

# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E AND REQUIREMENT

OF

Product Name:	2x2 dual-band IEEE 802.11 a/b/g/n/ac and BT4.2 Combo Module		
Brand Name:	Foxconn		
Model No.:	WBU034		
Model Difference:	N/A		
FCC ID:	RX3-WBU034		
Report No.:	ER/2016/80037-01		
Issue Date:	Sep. 02, 2019		
FCC Rule Part:	§15.407		
	Hon Hai Precision Industry Co., Ltd.		
Prepared for:	No.151, Sec. 1, Nankan Rd., Lujhu Town- ship, Taoyuan County, 33859, Taiwan (R.O.C)		
	SGS Taiwan Ltd.		
	Electronics & Communication Laboratory		
Prepared by:	No.134, Wu Kung Road, New Taipei		
	Industrial Park, Wuku District, New Taipei		
	City, Taiwan 24803		
	<b>Note:</b> 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		
Testing Laboratory 0513	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.

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



# VERIFICATION OF COMPLIANCE

Applicant (FCC):	Hon Hai Precision Industry Co., Ltd. No.151, Sec. 1, Nankan Rd., Lujhu Township, Taoyuan County, 33859, Taiwan (R.O.C)
Product Name:	2x2 dual-band IEEE 802.11 a/b/g/n/ac and BT4.2 Combo Module
Brand Name:	Foxconn
Model No.:	WBU034
Model Difference:	N/A
FCC ID:	RX3-WBU034
File Number:	ER/2016/80037-01
Date of Test:	Aug. 05, 2016 ~ Aug. 16, 2016
Date of EUT Received:	Aug. 05, 2016

## 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.

Test By:	Ton Lis	Date:	Sep. 02, 2019
Prepared By:	Tiffany Kao	Date:	Sep. 02, 2019
Approved By:	Tiffany Kao / Clerk Jim Chang Jim Chang / Asst. Manager	Date:	Sep. 02, 2019

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

で解す另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms and Conditions for Electronic Documents at www.sgs.com/terms and conditions of an and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of</u> Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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



# **Revision History**

Report Number	Revision	Description	Effected Page	Issue Date	Revised By
ER/2016/80037	Rev.00	Initial creation of docu- ment	All	Aug. 19, 2016	Tiffany Kao
ER/2016/80037-01	Rev.01	Add section 1.7 remark and conduction data updated	Page 10, 22~23	Sep. 02, 2019	Tiffany Kao

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document 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



# **Contents**

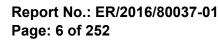
1.	GENE	ERAL INFORMATION	6
	1.1	Product Description	6
	1.2	Product Feature of Equipment Under Test	9
	1.3	Test Methodology of Applied Standards	10
	1.4	Test Facility	10
	1.5	Special Accessories	10
	1.6	Equipment Modifications	10
	1.7	Remarks	10
2.	SYST	EM TEST CONFIGURATION	11
	2.1	EUT Configuration	.11
	2.2	EUT Exercise	.11
	2.3	Test Procedure	.11
	2.4	Measurement Results Explanation Example	12
	2.5	Configuration of Tested System	12
3.	SUM	MARY OF TEST RESULT	13
4.	DESC	RIPTION OF TEST MODES	14
	4.1	Operated in U-NII Bands	14
	4.2	The Worst Test Modes and Channel Details	16
5.	MEAS	SUREMENT UNCERTAINTY	19
6.	CON	DUCTED EMISSION TEST	20
	6.1.	Standard Applicable	20
	6.2.	Measurement Equipment Used	20
	6.3.	EUT Setup	20
	6.4.	Test SET-UP	21
	6.5.	Measurement Procedure	21
	6.6.	Measurement Result	21
7.	DUTY	CYCLE TEST SIGNAL	24
8.	26dB	& 6dB & 99% EMISSION BANDWIDTH MEASUREMENT	28
	8.1	Standard Applicable	28
	8.2	Measurement Procedure	28
	8.3	Measurement Equipment Used	29
	8.4	Test Set-up	29
	8.5	Measurement Result	30
9.	MAXI	MUM CONDUCTED OUTPUT POWER MEASUREMENT	72

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號



	9.1	Standard Applicable	
	9.2	Measurement Procedure	74
	9.3	Measurement Equipment Used	74
	9.4	Test Set-up	74
	9.5	Measurement Result	75
10.	PEAK	( POWER SPECTRAL DENSITY	
	10.1	Standard Applicable	
	10.2	Measurement Procedure	81
	10.3	Measurement Equipment Used	81
	10.4	Test Set-up	
	10.5	Measurement Result	
11.	UNDE	ESIRABLE RADIATED EMISSION MEASUREMENT	
	11.1	Standard Applicable	
	11.2	Measurement Equipment Used	111
	11.3	Test SET-UP	112
	11.4	Measurement Procedure	113
	11.5	Field Strength Calculation	113
	11.6	Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz	114
	11.7	Measurement Result	114
12.	TRAN	ISMISSION IN THE ABSENCE OF DATA	
	12.1	Standard Applicable	
	12.2	Result	
13.	FREC	QUENCY STABILITY	
	13.1	Standard Applicable	227
	13.2	Measurement Procedure	
	13.3	Test SET-UP	
	13.4	Measurement Equipment Used:	
	13.5	Measurement Result	
14.	ANTE	INNA REQUIREMENT	
	14.1	Standard Applicable	233
	14 2	Antenna Connected Construction	233

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號





## 1. GENERAL INFORMATION

## **1.1 Product Description**

#### General:

Product Name:	2x2 dual-band IEEE 802.11 a/b/g/n/ac and BT4.2 Combo Module
Brand Name:	Foxconn
Model No.:	WBU034
Model Difference:	N/A
Product SW/HW version:	N/A / DVT
Radio SW/HW version:	N/A / N/A
Test SW Version:	N/A
RF power setting in TEST SW:	N/A
Power Supply:	3.3Vdc from Test Kit

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此根告結果僅對測試之樣品負責,同時此樣品僅倍留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unavult and offenders may be prosecuted to the fullest event of the law. 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



#### WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology
	5150~5250	4	14.44 dBm (Avg.)	
110	5250~5350	4	14.47 dBm (Avg.)	
11a	5470~5725	12	14.49 dBm (Avg.)	OFDM
	5725-5850	5	14.49 dBm	
	HT / VHT20 5150~5250	4	HT: 14.48 dBm (Avg.) (Worst Case)	
11n /	HT / VHT20 5250~5350	4	HT: 14.49 dBm (Avg.) (Worst Case)	OFDM
ac_20M	HT / VHT20 5470~5725	11	HT: 14.46 dBm (Ávg.) (Worst Case)	
	HT / VHT20 5725-5850	5	HT: 14.46 dBm (Worst Case)	
	HT / VHT40 5150~5250	2	HT: 14.42 dBm (Avg.) (Worst Case)	
11n / ac 40M	HT / VHT40 5250~5350	2	HT: 14.49 dBm (Avg.) (Worst Case)	OFDM
_	HT / VHT40 5470~5725	5	HT: 14.49 dBm (Avg.) (Worst Case)	
	HT / VHT40 5725-5850	2	HT: 14.45 dBm (Worst Case)	
	VHT80 5150~5250	1	14.21 dBm (Avg.)	
11ac_80M	VHT80 5250~5350	1	14.24 dBm (Avg.)	OFDM
	VHT80 5470~5725	2	14.18 dBm (Avg.)	0.2
	VHT80 5725-5850	1	14.09 dBm	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 路 134 装



	PCB Antenna (Internal), 1. Main
	5GHz Gain: 2.78dBi (5150MHz-5250MHz)
	5GHz Gain: 2.78dBi (5250MHz-5350MHz)
	5GHz Gain: 1.89dBi (5470MHz-5725MHz)
Antenna Designation	5GHz Gain: -0.57dBi (5725MHz-5850MHz)
	2. Aux
	5GHz Gain: 3.01dBi (5150MHz-5250MHz)
	5GHz Gain: 3.01dBi (5250MHz-5350MHz)
	5GHz Gain: 4.11dBi (5470MHz-5725MHz)
	5GHz Gain: 2.66dBi (5725MHz-5850MHz)
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation type	256QAM for OFDM in 802.11ac only
	802.11 a: 6/9/12/18/24/36/48/54 Mbps
	802.11 n 20MHz: 6.5 – 144.4Mbps
	802.11 n 40MHz: 13.5 – 300Mbps
Transition Rate:	802.11 ac 20MHz: 6.5 –144.4Mbps
	802.11 ac 40MHz: 13.5 –300Mbps
	802.11 ac 80MHz: 29.3 – 650Mbps
	002.11 ac_001011 12. 29.0 - 000101045

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 路 134 装



#### 1.2 Product Feature of Equipment Under Test

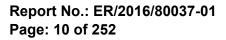
The equipment under Test (Hereafter Called: EUT) is 2x2 dual-band IEEE 802.11 a/b/g/n/ac and BT4.2 Combo Module, supporting Wi-Fi 802.11abgn/ac, Bluetooth, features, and below is details of information.

Product Feature			
Product Name: 2x2 dual-band IEEE 802.11 a/b/g/n/ac and BT4.2 Combo Module			
Brand Name:	Foxconn		
Model No.:	WBU034		
Model Difference:	N/A		
FCC ID:	RX3-WBU034		
Bluetooth Version	V4.2 dual mode		
Wi-Fi- Specification	802.11a/b/g/n/ac		

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.

Unless otherwise stated the results shown in finis test report refer only to the sample(s) tested and such sample(s) are retained for 50 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.





#### Test Methodology of Applied Standards 1.3

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules

FCC KDB 662911 D01 Multiple Transmitter Output

FCC KDB 644545 D03 Guidance for IEEE 802.11ac v01

ANSI C63.10:2013

Note:

All test items have been performed and record as per the above standards. 1.

#### 1.4 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803. (TAF code 0513)

FCC Designation numbers are: TW0001

#### 1.5 Special Accessories

There are no special accessories used while test was conducted.

#### Equipment Modifications 1.6

There was no modification incorporated into the EUT.

#### 1.7 Remarks

The original test report ER/2016/80037 will be withdrawn with this test report ER/2016/80037-01 and is no longer valid when the withdrawal occurred.

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

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



## 2. SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

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

#### 2.2 EUT Exercise

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

#### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

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

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plan. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this 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90天。本報告未經本公司書面許可,不可部份複製。

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



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

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

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss 3.3dB, and 10dB attenuator. **SISO mode offset:** = RF cable loss (dB)+ attenuation factor(dB)=10.3(dB) MIMO mode offset = RF cable loss (dB)+ attenuation factor(dB)+ 10 log(NANT) dB =13.3(dB)

#### 2.5 Configuration of Tested System

## Fig. 2-1 Radiated Emission & Conducted (Antenna Port) & Conduction (AC Power Line) Configuration

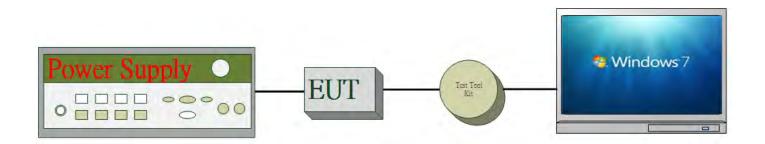


Table 2-1	Equipment	Used in	Tested	System
-----------	-----------	---------	--------	--------

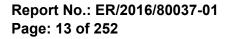
lte m	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	Notebook	Lenovo	L420	LR-7HXZA	Shielded	Un-shielded
3.	DC Power Supply	HP	E3640A	KR93300208	N/A	Un-shielded
4.	Test Kit	N/A	N/A	N/A	N/A	N/A

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

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.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 ransaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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





#### SUMMARY OF TEST RESULT 3.

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB & 6dB & 99% 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 <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 路 134 装

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.



## 4. DESCRIPTION OF TEST MODES

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



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

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

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	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

#### 2 channesl are provided for 802.11ac\_VHT80

Ī	CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
	106	5530 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

CHANNEL	FREQUENCY
155	5775 MHz

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

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



## 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 802.11n yields the highest reading that generates the highest emission. Therefore, 802.11n as the mode of test configuration is chosen to carry out the relevantly mandatory test items.

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	36,44,48	OFDM	1	MAIN		
802.11a	5260~5320	52 to 64	52,60,64	OFDM	1	MAIN		
802.11a	5500~5720	100 to 140	100,116,140	OFDM	1	MAIN		
802.11a	5745~5825	149 to 165	149,157,165	OFDM	1	MAIN		
	RADIATED EMISSION TEST (ABOVE 1 GHz)							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT		
802.11a	5180~5240	36 to 48	26 11 10	OFDM	1	MAIN		
802.11n_HT20	5160~5240	30 10 40	36,44,48	OFDM	MCS8	MIMO		
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS8	MIMO		
802.11ac_VHT80	5210	42	42	OFDM	MCS8	MIMO		
802.11a	5260~5320	52 to 64	52,60,64	OFDM	1	MAIN		
802.11n_HT20	5200~5520	52 10 04	52,00,04	OFDM	MCS8	MIMO		
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS8	MIMO		
802.11ac_VHT80	5290	58	58	OFDM	MCS8	MIMO		

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

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

で解す另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms and Conditions for Electronic Documents at www.sgs.com/terms and conditions of an and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of</u> Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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



MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5500~5720	100 to 111	100 116 140	OFDM	1	MAIN
802.11n_HT20	5500~5720	100 to 144	100,116,140	OFDM	MCS8	MIMO
802.11n_HT40	5510~5710	102 to 142	102,110,134	OFDM	MCS8	MIMO
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS8	MIMO
802.11a	5745~5825	149 to 165	149,157,165	OFDM	1	MAIN
802.11n_HT20	5745~5625	149 10 105	149,157,105	OFDM	MCS8	MIMO
802.11n_HT40	5755~5795	151 to 159	151,159	OFDM	MCS8	MIMO
802.11ac_VHT80	5775	155	155	OFDM	MCS8	MIMO

#### Note:

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

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



#### ANTENNA PORT CONDUCTED MEASUREMENT:

	CONDUCTED TEST								
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT			
802.11a	5180~5240	36 to 48	36,44,48	OFDM	1	MAIN			
802.11n_HT20	5160~5240	30 10 40	30,44,40	OFDM	MCS8	MIMO			
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS8	МІМО			
802.11ac_VHT80	5210	42	42	OFDM	MCS8	ΜΙΜΟ			
802.11a	5260~5320	52 to 64	52,60,64	OFDM	1	MAIN			
802.11n_HT20	5200~5520	52 10 04	52,00,04	OFDM	MCS8	MIMO			
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS8	ΜΙΜΟ			
802.11ac_VHT80	5290	58	58	OFDM	MCS8	ΜΙΜΟ			
802.11a	5500~5700	100 to 140	100 116 140	OFDM	1	MAIN			
802.11n_HT20	5500~5700	100 10 140	100,116,140	OFDM	MCS8	MIMO			
802.11n_HT40	5510~5670	102 to 134	102,110,134	OFDM	MCS8	MIMO			
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS8	MIMO			
802.11a		440 +- 405		OFDM	1	MAIN			
802.11n_HT20	5745~5825	149 to 165	149,157,165	OFDM	MCS8	MIMO			
802.11n_HT40	5755~5795	151 to 159	151,159	OFDM	MCS8	MIMO			
802.11ac_VHT80	5775	155	155	OFDM	MCS8	MIMO			

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### MEASUREMENT UNCERTAINTY 5.

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
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:

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

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

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

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

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



#### CONDUCTED EMISSION TEST 6.

### 6.1. Standard Applicable

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

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

#### 6.2. Measurement Equipment Used

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
EMI Test Receiver	R&S	ESCI7	100760	05/10/2016	05/09/2017				
LISN	SCHWARZBECK	NSLK 8127	8127-649	05/16/2016	05/15/2017				
LISN	MESS TEC	FCC-LISN-50/250 -25-2-01	4034	05/16/2016	05/15/2017				
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2015	11/25/2016				

#### 6.3. EUT Setup

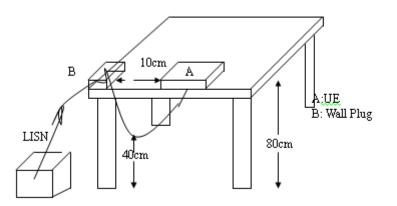
- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The LISN was connected with 120Vac/60Hz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

で解す另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms and Conditions for Electronic Documents at www.sgs.com/terms and conditions of an and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of</u> Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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



## 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

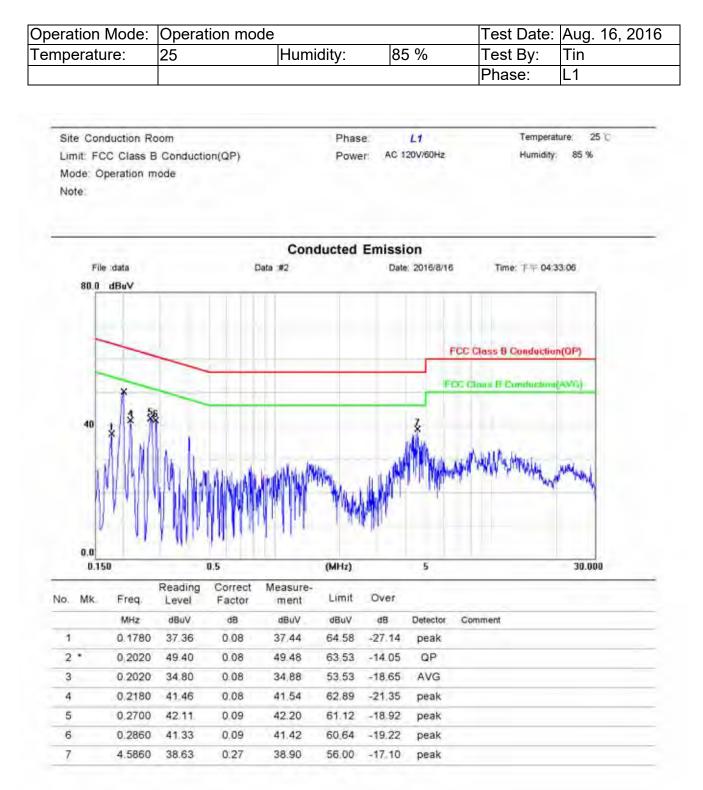
Note: Refer to next page for measurement data and plots. Note2: The \* reveals the worst-case results that closet to the limit

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

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



## AC POWER LINE CONDUCTED EMISSION TEST DATA



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

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

S 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



5

6

7

0.2700

0.2860

4.5180

43.17

42.31

37.10

0.09

0.09

0.26

43,25

42.40

37.35

61 12

60.64

56.00

-17.86

-18.24

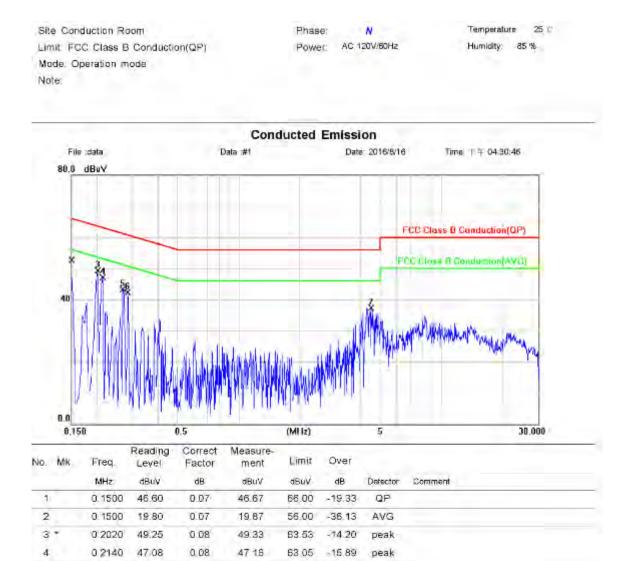
-18,64

peak

peak

peak

#### Report No.: ER/2016/80037-01 Page: 23 of 252



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

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

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



## 7. DUTY CYCLE 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:

Mode	Duty Cycle (%)	Duty Factor (dB) =10*log ( 1/Duty
802.11a	99.99	0.00
802.11n_20	99.99	0.00
802.11ac_20	99.99	0.00
802.11n_40	99.99	0.00
802.11ac_40	99.99	0.00
802.11ac_80	99.99	0.00

Duty Cycle Factor: 10 \* log(1/0.9999) = 0 Duty Cycle Factor: 10 \* log(1/0.9999) = 0

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

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

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



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

	10 DC	30.69.3		ALTON ADITO	04:30:53 PH Aug 11, 201	Frequency
enter Freq 5.180	PNO: Fast FGain:Low		n	Type: Log-Pwr	THE WARDE	
Ref Offset	10.3 dB				Mkr1 855.0 µs 19.72 dBm	Auto Tuni
000	1	a Same of Son 19, and a strengther of	and a state of the second	orten gila or a tradica	همو. ورد باریواندو میلارد. مورور در اینواندو میلارد	Center Free 5.180000000 GH
						Start Free 5 18000000 GH
0 () 0 () 0 ()						Stop Free 5 18000000 GH
enter 5.18000000 es BW 8 MHz	#V	BW 8.0 MHz			Span 0 H: .000 ms (1001 pts	CF Step 8.000000 MH Auto Ma
NODE TRC SOL	х 865.0 µs	19.72 dBm	FUNCTION	FUNCTION WEITH	FUNCTION VALUE	Freq Offset 0 Hz
6 7 8 9 9 1						Scale Type
a)		-		=ránus		

## 802.11n HT20

Reperght Spectrum Analyze RL RJ	50 G DC	STREET CHIT	Avg Type: Log-Pwr	04:31:27 PM Aug 11, 2010	Frequency
enter Freq 5.18	PN0: Fast ~ IFGain:Low	#Atten: 30 dB	AND INC. COLUM	DET P NEW MONTH	
Ref Offs dB/div Ref 30	et 13.3 dB .00 dBm			Mkr1 4.740 ms 20.31 dBm	Auto Tun
000	and a state of the	Lighten Standard Star		1 Hadaya Birang bar Mg, Pajah, Mg Katara	Center Fre 5.180000000 GH
					Start Fre 5 18000000 GH
00					Stop Fre 5 18000000 GH
enter 5.1800000 es BW 8 MHz		W 8.0 MHz	Sweep 5	Span 0 Hz .000 ms (1001 pts)	CF Ste 8.000000 MH
NR MODE TRC SCL	× 4.740 ms	9 FL 20.31 dBm	NCTION FUNCTION WEITH	FUNCTION VALUE ×	BULD MIL
2 3 4 5 6					Freq Offse
7					Scale Typ
					Log L
0			STÁTUS		

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## 802.11n HT 40

Repurphit Spectrolerr Analyter - Skept SA RL A/ 50 G DC		Spread of the		NUON NUTO	04:02:02 PM Aug 11, 2016	
enter Freq 5.1900000		and a second		Type: Log-Pwr	TRAGE DIR STATE	Frequency
Ref Offset 13.3 dl	B n				Mkr1 690.0 µs 17.97 dBm	Auto Tuni
1 20.0 1000 1000	daaraa ahaana	ninternantina	mantering	ومهدا والمراجع والمحافظ والمح	وجواليا ويلو الكارزوومية موجد	Center Free 5.190000000 GH
pb pb (0)						Start Free 5 190000000 GH
00						Stop Fre 5,19000000 GH
enter 5.190000000 GHz es BW 8 MHz er Mode TRC SCL		V 8.0 MHz	FUNCTION	Sweep 5.0	Span 0 Hz 000 ms (1001 pts) Function value	
1 N 1 t 2 3 4 5	690.0 us	17.97 dBm				Freq Offse 0 H
6 8 9 0						Scale Type
51.					r.	

