

Report No.: EH/2008/50015 Issue Date: Jun. 03, 2008 Page: 1 of 70

# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**

OF

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

Product Name:	Dream
Brand Name:	НТС
Model Name:	DREA100
Model Different:	N/A
FCC ID:	NM8DRM
<b>Report No.:</b>	EH/2008/50015
Issue Date:	Jun. 03, 2008
Rule Part:	<b>§15.247</b>
Prepared for	HTC Corporation
	No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan, R.O.C
Prepared by	SGS Taiwan Ltd.
	Electronics & Communication Laboratory
	No. 134, Wu Kung Rd., Wuku Industrial
	Zone, Taipei County, Taiwan



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Report No.: EH/2008/50015 Issue Date: Jun. 03, 2008 Page: 2 of 70

## **VERIFICATION OF COMPLIANCE**

Applicant:	HTC Corporation
	No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan, R.O.C
<b>Equipment Under Test:</b>	Dream
Brand Name:	НТС
Model No.:	DREA100
Model Difference:	N/A
FCC ID:	NM8DRM
File Number:	EH/2008/50015
Date of test:	May. 23, 2008 ~ Jun. 02, 2008
Date of EUT Received:	May. 22, 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:	Bondi Jin	Date	Jun. 03, 2008
Prepared By:	Bondi Liu / Engineer Gigi Jeh	Date	Jun. 03, 2008
Approved By:	Gigi Yeh / Clerk Tihulut In Vincent Su / Manager	Date	Jun. 03, 2008

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## Version

Version No.	Date
00	Jun. 03, 2008

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#### **GENERAL INFORMATION** 1.

General:

Product Name:	Dream		
Brand Name:	HTC		
Model Name:	DREA100		
Model Difference:	N/A		
Simple Hands-Free (SHF):	1 provide, Mode No.:	CHM-311STV08002, Supplier: COTRON	
Data Cable (USB):	2 provide, Model: MI	EC/60-4426-300C;70H00272_00M	
	3.7 Vdc re-chargeable	e battery or 5Vdc by AC/DC power adapter	
	Battery:	1. Model: DREA160 2. P/N: 35H00106-01M	
Power Supply	Adapter:	Model: PSAA05A-050	
	Car Charger:	Model: CLA05D-050A	
	Jog ball	EUT	
Jog ball and EUT color de-	TMU Dark Green	Black color	
scription	TMU Brown	Black color	
	TMU Nude	Original color	

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GSM:

USIM.					
	GSM/GPRS 850	824 MHz– 849MHz	33 dBm		
	EDGE 850	824 MHz– 849MHz	27 dBm		
Cellular Phone Standards Fre- quency Range and Power	GSM/GPRS 1900	1850MHz – 1910MHz	30 dBm		
quoney runge und rower	EDGE 1900	1850MHz – 1910MHz	26 dBm		
	WCDMA Band IV	1710MHz – 1755MHz	23 dBm		
	GSM: 300KGXW				
Type of Emission	EDGE: 300KG7W				
	WCDMA: 4M20F9W				
IMEI	35827901002462600				
	GSM850: PIFA Antenna, -1.5dBi				
Antenna Designation	GSM1900: PIFA Antenna. 0.5dBi				

#### WLAN:

WLAN.		
Frequency Range	2412 – 2462 MHz	
Channel number	11 channels	
Rated Power	802.11 b: 18.02 dBm (Peak) 802.11 g: 13.16 dBm (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, 0.5 dBi	
Type of Emission	16M5M7D	

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

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Bluetooth:

Frequency Range	2402 – 2480MHz
Channel number	79 channels
Rated Power1.25 dBm (Peak)	
Modulation type	Frequency Hopping Spread Spectrum (FHSS) (GFSK) (π/ 4-DQPSK) (8DPSK)
Antenna Designation	PIFA Antenna, 0.5dBi

The EUT is compliance with Bluetooth 2.0 with EDR.

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

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

This submittal(s) (test report) is intended for **FCC ID:** <u>NM8DRM</u> 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. 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. 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.

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### 2. SYSTEM TEST CONFIGURATION

#### **2.1. EUT Configuration**

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

#### 2.2. EUT Exercise

The 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.

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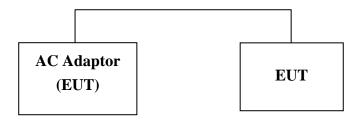
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### **2.4.** Configuration of Tested System

#### Fig. 2-1 Configuration of Tested System



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

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	Test Software	Marvell	SD8686PN	N/A	N/A	N/A

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## 3. 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	
§15.247(d)	Frequency Band Edges	Compliant
§15.247(d)	Spurious Emission	Compliant
§15.247(e)	Peak Power Density	Compliant
§15.203	15.203 Antenna Requirement	

## 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

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

802.11 g mode: Channel low (2412MHz)  $\cdot$  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.

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

### 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.

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Conducted Emission Test Site										
EQUIPMENT MFR		MODEL	SERIAL	LAST	CAL DUE.					
ТҮРЕ		NUMBER	NUMBER	CAL.						
EMC Analyzer	HP	8594EM	3624A00203	09/02/2007	09/03/2008					
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2007	06/10/2008					
Transient Limiter	HP	11947A	3107A02062	09/02/2007	09/03/2008					
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2007	12/30/2008					
LISN	Rolf-Heine	NNB-2/16Z	99013	01/10/2008	01/09/2009					
Coaxial Cables	FCC	FCC-LISN-50/250-25-2-01	04034	01/11/2008	01/10/2009					

## **5.4. Measurement Equipment Used:**

#### 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.

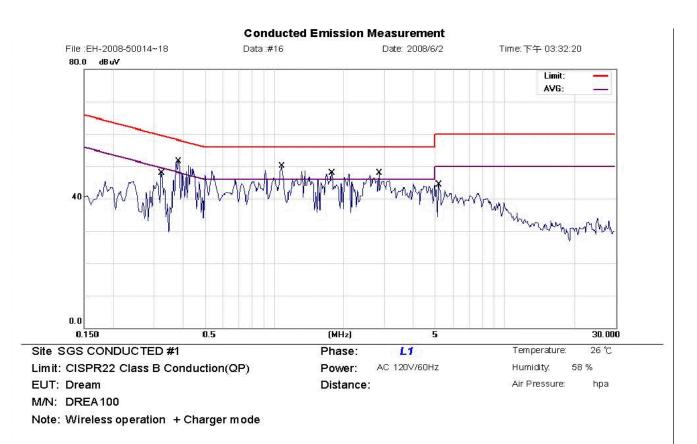
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#### AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Wifi Operating			Test Date:	Jun. 02, 2008
Temperature:	26 °C	Humidity: 58%	Sky	Test By:	Bondi



