

Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 1 of 220

### ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

# INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT

*OF* 

**Product Name: Tablet Computer** 

**Brand Name:** acer

**Marketing Name:** A3-A30

**Model No.:** A5003

**Model Difference:** N/A

FCC ID: **HLZA5003** 

E2/2015/20019 **Report No.:** 

**Issue Date:** Apr. 08, 2015

**FCC Rule Part: §15.407** 

**Acer Incorporated** 

Prepared for: 8F., No.88, Sec. 1, Hsintai 5th Rd., Hsichih,

New Taipei City 22181, Taiwan (R.O.C.)

SGS Taiwan Ltd. Prepared by:

> **Electronics & Communication Laboratory** No.2, Keji 1st Rd., Guishan District, Taoyuan

City, Taiwan 333





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,同時此樣品僅保留到天。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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 2 of 220

### VERIFICATION OF COMPLIANCE

**Applicant:** Acer Incorporated

8F., No.88, Sec. 1, Hsintai 5th Rd., Hsichih, New Taipei City 22181,

Taiwan (R.O.C.)

**Product Name: Tablet Computer** 

acer **Brand Name:** 

**Marketing Name:** A3-A30

Model No.: A5003

**Model Difference:** N/A

FCC ID: HLZA5003

File Number: E2/2015/20019

Date of test: Feb. 25, 2015 ~ Apr. 08, 2015

**Date of EUT Received:** Feb. 25, 2015

### We hereby certify that:

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

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

11 1

Test By:	Marcus Iseng	Date:	Apr. 08, 2015	
-	Marcus Tseng / Engineer			_
Prepared By:	Allen Tsai	Date:	Apr. 08, 2015	
Approved By:	Allen Tsai / Engineer  Time Chang  Jim Chang / Asst. Manager	Date:	Apr. 08, 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and frequence in which proved the transaction of the content or approval of the company. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 3 of 220

# **Revision History**

Report Number	Revision	Description	Issue Date
E2/2015/20019	Rev.00	Initial creation of document	Apr. 08, 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkunRoad New TaipeiIndustrialPark WukupDistrict New TaipeiCity Taiwan 24803/新北市五股區新北產業園區五工路 134 赞

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 4 of 220

### **Table of Contents**

1.	GEN	ERAL INFORMATION	6
	1.1	Product Description	<i>6</i>
	1.2	Product Feature of Equipment Under Test	9
	1.3	Test Methodology of Applied Standards	10
	1.4	Test Facility	10
	1.5	Special Accessories	10
	1.6	Equipment Modifications	10
2.	SYS	ΓΕΜ TEST CONFIGURATION	1
	2.1	EUT Configuration	11
	2.2	EUT Exercise	11
	2.3	Test Procedure	11
	2.4	Measurement Results Explanation Example	12
	2.5	Configuration of Tested System	13
3.	SUM	MARY OF TEST RESULT	15
4.	DES	CRIPTION OF TEST MODES	16
	4.1	Operated in U-NII Bands	16
	4.2	The Worst Test Modes and Channel Details	18
5.	MEA	SUREMENT UNCERTAINTY	21
6.	CON	DUCTED EMISSION TEST	22
	6.1.	Standard Applicable	22
	6.2.	Measurement Equipment Used	22
	6.3.	EUT Setup	22
	6.4.	Test SET-UP	23
	6.5.	Measurement Procedure	23
	6.6.	Measurement Result	23
7.	DUT	Y CYCLE TEST SIGNAL	28
8.	26dB	& 6dB EMISSION BANDWIDTH MEASUREMENT	31
	8.1	Standard Applicable	31
	8.2	Measurement Procedure	31
	8.3	Measurement Equipment Used	32
	8.4	Test Set-up	32
	8.5	Measurement Result	33
9.	MAX	XIMUM CONDUCTED OUTPUT POWER MEASUREMENT	61
	9.1	Standard Applicable	61

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkunRoad New TaipeiIndustrialPark WukupDistrict New TaipeiCity Taiwan 24803/新北市五股區新北產業園區五工路 134 赞



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 5 of 220

	9.2	Measurement Procedure	62
	9.3	Measurement Equipment Used	62
	9.4	Test Set-up	62
	9.5	Measurement Result	63
10.	PEAL	K POWER SPECTRAL DENSITY	66
	10.1	Standard Applicable	66
	10.2	Measurement Procedure	66
	10.3	Measurement Equipment Used	67
	10.4	Test Set-up	67
	10.5	Measurement Result	67
11.	UND	ESIRABLE RADIATED EMISSION MEASUREMENT1	91
	11.1	Standard Applicable	91
	11.2	Measurement Equipment Used	93
	11.3	Test SET-UP	94
	11.4	Measurement Procedure	95
	11.5	Field Strength Calculation	95
	11.6	Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz	96
	11.7	Measurement Result	96
12.	TRA	NSMISSION IN THE ABSENCE OF DATA	213
	12.1	Standard Applicable	213
	12.2	Result	213
13.	FRE	OUENCY STABILITY	214
	13.1	Standard Applicable	214
	13.2	Measurement Procedure	214
	13.3	Test SET-UP	214
	13.4	Measurement Equipment Used	214
	13.5	Measurement Result	215
14.	ANT	ENNA REQUIREMENT	220
	14.1	Standard Applicable	
	14.2	Antenna Connected Construction	220

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungNand NewTaipeilindustrialPark WukupDistrict NewTaipeiCity. Taiwan24803/新北市市股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 6 of 220

### **GENERAL INFORMATION**

### **Product Description**

### General:

Product Name:	Tablet Computer		
Brand Name:	acer		
Marketing Name:	A3-A30		
Model No.:	A5003		
Model Difference:	N/A		
Product SW/HW version:	Acer_AV0L0_A3-A30_RV01RZ01_WW_CUS1 / E0		
Radio SW/HW version:	1.5.1.2 / WCN3620		
Test SW Version:	1.5.1.2		
USB Cable	Model No	: 3080199058, Supplier: 坤記	
	3.8Vdc from Rechargeable Li-polymer Battery or 5.35V from AC/DC Adapter		
Power Supply:	Battery: Model No.:AP14A4M, Supplier: SONY		
	Adapter:	<ol> <li>Model No.: PA-1100-25, Supplier: LITEON.</li> <li>Model No.: ADP-10HW A, Supplier: DELTA.</li> </ol>	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 7 of 220

#### WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology
	5150~5250	4	12.30dBm	
110	5250~5350	4	13.13dBm	OEDM
11a	5470~5725	11	14.47dBm	OFDM
	5725-5850	5	13.99dBm	
	HT20 / VHT20 5150~5250	4	HT: 10.11dBm VHT: 11.09dBm	
11n / ac	HT20 / VHT20 5250~5350	4	HT: 10.83dBm VHT: 12.11dBm	OFDM
	HT20 / VHT20 5470~5725	11	HT: 12.28dBm VHT: 13.28dBm	
	HT20 / VHT20 5725-5850	5	HT: 12.14dBm VHT: 12.99dBm	
	HT40 / VHT40 5150~5250	2	HT: 7.81dBm VHT: 8.02dBm	
11n / ac	HT40 / VHT40 5250~5350	2	HT: 8.13dBm VHT: 8.31dBm	OFDM
Tim , uc	HT40 / VHT40 5470~5725	6	HT: 9.62dBm VHT: 9.77dBm	
	HT40 / VHT40 5725-5850	2	HT: 9.14dBm VHT: 9.25dBm	
	VHT80 5150~5250	1	8.53dBm	
11ac	VHT80 5250~5350	1	8.69dBm	OFDM
	VHT80 5470~5725	3	11.01dBm	
	VHT80 5725-5850	1	9.56dBm	

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungNand NewTaipeilindustrialPark WukupDistrict NewTaipeiCity. Taiwan24803/新北市市股區新北產業園區五工路 134 號

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 8 of 220

Antenna Designation	PCB Wire Antenna, Model No.: QTNKFWIPB01+A, Supplier: Wgt 5GHz Gain: 3.5dBi (5150MHz-5250MHz) 5GHz Gain: 3.5dBi (5250MHz-5350MHz) 5GHz Gain: 2.9dBi (5470MHz-5725MHz) 5GHz Gain: 2.9dBi (5725MHz-5850MHz)		
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM		
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65Mbps 802.11 n_40MHz: 13.5 – 135Mbps 802.11 ac_20MHz: 6.5 – 65Mbps 802.11 ac_40MHz: 13.5 – 135Mbps 802.11 ac_80MHz: 29.3 – 292.5Mbps		

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of his 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, NewTaipeiIndustrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

10.134, WuKungRoad, NewTaipeiIndustrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 9 of 220

### **Product Feature of Equipment Under Test**

The equipment under Test (Hereafter Called: EUT) is mobile phone supporting, ,Wi-Fi 802.11abgn & ac, Bluetooth with NFC features, and below is details of information

Product Feature  Product Feature			
Product Name:	Tablet Computer		
Brand Name:	acer		
Type No.:	A3-A30		
Model Difference:	A5003		
FCC ID	HLZA5003		
Wi-Fi Specification	802.11a/b/g/n/ac		
Bluetooth Version	V4.0 dual mode + HS		
NFC Specification	NFC		

Note: The above EUT information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 10 of 220

### **Test Methodology of Applied Standards**

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules v01

FCC KDB 662311 D01 Multiple Transmitter Output

ANSI C63.10:2013

#### Note:

- 1. All test items have been performed and record as per the above standards.
- 2. The composite system is compliance with FCC Subpart B is authorized under the certification procedure.
- The EUT was placed 1.5m height for frequency above 1GHz in accordance with AN-SI C63.10:2013.

### **Test Facility**

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan. (TAF code 0513)

FCC Registration Numbers are: 628985

Canada Registration Number: 4620A.

### **Special Accessories**

There are no special accessories used while test was conducted.

### **Equipment Modifications**

There was no modification incorporated into the EUT.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> edocument.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

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 www.tw.sqs.com

SGS Taiwan Ltd.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 11 of 220

### 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.

#### 2.3 **Test Procedure**

#### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz,. The CISPR Quasi-Peak and Average detector mode is employed according to §15.107. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table 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.

Unless otherwise stated 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,同時此樣品僅保留到天。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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 12 of 220

### **Measurement Results Explanation Example** For all conducted test items:

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

#### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss 2.3 dB and 10 dB attenuator.

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

Offices otherwise stated the results shown in this less report teler only to the sample(s) tested and such sample(s) are retained for 90 days only. 

Pk 非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 prints and the limits of the location of the content or appropriate and the produced except in full, without prior or the location of the content or appropriate in the produced except in full, without prior or the location of the content or appropriate in the produced except in full, without prior or the location of the content or appropriate in the prior of the content or appropriate and the prior of the content or ap pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

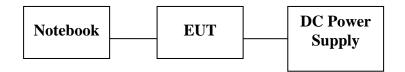
Page 13 of 220

### **Configuration of Tested System**

Fig. 2-1 Radiated Emission



Fig. 2-2 Conducted (Antenna Port) Configuration



**Table 2-1 Equipment Used in Tested System** 

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	DC Power Supply	Agilent	E3634A	MY53180030	Shield	Un-shield
3.	Notebook	Lenovo	L430	R9-YYG88	Shield	Un-shield

t (886-2) 2299-3279

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

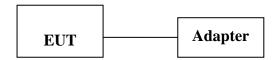
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 14 of 220

Fig. 2-3 AC Power Line Conducted Emission



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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	<b>Power Cord</b>
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

t (886-2) 2299-3279

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 15 of 220

### SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB & 6dB Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.203 §15.407(a)	Antenna Requirement	Compliant

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

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungNand NewTaipeilindustrialPark WukupDistrict NewTaipeiCity. Taiwan24803/新北市市股區新北產業園區五工路 134 號

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 16 of 220

### **DESCRIPTION OF TEST MODES**

### **Operated in U-NII Bands**

Operated band in 5150 MHz ~5250 MHz:

4 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	HANNEL FREQUENCY		FREQUENCY	
38	5190 MHz	46	5230 MHz	

1 channel is provided for 802.11ac\_VHT80

CHANNEL	FREQUENCY	
42	5210 MHz	

Operated band in 5250 MHz ~5350 MHz:

4 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac\_VHT80

CHANNEL	FREQUENCY	
58	5290 MHz	

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

台灣檢驗科技股份有限公司

SGS Taiwan Ltd.

t (886-2) 2299-3279

f (886-2) 2298-0488

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 www.tw.sqs.com



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 17 of 220

#### Operated band in 5470 MHz ~5725 MHz:

11 channels are provided for 802.11a, 802.11n HT20, 802.11ac VHT20

5 1 ded 101 002:11 d, 002:11 h_11120; 002:11 de_ 111120					
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY		
100	5500 MHz	124	5620 MHz		
104	5520 MHz	128	5640 MHz		
108	5540 MHz	132	5660 MHz		
112	5560 MHz	136	5680 MHz		
116	5580 MHz	140	5700 MHz		
120	5600 MHz				

5 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL	CHANNEL FREQUENCY		FREQUENCY
102 5510 MHz		126	5630 MHz
110	5590 MHz	134	5670 MHz
118	5590 MHz		

3 channels are provided for 802.11ac\_VHT80

CHANNEL FREQUENCY		CHANNEL	FREQUENCY
106	5530 MHz	138	5690 MHz
122	5610 MHz		

### Operated band in 5725 MHz ~5850 MHz:

5 channels are provided for 802.11a, 802.11n\_HT20, 802.11ac\_VHT20

CHANNEL FREQUENCY		CHANNEL	FREQUENCY		
149 5745 MHz		161	5805 MHz		
153	5765 MHz	165	5825 MHz		
157	5785 MHz				

2 channels are provided for 802.11n\_HT40, 802.11ac\_VHT40

CHANNEL FREQUENCY		CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac\_VHT80

. 11100			
CHANNEL	FREQUENCY		
155	5775 MHz		

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 18 of 220

#### 4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- 2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst case.
- 4. The given UE is pre-scanned among 802.11n and ac modes, and 802.11ac yields the highest reading that generates the highest emission. Therefore, 802.11ac as the mode of test configuration is chosen to carry out the relevantly mandatory test items.

#### **RADIATED EMISSION TEST:**

KADIATEDI	MIISSION 1F	<u>, , , , , , , , , , , , , , , , , , , </u>				
RADIATED EMISSION TEST (BELOW 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5180~5240	36 to 48	44	OFDM	6	MAIN
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MAIN
802.11a	5260~5320	52 to 64	60	OFDM	6	MAIN
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN
802.11a	5500~5700	100 to 140	116	OFDM	6	MAIN
802.11ac_VHT80	5530~5690	106 to 138	106,122,138	OFDM	MCS0	MAIN
802.11a	5745~5825	149 to 165	157	OFDM	6	MAIN
802.11ac_VHT80	5775	155	155	OFDM	MCS0	MAIN
	RAD	IATED EMIS	SION TEST (A	ABOVE 1 GHz)		
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5100 5240	26 4- 40	26 44 40	OFDM	6	MAIN
802.11ac_VHT20	5180~5240	36 to 48	36,44,48	OFDM	MCS0	MAIN
802.11ac_VHT40	5190~5230	38 to 46	38,46	OFDM	MCS0	MAIN
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MAIN
802.11a	5260 5220	50	52.60.64	OFDM	6	MAIN
802.11ac_VHT20	5260~5320	52 to 64	52,60,64	OFDM	MCS0	MAIN
802.11ac_VHT40	5270~5310	54 to 62	54,62	OFDM	MCS0	MAIN
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN

Unless otherwise stated 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,同時此樣品僅保留到天。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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 19 of 220

		-				-
MODE	FREQUENCY BAND (MHz)		TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5500 5700	100 to 140	100 116 140	OFDM	6	MAIN
802.11ac_VHT20	5500~5700	100 to 140	100,116,140	OFDM	MCS0	MAIN
802.11ac_VHT40	5510~5670	102 to 134	102,110,134	OFDM	MCS0	MAIN
802.11ac_VHT80	5530~5690	106 to 138	106,122,138	OFDM	MCS0	MAIN
802.11a	5745 5025	140 - 165	140 157 165	OFDM	6	MAIN
802.11ac_VHT20	5745~5825	149 to 165	149,157,165	OFDM	MCS0	MAIN
802.11ac_VHT40	5755~5795	151 to 159	151,159	OFDM	MCS0	MAIN
802.11ac_VHT80	5775	155	155	OFDM	MCS0	MAIN

#### **Note:**

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n/ac WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 20 of 220

#### ANTENNA PORT CONDUCTED MEASUREMENT:

	CONDUCTED TEST								
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED MODULATION		DATA RATE (Mbps)	ANTENNA PORT			
802.11a				OFDM	6	MAIN			
802.11ac_HT20 802.11ac_VHT20	5180~5240	36 to 48	36,44,48	OFDM	MCS0	MAIN			
802.11ac_HT40 802.11ac_VHT40	5190~5230	38 to 46	38,46	OFDM	MCS0	MAIN			
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MAIN			
802.11a				OFDM	6	MAIN			
802.11ac_HT20 802.11ac_VHT20	5260~5320	52 to 64	52,60,64	OFDM	MCS0	MAIN			
802.11ac_HT40 802.11ac_VHT40	5270~5310	5310 54 to 62 54,62		OFDM	MCS0	MAIN			
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN			
802.11a				OFDM	6	MAIN			
802.11ac_HT20 802.11ac_VHT20	5500~5700	100 to 140	100,116,140	OFDM	MCS0	MAIN			
802.11ac_HT40 802.11ac_VHT40	5510~5670	102 to 134	102,110,134	OFDM	MCS0	MAIN			
802.11ac_VHT80	5530~5690	106 to 138	106,122,138	OFDM	MCS0	MAIN			
802.11a				OFDM	6	MAIN			
802.11ac_HT20 802.11ac_VHT20	502.11ac_11120		149,157,165	OFDM	MCS0	MAIN			
802.11ac_HT40 802.11ac_VHT40	5755~5795	151 to 159	151,159	OFDM	MCS0	MAIN			
802.11ac_VHT80	5775	155	155	OFDM	MCS0	MAIN			

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungNand NewTaipeilindustrialPark WukupDistrict NewTaipeiCity. Taiwan24803/新北市市股區新北產業園區五工路 134 號

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 21 of 220

### **MEASUREMENT UNCERTAINTY**

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Measurement	+/- 0.96 dB
Peak Power Spectral Density Measurement	+/- 1.67 dB
Frequency Stability	+/- 123.36 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission:

	30MHz - 180MHz: +/- 3.37dB		
Measurement uncertainty	180MHz -417MHz: +/- 3.19dB		
(Polarization : <b>Vertical</b> )	0.417GHz-1GHz: +/- 3.19dB		
	1GHz - 18GHz: +/- 4.04dB		
	18GHz - 40GHz: +/- 4.04dB		

	30MHz - 167MHz: +/- 4.22dB
Measurement uncertainty	167MHz -500MHz: +/- 3.44dB
(Polarization : <b>Horizontal</b> )	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 22 of 220

### CONDUCTED EMISSION TEST

### 6.1. Standard Applicable

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

	Limits				
Frequency range	dB(uV)				
MHz	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

#### Note

- 1. The lower limit shall apply at the transition frequencies
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 6.2. Measurement Equipment Used

Conducted Emission Test Site									
Name of Equipment	Manufac-	Model	Serial Num-	Calibration	Calibration				
Name of Equipment	turer	Model	ber	Date	Due				
EMI Test Receiver	R&S	ESCI 3	101311	06/20/2014	06/19/2015				
Coaxial Cables	N/A	N30N30-1042-150cm	N/A	01/06/2015	01/07/2016				
LISN	Schwarzbeck	NSLK 8127	8127-648	06/10/2014	06/09/2015				
LISN	Rolf-Heine	NNB-2/16Z	99012	03/04/2015	03/03/2016				

### 6.3. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The LISN was connected with 120Vac/60Hz power source.

Unless otherwise stated 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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 www.tw.sqs.com

台灣檢驗科技股份有限公司

SGS Taiwan Ltd.

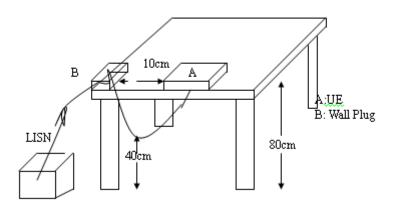
t (886-2) 2299-3279



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 23 of 220

#### 6.4. Test SET-UP



#### **6.5.** Measurement Procedure

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

#### 6.6. Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that that closet to the limit

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> edocument.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

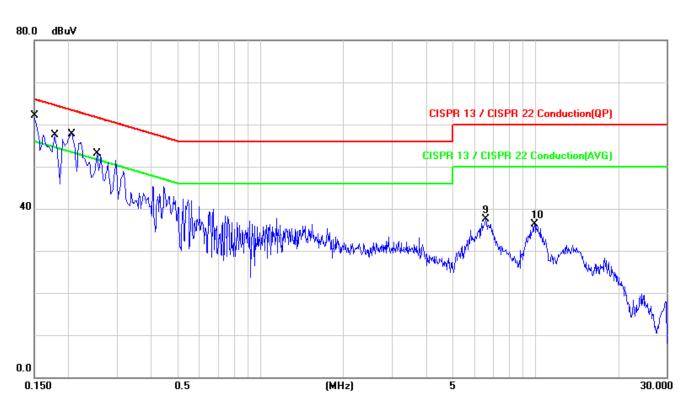


Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 24 of 220

#### AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Operation mode			Test Date:	Mar. 26, 2015
Temperature:	21	Humidity:	70 %	Test By:	Vito
Model No.:	PA-1100-25				
Phase:	L1				



No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Comment
		(MHz)	dBuV	(dB)	(dBuV)	(dBuV)	(dB)		
1	*	0.1516	54.40	0.12	54.52	65.91	-11.39	QP	
2		0.1516	38.70	0.12	38.82	55.91	-17.09	AVG	
3		0.1780	49.90	0.12	50.02	64.58	-14.56	QP	
4		0.1780	35.40	0.12	35.52	54.58	-19.06	AVG	
- 5		0.2060	50.80	0.12	50.92	63.37	-12.45	QP	
6		0.2060	37.30	0.12	37.42	53.37	-15.95	AVG	
7		0.2540	45.20	0.12	45.32	61.63	-16.31	QP	
8		0.2540	30.40	0.12	30.52	51.63	-21.11	AVG	
9		6.6020	37.11	0.32	37.43	60.00	-22.57	peak	·
10		9.9580	35.91	0.40	36.31	60.00	-23.69	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. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

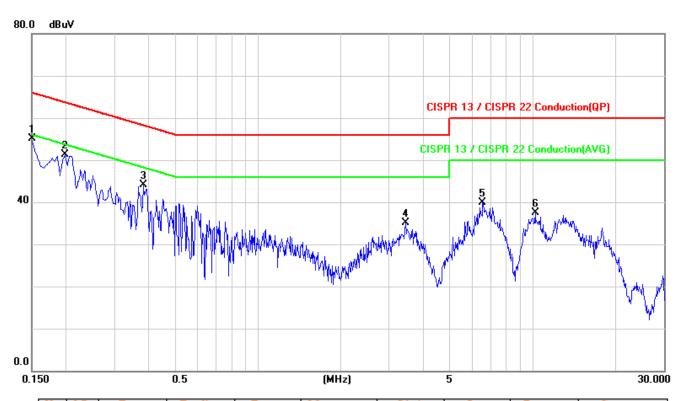
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 25 of 220

Operation Mode:	Operation mode			Test Date:	Mar. 26, 2015
Temperature:	21	Humidity:	70 %	Test By:	Vito
Model No.:	PA-1100-25				
Phase:	N				



No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Comment
		(MHz)	dBuV	(dB)	(dBuV)	(dBuV)	(dB)		
1	*	0.1500	54.98	0.12	55.10	66.00	-10.90	peak	
2		0.1980	51.17	0.12	51.29	63.69	-12.40	peak	
3		0.3820	44.01	0.12	44.13	58.24	-14.11	peak	
4		3.4420	34.97	0.23	35.20	56.00	-20.80	peak	
5		6.5700	39.54	0.32	39.86	60.00	-20.14	peak	·
6		10.2220	37.06	0.40	37.46	60.00	-22.54	peak	

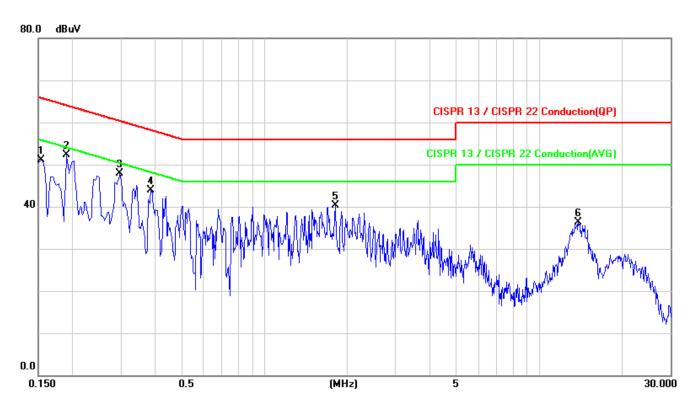
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf,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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 26 of 220

Operation Mode:	Operation mode			Test Date:	Mar. 26, 2015
Temperature:	21	Humidity:	70 %	Test By:	Vito
Model No.:	ADP-10HW				
Phase:	L1				



No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Comment
		(MHz)	dBuV	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1540	51.09	0.05	51.14	65.78	-14.64	peak	
2	*	0.1900	52.36	0.04	52.40	64.04	-11.64	peak	
3		0.2980	47.91	0.08	47.99	60.30	-12.31	peak	
4		0.3860	43.70	0.12	43.82	58.15	-14.33	peak	
5		1.8100	39.79	0.49	40.28	56.00	-15.72	peak	
6		13.8420	35.89	0.37	36.26	60.00	-23.74	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. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

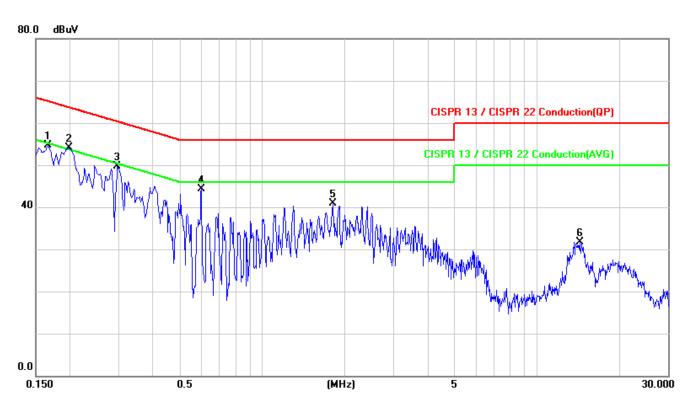
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 27 of 220

Operation Mode:	Operation mode			Test Date:	Mar. 26, 2015
Temperature:	21	Humidity:	70 %	Test By:	Vito
Model No.:	ADP-10HW		•		
Phase:	N				



No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Comment
		(MHz)	dBuV	(dB)	(dBuV)	(dBuV)	(dB)		
1		0.1660	54.71	0.05	54.76	65.16	-10.40	peak	
2	*	0.1980	54.01	0.04	54.05	63.69	-9.64	peak	
3		0.2980	49.53	0.08	49.61	60.30	-10.69	peak	
4		0.6020	44.17	0.21	44.38	56.00	-11.62	peak	
5		1.8100	40.47	0.49	40.96	56.00	-15.04	peak	
6		14.3260	31.45	0.35	31.80	60.00	-28.20	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. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 28 of 220

#### **DUTY CYCLE TEST SIGNAL**

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

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

#### Formula:

Duty Cycle = Ton / (Ton+Toff)

### **Measurement Procedure:**

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

#### **Duty Cycle:**

	Duty Cycle	Duty Fator (dB)
802.11a	93.33%	0.30
802.11ac_20	92.95%	0.32
802.11ac_40	86.74%	0.62
802.11ac_80	76.20%	1.18

Duty Cycle Factor:  $10 * \log (1/0.9333) = 0.30$ Duty Cycle Factor:  $10 * \log (1/0.9295) = 0.32$ Duty Cycle Factor:  $10 * \log (1/0.8974) = 0.62$ Duty Cycle Factor:  $10 * \log (1/0.7620) = 1.18$ 

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

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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 www.tw.sqs.com



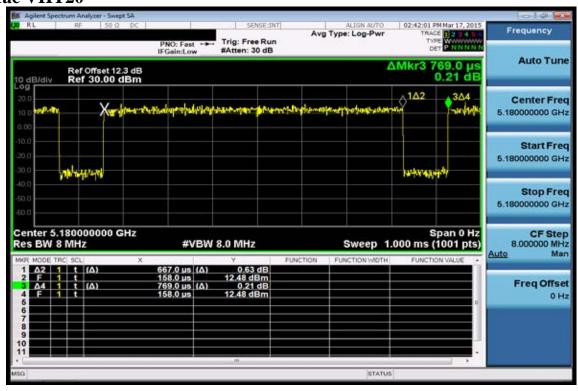
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 29 of 220

## **DUTY CYCLE TEST SIGNAL Measurement Result** 802.11a



### 802.11ac VHT20



Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in very service of this document is unavailable of the document in the limit of the content or approach is unavailable of the document in the limit of the content or approach in the limit of the content of the document is unavailable of the content of the content or approach in the limit of the content of the content or approach is unavailable of the content of the pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

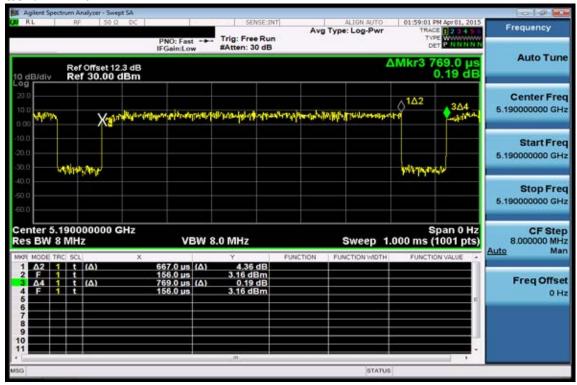
台灣檢驗科技股份有限公司



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 30 of 220

### 802.11 ac VHT 40



### 802.11 ac VHT 80



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

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 31 of 220

### 26dB & 6dB EMISSION BANDWIDTH MEASUREMENT

### 8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

#### **8.2** Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
  - a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto, Detector = Peak, Trace Mode = Max Hold, Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
  - b. Mark the peak frequency and –26dB (upper and lower) frequency.
- 4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
- 5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.
  - a. Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Peak, Sweep=auto
  - b. Mark the peak frequency and –6dB (upper and lower) frequency.
- 6. Repeat above procedures until all test default channel measured were complete.