## 802.11ac VHT 20

Keynight Spactrateri-Analyzer - Skrapt SA				3.2.2
Eenter Freq 5.180000000	PNO: Fast Trig: Free Run	Avg Type: Log-Pwr	04:32:37 PM Aug 11, 2010 TRACE 1 2 4 4 TVPE Weakerstop	Frequency
Ref Offset 13.3 dB	IFGain:Low #Atten: 30 dB	٨	Akr1 1.825 ms 20,41 dBm	Auto Tun
ອງຊູ 2000 ທານສະງະແຫຼ່ງສາກັນແຜ່ນະູເພງໃນເປັນແປນແປນ 1000 1.100	1 hulton 2		ladi, tara-ang kang ng mang na pang ng kang pang	Center Fre 5.180000000 GH
900 900				Start Fre 5 180000000 GP
40.0 30.0 60.0				Stop Fre 5 18000000 GP
Center 5.180000000 GHz Res BW 8 MHz	#VBW 8.0 MHz	Sweep 5.0	Span 0 Hz 00 ms (1001 pts)	CF Ste 8.000000 Mr Auto Mr
1 N 1 t 3 4 5	1.825 ms 20.41 dBm		-	Freq Offs 01
6 7 8 9 10 11				Scale Typ
80		STATUS		

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

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

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



### 802.11ac VHT 40

Consight Spectral Heavy Ser-					
enter Freq 5.190	0000000 GHz PN0: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	D44331 PMAug 11, 2016 THAOE 1 2 3 4 T TYPE WANNER	Frequency
Ref Offse	t 13.3 dB			Mkr1 1.655 ms 17.05 dBm	Auto Tune
	and the work of the	n han di katalan mang mang tang tan ang tan ang tan ang tang ta	dens kaiter in antise and and stopsy lead	anthah unang untuk hanana	Center Fred 5.190000000 GHz
					Start Free 5 190000000 GH
00 00 00					Stop Free 5.190000000 GH
enter 5.19000000 es BW 8 MHz	#VE	3W 8.0 MHz		Span 0 Hz 000 ms (1001 pts)	CF Step 8.000000 MH
MR MODE TRC SCL	× 1.655 ms	17.05 dBm	INCTION   FUNCTION WOTH	FUNCTION VALUE	Freq Offset 0 Hz
6 7 8 9 9 10					Scale Type
			STÁTUS		

## 802.11 ac VHT 80

RL RU RL RU enter Freg 5.2	10000000 GH	IZ NO: Fast ↔ Gain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	04-44111 PM Aug 11, 2010 TRADE 112-3-4-5 TVPE Weakeverse OET Plans Rates	Frequency
dB/div Ref 3	set 13.3 dB 0.00 dBm				Mkr1 825.0 µs 16.05 dBm	Auto Tune
al al Andrewski	a Laboration and an	4.philipathas	nontro-to-to-to-to-to-to-to-to-to-to-to-to-to	เสียรัฐสร้างร่างมีให้เลยาการ และแล้งเร	New March and Antonian	Center Free 5 210000000 GH
						Start Free 5 210000000 GH
						Stop Free 5.210000000 GH
nter 5.210000 s BW 8 MHz		#VBV	V 8.0 MHz		Span 0 Hz .000 ms (1001 pts)	CF Step 8,000000 MH Auto Ma
R MODE TRC. SOL	X. 32	25.0 µs	16.05 dBm	INCTION FUNCTION WOTH	FUNCTION VALUE	Freq Offse 0 H
						Scale Type
a)				STATU		

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

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

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



## 8. 26dB & 6dB & 99% 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.
- 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。

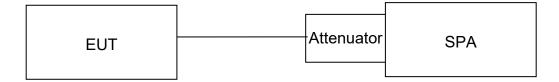
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### **Measurement Equipment Used** 8.3

SGS Conducted Room						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
Power Meter	Anritsu	ML2495A	1005007	12/09/2015	12/08/2016	
Power Sensor	Anritsu	MA2411B	917032	12/09/2015	12/08/2016	
EXA Spectrum						
Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017	
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2016	01/01/2017	
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/02/2016	01/01/2017	
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2016	01/01/2017	
Splitter	Agilent	11636B	N/A	01/02/2016	01/01/2017	
DC Power Supply	Agilent	E3640A	MY52410006	11/05/2015	11/04/2016	
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2016	05/16/2017	

#### Test Set-up 8.4



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

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



#### 8.5 Measurement Result 26dB Bandwidth

802.11a_Main					
Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)			
5180	19.94	12.997			
5220	20.48	13.112			
5240	20.10	13.031			
5260	19.85	12.978			
5300	20.02	13.015			
5320	20.13	13.038			
5500	20.57	13.132			
5580	20.74	13.169			
5700	20.32	13.079			

#### 802.11n\_HT20\_Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	20.25	13.063
5220	20.05	13.022
5240	20.13	13.039
5260	20.34	13.082
5300	20.25	13.065
5320	20.12	13.035
5500	20.42	13.101
5580	20.38	13.092
5700	19.97	13.005

802.11n\_HT20\_Aux1

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	20.23	13.061
5220	20.32	13.080
5240	20.31	13.076
5260	20.18	13.050
5300	19.75	12.955
5320	20.03	13.016
5500	20.41	13.099
5580	20.14	13.040
5700	20.34	13.084

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is anythid and offenders may be prosecuted to the fullest extent of the law 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



#### 802.11n \_HT40\_Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	40.56	16.081
5230	39.46	15.962
5270	41.04	16.132
5310	40.17	16.039
5510	40.52	16.076
5550	40.68	16.094
5670	40.30	16.053

802.11n \_HT40\_Aux1

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	40.19	16.041
5230	40.49	16.073
5270	40.05	16.026
5310	40.57	16.082
5510	40.16	16.038
5550	40.70	16.096
5670	40.30	16.053

802.11ac \_VHT80\_Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	83.82	19.234
5290	80.85	19.077
5530	80.37	19.051
5610	80.66	19.067

802.11ac \_VHT80\_Aux1

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	80.99	19.084
5290	80.83	19.076
5530	80.92	19.080
5610	81.06	19.088

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 路 134 装



#### 6dB Bandwidth (5725 MHz~ 5850 MHz) measure with Peak detector for FCC

8	02	.1	1	а	Ма	in

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.44	12.159
5785	16.40	12.149
5825	16.51	12.178

#### 802.11n\_HT20\_Main

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.63	12.463
5785	17.63	12.463
5825	17.63	12.462

#### 802.11n\_HT20\_Aux1

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)		
5745	17.64	12.464		
5785	17.63	12.461		
5825	17.63	12.462		

#### 802.11n\_HT40\_Main

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)		
5755	36.36	15.606		
5795	36.37	15.607		

802.11n_	_HT40_	_Aux1
----------	--------	-------

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)		
5755	36.35	15.605		
5795	36.33	15.603		

#### 802.11ac \_VHT80\_Main

Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)	F re
5775	75.74	18.793	

#### 802.11ac \_VHT80\_Aux1

В)	Frequency (MHz)	6dB BW (MHz)	10 Log (B) (dB)
	5775	72.63	18.611

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

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

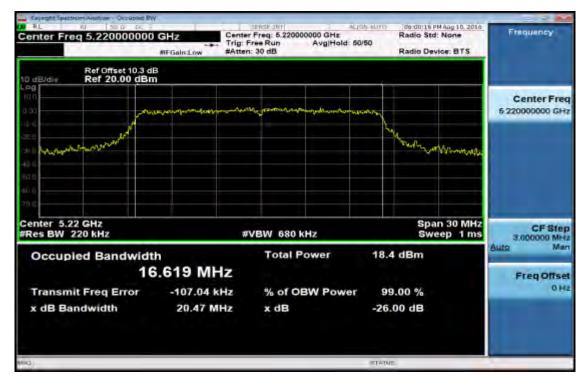
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



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



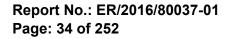
## 26dB Band Width Test Data CH-Mid (5220MHz)



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。

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





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

Revented Spectral Angel Spectral Spectra Spectra Spectral Spectral Spectral Spectra	(	SENSE JUT	ALISN AUTO	00-01-4	1 PM Aug 10, 2010	Frequency
Center Freq 5.240000000 GHz MFGaln Low Center Freq 5.240000000 GHz Trig: Free Run Avg Hold: 50/5 #Atten: 30 dB					Radio Std: None	
Ref Offset 10.3 dl 10 dB/div Ref 20.00 dBn						
10.0 0.30	and the second second	- John Martin	mont			Center Free 5 240000000 GH
and wardown from white			_	Manne	NW MAR	
-40 0 -57 0						
40.0 70.0						
Center 5.24 GHz #Res BW 220 kHz	#	VBW 680 kHz			oan 30 MHz weep 1 ms	CF Step 3.000000 MH
Occupied Bandwidt	Total Power 18.7 dB		.7 dBm		<u>Áuto</u> Man	
Transmit Freq Error x dB Bandwidth	5.637 MHz -115.19 kHz 20.10 MHz	% of OBW Pov x dB		99.00 % 6.00 dB		Freq Offse OH
(Cert			(ETA)	N/S		

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law 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



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

Keyenght Spectrem Analyzer - Occupied By	( · · · · · · · · · · · · · · · · · · ·					
Center Freq 5.26000000	- ing:	Freq: 5.260000000 GHz Free Run AvgiHo n: 30 dB	ALION AUTO	Radio Std: No Radio Device:	one	Frequency
Ref Offset 10.3 di Ref 20.00 dBn						
Log (00 p01	, and the second second second	- Jana and a start and a start and a start a st	harmon			Center Fre 5 26000000 GH
200 2013 may say baken born and a say of the say				mon	more	
51 0 (1 0 7/ 0						
Center 5.26 GHz #Res BW 220 kHz		VBW 680 kHz		Span 3 Sweep	1 ms	CF Ster 3.000000 MH
Occupied Bandwidt	<sub>h</sub> 5.651 MHz	Total Power	18.8	dBm	e e	Freg Offse
Transmit Freq Error x dB Bandwidth	-107.74 kHz 19.85 MHz	% of OBW Pov x dB		.00 % 00 dB		0 H
0			TADA			·

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

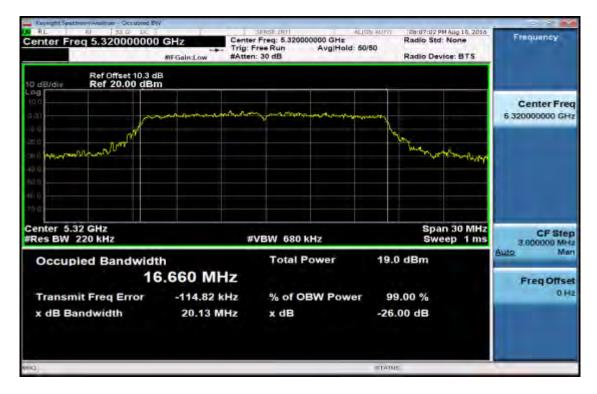


Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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



## 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.

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

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

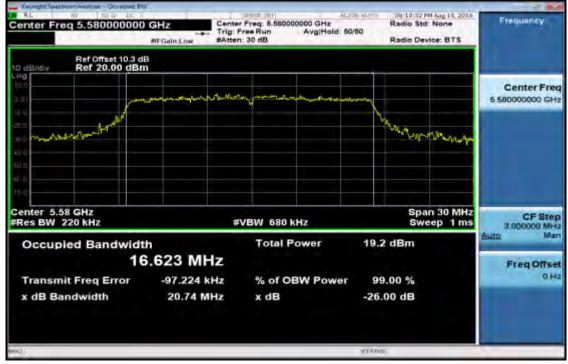


#### 802.11a, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5500MHz)

Center Freq 5.500000000 GHz		Center Freq: 5.5000 Trig: Free Run #Atten: 30 dB	Radio 50	47 PH Aug 10, 2016 Std: None Device: BTS	Frequency	
10 dE/div Ref 20.00 dBn						
100 101	مريقي وروني ور وروني وروني ورون وروني وروني ورون		and the second second	~~~~		Center Free 5 50000000 GH
manner				Mar Carley	Amminia	
40 0. 51 9 61 0						
Center 5.5 GHz		#VBW 6801	447		pan 30 MHz weep 1 ms	CF Step
Occupied Bandwidt	h 5.694 MH	Total F		19.1 dBm	acep 1 ms	3,000000 MH Auto Mar Freq Offse
Transmit Freq Error x dB Bandwidth	-111.78 kH 20.57 MH		BW Power	99.00 % -26.00 dB		0.84

TANS

## 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.

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

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

Member of SGS Group



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

Center Freq 5.700000000	and the strip	ter Freq: 5.7000000 ; Free Run ten: 30 dB		Radio S	7 PH Aug 10, 2016 itd: None Nevice: BTS	Frequency
10 dB/div Ref 20.00 dBm						
Log (00) 0.00 -0.0 -					~~~~	Center Freq 5 70000000 GHz
Center 5.7 GHz #Res BW 220 kHz		#VBW 680 kH	z		oan 30 MHz weep 1 ms	CF Step 3.000000 MHJ Auto Mar
Occupied Bandwidt	.671 MHz	Total Po	wer	19.4 dBm		FreqOffset
Transmit Freq Error x dB Bandwidth	-123.83 kHz 20.32 MHz	% of OBV x dB	W Power	99.00 % -26.00 dB		0 H2
CPR				TATME		

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

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

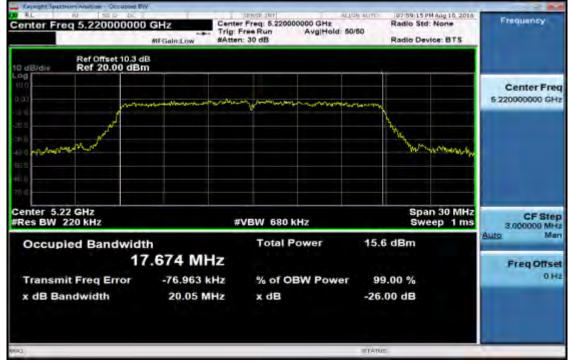
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



#### 802.11n HT20, 5150~5250 MHz (Main) 26dB Band Width Test Data CH-Low (5180 MHz)



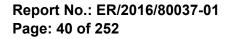
## 26dB Band Width Test Data CH-Mid (5220 MHz)



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.

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

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





# 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.

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

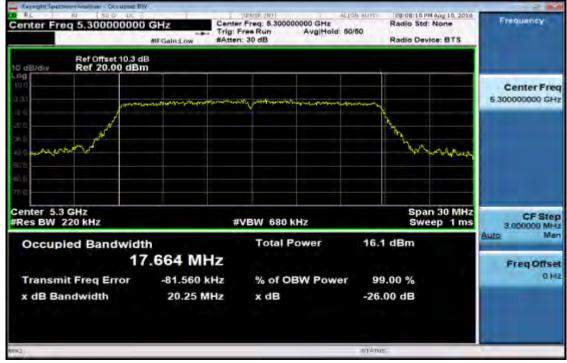
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



#### 802.11n HT20, 5250~5350 MHz (Main) 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.

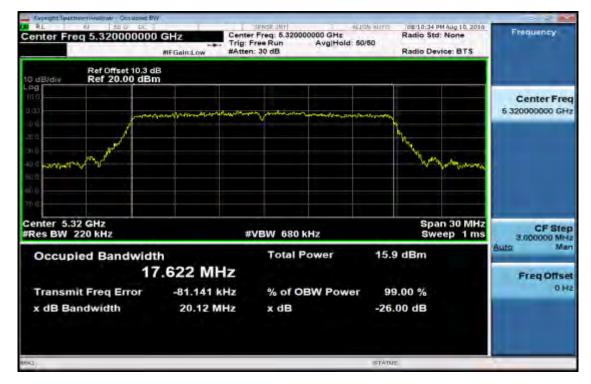
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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 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



# 26dB Band Width Test Data 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.

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

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



#### 802.11n HT20, 5470~5725 MHz (Main) 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。

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 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



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

Center Free	q 5.70000		HZ FGain:Low			AvgiHold	50/50	Radio St	PMAg 10, 2010 d: None evice: BTS	Frequency
10 dB/div	Ref Offset Ref 20.00		_							
100		-	and the second	بالدين المرينة ال	American	-	an and a second	K		Center Free 5,700000000 GH
-2010 -300 -400 -500 -500	mand							No and and	hannan	
Center 5.7 #Res BW 2				#V	BW 6801	(Hz			an 30 MHz /eep 1 ms	CF Step 3.000000 MH
Occupie	ed Band		644 MI	Ηz	Total P	ower	16.	0 dBm		Auto Mar Freq Offse
Transmit x dB Bar	t Freq Err ndwidth	or	-111.70 ) 19.97 N		% of O x dB	BW Powe		9.00 % .00 dB		0.HJ
(AP)							TAN	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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law 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



#### 802.11n HT20, 5150~5250 MHz (Aux1) 26dB Band Width Test Data CH-Low (5180 MHz)



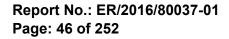
#### 26dB Band Width Test Data CH-Mid (5220 MHz)



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.

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

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





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

Exylengitt Spectratory Analyzer - Occupied By	15 mm				0.2
Center Freq 5.24000000	Trig: F	r Freq: 5.240000000 GHz Free Run AvgiHold 1: 30 dB	Ra 80/50	dio Std: None dio Device: BTS	Frequency
10 dE/div Ref 0ffset 10.3 d			-		
100	way and a surprise	a for a second	the management of the		Center Fre 5 240000000 GH
and an and a second a second and a second an				mamm	
BID					
Center 5.24 GHz /Res BW 220 kHz	#	VBW 680 kHz		Span 30 MHz Sweep 1 ms	CF Ste 3.000000 M
Occupied Bandwidt 17	h 7.638 MHz	Total Power	15.6 df	Bm	Auto M Freq Offs
Transmit Freq Error x dB Bandwidth	-86.442 kHz 20.31 MHz	% of OBW Powers	er 99.00 -26.00		01
(2)			STATUS		·

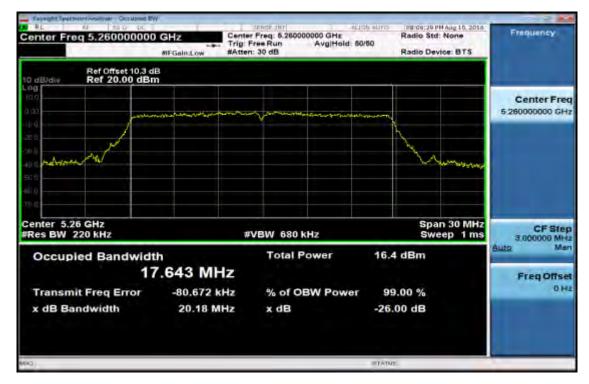
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

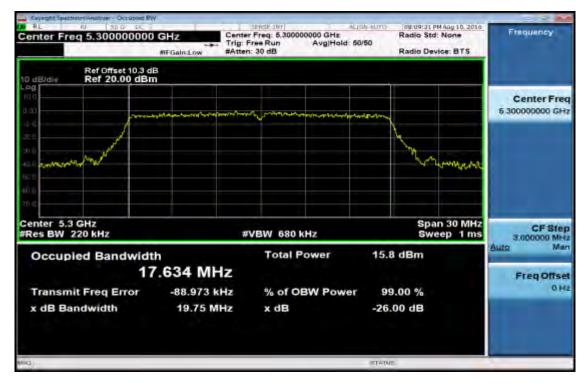
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



#### 802.11n HT20, 5250~5350 MHz (Aux1) 26dB Band Width Test Data CH-Low (5260 MHz)



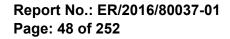
#### 26dB Band Width Test Data CH-Mid (5300 MHz)



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.

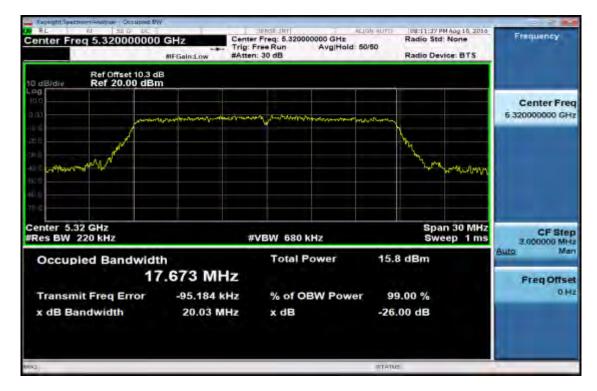
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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





# 26dB Band Width Test Data 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.

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

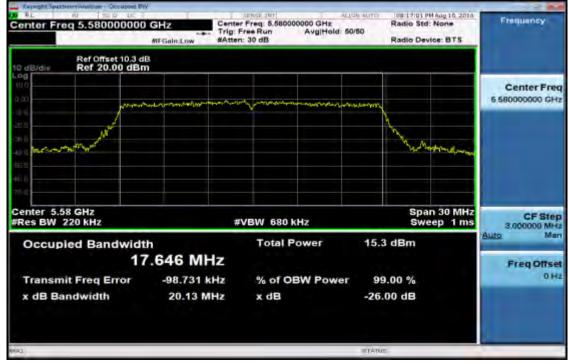
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



#### 802.11n HT20, 5470~5725 MHz (Aux1) 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.

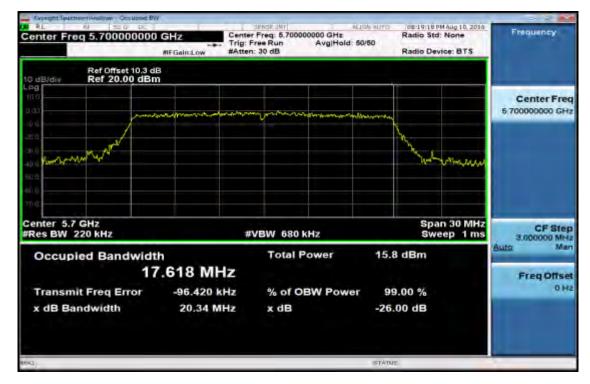
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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

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



# 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.

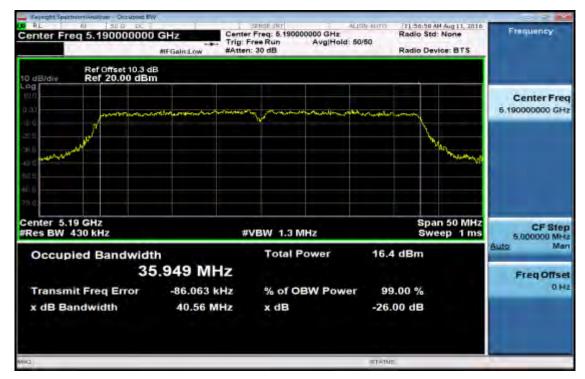
Content wase stated the results shown in this test report relief only to the sample(s) tested and such sample(s) are retained to 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of

Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd.

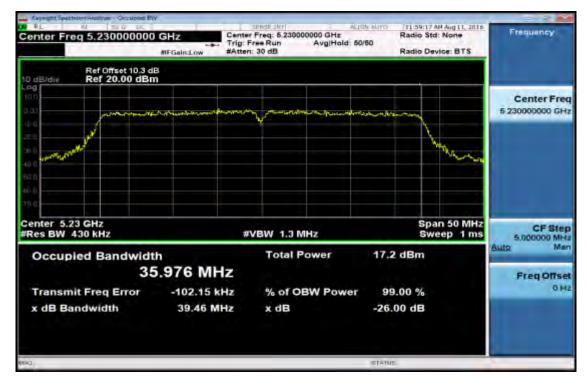
No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



# 802.11n HT40, 5150~5250 MHz (Main) 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。

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



#### 802.11n HT40, 5250~5350 MHz (Main) 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。

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 parameters. This 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



#### 802.11n HT40, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5510 MHz)



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



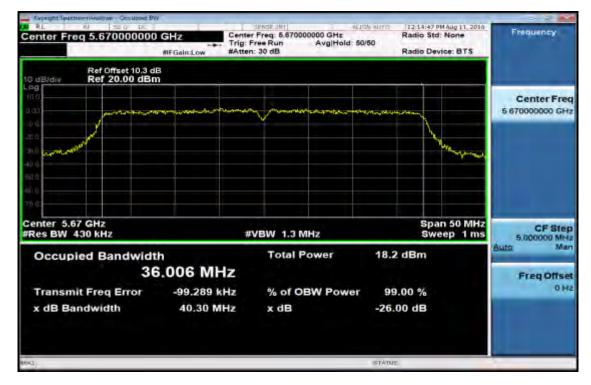
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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。

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



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

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

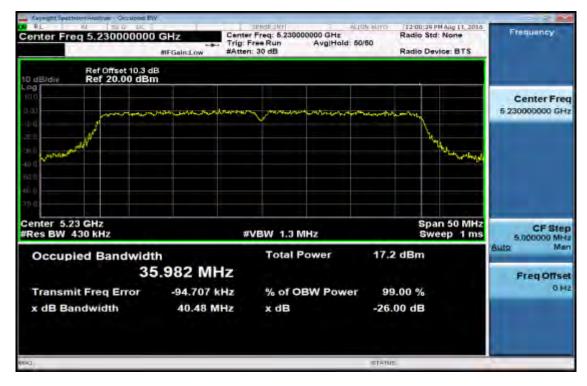
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



# 802.11n HT40, 5150~5250 MHz (Aux1) 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。

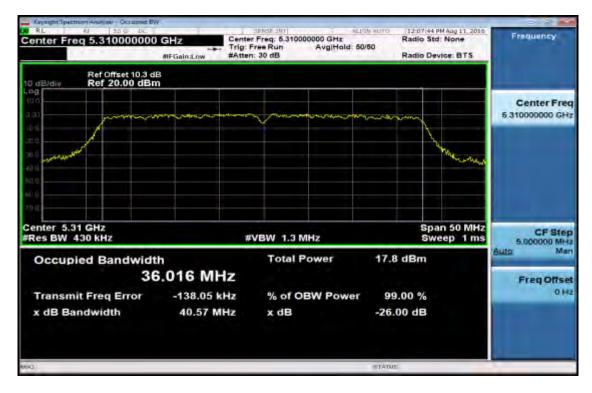
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### 802.11n HT40, 5250~5350 MHz (Aux1) 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。

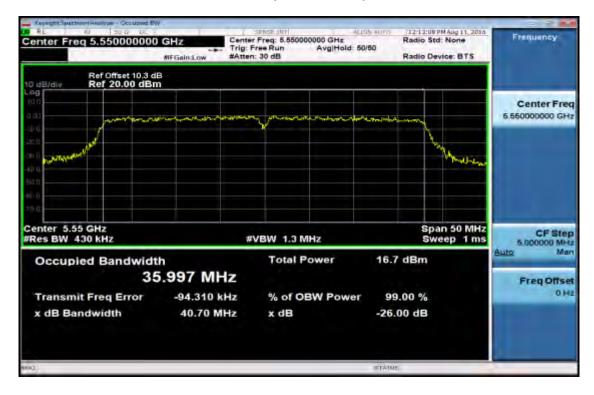
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### 802.11n HT40, 5470~5725 MHz (Aux1) 26dB Band Width Test Data CH-Low (5510 MHz)



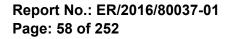
#### 26dB Band Width Test Data CH-Mid (5550 MHz)



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.

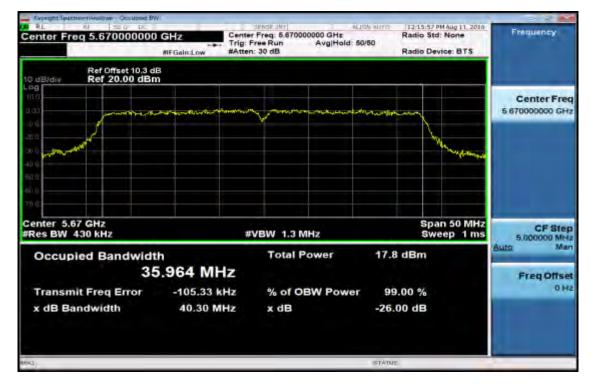
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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





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



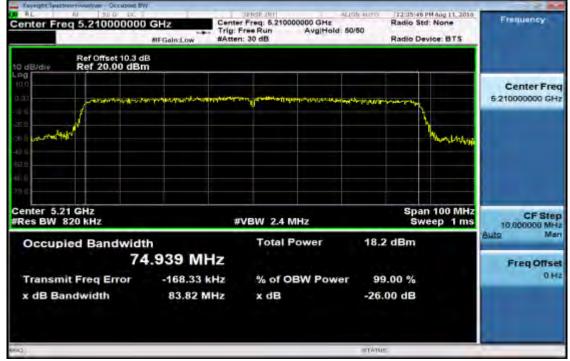
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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

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



#### 802.11ac VHT80, 5150~5250 MHz (Main) 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 <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 parance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



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



#### 802.11ac VHT80, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-High (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。

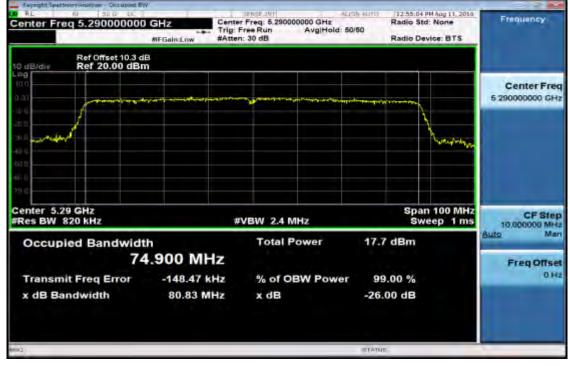
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### 802.11ac VHT80, 5150~5250 MHz (Aux1) 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。

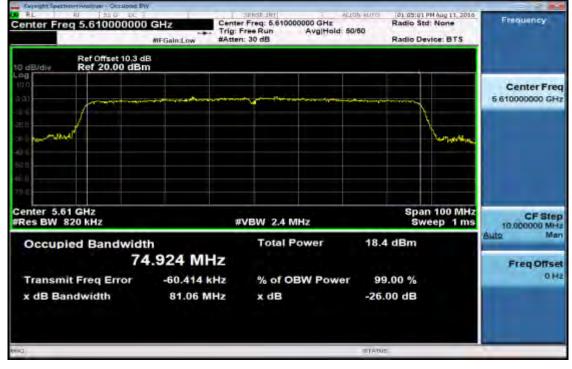
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### 802.11ac VHT80, 5470~5725 MHz (Aux1) 26dB Band Width Test Data CH-Low (5530 MHz)



#### 802.11ac VHT80, 5470~5725 MHz (Aux1) 26dB Band Width Test Data CH-High (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。

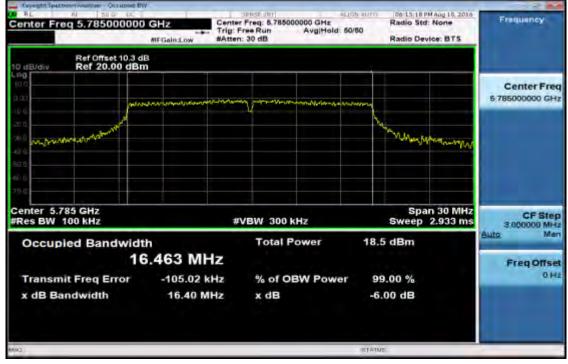
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



#### 6dB Band Width measure with Peak detector for FCC 802.11a, 5725~5850 MHz (Main) 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。

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 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.