No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∀	dBuV	dB	Detector	Comment
1	0.3250	47.78	0.12	47.90	59.58	-11.68	QP	
2	0.3250	42.00	0.12	42.12	49.58	-7.46	AVG	
3	0.3850	51.41	0.10	51.51	58.17	-6.66	QP	
4	0.3850	42.00	0.10	42.10	48.17	-6.07	AVG	
5 *	1.0800	50.04	0.04	50.08	56.00	-5.92	QP	
6	1.0800	32.00	0.04	32.04	46.00	-13.96	AVG	
7	1.7800	47.81	0.04	47.85	56.00	-8.15	QP	
8	1.7800	35.00	0.04	35.04	46.00	-10.96	AVG	
9	2.8600	47.79	0.04	47.83	56.00	-8.17	QP	
10	2.8600	37.00	0.04	37.04	46.00	-8.96	AVG	
11	5.1600	44.32	0.06	44.38	60.00	-15.62	QP	

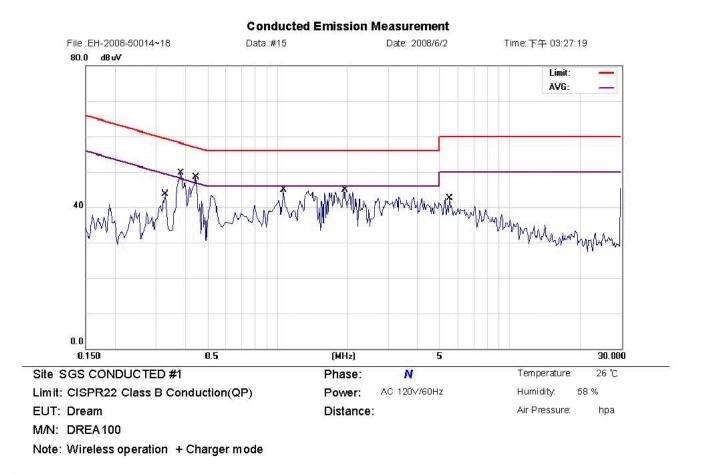
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Report No.: EH/2008/50015 Issue Date: Jun. 03, 2008 Page: 16 of 70



No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBu∀	dB	Detector	Comment
1		0.3300	43.52	0.10	43.62	59.45	-15.83	QP	
2		0.3850	49.53	0.08	49.61	58.17	-8.56	QP	
3	*	0.3850	41.00	0.08	41.08	48.17	-7.09	AVG	
4		0.4450	48.52	0.07	48.59	56.97	-8.38	QP	
5		0.4450	39.00	0.07	39.07	46.97	-7.90	AVG	
6		1.0600	44.90	0.03	44.93	56.00	-11.07	QP	
7		1.0600	34.00	0.03	34.03	46.00	-11.97	AVG	
8		1.9400	44.83	0.03	44.86	56.00	-11.14	QP	
9		1.9400	33.00	0.03	33.03	46.00	-12.97	AVG	
10		5.5200	42.37	0.08	42.45	60.00	-17.55	QP	

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### 6. PEAK OUTPUT POWER MEASUREMENT

#### 6.1. Standard Applicable

According to §15.247(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.

I 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.

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#### **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	04/27/2008	04/27/2009				
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A				
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009				

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#### 6.4. Measurement Result

#### 802.11b

Frequency (MHz)	Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
2412.00	17.16	0.50	17.66	0.05834	1
2437.00	17.52	0.50	18.02	0.06339	1
2462.00	17.00	0.50	17.50	0.05623	1

\*Note: Offset 0.1dB

#### 802.11g

Frequency (MHz)	Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
2412.00	12.66	0.50	13.16	0.02070	1
2437.00	12.63	0.50	13.13	0.02056	1
2462.00	12.11	0.50	12.61	0.01824	1

\*Note: Offset 0.1dB

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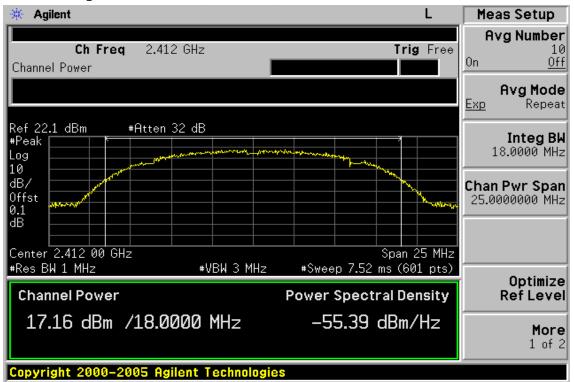
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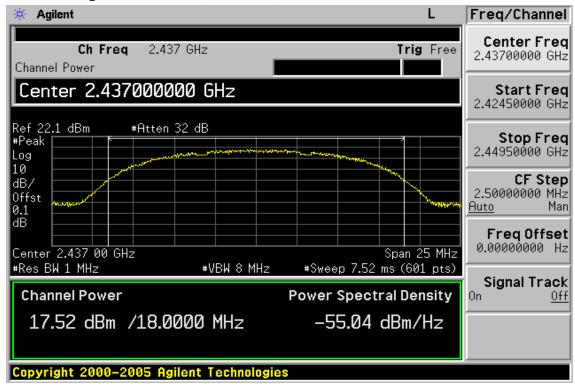
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### 802.11b

#### Peak Power Output Data Plot (CH Low)



Peak Power Output Data Plot (CH Mid)



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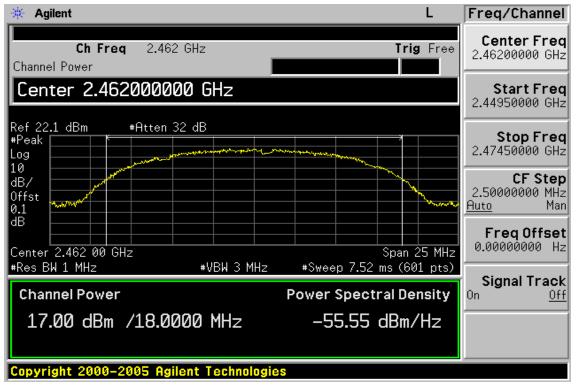
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### Peak Power Output Data Plot (CH High)