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

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

www.tw.sqs.com



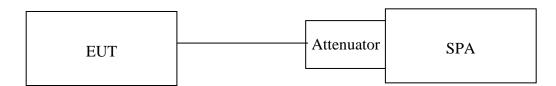
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 32 of 220

**Measurement Equipment Used** 

Conducted Emission Test Site					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015
DC Block	PASTERNACK	PE8210	RF29	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/19/2014	12/18/2015

### **Test Set-up**



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkunRoad New TaipeiIndustrialPark WukupDistrict New TaipeiCity Taiwan 24803/新北市五股區新北產業園區五工路 134 赞

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

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 33 of 220

### **Measurement Result**

### 26dB Bandwidth

802.11a

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5180	21.450	13.31
5220	21.500	13.32
5240	21.420	13.31
5260	21.540	13.33
5300	21.450	13.31
5320	21.220	13.27
5500	21.690	13.36
5580	21.480	13.32
5700	21.420	13.31

802.11ac\_VHT20

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5180	21.720	13.37
5220	21.780	13.38
5240	21.610	13.35
5260	21.660	13.36
5300	21.610	13.35
5320	21.530	13.33
5500	21.510	13.33
5580	21.570	13.34
5700	21.620	13.35

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 34 of 220

802.11ac \_VHT40

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5190	40.050	16.03
5230	40.130	16.03
5270	40.420	16.07
5310	40.220	16.04
5510	39.880	16.01
5550	40.000	16.02
5670	40.110	16.03

802.11ac \_VHT80

Frequency (MHz)	26dB Bandwidth (MHz)	10 Log (B) (dB)
5210	81.170	19.09
5290	81.260	19.10
5530	80.730	19.07
5610	81.380	19.11
5690	80.890	19.08

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

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungNand NewTaipeilindustrialPark WukupDistrict NewTaipeiCity. Taiwan24803/新北市市股區新北產業園區五工路 134 號

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

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 35 of 220

### 6dB Bandwidth (5725 MHz~ 5850 MHz)

802.11a

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5745	16.340	12.13
5785	16.350	12.14
5825	16.370	12.14

802.11ac\_VHT20

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5745	17.620	12.46
5785	17.600	12.46
5825	17.600	12.46

802.11ac\_VHT40

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5755	36.380	15.61
5795	36.330	15.60

802.11ac\_VHT80

Frequency (MHz)	6dB Bandwidth (MHz)	10 Log (B) (dB)
5775	75.780	18.80

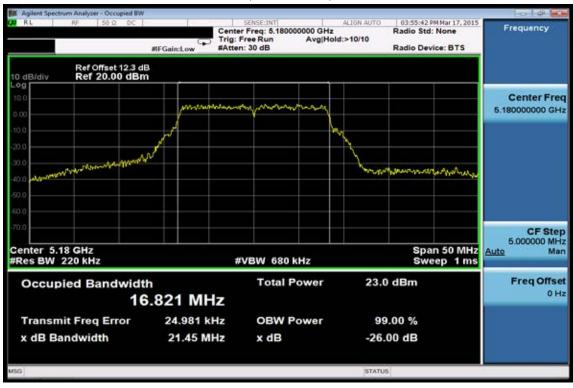
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf,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



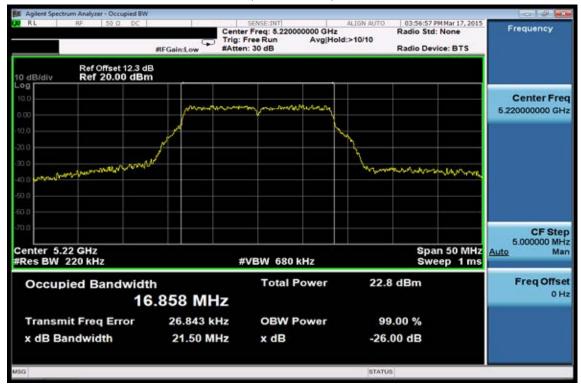
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 36 of 220

# 802.11a, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5180MHz)



### 26dB Band Width Test Data CH-Mid (5220MHz)



Unless otherwise stated 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。

t (886-2) 2299-3279

家非方角就明 - 比較容易未僅對測減之樣必負責 | 阿時此樣必僅体留別之 - 本教者を無率之の音曲部引 - 木可能价模装。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

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

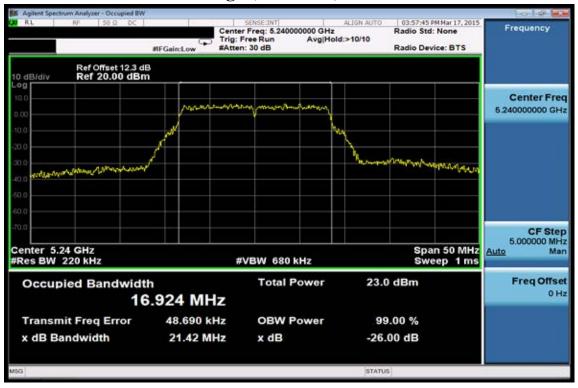
www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 37 of 220

# 26dB Band Width Test Data CH-High (5240MHz)



Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in view to the devict of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

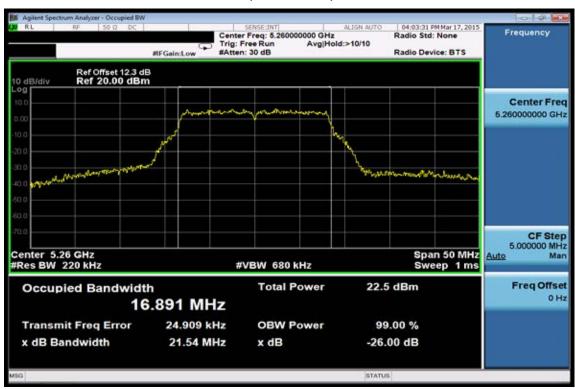
t (886-2) 2299-3279



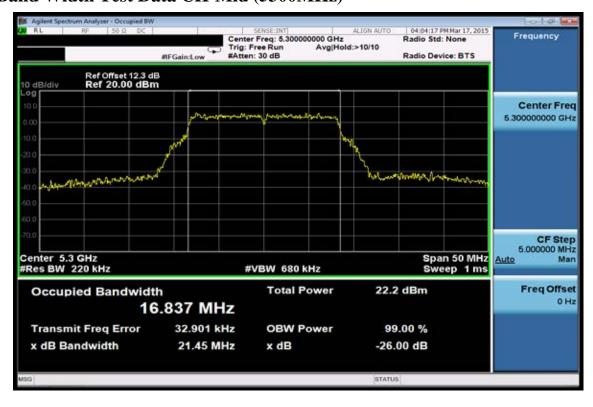
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 38 of 220

# 802.11a, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5260MHz)



### 26dB Band Width Test Data CH-Mid (5300MHz)



Unless otherwise stated 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。

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

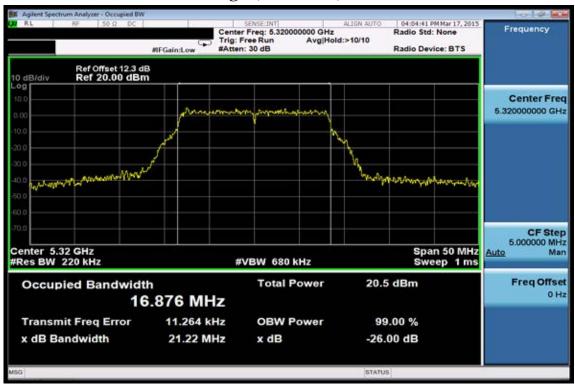
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 39 of 220

## 26dB Band Width Test Data CH-High (5320MHz)



Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

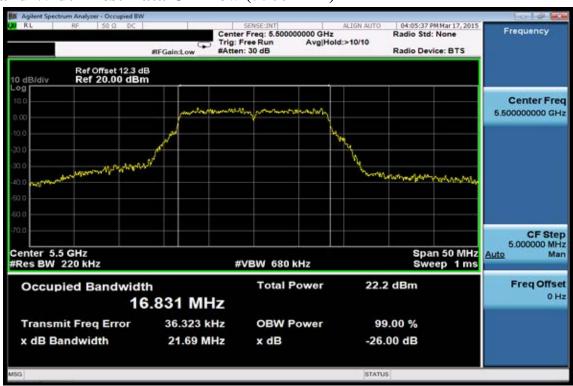
t (886-2) 2299-3279



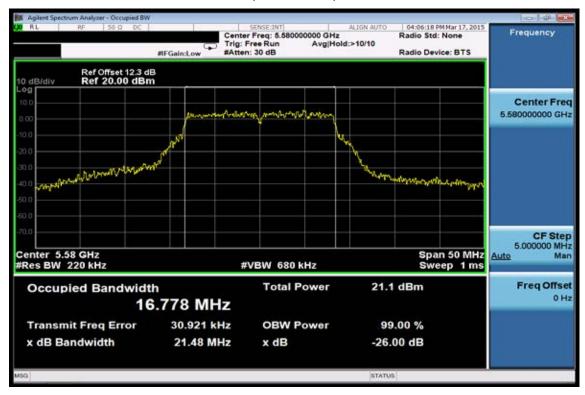
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 40 of 220

# 802.11a, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5500MHz)



## 26dB Band Width Test Data CH-Mid (5580MHz)



Unless otherwise stated 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。

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

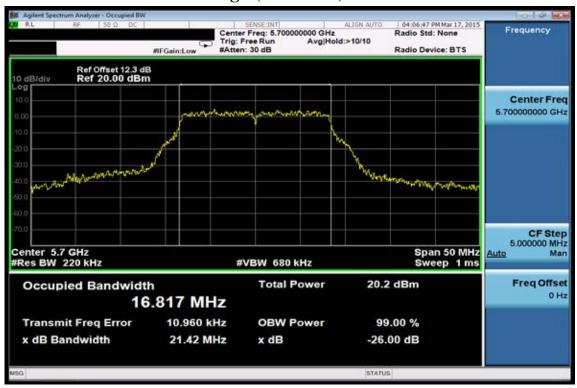
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 41 of 220

## 26dB Band Width Test Data CH-High (5700MHz)



Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

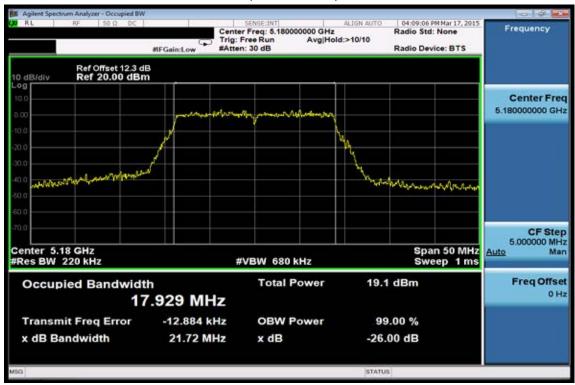
t (886-2) 2299-3279



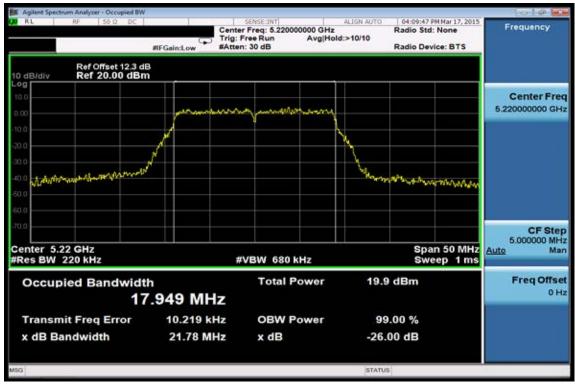
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 42 of 220

# 802.11ac VHT20, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5180 MHz)



## 26dB Band Width Test Data CH-Mid (5220 MHz)



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

t (886-2) 2299-3279

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

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

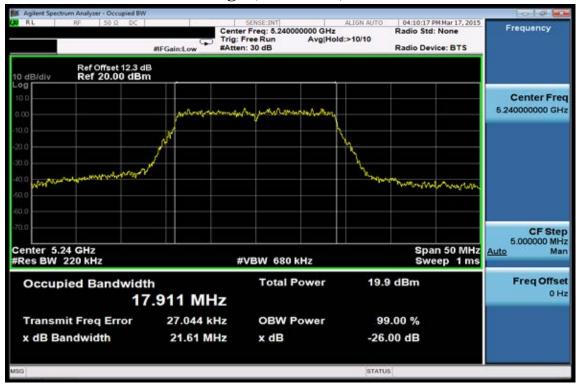
f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 43 of 220

# 26dB Band Width Test Data CH-High (5240 MHz)



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

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

台灣檢驗科技股份有限公司

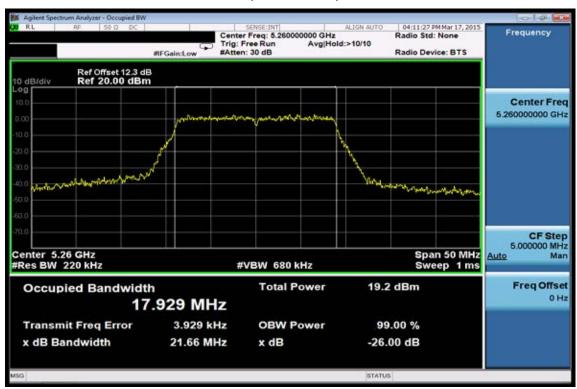
f (886-2) 2298-0488



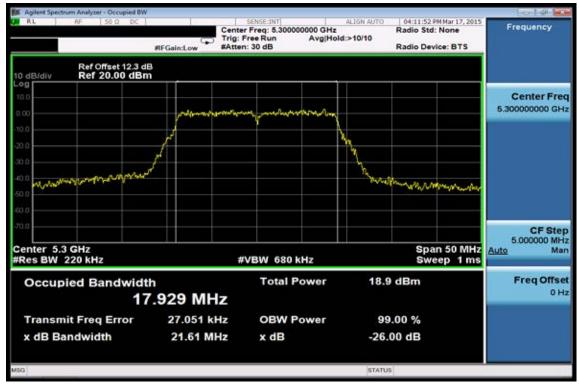
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 44 of 220

# 802.11ac VHT20, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5260 MHz)



# 26dB Band Width Test Data CH-Mid (5300 MHz)



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

t (886-2) 2299-3279

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

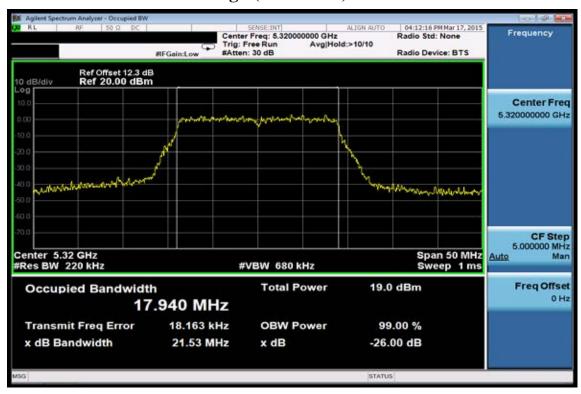
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 45 of 220

# 26dB Band Width Test Data CH-High (5320 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in view to the devict of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

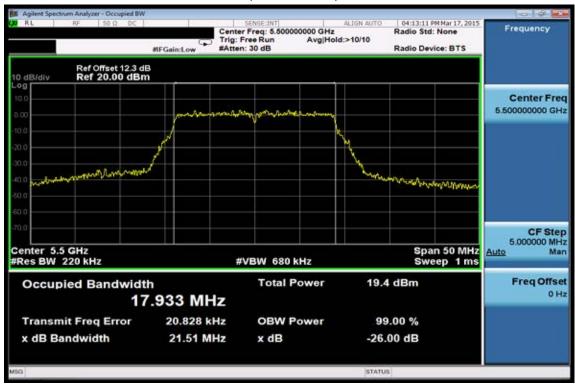
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



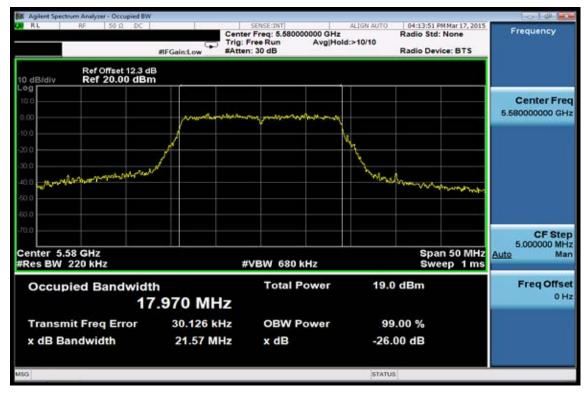
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 46 of 220

# 802.11n VHT20, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5500 MHz)



## 26dB Band Width Test Data CH-Mid (5580 MHz)



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

t (886-2) 2299-3279

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

台灣檢驗科技股份有限公司

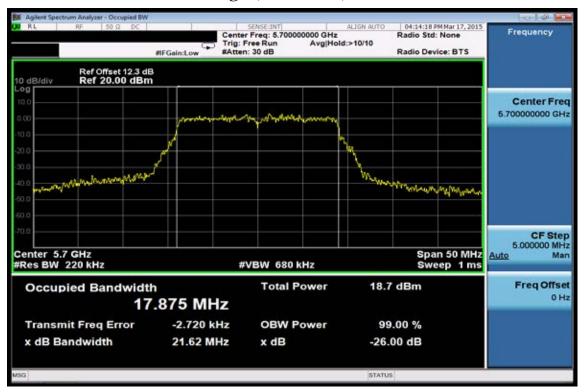
f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 47 of 220

# 26dB Band Width Test Data CH-High (5700 MHz)



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

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

台灣檢驗科技股份有限公司

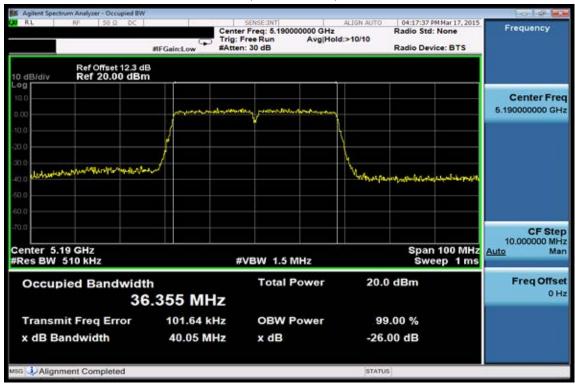
t (886-2) 2299-3279



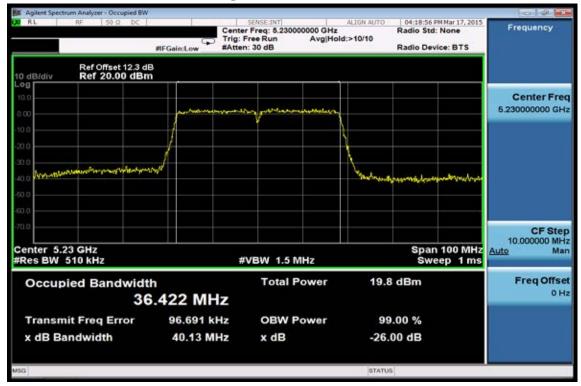
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 48 of 220

# 802.11ac VHT40, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5190 MHz)



## 26dB Band Width Test Data CH-High (5230 MHz)



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

家非方角就明 - 比較容易未僅對測減之樣必負責 | 阿時此樣必僅体留別之 - 本教者を無率之の音曲部引 - 木可能价模装。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

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

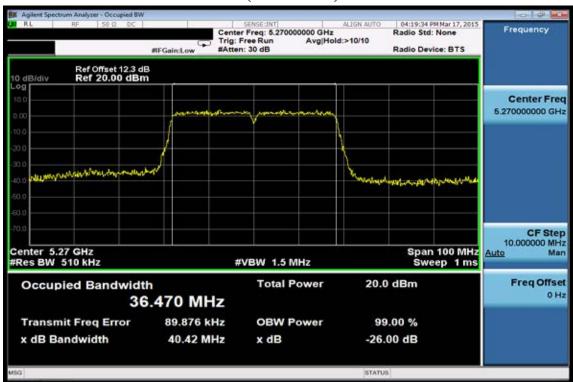
t (886-2) 2299-3279



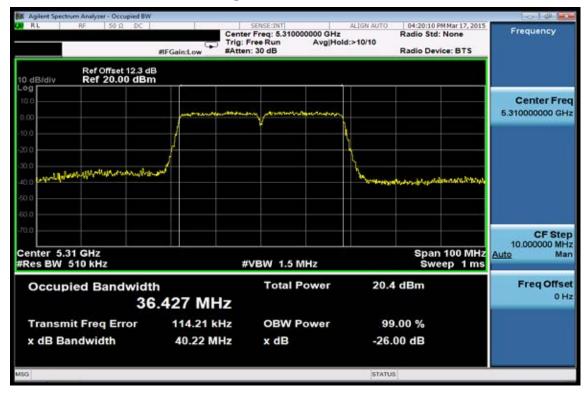
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 49 of 220

# 802.11ac VHT40, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5270 MHz)



## 26dB Band Width Test Data CH-High (5310MHz)



Unless otherwise stated 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。

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

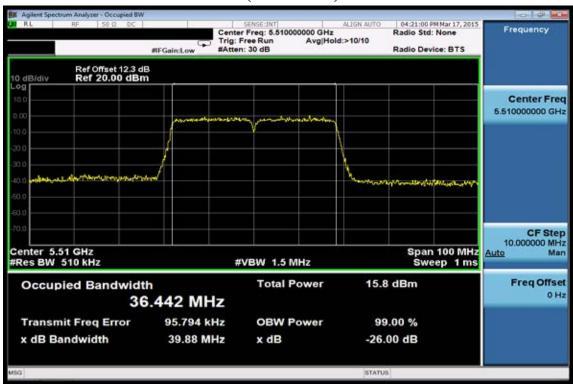
t (886-2) 2299-3279



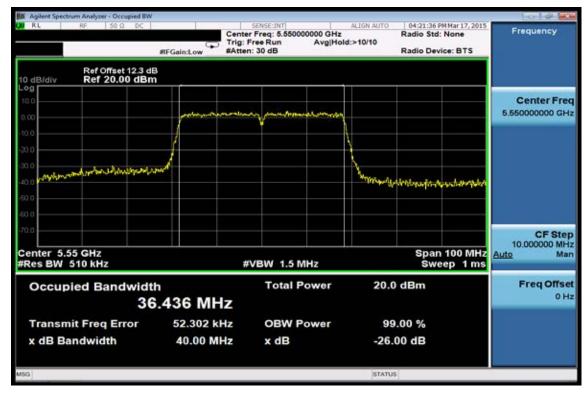
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 50 of 220

# 802.11ac VHT40, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5510 MHz)



## 26dB Band Width Test Data CH-Mid (5550 MHz)



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

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

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

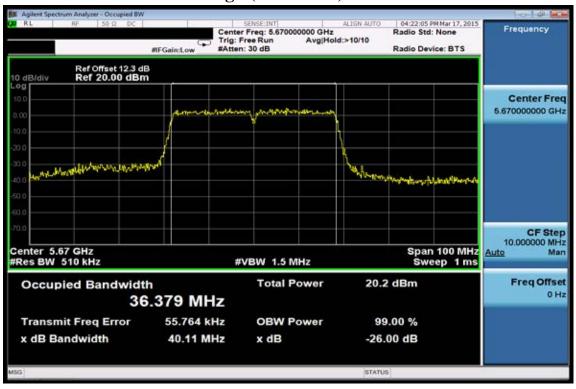
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 51 of 220

# 26dB Band Width Test Data CH-High (5670 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in view to the devict of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

