

Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 1 of 68

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name: Lucky Dog 7

Brand Name: Blue Dog

Model Name: BNG-07

Model Difference: N/A

FCC ID: WLYLD7

Report No.: ER/2008/80011

Issue Date: Sep. 30, 2008

FCC Rule Part: §15.247

Prepared for: Bettina Corp d.b.a. blue dog Inc.

1860 Crown Drive, Suite 1406, Dallas, Texas

75234, USA

Prepared by: SGS Taiwan Ltd.

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial

Zone, Taipei County, Taiwan





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

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

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 業品工路134號

台灣檢驗科技股份有限公司 (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: ER/2008/80011 Issue Date: Sep. 30, 2008

Page: 2 of 68

VERIFICATION OF COMPLIANCE

Applicant: Bettina Corp d.b.a. blue dog Inc.

1860 Crown Drive, Suite 1406, Dallas, Texas 75234, USA

Equipment Under Test: Lucky Dog 7

Brand Name: Blue Dog

Model No.: BNG-07

Model Difference: N/A

FCC ID: WLYLD7

File Number: ER/2008/80011

Date of test: Aug. 08, 2008 ~ Sep. 24, 2008

Date of EUT Received: Aug. 07, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (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 15.247.

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

Test By:	Jason We	Date	Sep. 30, 2008	
Prepared By:	Jason Wu /Asst. Supervisor		Sep. 30, 2008	
	Gigi Yeh / Clerk		Sep. 30, 2000	
Approved By:	Jim Chang	Date	Sep. 30, 2008	
	Jim Chang / Supervisor			

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/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 3 of 68

Version

Version No.	Date	Description
00	Sep. 30, 2008	Initial creation of 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 4 of 68

Table of Contents

I.	GEN	ERAL INFORMATION	
	1.1.	Related Submittal(s) / Grant (s)	7
	1.2.	Test Methodology	7
	1.3.	Test Facility	7
	1.4.	Special Accessories	7
	1.5.	Equipment Modifications	7
2.	SYST	TEM TEST CONFIGURATION	8
	2.1.	EUT Configuration	8
	2.2.	EUT Exercise	8
	2.3.	Test Procedure	8
	2.4.	Configuration of Tested System	9
3.	SUM	MARY OF TEST RESULTS	10
4.	DES	CRIPTION OF TEST MODES	10
5.	CON	DUCTED EMISSION TEST	11
	5.1.	Standard Applicable	11
	5.2.	EUT Setup	11
	5.3.	Measurement Procedure	11
	5.4.	Measurement Equipment Used:	12
	5.5.	Measurement Result	12
6.	PEA:	K OUTPUT POWER MEASUREMENT	15
	6.1.	Standard Applicable	15
	6.2.	Measurement Procedure	16
	6.3.	Measurement Equipment Used:	16
	6.4.	Measurement Result	17
7.	6dB 1	Bandwidth	22
	7.1.	Standard Applicable	22
	7.2.	Measurement Procedure	22
	7.3.	Measurement Equipment Used:	22
	7.4.	Measurement Result	23
8.	100K	Hz BANDWIDTH OF BAND EDGES MEASUREMENT	
	8.1.	Standard Applicable	28
	8.2.	Measurement Procedure	28
	8.3.	Measurement Equipment Used:	28
	8.4.	Measurement Result	28

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 5 of 68

9.	SPUR	RIOUS RADIATED EMISSION TEST	35
	9.1.	Standard Applicable	35
	9.2.	EUT Setup	35
	9.3.	Measurement Procedure	35
	9.4.	Test SET-UP (Block Diagram of Configuration)	36
	9.5.	Measurement Equipment Used:	37
	9.6.	Field Strength Calculation	37
	9.7.	Measurement Result	37
10.	Peak	Power Spectral Density	62
	10.1.	- · · · · · · · · · · · · · · · · · · ·	
	10.2.	Measurement Procedure	62
	10.3.	Measurement Equipment Used:	62
	10.4.	Measurement Result	63
11.	ANTI	ENNA REQUIREMENT	68
	11.1.	Standard Applicable	68
	11.2.	Antenna Connected Construction	68
AP	PEND!	IX 1 PHOTOGRPHS OF SET UP	69
ΑP	PEND	IX 2 PHOTOGRPHS OF EUT	72

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

f (886-2) 2298-0488



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 6 of 68

GENERAL INFORMATION

General:

Product Name	Lucky Dog 7				
Brand Name	Blue Dog				
Model Name	BNG-07				
Model Difference	N/A				
Data Cable (USB)	N/A				
Simple Hands-free (SHF)	N/A				
Cigar Lighter Adaptor (CLA)	N/A				
	11.1 Vdc re-chargeable battery(External) and 8 Vdc re-chargeable battery(Internal) or 19Vdc by AC/DC power adapter				
Power Supply	Battery: 1. Model: BNG-EBP, Supplier: Lucky Dog 7 2.Model: BNG-07-RACK, Supplier: Lucky Dog 7				
	Adapter: Model: 680-22409-001, Supplier: SUNRISE TELECOM				

WLAN:

g.	·			
Frequency Range:	2412 – 2462 MHz			
Channel number:	11 channels			
Max. Output Power:	802.11 b: 18.83 dBm peak 802.11 g: 16.08dBm peak			
Modulation Technology:	DSSS, OFDM			
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM			
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps			
Antenna Designation:	PIFA Antenna / 2dBi.			
Type of Emission	16M5M2D			

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

This test report applies for 802.11b and 802.11g WLAN.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 7 of 68

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

This submittal(s) (test report) is intended for FCC ID: WLYLD7 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with Subpart B is authorized under a Doc procedure.

1.2. Test Methodology

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

1.3. 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.

1.4. Special Accessories

Not available for this EUT intended for grant.

1.5. Equipment Modifications

Not available for this EUT intended for grant.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 8 of 68

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

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 9 of 68

2.4. Configuration of Tested System

Fig. 2-1 AC Power line and Radiated Emission Configuration

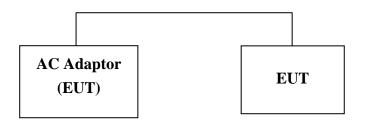


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	WiFi Software	N/A	WLAN eMapi	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. 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 unposition is unposition. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀改工業品工路134號



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 10 of 68

SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result	
§15.207(a)	AC Power Line Conducted Emission	Compliant	
§15.247(b) (3),(4)(c)	Peak Output Power	Compliant	
§15.247(a)(2)	6dB Bandwidth	Compliant	
	100 KHz Bandwidth Of	Compliant	
§15.247(d)	Frequency Band Edges		
§15.247(d)	Spurious Emission	Compliant	
§15.247(e)	Peak Power Density	Compliant	
§15.203	Antenna Requirement	Compliant	

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.

802.11 b mode: Channel low (2412MHz) · mid (2437MHz) and high (2462MHz) with 1Mbps data rate are chosen for full testing.

802.11 g mode: Channel low (2412MHz) · mid (2437MHz) and high (2462MHz) with 6Mbps data rate are chosen for full testing.

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 11 of 68

CONDUCTED EMISSION TEST

5.1. Standard Applicable

According to §15.207. frequency within 150KHz to 30MHz shall not exceed the Limit table as below.