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

Keynght Spectrom Analyzer - Occupied B	W	SINSE JUT	ALION AUTO 100	16:37 PM Aug 10 2016	
Center Freq 5.82500000	Trig:	er Freq: 5.825000000 GHz	Ra4	dio Std: None dio Device: BTS	Frequency
10 dE/div Ref Offset 10.3 d Ref 20.00 dBi					
10.0		un Van an a	annad part	Marcharrow	Center Free 5 825000000 GH
Center 5.825 GHz				Span 30 MHz	CF Step
#Res BW 100 kHz Occupied Bandwid 11		≇VBW 300 kHz Total Power	19.0 dE	7eep 2.933 ms 3m	3,00000 MH Auto Ma
Transmit Freq Error x dB Bandwidth	-108.63 kHz 16.51 MHz	% of OBW Pow x dB	er 99.00 -6.00		OH
Carry			STATUS		, ·

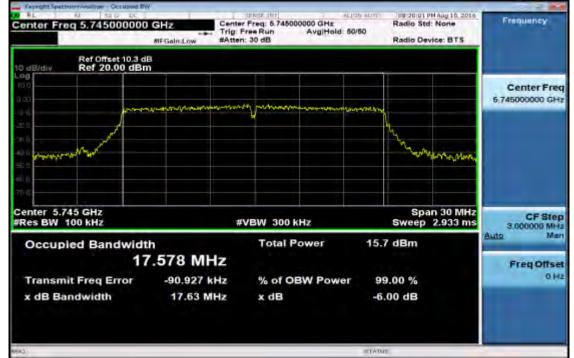
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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

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



### 802.11n\_HT20, 5725~5850 MHz (Main) 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。

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

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



# 6dB Band Width Test Data 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.

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

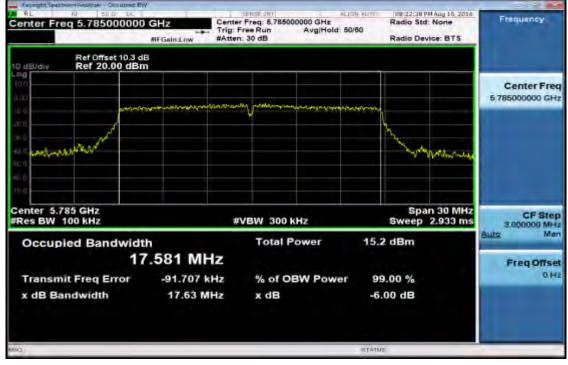
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



#### 802.11n\_HT20, 5725~5850 MHz (Aux1) 6dB Band Width Test Data CH-Low (5745 MHz)



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



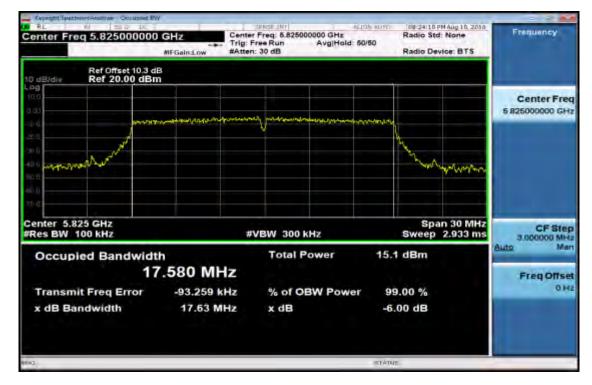
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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。

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.



# 6dB Band Width Test Data 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.

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

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

### 802.11n\_HT40, 5725~5850 MHz (Main) 6dB Band Width Test Data CH-Low (5755 MHz)



## 6dB Band Width Test Data CH-Mid (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。

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 parance 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

Member of SGS Group



## 802.11n\_HT40, 5725~5850 MHz (Aux1) 6dB Band Width Test Data CH-Low (5755 MHz)



## 6dB Band Width Test Data CH-Mid (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。

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

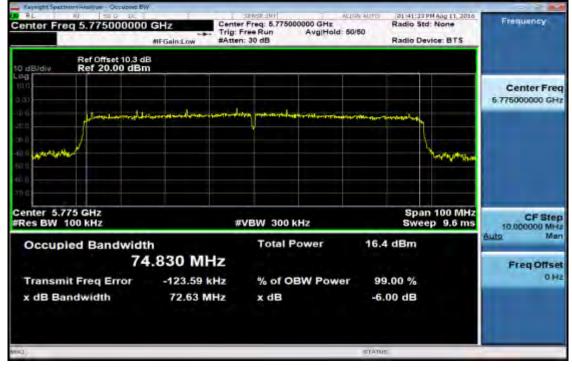
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



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



#### 802.11ac VHT80, 5725~5850 MHz (Aux1) 6dB Band Width Test Data CH-Low (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 <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 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.



#### MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT 9.

#### 9.1 **Standard Applicable**

OPERATION Band		EUT CATEGORY	LIMIT		
U-NII-1		Access Point (Mater device )	1 Watt(30dBm)		
		Fixed point-to-point Acess Ponit	1 Watt(30dBm)		
		clinet device	250mW(23.98dBm)		
U-NII-2A	$\checkmark$		250mW(23.98dBm) or 11dBm+10 log B		
U-NII-2C	$\checkmark$		250mW(23.98dBm) or 11dBm+10 log B		
U-NII-3	$\checkmark$		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.

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



Note: 5.15-5.25G Antenna1 Gain: 2.78 dBi Antenna2 Gain: 3.01 dBi Number Antenna: 2 pcs Limit: 23.98 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 6.02 dBi Limit: 23.98dBm – (6.02– 6dBi)=23.96 Note: 5.25-5.35G Antenna1 Gain: 2.78 dBi Antenna2 Gain: 3.01 dBi Number Antenna: 2 pcs Limit: 23.98 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 6.02 dBi Limit: 23.98dBm – (6.02– 6dBi)=23.96

Note: 5.47-5.725G Antenna1 Gain: 1.89 dBi 4.11 dBi Antenna2 Gain: Number Antenna: 2 pcs Limit: 23.98 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 7.12 dBi Limit: 23.968dBm - (7.12-6dBi)=22.86

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

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



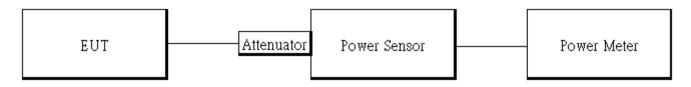
#### 9.2 Measurement Procedure

- 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.
- 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.

	SGS	6 Conducted	Room		
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2495A	1005007	12/09/2015	12/08/2016
Power Sensor	Anritsu	MA2411B	917032	12/09/2015	12/08/2016
EXA Spectrum					
Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2016	01/01/2017
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/02/2016	01/01/2017
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2016	01/01/2017
Splitter	Agilent	11636B	N/A	01/02/2016	01/01/2017
DC Power Supply	Agilent	E3640A	MY52410006	11/05/2015	11/04/2016
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2016	05/16/2017

#### 9.3 Measurement Equipment Used

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



#### 9.5 Measurement Result

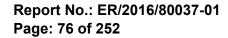
#### Conducted output power

#### 802.11a\_Main

сн	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
36	5180	MCS0	14.44	27.797		23.98		PASS
44	5220	MCS0	14.37	27.353		23.98		PASS
48	5240	MCS0	14.24	26.546		23.98		PASS
52	5260	MCS0	14.16	26.062	23.98	or 11+10log(B) =	23.98	PASS
60	5300	MCS0	14.44	27.797	23.98	or 11+10log(B) =	24.02	PASS
64	5320	MCS0	14.47	27.990	23.98	or 11+10log(B) =	24.04	PASS
100	5500	MCS0	14.49	28.119	23.98	or 11+10log(B) =	24.13	PASS
116	5580	MCS0	14.49	28.119	23.98	or 11+10log(B) =	24.17	PASS
140	5700	MCS0	14.46	27.925	23.98	or 11+10log(B) =	24.08	PASS
149	5745	MCS0	14.49	28.119		30		PASS
157	5785	MCS0	14.48	28.054		30		PASS
165	5825	MCS0	14.22	26.424		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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.





#### 802.11n\_HT20\_MIMO

сн	Frequency (MHz)	Data Rate		RAGE R (dBm)	TOTAL POWER	TOTAL POWER	-		RESULT	
	(	Tuto	CH 0	CH 1	(dBm)	(mW)				
36	5180	MCS8	11.72	11.21	14.48	28.072		23.96		PASS
44	5220	MCS8	11.69	11.11	14.42	27.669		23.96		PASS
48	5240	MCS8	11.65	11.07	14.38	27.416		23.96		PASS
52	5260	MCS8	11.68	11.27	14.49	28.120	23.96	or 11+10log(B)	24.05	PASS
60	5300	MCS8	11.67	11.24	14.47	27.994	23.96	or 11+10log(B)	23.96	PASS
64	5320	MCS8	11.66	11.3	14.49	28.145	23.96	or 11+10log(B)	24.02	PASS
100	5500	MCS8	11.68	11.11	14.41	27.635	22.86	or 11+10log(B)	24.10	PASS
116	5580	MCS8	11.76	11.11	14.46	27.909	22.86	or 11+10log(B)	24.04	PASS
140	5700	MCS8	11.88	10.74	14.36	27.275	22.86	or 11+10log(B)	24.00	PASS
149	5745	MCS8	11.98	10.67	14.38	27.444		30		PASS
157	5785	MCS8	11.84	11.02	14.46	27.923		30		PASS
165	5825	MCS8	11.73	10.57	14.20	26.296		30		PASS

#### 802.11n\_HT40\_MIMO

СН	Frequency (MHz)	-	AVERAGE POWER (dBm)		TOTAL POWER	TOTAL POWER		REQUIRED LIMIT		RESULT
	(1911 12)	Nale	CH 0	CH 1	(dBm)	(mW)	(dBm)			
38	5190	MCS8	11.46	11.33	14.41	27.579		23.96		PASS
46	5230	MCS8	11.89	10.87	14.42	27.671		23.96		PASS
54	5270	MCS8	11.68	11.28	14.49	28.151	23.96	or 11+10log(B)	27.03	PASS
62	5310	MCS8	11.61	11.22	14.43	27.731	23.96	or 11+10log(B)	27.04	PASS
102	5510	MCS8	11.81	11.12	14.49	28.112	22.86	or 11+10log(B)	27.04	PASS
110	5550	MCS8	11.72	11.11	14.44	27.772	22.86	or 11+10log(B)	27.09	PASS
134	5670	MCS8	11.79	11.14	14.49	28.102	22.86	or 11+10log(B)	27.05	PASS
151	5755	MCS8	11.73	11.13	14.45	27.865		30		PASS
159	5795	MCS8	11.77	10.75	14.30	26.916		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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### 802.11ac\_VHT20\_MIMO

СН	Frequency (MHz)		AVERAGE POWER (dBm)		TOTAL POWER	TOTAL POWER		REQUIRED LIMIT		RESULT
	(IVITZ)	Rate	CH 0	CH 1	(dBm)	(mW)	(dBm)			
36	5180	MCS8	11.79	10.67	14.28	26.769		23.96		PASS
44	5220	MCS8	11.74	11.03	14.41	27.604		23.96		PASS
48	5240	MCS8	11.41	10.89	14.17	26.110		23.96		PASS
52	5260	MCS8	11.42	10.88	14.17	26.114	23.96	or 11+10log(B)	24.05	PASS
60	5300	MCS8	11.65	10.84	14.27	26.756	23.96	or 11+10log(B)	23.96	PASS
64	5320	MCS8	11.79	10.98	14.41	27.632	23.96	or 11+10log(B)	24.02	PASS
100	5500	MCS8	11.74	11.01	14.40	27.546	22.86	or 11+10log(B)	24.10	PASS
116	5580	MCS8	11.48	10.8	14.16	26.083	22.86	or 11+10log(B)	24.04	PASS
140	5700	MCS8	11.65	10.69	14.21	26.344	22.86	or 11+10log(B)	24.00	PASS
149	5745	MCS8	11.89	10.67	14.33	27.121		30		PASS
157	5785	MCS8	11.57	10.36	14.02	25.219		30		PASS
165	5825	MCS8	11.6	10.28	14.00	25.120		30		PASS

#### 802.11ac\_VHT40\_MIMO

СН	Frequency	Data	AVEF POWEF	RAGE R (dBm)	TOTAL POWER	TOTAL POWER	REQUIRED LIMIT (dBm)		RESULT	
	(MHz)	Rate	CH 0	CH 1	(dBm)	(mW)				
38	5190	MCS8	11.49	11.1	14.31	26.975		23.96		PASS
46	5230	MCS8	11.65	11.12	14.40	27.564		23.96		PASS
54	5270	MCS8	11.55	10.99	14.29	26.849	23.96	or 11+10log(B)	27.03	PASS
62	5310	MCS8	11.46	10.9	14.20	26.299	23.96	or 11+10log(B)	27.04	PASS
102	5510	MCS8	11.75	10.9	14.36	27.265	22.86	or 11+10log(B)	27.04	PASS
110	5550	MCS8	11.38	10.65	14.04	25.355	22.86	or 11+10log(B)	27.09	PASS
134	5670	MCS8	12.05	10.65	14.42	27.647	22.86	or 11+10log(B)	27.05	PASS
151	5755	MCS8	11.44	10.5	14.01	25.152		30		PASS
159	5795	MCS8	11.57	10.58	14.11	25.784		30		PASS

#### 802.11ac\_VHT80\_MIMO

СН	Frequency (MHz)	Data Rate	AVEF POWEF	-	TOTAL POWER	TOTAL POWER	REQUIRED LIMIT		RESULT	
	(191112)	Nate	CH 0	CH 1	(dBm)	(mW)	(dBm)			
42	5210	MCS8	11.1	11.3	14.21	26.372		23.96		PASS
58	5290	MCS8	11.28	11.18	14.24	26.550	23.96	or 11+10log(B)	30.08	PASS
106	5530	MCS8	11.75	10.27	14.08	25.604	22.86	or 11+10log(B)	30.05	PASS
122	5610	MCS8	11.11	11.23	14.18	26.186	22.86	or 11+10log(B)	30.07	PASS
155	5775	MCS8	11.26	10.89	14.09	25.640		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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No.: ER/2016/80037-01 Page: 78 of 252

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

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



#### **10. PEAK POWER SPECTRAL DENSITY**

#### **10.1 Standard Applicable**

#### FCC

OPERATION Band		EUT CATEGORY	LIMIT		
U-NII-1		Access Point (Mater device )	17dBm/ MHz		
	Fixed point-to-point Acess Ponit				
		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.

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

Unless otherwise stated the results shown in finis test report refer only to the sample(s) tested and such sample(s) are retained for 50 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



Note: 5.15-5.25G

Antenna1 Gain: 2.78 dBi 3.01 dBi Antenna2 Gain: Number Antenna: 2 pcs Limit: 11 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 6.02 dBi Limit: 11dBm – (6.02– 6dBi)=10.98 Note: 5.25-5.35G Antenna1 Gain: 2.78 dBi Antenna2 Gain: 3.01 dBi Number Antenna: 2 pcs Limit: 11 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 6.02 dBi Limit: 11dBm – (6.02– 6dBi)=10.98 Note: 5.47-5.725G 1.89 dBi Antenna1 Gain: 4.11 dBi Antenna2 Gain: Number Antenna: 2 pcs Limit: 11 dBm The antenna gain is grater than 6dBi in MIMO mode the limit reduce as below: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain (dBi) = 7.12 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

Limit: 118dBm - (7.12-6dBi)=9.88

で解す另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms and Conditions for Electronic Documents at www.sgs.com/terms and conditions of an and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of</u> Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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



#### **10.2 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.
- 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.

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)

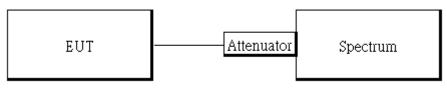
- 5. User the cursor on spectrum to peak search the highest level of trace
- 6. Record the max. reading and add 10 log(1/duty cycle).
- 7. Repeat above procedures until all default test channel (low, middle, and high) was complete.

Note: For the test of PSD at MIMO mode, the highest emission of worst case employing Measure and add 10 log (N) technical is reported on this report after the comparison between Main Antenna at single transmitting mode and Aux that yields the higher value. The MIMO transmitting mode produces higher value of outcome

measurement Equipment Osed										
SGS Conducted Room										
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due					
EXA Spectrum										
Analyzer	Agilent	N9030A	MY53120760	02/26/2016	02/25/2017					
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2016	01/01/2017					
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2016	01/01/2017					

#### **10.3 Measurement Equipment Used**

#### 10.4 Test Set-up



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

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

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



#### **10.5 Measurement Result**

POWER DENSITY 802.11a MODE								
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (d B)					
5180	2.87	11	-8.13					
5220	2.38	11	-8.62					
5240	2.75	11	-8.25					
5260	2.68	11	-8.32					
5300	1.92	11	-9.08					
5320	1.89	11	-9.11					
5500	2.37	11	-8.63					
5580	1.97	11	-9.03					
5700	2.51	11	-8.49					
5745	6.96	30	-23.04					
5785	7.27	30	-22.73					
5825	7.07	30	-22.93					

POWER DE	POWER DENSITY 802.11n HT20 MODE									
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)							
5180	1.84	10.98	-9.14							
5220	2.08	10.98	-8.90							
5240	1.87	10.98	-9.11							
5260	2.81	10.98	-8.17							
5300	1.87	10.98	-9.11							
5320	1.87	10.98	-9.11							
5500	1.57	9.88	-8.31							
5580	1.32	9.88	-8.56							
5700	2.66	9.88	-7.22							
5745	6.44	30	-23.56							
5785	6.11	30	-23.89							
5825	6.10	30	-23.90							

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

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



POWER DENSITY 802.11n HT40 MODE								
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (d B)					
5190	-2.21	10.98	-13.19					
5230	-0.88	10.98	-11.86					
5270	-1.46	10.98	-12.44					
5310	-1.25	10.98	-12.23					
5510	-0.92	9.88	-10.80					
5550	-1.02	9.88	-10.90					
5670	-0.43	9.88	-10.31					
5755	4.47	30	-25.53					
5795	3.54	30	-26.46					

POWER DENSITY 802.11ac VHT80 MODE									
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (d B)						
5210	-3.76	10.98	-14.74						
5290	-3.53	10.98	-14.51						
5530	-4.69	9.88	-14.57						
5610	-3.49	9.88	-13.37						
5775	1.59	30	-28.41						

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

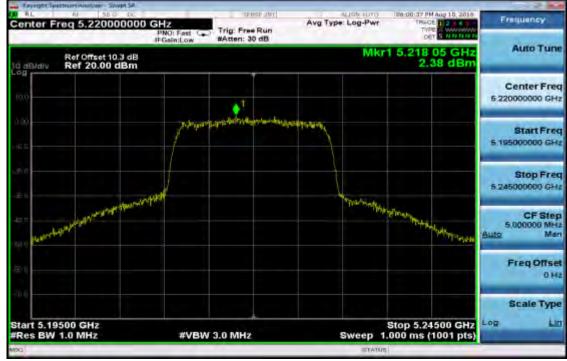
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



#### 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)



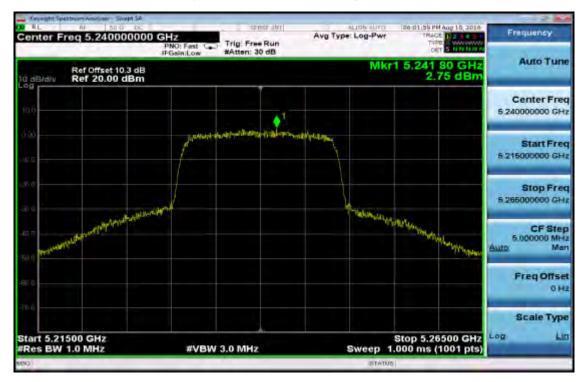
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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.

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



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



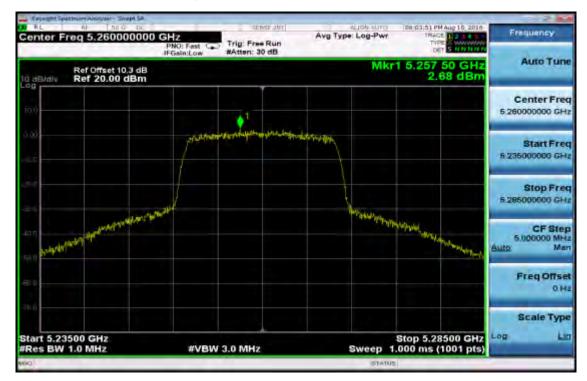
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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

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



## 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 <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 careful and obligations under the pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



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

P.I Center Freq 5.320000000 GHz Frequency Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB PNO: Fast C Auto Tune Mkr1 5.322 50 GHz Ref Offset 10.3 dB Ref 20.00 dBm 1.89 dBm **Center Freq** 5 320000000 GHz •1 challing. Start Freq 5 295000000 GH Stop Freq 5 34500000 GH white many walls orthonal a CF Step 5.000000 MH Auto MW man Freq Offset 0 Hz Scale Type Start 5.29500 GHz #Res BW 1.0 MHz Stop 5.34500 GHz Sweep 1.000 ms (1001 pts) Log Lin #VBW 3.0 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.

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

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



## 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 <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document, 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 satisfied at information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



## Peak Power Spectral Density Data Plot (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.

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

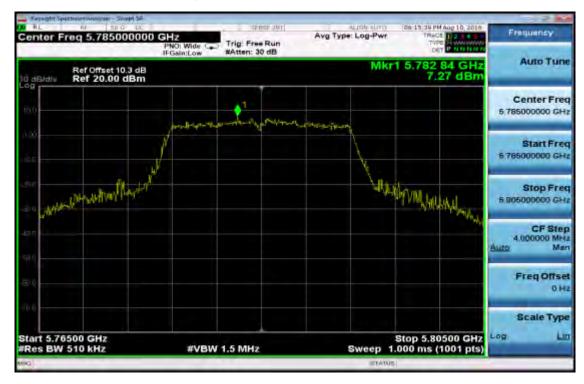
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



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



#### Peak Power Spectral Density Data Plot (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.

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

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



# 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.

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

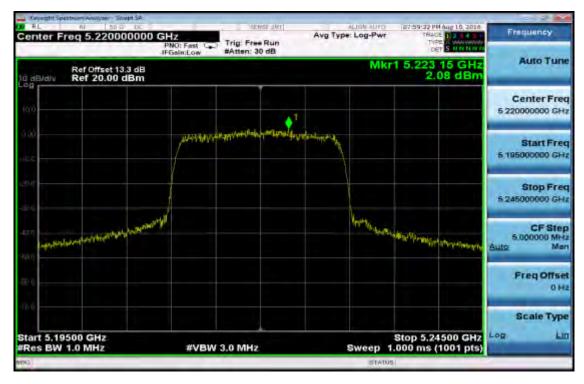
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



# 802.11n HT20, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5180 MHz)

Frequency Auto Tun	THE DET S NOT NOT	Log-Pwr	Avg Type			Z VO: Fest G	0000 GH	aq 5.18000	RL enter Fr
	5.181 20 GHz 1.84 dBm	Mkr					dB	Ref Offset 13 Ref 20.00 d	dB/d/v
Center Fre 5.180000000 GH				.1					10
Start Fre 5 15500000 GH			Maprillora L	Hantson And MIL	Heropy Advin	-			00 1 G
Stop Fre 5 20500000 GH									0
CF Ste 5.000000 MH Auto Ma	millionaliseervesterate	Seal and and					كماية يستعمل	upititienal or film	TT Preprinted
Freq Offse 0 H									0
Scale Typ	Stop 5.20500 GHz							00 GHz	art 5.15
No.	000 ms (1001 pts)				3.0 MHz	#VBW			tes BW

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



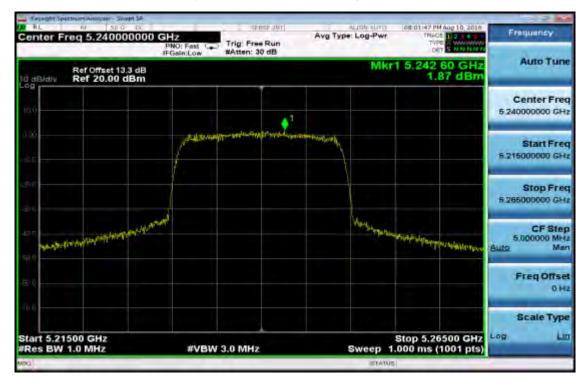
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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。

はオナジオ 地のビーシャルでもあったま オペルペー体のサスト 「可可比体の可能可能 サンス こ チャル すうたえ キング うき 脚 可 ゴ ・ ケンザ に 力 え え This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



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



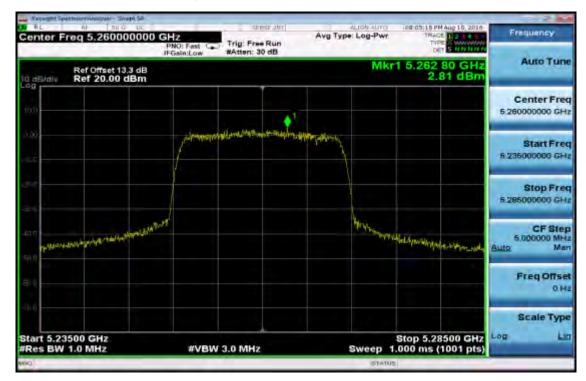
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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

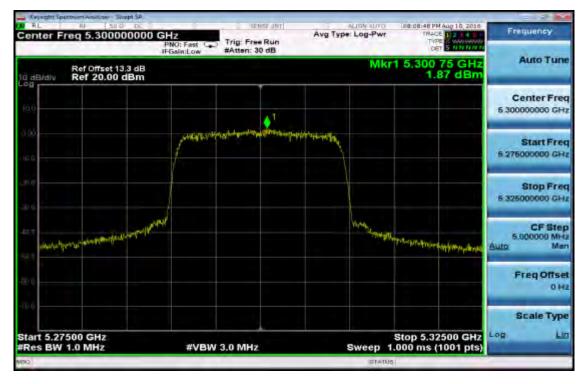
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



## 802.11n HT20, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260MHz)



# 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 <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 careful and obligations under the pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