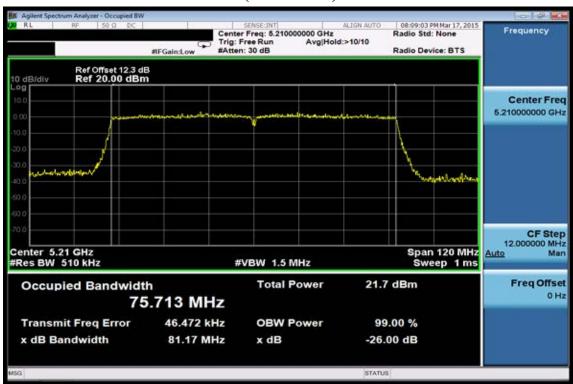
台灣檢驗科技股份有限公司



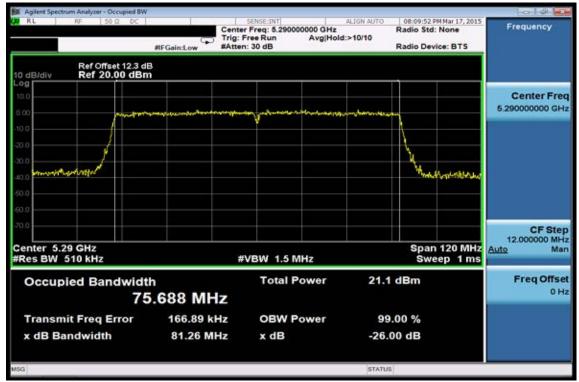
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 52 of 220

# 802.11ac VHT80, 5150~5250 MHz 26dB Band Width Test Data CH-Mid (5210 MHz)



# 802.11ac VHT80, 5250~5350 MHz 26dB Band Width Test Data CH-Mid (5290 MHz)



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

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

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

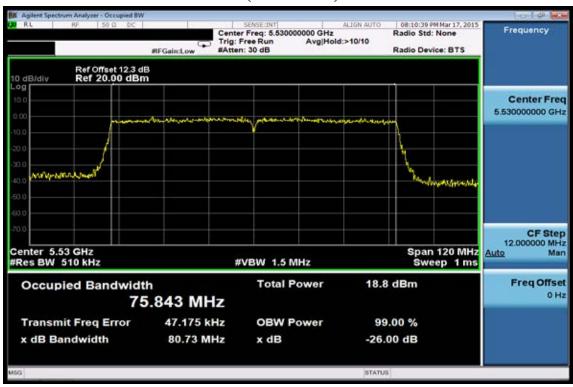
f (886-2) 2298-0488



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 53 of 220

# 802.11ac VHT80, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5530 MHz)



## 26dB Band Width Test Data CH-Mid (5610 MHz)



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

wan 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

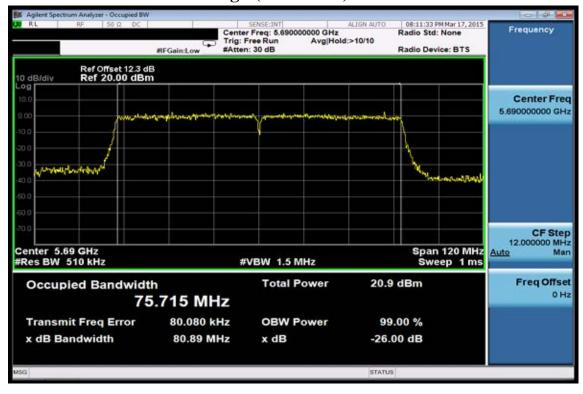
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 54 of 220

# 26dB Band Width Test Data CH-High (5690 MHz)



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

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

台灣檢驗科技股份有限公司

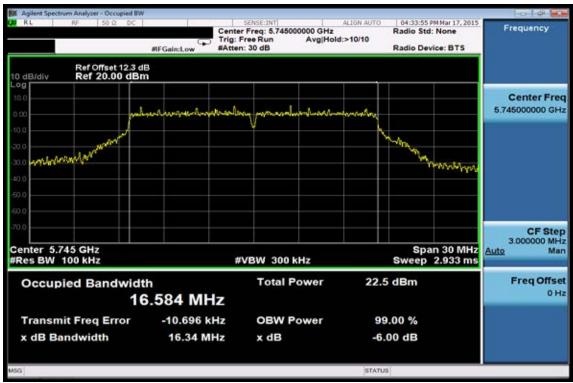
t (886-2) 2299-3279



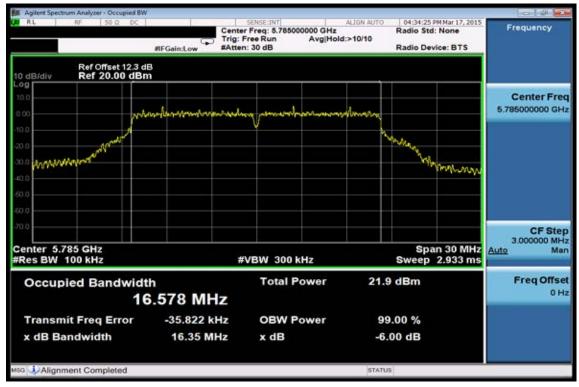
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 55 of 220

# 802.11a, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5745 MHz)



## 6dB Band Width Test Data CH-Mid (5785 MHz)



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

t (886-2) 2299-3279

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

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

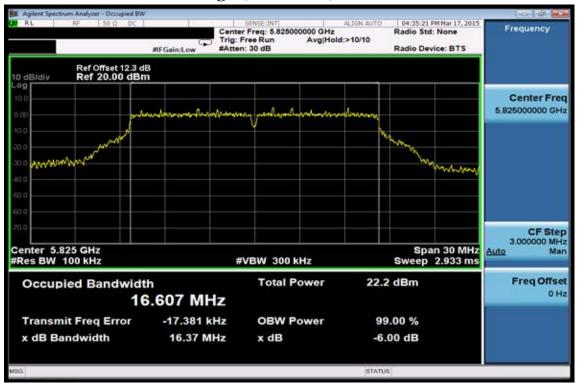
f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 56 of 220

# 6dB Band Width Test Data CH-High (5825 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in view to the devict of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

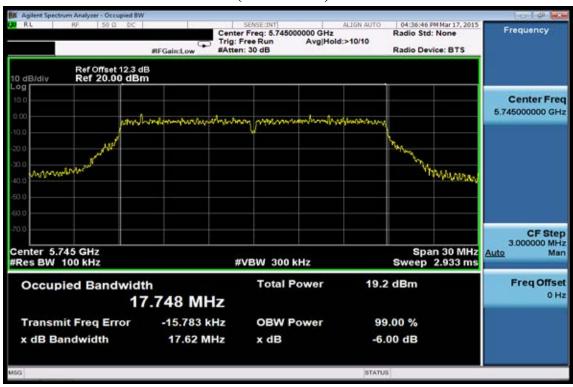
f (886-2) 2298-0488



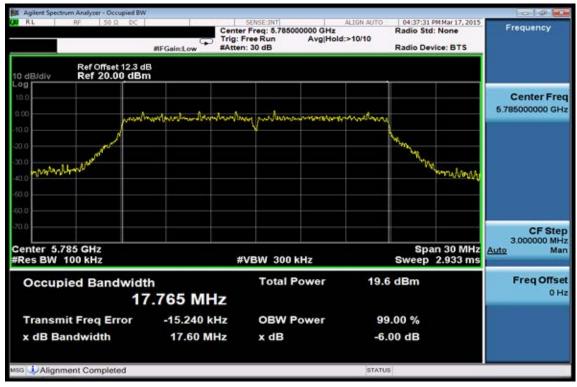
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 57 of 220

# 802.11ac VHT20, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5745 MHz)



## 6dB Band Width Test Data CH-Mid (5785 MHz)



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

家非方角就明 - 比較容易未僅對測減之樣必負責 | 同時此樣必僅体留別之 - 本教を不整本の自由部門 - 木可能位養者。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

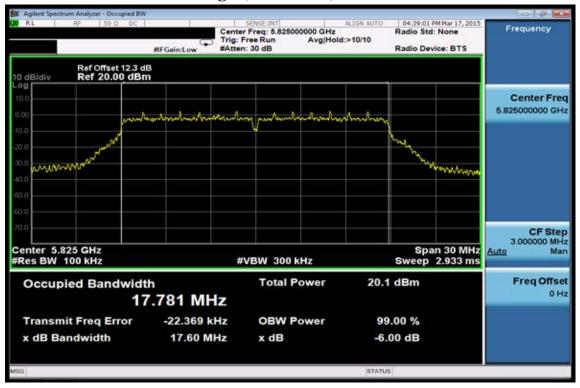
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 58 of 220

# 6dB Band Width Test Data CH-High (5825 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in view to the devict of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

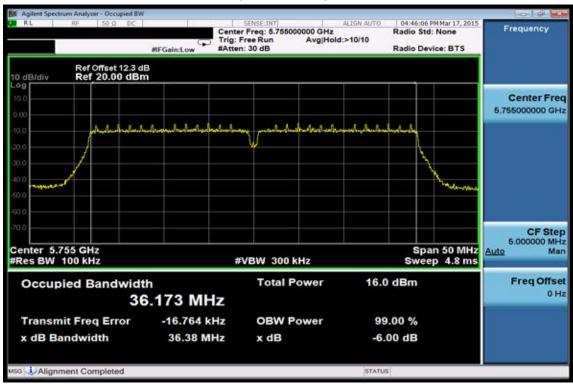
GS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



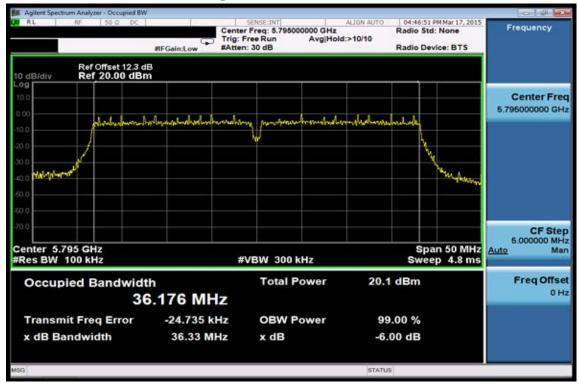
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 59 of 220

# 802.11ac VHT40, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5755 MHz)



## 6dB Band Width Test Data CH-High (5795 MHz)



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

t (886-2) 2299-3279

家非方角就明 - 比較容易未僅對測減之樣必負責 | 阿時此樣必僅体留別之 - 本教者を無率之の音曲部引 - 木可能价模装。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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

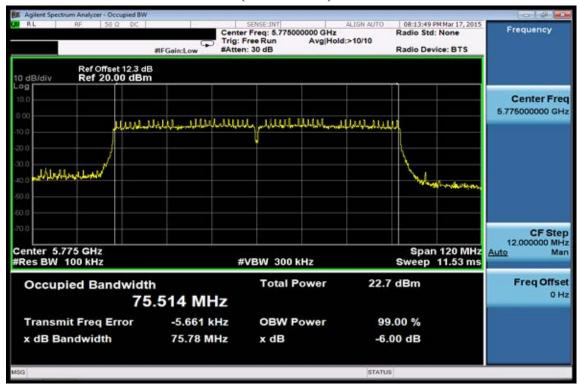
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 60 of 220

# 802.11ac VHT80, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5775 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and frequence in which proved the transaction of the content or approval of the company.

pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law GS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 61 of 220

#### MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

## **Standard Applicable**

OPERZTION Band		EUT CATEGORY	LIMIT
U-NII-1		Access Point (Mater device )	1 Watt(30dBm)
		Fixed point-to-point Acess Ponit	1 Watt(30dBm)
		Mobile and portable clinet device	250mW(23.98dBm)
U-NII-2A			250mW(23.98dBm) or 11dBm+10 log B
U-NII-2C	√		250mW(23.98dBm) or 11dBm+10 log B
U-NII-3			1 Watt(30dBm)

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the direction-al gain of the antenna exceeds 6 dBi.

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 62 of 220

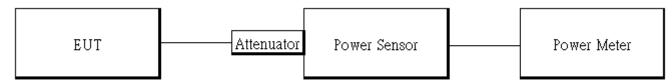
#### 9.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
- 4. Power Meter is used as the auxiliary test equipment to conduct the output power measurement.
- 5. Record the max. reading and add 10 log(1/duty cycle).
- 6. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

#### 9.3 Measurement Equipment Used

Refer to section 8.3 for details.

#### 9.4 Test Set-up



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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm</a>. 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 63 of 220

#### 9.5 Measurement Result

802.11a

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.22	16.672	23.98	PASS
44	5220	12.3	16.982	23.98	PASS
48	5240	12.22	16.672	23.98	PASS
52	5260	12.94	19.679	$23.98 \text{ or } 11+10\log(B)=24.33$	PASS
60	5300	13.13	20.559	$23.98 \text{ or } 11+10\log(B)=24.31$	PASS
64	5320	13.08	20.324	$23.98 \text{ or } 11+10\log(B)=24.27$	PASS
100	5500	13.96	24.889	23.98 or 11+10log(B) =24.36	PASS
116	5580	14.47	27.990	23.98 or 11+10log(B) =24.32	PASS
140	5700	14.22	26.424	$23.98 \text{ or } 11+10\log(B)=24.31$	PASS
149	5745	13.99	25.061	30	PASS
157	5785	13.71	23.496	30	PASS
165	5825	13.86	24.322	30	PASS

802.11n\_HT20

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	10.01	10.023	23.98	PASS
44	5220	10.11	10.257	23.98	PASS
48	5240	10.01	10.023	23.98	PASS
52	5260	10.56	11.376	$23.98 \text{ or } 11+10\log(B)=24.36$	PASS
60	5300	10.83	12.106	$23.98 \text{ or } 11+10\log(B)=24.35$	PASS
64	5320	10.81	12.050	$23.98 \text{ or } 11+10\log(B)=24.33$	PASS
100	5500	12.28	16.904	$23.98 \text{ or } 11+10\log(B)=24.33$	PASS
116	5580	12.19	16.558	$23.98 \text{ or } 11+10\log(B)=24.34$	PASS
140	5700	12.18	16.520	$23.98 \text{ or } 11+10\log(B)=24.35$	PASS
149	5745	12.14	16.368	30	PASS
157	5785	11.84	15.276	30	PASS
165	5825	11.87	15.382	30	PASS

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows are proposed to the language of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 64 of 220

#### 802.11ac\_VHT20

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	11.03	12.677	23.98	PASS
44	5220	11.09	12.853	23.98	PASS
48	5240	11.01	12.618	23.98	PASS
52	5260	11.55	14.289	$23.98 \text{ or } 11+10\log(B) = 24.36$	PASS
60	5300	12.11	16.255	23.98 or 11+10log(B) =24.35	PASS
64	5320	12.06	16.069	$23.98 \text{ or } 11+10\log(B)=24.33$	PASS
100	5500	13.28	21.281	$23.98 \text{ or } 11+10\log(B)=24.33$	PASS
116	5580	13.19	20.845	$23.98 \text{ or } 11+10\log(B)=24.34$	PASS
140	5700	13.18	20.797	$23.98 \text{ or } 11+10\log(B)=24.35$	PASS
149	5745	12.99	19.907	30	PASS
157	5785	12.77	18.923	30	PASS
165	5825	12.83	19.187	30	PASS

#### 802.11n\_HT40

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	7.75	5.957	23.98	PASS
46	5230	7.81	6.039	23.98	PASS
54	5270	8.06	6.397	$21.47 \text{ or } 11+10\log(B) = 27.07$	PASS
62	5310	8.13	6.501	$21.47 \text{ or } 11+10\log(B) = 27.04$	PASS
102	5510	9.61	9.141	$21.47 \text{ or } 11+10\log(B)=27.01$	PASS
110	5550	9.62	9.162	$21.47 \text{ or } 11+10\log(B) = 27.02$	PASS
134	5670	9.53	8.974	$21.47 \text{ or } 11+10\log(B) = 27.03$	PASS
151	5755	9.14	8.204	30	PASS
159	5795	9.03	7.998	30	PASS

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

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and 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 WulkungRand NewTaipeilindustrialPark WulkungRand NewT

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 65 of 220

#### 802.11ac VHT40

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	8.02	6.339	23.98	PASS
46	5230	8.00	6.310	23.98	PASS
54	5270	8.12	6.486	$21.47 \text{ or } 11+10\log(B) = 27.07$	PASS
62	5310	8.31	6.776	$21.47 \text{ or } 11+10\log(B) = 27.04$	PASS
102	5510	9.65	9.226	$21.47 \text{ or } 11+10\log(B)=27.01$	PASS
110	5550	9.77	9.484	$21.47 \text{ or } 11+10\log(B) = 27.02$	PASS
134	5670	9.66	9.247	$21.47 \text{ or } 11+10\log(B) = 27.03$	PASS
151	5755	9.25	8.414	30	PASS
159	5795	9.01	7.962	30	PASS

#### 802.11ac\_VHT80

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	8.53	7.129	23.98	PASS
58	5290	8.69	7.396	21.47 or 11+10log(B) =27.07	PASS
106	5530	10.91	12.331	$21.47 \text{ or } 11+10\log(B) = 27.04$	PASS
122	5610	11.01	12.618	$21.47 \text{ or } 11+10\log(B)=27.01$	PASS
138	5690	10.66	11.641	$21.47 \text{ or } 11+10\log(B) = 27.02$	PASS
155	5775	9.56	9.036	30	PASS

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms\_e-document.htm">www.sgs.com/terms\_e-document.htm</a>. 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 Tailwan Ltd.\*\*

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

10.200.0



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 66 of 220

#### 10. PEAK POWER SPECTRAL DENSITY

## 10.1 Standard Applicable

OPERZTION Band	EUT CATEGORY		LIMIT
U-NII-1	Access Point (Mater device ) NII-1		17dBm/ MHz
		Fixed point-to-point Acess Ponit	
	V	Mobile and portable clinet device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3			30dBm/ 500kHz

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 10.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.

#### 4. For U-NII1, U-NII-2A, U-NII-2C Band:

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

#### For U-NII-3 Band:

Set RBW=500 kHz, VBW≥ 3RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

- 5. User the cursor on spectrum to peak search the highest level of trace
- Record the max. reading and add 10 log(1/duty cycle).
- Repeat above procedures until all default test channel (low, middle, and high) was complete.

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

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

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

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



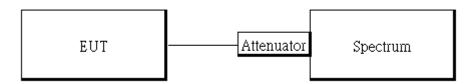
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 67 of 220

## 10.3 Measurement Equipment Used

Conducted Emission Test Site						
Name of Equipment	Manufacturer	Model	Serial Num-	Calibration	Calibration	
Name of Equipment	Manufacturer	Model	ber	Date	Due	
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015	
DC Block	PASTERNACK	PE8210	RF29	12/19/2014	12/18/2015	
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015	

#### 10.4 Test Set-up



#### 10.5 Measurement Result

802.11a

Frequency	PPSD	Limit	Margin
(MHz)	(dBm)	(dBm)	(dB)
5180	1.12	11.00	-9.88
5220	0.70	11.00	-10.30
5240	2.50	11.00	-8.50
5260	1.99	11.00	-9.01
5300	0.52	11.00	-10.48
5320	1.56	11.00	-9.44
5500	1.26	11.00	-9.74
5580	1.35	11.00	-9.65
5700	-0.58	11.00	-11.58
5745	1.30	30.00	-28.70
5785	2.13	30.00	-27.87
5825	1.39	30.00	-28.61

Unless otherwise stated 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。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 68 of 220

#### 802.11ac VHT20

Frequency	PPSD	Limit	Margin
(MHz)	(dBm)	(dBm)	(dB)
5180	-1.52	11.00	-12.52
5220	-1.27	11.00	-12.27
5240	-2.27	11.00	-13.27
5260	-3.03	11.00	-14.03
5300	-2.01	11.00	-13.01
5320	-2.52	11.00	-13.52
5500	-2.15	11.00	-13.15
5580	-2.91	11.00	-13.91
5700	-2.60	11.00	-13.60
5745	-0.97	30.00	-30.97
5785	-1.67	30.00	-31.67
5825	-0.85	30.00	-30.85

#### 802.11ac VHT40

Frequency	PPSD	Limit	Margin
(MHz)	(dBm)	(dBm)	(dB)
5190	-6.50	11.00	-17.50
5230	-6.55	11.00	-17.55
5270	-7.74	11.00	-18.74
5310	-7.04	11.00	-18.04
5510	-10.81	11.00	-21.81
5550	-6.43	11.00	-17.43
5670	-5.91	11.00	-16.91
5755	-9.82	30.00	-39.82
5795	-7.20	30.00	-37.20

#### 802.11ac VHT80

Frequency	PPSD	Limit	Margin
(MHz)	(dBm)	(dBm)	(dB)
5210	-13.38	11.00	-24.38
5290	-11.63	11.00	-22.63
5530	-15.18	11.00	-26.18
5610	-13.97	11.00	-24.97
5690	-13.07	11.00	-24.07
5775	-12.11	30.00	-42.11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

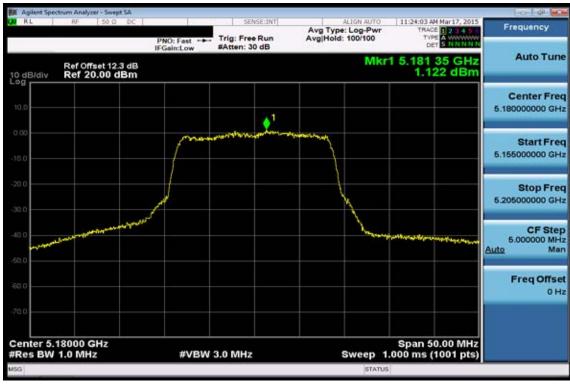
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



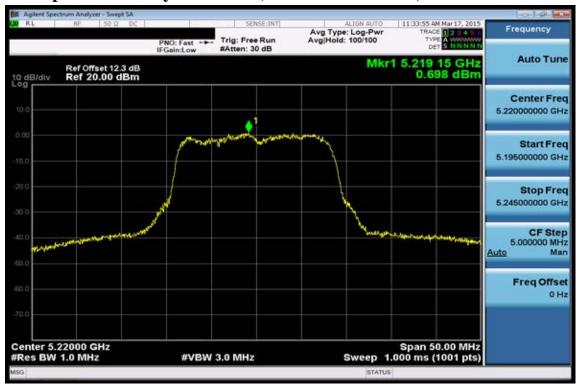
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 69 of 220

# 802.11a, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5180 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)



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

t (886-2) 2299-3279

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

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 70 of 220

## Peak Power Spectral Density Data Plot (CH High 5240 MHz)



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

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

台灣檢驗科技股份有限公司

f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

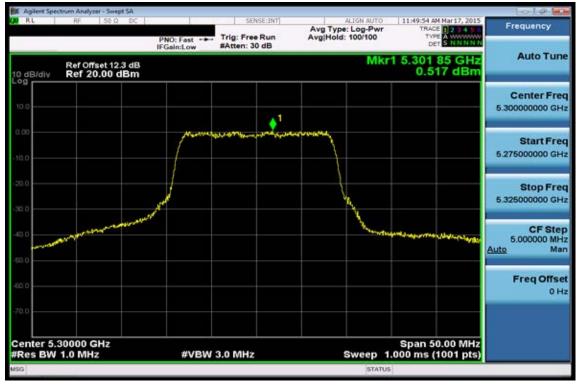
Page 71 of 220

## 802.11a, 5250~5350 MHz

# Peak Power Spectral Density Data Plot (CH Low 5260 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



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

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

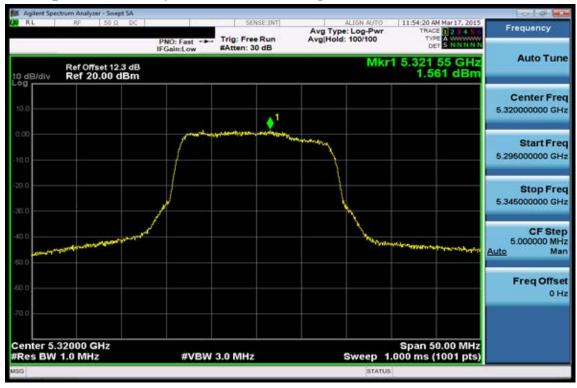
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 72 of 220

# Peak Power Spectral Density Data Plot (CH High 5320 MHz)



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

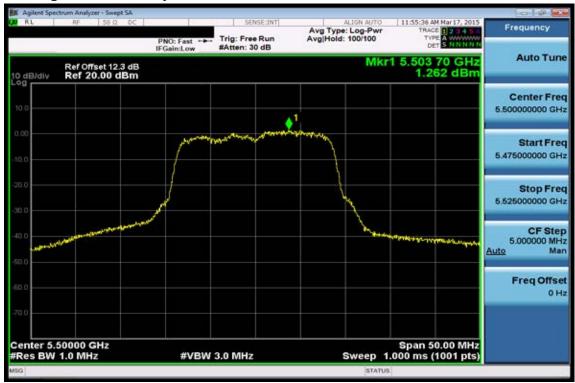


Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

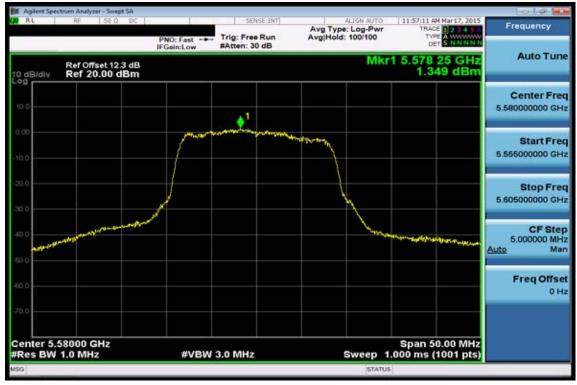
Page 73 of 220

## 802.11a, 5470~5725 MHz

## Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5580 MHz)



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

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

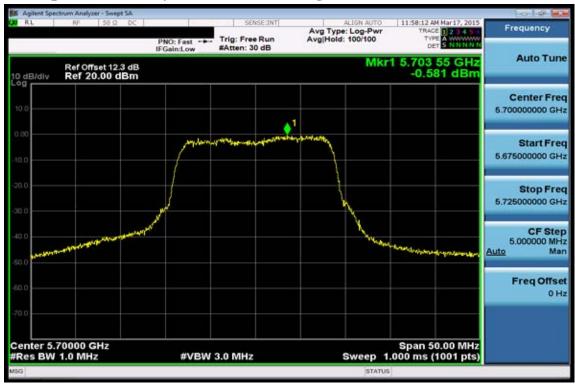
台灣檢驗科技股份有限公司



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

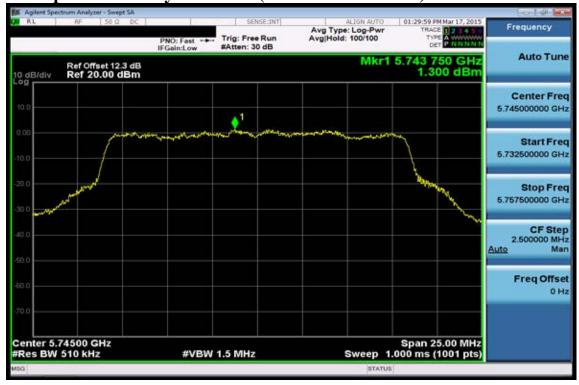
Page 74 of 220

## Peak Power Spectral Density Data Plot (CH High 5700 MHz)



## 802.11a, 5725~5850 MHz

# Peak Power Spectral Density Data Plot (CH Low 5745 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 75 of 220

## Peak Power Spectral Density Data Plot (CH Mid 5785 MHz)



# Peak Power Spectral Density Data Plot (CH High 5825 MHz)



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

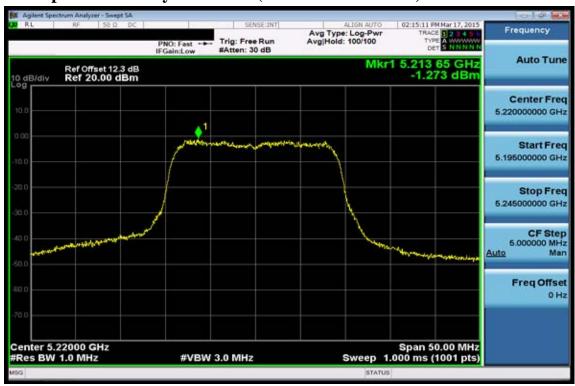
Page 76 of 220

# 802.11ac VHT20, 5150~5250 MHz

## Peak Power Spectral Density Data Plot (CH Low 5180 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

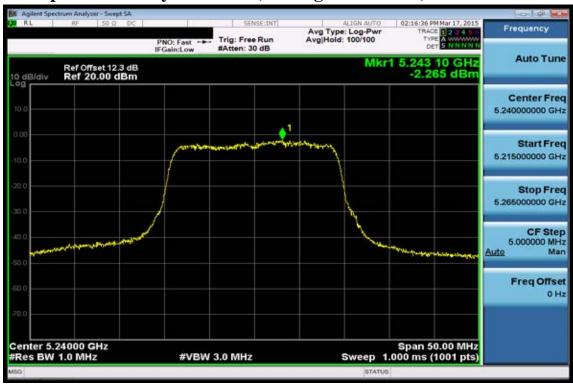
www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 77 of 220