Frequency range		mits (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

Onless orderwise stated the results shown in this test report reter only to the sample(s) tester 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 appear ance 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/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 12 of 68

5.4. Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2007	09/14/2008		
LISN	Rolf-Heine	NNB-2/16Z	99012	02/18/2008	02/17/2009		
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/18/2008	02/17/2009		
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2007	10/29/2008		

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

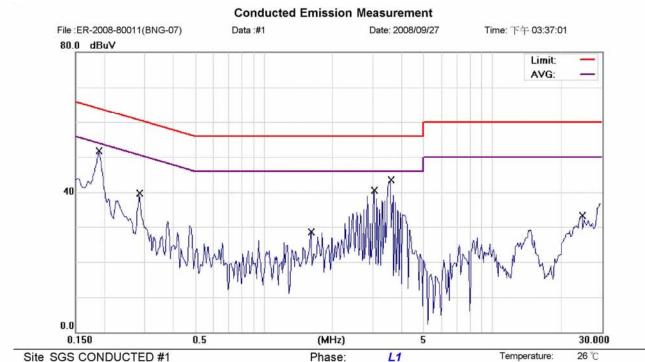


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 13 of 68

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode: WLAN Operating		Test Date:	Sep. 27, 2008		
Temperature:	26 ℃	Humidity:	62%	Test By:	Jason



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Lucky Dog 7

M/N: BNG-07 Note: Normal Link

No. N	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1 '	*	0.1900	51.50	0.21	51.71	64.04	-12.33	QP		
2		0.2850	39.51	0.13	39.64	60.67	-21.03	QP		
3		1.6100	28.44	0.04	28.48	56.00	-27.52	QP		
4		3.0400	40.38	0.05	40.43	56.00	-15.57	QP		
5		3.6000	43.47	0.05	43.52	56.00	-12.48	QP		
6		24.9200	33.09	0.26	33.35	60.00	-26.65	QP		

Power:

Distance:

AC 120V/60Hz

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

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

www.sgs.com.tw

Humidity:

Air Pressure:

62 %

hpa



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

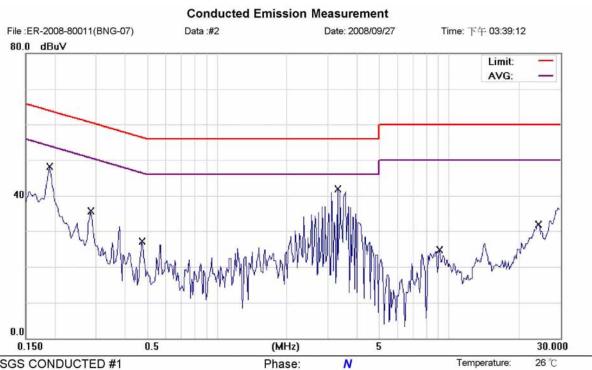
Page: 14 of 68

Humidity:

Air Pressure:

62 %

hpa



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Freq.

MHz

0.1900

0.2850

0.4750

3.3200

9.1000

24.5600

Limit: CISPR22 Class B Conduction(QP)

Reading

Level

dBuV

47.96

35.68

26.95

41.89

24.52

31.60

0.25

31.85

EUT: Lucky Dog 7 M/N: BNG-07 Note: Normal Link

No. Mk.

1 2

3

4

5

6

Factor	Measure- ment	Limit	Over			
dB	dBuV	dBuV	dB	Detector	Comment	
0.19	48.15	64.04	-15.89	QP		
0.11	35.79	60.67	-24.88	QP		
0.06	27.01	56.43	-29.42	QP		
0.04	41.93	56.00	-14.07	QP		
0.19	24.71	60.00	-35.29	QP		

QP

-28.15

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

60.00

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

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

www.sgs.com.tw



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 15 of 68

PEAK OUTPUT POWER MEASUREMENT

6.1. Standard Applicable

According to $\S15.247(a)(2)$, (b)

- (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and
- 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
- (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (c) Operation with directional antenna gains greater than 6 dBi.
- (1) Fixed point-to-point operation:
- (i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for

fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

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/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 16 of 68

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 antenna port to the power meter or spectrum. (Channel power function, RBW= 1MHz, VBW = 3MHz, Bandwidth=26dB occupied Bandwidth)
- 3. Record the max. reading.
- 4. 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	04/19/2008	04/18/2010						
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009						
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2008	01/04/2009						
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009						

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 17 of 68

6.4. Measurement Result

802.11b

Cabl	le loss = 0	Peak Power Output						
СН	Frequency		Required					
	(MHz)	1	2	5.5	11	Limit		
1	2412	17.55	17.47	17.43	17.16	30 dBm		
6	2437	18.83	18.74	18.48	18.31	30 dBm		
11	2462	18.27	18.24	18.15	18.08	30 dBm		

802.11g

Cabl	le loss = 0		Peak Power Output							
СН	Frequency		Required							
(MHz)	6	9	12	18	24	36	48	54	Limit	
1	2412	14.25	14.10	14.07	14.09	14.04	13.99	13.92	14.03	30 dBm
6	2437	16.08	15.96	15.90	15.86	15.82	15.78	15.72	15.70	30 dBm
11	2462	15.31	15.26	15.18	15.07	15.02	15.00	15.03	15.09	30 dBm

Cable loss = 0

*Note: Offset 11dB

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

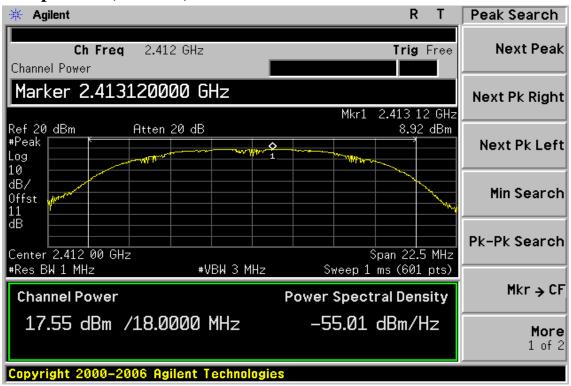


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 18 of 68

802.11b, 1Mbps

Power Output Plot (CH Low)



Power Output Plot (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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

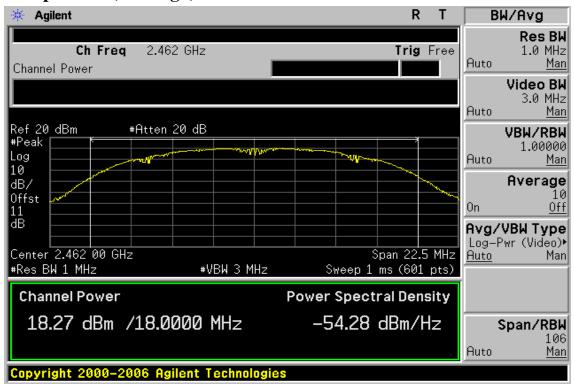
www.sgs.com.tw



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 19 of 68

Power Output Plot (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

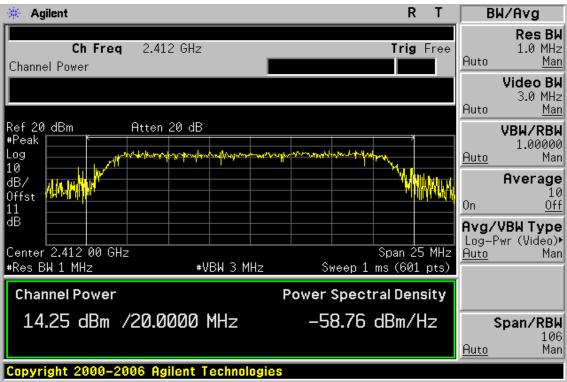


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

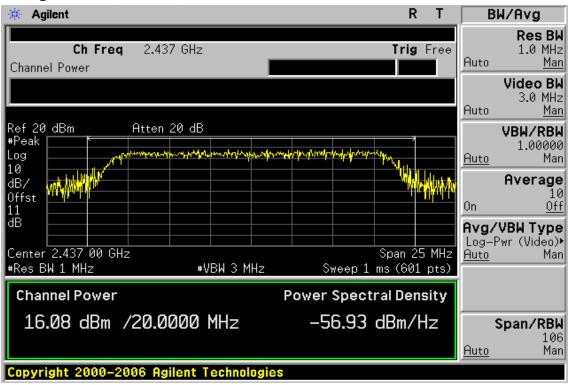
Page: 20 of 68

802.11g, 6Mbps

Power Output Plot (CH Low)



Power Output Plot (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.