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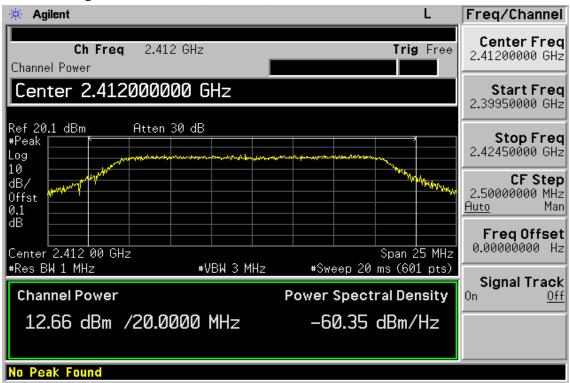
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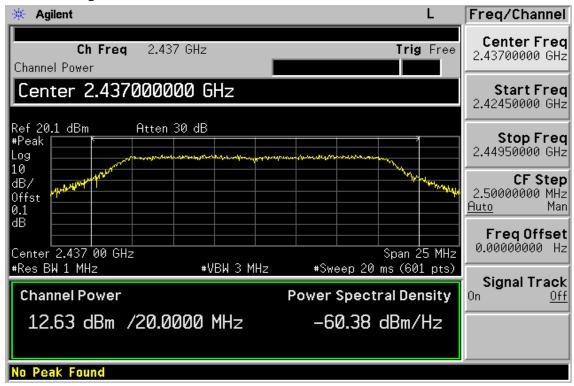
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## 802.11g

#### Peak Power Output Data Plot (CH Low)



#### Peak Power Output Data Plot (CH Mid)



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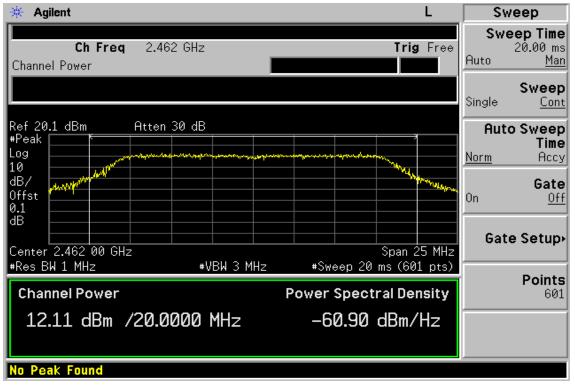
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## Peak Power Output Data Plot (CH High)



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## 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.

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

#### 7.3. Measurement Equipment Used:

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### 7.4. Measurement Result

802.11b									
СН	Bandwidth (MHz)	Bandwidth (KHz)	Result						
Lower	11.710	> 500	PASS						
Mid	11.136	> 500	PASS						
Higher	10.444	> 500	PASS						

\*Offset 0.1dB

#### 802.11g

СН	Bandwidth (MHz)	Bandwidth (KHz)	Result
Lower	16.536	> 500	PASS
Mid	16.577	> 500	PASS
Higher	16.548	> 500	PASS

\*Offset 0.1dB

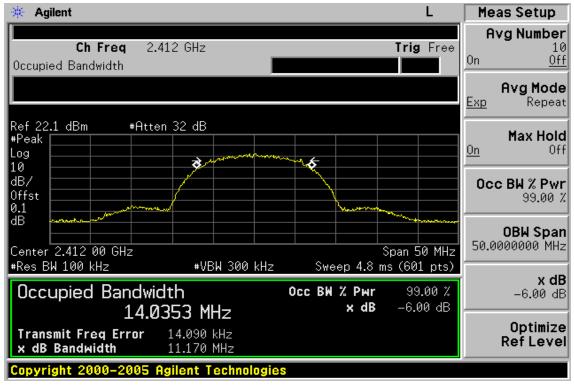
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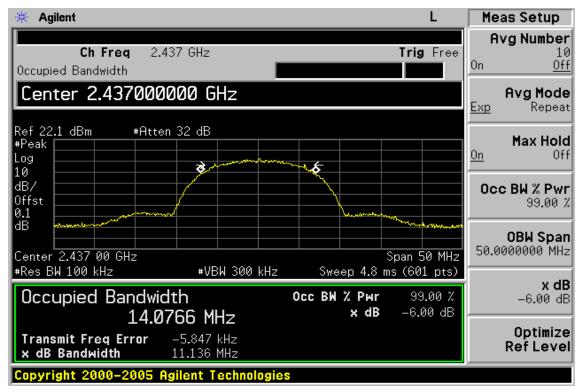
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## 802.11b

### 6dB Band Width Test Data CH-Low



#### 6dB Band Width Test Data CH-Mid



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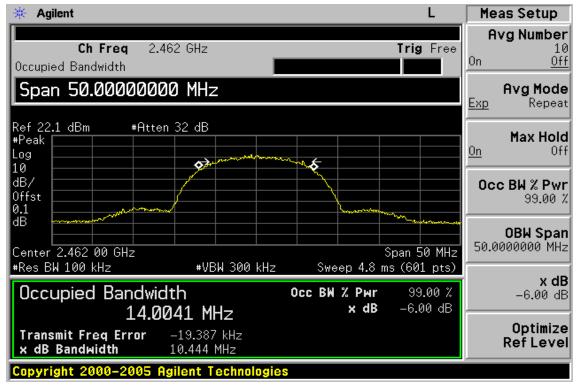
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### 6dB Band Width Test Data CH-High



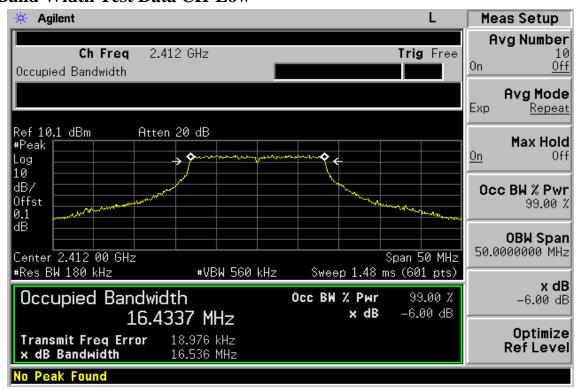
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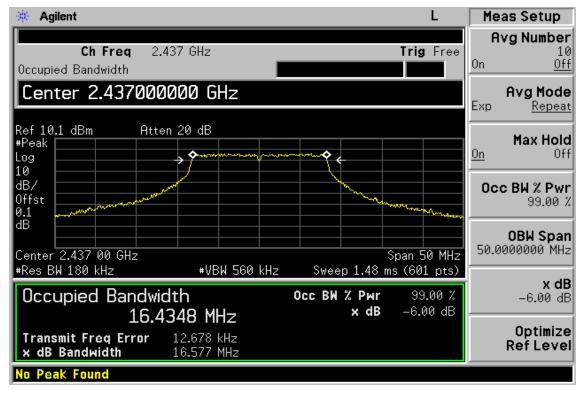


