

Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 1 of 75

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT **INDUSTRY CANADA RSS-210**

Product Name: Wireless 802.11a/b/g SDIO Adaptor

Brand Name: Silex

Model Name: SX-SDWAG

Model Different: N/A

FCC ID: N6C-SXSDWAG IC: 4908B-SXSDWAG

ER/2008/70029~30 **Report No.:**

Issue Date: Aug. 04, 2008

FCC Rule Part: §15.407

IC Rule Part: RSS-210 issue 7:2007, Annex 9

Prepared for: For FCC:

Silex Technology, Inc.

2-3-1 Hikaridai, Seika-cho Sourakugun Kyoto

619-0237 Japan

For IC:

SILEX TECHNOLOGY AMERICA INC.

150 Roehampton Avenue #904, Toronto, Ontario,

Canada, M4P 0A2

Prepared by: SGS Taiwan Ltd.

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial Zone,

Taipei County, Taiwan.





0513

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attentise drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 2 of 75

VERIFICATION OF COMPLIANCE

For FCC: **Applicant:**

Silex Technology, Inc.

2-3-1 Hikaridai, Seika-cho Sourakugun Kyoto 619-0237 Japan

For IC:

SILEX TECHNOLOGY AMERICA INC.

150 Roehampton Avenue #904, Toronto, Ontario, Canada, M4P 0A2

Wireless 802.11a/b/g SDIO Adaptor Product Name:

Brand Name: Silex

FCC ID: N6C-SXSDWAG IC: 4908B-SXSDWAG

Model No.: **SX-SDWAG**

Model Difference: N/A

File Number: ER/2008/70029~30

Date of test: Jul. 20, 2008 ~ Aug. 04, 2008

Date of EUT Received: Jul. 20, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407 and RSS-210 issue 7: 2007 Annex 9. The test results of this report relate only to the tested sample identified in this report.

Test By:	Alm Hsieh	Date	Aug. 04, 2008
Prepared By:	Arno Hsieh / Sr. Engineer	Date	Aug. 04, 2008
Approved By:	Eva Kao / Asst. Supervisor	Date -	Aug. 04, 2008

Vincent Su / Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Atten is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 3 of 75

Version

Version No.	Date	Description
00	Aug. 04, 2008	

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



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 4 of 75

Table of Contents

1.	GEN	ERAL INFORMATION	
	1.1.	Product Description	
	1.2.	Related Submittal(s) / Grant (s)	8
	1.3.	Test Methodology	8
	1.4.	Test Facility	8
	1.5.	Special Accessories	8
	1.6.	Equipment Modifications	8
2.	SYS	ΓΕΜ TEST CONFIGURATION	9
	2.1.	EUT Configuration	9
	2.2.	EUT Exercise	9
	2.3.	Test Procedure	9
	2.4.	Configuration of Tested System	10
3.	SUM	MARY OF TEST RESULT	1
4.		CRIPTION OF TEST MODES	
5.	AC F	POWER LINE CONDUCTED EMISSION TEST	12
	5.1.	Standard Applicable	12
	5.2.	EUT Setup	12
	5.3.	Measurement Procedure.	12
	5.4.	Measurement Equipment Used:	13
	5.5.	Measurement Result.	13
6.	26dB	and 99% EMISSION BANDWIDTH MEASUREMENT	16
	6.1	Standard Applicable	
	6.2	Measurement Procedure	16
	6.3	Measurement Equipment Used:	16
	6.4	Measurement Result	17
7.	PEA:	K OUTPUT POWER MEASUREMENT	20
	7.1	Standard Applicable	22
	7.2	Measurement Procedure	23
	7.3	Measurement Equipment Used:	24
	7.4	Measurement Result	24

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。 This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of the documents in unpoint in a page of the followers to the fullest output of the followers. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 5 of 75

8.	PEAL	K POWER SPECTRAL DENSITY	27
	8.1	Standard Applicable	27
	8.2	Measurement Procedure	28
	8.3	Measurement Equipment Used:	29
	8.4	Measurement Result	29
9.	PEAL	K EXCURSION MEASUREMENT	32
	9.1	Standard Applicable	32
	9.2	Measurement Procedure	32
	9.3	Measurement Equipment Used:	32
	9.4	Test Results:	33
10.	UND	ESIRABLE EMISSION - CONDUCTED MEASUREMENT	36
	10.1	Standard Applicable	
	10.2	Measurement Procedure	37
	10.3	Measurement Equipment Used:	37
11.	UND	ESIRABLE EMISSION - RADICTED MEASUREMENT	43
	11.1	Standard Applicable	
	11.2	EUT Setup	46
	11.3	Measurement Procedure	47
	11.4	Test SET-UP (Block Diagram of Configuration)	48
	11.5	Measurement Equipment Used:	49
	11.6	Field Strength Calculation	50
	11.7	Measurement Result	50
12.	TRA	NSMISSION IN THE ABSENCE OF DATA	72
	12.1	Standard Applicable	
	12.2	Result:	72
13.	FRE	QUENCY STABILITY	73
	13.1	Standard Applicable	
	13.2	Result:	73
14.	ANT	ENNA REQUIREMENT	74
	14.1	Standard Applicable	
	14.2	Antenna Connected Construction	74

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。 This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of the documents in unpoint in a page of the followers to the fullest output of the followers. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 6 of 75

15.	TPC	and DFS MEASUREMENT	.75
	15.1	TPC: Standard Applicable	.75
	15.2	DFS: Standard Applicable	.75



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 7 of 75

GENERAL INFORMATION

1.1. Product Description

General:

S chief this	
Product Name:	Wireless 802.11a/b/g SDIO Adaptor
Brand Name:	Silex
Model Name:	SX-SDWAG
Model Difference:	N/A
Power Supply:	3.3Vdc

WLAN: 802.11 a/b/g

Frequency Range	2412MHz- 2462MHz	5150MHz- 5250MHz	5725MHz – 5850MHz	
Channel number	11 channels	4 channels	5 channels	
Rated Power	b mode: 16.5 dBm g mode: 16.65 dBm	14.29 dBm	14.54 dBm	
Modulation Technology	DSSS, OFDM	OFDM	OFDM	
Antenna Designation	Dipole Antenna, 1.5dBi	Dipole Antenna, 0.4dBi	Dipole Antenna, 2.1dBi	
Type of Emission	16M6M7D	24M6M7D	16M6M7D	
Modulation type	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM			
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps; 802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps			

The EUT is compliance with IEEE 802.11 a/b/g Standard.

This report applies for frequency bands 5150 MHz-5250 MHz

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 8 of 75

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

This submittal(s) (test report) is intended for FCC ID: N6C-SXSDWAG filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules and IC: 4908B-SXSDWAG filing to comply with Industry Canada RSS-210 issue 7: 2007 Annex 9. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003) and RSS-Gen: 2007.. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1.