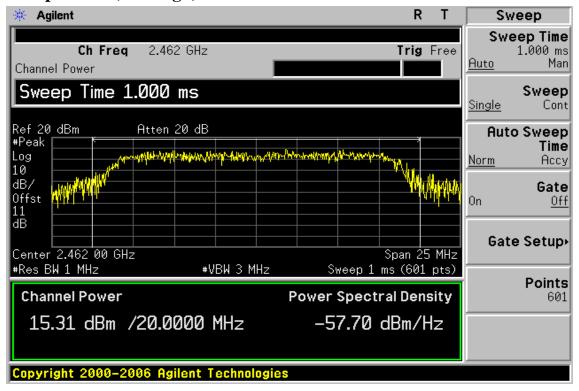
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 21 of 68

Power Output Plot (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



Report No.: ER/2008/80011 Issue Date: Sep. 30, 2008

Page: 22 of 68

7. 6dB Bandwidth

7.1. Standard Applicable

According to §15.247(a)(2), Systems using digital modulation techniques may operate in the 902 - 928 MHz,2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

7.2. 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 –6dB (upper and lower) frequency.
- 5. Repeat above procedures until all frequency measured were complete.

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	04/19/2008	04/18/2010						
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009						
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2008	01/04/2009						
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009						

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 23 of 68

7.4. Measurement Result

802.11b

СН	CH Bandwidth (MHz)		Result		
Lower	10.120	> 500	PASS		
Mid	10.145	> 500	PASS		
Higher	10.173	> 500	PASS		

^{*}Offset 11dB

802.11g

СН	Bandwidth (MHz)	Bandwidth (KHz)	Result		
Lower	16.455	> 500	PASS		
Mid	16.430	> 500	PASS		
Higher	16.409	> 500	PASS		

^{*}Offset 11dB

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

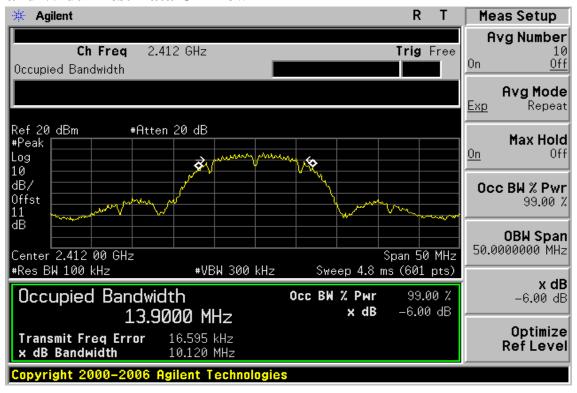


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

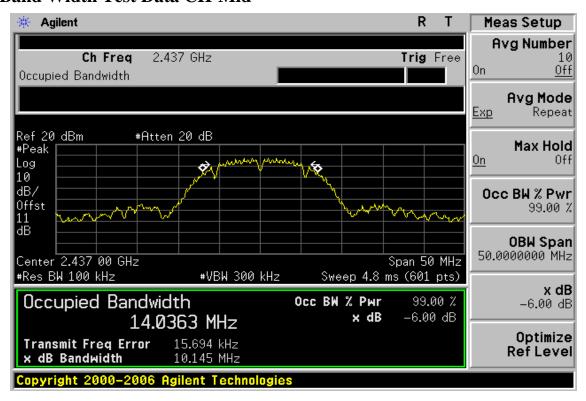
Page: 24 of 68

802.11b

6dB Band Width Test Data CH-Low



6dB 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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 25 of 68

6dB Band Width 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。
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 unposition is unposition. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

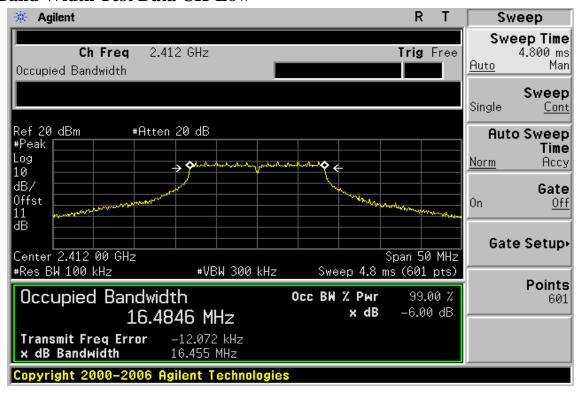


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

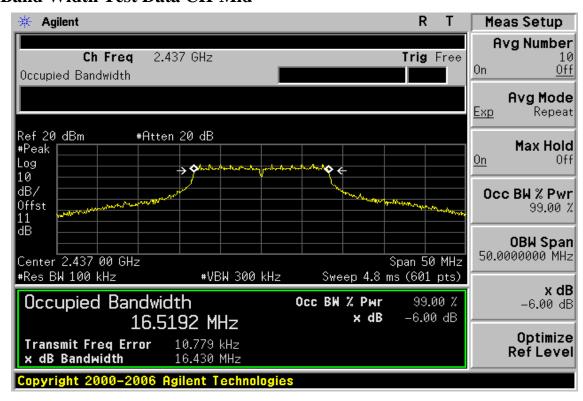
Page: 26 of 68

802.11g

6dB Band Width Test Data CH-Low



6dB 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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

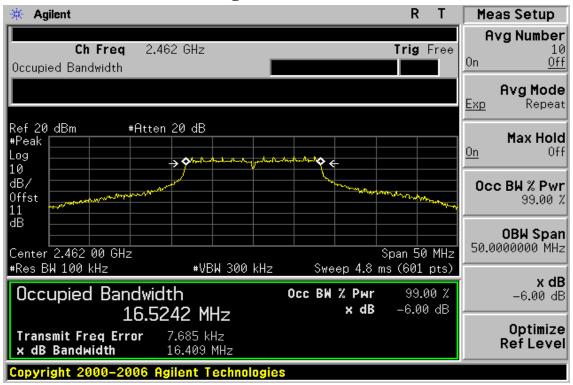
www.sgs.com.tw



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 27 of 68

6dB Band Width 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 28 of 68

100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

8.1. Standard Applicable

According to §15.247(c), in any 100 KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

8.2. 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 the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=100KHz, Span=30MHz, Sweep = auto
- 5. Mark Peak, 2.390GHz and 2.4835GHz and record the max. level.
- 6. Repeat above procedures until all frequency measured were complete.

8.3. Measurement Equipment Used:

Conducted Emission Test Site											
EQUIPMENT	MODEL SERIAL		LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.							
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010						
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009						
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2008	01/04/2009						
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009						

8.4. Measurement Result

Refer to attach spectrum analyzer data chart.

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 https://www.sgs.com/terms_and_conditions.htm. Attentic 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 appear ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 29 of 68

802.11b **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。
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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

www.sgs.com.tw



Report No.: ER/2008/80011 Issue Date: Sep. 30, 2008

Page: 30 of 68

Radiated Emission: 802.11 b mode

Operation Mode TX CH Low Test Date Aug. 25, 2008 Fundamental Frequency 2412 MHz Test By Sky

Fundamental Frequency 2412 MHz Test By Sky Tmperature 25 $^{\circ}$ C Pol Ver.