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

Keynight Spectrum Anunyser - Shupt SA R.L. NJ 50 G DC		SPIRE AWT		ALTON AUTO	08:10:52 PM Aug 10, 2010	1012
Center Freq 5.32000000 G	NO: East ( )	Trig: Free Run	Avg Typ	: Log-Pwr	TRACE 1 2 14 16 TYPE A MANAGEMENT DET 5 NN NACH	Frequency
Ref Offset 13.3 dB	Galinicow	ALCORE OF OR		Mkr	1 5.318 60 GHz 1.87 dBm	Auto Tun
10.0		•1				Center Fre 5.320000000 GH
0.00 .00	A COMPANY AND AND	autilities and the state	ant-sharkten			Start Fre 6 29500000 GH
30						Stop Fre 5.345000000 GH
ann n madelyfeliphineliperature and and and and and and and and a second and a second and a second and a second and a				phal phants	ngagh, ang biling district - na signer, grade	CF Ste 5.000000 MP Auto Mo
8) 0						Freq Offs 01
Start 5.29500 GHz	#VBW 3				Stop 5.34500 GHz	Scale Typ
Res BW 1.0 MHz	#ABAA 2	o whz		Sweep	.000 ms (1001 pts)	

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

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

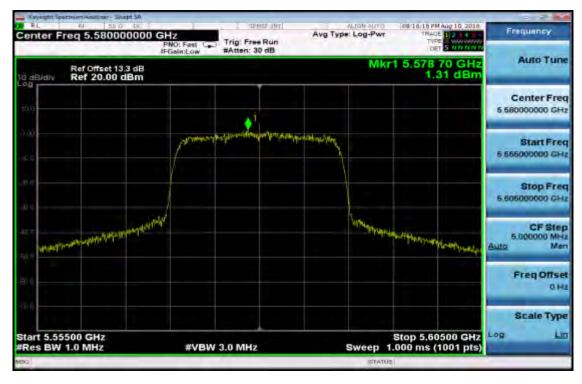
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



## 802.11n HT20, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5500 MHz)

Kesselft Spectrum Analyzer - 3/4 pt 54 RL Al 50 C CC Center Freq 5.500000000 C	PNO: Fast Car	Trig: Free Run #Atten: 30 dB		Log-Pwr	108-13:03 PM Aug 10, 2016 TRACE 12:14 TYPE 1 VANNON OET 5 N M N M	Frequency
Ref Offset 13.3 dB				Mkr	1 5.502 30 GH 1.57 dBm	Auto Tuni
iā.0						Center Fre 5 500000000 GH
) 00) 	Andrews	polition and and a second second	animinity			Start Fre 5.475000000 GH
9.0 9.0						Stop Fre 5.525000000 GH
and and a second provide and the second s	-			A Development	ng international	CF Ste 5,000000 MH Auto Ma
90.0						Freq Offse 0 H
m.0						Scale Type
Start 5.47500 GHz #Res BW 1.0 MHz	#VBW :	3.0 MHz			Stop 5.52500 GH2 .000 ms (1001 pts	

# Peak Power Spectral Density Data Plot (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。

はキナジオ 地のマレビシャス じま オペルペン (本の中央) キー (1) 可能に体の) 医研 (1) かい (1) かい



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

SHz	Avg Type: L	og-Pwr TRACE TEL	Frequency
		Mkr1 5.698 50 G 2.66 d	HZ Auto Tun
1			Center Fre 5 700000000 GH
1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1	manustransperson		Start Fre 5 675000000 GH
			Stop Fre 5.725000000 GH
	M	ward a grade part of the same	CF Ste 5.00000 Mit Auto Mit
			Freq Offse
#VBW 3.0 MHz		Stop 5.72500 ( veep 1.000 ms (1001	
	SHZ PNO: Fest C Trig: Fre #Atten: 3	Avg Type: L PND: Fest Trig: Free Run #Atten: 30 dB	SHZ       PNO: Feast Trig: Free Run #Atten: 30 dB       Avg Type: Log-Pwr       Trig: Free Run Type: Log Pwr         IFGain: Low       #Atten: 30 dB       Mikr1 5.698 50 G         2.66 dl       Image: State Stat

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

Unless otherwise stated the results shown in this test report reter only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law 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



# 802.11n HT20, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Low 5745 MHz)



#### Peak Power Spectral Density Data Plot (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。

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

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

Member of SGS Group



# 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.

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

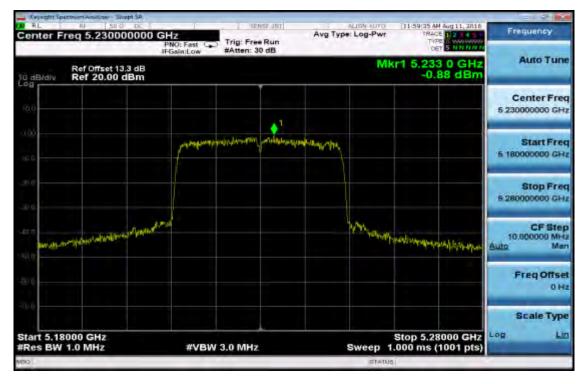
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號



## 802.11n HT40, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5190 MHz)

Keyeight Spectrum Anusyter - Skept SA		and the second second			1			
enter Freq 5.190000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr		Frequency			
Bef Offset 13.3 dB Mkr1 5.185 8 GHz dB/div Ref 20.00 dBm -2.21 dBm								
10 10					Center Fre 5.190000000 GH			
00 . a	magration	station is the station	many		Start Fre 5 140000000 GF			
a					Stop Fre 5 240000000 GH			
hollopulson and applying and	and		Prvi Bran	the anophistic age in the start of	CF Ste 10.000000 Mi Auto Mi			
0					Freq Offs 01			
art 5.14000 GHz				Stop 5.24000 GHz				
tes BW 1.0 MHz	#VBW	3.0 MHz	Sweep	1.000 ms (1001 pts)				

# 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。

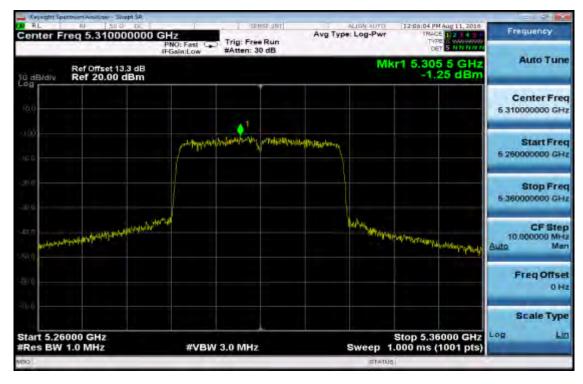
Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval 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



### 802.11n HT40, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5270 MHz)

	12:03:00 PM Aug 11, 2016	ALIGN BUTG		SENSE UNT		P DC	RI 50 C	RL RL
Frequency Auto Tun	TYPE & WARNEN	e: Log-Pwr	Avg Typ	g: Free Run Iten: 30 dB	C: East C. T	PN	req 5.2700	Center F
	r1 5.270 8 GHz -1.46 dBm	M					Ref Offset 13 Ref 20.00	i dB/div
Center Fre 5 270000000 GH								10,0
Start Fre 5 220000000 GH			malana	denting Makemany	anistantin			) (0) (0.0
Stop Fre 5 320000000 GH								30.0
CF Ste 10,000000 MH Auto Me	of www. false we want false and the	have when he				aparta attal	Anine and the providence	£11 ff sairteff
Freq Offse 0 F								E0 0.
Scale Typ	OLOD 9:05:000 OLIS						000 GHz	
Access of the second	.000 ms (1001 pts)	Sweep 1		MHz	#VBW 3.0		1.0 MHz	Res BW

# 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。

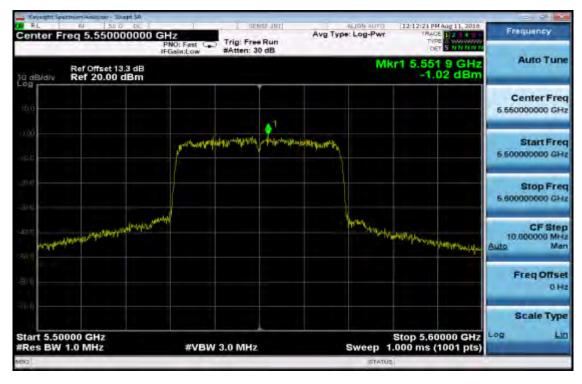
Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval 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



## 802.11n HT40, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5510 MHz)

RL	eq 5.51000	0000 GH	Z O: Fast Ca			Avg Typ	e: Log-Pwr	TRAD	4 Aug 11, 2010 E 1 2 3 4 5 F 5 N 1 1 1 1 1	Frequency
	Ref Offset 13. Ref 20.00 d						Mk	r1 5.50 -0.1	7 0 GHz 92 dBm	Auto Tuni
10,0										Center Fre 5 510000000 GH
0.00 16.6			1000 ANTA	Introl I by the second	and the second second	marian				Start Free 5 460000000 GH
										Stop Fre 5 56000000 GH
40.00	and the stand of the	apatheatenment					wine the second	Protospicological	What is advert	CF Ste 10.000000 MH Auto Ma
-E0 ()										Freq Offse 0 H
30.0										Scale Type
Start 5.460 #Res BW			#VBW	3.0 MHz			Sweep 1	.000 ms (	5000 GHz 1001 pts)	Log Lu

# 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。

Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law



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

Frequency	12:15:05 PM Aug 11, 2016 TRACE 1 2 4 1916	Avg Type: Log-Pw	anea ant		Iz	OF DE 1	10 50 10 50 reg 5.6700	RL
Auto Tun	PND: Fest Trig: Free Run IFGein:Low #Atten: 30 dB Offset 13.3 dB Ref Offset 13.3 dB Bidly Ref 20.00 dBm -0.43 dBm							
Center Fre 5 670000000 GH								<b>6</b> g
Start Fre 5 620000000 GH		herbywste	r	antipote last	1			000 010
Stop Fre 5.720000000 GH								9 (°
CF Ste 10.000000 Mi Auto Mi	You day any for the second and the second	Whenway			¥	pour sound	Route Presentes	tan san
Freq Offs 01								E) ()
Scale Typ	Stop 5.72000 GHz						000 GHz	
	1.000 ms (1001 pts)	Sweep	z	3.0 MHz	#VBW		1.0 MHz	Res BW

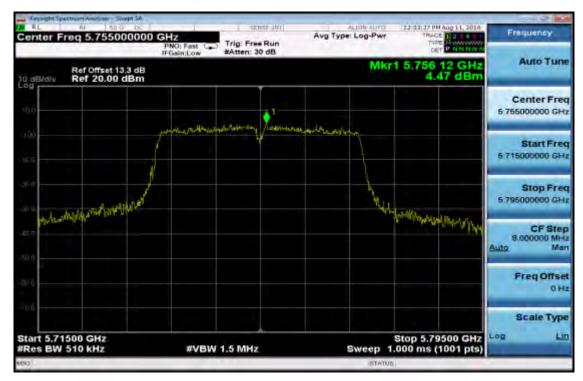
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report reter only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

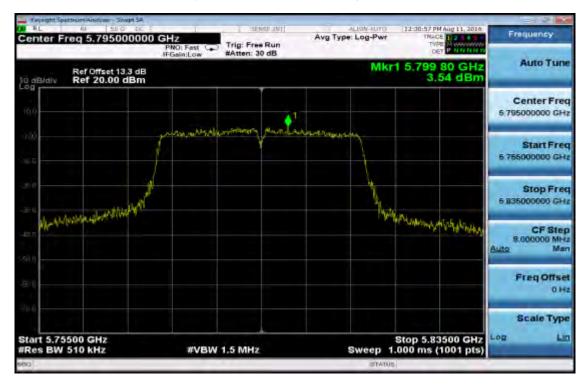
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



## 802.11n HT40, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Low 5755 MHz)



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



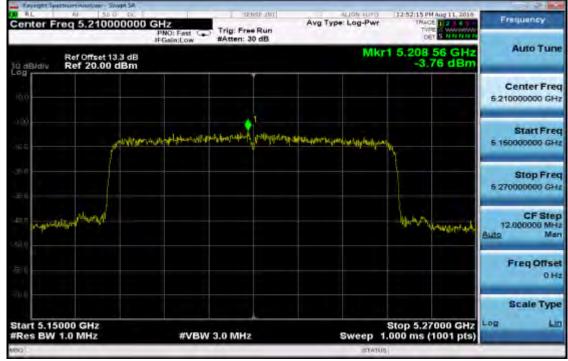
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the parance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### 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。

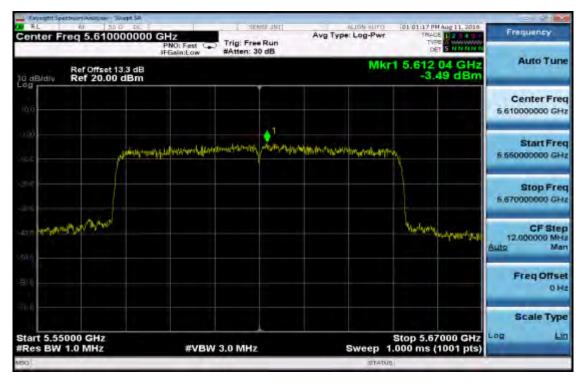
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms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



# 802.11ac VHT80, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5530 MHz)



#### 802.11ac VHT80, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH High 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 <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document, 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 satisfied at information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### 802.11ac VHT80, 5725~5850 MHz Peak Power Spectral Density Data Plot (CH Mid 5775 MHz)

	1:14:47 PM Aug 11, 2010	4109-1010	T SENSE UNT		Al Star Dc	RL RL
Frequency	TRACE 1 2 3 4 5 1 TYPE NUMBER	Avg Type: Log-Pwr	Trig: Free Run #Atten: 30 dB	PNO: Fast Ca	eq 5.775000000	Center Fr
Auto Tun	5.776 5 GHz 1.59 dBm	Mk		I CONLOW	Ref Offset 13.3 dB Ref 20.00 dBm	
Center Fre 5.775000000 GH			1			16.0
Start Fre 5 725000000 GH	hanne	น้ำที่ประเทศใหญ่ เกิดที่ประเทศให้	Subtane Araberts	shilomboundedt	- Margarillado	000 000
Stop Fre 5 825000000 GH	3,75,096				w	an marked
CF Ste 10.000000 Mr Auto Ma						4n fi
Freq Offs 01						800
Scale Typ	op 5.82500 GHz 0 ms (1001 pts)		1.5 MHz	#VBW		Start 5.725 #Res BW 5
Co		STATUS				(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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law 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.



# 11. UNDESIRABLE RADIATED EMISSION MEASUREMENT

## 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.

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

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



APPLICABLE TO	LIN	ЛІТ			
FCC KDB 789033 D02 General UNII Test Procedures New Rules	FIELD STRENGTH AT 3m				
v01r01	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)	ΡΚ: 68.3 (dBμV/m) ΡΚ: 78.2 (dBμV/m)			
15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK:122.2 (dBμV/m) *4			
*1 beyond 75 MHz or more above of	-				

\*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

\*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. \*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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.

で解す另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms and Conditions for Electronic Documents at www.sgs.com/terms and conditions of an and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of</u> Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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.



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

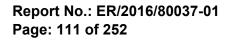
## Note:

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

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

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

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





## 11.2 Measurement Equipment Used

	SGS SAC-III								
Name of Equipment	Manufacturer	Model	Serial Num- ber	Calibration Date	Calibration Due				
EMI Test Receiver	R&S	ESCI7	100760	05/10/2016	05/09/2017				
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2016	01/28/2017				
Loop Antenna	ETS.LINDGREN	6502	148045	09/07/2015	09/06/2016				
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/14/2015	12/13/2016				
Horn Antenna	Schwarzbeck	BBHA9120D	1441	08/01/2016	07/31/2017				
Pre-Amplifier	Agilent	8447D	2944A07676	01/02/2016	01/01/2017				
Pre-Amplifier	EMC Instru- ments Corp.	EMC0126530	980038	01/02/2016	01/01/2017				
Turn Table	HD	DT420	N/A	N.C.R	N.C.R				
Antenna Tower	ChamPro	AM-BS-4500-B	060776-ABS	N.C.R	N.C.R				
Controller	ChamPro	EM1000	60776	N.C.R	N.C.R				
Low Loss Cable	Huber Suhner	966_RX	9	01/02/2016	01/01/2017				
3m Site NSA	SGS	966 chamber	N/A	07/01/2016	06/30/2017				
Low Loss Cable	Huber Suhner	966 TX	1	01/02/2016	01/01/2017				
Horn Antenna	Schwarzbeck	BBHA9170	184	12/12/2015	12/11/2016				
Pre-Amplifier	EMC Instru- ments Corp.	EMC184045	980135	01/02/2016	01/01/2017				

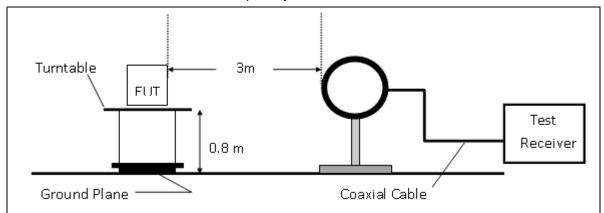
Note: N.C.R refers to Not Calibrated Required.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 工 路 134 號

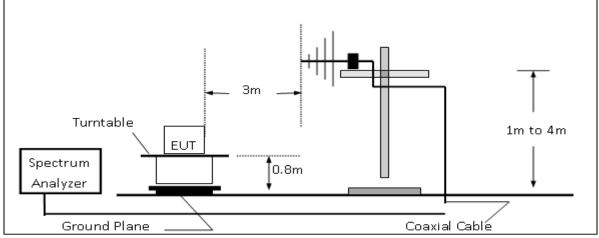


# 11.3 Test SET-UP

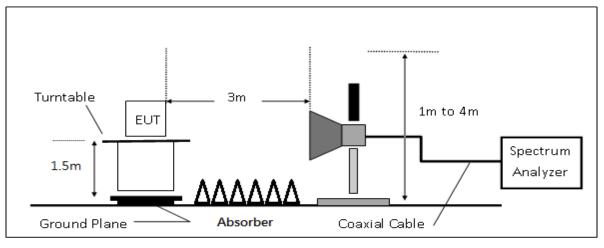
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



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



(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.

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



# **11.4 Measurement Procedure**

- 1. 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.
- 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.
- 6. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
- 7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
- 8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- 9. 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:

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

# FS = RA + AF + CL - AG

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)

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

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exenerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This 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.



# Note :

"F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency."E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

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

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

# 11.7 Measurement Result

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

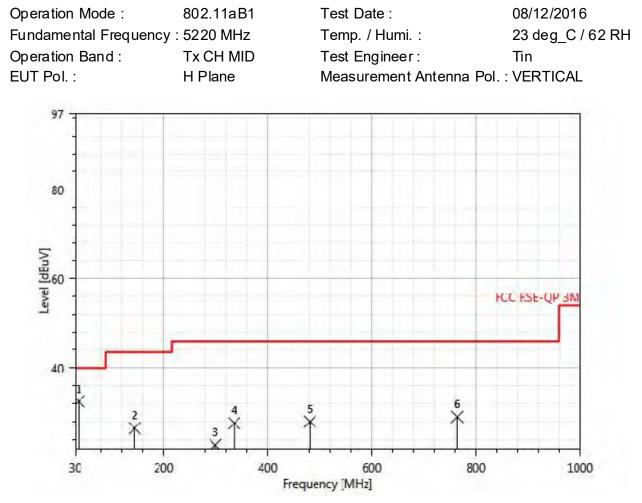
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

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

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



# **Radiated Spurious Emission Measurement Result Below 1GHz Worst-Case Data:** 802.11a 5150~5250 MHz



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
36.79	S	Peak	32.48	41.31	-8.84	40.00	-7.52
144.46	S	Peak	26.50	34.57	-8.07	43.50	-17.00
299.66	S	Peak	22.72	28.65	-5.93	46.00	-23.28
335.55	S	Peak	27.59	32.91	-5.32	46.00	-18.41
481.05	S	Peak	27.96	30.33	-2.37	46.00	-18.04
764.29	S	Peak	29.02	26.05	2.97	46.00	-16.98

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.

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

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



**Operation Mode :** 802.11aB1 Test Date : 08/12/2016 Fundamental Frequency : 5220 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: HORIZONTAL 97 80 Level [dBuV] FCC RSE-QP 3M 40 Δ 6 2 5 ж 400 600 30 200 800 1000 Frequency [MHz]

Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
90.14	S	Peak	22.82	36.54	-13.72	43.50	-20.68
216.24	S	Peak	28.69	38.12	-9.43	46.00	-17.31
243.40	S	Peak	33.76	41.79	-8.03	46.00	-12.24
359.80	S	Peak	34.16	38.96	-4.80	46.00	-11.84
481.05	S	Peak	28.13	30.50	-2.37	46.00	-17.87
773.99	S	Peak	29.84	27.07	2.77	46.00	-16.16

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.

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



#### 802.11a 5250~5350 MHz

Operation Mc Fundamental Operation Ba EUT Pol. :	Frequency	802.11aB2 : 5300 MHz Tx CH MID H Plane		Test Date : Temp. / Hun Test Engine Measureme	er:	08/12/2016 23 deg_C / 6 Tin ol. : VERTICAL	62 RH
97							
Level [dBuV]			-				
1 PA-1		<b>r</b>				FCC RSE-QP 3M	
	Ž	3 3		5 K	6 *		
30	200	0	400 Freque	600 ency [MHz]	800	1000	

Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
36.79	S	Peak	33.27	42.11	-8.84	40.00	-6.73
144.46	S	Peak	27.01	35.08	-8.07	43.50	-16.49
299.66	S	Peak	22.72	28.65	-5.93	46.00	-23.28
335.55	S	Peak	27.88	33.20	-5.32	46.00	-18.12
498.51	S	Peak	26.07	28.59	-2.52	46.00	-19.93
770.11	S	Peak	29.21	26.53	2.69	46.00	-16.79

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號



MHz

90.14

216.24

240.49

359.80

479.11

774.96

F/H/E/S

S

S

S

S

S

S

**Operation Mode :** 802.11aB2 Test Date : 08/12/2016 Fundamental Frequency : 5300 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC ESE-QP 3M 40 X 4 6 2 5 400 600 30 200 800 1000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin FS Mode **Reading Level** @3m

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

QP/AV/PK

Peak

Peak

Peak

Peak

Peak

Peak

dBµV/m

22.09

28.15

35.22

33.67

27.72

29.98

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

dBµV/m

35.81

37.58

43.26

38.47

30.11

27.22

dBuV/m

43.50

46.00

46.00

46.00

46.00

46.00

dB

-21.41

-17.85

-10.78

-12.33

-18.28

-16.02

dB

-13.72

-9.43

-8.03

-4.80

-2.39

2.76



## 802.11a, 5470~5725 MHz

Operation Fundamer Operation EUT Pol. :	ital Fre Band :	quenc	y : 558 Tx	2.11aB 80 MHz CH MI Plane	z	Te Te	st Eng	lumi. : ineer:	ntenna I		2/2016 leg_C / 62 RH RTICAL	ł
97 - - - 80 -												
Level [dBuV]										FCC RSE	-QP 3M	
- 40    	×	2		4 3 X		5×			6 X			
30	2	20	00	1.5.1.	400 Fr	equency	600 [MHz]		80	0	1000	

Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
36.79	S	Peak	32.22	41.05	-8.84	40.00	-7.78
144.46	S	Peak	27.85	35.92	-8.07	43.50	-15.65
293.84	S	Peak	22.41	28.45	-6.05	46.00	-23.59
335.55	S	Peak	27.01	32.34	-5.32	46.00	-18.99
479.11	S	Peak	26.29	28.69	-2.39	46.00	-19.71
774.96	S	Peak	28.71	25.95	2.76	46.00	-17.29

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

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



**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5580 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: HORIZONTAL 97 80 Level [dBuV] FCC RSE-QP 3M 40 4 3 6 2 400 600 800 30 200 1000 Frequency [MHz]

Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
90.14	S	Peak	23.05	36.77	-13.72	43.50	-20.45
165.80	S	Peak	28.18	35.57	-7.39	43.50	-15.32
243.40	S	Peak	34.18	42.21	-8.03	46.00	-11.82
359.80	S	Peak	34.57	39.37	-4.80	46.00	-11.43
478.14	S	Peak	26.86	29.30	-2.43	46.00	-19.14
760.41	S	Peak	30.42	27.47	2.95	46.00	-15.58

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.

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



## 802.11a, 5725~5850 MHz

802.11aB4 acy : 5785 MHz Tx CH MID H Plane	Test Date : Temp. / Humi. : Test Engineer: Measurement Anten	08/12/2016 23 deg_C / 62 RH Tin na Pol. : VERTICAL
		FCC RSE-QP 3M
4 3 200 400	5 	6 7 800 1000
	ncy : 5785 MHz Tx CH MID H Plane	ncy : 5785 MHz Tx CH MID H Plane

Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
	Mode	Reading Level	FS		@3m	
F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
S	Peak	34.48	43.31	-8.84	40.00	-5.52
S	Peak	27.53	35.60	-8.07	43.50	-15.97
S	Peak	21.93	27.86	-5.93	46.00	-24.07
S	Peak	28.73	34.05	-5.32	46.00	-17.27
S	Peak	26.39	28.05	-1.67	46.00	-19.61
S	Peak	29.82	27.05	2.77	46.00	-16.18
	F/H/E/S S S S S S S	ModeF/H/E/SQP/AV/PKSPeakSPeakSPeakSPeakSPeakSPeakSPeak	ModeReading LevelF/H/E/SQP/AV/PKdBμV/mSPeak34.48SPeak27.53SPeak21.93SPeak28.73SPeak26.39	Mode         Reading Level         FS           F/H/E/S         QP/AV/PK         dBμV/m         dBμV/m           S         Peak         34.48         43.31           S         Peak         27.53         35.60           S         Peak         21.93         27.86           S         Peak         28.73         34.05           S         Peak         26.39         28.05	Mode         Reading Level         FS           F/H/E/S         QP/AV/PK         dBμV/m         dBμV/m         dB           S         Peak         34.48         43.31         -8.84           S         Peak         27.53         35.60         -8.07           S         Peak         21.93         27.86         -5.93           S         Peak         28.73         34.05         -5.32           S         Peak         26.39         28.05         -1.67	Mode         Reading Level         FS         @3m           F/H/E/S         QP/AV/PK         dBµV/m         dBµV/m         dB         dBuV/m           S         Peak         34.48         43.31         -8.84         40.00           S         Peak         27.53         35.60         -8.07         43.50           S         Peak         21.93         27.86         -5.93         46.00           S         Peak         28.73         34.05         -5.32         46.00           S         Peak         26.39         28.05         -1.67         46.00

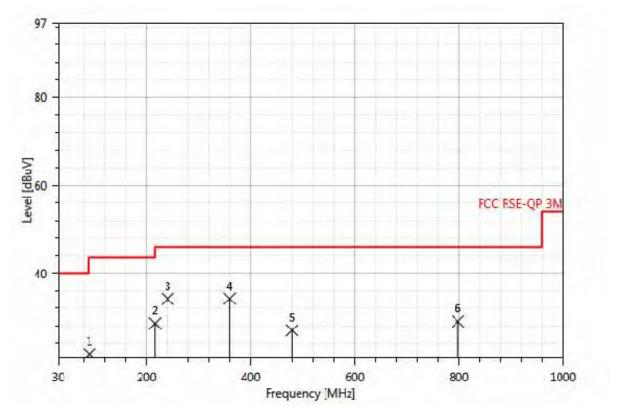
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

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



**Operation Mode :** 802.11aB4 Fundamental Frequency : 5785 MHz **Operation Band**: Tx CH MID EUT Pol. : H Plane

Test Date : 08/12/2016 Temp. / Humi. : 23 deg C / 62 RH Test Engineer: Tin Measurement Antenna Pol.: HORIZONTAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
90.14	S	Peak	21.50	35.22	-13.72	43.50	-22.00
216.24	S	Peak	28.52	37.95	-9.43	46.00	-17.48
240.49	S	Peak	34.11	42.15	-8.03	46.00	-11.89
359.80	S	Peak	34.17	38.96	-4.80	46.00	-11.83
479.11	S	Peak	26.93	29.33	-2.39	46.00	-19.07
798.24	S	Peak	28.99	25.88	3.11	46.00	-17.01

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.

