

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT****INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT  
AND INDUSTRY CANADA RSS-210**

OF

**Product Name:** wifly module

**Brand Name:** ROVING

**Model Name:** RN-111B

**Model Different:** N/A

**ID Number:** T9J-RN111B

**IC Number:** 6514A-RN111B

**Report No.:** ER/2008/50008

**Issue Date:** Jul. 07, 2008

**Rule Part:** FCC Part 15.247,  
RSS-210 issue 7:2007, Annex 8

**Prepared for:** Roving Networks, Inc.  
809 University Avenue Los Gatos, CA95032 ,U.S.A

**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No. 134, Wu Kung Rd., Wuku Industrial Zone,  
Taipei County, Taiwan.



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## VERIFICATION OF COMPLIANCE

**Applicant:** Roving Networks, Inc.  
809 University Avenue Los Gatos, CA95032 ,U.S.A

**Equipment Under Test:** wifly module

**Brand Name:** ROVING

**Model No.:** RN-111B

**Model Difference:** N/A

**ID Number:** T9J-RN111B

**IC Number:** 6514A-RN111B

**File Number:** ER/2008/50008

**Date of test:** Jun. 07, 2008 ~Jul. 04, 2008

**Date of EUT Received:** Jun. 06, 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 and RSS-210 issue 7: 2007 Annex 8.

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

<b>Test By:</b>	 <hr/> Sky Wang/Asst. Supervisor	<b>Date</b>	Jul. 07, 2008 <hr/>
<b>Prepared By:</b>	 <hr/> Gigi Yeh / Clerk	<b>Date</b>	Jul. 07, 2008 <hr/>
<b>Approved By:</b>	 <hr/> Vincent Su / Manager	<b>Date</b>	Jul. 07, 2008 <hr/>

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## Version

Version No.	Date
00	Jul. 07, 2008

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## 1. GENERAL INFORMATION

### General:

Product Name:	wifly module
Brand Name:	ROVING
Model Name:	RN-111B
Model Difference:	N/A
Data Cable (USB):	N/A
Power Supply:	4.5 Vdc

### WLAN:

Frequency Range:	2412 – 2462 MHz
Channel number:	13 channels
Rated Power:	802.11 b: 16.98 dBm (Peak)
Modulation Technology:	DSSS
Modulation type:	CCK, DQPSK, DBPSK for DSSS
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps;
Type of Emission:	15M8M4D

The EUT is compliance with IEEE 802.11 b Standard.

**Antenna Specification:**

Item no.	Model/Type	
Antenna 1.	Antenna Type	Monopole Integrated Whip Antenna
	Manufacture:	N/A
	Model:	RN111B
	Frequency Range:	2.4GHz~2.5GHz
	Antenna Gain:	1dBi
	Impedance	50 ohms
	VSWR	<2
	Radiation pattern	Omni
Antenna 2.	Antenna Type	Dipole Antenna
	Manufacture:	Central
	Model:	6602803081-000
	Frequency Range:	2.4GHz~2.5GHz
	Antenna Gain:	3dBi
	Impedance	50 ohm nominal
	VSWR	<2
	Radiation pattern	Omni
Antenna 3.	Antenna Type	Dipole Antenna
	Manufacture:	Central
	Model:	6602803081-000
	Frequency Range:	2.4GHz
	Antenna Gain:	3dBi
	Impedance	50 ohms
	VSWR	<2
	Radiation pattern	Omni
Antenna 4.	Antenna Type	Chip Antenna
	Manufacture:	WALSIN
	Model:	N/A
	Frequency Range:	2.45GHz
	Antenna Gain:	2dBi max
	Impedance	50 ohms
	VSWR	2 max
	Radiation pattern	Omni-directional

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

This submittal(s) (test report) is intended for FCC ID: **T9J-RN111B** filing to comply with Section 15.247 of the FCC Part 15C: 2005, Subpart C Rules. And IC: **6514A-RN111B** filing to comply with Industry Canada RSS-210 issue 7: 2007 Annex 8.

### 1.2. Test Methodology

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

### 1.3. 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.



## 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 placed on a 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 30 MHz using CISPR Quasi-Peak and Average detector mode.

#### 2.3.2 Radiated Emissions

The EUT is placed on a 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 according to the requirements in Section 8 and 13 of ANSI C63.4-2003 and RSS-Gen:2007.

## 2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

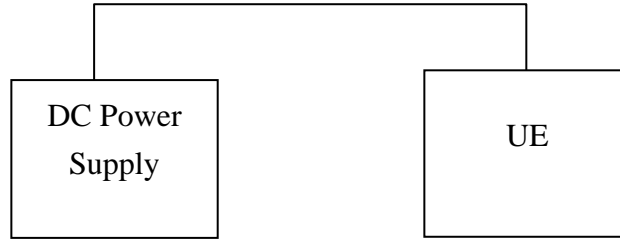


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	DC Power Supply					

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a) RSS-Gen §7.2.2	AC Power Line Conducted Emission	N/A
§15.247(b) (3),(4)(c) RSS-210 issue 7,§A8.4(2)	Peak Output Power	Compliant
§15.247(a)(2)	6dB Bandwidth	Compliant
§15.247(d) RSS-210 issue 7,§A8.5	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(d) RSS-210 issue 7,§A8.5	TX/RX Spurious Emission	Compliant
§15.247(e) RSS-210 issue 7,§A8.3(2)	Peak Power Density	Compliant
RSS-210 issue 7,§A8.1(2)	Frequency Separation	Compliant
RSS-210 issue 7,§A8.4(2)	Number of hopping frequency	Compliant
RSS-210 issue 7,§A8.1(4)	Time of Occupancy	Compliant
RSS-Gen §4.4.1	99% Power Bandwidth	Compliant
§15.203 RSS-GEN 7.1.4, RSS-210 issue 7,§A8.4	Antenna Requirement	Compliant

### 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) 、 mid (2437MHz) and high (2462MHz) with 1Mbps data rate are chosen for full testing.