Humidity 65 %

	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/r	n) (dB)	
2390.00	37.43		-1.39	36.04		74.00	54.00	-17.96	Peak
Operation	Mode	TX C	H Low			Test	Date	Aug. 25, 2	800
Fundamen	tal Frequer	ncy 2412	MHz			Test	By	Sky	
Temperatu	ıre	25				Pol	-	Hor.	
Humidity		65 %							
	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Emag	Daadina	Daadina	A mt /CT	Dools	A T 7	T ::4	T ::4	Manain	Damanla

	Peak	AV		Actu	al FS	Peak	ΑV		
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)	
2390.00	41.61		-1.39	40.22		74.00	54.00	-13.78	Peak

Remark:

- (1) 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.
- (2) 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
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms
- (4) Spectrum AV Setting: 1GHz- 26GHz, 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。
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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 31 of 68

Radiated Emission: 802.11 b mode

Operation Mode TX CH High Test Date Aug. 25, 2008

Fundamental Frequency 2462 MHz Test By Sky Pol Ver. **Temperature** 25

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)	
2483.50	44.76		-0.92	43.84		74.00	54.00	-10.16	Peak
Operation 1	Mode	TX C	H High			Test	Date 1	Aug. 25, 2	008
Fundament	tal Frequer	ncy 2462	MHz			Test	By S	Sky	
Temperatu	re	25				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)	
2483.50	47.85		-0.92	46.93		74.00	54.00	-7.07	Peak

Remark:

- (1) 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.
- (2) 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
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

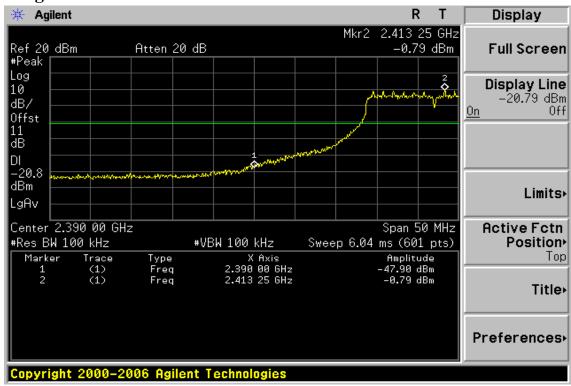
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 32 of 68

802.11g **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。
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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

www.sgs.com.tw



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 33 of 68

Radiated Emission: 802.11 g mode

Operation Mode TX CH Low Test Date Aug. 25, 2008

Fundamental Frequency 2412 MHz Test By Sky 25 °C Pol Ver. **Tmperature**

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)	
2390.00	50.41		-1.39	49.02		74.00	54.00	-4.98	Peak
Operation 1	Mode	TX C	H Low			Test	Date	Aug. 25, 2	800
Fundament	tal Frequer	ncy 2412	MHz			Test	By S	Sky	
Temperatu	re	25 ℃				Pol]	Hor.	
Humidity		65 %							

	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)	_
2390.00	52.32		-1.39	50.93		74.00	54.00	-3.07	Peak

Remark:

- (1) 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.
- (2) 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
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- (4) Spectrum AV Setting: 1GHz-26GHz, 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

Onless otherwise stated the results shown in this test report reter only to the sample(s) tested. This rest 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.sqs.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/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 34 of 68

Radiated Emission: 802.11 g mode

Operation Mode TX CH High Test Date Aug. 25, 2008

Fundamental Frequency 2462 MHz Test By Sky Temperature Pol Ver. 25 ℃

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/n	n) (dB)		
2483.50	51.24		-0.92	50.32		74.00	54.00	-3.68	Peak	
0 4	N. 6. 1	TIV. C	(TT TT' 1				D .	. 25.2	000	
Operation Mode TX CH High					Test Date Aug. 25, 2008					
Fundamental Frequency 2462 MHz						Test By Sky				
Temperatu	re	25 °C				Pol	•	Hor.		
Humidity		65 %								
	ъ.	A T 7			LEG	ъ.	A T 7			
	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}			
Frea.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark	

	Peak	AV		Actu	al FS	Peak	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)	
2483.50	54.47	48.22	-0.92	53.55	47.30	74.00	54.00	-6.70	AV

Remark:

- (1) 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.
- (2) 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
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (4) Spectrum AV Setting: 1GHz- 26GHz, 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

Onless otherwise stated the results shown in this test report reter only to the sample(s) tested. This rest 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.sqs.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/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 35 of 68

SPURIOUS RADIATED EMISSION TEST

9.1. Standard Applicable

According to §15.247(c), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). And according to §15.33(a)(1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

9.2. EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The spacing between the peripherals was 10 centimeters.
- 4. External I/O cables were draped along the edge of the test table and bundle when necessary.

9.3. Measurement Procedure

- 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.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. 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

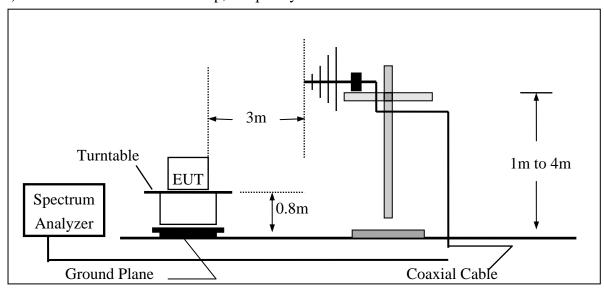


Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

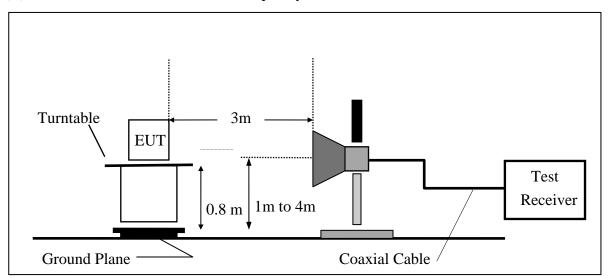
Page: 36 of 68

9.4. 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

Onless otherwise stated the results shown in this test report reter only to the sample(s) tester 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. Attentic 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 document is unabuful to produce the decrease of the document is unabuful to an effective menute preparation. ance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 37 of 68

9.5. **Measurement Equipment Used:**

	9	66 Chamber			
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2009
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3158	11/29/2007	11/28/2008
Horn antenna	Schwarzbeck	BBHA 9120D	9120D-673	05/09/2008	05/10/2010
Horn antenna	Schwarzbeck	BBHA 9170	184/185	12/31/2007	12/30/2008
Pre-Amplifier	HP	8447F	3113A06892	01/05/2008	01/04/2009
Pre-Amplifier	HP	8449B	3008A01973	01/05/2008	01/04/2009
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

9.6. 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	

9.7. Measurement Result

Refer to attach tabular data sheets.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. 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 unlocation to a present date 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.