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

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 9 of 75

SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

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

2.2. EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Emissions

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

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna. According to the reguirements in Section 8 and 13 and Subclause 8.3.1.2 of ANSI C63.4-2003.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www. is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 10 of 75

2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

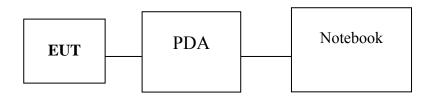


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.
1.	Notebook	IBM	T43	L3LHHN6
2.	PDA	Mio	Mio P350	WL1T6600211

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

台灣檢驗科技股份有限公司



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 11 of 75

SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted	Compliant
RSS-Gen §7.2.2	Emission	
§15.407(a)	26 dB and 99% Emission Band-	Compliant
RSS 210 A9.2	width	
RSS-Gen §4.4.1		
§15.407(a)	Peak Output Power Measurement	Compliant
RSS 210 A9.2(1)		
§15.407(a)	Peak Power Spectral Density	Compliant
RSS 210 A9.2(1)	Measurement	
15.407(a)(6)	Peak Excursion Measurement	Compliant
§15.407(b)	Undesirable Emission – Con-	Compliant
RSS 210 A9.3	ducted Measurement	
§15.407(b)	Undesirable Emission – Radiated	Compliant
RSS 210 A9.3	Measurement	
§15.407(c)	Transmission in case of Absence	Compliant
RSS 210 A9.5(4)	of Information	
§15.407(g); RSS 210	Frequency Stability	Compliant
A9.5(5)		
§15.407(d)	Antenna Requirement	Compliant
RSS-210 issue 7,§A8.4		
§15.407(d)	TPC and DFS Measurement	Compliant
RSS 210 A9.4		

4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel lowest(5180MHz) · Mid(5220MHz) and Highest(5240MHz) with 6Mbps highest data rate are chosen for full testing.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 Issue Date: Aug. 04, 2008

Page: 12 of 75

AC POWER LINE CONDUCTED EMISSION TEST

5.1. Standard Applicable

According to \$15.207 and RSS-Gen \$7.2.2, frequency range within 150KHz to 30MHz shall not exceed the Limit table as below.

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

Note

5.2. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
- 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 110Vac/60Hz power source.

5.3. Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- **3.** Repeat above procedures until all frequency measured were complete.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Atten is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

^{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.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 13 of 75

5.4. Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
EMC Analyzer	HP	8594EM	3624A00203	09/02/2007	09/03/2008	
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2007	09/14/2008	
Transient Limiter	HP	11947A	3107A02062	09/02/2007	09/03/2008	
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2007	12/30/2008	
LISN	Rolf-Heine	NNB-2/16Z	99013	01/10/2008	01/09/2009	
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	01/11/2008	01/10/2009	
Coaxial Cables	N/A	N/A	CE01	01/11/2008	01/10/2009	

5.5. Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

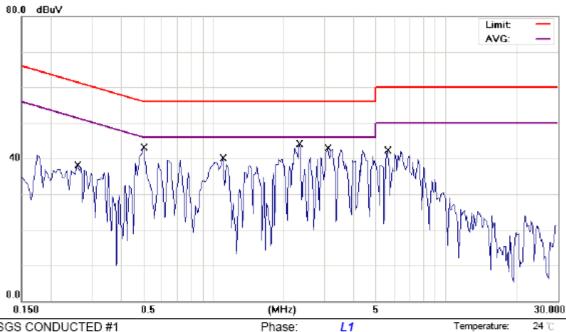


Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 14 of 75

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Worst Case: 802.11g mode Data Link			Test Date:	Aug. 04, 2008
Temperature:	24 °C	Humidity:	60%	Test By:	Arno



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: WIRELESS 802.11ABG SDIO ADAPTER

M/N: SX-SDWAG Note: DATA LINK

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.2600	38.13	0.02	38.15	61.43	-23.28	QP		
2	0.5000	43.00	0.02	43.02	56.00	-12.98	QP		
3	1.1000	40.14	0.01	40.15	56.00	-15.85	QP		
4 *	2.3400	44.15	0.05	44.20	56.00	-11.80	QP		
5	3.1200	42.75	0.06	42.81	56.00	-13.19	QP		
6	5.6000	42.14	0.12	42.26	60.00	-17.74	QP		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Humidity:

Air Pressure:



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

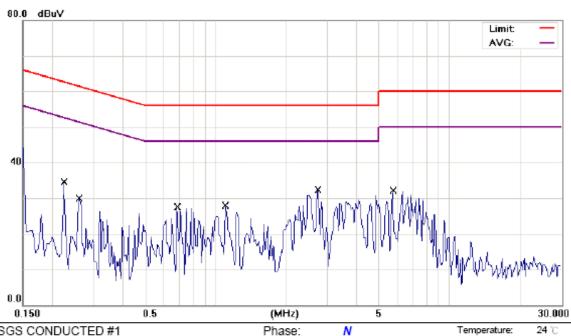
Page: 15 of 75

Humidity:

Air Pressure:

60 %

hpa



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: WIRELESS 802.11ABG SDIO ADAPTER

M/N: SX-SDWAG Note: DATA LINK

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.2250	34.40	0.02	34.42	62.63	-28.21	QP		
2	0.2600	29.96	0.02	29.98	61.43	-31.45	QP		
3	0.6850	27.55	0.02	27.57	56.00	-28.43	QP		
4	1.1000	27.90	0.01	27.91	56.00	-28.09	QP		
5 *	2.7500	32.24	0.05	32.29	56.00	-23.71	QP		
6	5.7200	31.97	0.13	32.10	60.00	-27.90	QP		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 16 of 75

26dB and 99% EMISSION BANDWIDTH MEASUREMENT

6.1 Standard Applicable

According to §15.407(a). No Limit required.

According to RSS 210 A9.2(1), No Limit required.

RSS-Gen §4.4.1, the transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

6.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the 3.antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW=1% bandwidth, VBW = 3* RBW, Span= 50MHz, Sweep=auto
- 4. Mark the peak frequency and –26dB (upper and lower) frequency.
- 5. Repeat above procedures until all frequency measured were complete.

6.3 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009			
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008			
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A			

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Atten is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 Issue Date: Aug. 04, 2008

Page: 17 of 75

Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009
------------	--------------	---------	-----	------------	------------

6.4 Measurement Result

Frequency (MHz)	26dB Bandwidth (B)	10 Log (B) (dB)	99% Bandwidth (MHz)
5180	24.90	13.96	20.60
5220	27.90	14.46	24.00
5240	27.00	14.31	24.60