The field strength of radiation emission was measured as EUT stand-up position (H mode) for testing.

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

Note

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

### 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.

#### 5.4. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMC Analyzer	HP	8594EM	3624A00203	09/02/2007	09/03/2008
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2008	06/10/2009
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

#### 5.5. Measurement Result

N/A. The EUT is power from 4.5Vdc.

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.

## 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.

(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.

According to RSS-210 issue 7, §A8.4(2), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, the maximum conducted output power shall not exceed 1 W. For all other frequency hopping systems, the maximum peak conducted output power shall not exceed 0.125 W.

## 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 TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
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

## 6.4. Measurement Result

### 802.11b

Frequency (MHz)	Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
2412.00	13.29	0.00	13.29	0.02133	1
2437.00	13.44	0.00	13.44	0.02208	1
2462.00	13.19	0.00	13.19	0.02084	1

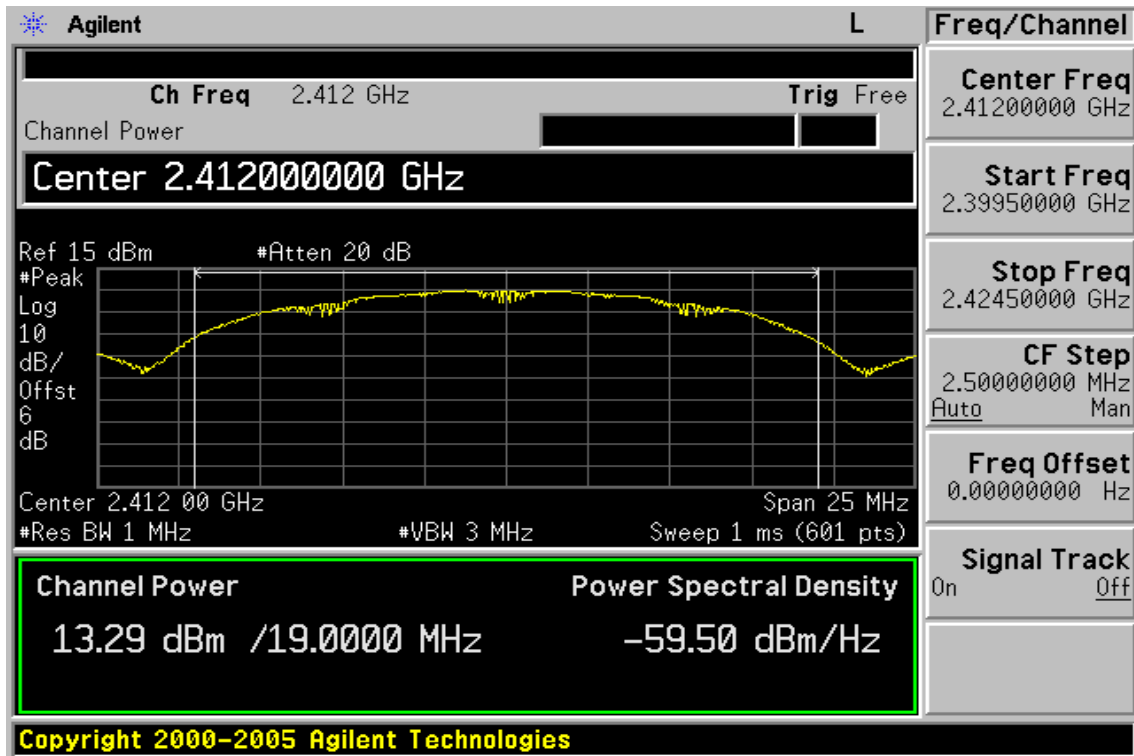
\*Note: Offset 0.6dB

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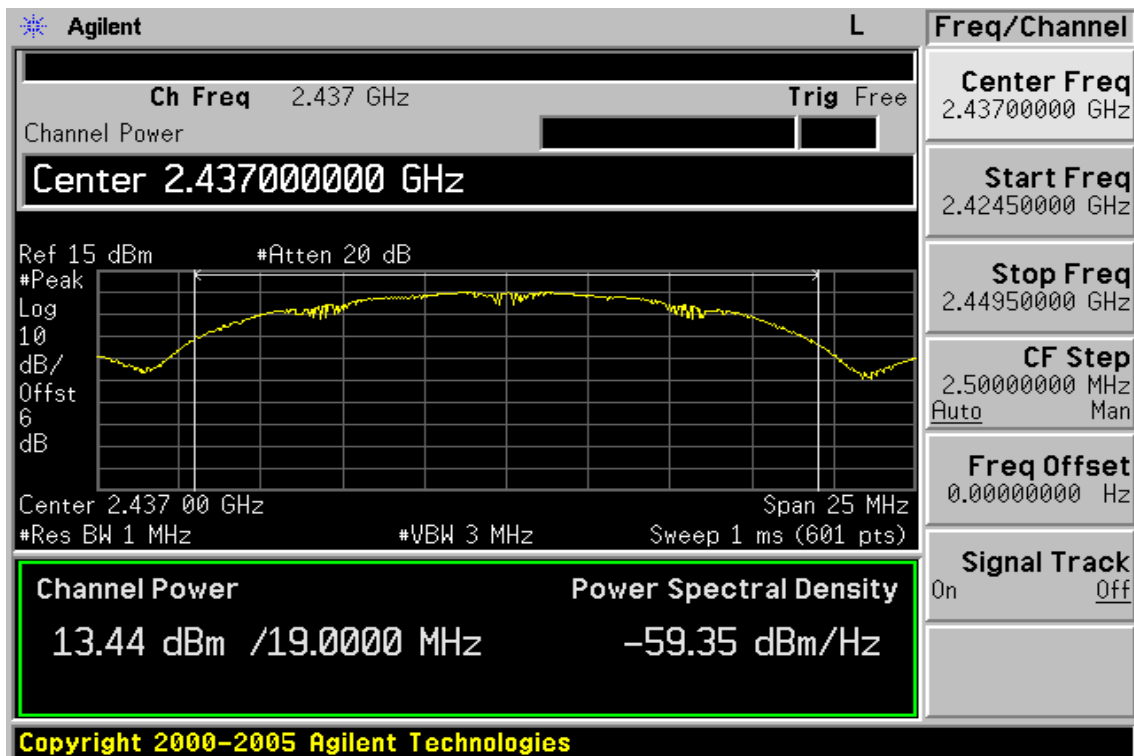
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### 802.11b

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



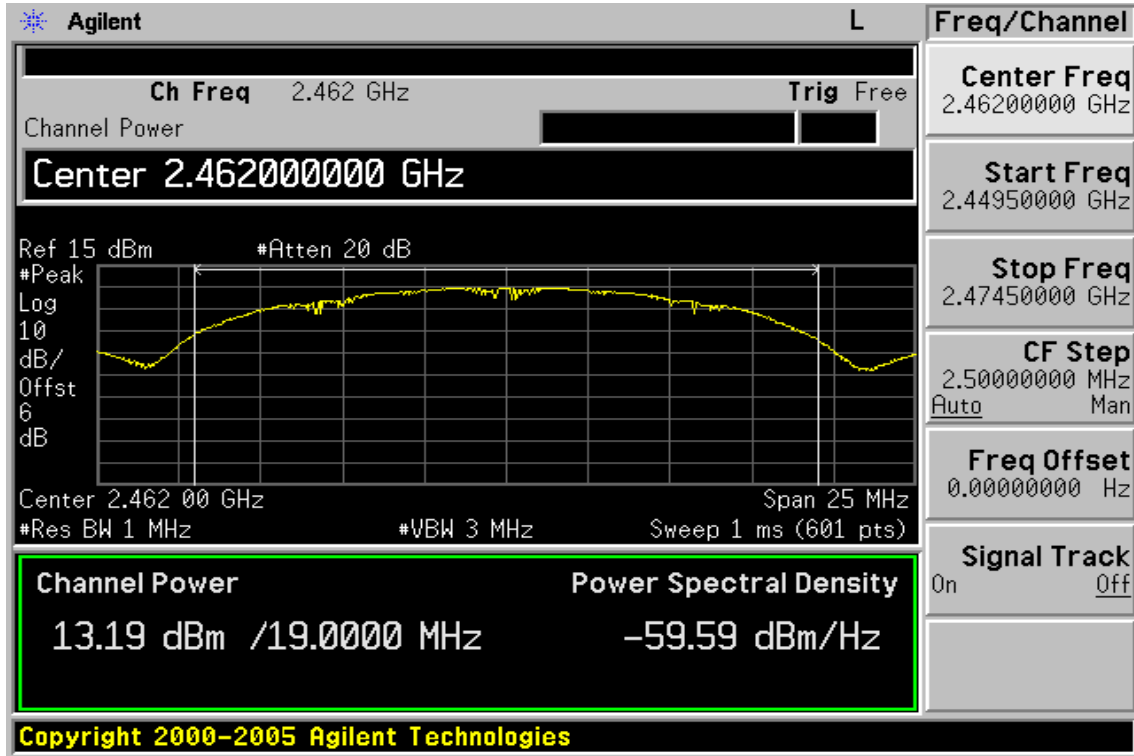
#### Peak Power Output Data Plot (CH Mid)



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### 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.