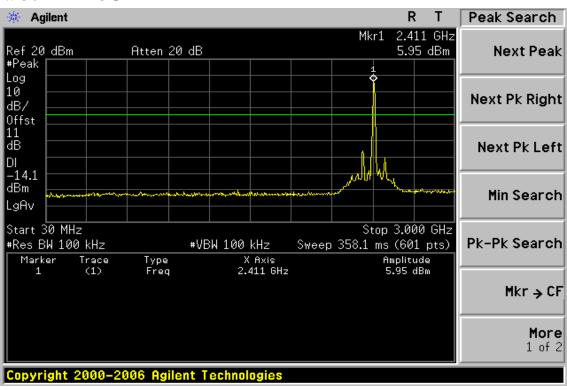
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號



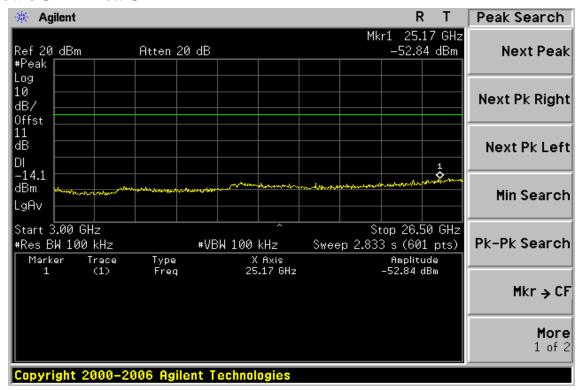
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 38 of 68

Conducted Spurious Emission Measurement Result (802.11b) Ch Low 30MHz - 3GHz



Ch Low 3GHz - 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

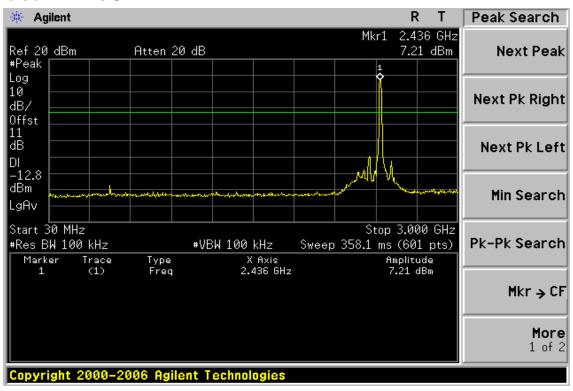
f (886-2) 2298-0488



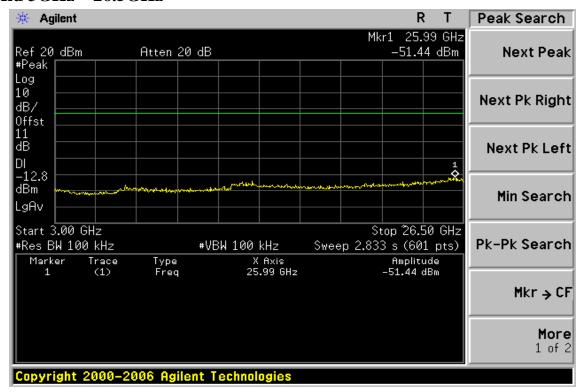
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 39 of 68

Ch Mid 30MHz - 3GHz



Ch Mid 3GHz - 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

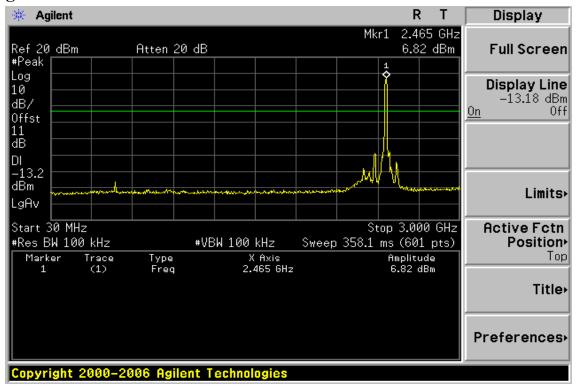
www.sgs.com.tw



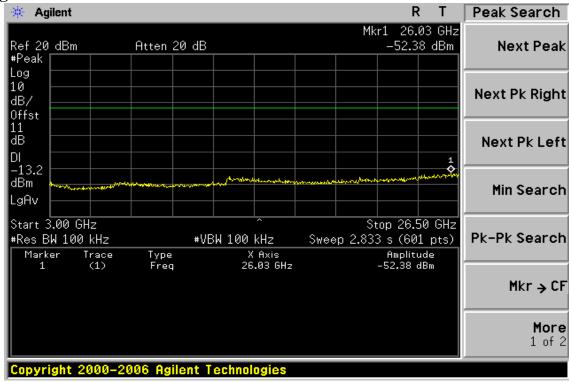
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 40 of 68

Ch High 30MHz – 3GHz



Ch High 3GHz – 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

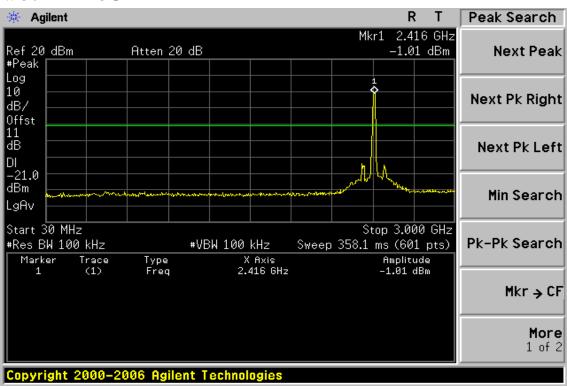
f (886-2) 2298-0488



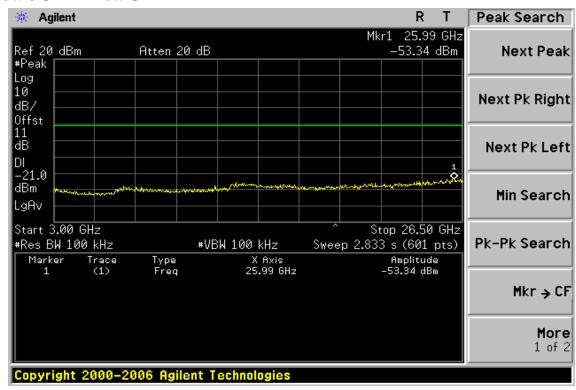
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 41 of 68

Conducted Spurious Emission Measurement Result (802.11g) Ch Low 30MHz - 3GHz



Ch Low 3GHz - 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

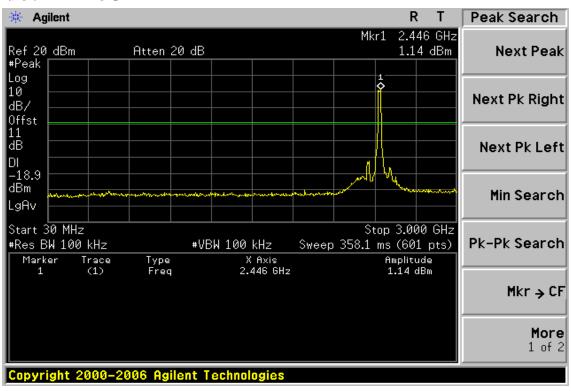
www.sgs.com.tw



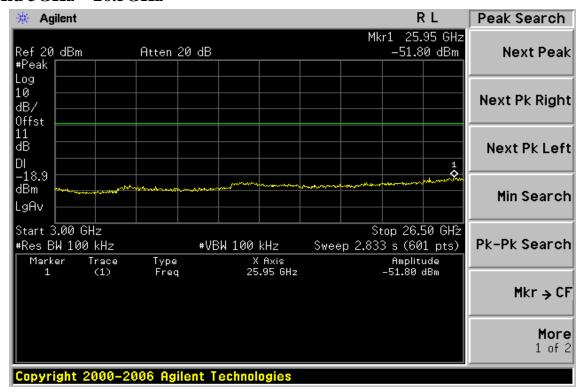
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 42 of 68