## Peak Power Spectral Density Data Plot (CH High 5240 MHz)



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

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

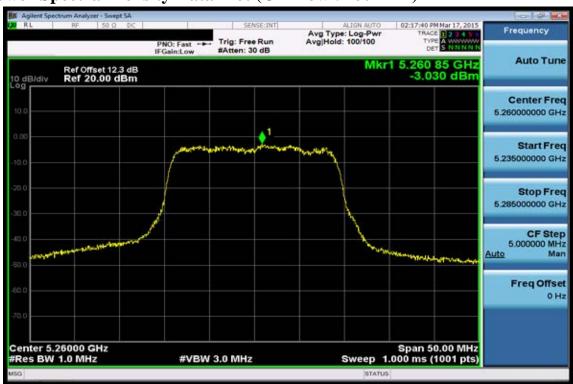
www.tw.sqs.com



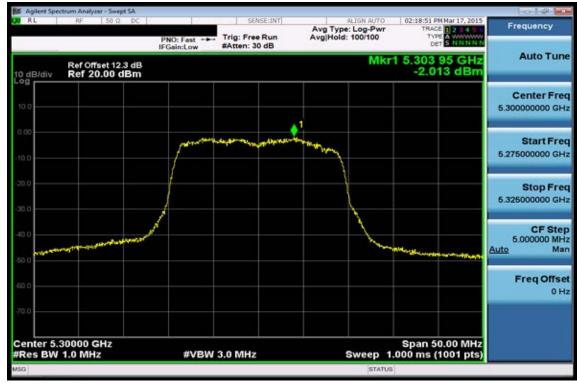
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 78 of 220

# 802.11ac VHT20, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

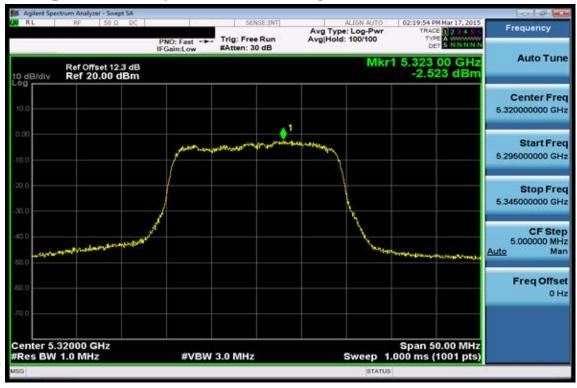
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 79 of 220

## Peak Power Spectral Density Data Plot (CH High 5320 MHz)



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

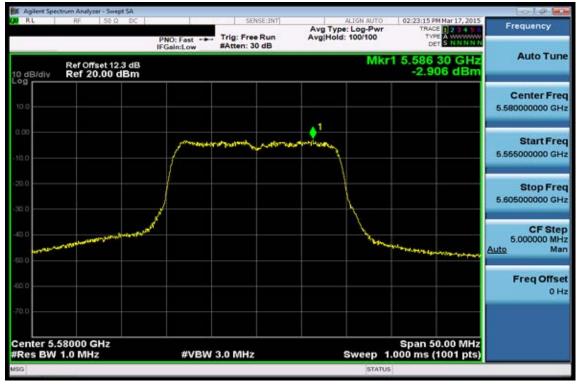
Page 80 of 220

## 802.11ac VHT20, 5470~5725 MHz

# Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5580MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

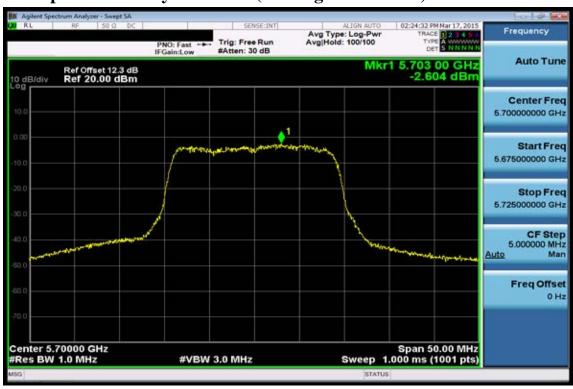
www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 81 of 220

## Peak Power Spectral Density Data Plot (CH High 5700 MHz)



## 802.11ac VHT20, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Low 5745 MHz)



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

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 82 of 220

## Peak Power Spectral Density Data Plot (CH Mid 5785 MHz)



# Peak Power Spectral Density Data Plot (CH High 5825 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

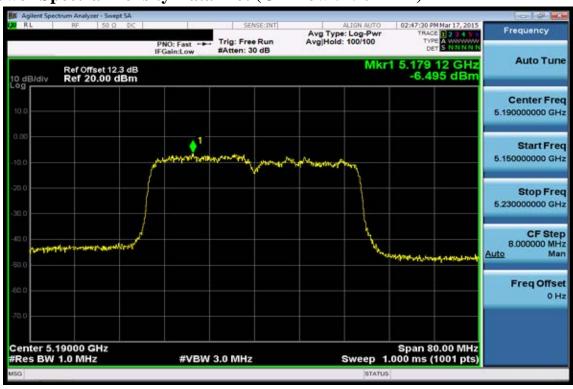
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



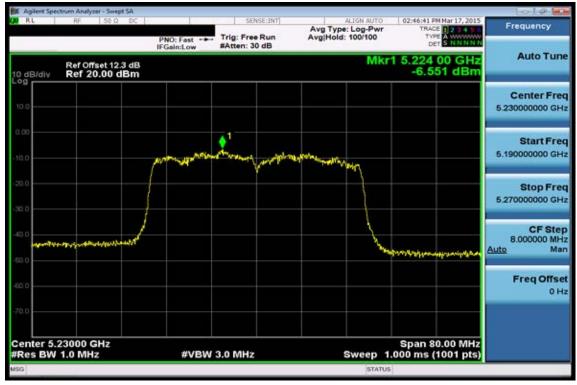
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 83 of 220

# 802.11ac VHT40, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5190 MHz)



## Peak Power Spectral Density Data Plot (CH High 5230 MHz)



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

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 84 of 220

# 802.11ac VHT40, 5250~5350 MHz

## Peak Power Spectral Density Data Plot (CH Low 5270 MHz)



## Peak Power Spectral Density Data Plot (CH High 5310 MHz)



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

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

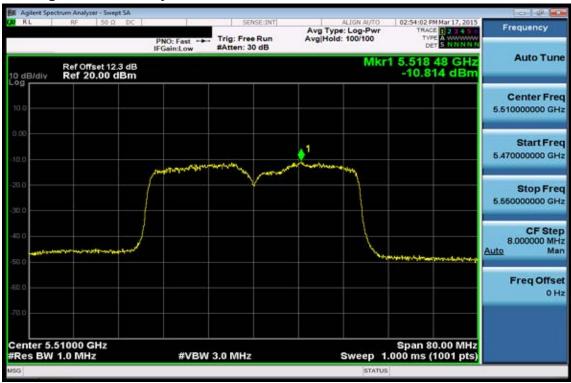
t (886-2) 2299-3279



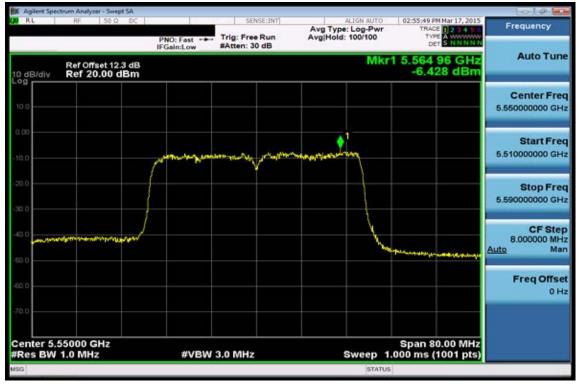
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 85 of 220

# 802.11802.11ac VHT40, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5510 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5550 MHz)



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

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

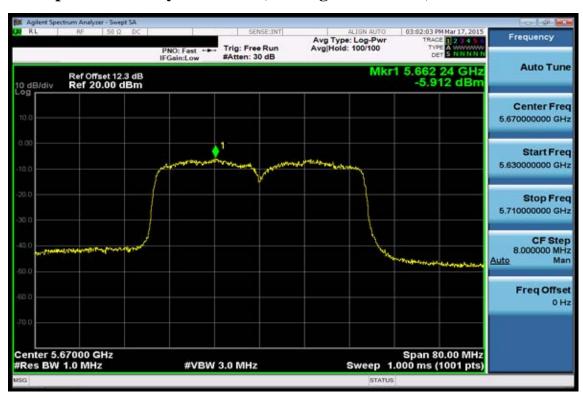
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 86 of 220

## Peak Power Spectral Density Data Plot (CH High 5670 MHz)



802.11802.11ac VHT40, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Low 5755 MHz)



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

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

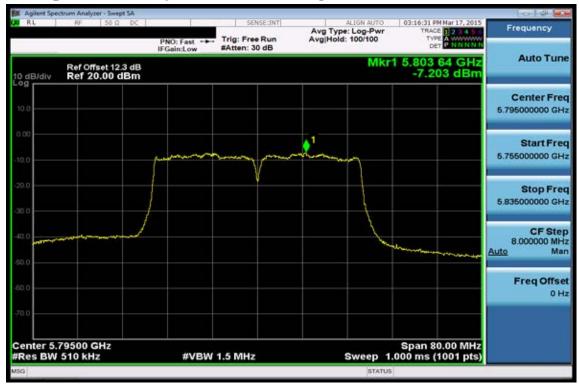
t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 87 of 220

## Peak Power Spectral Density Data Plot (CH High 5795 MHz)



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

www.tw.sqs.com



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 88 of 220

# 802.11ac VHT80, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH ,Mid 5210 MHz)



802.11ac VHT80, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Mid 5290 MHz)



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

家手方角就可,比較容易未僅對測減之樣必負責,问時此樣必僅所留別之。本報告未經本之可看面評可,不可能仍複复。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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 document 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 89 of 220

# 802.11802.11ac VHT80, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5530 MHz)



## Peak Power Spectral Density Data Plot (CH Mid 5610 MHz)



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

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

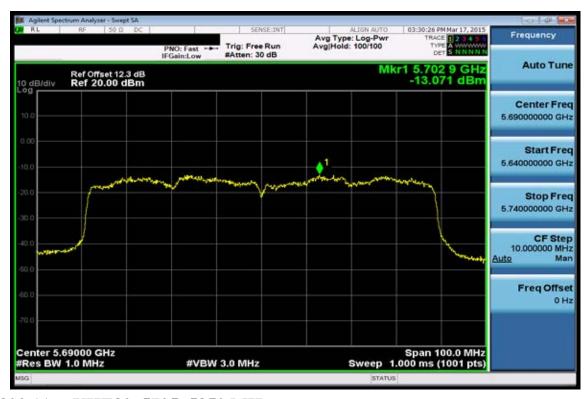
t (886-2) 2299-3279



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 90 of 220

## Peak Power Spectral Density Data Plot (CH High 5690 MHz)



# 802.11802.11ac VHT80, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Mid 5775 MHz)



t (886-2) 2299-3279

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low.

pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law 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

www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 91 of 220

#### 11. UNDESIRABLE RADIATED EMISSION MEASUREMENT1

#### 11.1 **Standard Applicable**

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- 1. For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- 2. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- 3. For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- 4. For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

APPLICABLE TO	LII	MIT		
FCC KDB 789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m			
	PK: 74 (dBµV/m)	AV 54 (dBμV/m)		
APPLICABLE TO	EIRP LIMIT	FIELD STRENGTH AT 3m		
15.407(b)(1)				
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.3 (dBµV/m)		
15.407(b)(3)				
15.407(b)(4)	PK: -27 (dBm/MHz) PK: -17 (dBm/MHz)	PK: 68.3 (dBμV/m) PK: 78.2 (dBμV/m)		

EIRP =  $((E*d)^2) / 30$ , where E is the field in V/m, d is the measurement distance (3m), EIRP is the equivalent isotropically radiated power in Watts.

Unless otherwise stated 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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 92 of 220

Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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

#### Note:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level  $(dB\mu V/m) = 20 \log Emission level (dB\mu V/m)$

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 93 of 220

## 11.2 Measurement Equipment Used

	9	66 Chamber			
N	M64	Madal	Serial Num-	Calibration	Calibration
Name of Equipment	Manufacturer	Model	ber	Date	Due
EMI Test Receiver	R&S	ESU 40	100363	04/12/2014	04/11/2015
Loop Antenna	ETS-Lindgren	6502	00143303	12/09/2014	12/08/2015
Broadband Antenna	TESEQ	CBL 6112D	35240	12/05/2014	12/04/2015
Horn Antenna	ETS-Lindgren	3117	00143272	12/08/2014	12/07/2015
Horn Antenna	ETS-Lindgren	3160-09	00117911	11/13/2014	11/12/2015
Horn Antenna	ETS-Lindgren	3160-10	00117783	11/13/2014	11/12/2015
Pre Amplifier	EMC Instruments	EMC330	980096	12/19/2014	12/18/2015
Pre Amplifier	EMC Instruments	EMC0011830	980199	12/19/2014	12/18/2015
Pre Amplifier	R&S	SCU-18	10204	12/19/2014	12/18/2015
Pre Amplifier	R&S	SCU-26	100780	12/19/2014	12/18/2015
Pre Amplifier	R&S	SCU-40	100356	12/19/2014	12/18/2015
Pre Amplifier	EMC Instruments	EMC184045B	980135	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF27	12/19/2014	12/18/2015
Site NSA	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016
Site VSWR	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016
DC Power Supply	HOLA	DP-3003	D7070035	05/31/2014	05/30/2015
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

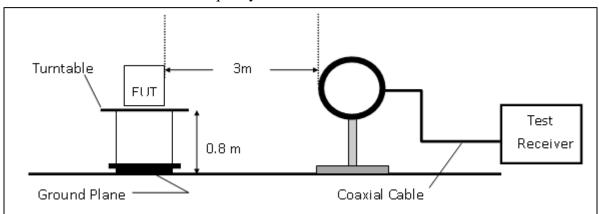


Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

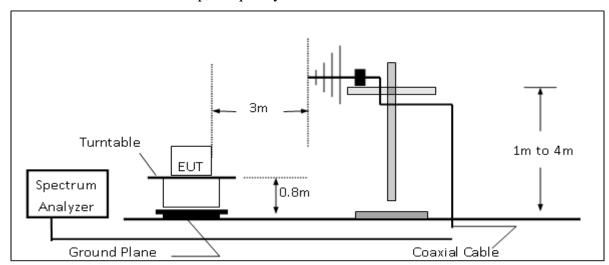
Page 94 of 220

#### **Test SET-UP** 11.3

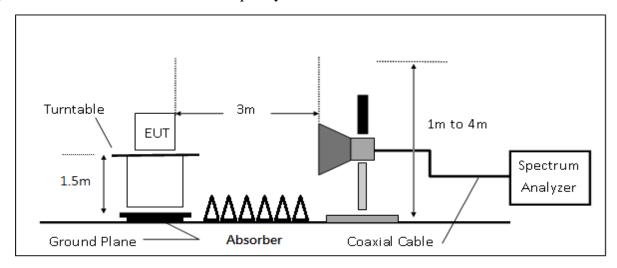
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



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



(C) 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 95 of 220

#### 11.4 Measurement Procedure

- The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
- 3. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
- 4. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 5. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and 6. Quasi-peak (QP) at frequency below 1 GHz.
- 7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
- Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- 9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 11. Repeat above procedures until all frequency measured were complete.

#### 11.5 Field Strength Calculation

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

FS = RA + AF + CL - AG

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

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

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

#### Note:

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

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

Unless otherwise stated 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 documents is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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 t (886-2) 2299-3279

台灣檢驗科技股份有限公司



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 96 of 220

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

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

### 11.7 Measurement Result

Refer to attach tabular data sheets.

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm</a>. 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 97 of 220

### **Radiated Spurious Emission Measurement Result**

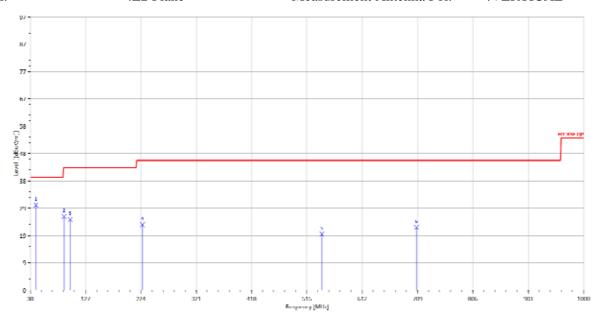
#### **Below 1GHz Worst-Case Data:**

## 802.11a, 5150~5250 MHz

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
39.70	Peak	S	48.98	-18.79	30.19	40.00	-9.81
89.17	Peak	S	51.84	-25.74	26.10	43.50	-17.40
99.84	Peak	S	48.87	-23.84	25.04	43.50	-18.46
226.91	Peak	S	45.71	-22.53	23.19	46.00	-22.81
541.19	Peak	S	33.16	-13.27	19.89	46.00	-26.11
707.06	Peak	S	33.15	-10.87	22.28	46.00	-23.72

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



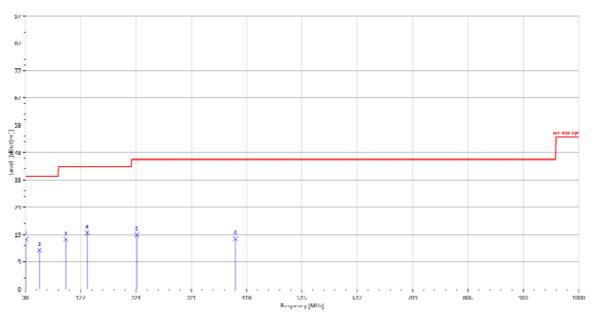
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 98 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX MID Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
30.97	Peak	S	31.38	-13.64	17.74	40.00	-22.26
55.22	Peak	S	40.90	-27.06	13.84	40.00	-26.16
100.81	Peak	S	41.38	-23.69	17.69	43.50	-25.81
138.64	Peak	S	41.62	-21.60	20.02	43.50	-23.48
225.94	Peak	S	41.86	-22.60	19.26	46.00	-26.74
398.60	Peak	S	33.77	-15.93	17.84	46.00	-28.16

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

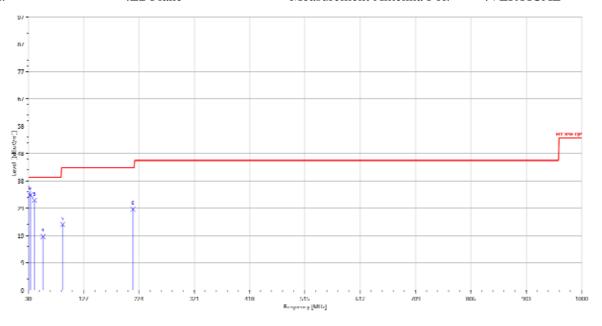
Page 99 of 220

#### 802.11ac VHT80, 5150~5250 MHz

**Operation Band** :802.11 ac 80M **Test Date** :2015-03-27

Fundamental Frequency :5210 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode Engineer :TX MID :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
30.97	Peak	S	47.86	-13.64	34.22	40.00	-5.78
33.88	Peak	S	48.95	-15.22	33.73	40.00	-6.27
40.67	Peak	S	51.30	-19.43	31.87	40.00	-8.13
56.19	Peak	S	46.36	-27.33	19.03	40.00	-20.97
90.14	Peak	S	48.87	-25.61	23.27	43.50	-20.23
213.33	Peak	S	51.62	-22.93	28.69	43.50	-14.81

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



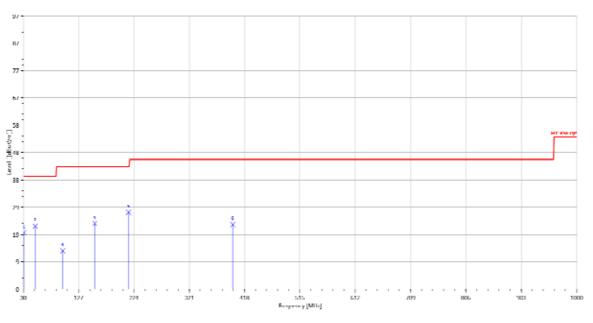
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 100 of 220

Operation Band :802.11 ac 80M Test Date :2015-03-27

Fundamental Frequency :5210 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX MID Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
30.97	Peak	S	33.70	-13.64	20.06	40.00	-19.94
51.34	Peak	S	48.31	-25.94	22.37	40.00	-17.63
98.87	Peak	S	37.60	-24.01	13.59	43.50	-29.91
155.13	Peak	S	46.11	-22.82	23.29	43.50	-20.21
214.30	Peak	S	50.18	-22.94	27.24	43.50	-16.26
397.63	Peak	S	38.86	-15.96	22.91	46.00	-23.09

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



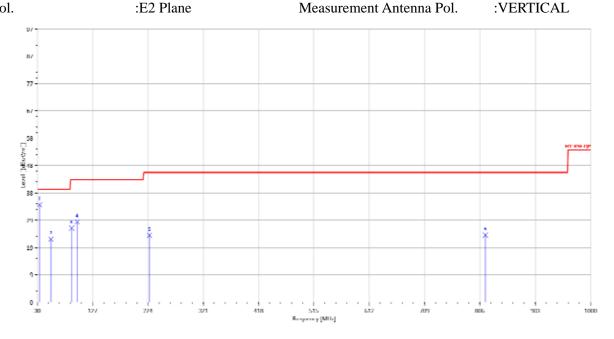
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 101 of 220

#### 802.11a, 5250~5350 MHz

**Operation Band** :802.11 a Test Date :2015-03-27 Fundamental Frequency :5300 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
33.88	Peak	S	49.75	-15.22	34.52	40.00	-5.48
54.25	Peak	S	49.18	-26.79	22.38	40.00	-17.62
90.14	Peak	S	51.85	-25.61	26.25	43.50	-17.25
99.84	Peak	S	52.29	-23.84	28.45	43.50	-15.05
226.91	Peak	S	46.24	-22.53	23.71	46.00	-22.29
815.70	Peak	S	32.77	-9.00	23.77	46.00	-22.23

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



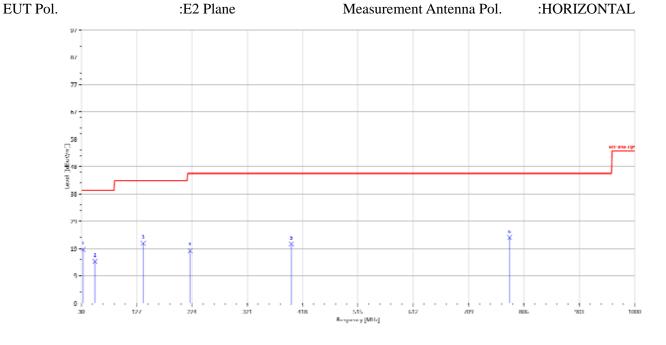
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 102 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5300 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
32.91	Peak	S	33.72	-14.69	19.03	40.00	-20.97
54.25	Peak	S	41.57	-26.79	14.78	40.00	-25.22
138.64	Peak	S	42.78	-21.60	21.18	43.50	-22.32
221.09	Peak	S	41.52	-22.91	18.61	46.00	-27.39
398.60	Peak	S	36.93	-15.93	21.01	46.00	-24.99
780.78	Peak	S	33.50	-10.25	23.25	46.00	-22.75

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

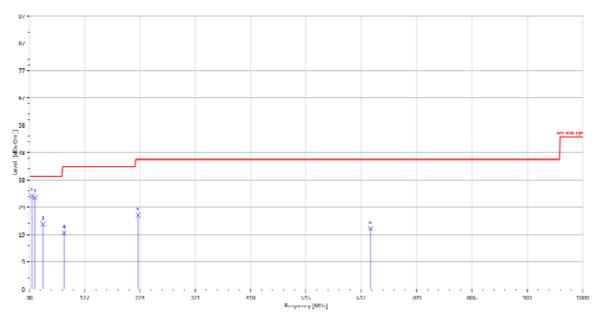
Page 103 of 220

#### 802.11ac VHT80, 5250~5350 MHz

**Operation Band** :802.11 ac80 Test Date :2015-03-27

Fundamental Frequency :5290 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBµV/m	dBμV/m	dB
34.85	Peak	S	48.71	-15.75	32.96	40.00	-7.04
39.70	Peak	S	51.31	-18.79	32.51	40.00	-7.49
54.25	Peak	S	49.82	-26.79	23.02	40.00	-16.98
91.11	Peak	S	45.44	-25.42	20.01	43.50	-23.49
221.09	Peak	S	49.20	-22.91	26.29	46.00	-19.71
628.49	Peak	S	33.39	-11.93	21.45	46.00	-24.55

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 104 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

:802.11 ac 80M :5290 MHz :TX MID

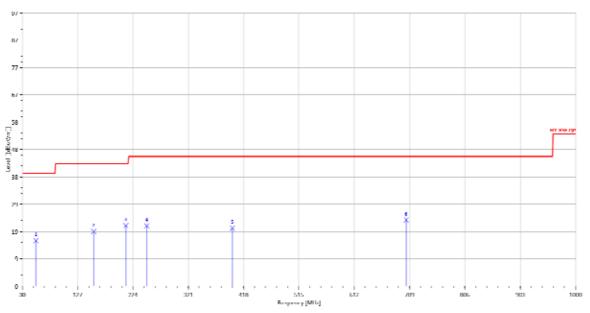
:E2 Plane

Test Date Temp./Humi.