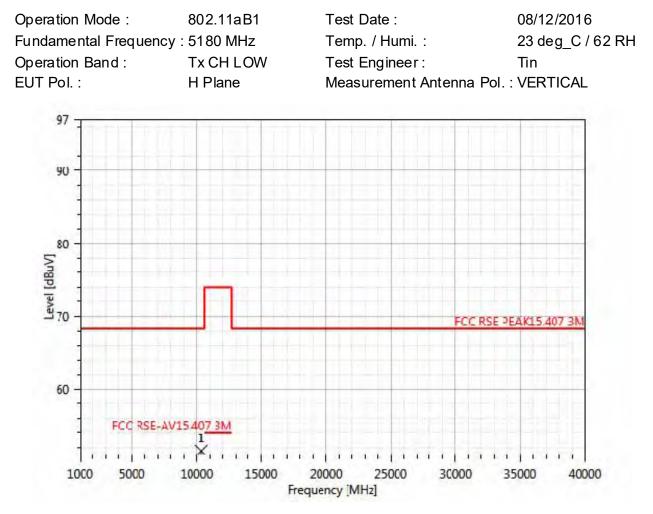
Unless otherwise stated the results shown in this test report reter only to the sample(s) tested and such sample(s) are retained for you days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf,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

S 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



## Above 1GHz Worst-Case Data:

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



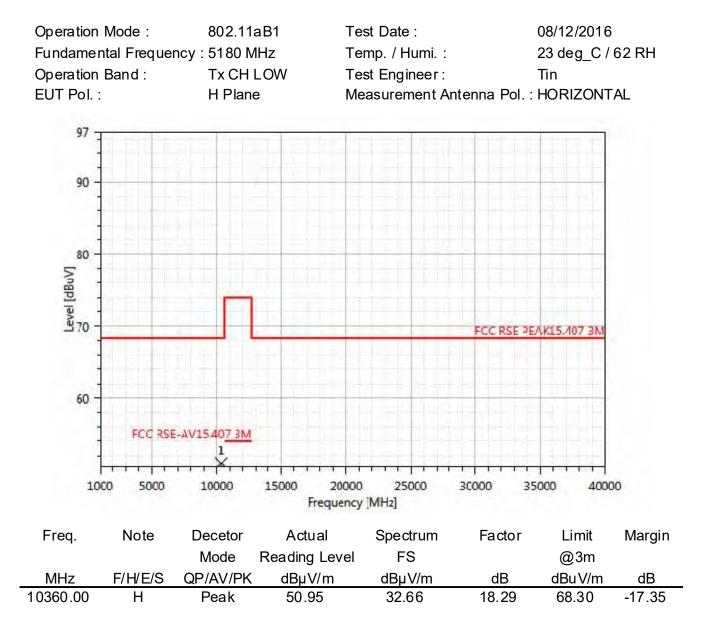
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
10360.00	Н	Peak	51.55	33.26	18.29	68.30	-16.75

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.

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

S 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





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

S 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

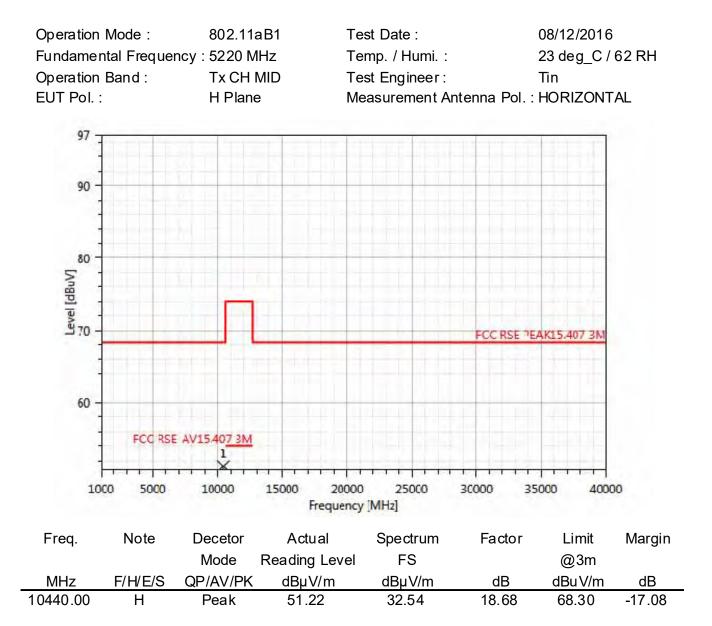


**Operation Mode :** 802.11aB1 Test Date : 08/12/2016 Fundamental Frequency : 5220 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: VERTICAL 97 90 80 Level [dBuV] TEAK15,407 3 DCE 60 FCC RSE-AV15.407 3M 1 15000 20000 25000 30000 1000 5000 10000 35000 40000 Frequency [MHz] Note Actual Spectrum Limit Margin Freq. Decetor Factor Mode **Reading Level** FS @3m QP/AV/PK dBµV/m dBuV/m F/H/E/S dBµV/m dB dB MHz 10440.00 Н Peak 51.05 32.37 18.68 68.30 -17.25

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

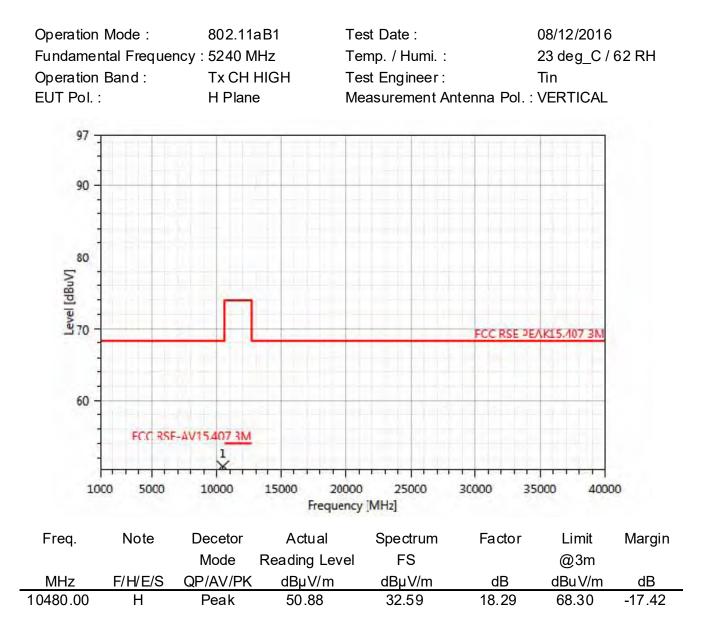
Content wase stated the results shown in this test report relief only to the sample(s) tested and such sample(s) are retained to 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available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





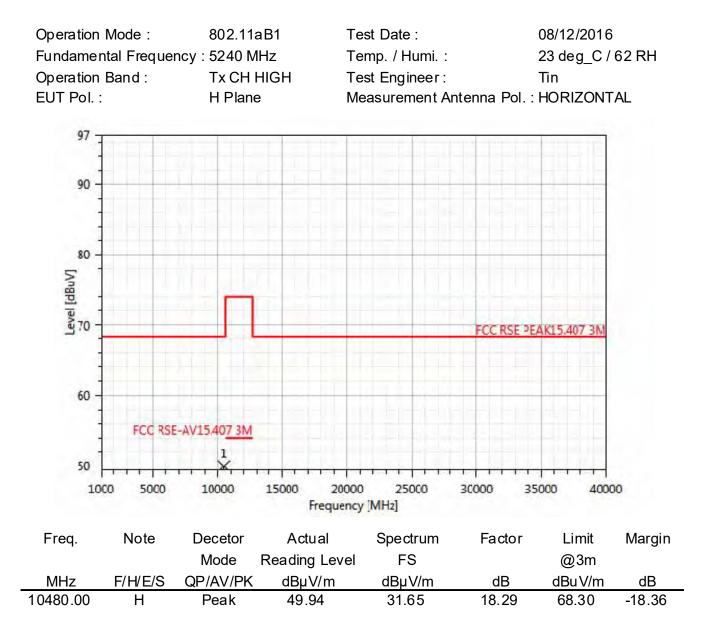
Content wase stated the results shown in this test report relief only to the sample(s) tested and such sample(s) are retained to 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available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





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





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

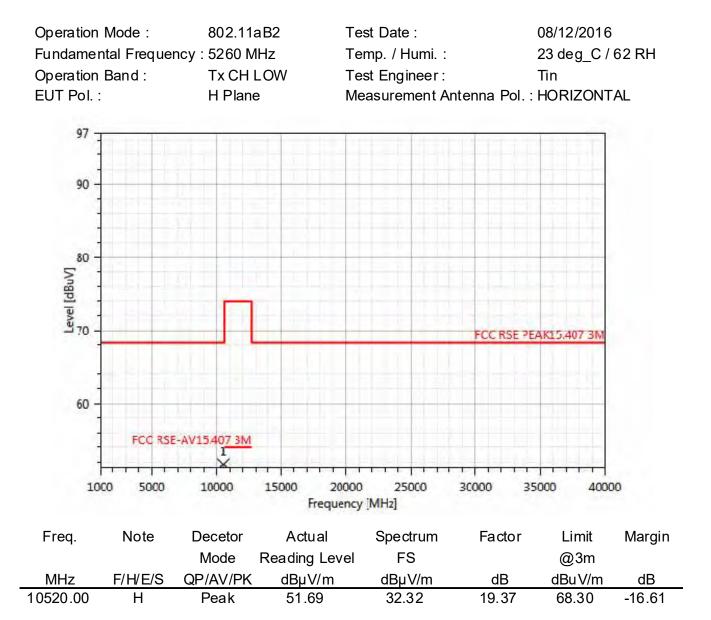


#### Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz

Operation Fundame Operation EUT Pol.	ntal Freque Band :	802.11 ncy : 5260 M Tx CH H Pland	1Hz LOW	Test Date : Temp. / Humi. Test Engineer Measurement		08/12/2016 23 deg_C / Tin : VERTICAL	
97 -							
90 -	-						
		T.					
80 [	-						
Level [dBuV]							
- <sub>70</sub> -					FCC RSE 1	EAK15.407 3M	
60 -							
	FCC RSE	AV15.407 3M					
10	000 5000	10000		0000 25000 iency [MHz]	30000 3	35000 4000	00
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Le	vel FS		@3m	
MHz	F/H/E/S	QP/AV/PK		dBµV/m	dB	dBu V/m	dB
10520.00	Н	Peak	51.62	32.25	19.37	68.30	-16.68

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 工 路 134 號

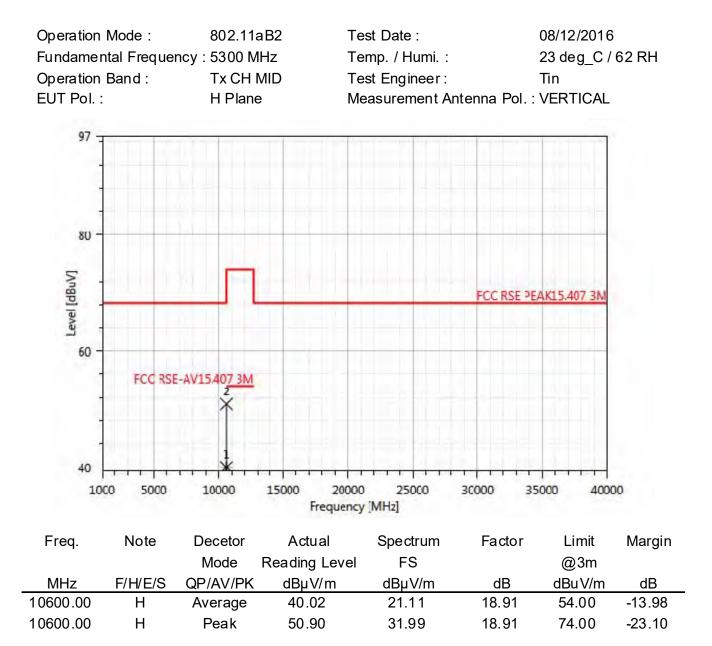




Unless otherwise stated the results shown in this test report reter only to the sample(s) tested and such sample(s) are retained for you days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf,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

S 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





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



10600.00

Н

н

**Operation Mode :** 802.11aB2 Test Date : 08/12/2016 Fundamental Frequency : 5300 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15.407 3M 2 40 15000 20000 25000 1000 5000 10000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBuV/m MHz dBµV/m dBµV/m dB dB

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

40.14

49.76

Average

Peak

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

21.23

30.85

18.91

18.91

-13.86

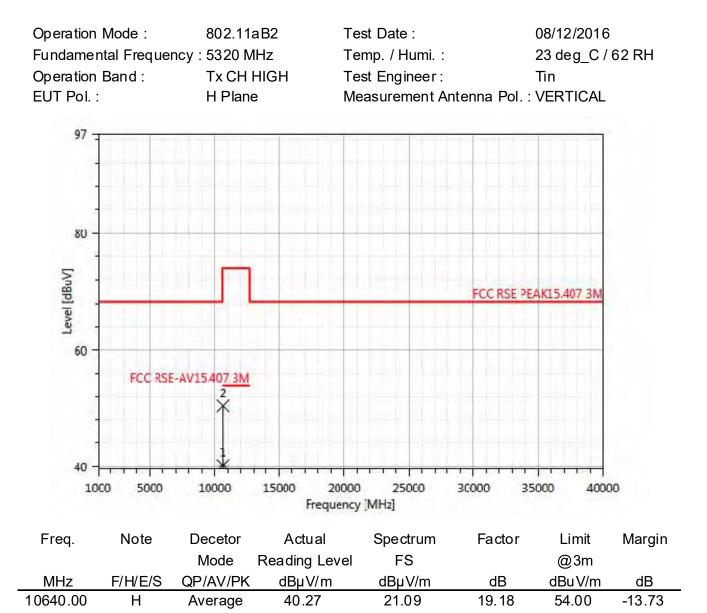
-24.24

54.00

74.00



н



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

Peak

50.48

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

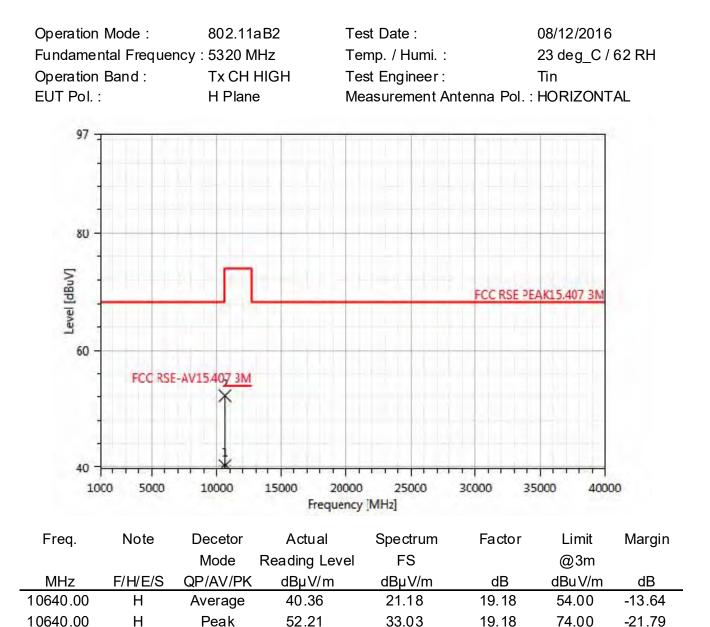
31.30

19.18

74.00

-23.52





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

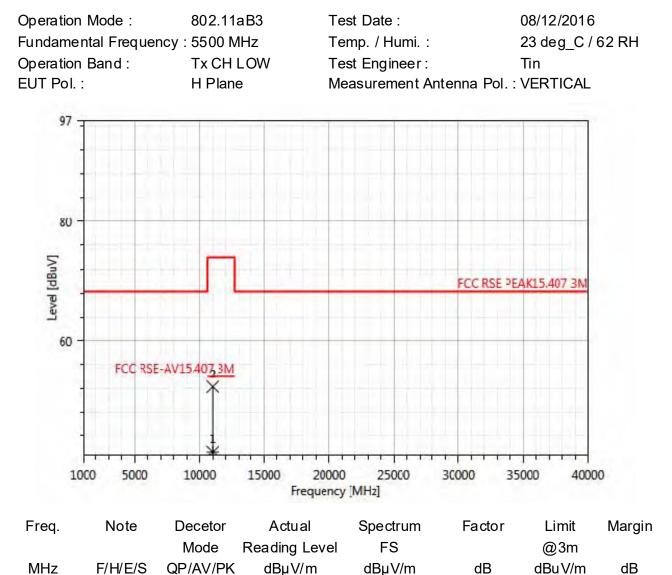


11000.00

н

Н

## Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz



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

41.34

52.29

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

Average

Peak

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

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

21.17

32.12

20.17

20.17

54.00

74.00

-12.66

-21.71



11000.00

Н

н

**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5500 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH LOW** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSF-AV15407.3M 15000 25000 1000 5000 10000 20000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBuV/m MHz dBµV/m dBµV/m dB dB

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

41.37

53.84

Average

Peak

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

21.20

33.67

20.17

20.17

-12.63

-20.16

54.00

74.00



MHz

11160.00

11160.00

Н

н

**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5580 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSF-AV15407 3M 15000 25000 1000 5000 10000 20000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBuV/m

dBµV/m

41.36

51.71

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

Average

Peak

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

dBµV/m

20.91

31.26

dB

20.45

20.45

dB

-12.64

-22.29

54.00

74.00



**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5580 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407.3N 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin

		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11160.00	Н	Average	41.62	21.17	20.45	54.00	-12.38
11160.00	Н	Peak	52.03	31.59	20.45	74.00	-21.97

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.

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



**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: VERTICAL 97 80 Level [dBuV] CC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 1000 5000 10000 20000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.42

51.71

F/H/E/S

Н

н

MHz

11400.00

11400.00

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

dBµV/m

20.86

31.15

dBuV/m

54.00

74.00

dB

-12.58

-22.29

dB

20.56

20.56



11400.00

Н

н

**Operation Mode :** 802.11aB3 Test Date : 08/12/2016 Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 1000 5000 10000 20000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBuV/m MHz dBµV/m dBµV/m dB dB

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

Average

Peak

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

21.06

31.64

41.62

52.19

20.56

20.56

-12.38

-21.81

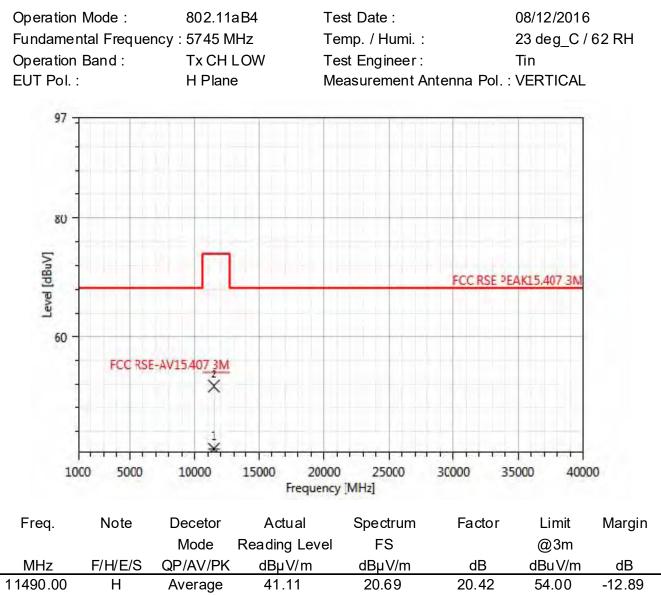
54.00

74.00



Н

## Radiated Spurious Emission Measurement Result 802.11a, 5725~5850 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.

Peak

51.69

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

S 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

31.27

74.00

20.42

-22.31



Operation Fundamer Operation EUT Pol. :	ntal Freque Band :	802.11a ncy : 5745 M Tx CH L H Plane	Hz To _OW To	est Date : emp. / Humi. : est Engineer : leasurement A	ntenna Pol. :	08/12/2016 23 deg_C / Tin HORIZONT	
97 - - - - - - - - - - - - - - - - - - -							
Level [dBuV]					FCC RSE PE	AK15.407 3M	
60 - - - -	FCC RSI	E-AV1540 <u>7 3M</u> X					
10	co 5000	10000	15000 2000 Frequenc		30000 3	5000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11490.00	Н	Average	41.31	20.89	20.42	54.00	-12.69

Peak

11490.00

Н

52.35

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

31.93

20.42

74.00

-21.65



**Operation Mode :** 802.11aB4 Test Date : 08/12/2016 Fundamental Frequency : 5785 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Spectrum Factor Limit Margin Decetor Actual Mode Reading Level **– –** @ 3m

		Mode	Reading Level	FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
11570.00	Н	Average	41.54	20.95	20.59	54.00	-12.46	
11570.00	Н	Peak	52.36	31.78	20.59	74.00	-21.64	

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.

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



11570.00

Н

н

**Operation Mode :** 802.11aB4 Test Date : 08/12/2016 Fundamental Frequency : 5785 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: Tx CH MID Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 1000 5000 10000 20000 30000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBuV/m MHz dBµV/m dBµV/m dB dB

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

Average

Peak

41.65

51.77

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

21.07

31.18

20.59

20.59

-12.35

-22.23

54.00

74.00



Operation Mode : 802.11aB4 Test Date : 08/12/2016 Fundamental Frequency : 5825 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3M 60 FCC RSF-AV15407 3M 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Spectrum Factor Limit Margin Decetor Actual

		Mode	Reading Level	FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
11650.00	Н	Average	41.55	21.12	20.43	54.00	-12.45	
11650.00	Н	Peak	50.96	30.53	20.43	74.00	-23.04	

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.

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

S 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



11650.00

Н

н

**Operation Mode :** 802.11aB4 Test Date : 08/12/2016 Fundamental Frequency : 5825 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 30000 15000 25000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m F/H/E/S QP/AV/PK dBµV/m dBuV/m MHz dBµV/m dB dB

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

Average

Peak

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

21.22

30.52

41.65

50.95

20.43

20.43

-12.35

-23.05

54.00

74.00



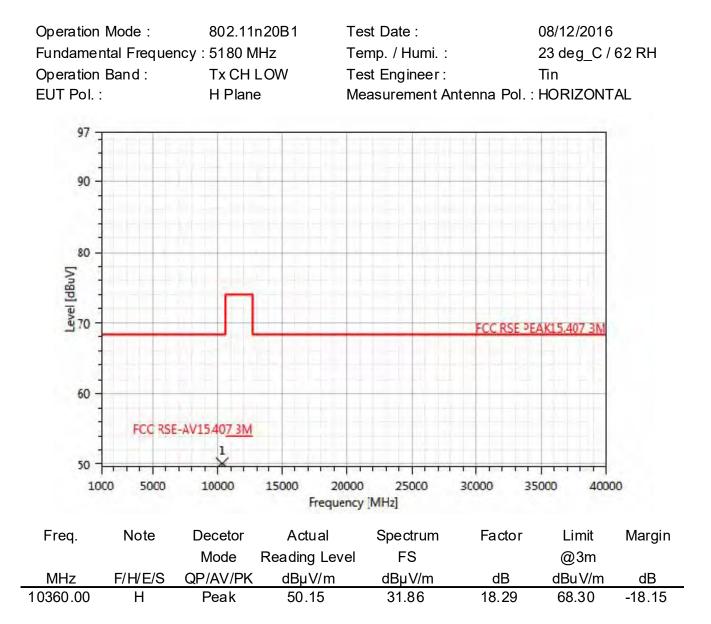
# Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz

Operation Fundamen Operation EUT Pol. :	ital Freque	802.11 ncy : 5180 M Tx CH H Plane	1Hz LOW	Test Date : Temp. / Hu Test Engin Measurem	umi. :	2	08/12/2016 23 deg_C / Tin /ERTICAL	62 RH
97 <del>-</del> 구	n teche		1			P-1-0-		
90 -								
Level [dBuV]					FC	C RSF PF4	K15.407 3M	
- 60 - -	FCC RSE	-AV15.40 <u>7 3M</u>						
100	20 5000	10000		0000 250 iency [MHz]	co 3coo	0 350	000 4000	0
Freq.	Note	Decetor	Actual	Spect		actor	Limit	Margin
		Mode	Reading Le			10	@3m	10
MHz 10360.00	F/H/E/S H	QP/AV/PK Peak	<u>dBµV/m</u> 50.83	<u>dB</u> µ∨ 32.5		dB 8.29	dBuV/m 68.30	dB -17.47
10300.00	11	rean	50.05	52.5	<del>4</del> I	0.29	00.00	-11.41

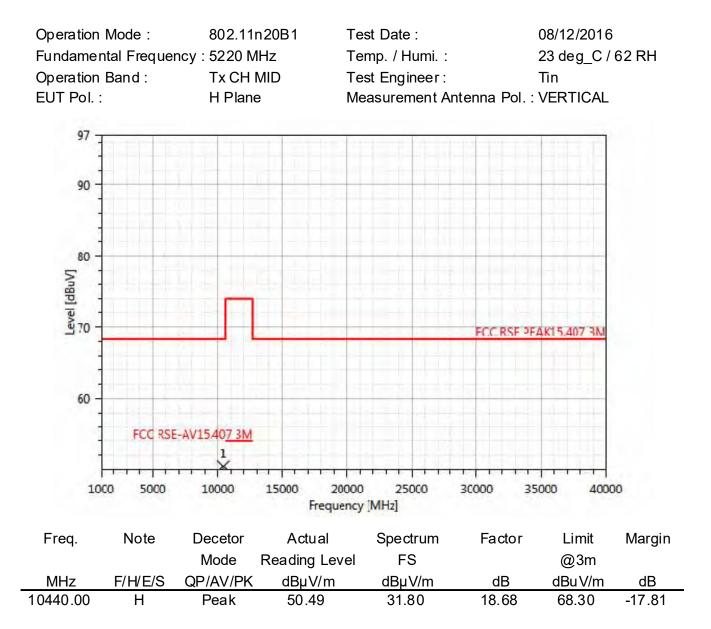
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 工 路 134 號