Ch Mid 30MHz - 3GHz



Ch Mid 3GHz - 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

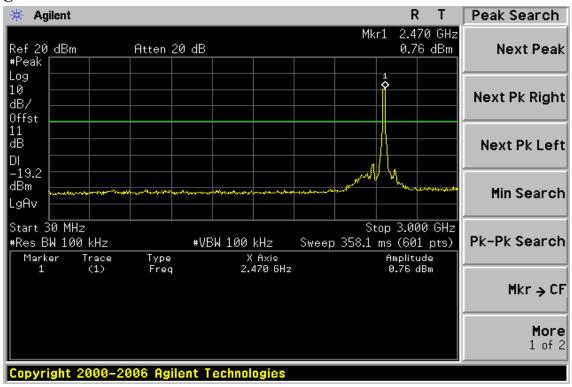
www.sgs.com.tw



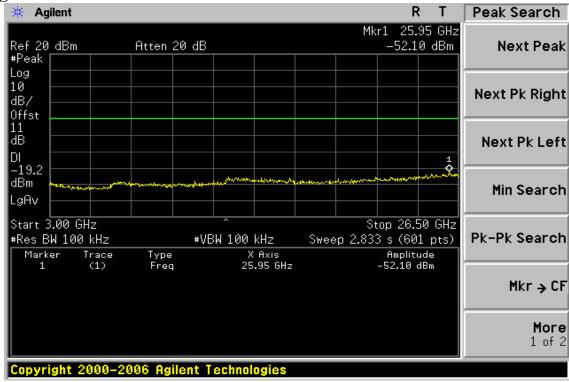
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 43 of 68

Ch High 30MHz – 3GHz



Ch High 3GHz – 26.5GHz



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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 44 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11b)

Operation Mode 802.11b TX CH Low **Test Date** Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
119.24	V	Peak	51.65	-15.32	36.33	43.50	-7.17
250.19	V	Peak	49.97	-13.74	36.23	46.00	-9.77
523.73	V	Peak	46.41	-8.08	38.33	46.00	-7.67
712.88	V	Peak	43.91	-4.82	39.09	46.00	-6.91
856.44	V	Peak	40.68	-1.89	38.79	46.00	-7.21
1000.00	V	Peak	39.60	-0.63	38.97	54.00	-15.03
119.24	Н	Peak	49.02	-15.32	33.70	43.50	-9.80
213.33	Н	Peak	52.43	-15.16	37.27	43.50	-6.23
261.83	Н	Peak	48.49	-13.63	34.86	46.00	-11.14
405.39	Н	Peak	45.78	-9.86	35.92	46.00	-10.08
475.23	Н	Peak	47.52	-8.56	38.96	46.00	-7.04
647.89	Н	Peak	41.05	-4.99	36.06	46.00	-9.94
875.84	Н	Peak	39.36	-1.51	37.85	46.00	-8.15
1000.00	Н	Peak	38.19	-0.63	37.56	54.00	-16.44

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 45 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11b)

Operation Mode 802.11b TX CH Mid **Test Date** Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
119.24	V	Peak	50.76	-15.32	35.44	43.50	-8.06
261.83	V	Peak	50.60	-13.63	36.97	46.00	-9.03
429.64	V	Peak	46.24	-9.14	37.10	46.00	-8.90
475.23	V	Peak	46.60	-8.56	38.04	46.00	-7.96
523.73	V	Peak	46.19	-8.08	38.11	46.00	-7.89
712.88	V	Peak	44.14	-4.82	39.32	46.00	-6.68
875.84	V	Peak	40.41	-1.51	38.90	46.00	-7.10
1000.00	V	Peak	39.17	-0.63	38.54	54.00	-15.46
119.24	Н	Peak	49.44	-15.32	34.12	43.50	-9.38
213.33	Н	Peak	51.32	-15.16	36.16	43.50	-7.34
405.39	Н	Peak	47.02	-9.86	37.16	46.00	-8.84
450.98	Н	Peak	45.53	-8.61	36.92	46.00	-9.08
475.23	Н	Peak	48.79	-8.56	40.23	46.00	-5.77
644.98	Н	Peak	40.60	-5.10	35.50	46.00	-10.50
875.84	Н	Peak	38.98	-1.51	37.47	46.00	-8.53
1000.00	Н	Peak	37.56	-0.63	36.93	54.00	-17.07

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 46 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11b)

Operation Mode 802.11b TX CH High **Test Date** Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
119.24	V	Peak	52.66	-15.32	37.34	43.50	-6.16
261.83	V	Peak	49.36	-13.63	35.73	46.00	-10.27
356.89	V	Peak	47.52	-11.49	36.03	46.00	-9.97
426.64	V	Peak	46.19	-9.14	37.05	46.00	-8.95
475.23	V	Peak	45.74	-8.56	37.18	46.00	-8.82
523.73	V	Peak	46.08	-8.08	38.00	46.00	-8.00
856.44	V	Peak	40.57	-1.89	38.68	46.00	-7.32
1000.00	V	Peak	38.68	-0.63	38.05	54.00	-15.95
119.24	Н	Peak	48.97	-15.32	33.65	43.50	-9.85
213.33	Н	Peak	51.22	-15.16	36.06	43.50	-7.44
405.39	Н	Peak	46.55	-9.86	36.69	46.00	-9.31
450.98	Н	Peak	45.51	-8.61	36.90	46.00	-9.10
475.23	Н	Peak	47.85	-8.56	39.29	46.00	-6.71
644.98	Н	Peak	40.34	-5.10	35.24	46.00	-10.76
875.84	Н	Peak	39.70	-1.51	38.19	46.00	-7.81
1000.00	Н	Peak	37.63	-0.63	37.00	54.00	-17.00

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 47 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11g)

Operation Mode 802.11g TX CH Low **Test Date** Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
30.00	V	Peak	52.20	-14.97	37.23	40.00	-2.77
119.24	V	Peak	52.07	-15.32	36.75	43.50	-6.75
261.83	V	Peak	49.56	-13.63	35.93	46.00	-10.07
475.23	V	Peak	47.65	-8.56	39.09	46.00	-6.91
523.73	V	Peak	46.87	-8.08	38.79	46.00	-7.21
712.88	V	Peak	42.94	-4.82	38.12	46.00	-7.88
856.11	V	Peak	41.24	-1.89	39.35	46.00	-6.65
1000.00	V	Peak	40.26	-0.63	39.63	54.00	-14.37
119.24	Н	Peak	50.88	-15.32	35.56	43.50	-7.94
213.33	Н	Peak	52.89	-15.16	37.73	43.50	-5.77
261.83	Н	Peak	49.70	-13.63	36.07	46.00	-9.93
405.39	Н	Peak	48.34	-9.86	38.48	46.00	-7.52
475.23	Н	Peak	47.45	-8.56	38.89	46.00	-7.11
712.88	Н	Peak	42.59	-4.82	37.77	46.00	-8.23
875.84	Н	Peak	43.09	-1.51	41.58	46.00	-4.42
1000.00	Н	Peak	39.68	-0.63	39.05	54.00	-14.95

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 48 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11g)

Operation Mode 802.11g TX CH Mid **Test Date** Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
119.24	V	Peak	52.45	-15.32	37.13	43.50	-6.37
143.49	V	Peak	49.29	-13.42	35.87	43.50	-7.63
261.83	V	Peak	49.70	-13.63	36.07	46.00	-9.93
450.98	V	Peak	46.45	-8.61	37.84	46.00	-8.16
499.48	V	Peak	46.27	-8.51	37.76	46.00	-8.24
712.88	V	Peak	44.31	-4.82	39.49	46.00	-6.51
856.44	V	Peak	40.64	-1.89	38.75	46.00	-7.25
1000.00	V	Peak	40.09	-0.63	39.46	54.00	-14.54
119.24	Н	Peak	49.43	-15.32	34.11	43.50	-9.39
213.33	Н	Peak	51.78	-15.16	36.62	43.50	-6.88
405.39	Н	Peak	46.11	-9.86	36.25	46.00	-9.75
475.23	Н	Peak	47.13	-8.56	38.57	46.00	-7.43
644.98	Н	Peak	40.46	-5.10	35.36	46.00	-10.64
712.88	Н	Peak	42.87	-4.82	38.05	46.00	-7.95
875.84	Н	Peak	38.61	-1.51	37.10	46.00	-8.90
1000.00	Н	Peak	36.70	-0.63	36.07	54.00	-17.93