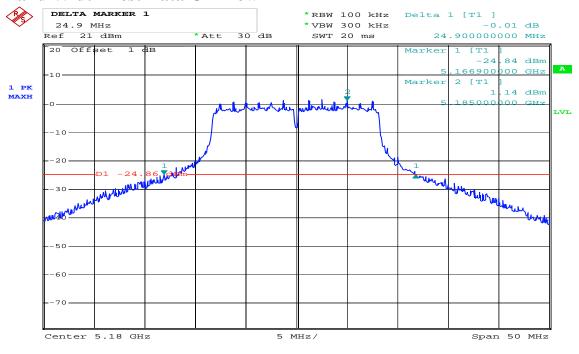
*Note: Offset 1dB



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

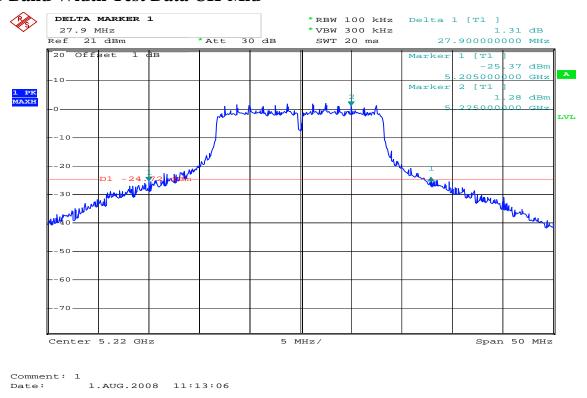
Page: 18 of 75

26dB Band Width Test Data CH-Low



Comment: 1 1.AUG.2008 11:09:38

26dB Band Width Test Data CH-Mid



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

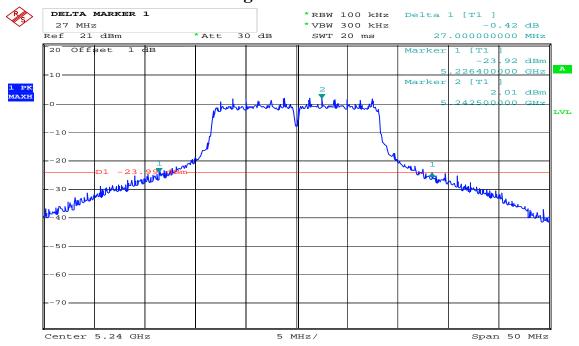


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 19 of 75

26dB Band Width Test Data CH-High



Comment: 1

1.AUG.2008 11:16:44

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

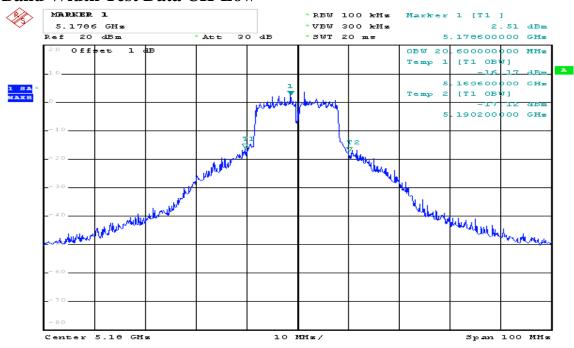


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

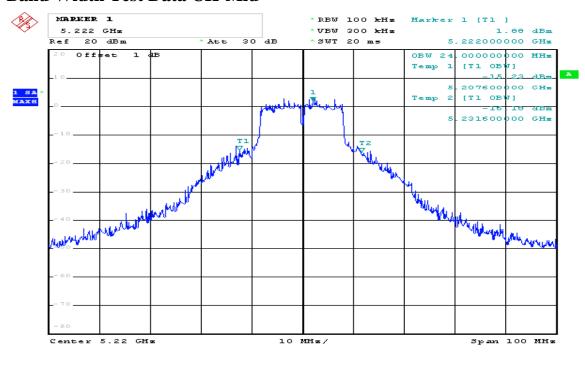
Page: 20 of 75

99% Band Width Test Data CH-Low



Comment: 1 31.JUL.2008 21:53:20

99% Band Width Test Data CH-Mid



Comment: 1 31.JUL.2000

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

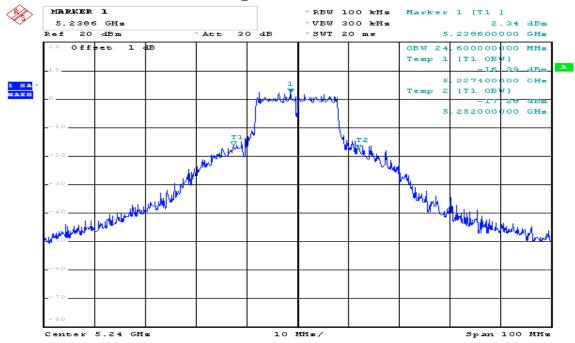


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 21 of 75

99% Band Width Test Data CH-High



Comment: 1 31.JUL.2008 21:50:50

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 22 of 75

PEAK OUTPUT POWER MEASUREMENT

7.1 Standard Applicable

According to §15.407(a)

- 1. For the band 5.15-5.25 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B.
- 2. For the band 5.25-5.35 GHz and 5.47-5.725GMHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.
- 3. For the band 5.725-5.825 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 1W (30dBm) or 17 dBm + 10log B.

According to RSS-210 A9.2

- 1. For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 20 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
- 2. For the bands 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or

17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

In addition, devices with maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

In addition to the above requirements, devices operating in the band 5250-5350 MHz with maximum e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. elevation mask where θ is the angle above the local horizontal plane (of the earth) as shown below:



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 23 of 75

- (i) -13 dB(W/MHz) for $0o \le \theta < 8o$
- (ii) -13 0.716 (θ -8) dB(W/MHz) for $80 \le \theta < 400$
- (iii) -35.9 1.22 (θ -40) dB(W/MHz) for $40o \le \theta \le 45o$
- (iv) -42 dB(W/MHz) for $\theta > 45$ o
- 3. For the band 5725-5825 MHz, the maximum conducted output power shall not exceed 1.0 W or

17 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 17 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Fixed point-to-point systems for this band are permitted to have an e.i.r.p. greater than 4 W, provided that the higher e.i.r.p. is achieved by employing higher gain antennas, but not higher transmitter output powers. Point-to-multipoint systems, omni-directional applications and multiple co-located transmitters transmitting the same information are prohibited from exceeding 4 W e.i.r.p. However, remote stations of point-to-multipoint systems shall be permitted to operate at greater than 4 W e.i.r.p, under the same conditions as for point-to-point systems.

where B is the 26dB emission bandwidth in MHz.

7.2 Measurement Procedure

- Place the EUT on the table and set it in transmitting mode. 1.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Channel Power Function, RBW=1MHz, VBW=3MHz, ACP Bandwidth = 26dB Emission Bandwidth)
- 3. Record the max. reading.
- Repeat above procedures until all frequency measured were complete. 4.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 24 of 75

7.3 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
ТҮРЕ		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009			
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008			
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009			

7.4 Measurement Result

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	5180	14.29	17.00	-2.71
Mid	5220	13.59	17.00	-3.41
High	5240	13.66	17.00	-3.34

*Note: Offset 1dB

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

Company. 除非另有說明,此報告結果集到測成之樣的員質。本報告术總本公司書國計刊,不可能仍複製。
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

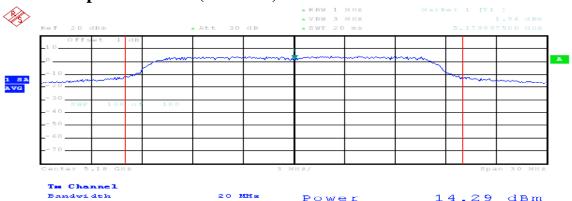


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

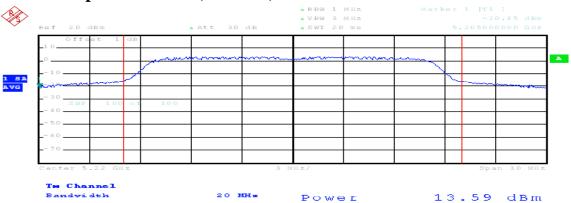
Page: 25 of 75

Peak Power Output Data Plot (CH Low)



31.JUL.2008 21:27:22

Peak Power Output Data Plot (CH Mid)



31.JUL.2008 21:30:44 Date:

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

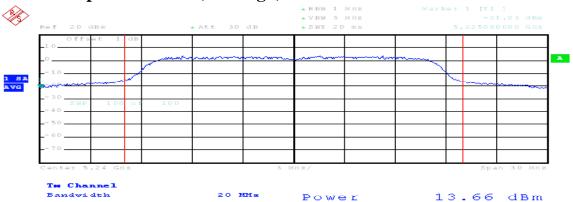


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 26 of 75

Peak Power Output Data Plot (CH High)



Comment: 1 31.JUL.2008 21:31:36

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 27 of 75

PEAK POWER SPECTRAL DENSITY

8.1 Standard Applicable

According to §15.407(a)

- 1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band.
- 2. For the band 5.25-5.35 GHz and 5.47-5.725GMHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band.
- 3. For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band.