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

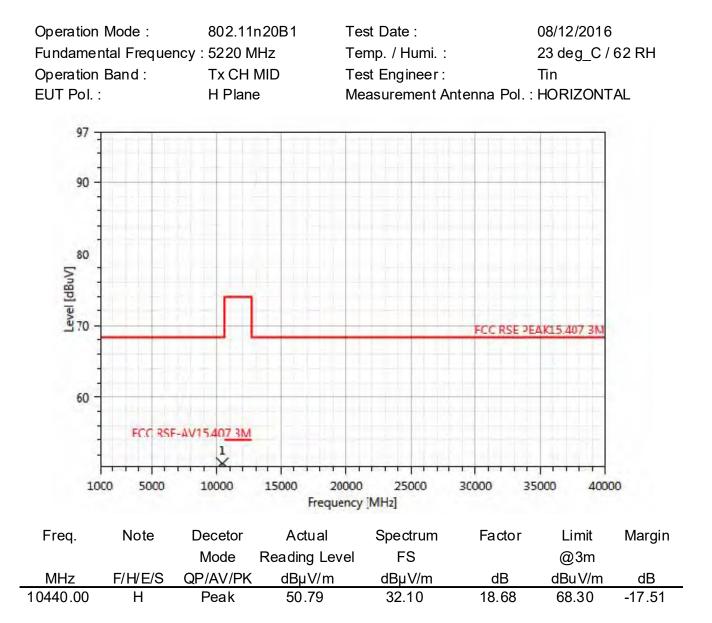




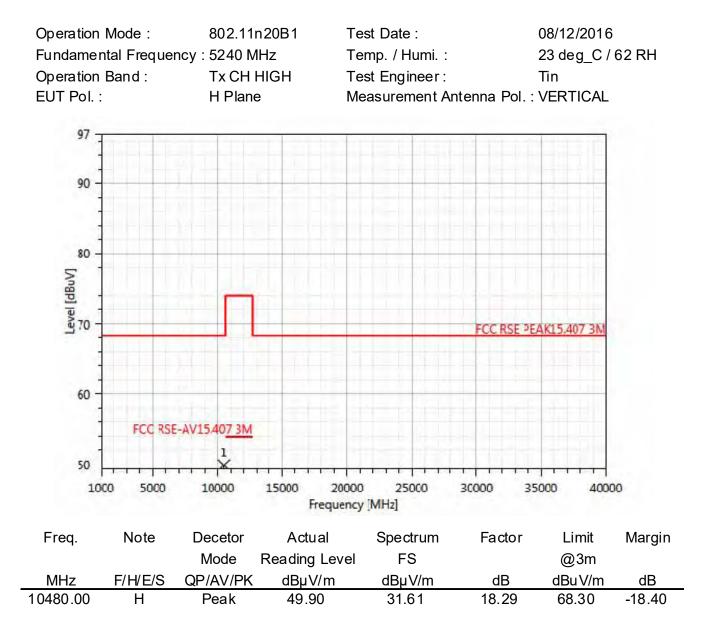




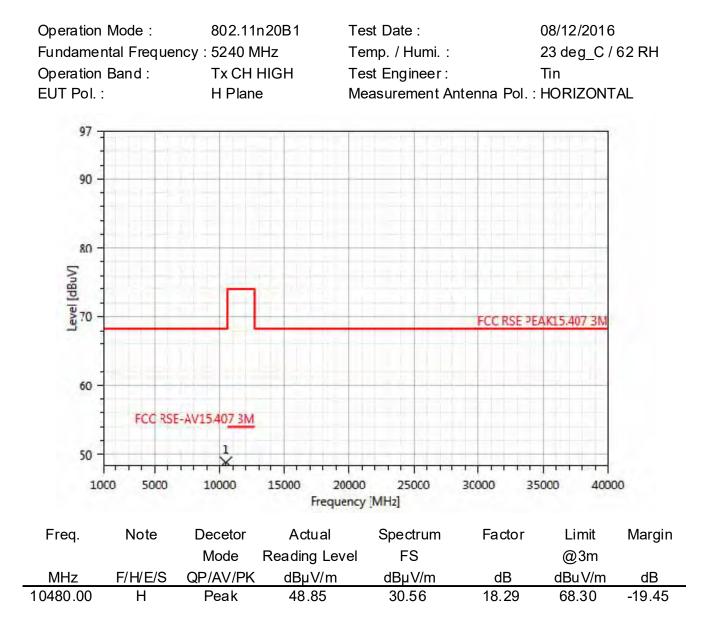












Content wase stated the results shown in this test report relief only to the sample(s) tested and such sample(s) are retained to 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available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

S 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



### Radiated Spurious Emission Measurement Result 802.11n HT20, 5250~5350 MHz

Operation Fundame Operation EUT Pol.	ntal Frequei Band :	802.11 ncy : 5260 M Tx CH H Plane	1Hz T LOW T	<sup>-</sup> est Date : <sup>-</sup> emp. / Humi. : <sup>-</sup> est Engineer : <i>I</i> easurement A		08/12/2016 23 deg_C / Tin : VERTICAL	
97 -				ni - c fa -		-	
90 -	-						
80 -							
100 Level [dBuV]	-						
· 970 -					FCC RSE P	EAK15.407 3M	
60 -							
	FCC RSE	-AV15407 3M	-				
	-	1 1 1 X 1					
10	000 5000	10000	15000 2000 Frequen	00 25000 cy [MHz]	30000 3	5000 4000	00
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum I FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	•	и го dBµV/m	dB	dBuV/m	dB
10520.00	H	Peak	50.67	31.29	19.37	68.30	-17.63



**Operation Mode :** 802.11n20B2 Test Date : 08/12/2016 Fundamental Frequency : 5260 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH LOW** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 90 80 Level [dBuV] RSF K15.407 60 FCC RSF-AV15.407 3M 1 15000 20000 25000 30000 1000 5000 10000 35000 40000 Frequency [MHz] Note Actual Spectrum Limit Margin Freq. Decetor Factor Mode **Reading Level** FS @3m QP/AV/PK dBµV/m dBuV/m F/H/E/S dBµV/m dB dB MHz 10520.00 Н Peak 50.85 31.48 19.37 68.30 -17.45

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.



10600.00

Н

н

Operation	Mode :	802.11	n20B2 Te	est Date :		08/12/2016	
Fundame	ntal Freque	ncy : 5300 N	IHz Te	emp. / Humi. :		23 deg_C /	62 RH
Operation	Band :	Tx CH	MID Te	est Engineer:		Tin	
EUT Pol. :	:	H Plan	e M	easurement A	Antenna Pol.	: VERTICAL	
97 -							
80 -							
Level [dBuV]			+++++++++++++++++++++++++++++++++++++++	131 1-	FCC RSE 2	EAK15.407 3M	
- 00			-				
	FCC RSE	E-AV15.407 3M					
		2 X					
40 -							
10	CO 5000	10000	15000 2000 Frequenc		30000 3	35000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
·		Mode	Reading Level	FS		@3m	-
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB

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

39.78

50.06

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

20.87

31.15

18.91

18.91

54.00

74.00

-14.22



Н

Peak

50.74

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

31.83

18.91

74.00



10640.00

Н

Н

Operation	Mode :	802.11	n20B2 Te	est Date :		08/12/2016		
Fundamer	ntal Freque	ncy : 5320 N	lHz Te	Temp. / Humi. :			23 deg_C / 62 RH	
Operation	Band :	Tx CH	HIGH Te	est Engineer:		Tin		
EUT Pol. :		H Plane	e Me	easurement A	ntenna Pol.	: VERTICAL		
97 -								
2								
-								
-								
80 -								
5								
dBu		611			FCC RSE	EAK15.407.3M		
Level [dBuV]								
60 -								
-	FCC RSE	E-AV15.407 3M						
-		2						
+		1						
40 -		*						
10	CO 50CO	10000	15000 20000	25000	30000 3	35000 4000	0	
	ca a const		Frequency			anne Saa	2	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Level	FS		@3m	-	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	

40.32

50.66

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or 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

21.14

31.47

19.18

19.18

54.00

74.00

-13.68



Н

Operation Fundamer Operation EUT Pol. :	ntal Freque Band :	802.11r ncy : 5320 M Tx CH H H Plane	Hz Te HIGH Te	est Date : emp. / Humi. : est Engineer : easurement A		08/12/2016 23 deg_C / Tin HORIZONT	
- 97 08 08 00	FCC RSI	E-AV15.40 <u>7 3M</u>			FCC RSE PE	AK15.407 3M	
40 - 100	0 5000	10000	15000 20000 Frequency		30000 35	5000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
			Reading Level	FS	10	@3m	
MHz	F/H/E/S	QP/AV/PK	<u>dBµV/m</u>	dBµV/m	dB	dBuV/m	dB
10640.00	Н	Average	40.41	21.23	19.18	54.00	-13.59

Peak

51.60

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,此報告结果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions of 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 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

32.41

19.18

74.00

-22.40



Н

# Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz

Operation Fundamer Operation EUT Pol. :	ntal Freque Band :	802.11r ncy : 5500 M Tx CH L H Plane	Hz _OW	Test Date : Temp. / Humi. : Test Engineer : Measurement A		08/12/2016 23 deg_C / Tin VERTICAL	
- 79 					FCC RSE PE	AK15.407 3M	
	FCC RSE	-AV1540 <u>7 3M</u>					
10	co 5000	10000		0000 25000 ency [MHz]	30000 35	5000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
			Reading Lev			@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
11000.00	Н	Average	40.81	20.64	20.17	54.00	-13.19

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

51.95

Peak

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

31.78

20.17

74.00

-22.05



11000.00

Н

н

Operation Mode : Fundamental Frequ Operation Band : EUT Pol. :	802.11n20B3 ency : 5500 MHz Tx CH LOW H Plane	Test Date : Temp. / Humi. : Test Engineer : Measurement A	2	08/12/2016 23 deg_C / ( Tin HORIZONT/	
97					
80 -					
00 Level [dBuV]			FCC RSE PEA	4 <mark>K15.407 3M</mark>	
	SE-AV15.40 <u>3.3M</u>				
1000 5000		20000 25000 requency [MHz]	30000 350	000 4000	0
Freq. Note	Decetor Actu	•	Factor	Limit	Margin
MHz F/H/E/S	Mode Reading QP/AV/PK dBµ∖		dB	@3m dBu V/m	dB

41.10

52.33

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is any be prosecuted to the fullest extent of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

20.93

32.17

20.17

20.17

54.00

74.00

-12.90

-21.67



Н

Operation Fundamer Operation EUT Pol. :	ital Freque Band :	802.11r ncy : 5580 M Tx CH I H Plane	Hz T MID T	est Date : emp. / Humi. : est Engineer : leasurement A	ntenna Pol. :	08/12/2016 23 deg_C / Tin : VERTICAL	62 RH
97 - - - - - - - - - - - - - - - - - - -							
Level [dBuV]					FCC RSE PI	EAK15.407 3M	
-	FCC RSI	-AV1540 <u>7 3M</u> 2 X					
100	0 5000	10000	15000 2000 Frequence		30000 3	5000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	I FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11160.00	Н	Average	41.20	20.76	20.45	54.00	-12.80

Peak

50.92

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

30.48

20.45

74.00



11160.00

Н

н

Operation Mod Fundamental F Operation Ban EUT Pol. :	requency : 5580 N	/Hz Te MID Te	est Date : emp. / Humi. : est Engineer: easurement Ar	ntenna Pol.	08/12/2016 23 deg_C / Tin . : HORIZONT	62 RH
97						
Level [dBuV]				FCC RSE	РЕАК15.407 ЗМ	
60	FCC RSE-AV1540 <u>7 3M</u>					
1000	5000 10000	15000 20000 Frequency		30000	35000 400	00
Freq. N	ote Decetor	Actual	Spectrum	Factor		Margin
MHz F/F	Mode I/E/S QP/AV/PK	Reading Level dBµV/m	FS dBµV/m	dB	@3m dBuV/m	dB

41.33

50.97

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is anythid and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

20.89

30.53

20.45

20.45

54.00

74.00

-12.67



**Operation Mode :** 802.11n20B3 Test Date : 08/12/2016 Fundamental Frequency : 5700 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15.407 3N 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.62

51.46

F/H/E/S

Н

н

MHz

11400.00

11400.00

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

dBµV/m

21.06

30.90

dBuV/m

54.00

74.00

dB

-12.38

-22.54

dB

20.56

20.56



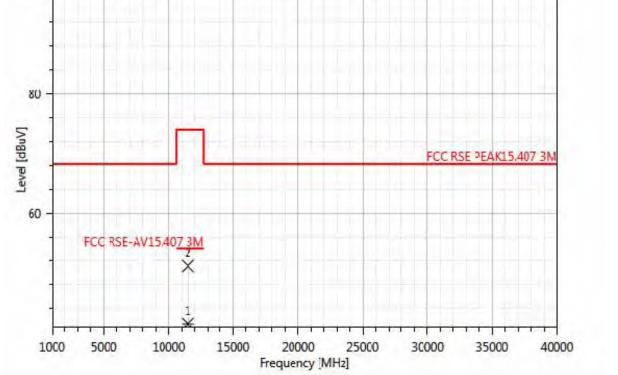
Operation Mode : Fundamental Frequency Operation Band : EUT Pol. :	802.11n20B3 y : 5700 MHz Tx CH HIGH H Plane	Test Date : Temp. / Humi. : Test Engineer : Measurement Ant	23 Ti	8/12/2016 3 deg_C / 62 RH in ORIZONTAL
97				
80 -				
Level [dBuV]			FCC RSE PEAK	<u>(15.407 3M</u>
60 - FCC RSE-A	v1540 <u>7 3M</u> X			
1000 5000		20000 25000 3 juency [MHz]	0000 3500	00 40000
•	Decetor Actual Mode Reading Lo	evel FS	Factor	Limit Margir @3m

		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11400.00	Н	Average	41.74	21.18	20.56	54.00	-12.26
11400.00	Н	Peak	51.26	30.70	20.56	74.00	-22.74



# Radiated Spurious Emission Measurement Result 802.11n HT20, 5725~5850 MHz

Operation Mode :	802.11n20B4	Test Date :	08/12/2016
Fundamental Frequency	: 5745 MHz	Temp. / Humi. :	23 deg_C / 62 RH
Operation Band :	Tx CH LOW	Test Engineer:	Tin
EUT Pol. :	H Plane	Measurement Antenna Pol.	: VERTICAL
07			
97 -			and a supervised of the superv



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11490.00	Н	Average	41.46	21.04	20.42	54.00	-12.54
11490.00	Н	Peak	51.19	30.77	20.42	74.00	-22.81

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.

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

S 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



**Operation Mode :** 802.11n20B4 Test Date : 08/12/2016 Fundamental Frequency : 5745 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH LOW** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin

		Mode	Reading Level	FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
11490.00	Н	Average	41.59	21.16	20.42	54.00	-12.41	_
11490.00	Н	Peak	52.50	32.08	20.42	74.00	-21.50	

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.

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

S 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



11570.00

11570.00

Н

н

Operation Fundamer Operation EUT Pol. :	ntal Frequency Band :	802.11 : 5785 M Tx CH I H Plane	IHz MID	Test Date : Temp. / Humi. Test Engineer Measurement	:	08/12/201 23 deg_C Tin I. : VERTICA	/ 62 RH
97							
80 -							
Level [dBuV]		П			FCC RSE	PEAK15.407 3N	
60 -	FCC RSE-AV	/1540 <u>7 3M</u> X					
10	co 50 <mark>0</mark> 0	10000		0000 25000 ency [MHz]	30000	35000 40	000
Freq.	Note	Decetor	Actual	Spectrum	Factor		Margin
MЦэ			Reading Lev		dP	@3m dBu\//m	dB
MHz	F/H/E/S G	P/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB

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

41.53

51.85

Average

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,此根告結果僅對測試之樣品負責,同時此樣品僅保留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unavult and offenders may be prosecuted to the fullet extent of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

20.94

31.26

20.59

20.59

-12.47

-22.15

54.00

74.00



11570.00

11570.00

Н

н

Operation N Fundament Operation E EUT Pol. :	al Frequer	802.11 ncy : 5785 M Tx CH H Plane	IHz T MID T	Γest Date : Γemp. / Humi. : Γest Engineer : Measurement A	ntenna Po	08/12/201 23 deg_C Tin I. : HORIZON	/ 62 RH
97							
Level [dBuV]					FCC RSE	PEAK15.407 3M	
60	FCC RSE	-AV15407 3M					
1000	5000	10000	15000 200 Frequen	00 25000 icy [MHz]	30000	35000 400	000
Freq.	Note	Decetor	Actual	Spectrum	Factor		Margin
MHz	F/H/E/S	Mode QP/AV/PK	Reading Leve dBµV/m	l FS dBµV/m	dB	@3m dBuV/m	dB

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

41.76

53.20

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

21.18

32.61

20.59

20.59

54.00

74.00

-12.24

-20.80



**Operation Mode :** 802.11n20B4 Test Date : 08/12/2016 Fundamental Frequency : 5825 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.52

52.10

F/H/E/S

Н

н

MHz

11650.00

11650.00

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

dBµV/m

21.09

31.66

dBuV/m

54.00

74.00

dB

-12.48

-21.90

dB

20.43

20.43



**Operation Mode :** 802.11n20B4 Test Date : 08/12/2016 Fundamental Frequency : 5825 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15.407 31 30000 15000 25000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.62

51.44

F/H/E/S

Н

н

MHz

11650.00

11650.00

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

S 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

dBµV/m

21.18

31.01

dBuV/m

54.00

74.00

dB

-12.38

-22.56

dB

20.43

20.43



# Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHz

Operation Fundame Operation EUT Pol.	ntal Freque Band :	802.11 ncy : 5190 M Tx CH H Plane	lHz LOW	Test Date : Temp. / Humi. : Test Engineer : Measurement A		08/12/2016 23 deg_C / Tin : VERTICAL	
97 -	-				-		
90 -							
	-						
80 - 5							
[Aud] [dBuV]	]						
- 07 Fe					FCC RSE 2	EAK15.407 3M	
60 -							
	FCC RSE	E-AV15.40 <u>7 3M</u>					
50 -	-	1					
10	000 5000	10000		000 25000 ncy [MHz]	3C000 3	35000 4000	00
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
10380.00	Н	Peak	49.19	31.07	18.12	68.30	-19.11



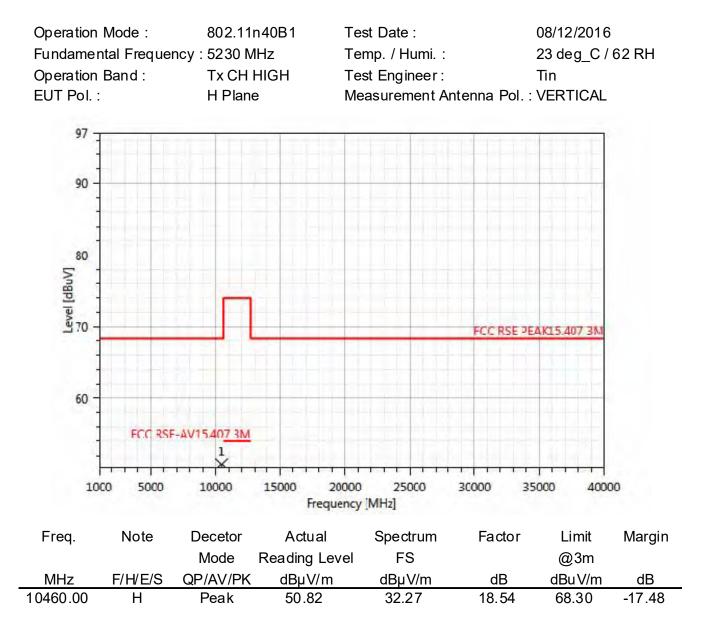
**Operation Mode :** 802.11n40B1 Test Date : 08/12/2016 Fundamental Frequency : 5190 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH LOW** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 90 80 Level [dBuV] TEAK15,407 3 CRSE 60 FCC RSE-AV15.407 3M 1 30000 15000 20000 25000 1000 5000 10000 35000 40000 Frequency [MHz] Note Actual Spectrum Limit Margin Freq. Decetor Factor Mode **Reading Level** FS @3m QP/AV/PK dBµV/m dBuV/m F/H/E/S dBµV/m dB dB MHz 10380.00 Н Peak 51.18 33.05 18.12 68.30 -17.12

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

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

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

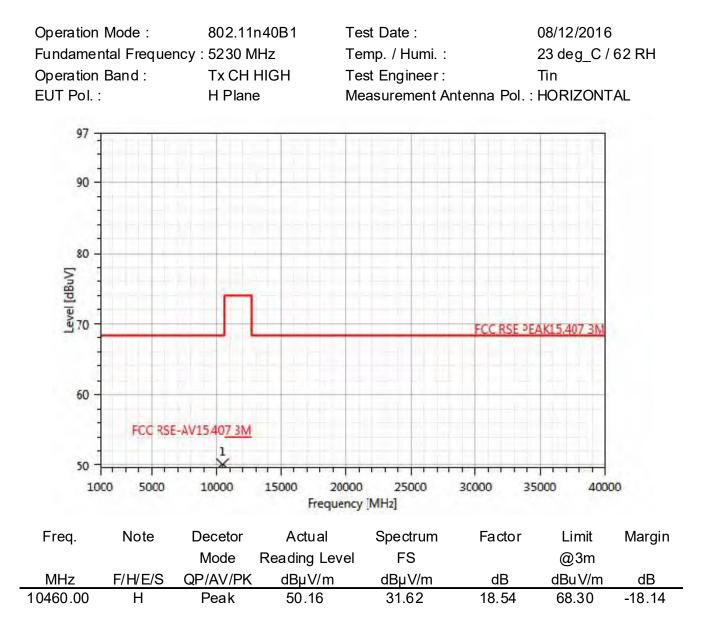




Unless otherwise stated the results shown in this test report reter only to the sample(s) tested and such sample(s) are retained for you days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf,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

S 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







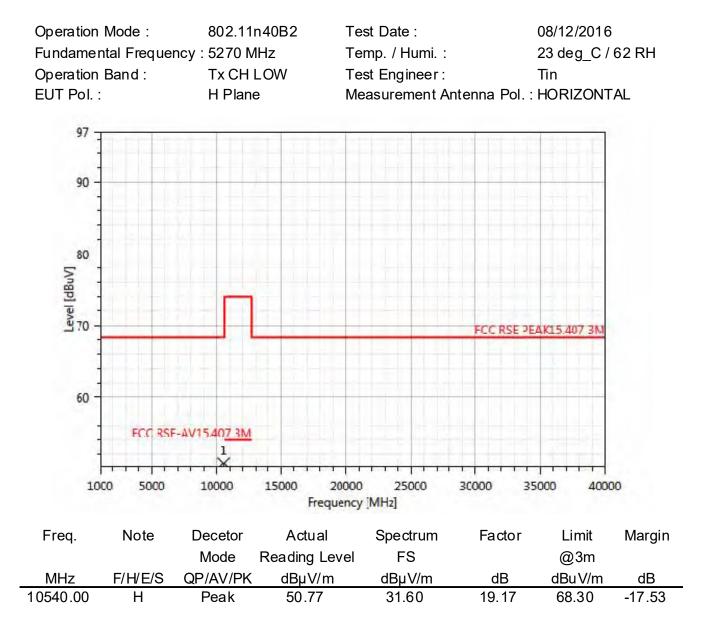
# Radiated Spurious Emission Measurement Result 802.11n HT40, 5250~5350 MHz

Operation Fundame Operation EUT Pol. :	ntal Frequei Band :	802.11 ncy : 5270 M Tx CH H Pland	lHz LOW	Test Date Temp. / H Test Engir Measurem	umi. :	23 c Tin	12/2016 deg_C / 6 RTICAL	62 RH
97 -			1 711			111111		
90 -								
80 -								
Level [dBuV]		VI						
evel [o								
5/0-					FC.	CRSF PEAK15	.407 3M	
60 -								
	FCC RSE	-AV15.40 <u>7 3M</u>						
-		1						
10	00 5000	10000		20000 250 uency [MHz]	000 30000	35000	40000	)
Freq.	Note	Decetor	Actual	Spect	rum Fa	actor	Limit	Margin
		Mode	Reading Le	evel FS	6		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m				Bu V/m	dB
10540.00	Н	Peak	50.86	31.6	59 19	9.17 6	8.30	-17.44

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 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.