### 7.3. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
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

### 7.4. Measurement Result

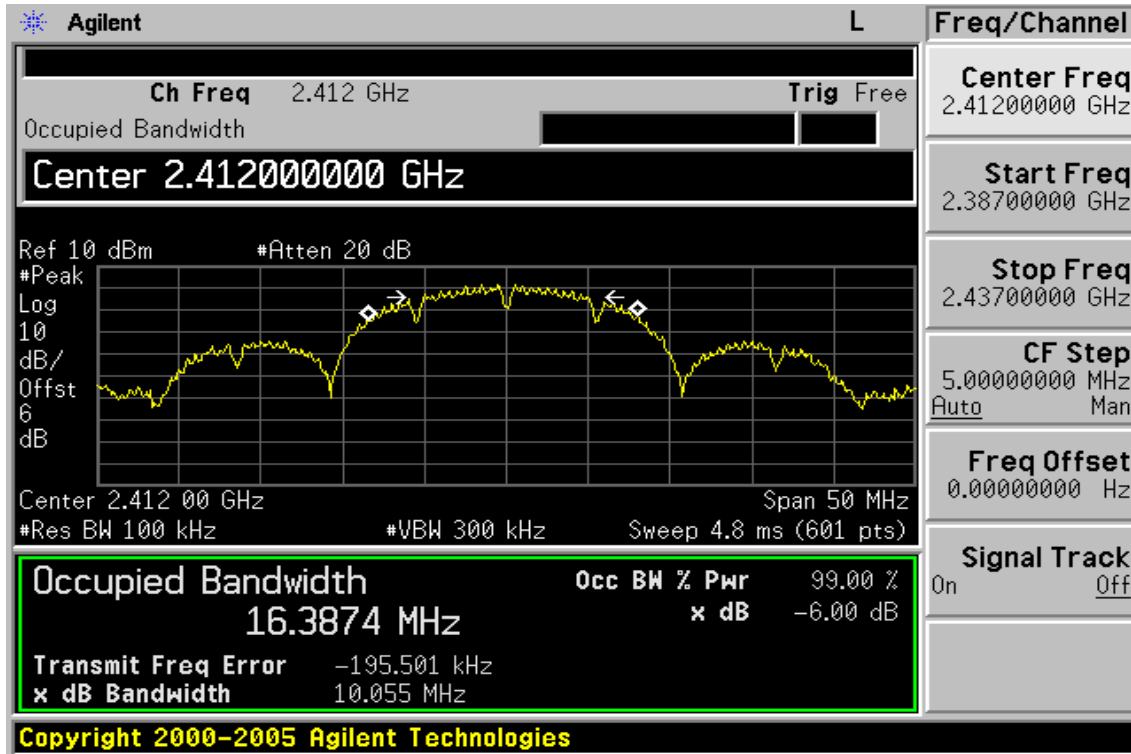
#### 802.11b

CH	Bandwidth (MHz)	Bandwidth (KHz)	Result
Lower	10.055	> 500	PASS
Mid	10.159	> 500	PASS
Higher	10.144	> 500	PASS

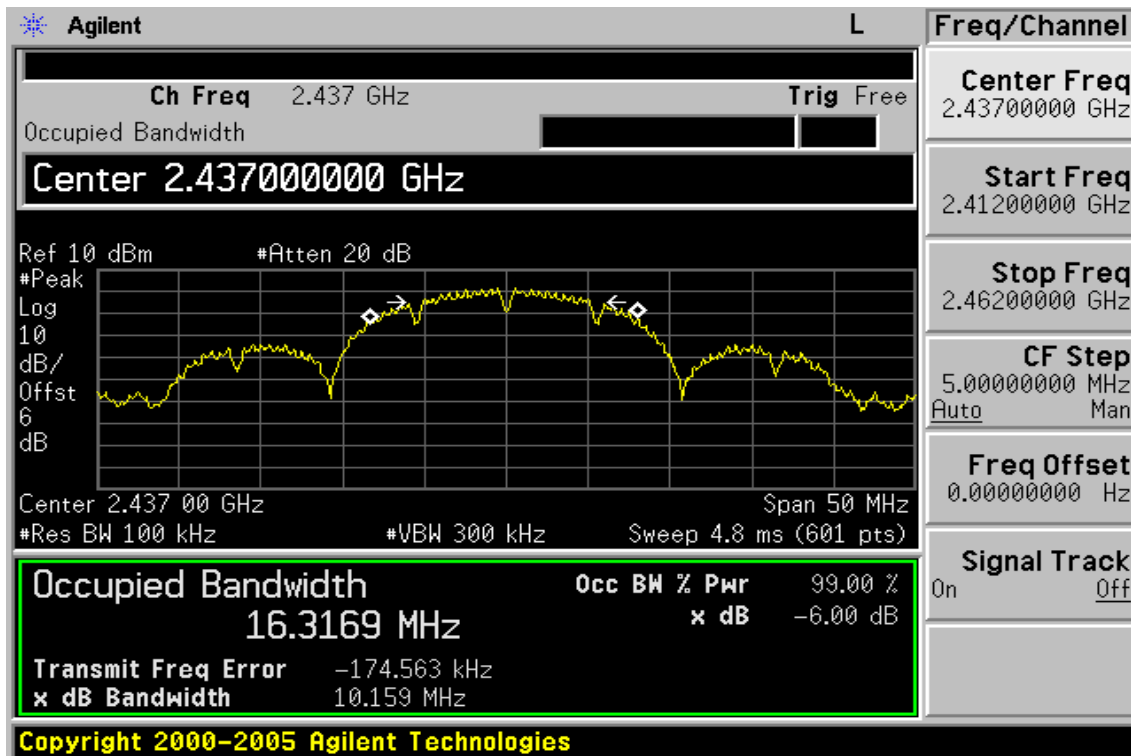
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802.11b