Where B is the -26dBc emission bandwidth in MHz. 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.

According to RSS-210 A9.2

- 1. For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
- 2. For the bands 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or

17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

In addition, devices with maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

In addition to the above requirements, devices operating in the band 5250-5350 MHz with maximum e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. elevation mask where θ is the angle above the local horizontal plane (of the earth) as shown below:



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 28 of 75

- (i) -13 dB(W/MHz) for $0o \le \theta \le 8o$
- (ii) -13 0.716 (θ -8) dB(W/MHz) for $80 \le \theta < 400$
- (iii) -35.9 1.22 (θ -40) dB(W/MHz) for $40o \le \theta \le 45o$
- (iv) -42 dB(W/MHz) for $\theta > 45$ o
- 3. For the band 5725-5825 MHz, the maximum conducted output power shall not exceed 1.0 W or

17 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 17 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Fixed point-to-point systems for this band are permitted to have an e.i.r.p. greater than 4 W, provided that the higher e.i.r.p. is achieved by employing higher gain antennas, but not higher transmitter output powers. Point-to-multipoint systems, omni-directional applications and multiple co-located transmitters transmitting the same information are prohibited from exceeding 4 W e.i.r.p. However, remote stations of point-to-multipoint systems shall be permitted to operate at greater than 4 W e.i.r.p, under the same conditions as for point-to-point systems.

B is the 99% emission bandwidth in MHz.

8.2 Measurement Procedure

- Place the EUT on the table and set it in transmitting mode. 1.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
- Set RBW=1MHz, VBW=3MHz, Span=20MHz (Base Mode)/ 50MHz (Turbo Mode), Sweep 3. time = Auto, traces 100 sweeps of video averaging.
- 4. Record the max. reading.
- Repeat above procedures until all frequency measured were complete. 5.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www. is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 29 of 75

8.3 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009			
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008			
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009			

8.4 Measurement Result

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5180	3.52	4.00	-0.48
Mid	5220	3.29	4.00	-0.71
High	5240	3.42	4.00	-0.58

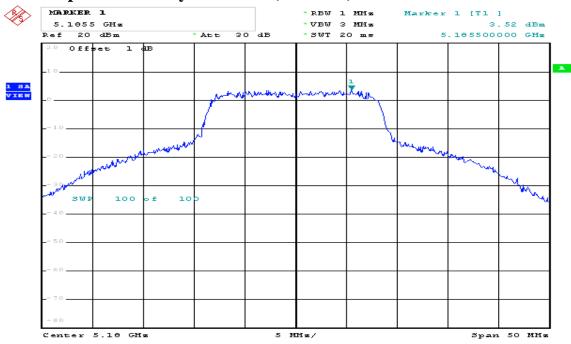
*Note: Offset 1dB



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

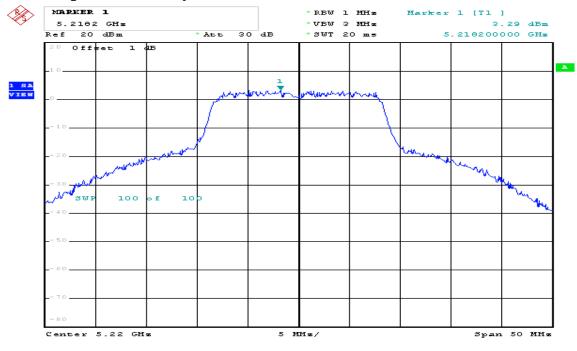
Page: 30 of 75

Peak Power Spectral Density Data Plot (CH Low)



Comment: 1 31.JUL.2008 21:39:28

Peak Power Spectral Density Data Plot (CH Mid)



Comment: 1 31.JUL.2008 21:36:13

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

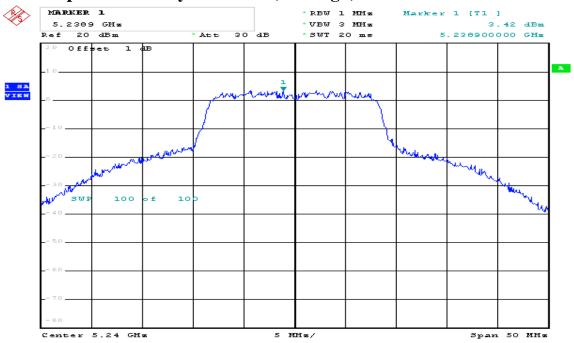


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 31 of 75

Peak Power Spectral Density Data Plot (CH High)



Comment: 1 31.JUL.2008 21:35:10

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 32 of 75

9. PEAK EXCURSION MEASUREMENT

9.1 Standard Applicable

15.407(a)(6) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

9.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to spectrum.
- 3. Trace A, Set RBW=1MHz, VBW = 3MHz, Span = 26dBc, Max. hold.
- 4. Trace B, Set RBW=1MHz, VBW = 30KHz, Span = 26dBc, Max. hold...
- 5. Delta Mark trace A center frequency and trace B center frequency.
- 6. Repeat above procedures until all frequency measured were complete.

9.3 Measurement Equipment Used:

	in manufacture Equipment eget.								
	Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
ТҮРЕ		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009				
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009				
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A				
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009				



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 33 of 75

9.4 Test Results:

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Low	5180	9.67	13.00	-3.33
Mid	5220	9.03	13.00	-3.97
High	5240	9.49	13.00	-3.51

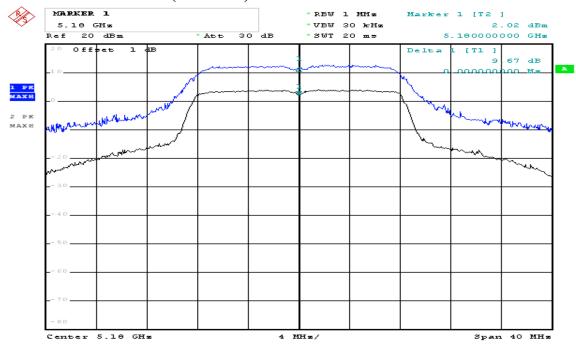
*Note: Offset 1dB



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

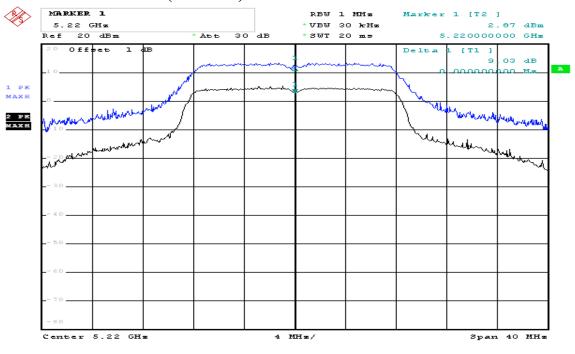
Page: 34 of 75

Peak Excursion Data Plot (CH Low)



Comment: 1 31.JUL.2008 22:02:58

Peak Excursion Data Plot (CH Mid)