:2015-03-27 :17.6deg\_C / 75 RH

Engineer :Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m dB}\mu { m V}$	dB	dBμV/m	dBμV/m	dB
54.25	Peak	S	42.90	-26.79	16.11	40.00	-23.89
155.13	Peak	S	42.18	-22.82	19.36	43.50	-24.14
211.39	Peak	S	44.37	-22.91	21.46	43.50	-22.04
248.25	Peak	S	41.96	-20.58	21.38	46.00	-24.62
398.60	Peak	S	36.49	-15.93	20.57	46.00	-25.43
703.18	Peak	S	34.46	-11.00	23.46	46.00	-22.54

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

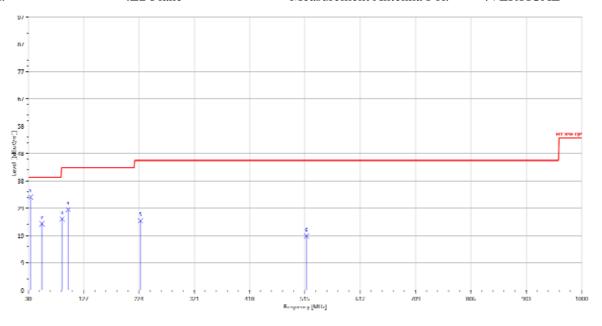
Page 105 of 220

#### 802.11a, 5470~5725 MHz

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5580 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
33.88	Peak	S	48.21	-15.22	32.99	40.00	-7.01
54.25	Peak	S	50.32	-26.79	23.53	40.00	-16.47
89.17	Peak	S	50.98	-25.74	25.24	43.50	-18.26
99.84	Peak	S	52.41	-23.84	28.57	43.50	-14.93
226.91	Peak	S	47.10	-22.53	24.57	46.00	-21.43
517.91	Peak	S	32.81	-13.60	19.21	46.00	-26.79

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



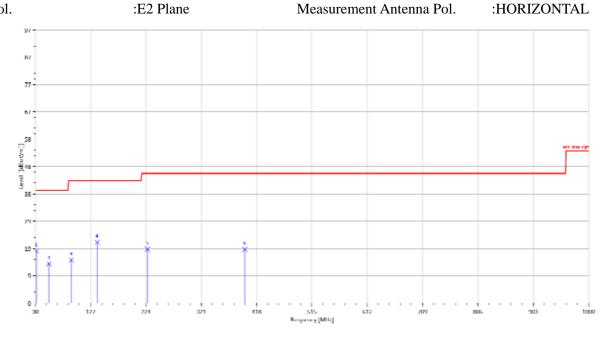
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 106 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5580 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
31.94	Peak	S	32.64	-14.17	18.47	40.00	-21.53
54.25	Peak	S	40.74	-26.79	13.95	40.00	-26.05
93.05	Peak	S	40.35	-25.06	15.29	43.50	-28.21
138.64	Peak	S	43.23	-21.60	21.63	43.50	-21.87
226.91	Peak	S	41.68	-22.53	19.16	46.00	-26.84
397.63	Peak	S	35.05	-15.96	19.09	46.00	-26.91

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

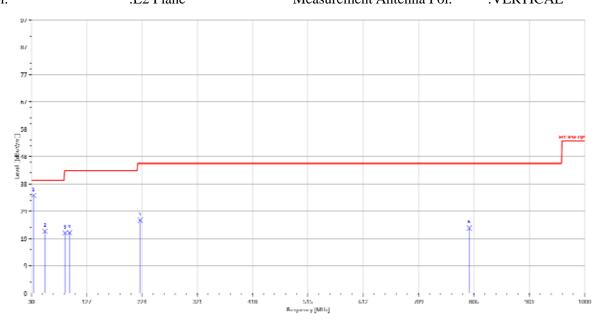
Page 107 of 220

### 802.11ac VHT80, 5470~5725 MHz

**Operation Band** :802.11 ac 80M Test Date :2015-03-27

Fundamental Frequency :5610 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
33.88	Peak	S	49.87	-15.22	34.65	40.00	-5.35
54.25	Peak	S	48.76	-26.79	21.97	40.00	-18.03
89.17	Peak	S	47.10	-25.74	21.36	43.50	-22.14
96.93	Peak	S	45.78	-24.36	21.42	43.50	-22.08
221.09	Peak	S	48.80	-22.91	25.89	46.00	-20.11
798.24	Peak	S	32.61	-9.55	23.06	46.00	-22.94

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 108 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

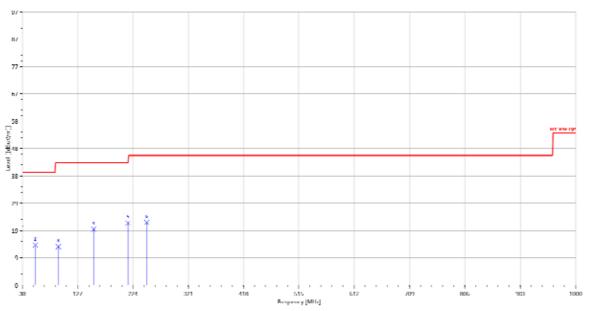
:802.11 ac 80M :5610 MHz :TX MID :E2 Plane

Test Date Temp./Humi. Engineer

:2015-03-27 :17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
30.00	Peak	S	32.33	-13.11	19.22	40.00	-20.78
53.28	Peak	S	40.69	-26.52	14.17	40.00	-25.83
93.05	Peak	S	38.68	-25.06	13.62	43.50	-29.88
155.13	Peak	S	42.61	-22.82	19.79	43.50	-23.71
215.27	Peak	S	45.00	-22.95	22.04	43.50	-21.46
248.25	Peak	S	42.84	-20.58	22.26	46.00	-23.74

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

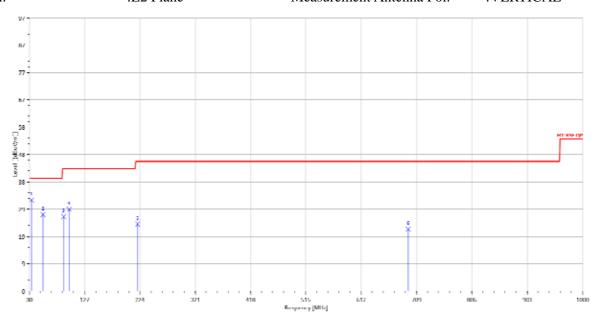
Page 109 of 220

#### 802.11a, 5725~5850 MHz

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
33.88	Peak	S	47.53	-15.22	32.31	40.00	-7.69
54.25	Peak	S	53.94	-26.79	27.15	40.00	-12.85
90.14	Peak	S	52.01	-25.61	26.41	43.50	-17.09
99.84	Peak	S	52.91	-23.84	29.07	43.50	-14.43
220.12	Peak	S	46.72	-22.96	23.76	46.00	-22.24
694.45	Peak	S	32.97	-10.99	21.99	46.00	-24.01

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



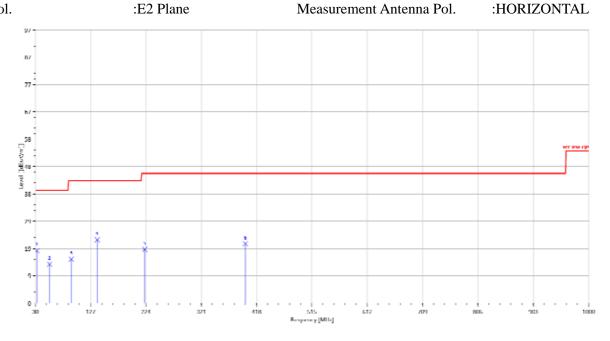
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 110 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
32.91	Peak	S	33.32	-14.69	18.63	40.00	-21.37
55.22	Peak	S	40.84	-27.06	13.78	40.00	-26.22
93.05	Peak	S	40.68	-25.06	15.61	43.50	-27.89
138.64	Peak	S	44.09	-21.60	22.49	43.50	-21.01
222.06	Peak	S	41.95	-22.86	19.09	46.00	-26.91
398.60	Peak	S	37.00	-15.93	21.08	46.00	-24.92

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

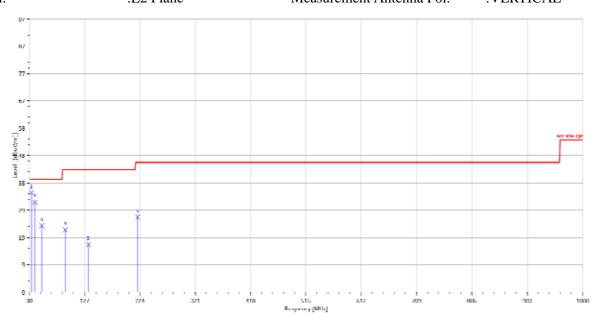
Page 111 of 220

### 802.11ac VHT80, 5725~5850 MHz

**Operation Band** :802.11 ac 80M Test Date :2015-03-27

Fundamental Frequency :5775 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
33.88	Peak	S	50.53	-15.22	35.31	40.00	-4.69	
39.70	Peak	S	50.74	-18.79	31.94	40.00	-8.06	
52.31	Peak	S	49.81	-26.23	23.59	40.00	-16.41	
93.05	Peak	S	47.22	-25.06	22.15	43.50	-21.35	
133.79	Peak	S	38.28	-21.40	16.89	43.50	-26.61	
220.12	Peak	S	49.58	-22.96	26.61	46.00	-19.39	

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 112 of 220

Operation Band Fundamental Frequency

Operation Mode

EUT Pol.

:802.11 ac 80M :5775 MHz :TX LOW :E2 Plane

Test Date Temp./Humi.

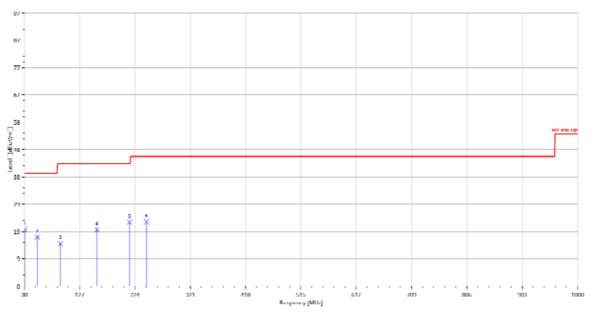
Engineer

:2015-03-27

:17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{dB}\mu\mathrm{V}$	dB	dBµV/m	dBμV/m	dB
30.97	Peak	S	33.71	-13.64	20.08	40.00	-19.92
53.28	Peak	S	43.92	-26.52	17.40	40.00	-22.60
93.05	Peak	S	40.14	-25.06	15.08	43.50	-28.42
157.07	Peak	S	43.00	-22.98	20.02	43.50	-23.48
214.30	Peak	S	45.63	-22.94	22.68	43.50	-20.82
244.37	Peak	S	43.66	-20.86	22.80	46.00	-23.20

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 113 of 220

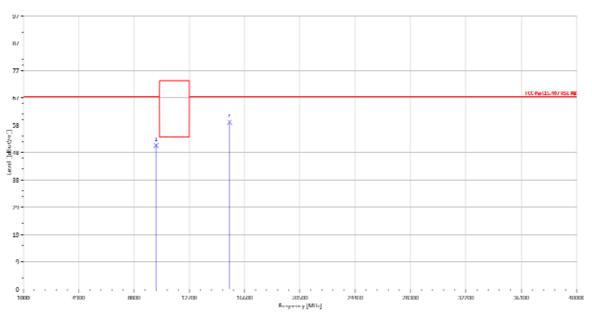
# **Above 1GHz Worst-Case Data:**

### 802.11a, 5150~5250 MHz

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10360.00	Peak	Н	32.05	18.94	50.99	68.30	-17.31	
15540.00	Peak	Н	33.46	25.80	59.26	68.30	-9.04	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



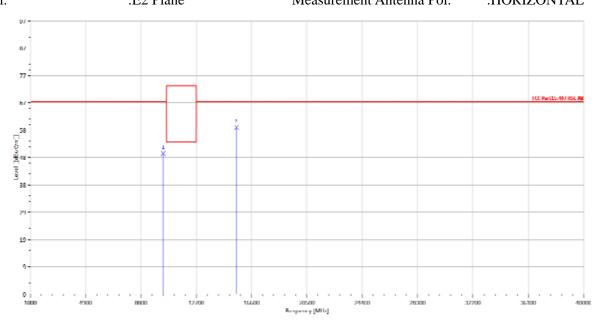
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 114 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane :HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10360.00	Peak	Н	30.97	18.94	49.91	68.30	-18.39
15540.00	Peak	Н	33.37	25.80	59.17	68.30	-9.13

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



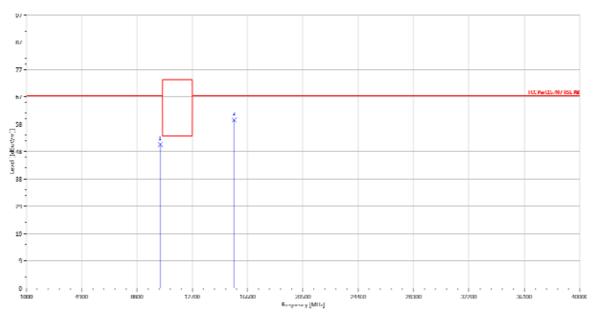
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 115 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10440.00	Peak	S	31.93	19.03	50.96	68.30	-17.34
15660.00	Peak	S	33.61	26.06	59.67	68.30	-8.63

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



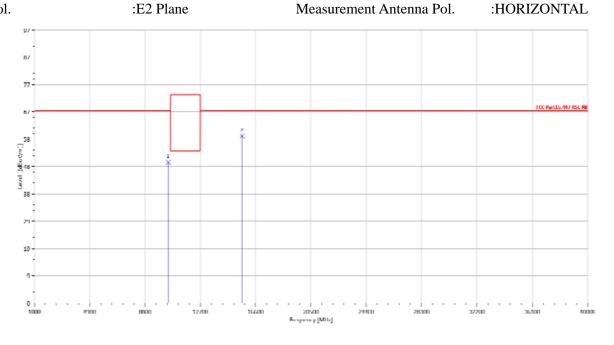
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 116 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10440.00	Peak	Н	30.93	19.03	49.96	68.30	-18.34
15660.00	Peak	Н	33.24	26.06	59.31	68.30	-8.99

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



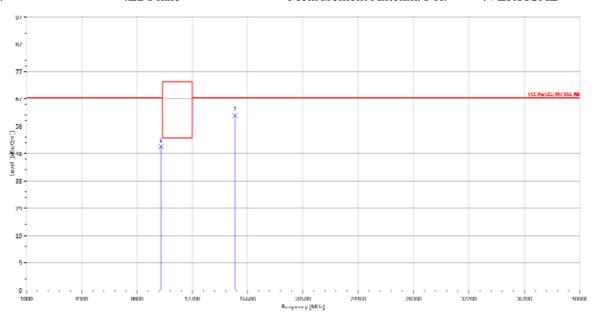
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 117 of 220

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5240 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10480.00	Peak	Н	31.81	19.13	50.94	68.30	-17.36
15720.00	Peak	Н	35.85	26.13	61.98	68.30	-6.32

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



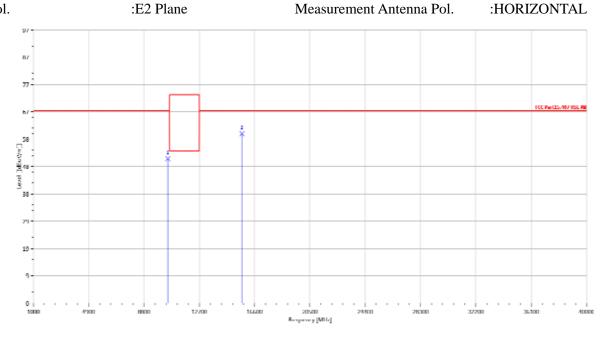
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 118 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5240 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol. :E2 Plane



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10480.00	Peak	Н	32.10	19.13	51.23	68.30	-17.07
15720.00	Peak	H	33.99	26.13	60.12	68.30	-8.18

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



5150.00

FCC ID: HLZA5003

Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 119 of 220

54.00

-7.72

#### Band edge falling to restricted band

Average

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode Engineer :Band Edge LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq. Detector Note Spectrum Factor Actual Limit Margin Reading Level FS Mode @3m PK/QP/AV F/H/E/S dBμV dBµV/m dBµV/m dB MHz dB 5150.00 48.48 11.14 59.62 74.00 -14.38 Peak Е

11.14

46.28

Operation Band :802.11 a Test Date :2015-03-27

35.14

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

E

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d}B\mu\mathrm{V}$	dB	dBμV/m	dBµV/m	dB
5150.00	Peak	E	50.94	11.14	62.08	74.00	-11.92
5150.00	Average	E	36.52	11.14	47.66	54.00	-6.34

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

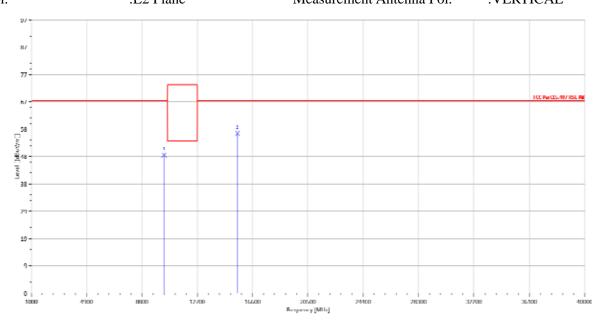
Page 120 of 220

### Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5150~5250 MHz

**Operation Band** :802.11 ac20M **Test Date** :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10360.00	Peak	Н	30.09	18.94	49.03	68.30	-19.27
15540.00	Peak	Н	30.91	25.80	56.71	68.30	-11.59

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



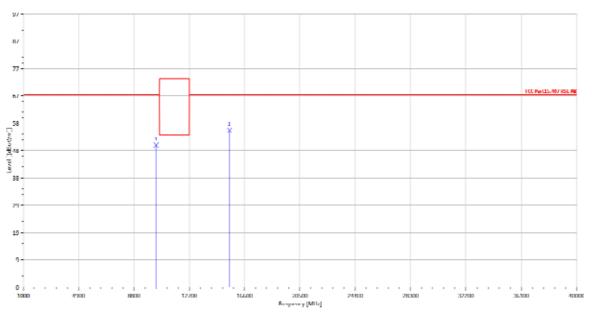
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 121 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10360.00	Peak	Н	31.42	18.94	50.36	68.30	-17.94	
15540.00	Peak	Н	29.83	25.80	55.63	68.30	-12.68	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



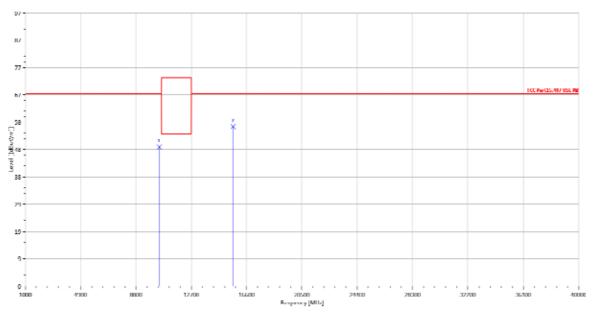
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 122 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10440.00	Peak	Н	30.36	19.03	49.38	68.30	-18.92	
15660.00	Peak	Н	30.58	26.06	56.64	68.30	-11.66	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



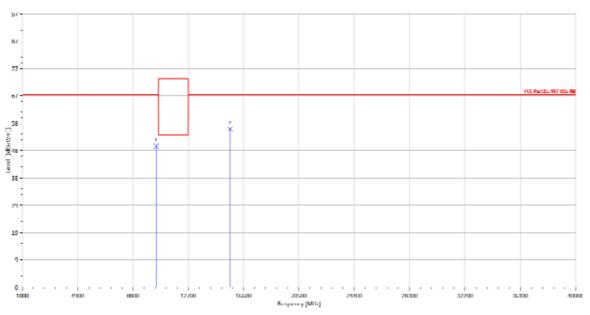
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 123 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5220 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX MID Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10440.00	Peak	Н	31.00	19.03	50.03	68.30	-18.27	
15660.00	Peak	Н	30.08	26.06	56.14	68.30	-12.16	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



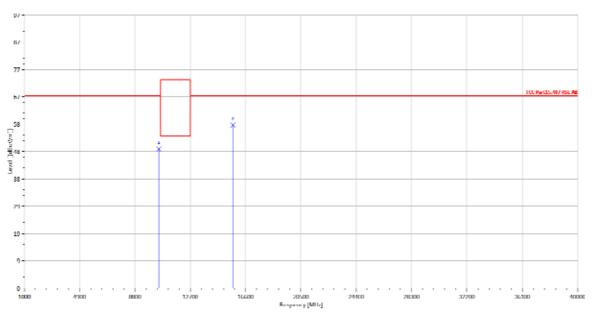
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 124 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5240 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10480.00	Peak	Н	30.27	19.13	49.39	68.30	-18.91	
15720.00	Peak	Н	31.70	26.13	57.83	68.30	-10.47	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



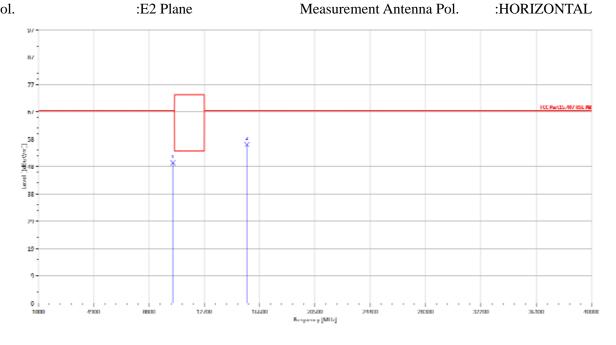
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 125 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5240 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10480.00	Peak	Н	30.69	19.13	49.82	68.30	-18.48
15720.00	Peak	Н	30.18	26.13	56.31	68.30	-11.99

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 126 of 220

### Band edge falling to restricted band

**Operation Band** :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBµV/m	dBμV/m	dB
5150.00	Peak	E	49.56	11.14	60.70	74.00	-13.30
5150.00	Average	E	35.43	11.14	46.57	54.00	-7.43

**Operation Band** :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5180 MHz Temp./Humi. :17.6deg\_C / 75 RH

:Band Edge LOW Operation Mode Engineer :Ashton

EUT Pol. :E2 Plane 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)

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

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

"---": denotes Noise Floor.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5150.0	0 Peak	E	52.31	11.14	63.45	74.00	-10.55
5150.0	0 Average	E	36.70	11.14	47.84	54.00	-6.16

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

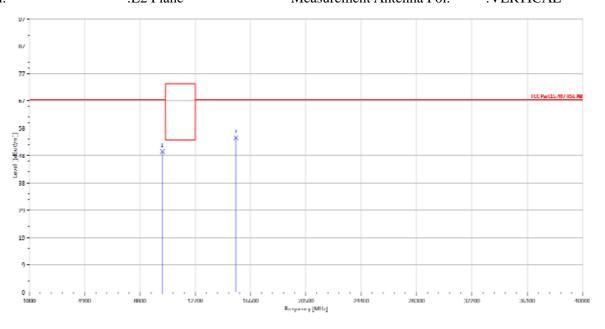
Page 127 of 220

## Radiated Spurious Emission Measurement Result 802.11ac VHT40, 5150~5250 MHz

**Operation Band** :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5190 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10380.00	Peak	Н	30.89	19.01	49.91	68.30	-18.39
15570.00	Peak	Н	28.99	25.80	54.80	68.30	-13.50

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



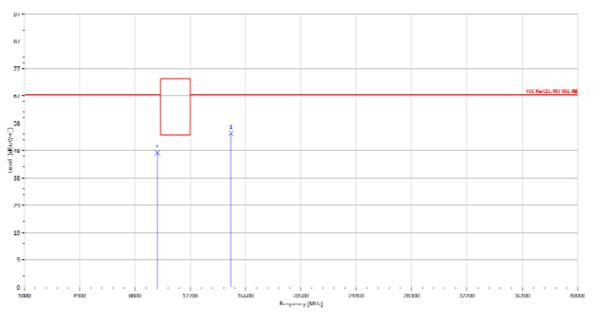
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 128 of 220

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5190 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	$dB\mu V/m$	dBμV/m	dB
10380.00	Peak	Н	28.68	19.01	47.69	68.30	-20.61
15570.00	Peak	Н	28.78	25.80	54.58	68.30	-13.72

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



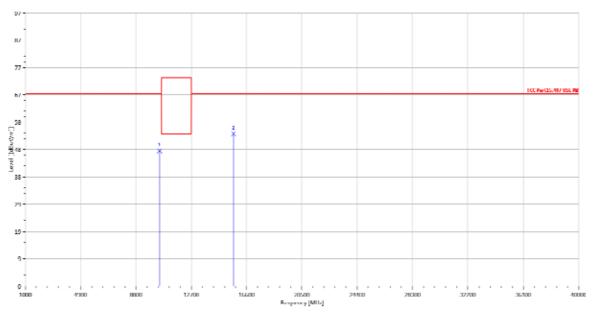
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 129 of 220

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5230 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10460.00	Peak	Н	28.87	19.11	47.98	68.30	-20.32
15690.00	Peak	Н	28.04	26.05	54.09	68.30	-14.21

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



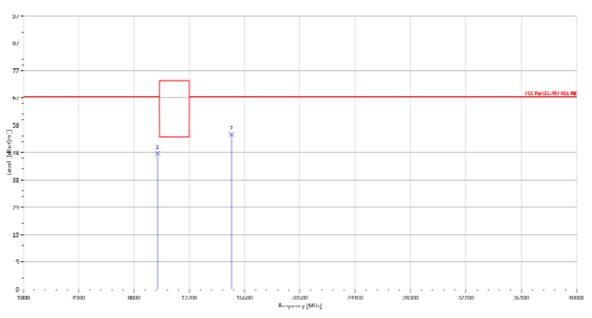
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 130 of 220

Operation Band :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5230 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10460.00	Peak	Н	29.11	19.11	48.23	68.30	-20.07	
15690.00	Peak	Н	28.87	26.05	54.92	68.30	-13.38	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 131 of 220

Band edge falling to restricted band

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5190 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5150.00	Peak	E	49.48	11.14	60.63	74.00	-13.37
5150.00	Average	E	34.16	11.14	45.30	54.00	-8.70

**Operation Band** :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5190 MHz Temp./Humi. :17.6deg\_C / 75 RH

:Band Edge LOW Operation Mode Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5150.00	Peak	Е	51.18	11.14	62.32	74.00	-11.68
5150.00	Average	E	34.81	11.14	45.95	54.00	-8.05

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

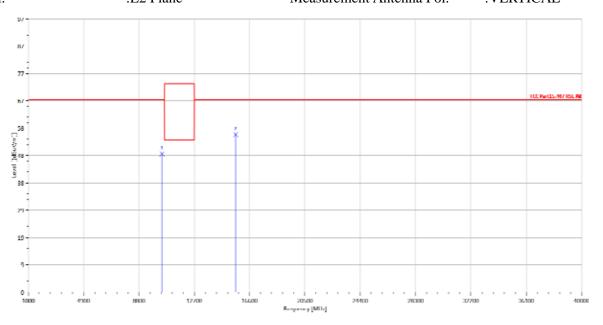
Page 132 of 220

## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5150~5250 MHz

**Operation Band** :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5210 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX MID :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10420.00	Peak	Н	30.09	18.96	49.05	68.30	-19.25
15630.00	Peak	Н	29.93	25.97	55.90	68.30	-12.40