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#### 802.11g 6dB Band Width Test Data CH-Low



## 6dB Band Width Test Data CH-Mid



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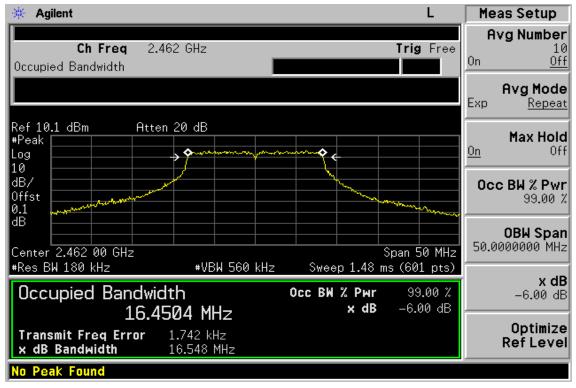
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## 6dB Band Width Test Data CH-High



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### 8. 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

#### 8.1. Standard Applicable

According to §15.247I, 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 in15.209(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.

	1 1									
	Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009					
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A					
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009					

#### 8.3. Measurement Equipment Used:

#### 8.4. Measurement Result

Refer to attach spectrum analyzer data chart.

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## 802.11b

#### **Band Edges Test Data CH-Low**



#### **Band Edges Test Data CH-High**



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Peak

-17.12

#### Radiated Emission: 802.11 b mode

Operation Mode	TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412 MHz	Test By	Bondi
Tmperature	25 °C	Pol	Ver.
Humidity	65 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	n) (dB)	
2390.00	44.79		-10.76	34.03		74.00	54.00	-19.97	Peak
Operation ModeTX CH LowFundamental Frequency2412 MHzTemperature25 °CHumidity65 %					Test Test Pol	By	Jun. 02, 20 Bondi Hor.	008	
	Peak	AV		Actu	al FS	Peak	AV		
Freq.	0	Reading		Peak	AV	Limit	Limit	0	Remark
(MHz)	(dBuV)	$(\mathbf{u}\mathbf{D}\mathbf{u}\mathbf{v})$	Cr(ab)	(uDuV/M)	(dBuV/m)	( <b>uduv/m</b> )(		n) ( <b>dB</b> )	

Domorl		
Remark	•	

47.64

-10.76

2390.00

(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.

36.88

74.00

54.00

- (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 column₀
- (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.

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#### Radiated Emission: 802.11 b mode

Operation Mode	TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	n) ( <b>dB</b> )	
2483.50	46.04		-10.46	35.58		74.00	54.00	-18.42	Peak
Operation Mode TX CH High Test Date Jun. 02, 2008								008	
Fundament	tal Frequer	ncy 2462	MHz			Test	By	Bondi	
Temperatu	re	25 °C				Pol		Hor.	
Humidity		65 %							
	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	n) (dB)	

2483.50 47.77 --- -10.46 37.31 --- 74.00 54.00 -16.69 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 column₀
- (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.

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## 802.11g

#### **Band Edges Test Data CH-Low**



#### **Band Edges Test Data CH-High**



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#### Radiated Emission: 802.11 g mode

Operation Mode	TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412 MHz	Test By	Bondi
Tmperature	25 °C	Pol	Ver.
Humidity	65 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	( <b>dB</b> )	
2390.00	45.57		-10.76	34.81		74.00	54.00	-19.19	Peak
Operation Mode TX CH Low Test Date Jun. 02, 200							08		
Fundament	al Frequer	ncy 2412	MHz			Test	By ]	Bondi	
Temperatur	re	25 °C				Pol	]	Hor.	
Humidity		65 %							
	Peak	AV		Actu	al FS	Peak	AV		
Freq.	0	Reading			AV (dBuV/m)	Limit	Limit	0	Remark

(MHZ)	(abuv)	(abuv)	CF(ab)	(abuv/m)	) (abuv/m)	) (abuv/m)	(abuv/m	, (ав)	
2390.00	50.39		-10.76	39.63		74.00	54.00	-14.37	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 column₀
- (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.

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#### Radiated Emission: 802.11 g mode

Operation Mode Fundamental Frequency	TX CH High 2462 MHz	Test Date Test By	Jun. 02, 2008 Bondi
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	n) ( <b>dB</b> )	
2483.50	50.45		-10.46	39.99		74.00	54.00	-14.01	Peak
Operation Fundament Temperatu Humidity	tal Frequer					Test Test Pol	By	Jun. 02, 20 Bondi Hor.	008
	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	<b>)</b> ( <b>dB</b> )	
2483.50	54.17		-10.46	43.71		74.00	54.00	-10.29	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 column₀
- (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.

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## 9. SPURIOUS RADIATED EMISSION TEST

### 9.1. Standard Applicable

According to \$15.247I, 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. When 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.
- 5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 7. Repeat above procedures until all frequency measured were complete.

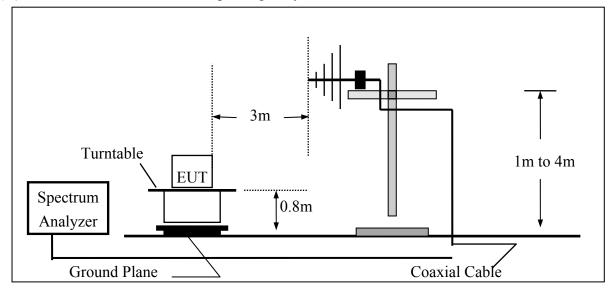
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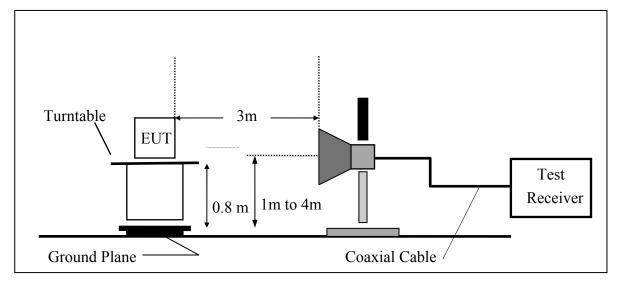
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## 9.4. Test SET-UP (Block Diagram of Configuration)