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 49 of 68

Radiated Spurious Emission Measurement Result (below 1GHz) (802.11g)

Operation Mode 802.11g TX CH High **Test Date** Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Ver./Hor Temperature 25

Humidity 60 %

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)
30.00	V	Peak	51.72	-14.97	36.75	40.00	-3.25
119.24	V	Peak	51.84	-15.32	36.52	43.50	-6.98
250.19	V	Peak	49.82	-13.74	36.08	46.00	-9.92
450.98	V	Peak	46.44	-8.61	37.83	46.00	-8.17
523.73	V	Peak	46.11	-8.08	38.03	46.00	-7.97
712.88	V	Peak	43.00	-4.82	38.18	46.00	-7.82
856.44	V	Peak	41.15	-1.89	39.26	46.00	-6.74
1000.00	V	Peak	41.44	-0.63	40.81	54.00	-13.19
119.24	Н	Peak	49.52	-15.32	34.20	43.50	-9.30
213.33	Н	Peak	49.77	-15.16	34.61	43.50	-8.89
358.83	Н	Peak	46.71	-11.43	35.28	46.00	-10.72
405.39	Н	Peak	45.38	-9.86	35.52	46.00	-10.48
475.23	Н	Peak	47.05	-8.56	38.49	46.00	-7.51
712.88	Н	Peak	41.33	-4.82	36.51	46.00	-9.49
875.84	Н	Peak	38.42	-1.51	36.91	46.00	-9.09
1000.00	Н	Peak	37.26	-0.63	36.63	54.00	-17.37

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (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.

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 50 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH Low Test Date Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Ver. Temperature 23

Humidity 54 %

	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)	(dB)
1143.0	42.21		-7.52	34.69		74.00	54.00	-19.31	Peak
4824.0	39.06		6.02	45.08		74.00	54.00	-8.92	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- 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.
- 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.
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 51 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH Low **Test Date** Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Hor Temperature 23

Humidity 54 %

	Peak	\mathbf{AV}		Actual 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)
1000.0	48.00		-7.74	40.26		74.00	54.00	-13.74
1143.0	43.78		-7.52	36.26		74.00	54.00	-17.74
1286.0	41.95		-6.85	35.10		74.00	54.00	-18.90
2410.5	40.32		-1.30	39.02		74.00	54.00	-14.98
4824.0	35.12		6.05	41.17		74.00	54.00	-12.83
7236.0						74.00	54.00	
9648.0						74.00	54.00	
12060.0						74.00	54.00	
14472.0						74.00	54.00	
16884.0						74.00	54.00	
19296.0						74.00	54.00	
21708.0						74.00	54.00	
24120.0						74.00	54.00	

Remark:

- 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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 52 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH Mid Test Date Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Ver Temperature 23

Humidity 54 %

	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)	
1143.0	42.41		-7.52	34.89		74.00	54.00	-19.11	Peak
4874.0	40.08		6.15	46.23		74.00	54.00	-7.77	Peak
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		
14622.0						74.00	54.00		
17059.0						74.00	54.00		
19496.0						74.00	54.00		
21933.0						74.00	54.00		
24370.0						74.00	54.00		

Remark:

- 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.
- 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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 53 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH Mid Test Date Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Hor Temperature 23

Humidity 54 %

	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)
1000.0	42.85		-7.74	35.11		74.00	54.00	-18.89
3093.0	37.37		0.72	38.09		74.00	54.00	-15.91
4874.0	33.59		6.17	39.76		74.00	54.00	-14.24
7311.0						74.00	54.00	
9748.0						74.00	54.00	
12185.0						74.00	54.00	
14622.0						74.00	54.00	
17059.0						74.00	54.00	
19496.0						74.00	54.00	
21933.0						74.00	54.00	
24370.0						74.00	54.00	

Remark:

- Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-(1) quency
- (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.
- 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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 54 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH High Test Date Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Ver Temperature 23

Humidity 54 %

	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)	
1000.0	42.34		-7.74	34.60		74.00	54.00	-19.40	Peak
1286.0	38.35		-6.85	31.50		74.00	54.00	-22.50	Peak
1708.5	38.42		-4.86	33.56		74.00	54.00	-20.44	Peak
4924.0	38.44		6.28	44.72		74.00	54.00	-9.28	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 55 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11b)

Operation Mode 802.11b TX CH High **Test Date** Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Hor Temperature 23

Humidity 54 %

	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)	
1000.0	44.36		-7.74	36.62		74.00	54.00	-17.38	Peak
2001.0	37.12		-3.41	33.71		74.00	54.00	-20.29	Peak
2898.0	37.62		0.18	37.80		74.00	54.00	-16.20	Peak
4924.0	34.48		6.26	40.74		74.00	54.00	-13.26	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 56 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH Low Test Date Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Ver. **Temperature** 25

Humidity 60 %

	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)
1000.0	50.08		-7.74	42.34		74.00	54.00	-11.66
4568.5	35.38		5.49	40.87		74.00	54.00	-13.13
4824.0	33.51		6.05	39.56		74.00	54.00	-14.44
5478.5	35.12		7.47	42.59		74.00	54.00	-11.41
7236.0						74.00	54.00	
9648.0						74.00	54.00	
12060.0						74.00	54.00	
14472.0						74.00	54.00	
16884.0						74.00	54.00	
19296.0						74.00	54.00	
21708.0						74.00	54.00	
24120.0						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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 57 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH Low Test Date Sep. 27, 2008

Fundamental Frequency 2412MHz Test By Jason Pol Hor **Temperature** 23

Humidity 54 %

	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)
1000.0	49.43		-7.74	41.69		74.00	54.00	-12.31
3821.0	35.67		3.08	38.75		74.00	54.00	-15.25
4824.0	34.00		6.05	40.05		74.00	54.00	-13.95
7236.0						74.00	54.00	
9648.0						74.00	54.00	
12060.0						74.00	54.00	
14472.0						74.00	54.00	
16884.0						74.00	54.00	
19296.0						74.00	54.00	
21708.0						74.00	54.00	
24120.0						74.00	54.00	

Remark:

- 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.
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 58 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH Mid Test Date Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Ver **Temperature** 23

Humidity 54 %

	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)
1000.0	49.90		-7.47	42.43		74.00	54.00	-11.57
1708.5	38.40		-4.86	33.54		74.00	54.00	-20.46
3255.0	36.88		1.23	38.11		74.00	54.00	-15.89
4874.0	33.68		6.17	39.85		74.00	54.00	-14.15
7311.0						74.00	54.00	
9748.0						74.00	54.00	
12185.0						74.00	54.00	
14622.0						74.00	54.00	
17059.0						74.00	54.00	
19496.0						74.00	54.00	
21933.0						74.00	54.00	
24370.0						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
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 59 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH Mid Test Date Sep. 27, 2008

Fundamental Frequency 2437MHz Test By Jason Pol Hor **Temperature** 23

Humidity 54 %

	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)
1000.0	51.61		-7.74	43.87		74.00	54.00	-10.13
1143.0	39.83		-7.52	32.31		74.00	54.00	-21.69
4874.0	34.37		6.17	40.54		74.00	54.00	-13.46
7311.0						74.00	54.00	
9748.0						74.00	54.00	
12185.0						74.00	54.00	
14622.0						74.00	54.00	
17059.0						74.00	54.00	
19496.0						74.00	54.00	
21933.0						74.00	54.00	
24370.0						74.00	54.00	

Remark:

- 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.
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 60 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH High Test Date Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Ver **Temperature** 23