Comment: 1 31.JUL.2000 22:05:12

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

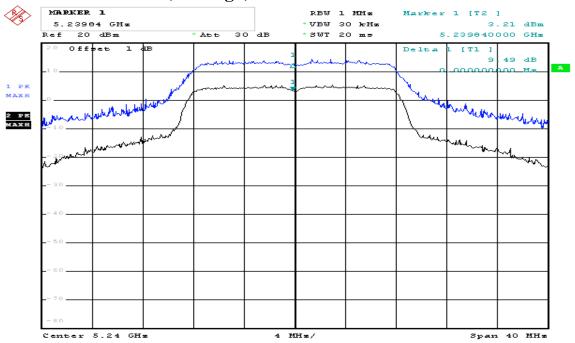


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 35 of 75

Peak Excursion Data Plot (CH High)



Comment: 1

31.JUL.2008 22:06:35

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 36 of 75

10. UNDESIRABLE EMISSION - CONDUCTED MEASUREMENT

10.1 Standard Applicable

According to §15.407(b),

- (b) Undesirable Emission Limits: Except as shown in Paragraph (b)(6) of this section, the peak 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 EIRP of -27 dBm/MHz.
 - 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 EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
 - 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 EIRP of -27 dBm/MHz.
 - For transmitters operating in the 5.725-5.825 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 EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.
 - The above emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
 - Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.
 - The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
 - When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 37 of 75

10.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to spectrum.
- Set Spectrum RBW=1MHz, VBW = 1MHz for peak measurement and 10Hz for average measurement.
- Set Spectrum at lower/upper band edge and the restricted band adjacent to the lower/upper 4. edge of the authorized band, with the transmitter set to the lowest/highest channel.
- 5. Set Spectrum over the 30MHz to 40GHz range with the transmitter set to the lowest, middle, and highest channels.

Conducted RF measurements of the transmitter output were made at the band edges and the adjacent restricted bands

Also, conducted RF measurements of the transmitter output over the 30 MHz to 40 GHz band were made in order to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

10.3 Measurement Equipment Used:

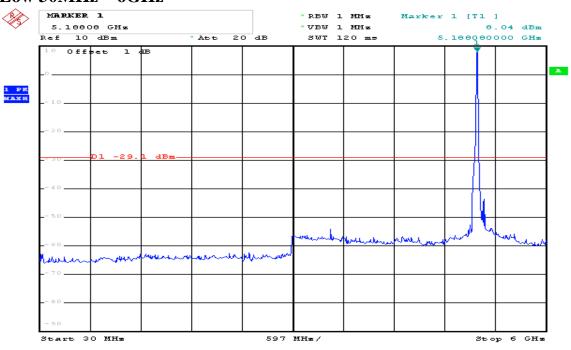
Conducted Emission Test Site										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009					
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009					
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A					
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009					



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

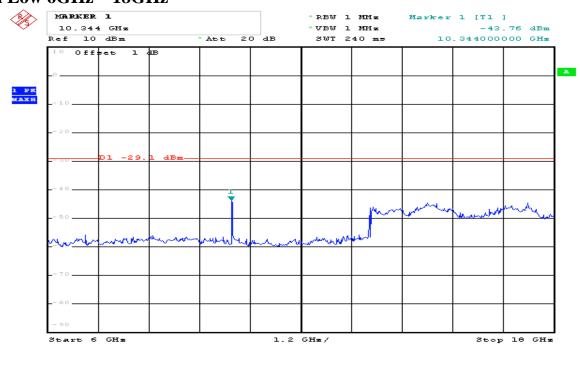
Page: 38 of 75

Ch Low 30MHz - 6GHz



Comment: 1
Nate: 31.JUL.2000 22:15:38

Ch Low 6GHz - 18GHz



31.JUL.2008 22:16:03 Date:

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

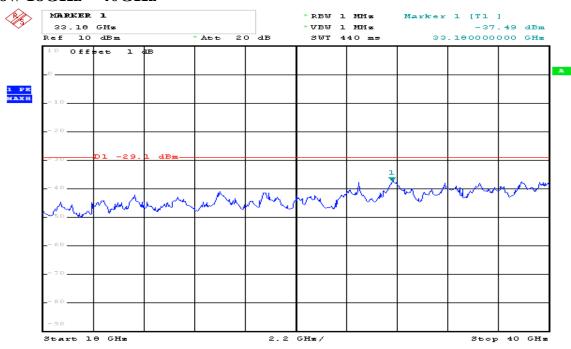


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

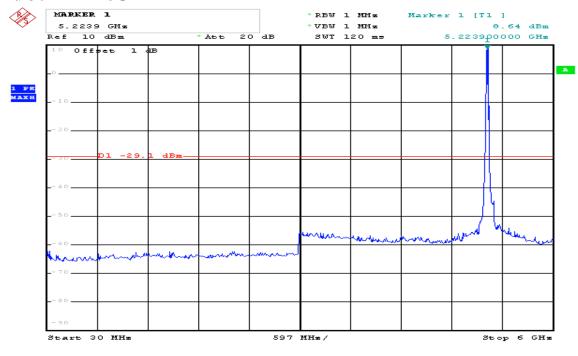
Page: 39 of 75

Ch Low 18GHz - 40GHz



Comment: 1 31.JUL.2008 22:16:40

Ch Mid 30MHz - 6GHz



Comment: 1 Date: 31.JUL.2000 22:13:46

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

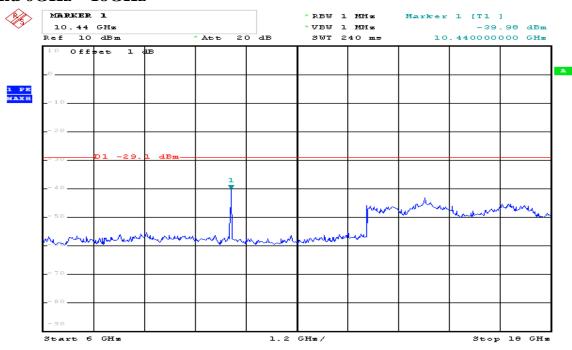
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

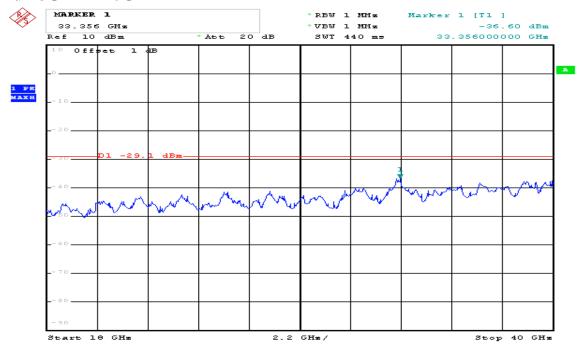
Page: 40 of 75

Ch Mid 6GHz - 18GHz



Comment: 1 31.JUL.2008 22:14:16

Ch Mid 18GHz – 40GHz



Comment: 1 Date: 31.JUL.2000 22:14:42

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

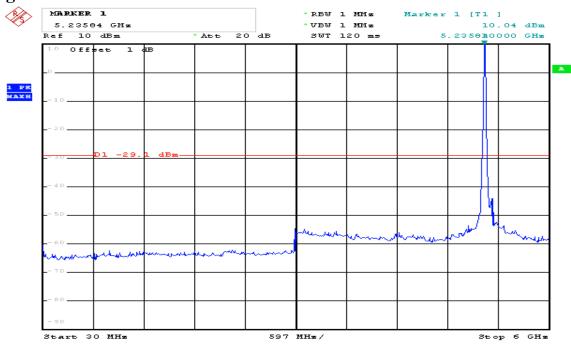
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