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



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



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966 Chamber									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
ТҮРЕ		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009				
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008				
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/14/2007	11/13/2008				
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	12/14/2007	12/13/2008				
Horn antenna	SCHWAZBECK	BBHA 9170	184/185	12/13/2007	12/12/2008				
Pre-Amplifier	HP	8447D	2944A09469	07/19/2007	07/18/2008				
Pre-Amplifier	HP	8494B	3008A00578	02/26/2008	02/25/2009				
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	10/09/2007	10/08/2008				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2007	10/08/2008				
Site NSA	SGS	966 chamber	N/A	11/17/2007	11/16/2008				

### 9.5. Measurement Equipment Used:

### 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:

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

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

### 9.7. Measurement Result

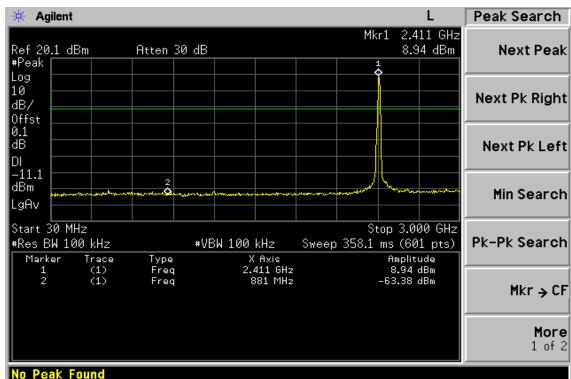
Refer to attach tabular data sheets.

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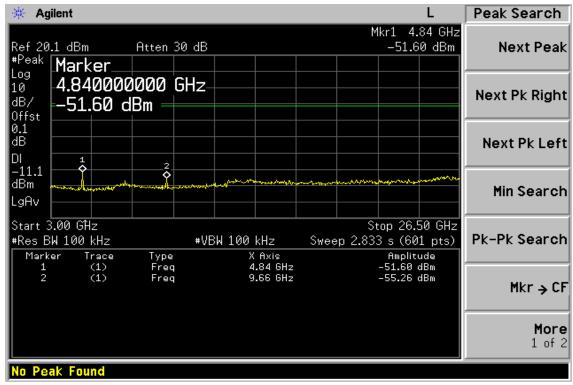


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## Conducted Spurious Emission Measurement Result (802.11b) Ch Low 30MHz – 3GHz





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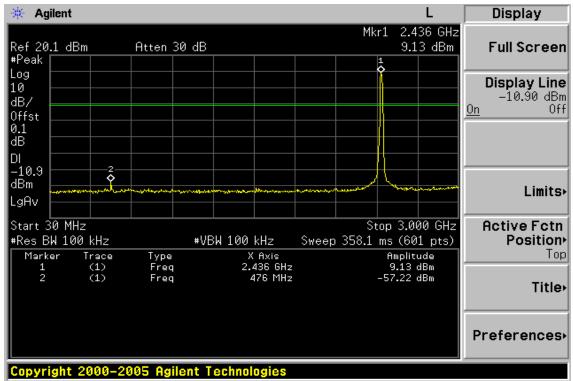
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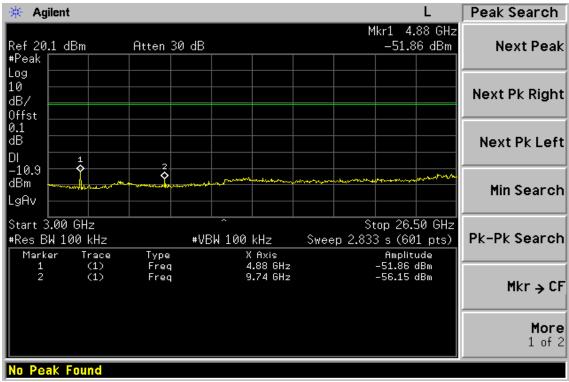


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## Ch Mid 30MHz – 3GHz







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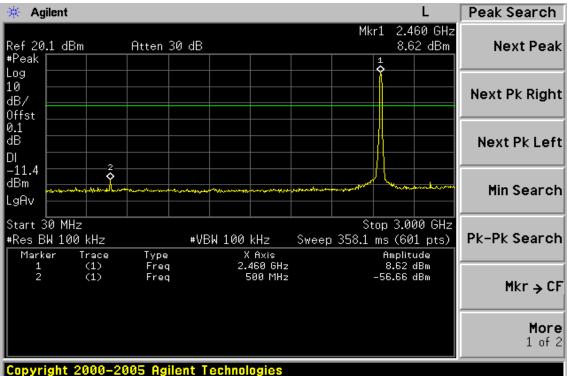
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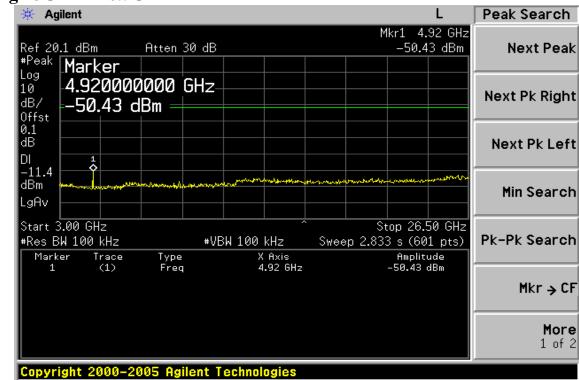
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## Ch High 30MHz – 3GHz





Ch High 3GHz – 26.5GHz

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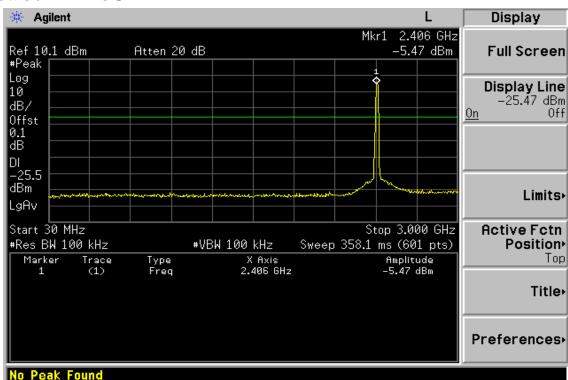
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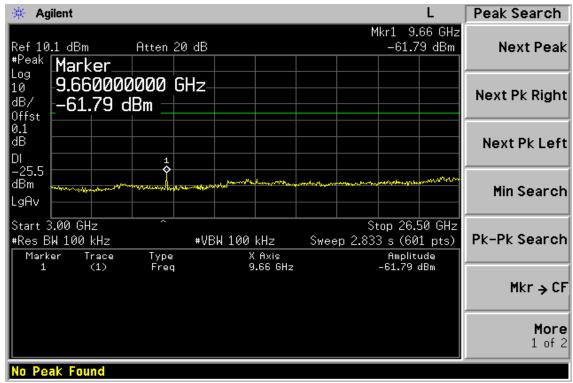