10620.00

Н

н

Operation Mo Fundamental Operation Ba EUT Pol. :	Frequency	802.11n40E : 5310 MHz Tx CH HIGE H Plane	Te H Te	st Date : mp. / Humi. : st Engineer : easurement Ar	ntenna Pol.	08/12/2016 23 deg_C / 0 Tin : VERTICAL	62 RH
97							
bevel [dBuV]					FCC RSE PI	EAK15.407 3M	
	FCC RSE-AV	15.40 <u>7 3M</u>					
40	5000	10000 150	000 20000 Frequency	25000 [MHz]	30000 3	5000 4000	0
Freq.			Actual	Spectrum	Factor	Limit	Margin
MHz F			ading Level dBµV/m	FS dBµV/m	dB	@3m dBu V/m	dB

40.20

50.93

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is any be prosecuted to the fullest extent of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

21.09

31.82

19.11

19.11

54.00

74.00

-13.80



Н

Operation N Fundament Operation E EUT Pol. :	al Freque	802.11r ncy : 5310 M Tx CH F H Plane	Hz HIGH	Test Date : Temp. / Humi. : Test Engineer : Measurement A	ntenna Pol. :	08/12/2016 23 deg_C / Tin HORIZONT	62 RH
97	FCC RSE	-AV1540 <u>7 3M</u> *			FCC RSE PE	AK15.407 3M	
40 - 1000	5000	10000	15000 200 Frequer	000 25000 ncy [MH2]	30000 35	5000 4000	0
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
10620.00	H	Average	40.28	21.17	19.11	54.00	-13.72

Peak

51.64

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or 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

32.54

19.11

74.00

-22.36



Н

# Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz

Operation Mode : Fundamental Frequer Operation Band : EUT Pol. :	802.11n40B3 ncy : 5510 MHz Tx CH LOW H Plane	Test Date : Temp. / Humi. : Test Engineer : Measurement Ar		08/12/2016 23 deg_C / ( Tin VERTICAL	62 RH
97 80 50 60 FCC RSE	-AV15.407.3M		FCC RSE PEA	AK15.407 3M	
1000 5000	10000 15000 Free	20000 25000 quency [MHz]	30000 35	000 4000	0
Freq. Note	Decetor Actua	•	Factor	Limit	Margin
	Mode Reading L	evel FS		@3m	
MHz F/H/E/S	QP/AV/PK dBµV/r		dB	dBu V/m	dB
11020.00 H	Average 41.12	20.96	20.16	54.00	-12.88

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

Peak

50.60

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

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

30.44

20.16

74.00



Operation Mode : Fundamental Frequ Operation Band : EUT Pol. :	802.11n40B3 ency : 5510 MHz Tx CH LOW H Plane	Test Date : Temp. / Humi. : Test Engineer : Measurement Antenr	08/12/2016 23 deg_C / 62 RH Tin na Pol. : HORIZONTAL
97			
FCC B	ISE-AV15.40 <u>7, 3M</u>	F	CC RSE PEAK15.407 3M
1000 5000	× 10000 15000	20000 25000 3000 equency [MHz]	00 35000 40000
Freq. Note	Decetor Actua Mode Reading	Level FS	Factor Limit Margin @3m

QP/AV/PK

Average

Peak

dBµV/m

41.34

52.05

F/H/E/S

Н

н

MHz

11020.00

11020.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is anythid and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

dBµV/m

21.18

31.89

dBu V/m

54.00

74.00

dB

-12.66

-21.95

dB

20.16

20.16



Operation M	lode :	802.11n40	)B3 <sup>-</sup>	Fest Date :		08/12/2016
Fundamenta	al Frequency	: 5550 MHz	-	Гетр. / Hum	i. :	23 deg_C / 62 RH
Operation B	and :	Tx CH MIE	) -	Fest Enginee	er:	Tin
EUT Pol. :		H Plane	1	Measuremen	t Antenna Pol.	: VERTICAL
97						
-						
-						
-						
80 -						
-		11			1-1-1- 1 B	100 m 100
Level [dBuV]						
P]				_	FCC RSE PI	EAK15.407 3M
Leve -		-				
60 -						
-	FCC RSE-AV	15 407 204				
-	TOG NDE AV	X		_		
		T_				
L		*				
1000	5000	10000 15	5000 200 Frequer	00 25000 cy [MHz]	30000 3	5000 40000
Freq.	Note D	Decetor	Actual	Spectrun	n Factor	Limit Margin
-		Mode Re	adina Leve	-		@3m

		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11100.00	Н	Average	40.98	20.66	20.32	54.00	-13.02
11100.00	Н	Peak	51.92	31.60	20.32	74.00	-22.08



11100.00

11100.00

Н

Н

Operation Mode Fundamental Fr Operation Band EUT Pol. :	equency : 5550 MHz	Test Date : Temp. / Humi. : Test Engineer : Measurement A	23	
97				
Level [dBuV]			FCC RSE PEAKL!	5.407 <u>3M</u>
60 -	CC RSE-AV15.40 <u>7,3M</u> X			
1000	5000 10000 15000	20000 25000 Frequency [MHz]	30000 35000	40000
Freq. No		tual Spectrum	Factor	Limit Margin
MHz F/H/		g Level FS V/m dBµV/m		@3m IBu V/m dB

41.19

52.20

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or 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

20.87

31.88

20.32

20.32

54.00

74.00

-12.81

-21.80



Operation M Fundamenta Operation B EUT Pol. :	al Frequency	802.11n4 : 5670 MH: Tx CH HI H Plane	z 1 GH 1	<sup>r</sup> est Date : <sup>r</sup> emp. / Humi. <sup>r</sup> est Enginee <i>r</i> ⁄leasurement		08/12/2016 23 deg_C / 6 Tin : VERTICAL	62 RH
97 -							
09 Level [dBuV]		Л			FCC RSE P	<u>EAK15,407 3M</u>	
-	FCC RSE-AV1	5.40 <u>7 3M</u>					
1000	5000	10000 1	15000 200 Frequen	00 25000 cy [MHz]	30000 3	\$5000 4000	0
Freq.		ecetor Mode R	Actual eading Leve	Spectrum	Factor	Limit @3m	Margin

		Mode	Reading Level	FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
11340.00	Н	Average	41.07	20.69	20.38	54.00	-12.93	
11340.00	Н	Peak	51.57	31.18	20.38	74.00	-22.43	



Operation Mode :	802.11n40B3	Test Date :	08/12/2016
Fundamental Frequency	: 5670 MHz	Temp. / Humi. :	23 deg_C / 62 RH
Operation Band :	Tx CH HIGH	Test Engineer:	Tin
EUT Pol. :	H Plane	Measurement Antenna Pol.	: HORIZONTAL
97			
80 -			
Level [dBuV]		FCC RSE	PEAK15.407 3M
60 - FCC RSE-AV	15.407 <u>.3M</u>		
	×		
1000 5000		0000 250C0 3C000 3	35000 40000
Freq. Note [	Decetor Actual Mode Reading Lev	Spectrum Factor /el FS	Limit Margin @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.10

51.99

F/H/E/S

Н

Н

MHz

11340.00

11340.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_edocument.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

dBµV/m

20.72

31.61

dBu V/m

54.00

74.00

dB

-12.90

-22.01

dB

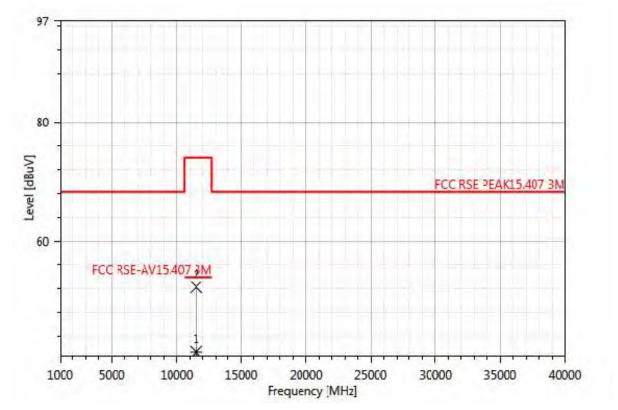
20.38

20.38



## Radiated Spurious Emission Measurement Result 802.11n HT40, 5725~5850 MHz

802.11n40B4	Test Date :	08/12/2016
: 5755 MHz	Temp. / Humi. :	23 deg_C / 62 RH
Tx CH LOW	Test Engineer:	Tin
H Plane	Measurement Antenna Pol.	VERTICAL
	: 5755 MHz Tx CH LOW	: 5755 MHz Temp. / Humi. : Tx CH LOW Test Engineer :



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11510.00	Н	Average	41.42	21.03	20.39	54.00	-12.58
11510.00	Н	Peak	52.32	31.93	20.39	74.00	-21.68

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.



**Operation Mode :** 802.11n40B4 Test Date : 08/12/2016 Fundamental Frequency : 5755 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH LOW** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSF-AV15407 3M 30000 15000 25000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.54

51.77

F/H/E/S

Н

Н

MHz

11510.00

11510.00

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

dBµV/m

21.15

31.38

dBuV/m

54.00

74.00

dB

-12.46

-22.23

dB

20.39

20.39



**Operation Mode :** 802.11n40B4 Test Date : 08/12/2016 Fundamental Frequency : 5795 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol.: VERTICAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 15000 25000 30000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin

		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11590.00	Н	Average	41.54	21.11	20.43	54.00	-12.46
11590.00	Н	Peak	52.52	32.09	20.43	74.00	-21.48

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.

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

S 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



**Operation Mode :** 802.11n40B4 Test Date : 08/12/2016 Fundamental Frequency : 5795 MHz Temp. / Humi. : 23 deg C / 62 RH **Operation Band**: **Tx CH HIGH** Test Engineer: Tin EUT Pol. : H Plane Measurement Antenna Pol. : HORIZONTAL 97 80 Level [dBuV] FCC RSE PEAK15.407 3N 60 FCC RSE-AV15407 3M 30000 15000 25000 1000 5000 10000 20000 35000 40000 Frequency [MHz] Freq. Note Decetor Actual Spectrum Factor Limit Margin Mode **Reading Level** FS @3m

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

QP/AV/PK

Average

Peak

dBµV/m

41.64

52.21

F/H/E/S

Н

Н

MHz

11590.00

11590.00

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

dBµV/m

21.21

31.78

dBuV/m

54.00

74.00

dB

-12.36

-21.79

dB

20.43

20.43



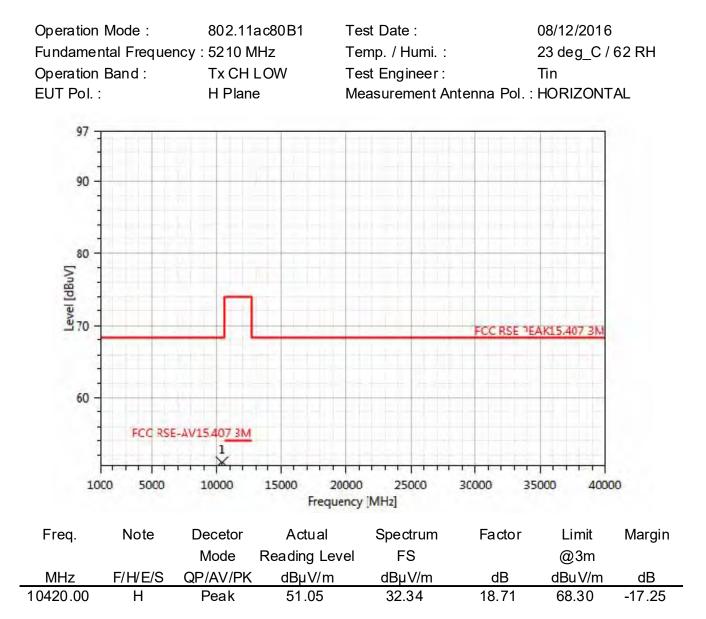
## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5150~5250 MHz

Operation Fundamer Operation EUT Pol. :	ntal Frequer Band :	802.11a ncy : 5210 M Tx CH I H Plane	lHz LOW	Test Date : Temp. / Humi. Test Engineer Measurement /	:	08/12/2016 23 deg_C / Tin : VERTICAL	
97							
90 -							
Level [dBuV] 64 1					FCC RSE P	EAK15.407 3M	
- - - - - -	FCC RSE	-AV1540 <u>7 3M</u>					
-	FT FT						
10	co 5000	10000		0000 25000 ency [MHz]	30000 3	5000 4000	0
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev			@3m	
MHz	F/H/E/S H	QP/AV/PK	dBµV/m	<u>dBµV/m</u>	dB 18.71	dBuV/m	dB -17.63
10420.00	п	Peak	50.67	31.96	10.71	68.30	-17.03

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装

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.





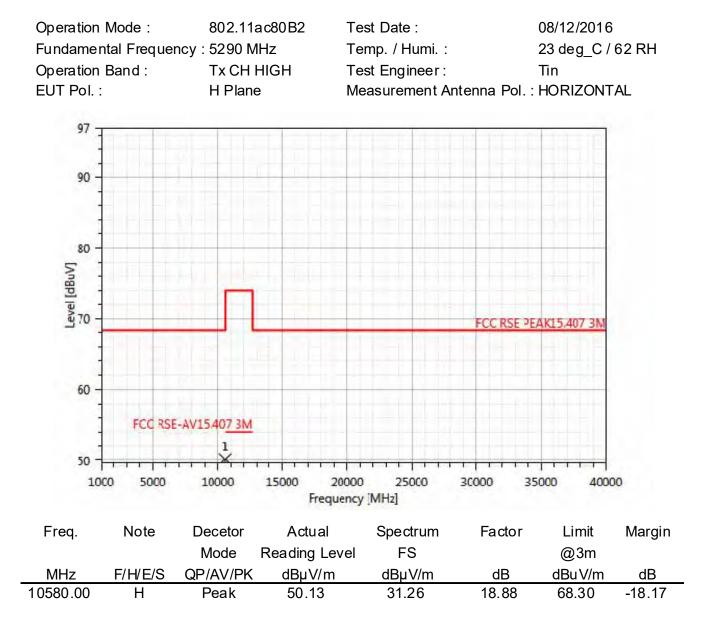
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



#### Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5250~5350 MHz

Operation Mode : Fundamental Frequer Operation Band : EUT Pol. :		802.11ac80B2 uency : 5290 MHz Tx CH HIGH H Plane		est Date : emp. / Humi. : est Engineer : easurement A		08/12/2016 23 deg_C / 62 RH Tin : VERTICAL		
97 <del>-</del>	the late			e la planar		111111		
90 - -								
- - 08 - 10								
Level [dBuy]					FCC RSE PE	AK15.407 3M		
60 -								
-	FCC RSI	E-AV15.407 3M						
100	0 5000	10000	15000 2000 Frequenc		3C000 3	5000 4000	0	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Level			@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB	
10580.00	Н	Peak	51.90	33.03	18.88	68.30	-16.40	





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.



11060.00

Н

#### Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5470~5725 MHz

Operatior Fundame Operatior EUT Pol.	ental Freque n Band :	802.11a ncy : 5530 M Tx CH L H Plane	Hz _OW	Test Date : Temp. / Humi. : Test Engineer : Measurement A	ntenna Pol.	08/12/2016 23 deg_C / Tin : VERTICAL	62 RH
97 80 60	FCC RSI	-AV1540 <u>7,3M</u>			FCC RSE PI	EAK15.407 3M	
		× 1 1				++++++	
1	000 5000	10000		000 25000 ncy [MHz]	30000 3	5000 4000	10
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve			@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
11060.00	Н	Average	41.20	20.94	20.26	54.00	-12.80

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.

51.91

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

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

31.65

20.26

74.00

-22.09



Operation M Fundamenta Operation B EUT Pol. :	al Frequency	802.11a : 5530 M Tx CH L H Plane	Hz _OW	Test E	/ Humi.: ngineer:	ntenna Pol	Tin	g_C / 6	
97									
80 -									
Level [dBuV]		Л				FCC RSE	PEAK15.40	<u>7 3M</u>	
60 -	FCC RSE-AV1	540 <u>23M</u> X							
1000	5000	1 10000		20000 Jency [MH:	25000 2]	3000	35000	40000	
Freq.		ecetor Mode	Actual Reading Le	-	ectrum FS	Factor		3m	Margin

Unless otherwise stated the results shown in this test report refer only to the sample(s)	

QP/AV/PK

Average

Peak

dBµV/m

41.41

52.09

F/H/E/S

Н

Н

MHz

11060.00

11060.00

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,此根告結果僅對測試之樣品負責,同時此樣品僅倍留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unavult and offenders may be prosecuted to the fullest event of the law. 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

dBµV/m

21.15

31.83

dB

20.26

20.26

dBuV/m

54.00

74.00

dB

-12.59

-21.91



Operation M Fundamenta Operation B EUT Pol. :	al Frequency	802.11a : 5610 Mł Tx CH H H Plane	Ηz	Test Date : Temp. / Humi. Test Engineer : Measurement /	:	08/12/2016 23 deg_C / Tin : VERTICAL	62 RH
97 -							
80							
Level [dBuV]					FCC RSE P	EAK15.407 3M	
60 -	FCC RSE-AV	1540 <u>X1M</u>					
1000	5000	1 1 10000		0000 25000 ency [MHz]	3COOO 3	5000 4000	0
Freq.		ecetor Mode l	Actual Reading Lev	Spectrum vel FS	Factor	Limit @3m	Margin

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

QP/AV/PK

Average

Peak

dBµV/m

41.25

50.89

F/H/E/S

Н

Н

MHz

11220.00

11220.00

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,此根告結果僅對測試之樣品負責,同時此樣品僅保留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unavult and offenders may be prosecuted to the fullet extent of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

dBµV/m

20.77

30.42

dBuV/m

54.00

74.00

dB

-12.75

-23.11

dB

20.48

20.48



11220.00

11220.00

Н

н

Fundamen	Operation Mode :802.11ac80B3Fundamental Frequency :5610 MHzOperation Band :Tx CH HIGHEUT Pol. :H Plane			「est Date : 「emp. / Humi. : 「est Engineer : ⁄Ieasurement A	ntenna Pol.	08/12/2016 23 deg_C / 62 RH Tin HORIZONTAL		
97 - - - 80 -								
bevel [dBuV]					FCC RSE P	EAK15.407 3M		
-	FCC RSE	-AV15.40 <u>723M</u>						
100	0 5000	10000	15000 200 Frequen	00 25000 cy [MHz]	30000 3	\$5000 4000	0	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
MHz	F/H/E/S	Mode QP/AV/PK	Reading Leve dBµV/m	l FS dBµV/m	dB	@3m dBuV/m	dB	

41.47

51.22

Average

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is any be prosecuted to the fullest extent of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

20.99

30.74

20.48

20.48

54.00

74.00

-12.53

-22.78



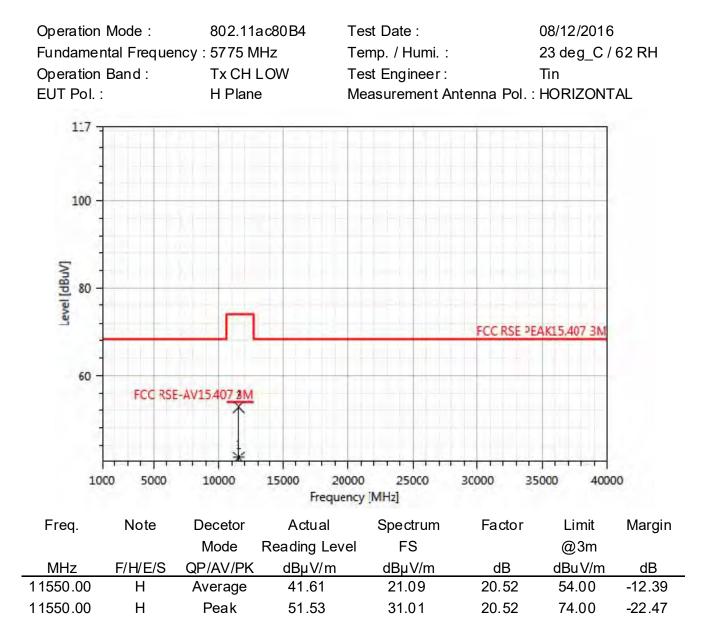
## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5725~5850 MHz

Operation	Mode :	802.11	ac80B4 Te	st Date :		08/12/2016	
Fundame	ntal Frequen	cy : 5775 N	1Hz Te	mp. / Humi. :		23 deg_C /	62 RH
Operation	Band :	Tx CH	LOW Te	st Engineer:		Tin	
EUT Pol. :	:	H Plane	e Me	asurement A	ntenna Pol.	: VERTICAL	
117 -							
100 -							
Level [dEuV]					FCC RSE 9	ЕЛК15.407 ЗМ	
60 -	FCC RSE-	AV1540 <u>7,3M</u>					
10	0 5000	10000	15000 20000 Frequency	25000 [MHz]	30000 3	5000 4000	00
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Level	FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
11550.00	Н	Average	41.58	21.06	20.52	54.00	-12.42
11550.00	Н	Peak	52.14	31.62	20.52	74.00	-21.86

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 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.





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



# Band edge falling to restricted band

#### 802.11a mode

Operation Mode :		802.11a	aB1	Test Date :		08/10/2016		
Fundamental Frequency : 5180 MHz			lHz	Temp. / Humi. :		23 deg_C / 62 RH		
Operation Band :		Bandedge CH LOW		Test Engineer:		Tin		
EUT Pol. : H Plane			e	Measurement Ante	enna Pol. :	VERTICAL		
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz F	/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5150.00	Е	Average	43.67	37.79	5.88	54.00	-10.33	
5150.00	Е	Peak	56.07	50.19	5.88	74.00	-17.93	

Operation Mode :		802.11a	aB1	Test Date :	08/10/2016		
Fundamental Frequency : 5180 MHz			Hz ·	Temp. / Humi. :			62 RH
Operation	Band :	Bandeo	lge CH LOW <sup>·</sup>	Test Engineer:		Tin	
EUT Pol. : H Plane			e l	Measurement Ant	enna Pol.:	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum el FS	Factor	Limit	Margin
			Reading Leve		10	@3m	10
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5150.00	Е	Average	44.21	38.33	5.88	54.00	-9.79
5150.00	Е	Peak	56.14	50.26	5.88	74.00	-17.86



Operation Mode :		802.11a	B2	Test Date :		08/10/2016	
Fundamental Frequency : 5320 MHz			Ηz	Temp. / Humi. :			62 RH
Operation	Band :	Banded	ge CH HIGH	I Test Engineer :		Tin	
EUT Pol. : H Plane				Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode I	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	Е	Average	43.46	37.31	6.15	54.00	-10.54
5350.00	Е	Peak	55.53	49.38	6.15	74.00	-18.47

Operation Mode : 8		802.11a	aB2 -	Test Date :		08/10/2016		
Fundamental Frequency : 5320 N			IHz <sup>-</sup>	Temp. / Humi.:		23 deg_C / 62 RH		
Operation	Band :	Bandeo	dge CH HIGH	Test Engineer:		Tin		
EUT Pol. : H Plane			e l	Measurement Antenna Pol. : HORIZONTAL				
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve			@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5350.00	Е	Average	44.56	38.41	6.15	54.00	-9.44	
5350.00	Е	Peak	57.22	51.07	6.15	74.00	-16.78	



Operation Mode: 80		802.11a	aB3	Test Date :		08/10/2016		
Fundamental Frequency : 5500 MHz			Temp. / Humi. :		23 deg_C / 62 RH			
Operation	Band :	Banded	ge CH LOW	Test Engineer:		Tin		
EUT Pol. : H Plane				Measurement Antenna Pol. : VERTICAL				
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5460.00	Е	Average	45.09	38.86	6.23	54.00	-8.91	
5460.00	Е	Peak	55.21	48.97	6.23	74.00	-18.79	

Operation Mode :		802.11a	aB3	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5500 Ml	Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	Test Engineer:		Tin	
EUT Pol. :		H Plane	:	Measurement Ant	tenna Pol. :	HORIZONT	AL
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
5460.00	E	Average	43.78	37.55	6.23	54.00	-10.22
5460.00	Е	Peak	55.71	49.48	6.23	74.00	-18.29



Operation	Mode :	802.11a	B3	Test Date :	08/10/2016			
Fundame	Fundamental Frequency : 5500 MHz			Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Banded	andedge CH LOW Test Engineer:			Tin		
EUT Pol. :		H Plane	Measurement Antenna Pol.: VERTICAL					
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5470.00	E	Peak	54.83	48.57	6.26	68.30	-13.47	

Operation	Mode :	802.11a	aB3 -	Test Date :	08/10/2016			
Fundamer	ntal Freque	ncy : 5500 M	Hz <sup>-</sup>	Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Bandeo	lge CH LOW <sup>-</sup>	Test Engineer:		Tin		
EUT Pol. :		H Plane	e l	Measurement Ant	tenna Pol. :	HORIZONT	AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5470.00	Е	Peak	57.76	51.49	6.26	68.30	-10.54	



Operation	Mode :	802.11a	aB3 -	Test Date :	08/10/2016			
Fundame	ntal Freque	ncy : 5700 M	Hz <sup>-</sup>	Temp. / Humi. :		23 deg_C /	62 RH	
Operation	Band :	Banded	lge CH HIGH <sup>-</sup>	Test Engineer:	Tin			
EUT Pol. :	:	H Plane	H Plane Measurement Antenna Pol. : VERTICAL					
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5725.00	E	Peak	56.14	49.55	6.59	68.30	-12.16	

Operation	Mode :	802.11	aB3 <sup>-</sup>	Test Date :	08/10/2016		
Fundamer	ntal Freque	ency : 5700 MHz Temp. / Humi. : 23 deg_0			23 deg_C /	62 RH	
Operation	Band :	Bandeo	dge CH HIGH <sup>-</sup>	Test Engineer:		Tin	
EUT Pol. :		H Plane	e l	Measurement An	tenna Pol. :	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5725.00	E	Peak	57.98	51.39	6.59	68.30	-10.32



5725.00

Е

Operation Mode : 802.11aB4 Fundamental Frequency : 5745 MHz				Test Date :		08/10/2016	
Fundamenta	ai Freque	ncy : 5745 IV	IHZ	Temp. / Humi. :		23 deg_C /	62 RH
Operation B	and :	Bandeo	dge CH LOW	Test Engineer :		Tin	
EUT Pol. :		H Plane	е	Measurement Ant	tenna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	Е	Peak	55.85	49.37	6.48	68.23	-12.38
5700.00	Е	Peak	55.43	48.75	6.68	105.23	-49.80
5720.00	Е	Peak	58.16	51.56	6.60	110.83	-52.67
5725.00	Е	Peak	64.73	58.14	6.59	122.23	-57.50

Operation Mode : 802.11aB4			Test Date : 08/10/2016			
Fundamental Fre	quency : 5745 N	ЛНz	Temp. / Humi. :		23 deg_C /	62 RH
Operation Band	Bande	dge CH LOW	Test Engineer:		Tin	
EUT Pol. :	H Plan	е	Measurement A	ntenna Pol. :	HORIZONT	AL
Freq. Not	e Decetor	Actual	Spectrum	Factor	Limit	Margin
1104. 110	Mode	Reading Lev	•	1 4 6 6 7	@3m	Margin
MHz F/H/	E/S QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00 E	Peak	55.28	48.79	6.48	68.23	-12.95
5700.00 E	Peak	55.48	48.80	6.68	105.23	-49.75
5720.00 E	Peak	60.81	54.21	6.60	110.83	-50.02

63.04

6.59

122.23

-52.60

69.63

Peak



Operation Mode : 802.11aB4 Fundamental Frequency : 5825 MHz				Test Date : Temp. / Humi. :		08/10/2016 23 deg. C./	
Operation	-	•		Test Engineer:		23 deg_C / 62 RH	
•			0	•		Tin	
EUT Pol. :		H Plane	9 I	Measurement An	tenna Pol.:	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	E	Peak	56.20	48.92	7.28	122.23	-66.03
5855.00	Е	Peak	56.72	49.40	7.32	110.83	-54.11
5875.00	Е	Peak	56.45	49.08	7.37	105.23	-48.78
5925.00	Е	Peak	57.00	49.61	7.39	68.23	-11.23

Operation	Mode :	802.11a	aB4 -	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5825 M	Hz <sup>-</sup>	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Bandeo	lge CH HIGH⁻	Test Engineer:	t Engineer:		
EUT Pol. :		H Plane	e 1	Measurement Ant	enna Pol.:	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
TTCq.	Note	Mode	Reading Leve		1 4 6 6 1	@3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	Е	Peak	59.00	51.72	7.28	122.23	-63.23
5855.00	Е	Peak	56.68	49.36	7.32	110.83	-54.15

49.42

48.94

56.79

56.33

Peak

Peak

Е

Е

5875.00

5925.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is anythid and offenders may be prosecuted to the fullest extent of the law pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

7.37

7.39

105.23

68.23

-48.44

-11.90



## 802.11n20 HT mode

Operation Mode : 802.11n20B			120B1	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5180 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	Test Engineer:		Tin	
EUT Pol. :		H Plane	•	Measurement Ant	enna Pol.:	VERTICAL	
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5150.00	E	Average	36.66	30.78	5.88	54.00	-17.34
5150.00	Е	Peak	50.74	44.86	5.88	74.00	-23.26

Operation Mode : 802.11n20B1			120B1	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5180 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	/ Test Engineer:		Tin	
EUT Pol. :		H Plane	•	Measurement An	tenna Pol. :	HORIZONT	AL
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5150.00	Е	Average	40.30	34.42	5.88	54.00	-13.70
5150.00	Е	Peak	52.33	46.45	5.88	74.00	-21.67



Operation	Mode :	802.11n	20B2	Test Date :		08/10/2016	
Fundamental Frequency : 5320 Mł			Hz	Hz Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	ge CH HIGH	Test Engineer :		Tin	
EUT Pol. : H Plane				Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	Е	Average	38.04	31.89	6.15	54.00	-15.96
5350.00	E	Peak	50.86	44.71	6.15	74.00	-23.14

Operation Mode : 802.11n20B2			120B2	Test Date :		08/10/2016	
Fundamental Frequency : 5320 MHz			Hz	Temp. / Humi. :		23 deg_C /	62 RH
Operation	Band :	Banded	lge CH HIGH	Test Engineer:	est Engineer:		
EUT Pol. :		H Plane	•	Measurement An	tenna Pol.:	HORIZONT	AL
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
5350.00	E	Average	40.95	34.80	6.15	54.00	-13.05
5350.00	Е	Peak	54.19	48.03	6.15	74.00	-19.81