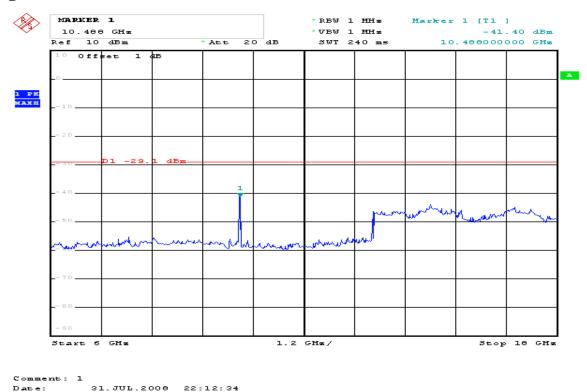
Page: 41 of 75

Ch High 30MHz - 6GHz



Comment: 1 31.JUL.2008 22:12:01

Ch High 6GHz - 18GHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

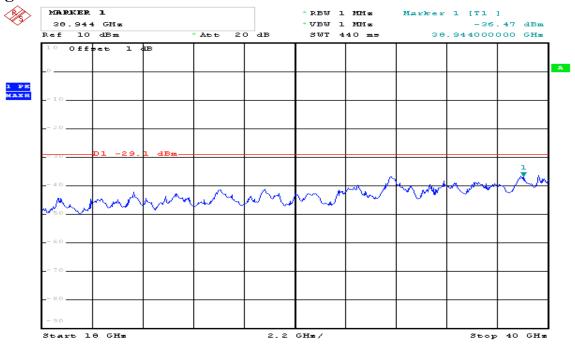


Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 42 of 75

Ch High 18GHz - 40GHz



Comment: 1

31.JUL.2008 22:12:59

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 43 of 75

11. UNDESIRABLE EMISSION - RADICTED MEASUREMENT

11.1 Standard Applicable

According to §15.407(b),

(b) Undesirable Emission Limits: Except as shown in Paragraph (b)(6) of this section, the peak 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 EIRP of -27 dBm/MHz.
- 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 EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
- 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 EIRP of -27 dBm/MHz.
- For transmitters operating in the 5.725-5.825 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 EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.
- The above emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.
- The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 44 of 75

According to RSS-210 A9.3

- For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.
- 2. For transmitters operating in the band 5250-5350 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Devices operating in the band 5250-5350 MHz that generate emissions in the band 5150-5250 MHz shall not exceed an out-of-band emission limit of -27 dBm/MHz e.i.r.p. in the band 5150-5250 MHz in order to operate indoor/outdoor, or alternatively shall comply with the spectral power density for operation within the band 5150-5250 MHz and shall be labelled "for indoor use only".
- 3. For transmitters operating in the band 5470-5725 MHz, all emissions outside that band shall not exceed -27 dBm/MHz e.i.r.p.
- For transmitters operating in the band 5725-5825 MHz, all emissions within the frequency range from the band edges to 10 MHz above or below the band edges shall not exceed -17 dBm/MHz e.i.r.p. For frequencies more than 10 MHz above or below the band edges, emissions shall not exceed -27 dBm/MHz.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 45 of 75

§15.205- RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	$(^{2})$
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

² Above 38.6



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 46 of 75

§15.209- RADIATED EMISSION LIMITS: GENERAL REQUIREMENTS

FCC PART 15.209

MEASURING DISTANCE OF 3 METER							
FREQUENCY RANGE	FIELD STRENGTH	FIELD STRENGTH					
(MHz)	(Microvolts/m)	(dBuV/m)					
30-88	100	40					
88-216	150	43.5					
216-960	200	46					
Above 960	500	54					

11.2 EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-1992.
- 2. The EUT was put in the front of the test table. The host PC system was placed on the center of the back edge on the test table. The peripherals like modem, monitor printer, K/B, and mouse were placed on the side of the host PC system. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- The keyboard was placed directly in the front of the monitor, flushed with the front tabletop. 3. The mouse was placed next to the Keyboard, flushed with the back of keyboard.
- 4. The spacing between the peripherals was 10 centimeters.
- 5. External I/O cables were draped along the edge of the test table and bundle when necessary.
- The host PC system was connected with 110Vac/60Hz power source. 6.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30 Issue Date: Aug. 04, 2008

Page: 47 of 75

Measurement Procedure 11.3

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance. 4.
- And also, each emission was to be maximized by changing the polarization of receiving 5. antenna both horizontal and vertical.
- Repeat above procedures until all frequency measured were complete. 6.

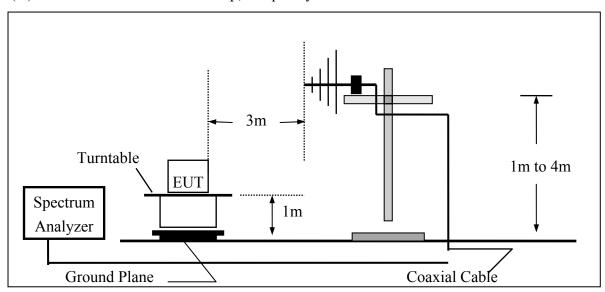


Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

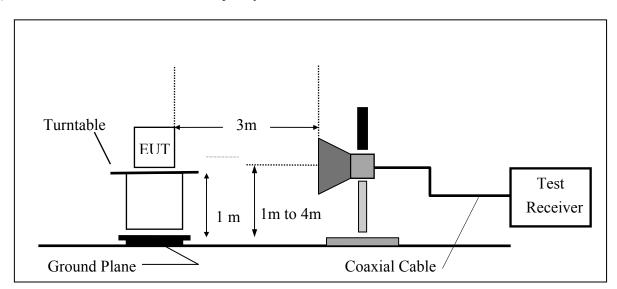
Page: 48 of 75

11.4 Test SET-UP (Block Diagram of Configuration)

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



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 49 of 75

11.5 Measurement Equipment Used:

966 Chamber										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2009					
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009					
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/08/2008					
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/14/2007	11/13/2008					
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	04/11/2007	04/10/2009					
Horn antenna	SCHWAZBECK	BBHA 9170	184/185	12/13/2007	12/12/2008					
Pre-Amplifier	НР	8447D	2944A09469	01/05/2008	01/04/2009					
Pre-Amplifier	НР	8494B	3008A00578	01/05/2008	01/04/2009					
Pre-Amplifier	Miteq	AMF-6F-2600 400-40-8P	971576	01/05/2008	01/05/2009					
Turn Table	HD	DT420	N/A	N.C.R	N.C.R					
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R					
Controller	HD	HD100	N/A	N.C.R	N.C.R					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2008	01/04/2009					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2008	01/04/2009					
Site NSA	SGS	966 chamber	N/A	11/17/2007	11/16/2008					



Report No.: ER/2008/70029~30 Issue Date: Aug. 04, 2008

Page: 50 of 75

11.6 Field Strength Calculation

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

$$FS = RA + AF + CL - AG$$

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

ERP/EIRP (dBm)calculation:

ERP/EIRP (dBm) = Field Strength (dBuV/m) - 95dB

Limit Calculation =

Field Strength (dBuV/m) = -27 dBm EIRP + 95 dB = 68dBuV/m

11.7 Measurement Result

Refer to attach tabular data sheets.