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### Conducted Spurious Emission Measurement Result (802.11g) Ch Low 30MHz – 3GHz





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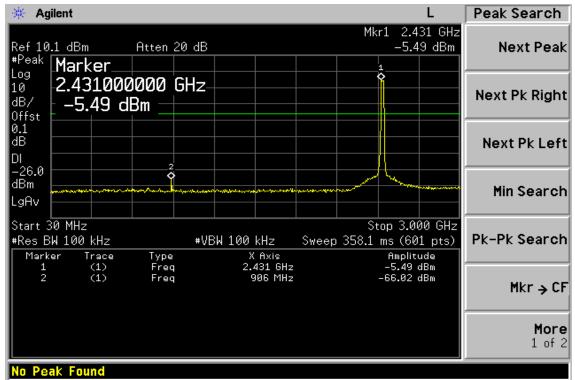
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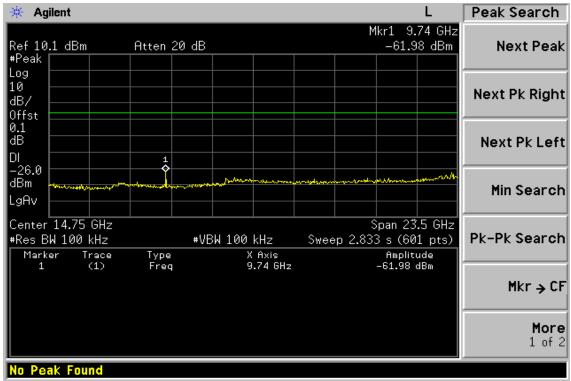


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## Ch Mid 30MHz – 3GHz







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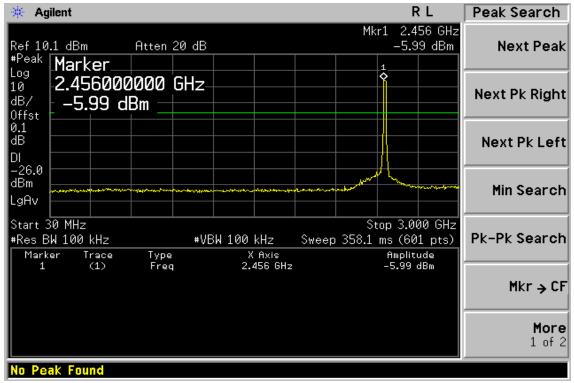
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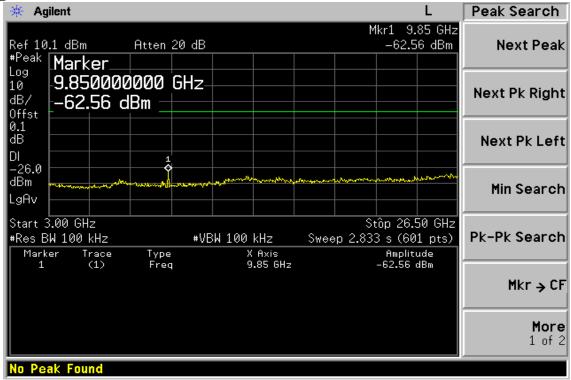


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## Ch High 30MHz – 3GHz







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

Operation Mode	802.11b TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

	Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
_	(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
	85.29	V	Peak	58.85	-30.75	28.10	40.00	-11.90
	96.93	V	Peak	61.44	-30.63	30.81	43.50	-12.69
	158.04	V	Peak	45.70	-26.99	18.71	43.50	-24.79
	256.98	V	Peak	47.27	-29.71	17.56	46.00	-28.44
	441.28	V	Peak	47.16	-25.20	21.96	46.00	-24.04
	557.68	V	Peak	45.28	-23.57	21.71	46.00	-24.29
	96.93	Н	Peak	55.17	-30.63	24.54	43.50	-18.96
	211.39	Н	Peak	55.61	-31.13	24.48	43.50	-19.02
	288.99	Н	Peak	52.12	-28.76	23.36	46.00	-22.64
	441.28	Н	Peak	49.97	-25.20	24.77	46.00	-21.23
	518.88	Н	Peak	47.57	-24.33	23.24	46.00	-22.76
	696.39	Н	Peak	44.40	-21.28	23.12	46.00	-22.88

- (1) Measuring frequencies from 30 MHz to the 1GHz<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

	Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
-	(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
	58.13	V	Peak	57.38	-26.67	30.71	40.00	-9.29
	133.79	V	Peak	47.90	-28.02	19.88	43.50	-23.62
	211.39	V	Peak	49.03	-31.13	17.90	43.50	-25.60
	288.99	V	Peak	50.64	-28.76	21.88	46.00	-24.12
	402.48	V	Peak	47.92	-25.99	21.93	46.00	-24.07
	441.28	V	Peak	46.89	-25.20	21.69	46.00	-24.31
	58.13	Н	Peak	48.80	-26.67	22.13	40.00	-17.87
	155.13	Н	Peak	45.40	-26.98	18.42	43.50	-25.08
	211.39	Н	Peak	55.87	-31.13	24.74	43.50	-18.76
	327.79	Н	Peak	47.36	-27.68	19.68	46.00	-26.32
	402.48	Н	Peak	48.32	-25.99	22.33	46.00	-23.67
	518.88	Н	Peak	47.62	-24.33	23.29	46.00	-22.71

#### Remark :

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

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

Operation Mode	802.11b TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

	Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
_	(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
	58.13	V	Peak	57.52	-26.67	30.85	40.00	-9.15
	150.28	V	Peak	45.42	-26.97	18.45	43.50	-25.05
	256.98	V	Peak	47.22	-29.71	17.51	46.00	-28.49
	327.79	V	Peak	46.68	-27.68	19.00	46.00	-27.00
	441.28	V	Peak	46.11	-25.20	20.91	46.00	-25.09
	732.28	V	Peak	44.52	-20.87	23.65	46.00	-22.35
	159.98	Н	Peak	46.82	-26.99	19.83	43.50	-23.67
	211.39	Н	Peak	55.82	-31.13	24.69	43.50	-18.81
	327.79	Н	Peak	47.53	-27.68	19.85	46.00	-26.15
	441.28	Н	Peak	50.90	-25.20	25.70	46.00	-20.30
	480.08	Н	Peak	46.40	-24.94	21.46	46.00	-24.54
	643.04	Н	Peak	46.62	-22.11	24.51	46.00	-21.49