Operation	Mode :	802.11r	120B3	Test Date :		08/10/2016	
Fundamental Frequency : 5500			Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Bandedge CH LOW		Test Engineer :		Tin	
EUT Pol. : H Plane			)	Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5460.00	Е	Average	38.21	31.98	6.23	54.00	-15.79
5460.00	Е	Peak	50.94	44.71	6.23	74.00	-23.06

Operation Mode: 802.11n20B3 Test Date:				Test Date :	08/10/2016			
Fundamental	I Frequer	ncy : 5500 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH		
Operation Ba	and :	Bandec	lge CH LOW	Test Engineer:		Tin		
EUT Pol. :		H Plane	;	Measurement Ante	enna Pol. :	HORIZONT	AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
			Reading Lev			@3m		
MHz F	-/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5460.00	Е	Average	38.19	31.96	6.23	54.00	-15.81	
5460.00	Е	Peak	49.84	43.60	6.23	74.00	-24.16	



Operation	Mode :	802.11n	20B3	Test Date :	08/10/2016		
Fundamer	ntal Freque	ncy : 5500 MF	Ηz	Temp. / Humi. :	23 deg_C / 62 RH		
Operation	Band :	Bandedg	ge CH LOW	Test Engineer:	Tin		
EUT Pol. :		H Plane		Measurement Ant	enna Pol.:	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode F	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5470.00	E	Peak	52.15	45.88	6.26	68.30	-16.15

Operation	Mode :	802.11r	120B3	Test Date :	08/10/2016		
Fundamer	ntal Freque	ncy : 5500 M	Hz	Temp. / Humi. :	23 deg_C / 62 R⊦		
Operation	Band :	Banded	lge CH LOW	Test Engineer :	Tin		
EUT Pol. :		H Plane	•	Measurement Ant	enna Pol.:	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5470.00	E	Peak	52.72	46.45	6.26	68.30	-15.58



Operation	Mode :	802.11n	20B3	Test Date :	08/10/2016		
Fundame	ntal Freque	ncy : 5700 MI	Hz	Temp. / Humi. :	23 deg_C / 62 RH		
Operation	Band :	Banded	ge CH HIGH	Test Engineer :	Tin		
EUT Pol. :	:	H Plane		Measurement Ant	enna Pol.:	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5725.00	E	Peak	48.67	42.08	6.59	68.30	-19.63

Operation	Mode :	802.11	n20B3	Test Date :	08/10/2016			
Fundamer	ntal Freque	ncy : 5700 M	IHz <sup>-</sup>	Temp. / Humi. :	23 deg_C / 62 RH			
Operation	Band :	Bandeo	dge CH HIGH <sup>-</sup>	Test Engineer:	Tin			
EUT Pol. :		H Plane	e l	Measurement Ant	enna Pol.:	HORIZONT	AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5725.00	Е	Peak	56.59	50.00	6.59	68.30	-11.71	



Operation Mode : 802.11n20B Fundamental Frequency : 5745 MHz			-	Test Date : Temp. / Humi. :		08/10/2016 23 deg C /	
Operation	-	•		Test Engineer:		Tin	02111
				enna Pol. : VERTICAL			
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	45.77	39.28	6.48	68.23	-22.46
5700.00	Е	Peak	45.85	39.17	6.68	105.23	-59.38
5720.00	Е	Peak	51.87	45.27	6.60	110.83	-58.96
5725.00	E	Peak	58.15	51.56	6.59	122.23	-64.08

Operation Mode : 802.11n20B4			120B4	Test Date : 08/10/2016			
Fundame	ntal Freque	ncy : 5745 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	Test Engineer :		Tin	
EUT Pol.	:	H Plane	•	Measurement Ant	enna Pol.:	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	49.15	42.67	6.48	68.23	-19.08
5700.00	Е	Peak	50.09	43.42	6.68	105.23	-55.14
5720.00	Е	Peak	60.11	53.51	6.60	110.83	-50.72
5725.00	Е	Peak	67.93	61.34	6.59	122.23	-54.30

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此根告結果僅對測試之樣品負責,同時此樣品僅倍留的天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unavult and offenders may be prosecuted to the fullest event of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



5925.00

Е

Operation Mode :	Test Date :		08/10/2016			
Fundamental Frequen	icy : 5825 Mi	HZ	Temp. / Humi. :		23 deg_C /	62 RH
Operation Band :	Banded	ge CH HIGH <sup>-</sup>	Test Engineer :		Tin	
EUT Pol. :	H Plane	• I	Measurement Ante	enna Pol. :	VERTICAL	
Freq. Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
	Mode	Reading Leve	el FS		@3m	
MHz F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00 E	Peak	50.58	43.30	7.28	122.23	-71.65
5855.00 E	Peak	47.69	40.37	7.32	110.83	-63.14
5875.00 E	Peak	47.00	39.63	7.37	105.23	-58.23
5925.00 E	Peak	46.59	39.20	7.39	68.23	-21.64

Operation Fundame		802.11n ncy : 5825 M <del>I</del>		Test Date : Temp. / Humi. :	08/10/2016 23 deg_C / 62 RI		
Operation		•		Test Engineer :		Tin	
EUT Pol. :	Pol.: H Plane Measurement Ante			enna Pol. :	enna Pol. : HORIZONTAL		
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode I	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	E	Peak	56.71	49.42	7.28	122.23	-65.52
5855.00	Е	Peak	51.12	43.80	7.32	110.83	-59.71
5875.00	Е	Peak	49.15	41.78	7.37	105.23	-56.08

48.51

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

41.12

7.39

68.23

-19.72



# 802.11n40 HT mode

Operation	Operation Mode : 802.11n40B1 Test Date :					08/10/2016		
Fundame	ntal Freque	ncy : 5190 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Bandeo	lge CH LOW	Test Engineer:		Tin		
EUT Pol. :		H Plane	9	Measurement Ant	enna Pol. :	VERTICAL		
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5150.00	Е	Average	41.92	36.04	5.88	54.00	-12.08	
5150.00	Е	Peak	57.96	52.08	5.88	74.00	-16.04	

Operation	peration Mode : 802.11n40B1 Test Date :					08/10/2016		
Fundamer	ntal Freque	ncy : 5190 M	Hz	z Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Bandeo	lge CH LOW	Test Engineer:		Tin		
EUT Pol. :		H Plane	9	Measurement An	tenna Pol. :	HORIZONT	AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
			Reading Leve			@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5150.00	Е	Average	46.60	40.72	5.88	54.00	-7.40	
5150.00	Е	Peak	60.57	54.69	5.88	74.00	-13.43	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號



Fundamental Frequency : 5310 MHz Temp. / Humi. : 23			08/10/2016 23 deg_C / Tin VERTICAL				
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	E	Average	43.45	37.30	6.15	54.00	-10.55
5350.00	Е	Peak	56.14	49.99	6.15	74.00	-17.86
Operation Mode : 802.11n40B2				Test Date : Temp. / Humi. :		08/10/2016	
	-	ncy : 5310 M		•		23 deg_C /	02 KN
Operation			-	Test Engineer:		Tin	A 1
EUT Pol. :		H Plane	2	Measurement Ant	enna Pol. :	HURIZUNT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	E	Average	47.71	41.56	6.15	54.00	-6.29
5350.00	Е	Peak	61.09	54.94	6.15	74.00	-12.91

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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Operation Mode :		802.11n	40B3	Test Date :		08/10/2016	
Fundamental Frequency : 5510 M			Ηz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation Band :		Bandedge CH LOW		Test Engineer:		Tin	
EUT Pol. :		H Plane		Measurement Antenna Pol. : VERTICAL			
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode I	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5460.00	Е	Average	37.49	31.26	6.23	54.00	-16.51
5460.00	Е	Peak	50.25	44.02	6.23	74.00	-23.75

Operation Mode :		802.11r	140B3	Test Date :		08/10/2016	
Fundamental Frequency : 5510 Mł			Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation Band :		Bandeo	lge CH LOW	Test Engineer:		Tin	
EUT Pol. :		H Plane	9	Measurement Antenna Pol.		HORIZONTAL	
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz F	/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5460.00	Е	Average	43.79	37.56	6.23	54.00	-10.21
5460.00	Е	Peak	55.99	49.76	6.23	74.00	-18.01



Operation Mode :		802.11n	40B3	Test Date :		08/10/2016		
Fundamental Frequency : 5510 MHz			Ηz	Temp. / Humi. :	23 deg_C / 62 RH			
Operation Band :		Banded	Bandedge CH LOW T		Test Engineer :		Tin	
EUT Pol. :		H Plane	H Plane Me		Measurement Antenna Pol. : VERTICAL			
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode I	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5470.00	E	Peak	57.48	51.22	6.26	68.30	-10.82	

Operation Mode : 8		802.11r	140B3 T	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5510 M	Hz T	Temp. / Humi. :		23 deg_C / 62 RH	
Operation Band :		Bandedge CH LOW 1		Test Engineer:		Tin	
EUT Pol. :		H Plane M		Measurement Antenna Pol. : HORIZONTAL		AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	l FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5470.00	E	Peak	62.97	56.70	6.26	68.30	-5.33



Operation	Mode :	802.11n	40B3	Test Date :		08/10/2016		
Fundamental Frequency : 5670 MHz			Hz	Temp. / Humi. : 23 deg_C /			62 RH	
Operation	Band :	Banded	Bandedge CH HIGH Test Engineer:			Tin		
EUT Pol. : H Plane				Measurement Ant	enna Pol.:	VERTICAL		
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5725.00	E	Peak	45.52	38.93	6.59	68.30	-22.78	

Operation	Mode :	802.11r	n40B3 1	Test Date :		08/10/2016		
Fundamer	ntal Freque	ncy : 5670 M	Hz 7	Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Bandeo	Bandedge CH HIGH Test Engineer :			Tin		
EUT Pol. :		H Plane	H Plane Me		Measurement Antenna Pol. :		AL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin	
		Mode	Reading Leve	el FS		@3m		
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB	
5725.00	Е	Peak	53.69	47.10	6.59	68.30	-14.61	



Operation		802.11r ncy : 5755 M	-	Test Date : Temp. / Humi. :		08/10/2016 23 deg  C / 62 RH	
	-	•					02111
Operation	Band :	Bandeo	dge CH LOW	Test Engineer:		Tin	
EUT Pol. :		H Plane	9	Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	45.86	39.38	6.48	68.23	-22.37
5700.00	Е	Peak	46.68	40.01	6.68	105.23	-58.55
5720.00	Е	Peak	56.25	49.65	6.60	110.83	-54.58
5725.00	Е	Peak	58.23	51.64	6.59	122.23	-64.00

Operation Fundame						08/10/2016 23 deg_C / 62 RH	
Operation	•	•		Test Engineer:		Tin	
EUT Pol.		H Plane	0	Measurement Antenna Pol. :		HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	49.51	43.03	6.48	68.23	-18.72
5700.00	Е	Peak	51.90	45.22	6.68	105.23	-53.33
5720.00	Е	Peak	67.02	60.42	6.60	110.83	-43.81
5725.00	Е	Peak	67.87	61.28	6.59	122.23	-54.36

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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.



5925.00

Е

Operation Mode : 802 Fundamental Frequency : 579			802.11n40B4 Test Date : 5795 MHz Temp. / Humi. :			08/10/2016 23 deg C / 62 RH	
	-	•		•			02111
Operation	Band :	Bandeo	dge CH HIGH	Test Engineer:		Tin	
EUT Pol. :		H Plane	Э	Measurement An	tenna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	E	Peak	48.61	41.32	7.28	122.23	-73.62
5855.00	Е	Peak	47.45	40.13	7.32	110.83	-63.38
5875.00	Е	Peak	46.64	39.27	7.37	105.23	-58.59
5925.00	Е	Peak	46.67	39.28	7.39	68.23	-21.56

Operation	Mode :	802.11n	40B4	Test Date :		08/10/2016	
Fundamental Frequency : 5795			5795 MHz Temp.		пр. / Humi. :		62 RH
Operation	Band :	Bandedg	ge CH HIGH	Test Engineer:		Tin	
EUT Pol. :		H Plane		Measurement Ant	enna Pol. :	HORIZONT	AL
_							
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode F	Reading Lev	/el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	E	Peak	52.06	44.77	7.28	122.23	-70.17
5855.00	E	Peak	50.83	43.51	7.32	110.83	-60.00
5875.00	E	Peak	49.28	41.91	7.37	105.23	-55.95

50.11

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134, Wu/KungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

42.72

7.39

68.23

-18.12



#### 802.11ac80 VHT mode

Operation Mode: 802			c80B1	Test Date :		08/10/2016	
Fundamental Frequency : 5210			Hz	Temp. / Humi. :		23 deg_C / 62 F	
Operation	Band :	Banded	ge CH LOW	Test Engineer:		Tin	
EUT Pol. : H P			1	Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor Mode	Actual Reading Lev	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5150.00	E	Average	44.22	38.33	5.88	54.00	-9.78
5150.00	E	Peak	58.26	52.38	5.88	74.00	-15.74

Operation Mode : 802.			ac80B1	Test Date :		08/10/2016	
Fundamental Frequency : 521			Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	Test Engineer :		Tin	
EUT Pol. :		H Plane	•	Measurement An	tenna Pol. :	HORIZONT	AL
Freq.	Note	Decetor Mode	Actual Reading Leve	Spectrum el FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
5150.00	E	Average	47.78	41.90	5.88	54.00	-6.22
5150.00	Е	Peak	61.72	55.84	5.88	74.00	-12.28



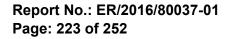
Operation Mode : 802.1			ac80B2	Test Date :		08/10/2016	
Fundamental Frequency : 5290 MI			Hz	Hz Temp. / Humi. :		23 deg_C / 62 RH	
Operation Band : Ba			Bandedge CH HIGH Test Engineer :			Tin	
EUT Pol. :		H Plane	9	Measurement Ant	asurement Antenna Pol. : VER		
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	Е	Average	41.90	35.75	6.15	54.00	-12.10
5350.00	Е	Peak	54.63	48.47	6.15	74.00	-19.37

Operation	Mode :	802.11a	c80B2	Test Date :		08/10/2016	
Fundamer	ntal Freque	ncy : 5290 MH	Hz ·	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	Bandedge CH HIGH Test Engineer:		Tin		
EUT Pol. : H Plane				Measurement An	tenna Pol. :	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode I	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5350.00	Е	Average	48.54	42.39	6.15	54.00	-5.46
5350.00	Е	Peak	64.03	57.88	6.15	74.00	-9.97



Operation Mode : 802			ac80B3	Test Date :		08/10/2016	
Fundamental Frequency : 5530 M			Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Banded	lge CH LOW	Test Engineer:		Tin	
EUT Pol. : H P			)	Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5460.00	Е	Average	45.87	39.64	6.23	54.00	-8.13
5460.00	Е	Peak	59.50	53.27	6.23	74.00	-14.50

Operation N	Node :	802.11a	ac80B3	Test Date :		08/10/2016	
Fundament	ncy : 5530 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH		
Operation Band :		Bandeo	lge CH LOW	Test Engineer:		Tin	
EUT Pol. : H			9	Measurement Ant	enna Pol. :	HORIZONT	AL
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5460.00	Е	Average	48.79	42.56	6.23	54.00	-5.21
5460.00	Е	Peak	62.68	56.44	6.23	74.00	-11.32





Operation	Mode :	802.11a	c80B3	Test Date :	08/10/2016		
Fundamental Frequency : 5530 MHz		Hz .	Temp. / Humi. :		23 deg_C /	62 RH	
Operation	Band :	Banded	Bandedge CH LOW Test Engineer :		Tin		
EUT Pol. :		H Plane	H Plane Measurement Antenna		enna Pol.:	a Pol. : VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode I	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5470.00	E	Peak	60.43	54.16	6.26	68.30	-7.87

Operation	Mode :	802.11a	ac80B3	Test Date :	08/10/2016		
Fundamental Frequency : 5530 MF		Hz <sup>-</sup>	Temp. / Humi. :		23 deg_C / 62 RH		
Operation	Band :	Banded	lge CH LOW <sup>-</sup>	Test Engineer :		Tin	
EUT Pol. :		H Plane	Plane Measurement An		tenna Pol. : HORIZONTAL		
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBuV/m	dB
5470.00	E	Peak	63.21	56.94	6.26	68.30	-5.09



Operation Mode : 80 Fundamental Frequency : 57				Test Date : Temp. / Humi. :		08/10/2016 23 deg C / 62 RH	
Operation Band :		Bandedge CH LOW		•		Tin	
EUT Pol.: H Plane Measurement Antenna Pol.:			VERTICAL				
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	54.35	47.87	6.48	68.23	-13.88
5700.00	Е	Peak	56.60	49.93	6.68	105.23	-48.63
5720.00	Е	Peak	58.32	51.72	6.60	110.83	-52.51
5725.00	Е	Peak	60.99	54.40	6.59	122.23	-61.24

Operation Mode :		802.11a	ac80B4	Test Date :		08/10/2016	
Fundame	ntal Freque	ncy : 5775 M	Hz	Temp. / Humi. :		23 deg_C / 62 RH	
Operation	Band :	Bandeo	lge CH LOW	Test Engineer:		Tin	
EUT Pol. :	:	H Plane	<b>;</b>	Measurement Ant	enna Pol. :	HORIZONT	AL
_	•• •						
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5650.00	E	Peak	58.09	51.61	6.48	68.23	-10.14
5700.00	Е	Peak	62.87	56.19	6.68	105.23	-42.36
5720.00	E	Peak	64.30	57.70	6.60	110.83	-46.53
5725.00	Е	Peak	66.69	60.10	6.59	122.23	-55.54



5925.00

Е

Operation Mode : 8 Fundamental Frequency : 5				Test Date :		08/10/2016	
Fundamer	ital Freque	ncy: 5775 IV	IHZ	Temp. / Humi. :		23 deg_C /	02 RH
Operation	Band :	Bandeo	dge CH HIGH	Test Engineer :		Tin	
EUT Pol. :		H Plane	е	Measurement Ant	enna Pol. :	VERTICAL	
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode	Reading Leve	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	E	Peak	52.38	45.10	7.28	122.23	-69.85
5855.00	Е	Peak	49.64	42.32	7.32	110.83	-61.19
5875.00	Е	Peak	49.09	41.72	7.37	105.23	-56.14
5925.00	Е	Peak	46.83	39.44	7.39	68.23	-21.40

Operation	Mode :	802.11a	c80B4	Test Date :	08/10/2016		
Fundamental Frequency : 5775 MHz Temp. / Humi. :			23 deg_C / 62 RH				
Operation	Band :	Banded	Bandedge CH HIGH Test Engi		er: Tin		
EUT Pol. :		H Plane		Measurement Ant	enna Pol. :	HORIZONT	AL
_							
Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
		Mode F	Reading Lev	el FS		@3m	
MHz	F/H/E/S	QP/AV/PK	dBµV/m	dBµV/m	dB	dBu V/m	dB
5850.00	Е	Peak	56.69	49.41	7.28	122.23	-65.54
5855.00	E	Peak	54.87	47.55	7.32	110.83	-55.96
5875.00	E	Peak	52.62	45.25	7.37	105.23	-52.61

42.98

50.37

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90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. SGCS Taiwan Ltd. No.134 WuKunDRoad.New TaipeindustrialPark. WukuDistrict NewTaipei/City Taiwan24803/新 th. 市 充 股區 新 th. 產 業 团 區 充 工 路 134 號

68.23

7.39

-17.86



# 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

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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

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



# **13. FREQUENCY STABILITY**

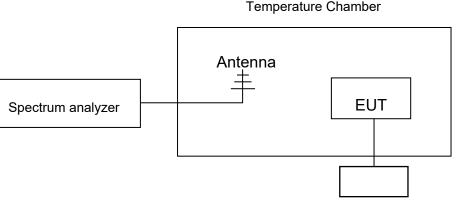
# 13.1 Standard Applicable

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:** SGS Conducted Room Calibration Calibration Name of Serial Manufacturer Model Equipment Number Date Due EXA Spectrum MY53120760 Analyzer Agilent N9030A 02/26/2016 02/25/2017 DC Block **Mini-Circuits** BLK-18-S+ 01/02/2016 01/01/2017 1 Temperature 911009 TERCHY MHG-120LF 05/17/2016 05/16/2017 Chamber

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

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

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



#### 13.5 **Measurement Result**

Operation Mode	802.11 a	Test Date	2016.08.10
Temperature	:17	Test By	Cooper
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
		36	5180	5,179.90991	0.00001739
		44	5220	5,219.88013	0.00002296
		48	5240	5,239.90991	0.00001719
		52	5260	5,259.91016	0.00001708
		60	5300	5,299.91016	0.00001695
	3.63V	64	5320	5,319.88013	0.00002253
		100	5500	5,499.91016	0.00001634
		116	5580	5,579.92505	0.00001343
		140	5700	5,699.89502	0.00001842
		149	5745	5,744.85010	0.00002609
		157	5785	5,784.84985	0.00002595
		165	5825	5,824.92505	0.00001287
- 10		36	5180	5,179.93994	0.00001159
		44	5220	5,219.89502	0.00002011
		48	5240	5,239.91016	0.00001715
		52	5260	5,259.92505	0.00001425
		60	5300	5,299.89502	0.00001981
	2.97V	64	5320	5,319.89502	0.00001973
		100	5500	5,499.90991	0.00001638
		116	5580	5,579.91016	0.00001610
		140	5700	5,699.90991	0.00001580
		149	5745	5,744.83496	0.00002873
		157	5785	5,784.89502	0.00001815
		165	5825	5,824.88013	0.00002058

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the flaw. SGCS Taiwan Ltd. IN 0.134 Wu/KunQRoad NewTaipeiIndustrialPark Wu/kunDistrict NewTaipeiCity. Taiwan24803/新 th. 市 东 股底 新 th. 素 業 团 医 东 工 这 134 装



·	1				
		36	5180	5,179.93994	0.00001159
		44	5220	5,219.89502	0.00002011
		48	5240	5,239.90991	0.00001719
		52	5260	5,259.85010	0.00002850
		60	5300	5,299.87988	0.00002266
25	3.3V	64	5320	5,319.91016	0.00001689
		100	5500	5,499.90991	0.00001638
		116	5580	5,579.90991	0.00001614
		140	5700	5,699.88013	0.00002103
		149	5745	5,744.92505	0.00001305
		157	5785	5,784.91016	0.00001553
		165	5825	5,824.86499	0.00002318
		36	5180	5,179.89502	0.00002027
		44	5220	5,219.86499	0.00002586
		48	5240	5,239.92505	0.00001430
		52	5260	5,259.87988	0.00002284
		60	5300	5,299.91016	0.00001695
		64	5320	5,319.81982	0.00003387
	3.63V	100	5500	5,499.91016	0.00001634
		116	5580	5,579.91016	0.00001610
		140	5700	5,699.91016	0.00001576
		149	5745	5,744.89502	0.00001827
		157	5785	5,784.90991	0.00001557
		165	5825	5,824.88013	0.00002058
55		36	5180	5,179.91016	0.00001734
		44	5220	5,219.84985	0.00002876
		48	5240	5,239.91016	0.00001715
		52	5260	5,259.91016	0.00001708
		60	5300	5,299.88013	0.00002262
	2.97V	64	5320	5,319.88013	0.00002253
		100	5500	5,499.94019	0.00001088
		116	5580	5,579.84985	0.00002691
		140	5700	5,699.91016	0.00001576
		149	5745	5,744.89502	0.00001827
		157	5785	5,784.89502	0.00001815
		165	5825	5,824.91016	0.00001542



Operation Mode	802.11 n_HT40	Test Date	2016.08.10
Temperature	:17	Test By	Cooper
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
		38	5190	5,189.87500	0.00002408
		46	5230	5,229.87500	0.00002390
		54	5270	5,269.87500	0.00002372
		62	5310	5,309.89990	0.00001885
	3.63V	102	5510	5,509.77490	0.00004085
		110	5550	5,549.87500	0.00002252
		134	5670	5,669.95020	0.0000878
		151	5755	5,754.90015	0.00001735
-10		159	5795	5,794.82520	0.00003016
		38	5190	5,189.82495	0.00003373
		46	5230	5,229.87500	0.00002390
		54	5270	5,269.82495	0.00003322
		62	5310	5,309.82495	0.00003297
	2.97V	102	5510	5,509.87500	0.00002269
		110	5550	5,549.92505	0.00001350
		134	5670	5,669.87500	0.00002205
		151	5755	5,754.82495	0.00003042
		159	5795	5,794.82495	0.00003021



		38	5190	5,189.90015	0.00001924
		46	5230	5,229.84985	0.00002871
		54	5270	5,269.87500	0.00002372
25		62	5310	5,309.87500	0.00002354
	3.3V	102	5510	5,509.82495	0.00003177
		110	5550	5,549.92505	0.00001350
		134	5670	5,669.82495	0.00003087
		151	5755	5,754.82495	0.00003042
		159	5795	5,794.80005	0.00003450
		38	5190	5,189.92505	0.00001444
		46	5230	5,229.92505	0.00001433
		54	5270	5,269.87500	0.00002372
		62	5310	5,309.90015	0.00001880
	3.63V	102	5510	5,509.85010	0.00002721
		110	5550	5,549.87500	0.00002252
		134	5670	5,669.85010	0.00002644
		151	5755	5,754.87500	0.00002172
		159	5795	5,794.82495	0.00003021
55		38	5190	5,189.82495	0.00003373
		46	5230	5,229.84985	0.00002871
		54	5270	5,269.90015	0.00001895
		62	5310	5,309.85010	0.00002823
	2.97V	102	5510	5,509.87500	0.00002269
		110	5550	5,549.87500	0.00002252
		134	5670	5,669.87500	0.00002205
		151	5755	5,754.87500	0.00002172
		159	5795	5,794.87500	0.00002157



Operation Mode	802.11 ac_VHT80	Test Date	2016.08.10
Temperature	:17	Test By	Cooper
Humidity	:65 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-10	3.63V	42	5210	5,209.80005	0.00003838
		58	5290	5,289.90015	0.00001888
		106	5530	5,529.80005	0.00003616
		122	5610	5,609.80005	0.00003564
		155	5775	5,774.69995	0.00005196
	2.97V	42	5210	5,209.90015	0.00001917
		58	5290	5,289.75000	0.00004726
		106	5530	5,529.80005	0.00003616
		122	5610	5,609.90015	0.00001780
		155	5775	5,774.90015	0.00001729
25	3.3V	42	5210	5,209.90015	0.00001917
		58	5290	5,289.85010	0.00002834
		106	5530	5,529.85010	0.00002711
		122	5610	5,609.59985	0.00007133
		155	5775	5,774.75000	0.00004329
55	3.63V	42	5210	5,209.90015	0.00001917
		58	5290	5,289.94995	0.0000946
		106	5530	5,529.80005	0.00003616
		122	5610	5,609.80005	0.00003564
		155	5775	5,774.85010	0.00002596
	2.97V	42	5210	5,209.80005	0.00003838
		58	5290	5,289.90015	0.00001888
		106	5530	5,529.75000	0.00004521
		122	5610	5,609.75000	0.00004456
		155	5775	5,774.75000	0.00004329



# **14. ANTENNA REQUIREMENT**

## 14.1 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

PIFA antenna designs are used.

The antenna is designed with permanent attached 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 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 <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 for exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-

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