6dB Band Width Test Data CH-Low



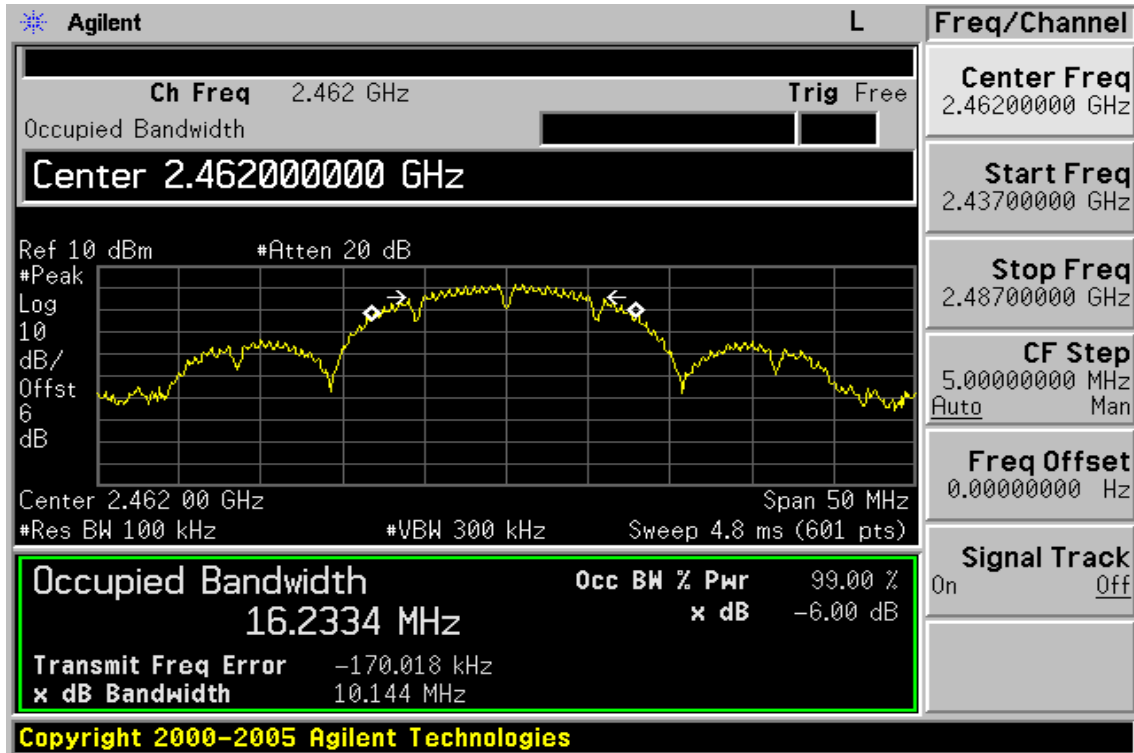
6dB Band Width Test Data CH-Mid



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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 §15.247(c), in any 100 KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is 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).

According to RSS-210 issue 7, §A8.5, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

### 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 TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
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

### 8.4. Measurement Result

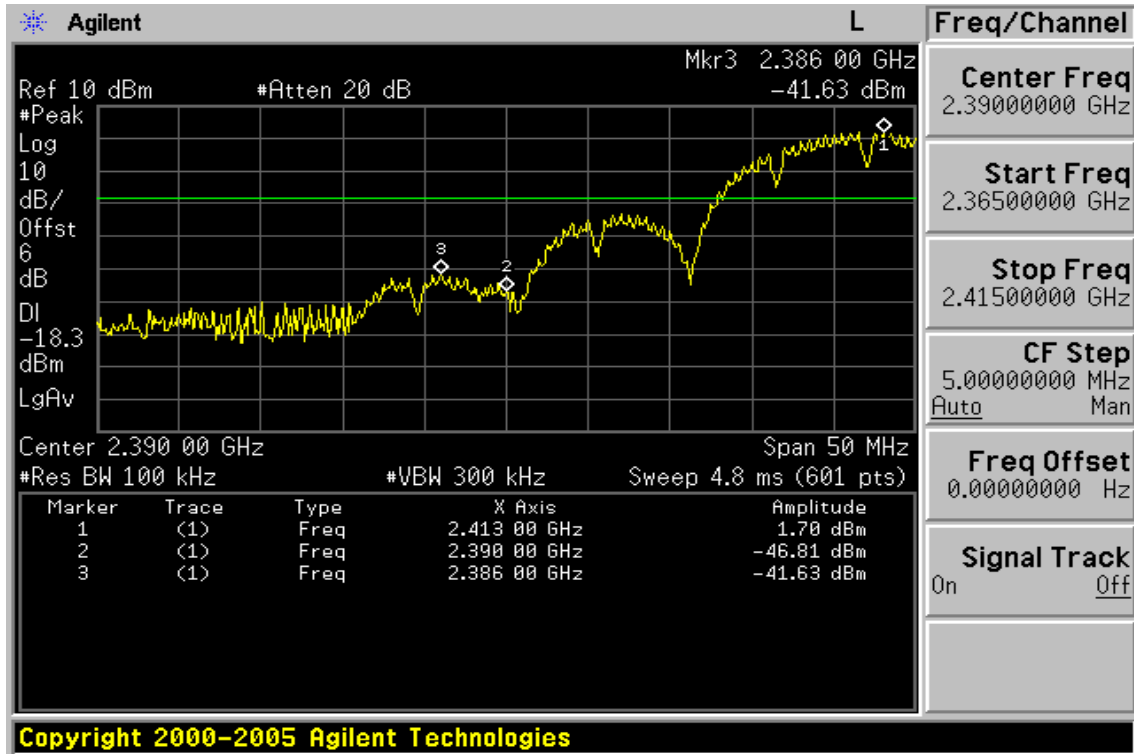
Refer to attach spectrum analyzer data chart.