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



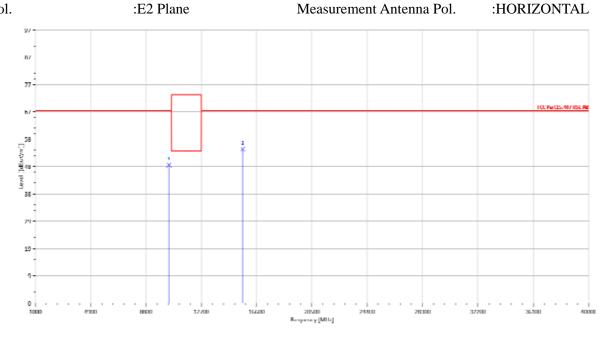
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 133 of 220

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5210 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	$dB\mu V/m$	dBμV/m	dB
10420.00	Peak	Н	30.07	18.96	49.03	68.30	-19.27
15630.00	Peak	Н	28.65	25.97	54.62	68.30	-13.68

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 134 of 220

Band edge falling to restricted band

Operation Band :802.11 ac 80M Test Date :2015-03-27

Fundamental Frequency :5210 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5150.00	Peak	E	48.26	11.14	59.40	74.00	-14.60
5150.00	Average	E	34.46	11.14	45.60	54.00	-8.40

**Operation Band** :802.11 ac 80M Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5150.00	Peak	E	51.91	11.14	63.05	74.00	-10.95
5150.00	Average	E	36.92	11.14	48.06	54.00	-5.94

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

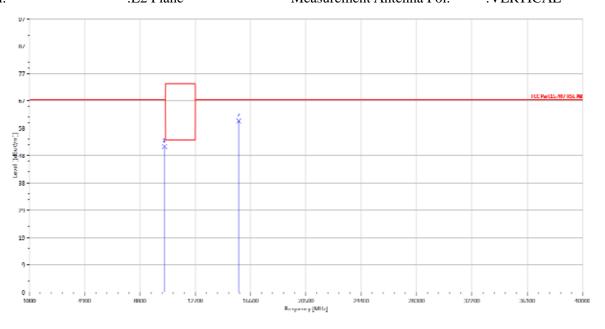
Page 135 of 220

# Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5260 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10520.00	Peak	Н	32.39	19.25	51.64	68.30	-16.66
15780.00	Peak	H	34.43	26.25	60.68	68.30	-7.62

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



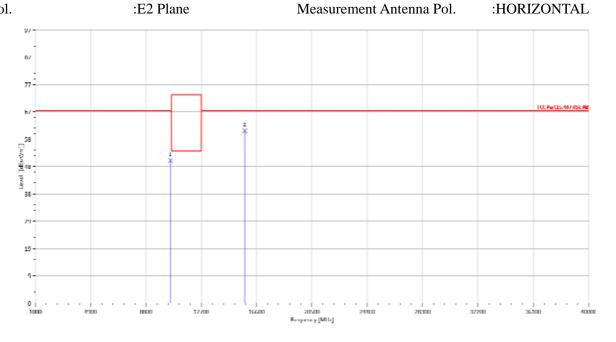
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 136 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5260 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10520.00	Peak	Н	31.35	19.25	50.60	68.30	-17.70
15780.00	Peak	H	34.90	26.25	61.15	68.30	-7.15

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



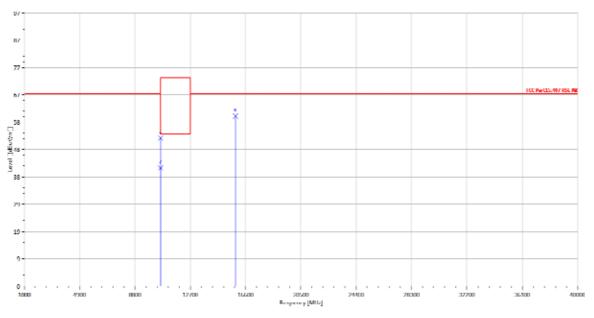
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 137 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5300 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10600.00	Peak	Н	33.16	19.38	52.54	74.00	-21.46
10600.00	Average	Н	22.50	19.38	41.88	54.00	-12.12
15900.00	Peak	Н	33.94	26.39	60.34	68.30	-7.96

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



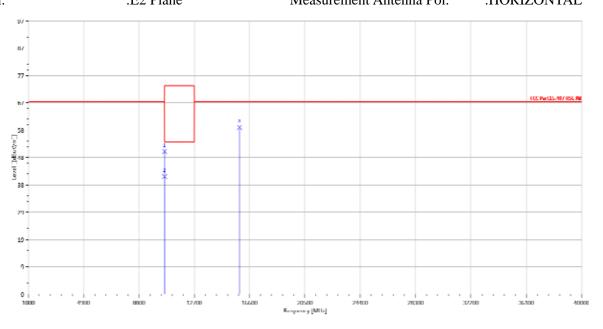
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 138 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5300 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane :HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10600.00	Peak	Н	31.27	19.38	50.65	74.00	-23.35
10600.00	Average	Н	22.32	19.38	41.70	54.00	-12.30
15900.00	Peak	Н	32.80	26.39	59.20	68.30	-9.10

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



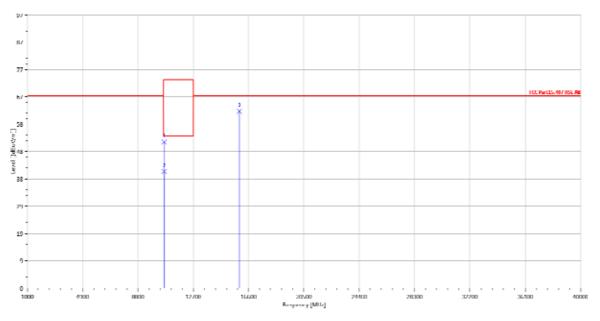
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 139 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10640.00	Peak	Н	32.53	19.28	51.81	74.00	-22.19	
10640.00	Average	Н	22.10	19.28	41.38	54.00	-12.62	
15960.00	Peak	Н	36.26	26.48	62.74	68.30	-5.56	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



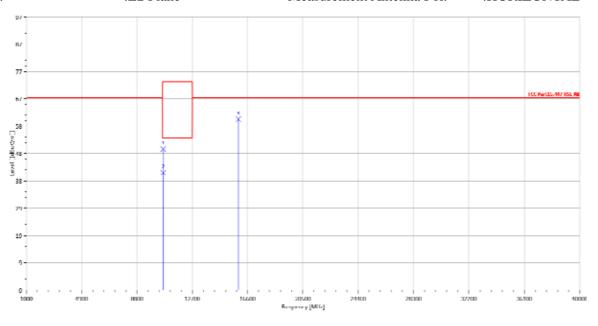
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 140 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10640.00	Peak	Н	30.75	19.28	50.03	74.00	-23.97
10640.00	Average	Н	22.35	19.28	41.63	54.00	-12.37
15960.00	Peak	Н	34.14	26.48	60.62	68.30	-7.68

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 141 of 220

Band edge falling to restricted band

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBµV/m	dB
5350.00	Peak	E	49.85	11.30	61.15	74.00	-12.85
5350.00	Average	E	35.61	11.30	46.91	54.00	-7.09

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

:Band Edge HIGH Operation Mode Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5350.00	Peak	E	50.31	11.30	61.61	74.00	-12.39
5350.00	Average	E	36.55	11.30	47.85	54.00	-6.15

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

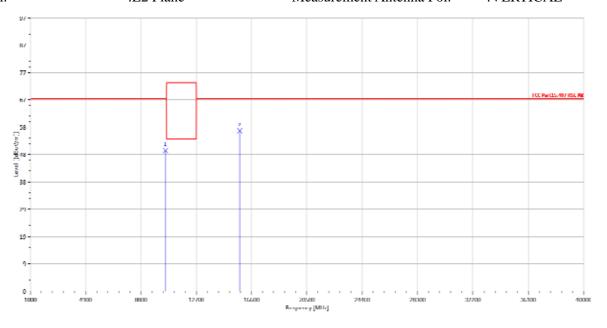
Page 142 of 220

## Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5250~5350 MHz

**Operation Band** :802.11 ac20M **Test Date** :2015-03-27

Fundamental Frequency :5260 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10520.00	Peak	Н	30.64	19.25	49.89	68.30	-18.41
15780.00	Peak	Н	30.66	26.25	56.91	68.30	-11.39

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



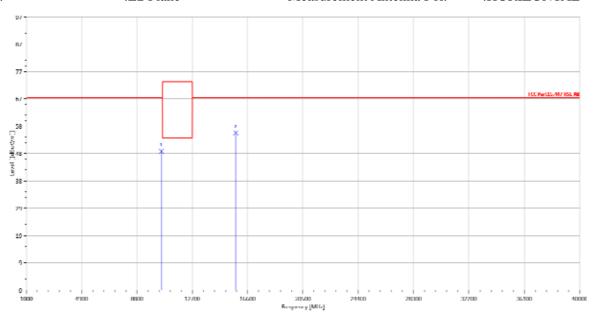
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 143 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5260 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	$dB\mu V/m$	dBμV/m	dB
10520.00	Peak	Н	30.08	19.25	49.33	68.30	-18.97
15780.00	Peak	Н	29.60	26.25	55.86	68.30	-12.44

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



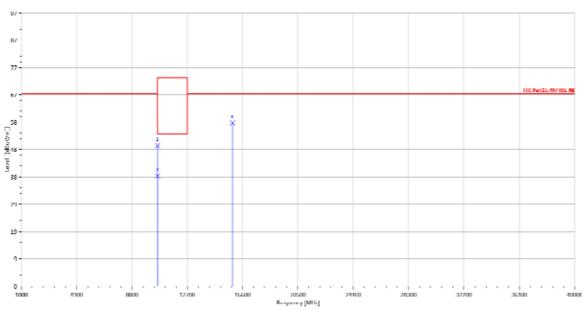
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 144 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5300 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10600.00	Peak	Н	30.52	19.38	49.89	74.00	-24.11
10600.00	Average	Н	19.70	19.38	39.08	54.00	-14.92
15900.00	Peak	Н	31.50	26.39	57.90	68.30	-10.40

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 145 of 220

Operation Band

Fundamental Frequency Operation Mode

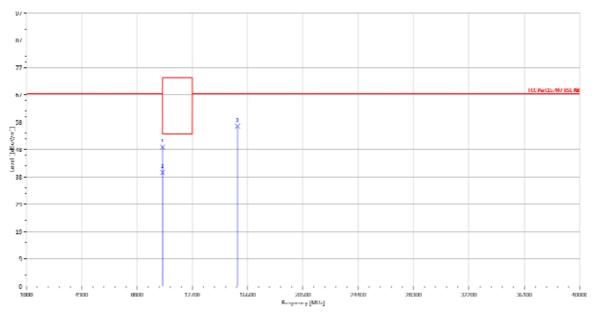
EUT Pol.

:802.11 ac20M :5300 MHz :TX MID :E2 Plane

Test Date :2015-03-27 Temp./Humi. :17.6deg\_C / 75 RH

Engineer :Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10600.00	Peak	Н	29.97	19.38	49.35	74.00	-24.65
10600.00	Average	Н	20.98	19.38	40.36	54.00	-13.64
15900.00	Peak	H	30.38	26.39	56.78	68.30	-11.52

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



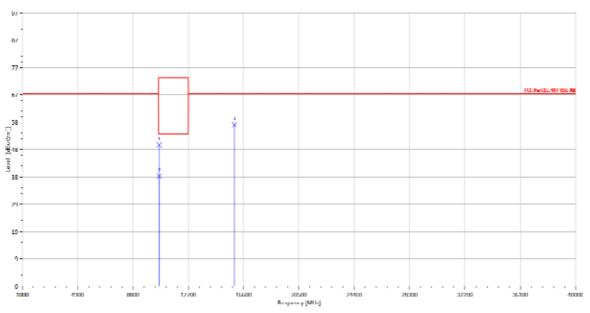
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 146 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10640.00	Peak	Н	30.84	19.28	50.12	74.00	-23.88	
10640.00	Average	Н	19.77	19.28	39.05	54.00	-14.95	
15960.00	Peak	H	30.80	26.48	57.28	68.30	-11.02	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



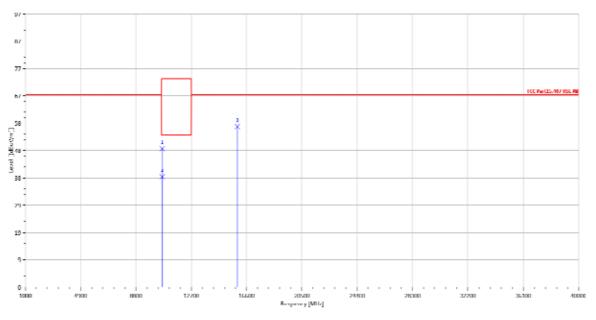
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 147 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10640.00	Peak	Н	29.86	19.28	49.14	74.00	-24.86
10640.00	Average	Н	19.92	19.28	39.20	54.00	-14.80
15960.00	Peak	H	30.49	26.48	56.97	68.30	-11.33

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 148 of 220

Band edge falling to restricted band

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Fre	eq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
M	Hz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
535	0.00	Peak	E	48.67	11.30	59.98	74.00	-14.02
535	0.00	Average	E	35.88	11.30	47.18	54.00	-6.82

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5320 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d}B\mu\mathrm{V}$	dB	dBμV/m	dBμV/m	dB
5350.00	Peak	E	50.64	11.30	61.94	74.00	-12.06
5350.00	Average	E	37.25	11.30	48.55	54.00	-5.45

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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

f (886-2) 2298-0488 t (886-2) 2299-3279

台灣檢驗科技股份有限公司



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

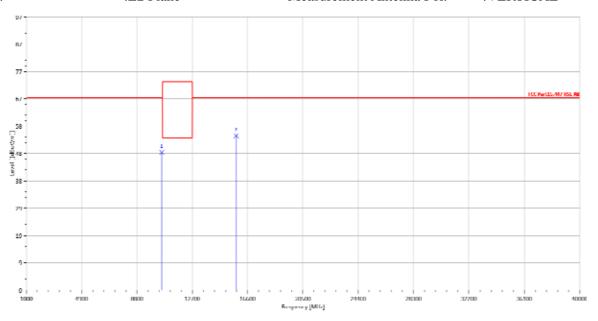
Page 149 of 220

# Radiated Spurious Emission Measurement Result 802.11ac VHT40, 5250~5350 MHz

**Operation Band** :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5270 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10540.00	Peak	Н	29.74	19.13	48.87	68.30	-19.43
15810.00	Peak	Н	28.46	26.30	54.76	68.30	-13.54

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



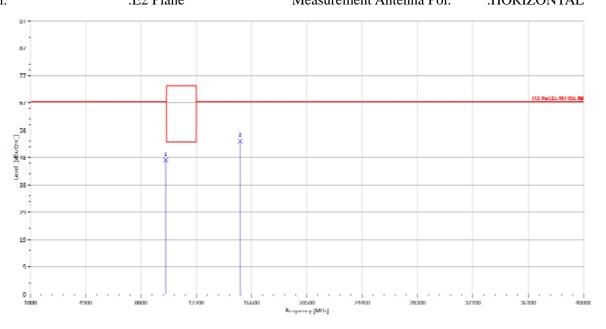
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 150 of 220

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5270 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode

:TX LOW Engineer :Ashton EUT Pol. :E2 Plane :HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
10540.00	Peak	Н	28.46	19.13	47.59	68.30	-20.71	
15810.00	Peak	Н	28.02	26.30	54.32	68.30	-13.98	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

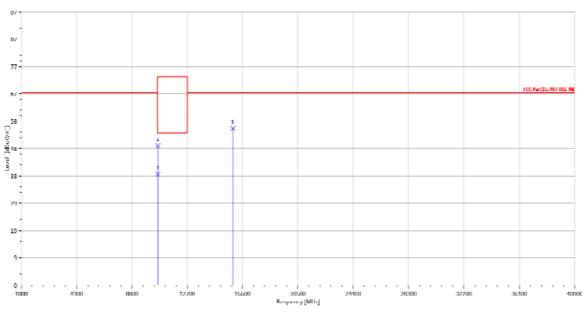
Page 151 of 220

:2015-03-27

Operation Band :802.11 ac40M **Test Date** 

Fundamental Frequency :5310 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10620.00	Peak	S	30.14	19.38	49.52	74.00	-24.48
10620.00	Average	S	20.02	19.38	39.40	54.00	-14.60
15930.00	Peak	S	29.11	26.50	55.61	68.30	-12.69

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Operation Mode

EUT Pol.

FCC ID: HLZA5003

Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 152 of 220

:2015-03-27

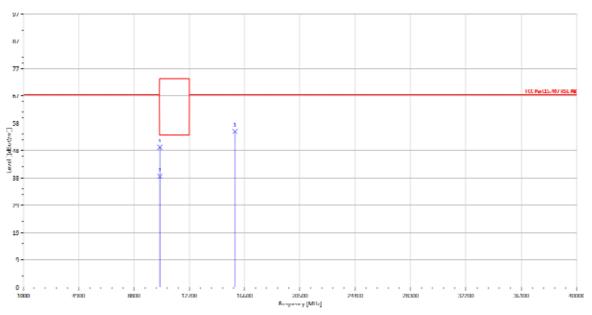
Operation Band :802.11 ac40M **Test Date** Fundamental Frequency

:E2 Plane

:5310 MHz Temp./Humi. :17.6deg\_C / 75 RH :TX HIGH

Engineer :Ashton

> :HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
10620.00	Peak	Н	30.31	19.38	49.69	74.00	-24.31
10620.00	Average	Н	20.01	19.38	39.39	54.00	-14.61
15930.00	Peak	Н	28.73	26.50	55.23	68.30	-13.07

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 153 of 220

Band edge falling to restricted band

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5310 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBµV/m	dB
5350.00	Peak	E	49.50	11.30	60.81	74.00	-13.19
5350.00	Average	E	34.55	11.30	45.85	54.00	-8.15

**Operation Band** :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5310 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5350.00	Peak	E	50.86	11.30	62.16	74.00	-11.84
5350.00	Average	E	35.22	11.30	46.52	54.00	-7.48

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

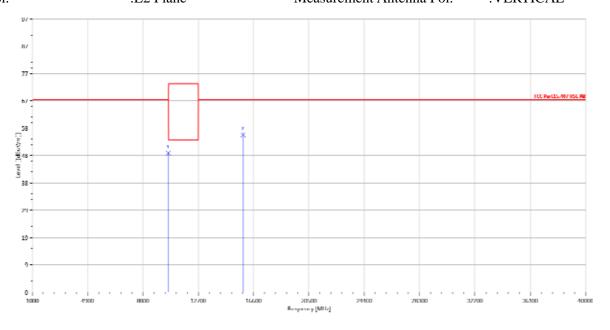
Page 154 of 220

# Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5250~5350 MHz

**Operation Band** :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5290 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX MID :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	$dB\mu V/m$	dBμV/m	dB
10580.00	Peak	Н	30.06	19.29	49.35	68.30	-18.95
15870.00	Peak	Н	29.43	26.42	55.84	68.30	-12.46

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 155 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

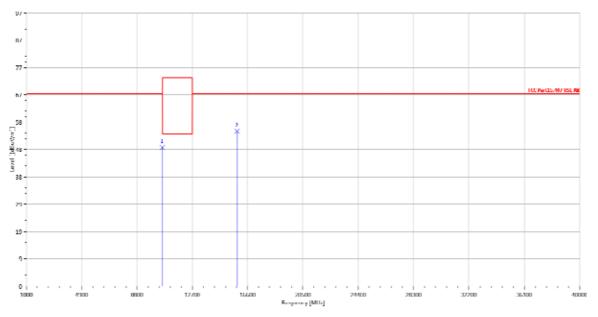
:802.11 ac80M :5290 MHz :TX MID :E2 Plane

**Test Date** Temp./Humi. Engineer

:2015-03-27 :17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Fı	req.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
M	IHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
105	80.00	Peak	Н	29.87	19.29	49.16	68.30	-19.14
158	70.00	Peak	H	28.52	26.42	54.94	68.30	-13.36

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 156 of 220

Band edge falling to restricted band

Operation Band :802.11 ac80M Test Date :2015-03-27

Fundamental Frequency :5290 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5350.00	Peak	E	48.97	11.30	60.27	74.00	-13.73
5350.00	Average	E	34.50	11.30	45.80	54.00	-8.20

**Operation Band** :802.11 ac80M Test Date :2015-03-27

Fundamental Frequency :5290 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5350.00	Peak	Е	49.62	11.30	60.92	74.00	-13.08
5350.00	Average	E	35.32	11.30	46.62	54.00	-7.38

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

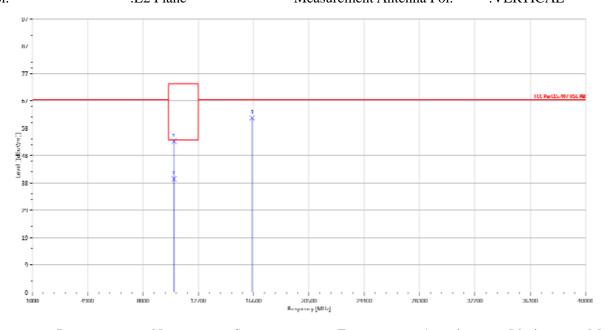
Page 157 of 220

# Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



req.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
ИHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
00.00	Peak	Н	33.50	20.02	53.52	74.00	-20.48
00.00	Average	Н	20.14	20.02	40.16	54.00	-13.84
00.00	Peak	Н	34.57	27.16	61.73	68.30	-6.57
	MHz 000.00 000.00 500.00	Mode MHz PK/QP/AV  000.00 Peak 000.00 Average	Mode MHz PK/QP/AV F/H/E/S  000.00 Peak H 000.00 Average H	Mode         Reading Level           MHz         PK/QP/AV         F/H/E/S         dBμV           000.00         Peak         H         33.50           000.00         Average         H         20.14	Mode         Reading Level           MHz         PK/QP/AV         F/H/E/S         dBμV         dB           000.00         Peak         H         33.50         20.02           000.00         Average         H         20.14         20.02	Mode         Reading Level         FS           MHz         PK/QP/AV         F/H/E/S         dBμV         dB         dBμV/m           000.00         Peak         H         33.50         20.02         53.52           000.00         Average         H         20.14         20.02         40.16	Mode         Reading Level         FS         @3m           MHz         PK/QP/AV         F/H/E/S         dBμV         dB         dBμV/m         dBμV/m           000.00         Peak         H         33.50         20.02         53.52         74.00           000.00         Average         H         20.14         20.02         40.16         54.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



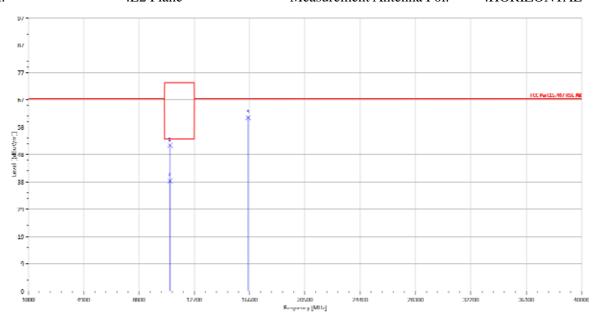
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 158 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Fr	eq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
M	Hz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
1100	00.00	Peak	Н	31.71	20.02	51.73	74.00	-22.27
1100	00.00	Average	Н	19.14	20.02	39.16	54.00	-14.84
1650	00.00	Peak	H	34.41	27.16	61.57	68.30	-6.73

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



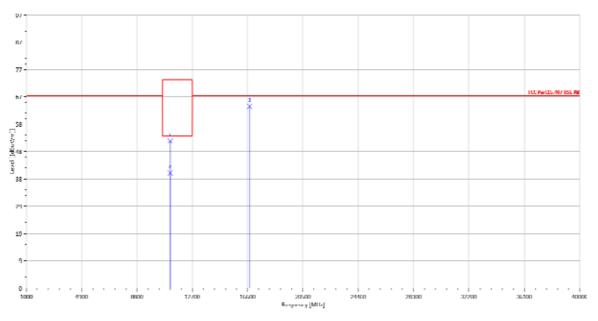
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 159 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5580 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBµV/m	dBμV/m	dB
11160.00	Peak	Н	31.75	20.38	52.13	74.00	-21.87
11160.00	Average	Н	20.43	20.38	40.81	54.00	-13.19
16740.00	Peak	Н	36.73	27.79	64.52	68.30	-3.78

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

GS Taiwan Ltd.