#### Remark :

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

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

Operation Mode	802.11g TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
109.54	V	Peak	50.80	-29.51	21.29	43.50	-22.21
150.28	V	Peak	45.59	-26.97	18.62	43.50	-24.88
211.39	V	Peak	49.03	-31.13	17.90	43.50	-25.60
327.79	V	Peak	46.49	-27.68	18.81	46.00	-27.19
480.08	V	Peak	45.50	-24.94	20.56	46.00	-25.44
594.54	V	Peak	44.14	-22.92	21.22	46.00	-24.78
43.58	Н	Peak	48.34	-25.76	22.58	40.00	-17.42
135.73	Н	Peak	46.29	-27.87	18.42	43.50	-25.08
211.39	Н	Peak	55.87	-31.13	24.74	43.50	-18.76
327.79	Н	Peak	47.36	-27.68	19.68	46.00	-26.32
441.28	Н	Peak	50.39	-25.20	25.19	46.00	-20.81
557.68	Н	Peak	45.46	-23.57	21.89	46.00	-24.11

- (1) Measuring frequencies from 30 MHz to the 1GHz<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

	Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
_	(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
	67.83	V	Peak	51.31	-28.92	22.39	40.00	-17.61
	133.79	V	Peak	47.03	-28.02	19.01	43.50	-24.49
	256.98	V	Peak	47.22	-29.71	17.51	46.00	-28.49
	327.79	V	Peak	46.68	-27.68	19.00	46.00	-27.00
	441.28	V	Peak	46.11	-25.20	20.91	46.00	-25.09
	715.79	V	Peak	44.64	-21.04	23.60	46.00	-22.40
	143.49	Н	Peak	45.48	-27.31	18.17	43.50	-25.33
	256.98	Н	Peak	46.50	-29.71	16.79	46.00	-29.21
	327.79	Н	Peak	47.53	-27.68	19.85	46.00	-26.15
	441.28	Н	Peak	50.90	-25.20	25.70	46.00	-20.30
	643.04	Н	Peak	46.62	-22.11	24.51	46.00	-21.49
	712.88	Н	Peak	44.33	-21.06	23.27	46.00	-22.73

- (1) Measuring frequencies from 30 MHz to the 1GHz<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Mar- gin
(MHz)	H/V	(PK/QP)	(dBuV)	( <b>dB</b> )	(dBuV/m)	(dBuV/m)	( <b>dB</b> )
85.29	V	Peak	58.85	-30.75	28.10	40.00	-11.90
177.44	V	Peak	45.83	-29.22	16.61	43.50	-26.89
256.98	V	Peak	47.27	-29.71	17.56	46.00	-28.44
402.48	V	Peak	47.49	-25.99	21.50	46.00	-24.50
557.68	V	Peak	45.28	-23.57	21.71	46.00	-24.29
749.74	V	Peak	44.19	-20.66	23.53	46.00	-22.47
58.13	Н	Peak	48.77	-26.67	22.10	40.00	-17.90
158.04	Н	Peak	45.62	-26.99	18.63	43.50	-24.87
256.98	Н	Peak	47.96	-29.71	18.25	46.00	-27.75
327.79	Н	Peak	48.49	-27.68	20.81	46.00	-25.19
480.08	Н	Peak	46.11	-24.94	21.17	46.00	-24.83
652.74	Н	Peak	44.28	-21.85	22.43	46.00	-23.57

#### Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	23 °C	Pol	Ver.
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
2001.0	45.97		-12.64	33.33		74.00	54.00	-20.67	Peak
4824.0						74.00	54.00		
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		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4824.0	46.65		-6.01	40.64		74.00	54.00	-13.36	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 :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	23 °C	Pol	Ver
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4874.0	44.15		-5.98	38.17		74.00	54.00	-15.83	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		

- (1) Measuring frequencies scanned from 1GHz to the 10<sup>th</sup> harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
3073.5	46.88		-10.34	36.54		74.00	54.00	-17.46	Peak
4874.0						74.00	54.00		
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		
21933.0						74.00	54.00		

### Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	23 °C	Pol	Ver
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4685.5	44.81		-6.27	38.54		74.00	54.00	-15.46	Peak
4924.0						74.00	54.00		
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		
24020.0						/4.00	54.00		

#### Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11b TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

Peak	AV		Actu	al FS	Peak	AV		
Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
45.41		-6.27	39.14		74.00	54.00	-14.86	Peak
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
					74.00	54.00		
	Reading (dBuV) 45.41      	Reading         Reading           (dBuv)         (dBuv)           45.41 <tr tr=""> </tr>	Reading         Reading         Ant./CL           (dBuV)         (DBuV)         (CF(dBuV))           45.41             45.41	ReadingAnt./CLPeak(dBu/)(dBu/)(dBu/)45.416.2739.14	ReadingAnt./CLPeakAV(dBu/)(dBu/)(dBu/)(dBu/)45.416.2739.14	ReadingReadingAnt./CLPeakAVLimit(dBuV)CF(dB)(dBuV)(dBuV)(dBuV)45.416.2739.1474.00 <td>Reading (dBuv)Ant./ClPeakAVLinni(dBuv)CF(dB)(dBuV)(dBuV)(dBuV)(dBuV)45.4139.1474.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0054.0054.0054.0054.0054.0054.0054.0054.0054.00</td> <td>Reading (dBuv)Ant./CLPeakAVLimitLimitMargin (dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)45.4139.1474.0054.00-14.8674.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.00</td>	Reading (dBuv)Ant./ClPeakAVLinni(dBuv)CF(dB)(dBuV)(dBuV)(dBuV)(dBuV)45.4139.1474.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0054.0054.0054.0054.0054.0054.0054.0054.0054.00	Reading (dBuv)Ant./CLPeakAVLimitLimitMargin (dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)(dBuv)45.4139.1474.0054.00-14.8674.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.0074.0054.00

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver.
Humidity	60 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0	43.02		-5.98	37.04		74.00	54.00	-16.96	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 :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH Low	Test Date	Jun. 02, 2008
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4824.0	42.93		-5.98	36.95		74.00	54.00	-17.05	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		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	23 °C	Pol	Ver
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4874.0	42.87		-5.93	36.94		74.00	54.00	-17.06	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		

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH Mid	Test Date	Jun. 02, 2008
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4874.0	42.34		-5.93	36.41		74.00	54.00	-17.59	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 :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	23 °C	Pol	Ver
Humidity	54 %		

_
Peak
<b>1</b>

#### Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency<sub>o</sub>
- (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<sub>o</sub>
- (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.