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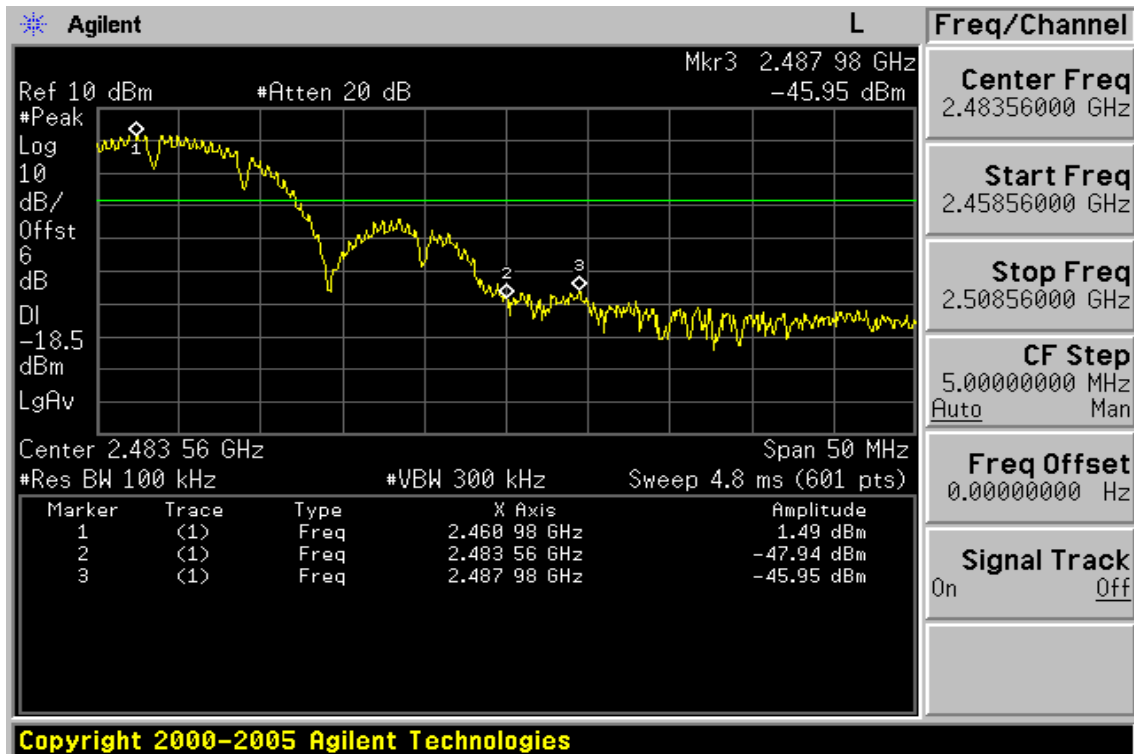
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802.11b

Band Edges Test Data CH-Low



Band Edges Test Data CH-High



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**Radiated Emission: 802.11 b mode (Antenna 1)**

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2390.00	57.35	---	-10.76	46.59	---	74.00	54.00	-7.41	Peak
2386.00	59.82	---	-10.76	49.06	---	74.00	54.00	-4.94	Peak

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2390.00	62.18	---	-10.76	51.42	---	74.00	54.00	-2.58	Peak
2386.00	62.92	---	-10.76	52.16	---	74.00	54.00	-1.84	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.
- (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.



**Radiated Emission: 802.11 b mode(Antenna 1)**

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2383.56	58.97	---	-10.46	48.51	---	74.00	54.00	-5.49	Peak
2487.98	58.44	---	-10.40	48.04	---	74.00	54.00	-5.96	Peak

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2483.50	61.82	---	-10.46	51.36	---	74.00	54.00	-2.64	Peak
2487.98	62.63	58.20	-10.40	52.23	47.80	74.00	54.00	-6.20	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.
- (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.

**Radiated Emission: 802.11 b mode (ANTENNA 2)**

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2386.00	57.45	---	-10.76	46.69	---	74.00	54.00	-7.31	Peak
2390.00	57.38	---	-10.76	46.62	---	74.00	54.00	-7.38	Peak

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2386.00	48.73	---	-10.76	37.97	---	74.00	54.00	-16.03	Peak
2390.00	51.83	---	-10.76	41.07	---	74.00	54.00	-12.93	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.
- (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.

**Radiated Emission: 802.11 b mode (ANTENNA 2)**

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2383.56	59.95	---	-10.46	49.49	---	74.00	54.00	-4.51	Peak
2487.98	61.99	---	-10.40	51.59	---	74.00	54.00	-2.41	Peak

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2483.50	50.59	---	-10.46	40.13	---	74.00	54.00	-13.87	Peak
2487.98	54.89	---	-10.40	44.49	---	74.00	54.00	-9.51	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.
- (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.

**Radiated Emission: 802.11 b mode (ANTENNA 3)**

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2386.00	58.78	---	-10.76	48.02	---	74.00	54.00	-5.98	Peak
2390.00	57.66	---	-10.76	46.90	---	74.00	54.00	-7.10	Peak

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2386.00	48.50	---	-10.76	37.74	---	74.00	54.00	-16.26	Peak
2390.00	50.88	---	-10.76	40.12	---	74.00	54.00	-13.88	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.
- (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.

**Radiated Emission: 802.11 b mode (ANTENNA 3)**

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2483.50	52.29	---	-10.46	41.83	---	74.00	54.00	-12.17	Peak
2487.98	56.83	---	-10.40	46.43	---	74.00	54.00	-7.57	Peak

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2483.50	59.69	---	-10.46	49.23	---	74.00	54.00	-4.77	Peak
2487.98	63.23	58.30	-10.40	52.83	47.90	74.00	54.00	-6.10	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.
- (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 (ANTENNA 4)**

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2386.00	57.35	---	-7.59	49.76	---	74.00	54.00	-4.24	Peak
2390.00	57.17	---	-7.59	49.58	---	74.00	54.00	-4.42	Peak

Operation Mode	TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2387.00	49.74	---	-7.59	42.15	---	74.00	54.00	-11.85	Peak
2390.00	48.85	---	-7.59	41.26	---	74.00	54.00	-12.74	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.
- (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.