Humidity 54 %

	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)
1000.0	48.70		-7.74	40.96		74.00	54.00	-13.04
1143.0	46.43		-7.52	38.91		74.00	54.00	-15.09
1286.0	40.57		-6.85	33.72		74.00	54.00	-20.28
4783.0	35.51		6.00	41.51		74.00	54.00	-12.49
4924.0	34.36		6.36	40.72		74.00	54.00	-13.28
7386.0						74.00	54.00	
9848.0						74.00	54.00	
12310.0						74.00	54.00	
14772.0						74.00	54.00	
17234.0						74.00	54.00	
19696.0						74.00	54.00	
22158.0						74.00	54.00	
24620.0						74.00	54.00	

Remark:

- Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental fre-(1) quency.
- (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.
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 61 of 68

Radiated Spurious Emission Measurement Result (above 1GHz) (802.11g)

Operation Mode 802.11g TX CH High Test Date Sep. 27, 2008

Fundamental Frequency 2462MHz Test By Jason Pol Hor Temperature 23 ℃

Humidity 54 %

	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)
1000.0	51.08		-7.74	43.34		74.00	54.00	-10.66
1143.0	41.95		-7.52	34.43		74.00	54.00	-19.57
1286.0	40.09		-6.85	33.24		74.00	54.00	-20.76
1708.5	39.96		-4.86	35.10		74.00	54.00	-18.90
4924.0	33.95		6.39	40.34		74.00	54.00	-13.66
7386.0						74.00	54.00	
9848.0						74.00	54.00	
12310.0						74.00	54.00	
14772.0						74.00	54.00	
17234.0						74.00	54.00	
19696.0						74.00	54.00	
22158.0						74.00	54.00	
24620.0						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.
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, 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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 62 of 68

10. Peak Power Spectral Density

10.1. Standard Applicable

According to §15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

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 the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 3KHz, VBW = 10KHz, Span = 1.5MHz, Sweep=100s
- 4. Record the max. reading.
- 5. Repeat above procedures until all frequency measured were complete.

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	04/19/2008	04/18/2010				
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009				
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2008	01/04/2009				
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009				

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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 63 of 68

10.4. Measurement Result

802.11b

0021110				
СН	RF Power Density Cable loss RF Po		RF Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-7.90	0.00	-7.90	8
Mid	-7.94	0.00	-7.94	8
High	-8.01	0.00	-8.01	8

802.11g

СН	RF Power Density	Cable loss	RF Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-15.78	0.00	-15.78	8
Mid	-15.91	0.00	-15.91	8
High	-15.78	0.00	-15.78	8

Note: offset 11 dB

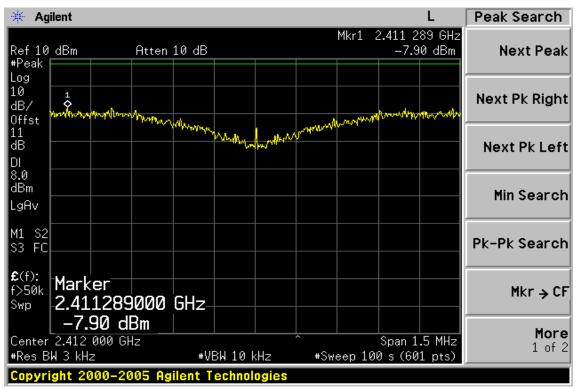
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the



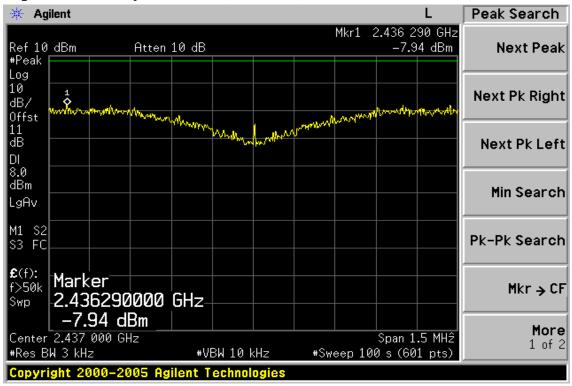
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 64 of 68

802.11b **Power Spectral Density Test Plot (CH-Low)**



Power Spectral Density Test Plot (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.

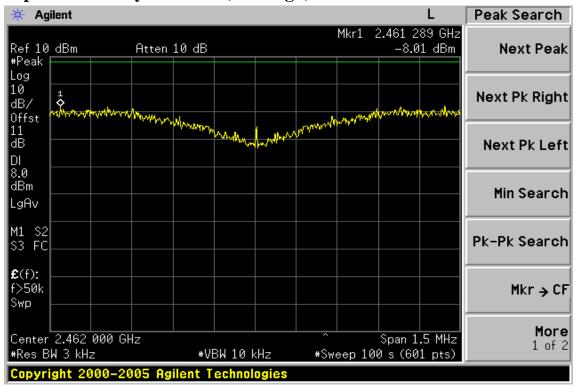
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 65 of 68

Power Spectral Density Test Plot (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。
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 unlocation to a present date 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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

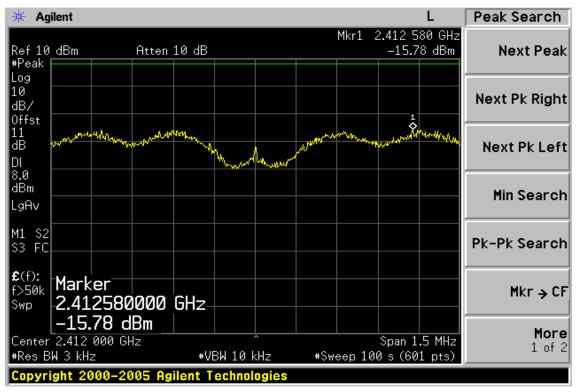
f (886-2) 2298-0488



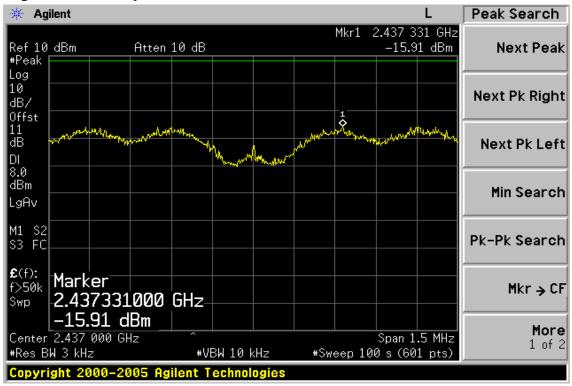
Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 66 of 68

802.11g **Power Spectral Density Test Plot (CH-Low)**



Power Spectral Density Test Plot (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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台博紀 第五下路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

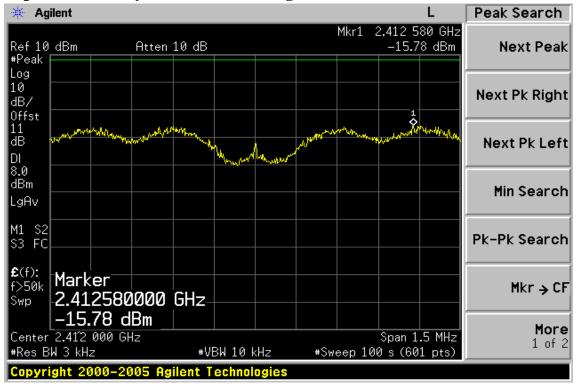
f (886-2) 2298-0488



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 67 of 68

Power Spectral Density Test Plot (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



Report No.: ER/2008/80011 **Issue Date: Sep. 30, 2008**

Page: 68 of 68

11. ANTENNA REQUIREMENT

11.1. 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.

11.2. Antenna Connected Construction

The directional gains of antenna used for transmitting is 2 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

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.