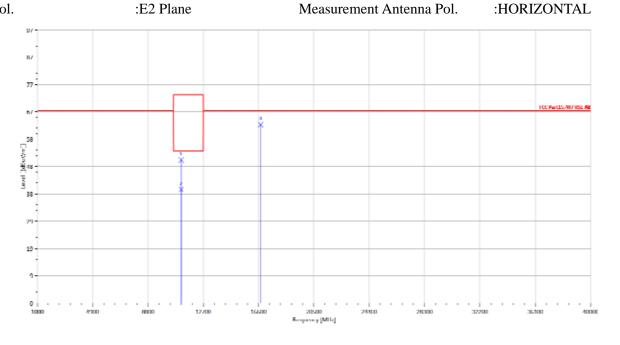
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 160 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5580 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11160.00	Peak	Н	30.43	20.38	50.81	74.00	-23.19
11160.00	Average	Н	19.93	20.38	40.31	54.00	-13.69
16740.00	Peak	H	35.55	27.79	63.34	68.30	-4.96

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



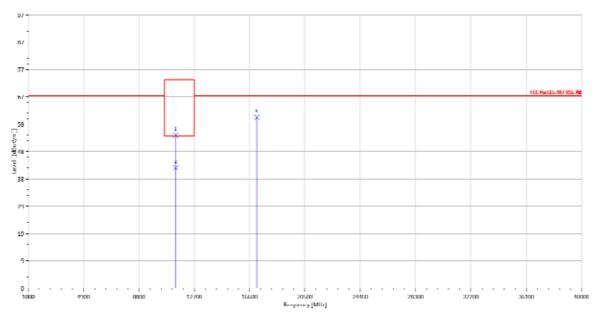
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 161 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11400.00	Peak	Н	33.47	20.81	54.28	74.00	-19.72	
11400.00	Average	Н	21.90	20.81	42.71	54.00	-11.29	
17100.00	Peak	H	32.34	28.26	60.60	68.30	-7.70	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



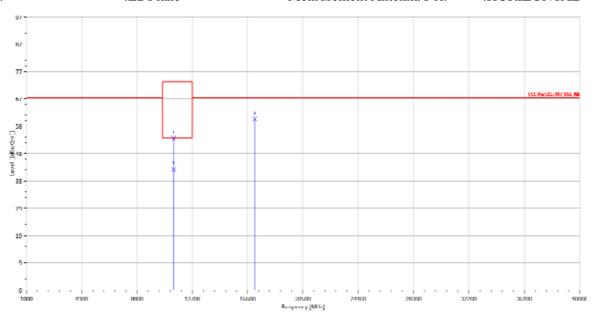
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 162 of 220

Operation Band :802.11 a **Test Date** :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11400.00	Peak	Н	33.06	20.81	53.87	74.00	-20.13	
11400.00	Average	Н	21.99	20.81	42.80	54.00	-11.20	
17100.00	Peak	H	32.53	28.26	60.79	68.30	-7.51	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 163 of 220

Band edge falling to restricted band

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} \mathrm{B} \mu \mathrm{V}$	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	48.57	11.46	60.03	74.00	-13.97
5460.00	Average	E	35.32	11.46	46.78	54.00	-7.22
5470.00	Peak	E	48.41	11.46	59.87	68.30	-8.43

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	50.46	11.46	61.93	74.00	-12.07
5460.00	Average	E	36.87	11.46	48.33	54.00	-5.67
5470.00	Peak	E	51.87	11.46	63.32	68.30	-4.98

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 164 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Note Spectrum Factor Actual Limit Margin Freq. Detector FS Mode Reading Level @3m PK/QP/AV F/H/E/S  $dB\mu V$ dΒ dBµV/m  $dB\mu V/m$ dB MHz 5725.00 Peak Е 47.65 12.27 59.92 68.30 -8.38

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	Е	52.10	12.27	64.37	68.30	-3.93

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

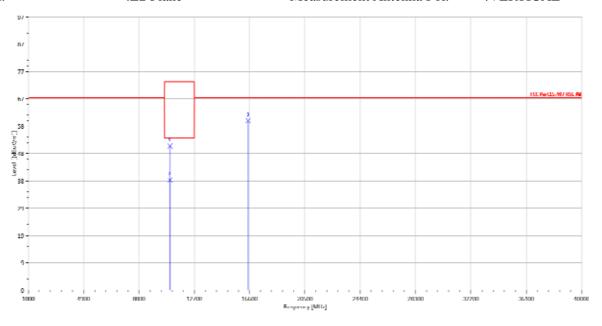
Page 165 of 220

# Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5470~5725 MHz

**Operation Band** :802.11 ac20M **Test Date** :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



	Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
		Mode		Reading Level		FS	@3m		
_	MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
	11000.00	Peak	Н	31.13	20.02	51.15	74.00	-22.85	
	11000.00	Average	Н	19.08	20.02	39.10	54.00	-14.90	
	16500.00	Peak	H	32.99	27.16	60.16	68.30	-8.14	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



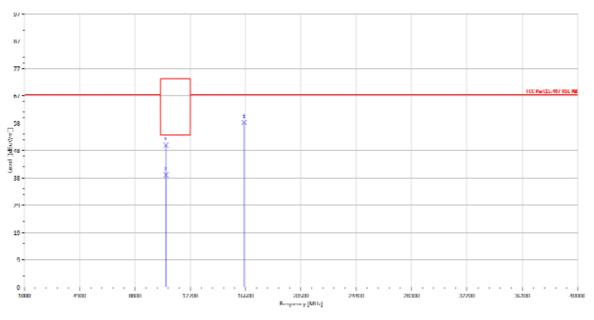
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 166 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11000.00	Peak	Н	30.31	20.02	50.33	74.00	-23.67	
11000.00	Average	Н	19.83	20.02	39.85	54.00	-14.15	
16500.00	Peak	Н	31.27	27.16	58.43	68.30	-9.87	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



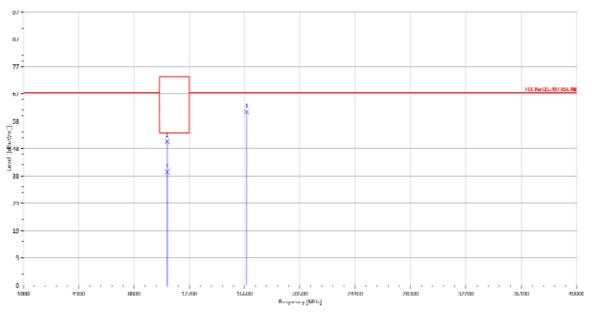
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 167 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5580 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11160.00	Peak	Н	30.64	20.38	51.02	74.00	-22.98
11160.00	Average	Н	19.76	20.38	40.14	54.00	-13.86
16740.00	Peak	Н	33.73	27.79	61.51	68.30	-6.79

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 168 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

:802.11 ac20M :5580 MHz :TX MID :E2 Plane

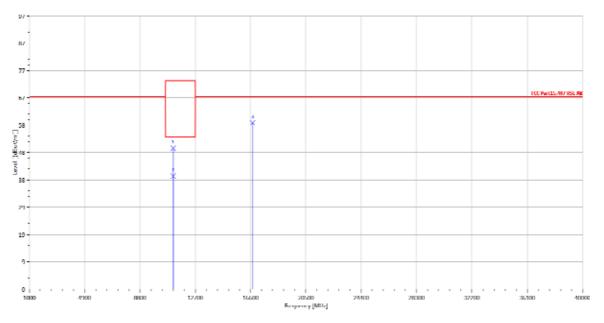
Test Date Temp./Humi.

Engineer :Ashton

:2015-03-27

:17.6deg\_C / 75 RH

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11160.00	Peak	Н	29.62	20.38	50.00	74.00	-24.00
11160.00	Average	Н	19.71	20.38	40.09	54.00	-13.91
16740.00	Peak	Н	31.20	27.79	58.98	68.30	-9.32

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



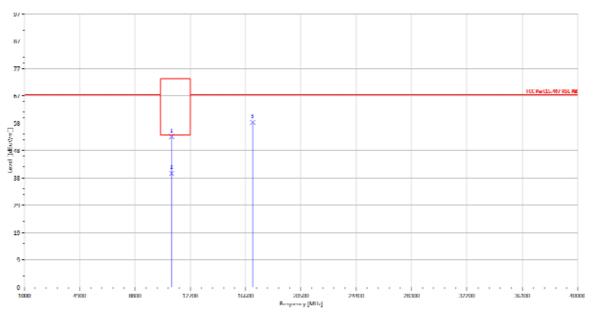
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 169 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11400.00	Peak	Н	32.58	20.81	53.39	74.00	-20.61	
11400.00	Average	Н	19.56	20.81	40.37	54.00	-13.63	
17100.80	Peak	Н	30.21	28.25	58.46	68.30	-9.84	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



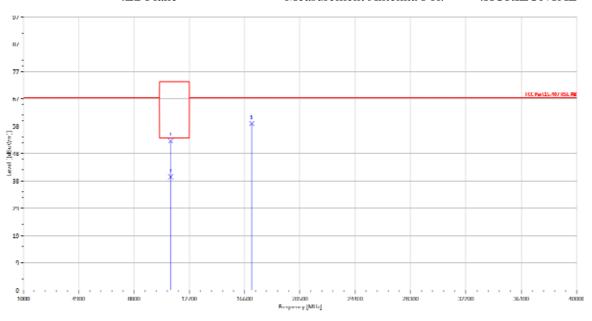
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 170 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11400.00	Peak	Н	32.18	20.81	52.99	74.00	-21.01	
11400.00	Average	Н	19.38	20.81	40.19	54.00	-13.81	
17100.00	Peak	H	30.83	28.26	59.09	68.30	-9.21	

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 171 of 220

Band edge falling to restricted band

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} \mathrm{B} \mu \mathrm{V}$	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	48.60	11.46	60.06	74.00	-13.94
5460.00	Average	E	35.38	11.46	46.84	54.00	-7.16
5470.00	Peak	E	48.85	11.46	60.30	68.30	-8.00

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5500 MHz Temp./Humi. :17.6deg C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	49.72	11.46	61.18	74.00	-12.82
5460.00	Average	E	36.07	11.46	47.53	54.00	-6.47
5470.00	Peak	E	52.87	11.46	64.32	68.30	-3.98

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 172 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5700 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	Е	47.29	12.27	59.56	68.30	-8.74

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :17.6deg\_C / 75 RH :5700 MHz

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	E	50.22	12.27	62.49	68.30	-5.81

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

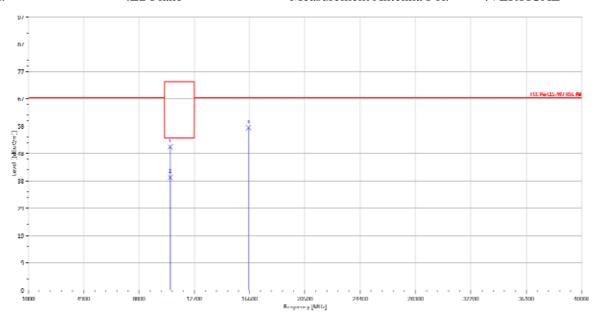
Page 173 of 220

### Radiated Spurious Emission Measurement Result 802.11ac VHT40, 5470~5725 MHz

**Operation Band** :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5510 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11020.00	Peak	Н	30.80	20.04	50.84	74.00	-23.16	
11020.00	Average	Н	19.91	20.04	39.95	54.00	-14.05	
16530.00	Peak	Н	30.37	27.29	57.66	68.30	-10.64	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



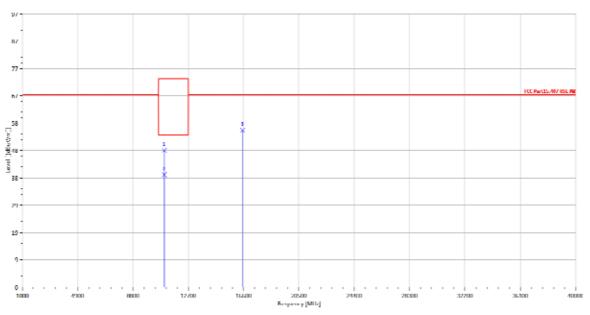
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 174 of 220

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5510 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11020.00	Peak	Н	28.47	20.04	48.51	74.00	-25.49
11020.00	Average	Н	19.83	20.04	39.87	54.00	-14.13
16530.00	Peak	Н	28.34	27.29	55.63	68.30	-12.67

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 175 of 220

:2015-03-27

Operation Band Fundamental Frequency

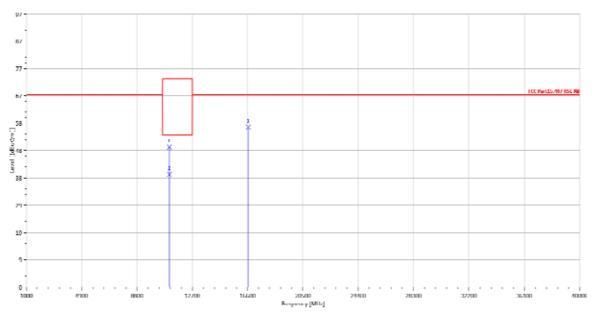
Operation Mode EUT Pol.

:802.11 ac40M :5550 MHz :TX MID :E2 Plane

Test Date Temp./Humi.

:17.6deg\_C / 75 RH

Engineer :Ashton Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11100.00	Peak	Н	29.50	20.21	49.70	74.00	-24.30	
11100.00	Average	Н	19.79	20.21	40.00	54.00	-14.00	
16650.00	Peak	H	29.24	27.54	56.78	68.30	-11.52	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low.

pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 176 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

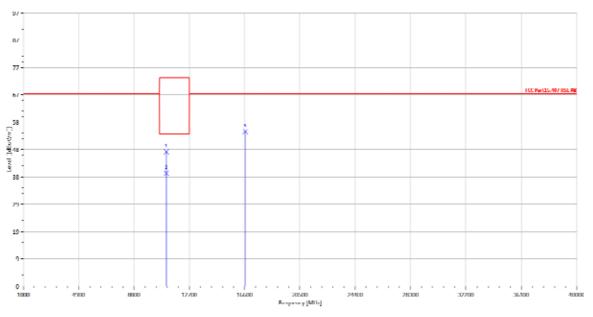
:802.11 ac40M :5550 MHz :TX MID :E2 Plane

Test Date Temp./Humi. Engineer

:2015-03-27 :17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11100.00	Peak	Н	27.45	20.21	47.65	74.00	-26.35
11100.00	Average	Н	19.82	20.21	40.03	54.00	-13.97
16650.00	Peak	Н	27.29	27.54	54.84	68.30	-13.46

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 177 of 220

:2015-03-27

Operation Band Fundamental Frequency

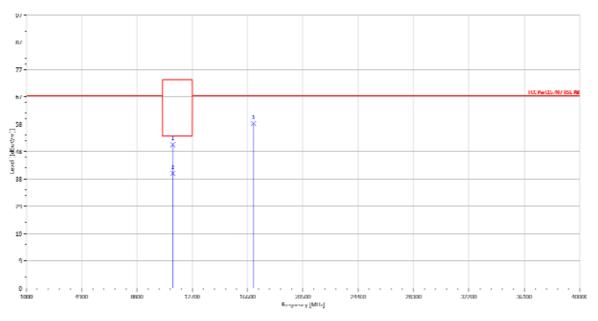
Operation Mode EUT Pol.

:802.11 ac40M :5670 MHz :TX HIGH :E2 Plane

Test Date Temp./Humi.

:17.6deg\_C / 75 RH

Engineer :Ashton Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11340.00	Peak	Н	30.29	20.61	50.90	74.00	-23.10	
11340.00	Average	Н	20.12	20.61	40.73	54.00	-13.27	
17010.00	Peak	Н	30.13	28.28	58.41	68.30	-9.89	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 178 of 220

Operation Band Fundamental Frequency

Operation Mode EUT Pol.

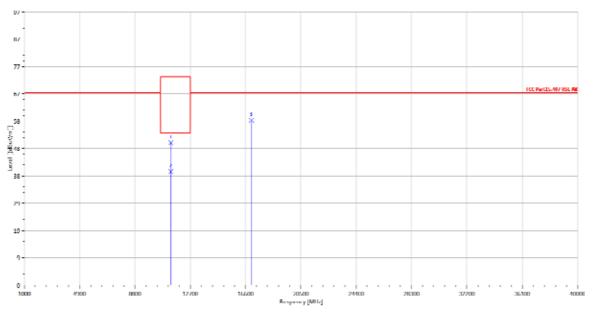
:802.11 ac40M :5670 MHz :TX HIGH :E2 Plane

Test Date Temp./Humi. Engineer

:2015-03-27 :17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11340.00	Peak	Н	29.89	20.61	50.50	74.00	-23.50
11340.00	Average	Н	19.65	20.61	40.26	54.00	-13.74
17010.00	Peak	H	30.19	28.28	58.47	68.30	-9.83

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 179 of 220

Band edge falling to restricted band

**Operation Band** :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5510 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	49.97	11.46	61.43	74.00	-12.57
5460.00	Average	E	34.15	11.46	45.61	54.00	-8.39
5470.00	Peak	E	48.00	11.46	59.46	68.30	-8.84

Test Date Operation Band :802.11 ac40M :2015-03-27

Fundamental Frequency :5510 MHz Temp./Humi. :17.6deg C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

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

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

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

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

"---": denotes Noise Floor.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBµV/m	dB
5460.00	Peak	E	50.20	11.46	61.66	74.00	-12.34
5460.00	Average	E	34.78	11.46	46.24	54.00	-7.76
5470.00	Peak	E	54.39	11.46	65.84	68.30	-2.46

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 180 of 220

**Operation Band** :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5670 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq. Detector Note Spectrum Factor Actual Limit Margin Reading Level FS Mode @3m PK/QP/AV dBμV dBµV/m dBµV/m MHz F/H/E/S dB dB 46.41 12.27 68.30 -9.62 5725.00 Peak Е 58.68

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5670 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	E	48.34	12.27	60.61	68.30	-7.69

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

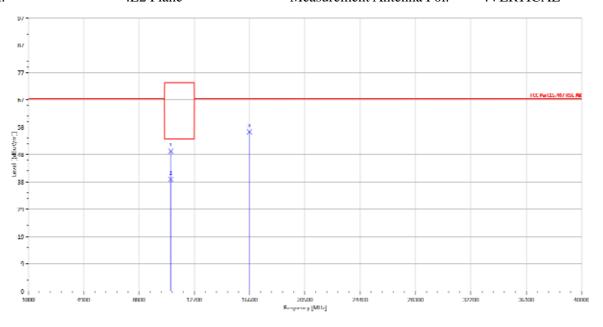
Page 181 of 220

## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5470~5725 MHz

**Operation Band** :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5530 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11060.00	Peak	Н	29.56	20.14	49.70	74.00	-24.30	
11060.00	Average	Н	19.56	20.14	39.70	54.00	-14.30	
16590.00	Peak	Н	29.22	27.33	56.55	68.30	-11.75	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



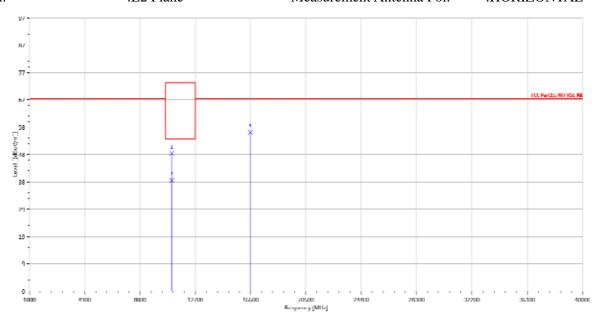
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 182 of 220

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5530 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11060.00	Peak	Н	28.77	20.14	48.91	74.00	-25.09	
11060.00	Average	Н	19.26	20.14	39.40	54.00	-14.60	
16590.00	Peak	Н	29.10	27.33	56.43	68.30	-11.87	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



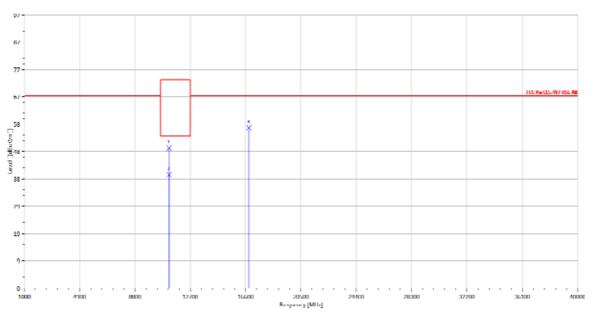
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 183 of 220

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5610 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11220.00	Peak	Н	29.33	20.39	49.73	74.00	-24.27
11220.00	Average	Н	19.85	20.39	40.24	54.00	-13.76
16830.00	Peak	Н	29.05	27.86	56.91	68.30	-11.39

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



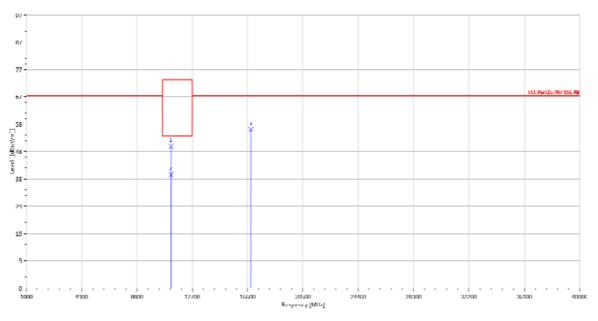
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 184 of 220

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5610 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX MID Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11220.00	Peak	Н	29.88	20.39	50.27	74.00	-23.73
11220.00	Average	Н	19.82	20.39	40.21	54.00	-13.79
16830.00	Peak	Н	28.47	27.86	56.33	68.30	-11.97

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 185 of 220

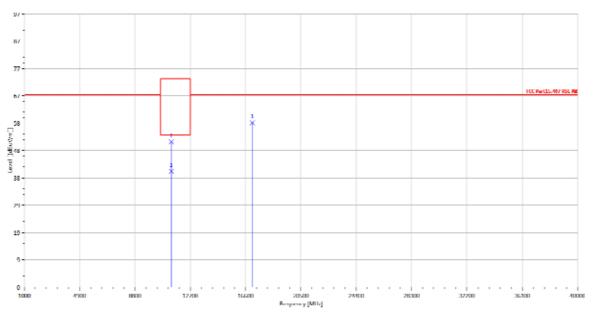
Operation Band Fundamental Frequency

Operation Mode EUT Pol.

:802.11 ac80M :5690 MHz :TX HIGH :E2 Plane

Test Date Temp./Humi. :2015-03-27 :17.6deg\_C / 75 RH

Engineer :Ashton Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11380.00	Peak	Н	30.68	20.84	51.53	74.00	-22.47
11380.00	Average	Н	20.23	20.84	41.07	54.00	-12.93
17070.00	Peak	Н	30.08	28.21	58.29	68.30	-10.01

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 186 of 220

Operation Band Fundamental Frequency Operation Mode

EUT Pol.

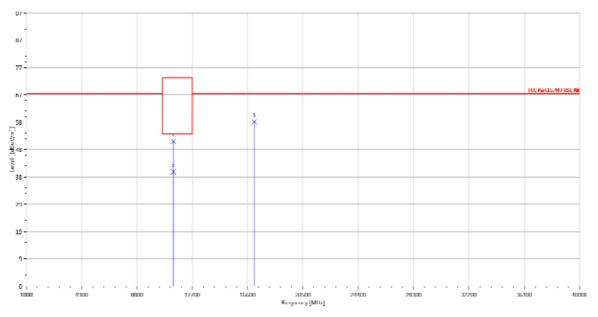
:802.11 ac80M :5690 MHz :TX HIGH :E2 Plane

Test Date Temp./Humi. Engineer

:2015-03-27 :17.6deg\_C / 75 RH

:Ashton

:HORIZONTAL Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11380.00	Peak	Н	30.49	20.84	51.33	74.00	-22.67
11380.00	Average	Н	19.71	20.84	40.55	54.00	-13.45
17070.00	Peak	Н	30.07	28.21	58.29	68.30	-10.01

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 187 of 220

Band edge falling to restricted band

**Operation Band** :802.11 ac80M Test Date :2015-03-27

Fundamental Frequency :5530 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	48.12	11.46	59.58	74.00	-14.42
5460.00	Average	E	34.52	11.46	45.98	54.00	-8.02
5470.00	Peak	E	48.53	11.46	59.99	68.30	-8.31

Test Date Operation Band :802.11 ac80M :2015-03-27

Fundamental Frequency :5530 MHz Temp./Humi. :17.6deg C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

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

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

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

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

"---": denotes Noise Floor.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d}B\mu\mathrm{V}$	dB	dBμV/m	dBμV/m	dB
5460.00	Peak	E	54.29	11.46	65.75	74.00	-8.25
5460.00	Average	E	38.36	11.46	49.82	54.00	-4.18
5470.00	Peak	E	48.53	11.46	59.99	68.30	-8.31

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

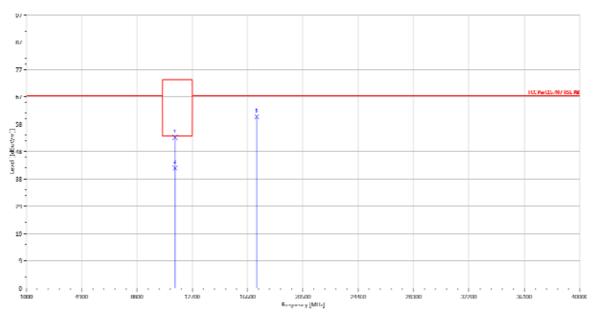
Page 188 of 220

## Radiated Spurious Emission Measurement Result 802.11a, 5725~5850 MHz

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11490.00	Peak	Н	32.42	21.08	53.50	74.00	-20.50
11490.00	Average	Н	21.53	21.08	42.61	54.00	-11.39
17235.00	Peak	H	32.79	28.06	60.85	68.30	-7.45

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



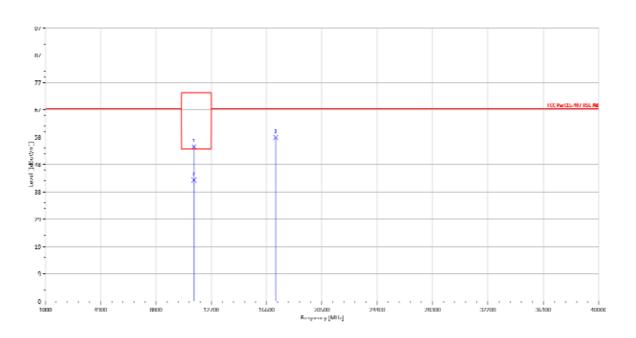
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 189 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB	
11490.00	Peak	Н	33.72	21.08	54.80	74.00	-19.20	
11490.00	Average	Н	21.90	21.08	42.98	54.00	-11.02	
17235.00	Peak	Н	29.99	28.06	58.04	68.30	-10.26	

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

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



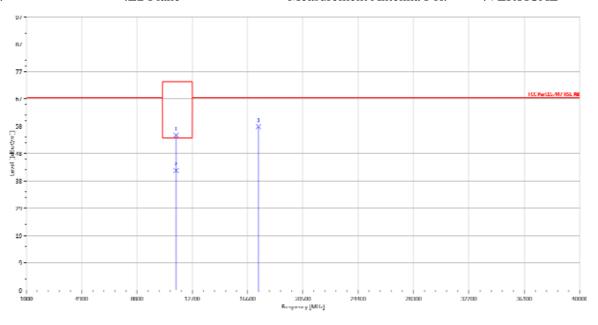
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 190 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11570.00	Peak	Н	33.84	21.14	54.98	74.00	-19.02
11570.00	Average	Н	21.32	21.14	42.46	54.00	-11.54
17355.00	Peak	Н	30.14	27.87	58.01	68.30	-10.29

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,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



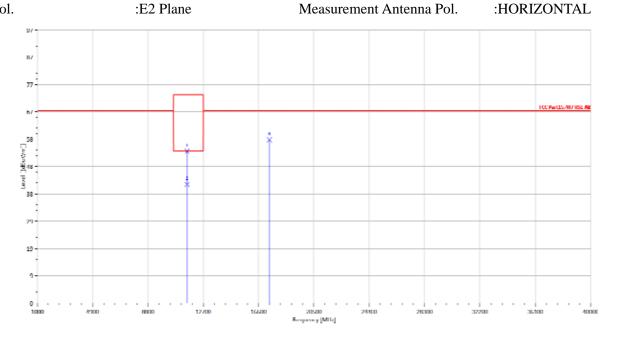
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 191 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11570.00	Peak	Н	32.76	21.14	53.90	74.00	-20.10	
11570.00	Average	Н	20.98	21.14	42.12	54.00	-11.88	
17355.00	Peak	Н	30.08	27.87	57.95	68.30	-10.35	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



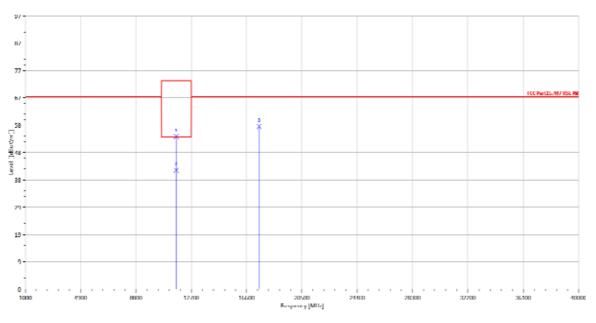
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 192 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5825 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX HIGH Engineer :Ashton :VERTICAL EUT Pol. :E2 Plane Measurement Antenna Pol.