NOTE:

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 51 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

TX CH Low Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	56.27	-26.36	29.91	40.00	-10.09
630.43	V	Peak	52.32	-22.28	30.04	46.00	-15.96
798.24	V	Peak	60.39	-20.21	40.18	46.00	-5.82
148.34	Н	Peak	54.81	-27.10	27.71	43.50	-15.79
630.43	Н	Peak	57.48	-22.28	35.20	46.00	-10.80
795.33	Н	Peak	58.17	-20.22	37.95	46.00	-8.05
931.13	Н	Peak	49.44	-18.68	30.76	46.00	-15.24

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 52 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

TX CH Mid **Test Date** Operation Mode Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
56.19	V	Peak	56.41	-26.51	29.90	40.00	-10.10
213.33	V	Peak	62.06	-31.01	31.05	43.50	-12.45
455.83	V	Peak	54.98	-24.95	30.03	46.00	-15.97
630.43	V	Peak	52.95	-22.28	30.67	46.00	-15.33
795.33	V	Peak	58.73	-20.22	38.51	46.00	-7.49
630.43	Н	Peak	56.91	-22.28	34.63	46.00	-11.37
798.24	Н	Peak	58.78	-20.21	38.57	46.00	-7.43
895.24	Н	Peak	50.58	-19.05	31.53	46.00	-14.47

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 53 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

TX CH High **Test Date** Operation Mode Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
56.19	V	Peak	56.54	-26.51	30.03	40.00	-9.97
213.33	V	Peak	60.85	-31.01	29.84	43.50	-13.66
631.43	V	Peak	53.28	-22.28	31.00	46.00	-15.00
798.24	V	Peak	60.69	-20.21	40.48	46.00	-5.52
630.43	Н	Peak	56.94	-22.28	34.66	46.00	-11.34
698.33	Н	Peak	50.65	-21.26	29.39	46.00	-16.61
798.24	Н	Peak	59.07	-20.21	38.86	46.00	-7.14

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 54 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

TX CH Low Operation Mode Test Date Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Ver. 25 °C

60 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2392.0	50.63		-10.76	39.87		74.00	54.00	-14.13	Peak
3982.0	48.06		-8.73	39.33		74.00	54.00	-14.67	Peak
10360.0	41.95		-7.73	34.22		75.00	54.00	-19.78	Peak
15540.0						74.00	54.00		
20720.0						74.00	54.00		
25900.0						74.00	54.00		
31080.0						74.00	54.00		
36260.0						74.00	54.00		
41440.0						74.00	54.00		
46620.0						74.00	54.00		
51800.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008 Page: 55 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

TX CH Low Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	46.07		-13.95	32.12		74.00	54.00	-21.88	Peak
3982.0	45.40		-8.73	36.67		74.00	54.00	-17.33	Peak
10360.0						74.00	54.00		
15540.0						74.00	54.00		
20720.0						74.00	54.00		
25900.0						74.00	54.00		
31080.0						74.00	54.00		
36260.0						74.00	54.00		
41440.0						74.00	54.00		
46620.0						74.00	54.00		
51800.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008 Page: 56 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

TX CH Mid Operation Mode Test Date Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Ver 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	47.84		-13.95	33.89		74.00	54.00	-20.11	Peak
2392.0	50.14		-10.76	39.38		74.00	54.00	-14.62	Peak
3982.0	46.97		-8.73	38.24		74.00	54.00	-15.76	Peak
10440.0						74.00	54.00		
15660.0						74.00	54.00		
20880.0						74.00	54.00		
26100.0						74.00	54.00		
31320.0						74.00	54.00		
36540.0						74.00	54.00		
41760.0						74.00	54.00		
46980.0						74.00	54.00		
52200.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-40GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008 Page: 57 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

TX CH Mid Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1744.0	57.76		-13.35	44.41		74.00	54.00	-9.59	Peak
3982.0	49.16		-8.73	40.43		74.00	54.00	-13.57	Peak
10440.0	41.24		7.47	48.71		75.00	54.00	-5.29	Peak
15660.0						74.00	54.00		
20880.0						74.00	54.00		
26100.0						74.00	54.00		
31320.0						74.00	54.00		
36540.0						74.00	54.00		
41760.0						74.00	54.00		
46980.0						74.00	54.00		
52200.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30 Issue Date: Aug. 04, 2008

Page: 58 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH High **Test Date** Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Pol Ver Temperature 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	45.91		-13.95	31.96		74.00	54.00	-22.04	Peak
1864.0	45.85		-13.09	32.76		74.00	54.00	-21.24	Peak
2392.0	45.85		-10.76	35.09		74.00	54.00	-18.91	Peak
3982.0	50.53		-8.73	41.80		74.00	54.00	-12.20	Peak
10480.0	40.06		7.60	47.66		75.00	54.00	-6.34	Peak
15720.0						74.00	54.00		
20960.0						74.00	54.00		
26200.0						74.00	54.00		
31440.0						74.00	54.00		
36680.0						74.00	54.00		
41920.0						74.00	54.00		
47160.0						74.00	54.00		
52400.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 59 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH High **Test Date** Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	46.91		-13.95	32.96		74.00	54.00	-21.04	Peak
2392.0	47.12		-10.76	36.36		74.00	54.00	-17.64	Peak
3982.0	48.54		-8.73	39.81		74.00	54.00	-14.19	Peak
10480.0						74.00	54.00		
15720.0						74.00	54.00		
20960.0						74.00	54.00		
26200.0						74.00	54.00		
31440.0						74.00	54.00		
36680.0						74.00	54.00		
41920.0						74.00	54.00		
47160.0						74.00	54.00		
52400.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-40GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 60 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

RX CH Low **Test Date** Operation Mode Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
213.33	V	Peak	62.15	-31.01	31.14	43.50	-12.36
455.83	V	Peak	54.99	-24.95	30.04	46.00	-15.96
798.24	V	Peak	59.82	-20.21	39.61	46.00	-6.39
929.19	V	Peak	48.74	-18.69	30.05	46.00	-15.95
630.43	Н	Peak	56.93	-22.28	34.65	46.00	-11.35
795.33	Н	Peak	55.82	-20.22	35.60	46.00	-10.40
897.18	Н	Peak	50.16	-19.03	31.13	46.00	-14.87
929.19	Н	Peak	50.42	-18.69	31.73	46.00	-14.27

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 61 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

RX CH Mid Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
216.24	V	Peak	61.21	-30.90	30.31	46.00	-15.69
630.43	V	Peak	53.20	-22.28	30.92	46.00	-15.08
798.24	V	Peak	60.90	-20.21	40.69	46.00	-5.31
897.18	V	Peak	49.16	-19.03	30.13	46.00	-15.87
630.43	Н	Peak	57.50	-22.28	35.22	46.00	-10.78
798.24	Н	Peak	59.29	-20.21	39.08	46.00	-6.92
897.18	Н	Peak	49.61	-19.03	30.58	46.00	-15.42

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008 Page: 62 of 75

Radiated Spurious Emission Measurement Result (below 1GHz)

RX CH High Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Temperature Pol Ver./Hor 25 °C

65 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
56.19	V	Peak	56.44	-26.51	29.93	40.00	-10.07
213.33	V	Peak	60.97	-31.01	29.96	43.50	-13.54
630.43	V	Peak	53.59	-22.28	31.31	46.00	-14.69
798.24	V	Peak	58.78	-20.21	38.57	46.00	-7.43
630.43	Н	Peak	57.20	-22.28	34.92	46.00	-11.08
798.24	Н	Peak	59.42	-20.21	39.21	46.00	-6.79
906.88	Н	Peak	50.72	-18.90	31.82	46.00	-14.18