**Radiated Emission: 802.11 b mode (ANTENNA 4)**

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2383.56	58.23	---	-10.46	47.77	---	74.00	54.00	-6.23	Peak
2487.98	63.23	58.50	-10.40	52.83	48.10	74.00	54.00	-5.90	AV

Operation Mode	TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25 °C	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Remark
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2483.50	49.50	---	-10.46	39.04	---	74.00	54.00	-14.96	Peak
2487.98	55.15	---	-10.40	44.75	---	74.00	54.00	-9.25	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.
- (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.

## 9. 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.

According to RSS-210 issue 7, §A8.5, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

### 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

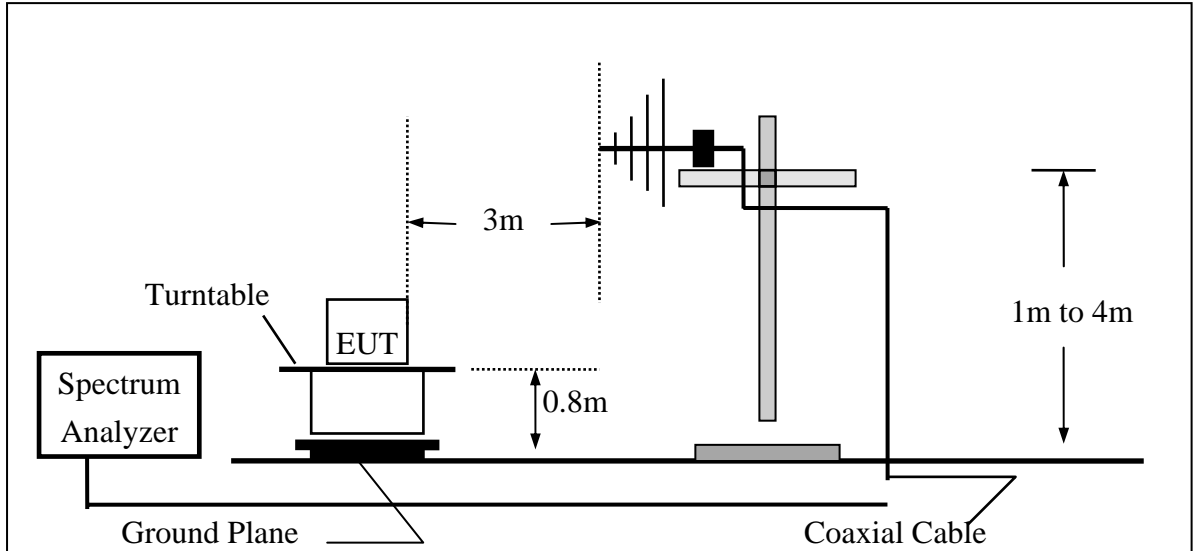
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was 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.

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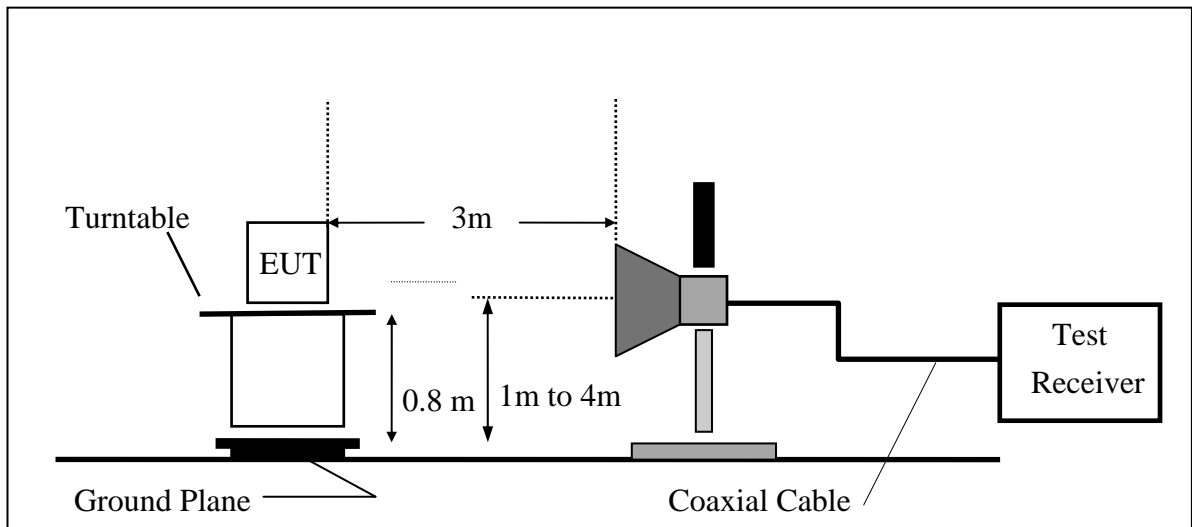


### 9.4. Test SET-UP (Block Diagram of Configuration)

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



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



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### 9.5. Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2008	07/03/2009
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