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

Operation Mode	802.11g TX CH High	Test Date	Jun. 02, 2008
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	23 °C	Pol	Hor
Humidity	54 %		

	Peak	AV		Actual FS		Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	( <b>dB</b> )	
4924.0	43.35		-5.91	37.44		74.00	54.00	-16.56	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<sub>o</sub>
- (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<sub>o</sub>
- (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.

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## **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.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S6W5	N/A	01/05/2008	01/04/2009

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### **10.4. Measurement Result**

802.11b

0020110				
СН	<b>RF</b> Power Density	Cable loss	<b>RF</b> Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-6.48	0.50	-5.98	8
Mid	-6.64	0.50	-6.14	8
High	-7.09	0.50	-6.59	8

802.11g

СН	<b>RF</b> Power Density	Cable loss	<b>RF</b> Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-19.01	0.50	-18.51	8
Mid	-18.92	0.50	-18.42	8
High	-19.70	0.50	-19.20	8

Note: offset 0.8 dB

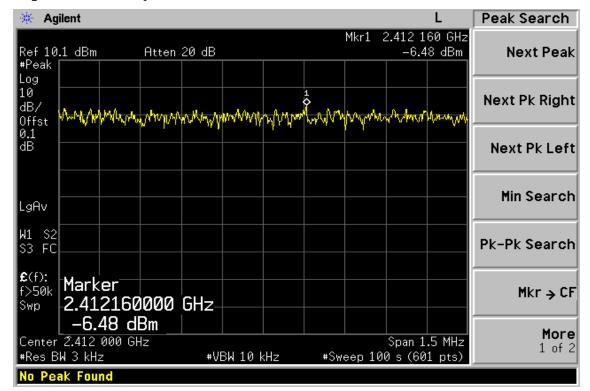
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### 802.11b

# Power Spectral Density Test Plot (CH-Low)



### **Power Spectral Density Test Plot (CH-Mid)**

Peak Search	L							ilent	🔆 Ag
Next Peak	2.437 160 GHz -6.64 dBm	М			20 dB	Atten		.1 dBm	Ref 10 #Peak
Next Pk Right	an manager and the second	1 	ኄየታውም	<b>r</b> -Mary	n. Nirwin	w <sup>hen</sup> row	Arthenone	47mm/hp	Log 10 dB/ Offst
Next Pk Left						r			0.1 dB
Min Search									LgAv
Pk-Pk Search									W1 S2 S3 FC
Mkr → CF									€(f): f>50k Swp
<b>More</b> 1 of 2	Span 1.5 MHz 00 s (601 pts)	#Sw <u>ee</u>	Hz	 3W 10 W	#V[	lz	000 GH z	2.437 Ж 3 kH	
							nd	ak Fou	No Pe

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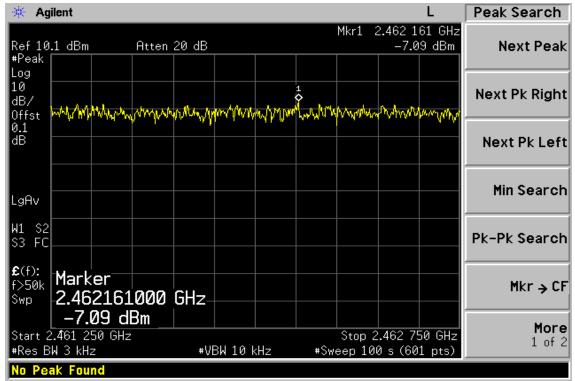
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 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台間紙股工業區五工路134號

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## Power Spectral Density Test Plot (CH-High)



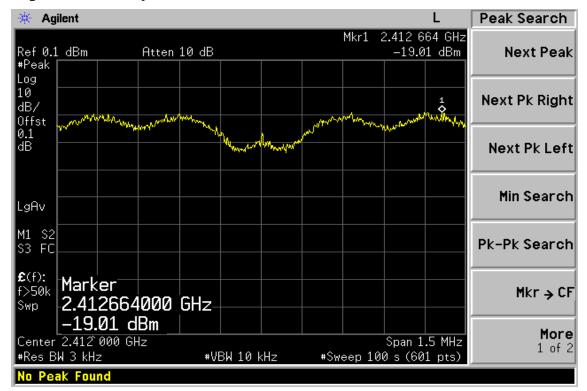
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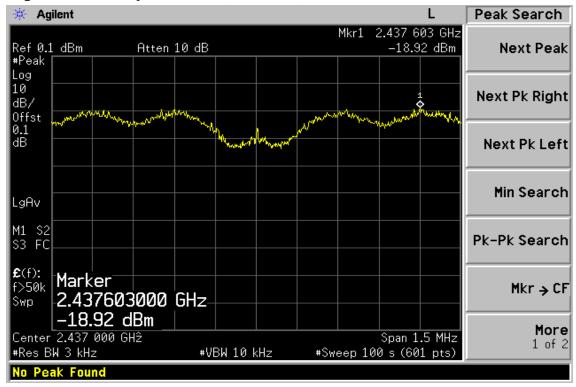
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## 802.11g

## **Power Spectral Density Test Plot (CH-Low)**



## **Power Spectral Density Test Plot (CH-Mid)**



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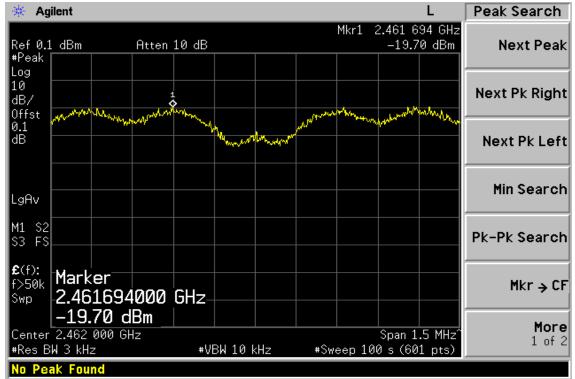
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## Power Spectral Density Test Plot (CH-High)



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## **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 0.5 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

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