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 63 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

RX CH Low Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Ver. 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1324.0	45.79		-14.93	30.86		74.00	54.00	-23.14	Peak
1594.0	48.14		-13.95	34.19		74.00	54.00	-19.81	Peak
2392.0	46.79		-10.76	36.03		74.00	54.00	-17.97	Peak
3982.0	46.66		-8.73	37.93		74.00	54.00	-16.07	Peak
10360.0						74.00	54.00		
15540.0						74.00	54.00		
20720.0						74.00	54.00		
25900.0						74.00	54.00		

- Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 64 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

RX CH Low Operation Mode Test Date Aug. 04, 2008

Fundamental Frequency 5180MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	51.34		-13.95	37.39		74.00	54.00	-16.61	Peak
2392.0	48.97		-10.76	38.21		74.00	54.00	-15.79	Peak
10360.0						74.00	54.00		
15540.0						74.00	54.00		
20720.0						74.00	54.00		
25900.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 65 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

RX CH Mid Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Ver 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3982.0	50.92		-8.73	42.19		74.00	54.00	-11.81	Peak
10440.0						74.00	54.00		
15660.0						74.00	54.00		
20880.0						74.00	54.00		
26100.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 66 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

RX CH Mid Operation Mode Test Date Aug. 04, 2008

Fundamental Frequency 5220MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	52.91		-13.95	38.96		74.00	54.00	-15.04	Peak
2392.0	46.12		-10.76	35.36		74.00	54.00	-18.64	Peak
10440.0						74.00	54.00		
15660.0						74.00	54.00		
20880.0						74.00	54.00		
26100.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 67 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

RX CH High Operation Mode **Test Date** Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Temperature Pol Ver 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2392.0	49.66		-10.76	38.90		74.00	54.00	-15.10	Peak
10480.0						74.00	54.00		
15720.0						74.00	54.00		
20960.0						74.00	54.00		
26200.0						74.00	54.00		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 68 of 75

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode RX CH High Test Date Aug. 04, 2008

Fundamental Frequency 5240MHz Test By Arno Temperature Pol Hor 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1594.0	52.16		-13.95	38.21		74.00	54.00	-15.79	Peak
2392.0	47.19		-10.76	36.43		74.00	54.00	-17.57	Peak
10480.0						74.00	54.00		
15720.0						74.00	54.00		
20960.0						74.00	54.00		
26200.0						74.00	54.00		

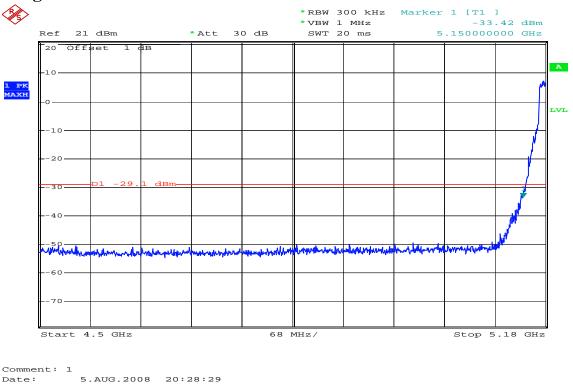
- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.



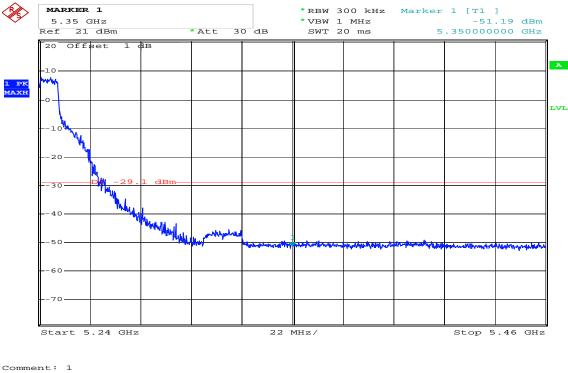
Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 69 of 75

Band Edges Test Data CH-Low



Band Edges Test Data CH-High



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。

5.AUG.2008 20:30:58

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms and conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Date:



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 70 of 75

Radiated Emission:

Operation Mode TX CH Low Test Date Aug. 04, 2008

Fundamental Frequency 5180 MHz Test By Arno **Tmperature** Pol Ver. 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	_
5150.00	64.54	34.52	-5.37	59.17	29.15	74.00	54.00	-24.85	AV
Operation 1	Mode	TX C	CH Low			Test	Date	Aug. 04, 2	008
Fundament	tal Frequer	ncy 5180	MHz			Test	By	Arno	
Temperatu	re	25 °C	2			Pol]	Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	Actual FS		\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
5150.00									

Remark:

- Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (3) Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30

Issue Date: Aug. 04, 2008

Page: 71 of 75

Radiated Emission:

Operation Mode TX CH High Test Date Aug. 04, 2008

Fundamental Frequency 5240 MHz Test By Arno Temperature Pol Ver. 25 °C

65 % Humidity

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
5350.00	48.79		-4.89	43.90		74.00	54.00	-10.10	Peak
Operation	Mode	TX C	H High			Test	Date	Aug. 04, 2	008
Fundamen	tal Frequer	ncy 5240	MHz			Test	By .	Arno	
Temperatu	re	25 °C				Pol		Hor.	
Humidity		65 %							

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
,	5350.00	47.78		-4.89	42.89		74.00	54.00	-11.11	Peak

Remark:

- Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (3) Spectrum Peak Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責。本報告未經本公司書面許可,不可部份複製。



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 72 of 75

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 signalling 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.

According to RSS-210 A9.5

The device shall automatically discontinue transmission in case of absence of information to transmit, or operational failure. A description on how this is done shall accompany the application for equipment certification. Note that this is not intended to prohibit transmission of control or signalling information or the use of repetitive codes where required by the technology.

12.2 Result:

No non-compliance noted:

Refer to the theory of operation.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 73 of 75

13. FREQUENCY STABILITY

13.1 Standard Applicable

According to §15.407 (g) 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.

According to A9.5

The applicant shall ensure frequency stability by showing that an emission is maintained within the band of operation under all normal operating conditions as specified in the user's manual.

13.2 Result:

No non-compliance noted:

±20ppm was defined in product specification.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 74 of 75

14. ANTENNA REQUIREMENT

14.1 Standard Applicable

According to §15.203, Antenna requirement.

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

14.2 Antenna Connected Construction

The directional gins of antenna used for transmitting is 1.5dBi for 2.4GHz, 0.4dBi for 5.2GHz, 2.1dBi for 5.8GHz, and the antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.



Report No.: ER/2008/70029~30 **Issue Date: Aug. 04, 2008**

Page: 75 of 75

15. TPC and DFS MEASUREMENT

15.1 TPC: Standard Applicable

According to §15.407(h)(1), Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

15.1.1. Result: N/A, The output power is less than 500mW.

15.2 DFS: Standard Applicable

According to §15.407(h)(2), Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 mW to 1 W is -64 dBm. For devices that operate with less than 200 mW e.i.r.p. the minimum detection threshold is -62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. The DFS process shall be required to provide a uniform spreading of the loading over all the available channels.

According to RSS-210 A9.4 Dynamic Frequency Selection (DFS) for devices operating in the bands 5250-5350 MHz and 5470-5725 MHz

15.2.1. Result: N/A, The device doesn't support 5.25-5.35 GHz and 5.47-5.725 GHz bands.