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB	
11650.00	Peak	Н	32.91	21.27	54.18	74.00	-19.82	
11650.00	Average	Н	20.93	21.27	42.20	54.00	-11.80	
17475.00	Peak	H	30.07	27.65	57.72	68.30	-10.58	

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



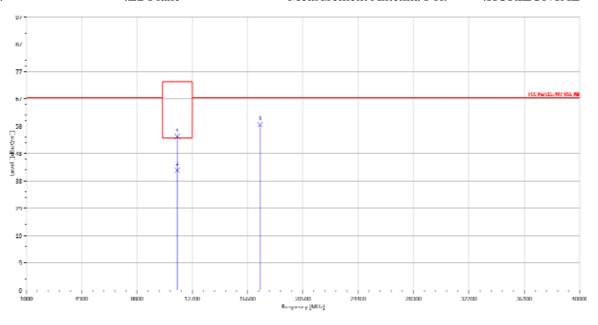
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 193 of 220

Operation Band :802.11 a Test Date :2015-03-27

Fundamental Frequency :5825 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11650.00	Peak	Н	33.22	21.27	54.49	74.00	-19.51
11650.00	Average	Н	21.32	21.27	42.59	54.00	-11.41
17475.00	Peak	H	31.05	27.65	58.70	68.30	-9.60

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 194 of 220

## Band edge falling to restricted band

**Operation Band** :802.11 a Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5725.00	Peak	Е	53.72	12.27	65.99	78.20	-12.21

Operation Band Test Date :2015-03-27 :802.11 a

Fundamental Frequency Temp./Humi. :5745 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m dB}\mu { m V}$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	Е	59.16	12.27	71.43	78.20	-6.77

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 195 of 220

Operation Band Test Date :2015-03-27 :802.11 a

Fundamental Frequency :5825 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
 MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5850.00	Peak	Е	47.23	12.61	59.84	78.20	-18.36

Operation Band Test Date :802.11 a :2015-03-27

Fundamental Frequency Temp./Humi. :5825 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m dB}\mu { m V}$	dB	dBμV/m	dBμV/m	dB
5850.00	Peak	Е	49.30	12.61	61.92	78.20	-16.28

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

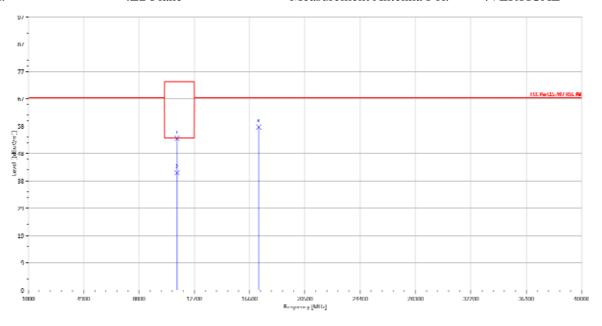
Page 196 of 220

## Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5725~5850 MHz

:802.11 ac20M Operation Band Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11490.00	Peak	Н	32.76	21.08	53.84	74.00	-20.16
11490.00	Average	Н	20.54	21.08	41.62	54.00	-12.38
17235.00	Peak	Н	29.81	28.06	57.86	68.30	-10.44

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



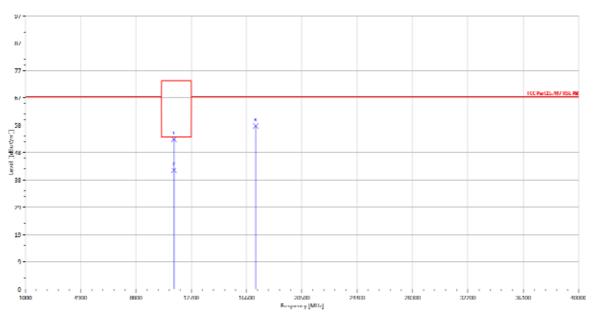
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 197 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d}B\mu\mathrm{V}$	dB	dBμV/m	dBμV/m	dB
11490.00	Peak	Н	32.11	21.08	53.19	74.00	-20.81
11490.00	Average	Н	21.10	21.08	42.18	54.00	-11.82
17235.00	Peak	Н	29.84	28.06	57.90	68.30	-10.40

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



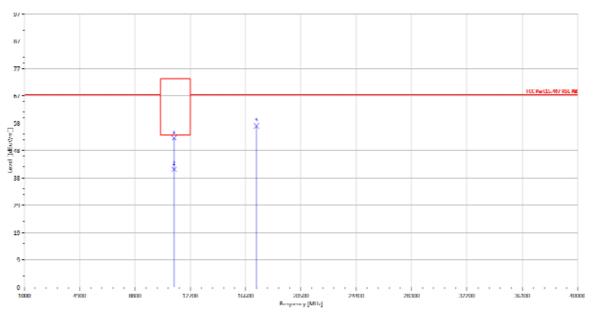
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 198 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :TX MID Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11570.00	Peak	Н	31.80	21.14	52.93	74.00	-21.07
11570.00	Average	Н	20.67	21.14	41.81	54.00	-12.19
17355.00	Peak	Н	29.27	27.87	57.15	68.30	-11.15

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



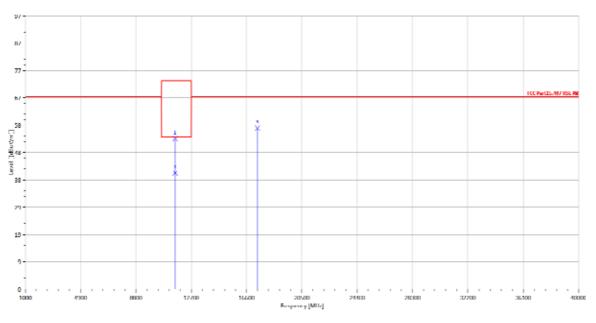
Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 199 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5785 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX MID Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11570.00	Peak	Н	32.25	21.14	53.38	74.00	-20.62
11570.00	Average	Н	20.02	21.14	41.16	54.00	-12.84
17355.00	Peak	Н	29.23	27.87	57.10	68.30	-11.20

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



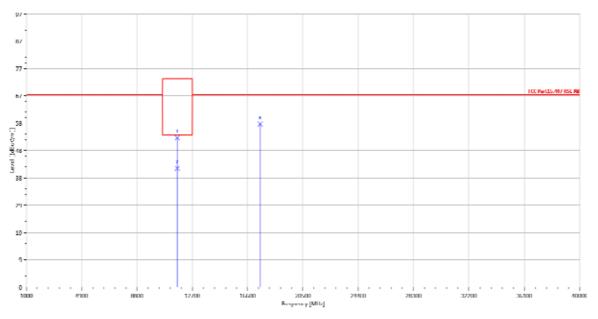
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 200 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27 Fundamental Frequency

:5825 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode

:TX HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB	
11650.00	Peak	Н	31.77	21.27	53.04	74.00	-20.96	
11650.00	Average	Н	20.87	21.27	42.15	54.00	-11.85	
17475.00	Peak	H	30.20	27.65	57.85	68.30	-10.45	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



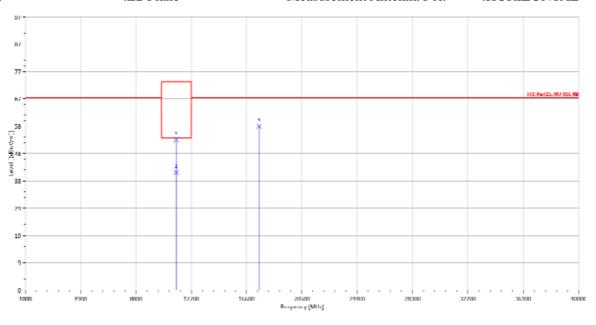
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 201 of 220

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5825 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11650.00	Peak	Н	32.15	21.27	53.42	74.00	-20.58
11650.00	Average	Н	20.49	21.27	41.76	54.00	-12.24
17475.00	Peak	Н	30.48	27.65	58.13	68.30	-10.17

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 202 of 220

### Band edge falling to restricted band

**Operation Band** :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5745 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

	Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
_	MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBµV/m	dBµV/m	dB
	5725.00	Peak	Е	51.99	12.27	64.26	78.20	-13.94

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :5745 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	Е	63.57	12.27	75.84	78.20	-2.36

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 203 of 220

**Operation Band** :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency :5825 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5850.00	Peak	Е	47.71	12.61	60.32	78.20	-17.88

Operation Band :802.11 ac20M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :5825 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m dB}\mu { m V}$	dB	dBμV/m	dBμV/m	dB
5850.00	Peak	Е	54.91	12.61	67.53	78.20	-10.67

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

Member of SGS Group



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

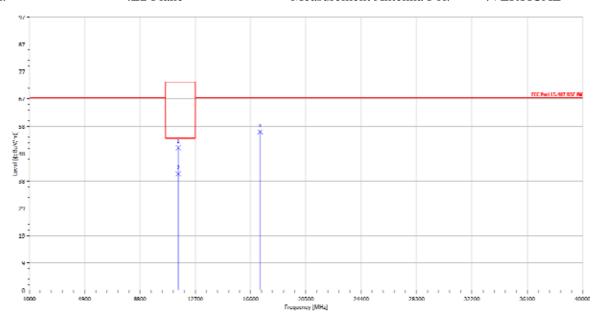
Page 204 of 220

## Radiated Spurious Emission Measurement Result (802.11n (5GHz)\_40M)

Operation Band :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5755 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode Engineer :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d}B\mu\mathrm{V}$	dB	dBμV/m	dBμV/m	dB	
11510.00	Peak	Н	29.43	21.17	50.59	74.00	-23.41	
11510.00	Average	Н	20.12	21.17	41.29	54.00	-12.71	
17265.00	Peak	Н	28.44	27.82	56.27	68.30	-12.03	

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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



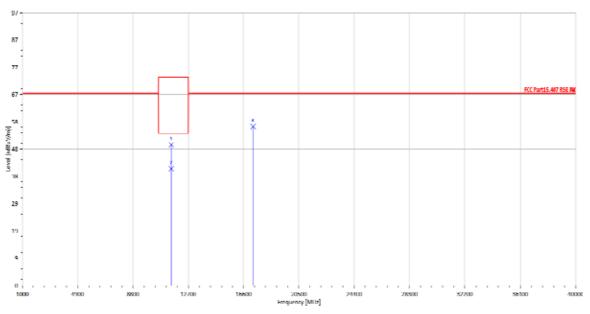
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 205 of 220

Operation Band :802.11 ac40M **Test Date** :2015-03-27

Fundamental Frequency :5755 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11510.00	Peak	Н	28.80	21.17	49.97	74.00	-24.03	
11510.00	Average	Н	20.28	21.17	41.45	54.00	-12.55	
17265.00	Peak	Н	28.62	27.82	56.44	68.30	-11.86	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

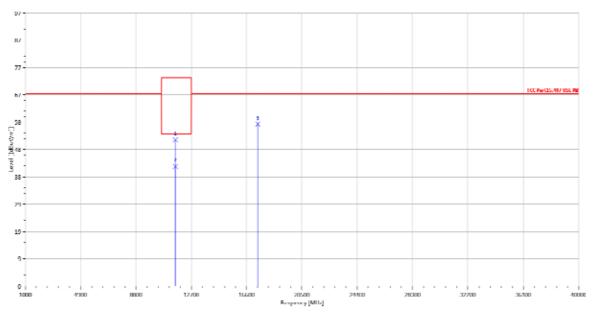
Page 206 of 220

:2015-03-27

Operation Band :802.11 ac40M **Test Date** Fundamental Frequency :5795 MHz Temp./Humi.

:17.6deg\_C / 75 RH Operation Mode :TX HIGH Engineer :Ashton

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11590.00	Peak	Н	30.64	21.28	51.92	74.00	-22.08	
11590.00	Average	Н	21.20	21.28	42.48	54.00	-11.52	
17385.00	Peak	H	29.88	27.61	57.49	68.30	-10.81	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 207 of 220

:2015-03-27

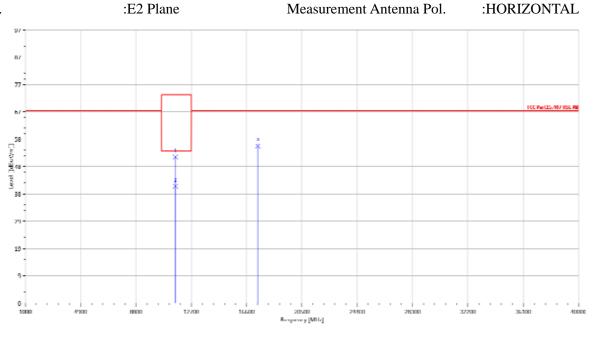
Operation Band Fundamental Frequency

Operation Mode EUT Pol.

:802.11 ac40M :5795 MHz :TX HIGH :E2 Plane

Test Date Temp./Humi.

:17.6deg\_C / 75 RH Engineer :Ashton



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11590.00	Peak	Н	30.52	21.28	51.79	74.00	-22.21
11590.00	Average	Н	20.20	21.28	41.48	54.00	-12.52
17385.00	Peak	S	28.17	27.61	55.78	68.30	-12.52

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

SGS Taiwan Ltd.



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 208 of 220

### Band edge falling to restricted band

**Operation Band** :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5755 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBµV/m	dB
5725.00	Peak	Е	48.05	12.27	60.32	78.20	-17.88

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :5755 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	${ m dB}\mu { m V}$	dB	dBμV/m	dBμV/m	dB
5725.00	Peak	Е	54.82	12.27	67.09	78.20	-11.11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 209 of 220

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency :5795 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

Detector Spectrum Factor Actual Limit Margin Freq. Note FS Reading Level @3m Mode dB<sub>µ</sub>V dBµV/m dBµV/m MHz PK/QP/AV F/H/E/S dB dB Е 46.81 12.61 59.42 78.20 -18.78 5850.00 Peak

Operation Band :802.11 ac40M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :5795 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge HIGH Engineer :Ashton

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

Spectrum Limit Margin Freq. Detector Note Factor Actual Mode Reading Level FS @3m dBµV/m PK/QP/AV dBμV dBµV/m MHz F/H/E/S dΒ dB 5850.00 Peak Е 47.35 12.61 59.96 78.20 -18.24

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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 www.tw.sqs.com



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

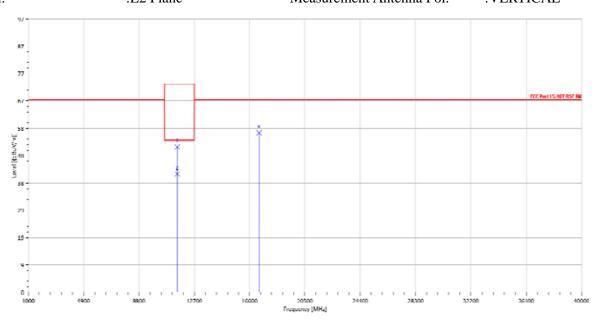
Page 210 of 220

## Radiated Spurious Emission Measurement Result (802.11n (5GHz)\_80M)

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5775 MHz Temp./Humi. :17.6deg\_C / 75 RH

Engineer Operation Mode :TX LOW :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB
11550.00	Peak	Н	28.80	21.17	49.97	74.00	-24.03
11550.00	Average	Н	20.19	21.17	41.36	54.00	-12.64
17325.00	Peak	Н	28.48	27.82	56.30	68.30	-12.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



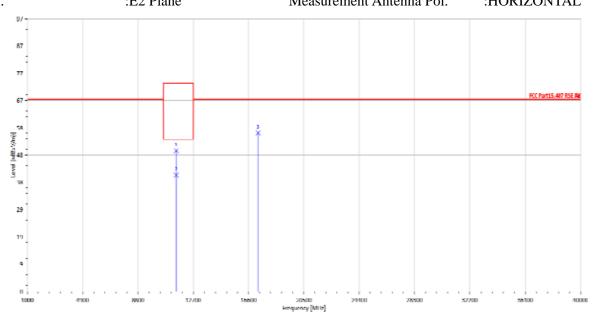
Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 211 of 220

Operation Band :802.11 ac80M **Test Date** :2015-03-27

Fundamental Frequency :5775 MHz Temp./Humi. :17.6deg\_C / 75 RH Operation Mode :TX LOW Engineer

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



Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	$\mathrm{d} B \mu V$	dB	dBμV/m	dBμV/m	dB	
11550.00	Peak	Н	28.80	21.17	49.97	74.00	-24.03	
11550.00	Average	Н	20.19	21.17	41.36	54.00	-12.64	
17325.00	Peak	Н	28.48	27.82	56.30	68.30	-12.00	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 212 of 220

### Band edge falling to restricted band

**Operation Band** :802.11 ac80M Test Date :2015-03-27

Fundamental Frequency :5775 MHz Temp./Humi. :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

	Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
_	MHz	PK/QP/AV	F/H/E/S	dΒμV	dB	dBμV/m	dBμV/m	dB
	5850.00	Peak	Е	47.83	12.61	60.44	78.20	-17.76

Operation Band :802.11 ac80M Test Date :2015-03-27

Fundamental Frequency Temp./Humi. :5775 MHz :17.6deg\_C / 75 RH

Operation Mode :Band Edge LOW Engineer :Ashton

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

	Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
		Mode		Reading Level		FS	@3m	
_	MHz	PK/QP/AV	F/H/E/S	$\mathrm{dB}\mu\mathrm{V}$	dB	dBμV/m	dBμV/m	dB
	5850.00	Peak	Е	46.98	12.61	59.59	78.20	-18.61

Unless otherwise stated 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,同時此樣品僅保留卯天。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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 approval of this document is unquited and find the prior that the full terms of the low. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 t (886-2) 2299-3279



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 213 of 220

### 12. TRANSMISSION IN THE ABSENCE OF DATA

# 12.1 Standard Applicable

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

#### **12.2 Result**

No non-compliance noted:

Refer to the theory of operation.

Unless otherwise stated 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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm</a>. 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.

f (886-2) 2298-0488

SGS Taiwan Ltd. No.134, WuKungRoad, New Taipeiln



Report No.: E2/2015/20019 Issue Date: Apr. 08, 2015

Page 214 of 220

## 13. FREQUENCY STABILITY

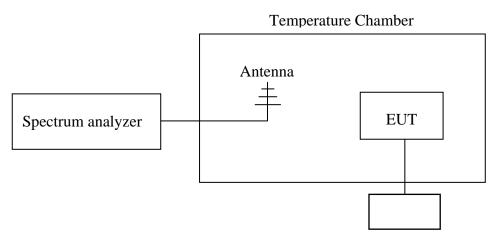
## 13.1 Standard Applicable

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

#### 13.2 Measurement Procedure

- 1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
- 2. Set EUT as normal operation.
- 3. Turn the EUT on and couple its output to spectrum.
- 4. Turn the EUT off and set the chamber to the highest temperature specified.
- 5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
- 6. Repeat step with the temperature chamber set to the lowest temperature.

#### 13.3 Test SET-UP



Variable AC Power Supply

## 13.4 Measurement Equipment Used

Conducted Emission Test Site								
EQUIPMENT	MED	MODEL	SERIAL	LAST	CAL DIJE			
TYPE	MFR	NUMBER	NUMBER	CAL.	CAL DUE.			
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015			
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/18/2014	06/17/2015			
DC Power Supply	Agilent	E3640A	MY53140006	05/31/2014	05/30/2015			

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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 215 of 220

#### **Measurement Result** 13.5

Operation Mode	802.11 a	Test Date	2015.3.18
Temperature	:17	Test By	Henry
Humidity	:65 %		_

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Frequency (MHz)
		36	5180.0000	5,179.887400	0.1126
		44	5220.0000	5,219.891130	0.1089
		48	5240.0000	5,239.933020	0.0670
		52	5260.0000	5,259.949400	0.0506
		60	5300.0000	5,299.955100	0.0449
	4.037	64	5320.0000	5,319.917220	0.0828
	4.2V	100	5500.0000	5,499.960820	0.0392
		116	5580.0000	5,579.908960	0.0910
		140	5700.0000	5,699.956910	0.0431
		149	5745.0000	5,744.940990	0.0590
		157	5785.0000	5,784.900750	0.0993
10		165	5825.0000	5,824.914710	0.0853
-10		36	5180.0000	5,179.819650	0.1803
		44	5220.0000	5,219.870460	0.1295
		48	5240.0000	5,239.878660	0.1213
		52	5260.0000	5,259.872490	0.1275
		60	5300.0000	5,299.907970	0.0920
	2.01	64	5320.0000	5,319.892440	0.1076
	3.6V	100	5500.0000	5,499.903170	0.0968
		116	5580.0000	5,579.847390	0.1526
		140	5700.0000	5,699.926900	0.0731
		149	5745.0000	5,744.888720	0.1113
		157	5785.0000	5,784.833460	0.1665
		165	5825.0000	5,824.873780	0.1262

t (886-2) 2299-3279

Unless otherwise stated 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。本報告未總本公司書面許可,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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> 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 appropriate in languaged and the propriate of the follows are proposed to the language of this document is unauthorized. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 216 of 220

		36	5180.0000	5,179.966500	0.0335
		44	5220.0000	5,219.965690	0.0343
		48	5240.0000	5,239.965410	0.0346
		52	5260.0000	5,259.965110	0.0349
		60	5300.0000	5,299.964840	0.0352
25	3.8V	64	5320.0000	5,319.964680	0.0353
23	3.0 V	100	5500.0000	5,499.963500	0.0365
		116	5580.0000	5,579.962950	0.0370
		140	5700.0000	5,699.962100	0.0379
		149	5745.0000	5,744.961820	0.0382
		157	5785.0000	5,784.961530	0.0385
		165	5825.0000	5,824.961240	0.0388
		36	5180.0000	5,179.910200	0.0898
	4.2V	44	5220.0000	5,219.888120	0.1119
		48	5240.0000	5,239.904910	0.0951
		52	5260.0000	5,259.931480	0.0685
		60	5300.0000	5,299.953700	0.0463
		64	5320.0000	5,319.952050	0.0480
		100	5500.0000	5,499.885940	0.1141
		116	5580.0000	5,579.912330	0.0877
		140	5700.0000	5,699.946250	0.0538
		149	5745.0000	5,744.923320	0.0767
		157	5785.0000	5,784.931710	0.0683
55		165	5825.0000	5,824.960120	0.0399
55		36	5180.0000	5,179.905320	0.0947
		44	5220.0000	5,219.824000	0.1760
		48	5240.0000	5,239.839450	0.1605
		52	5260.0000	5,259.898280	0.1017
		60	5300.0000	5,299.919070	0.0809
	3.6V	64	5320.0000	5,319.890390	0.1096
	3.0 V	100	5500.0000	5,499.836310	0.1637
		116	5580.0000	5,579.908910	0.0911
		140	5700.0000	5,699.893930	0.1061
		149	5745.0000	5,744.848730	0.1513
		157	5785.0000	5,784.857670	0.1423
		165	5825.0000	5,824.922790	0.0772

Unless otherwise stated 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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms\_e-document.htm">www.sgs.com/terms\_e-document.htm</a>. 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 Tailwan Ltd.\*\*

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

10.200.0

t (886-2) 2299-3279



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 217 of 220

Operation Mode	802.11 ac_VHT40	Test Date	2015.3.18
Temperature	:17	Test By	Henry
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Frequency (MHz)
		38	5190.0000	5,189.925970	0.0740
		46	5230.0000	5,229.938820	0.0612
		54	5270.0000	5,269.917250	0.0827
		62	5310.0000	5,309.928310	0.0717
	4.2V	102	5510.0000	5,509.956850	0.0432
		110	5550.0000	5,549.938580	0.0614
		134	5670.0000	5,669.956440	0.0436
		151	5755.0000	5,754.914690	0.0853
10		159	5795.0000	5,794.895850	0.1042
-10	3.6V	38	5190.0000	5,189.857720	0.1423
		46	5230.0000	5,229.937300	0.0627
		54	5270.0000	5,269.856910	0.1431
		62	5310.0000	5,309.859650	0.1403
		102	5510.0000	5,509.947670	0.0523
		110	5550.0000	5,549.878620	0.1214
		134	5670.0000	5,669.943280	0.0567
		151	5755.0000	5,754.849130	0.1509
		159	5795.0000	5,794.842850	0.1572
		38	5190.0000	5,189.965470	0.0345
		46	5230.0000	5,229.965230	0.0348
		54	5270.0000	5,269.964880	0.0351
		62	5310.0000	5,309.964600	0.0354
25	3.8V	102	5510.0000	5,509.963350	0.0367
		110	5550.0000	5,549.963050	0.0369
		134	5670.0000	5,669.962180	0.0378
		151	5755.0000	5,754.961670	0.0383
		159	5795.0000	5,794.961390	0.0386

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of his 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, NewTaipeiIndustrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

10.134, WuKungRoad, NewTaipeiIndustrict, 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 218 of 220

		_		· ·	
		38	5190.0000	5,189.906090	0.0939
		46	5230.0000	5,229.896840	0.1032
		54	5270.0000	5,269.888810	0.1112
		62	5310.0000	5,309.941730	0.0583
	4.2V	102	5510.0000	5,509.941320	0.0587
		110	5550.0000	5,549.914010	0.0860
		134	5670.0000	5,669.933090	0.0669
		151	5755.0000	5,754.925310	0.0747
55		159	5795.0000	5,794.935260	0.0647
55		38	5190.0000	5,189.885530	0.1145
		46	5230.0000	5,229.864850	0.1352
		54	5270.0000	5,269.843510	0.1565
		62	5310.0000	5,309.884850	0.1151
	3.6V	102	5510.0000	5,509.890990	0.1090
		110	5550.0000	5,549.860870	0.1391
		134	5670.0000	5,669.922170	0.0778
		151	5755.0000	5,754.866600	0.1334
		159	5795.0000	5,794.882750	0.1173

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of his 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, NewTaipeiIndustrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

10.134, WuKungRoad, NewTaipeiIndustrict, 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.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 219 of 220

Operation Mode	802.11 ac_VHT80	Test Date	2015.3.18
Temperature	:17	Test By	Henry
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Frequency (MHz)
		42	5210.0000	5,209.899550	0.1004
		58	5290.0000	5,289.923520	0.0765
	4.237	106	5530.0000	5,529.905150	0.0949
	4.2V	122	5610.0000	5,609.883880	0.1161
		138	5690.0000	5,689.957270	0.0427
-10		155	5775.0000	5,774.920650	0.0793
-10		42	5210.0000	5,209.882710	0.1173
		58	5290.0000	5,289.918090	0.0819
	2.64	106	5530.0000	5,529.876940	0.1231
	3.6V	122	5610.0000	5,609.807610	0.1924
		138	5690.0000	5,689.929540	0.0705
		155	5775.0000	5,774.891770	0.1082
	3.8V	42	5210.0000	5,209.965350	0.0346
		58	5290.0000	5,289.964740	0.0353
25		106	5530.0000	5,529.963230	0.0368
20		122	5610.0000	5,609.962730	0.0373
		138	5690.0000	5,689.962030	0.0380
		155	5775.0000	5,774.961520	0.0385
		42	5210.0000	5,209.954500	0.0455
		58	5290.0000	5,289.893000	0.1070
	4.237	106	5530.0000	5,529.889120	0.1109
	4.2V	122	5610.0000	5,609.960220	0.0398
		138	5690.0000	5,689.954370	0.0456
55		155	5775.0000	5,774.884220	0.1158
JJ		42	5210.0000	5,209.944150	0.0558
		58	5290.0000	5,289.866440	0.1336
	2 611	106	5530.0000	5,529.876410	0.1236
	3.6V	122	5610.0000	5,609.907260	0.0927
		138	5690.0000	5,689.878920	0.1211
		155	5775.0000	5,774.848120	0.1519

Unless otherwise stated 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 <a href="www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of his 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, NewTaipeiIndustrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

10.134, WuKungRoad, NewTaipeiIndustrict, 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



Report No.: E2/2015/20019 **Issue Date: Apr. 08, 2015** 

Page 220 of 220

## 14. ANTENNA REQUIREMENT

# **Standard Applicable**

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

According to §15.407, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 14.2 **Antenna Connected Construction**

An embedded-in antenna design is used.

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

The antenna gain is less than 6dBi. Therefore, it is not necessary to reduce maximum output power power limit.

~ 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 <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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.