### 9.6. 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:

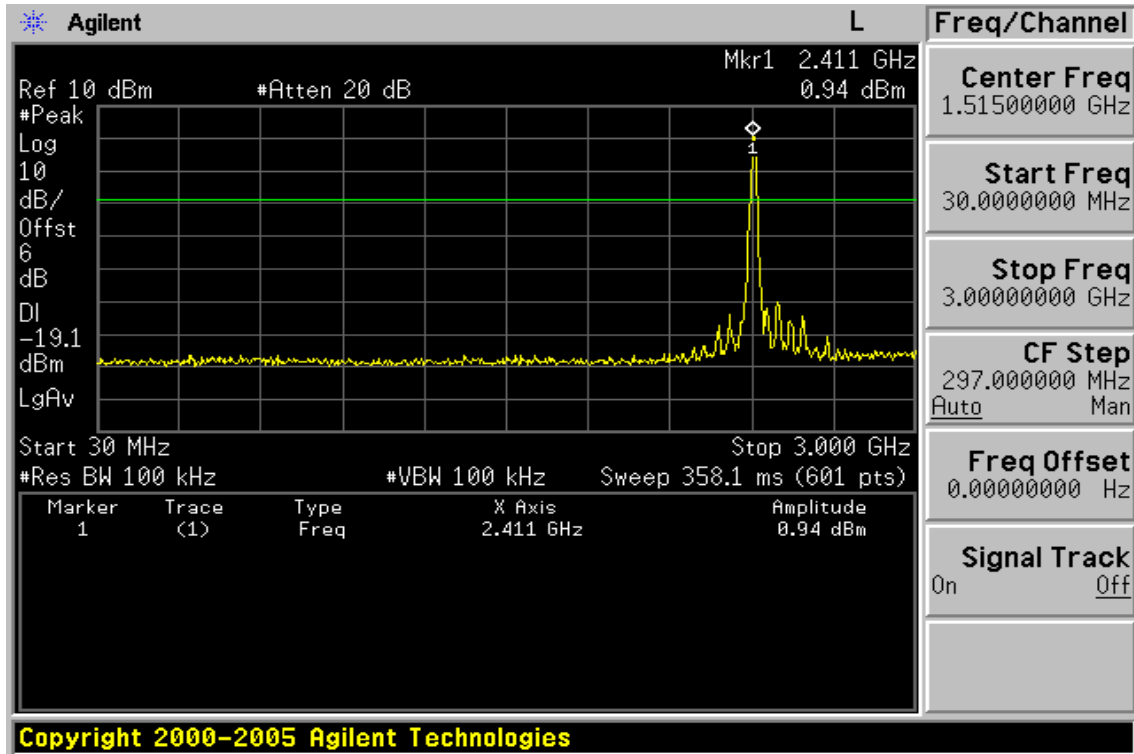
$$FS = RA + AF + CL - AG$$

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

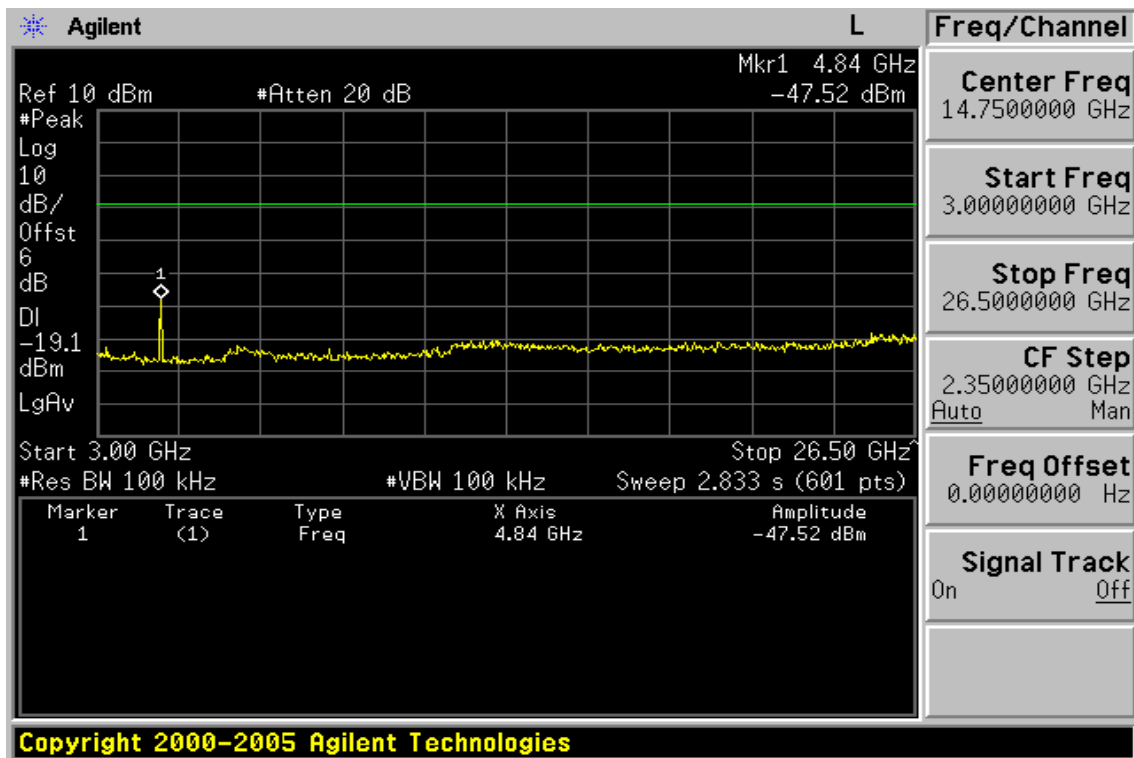
### 9.7. Measurement Result

Refer to attach tabular data sheets.

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

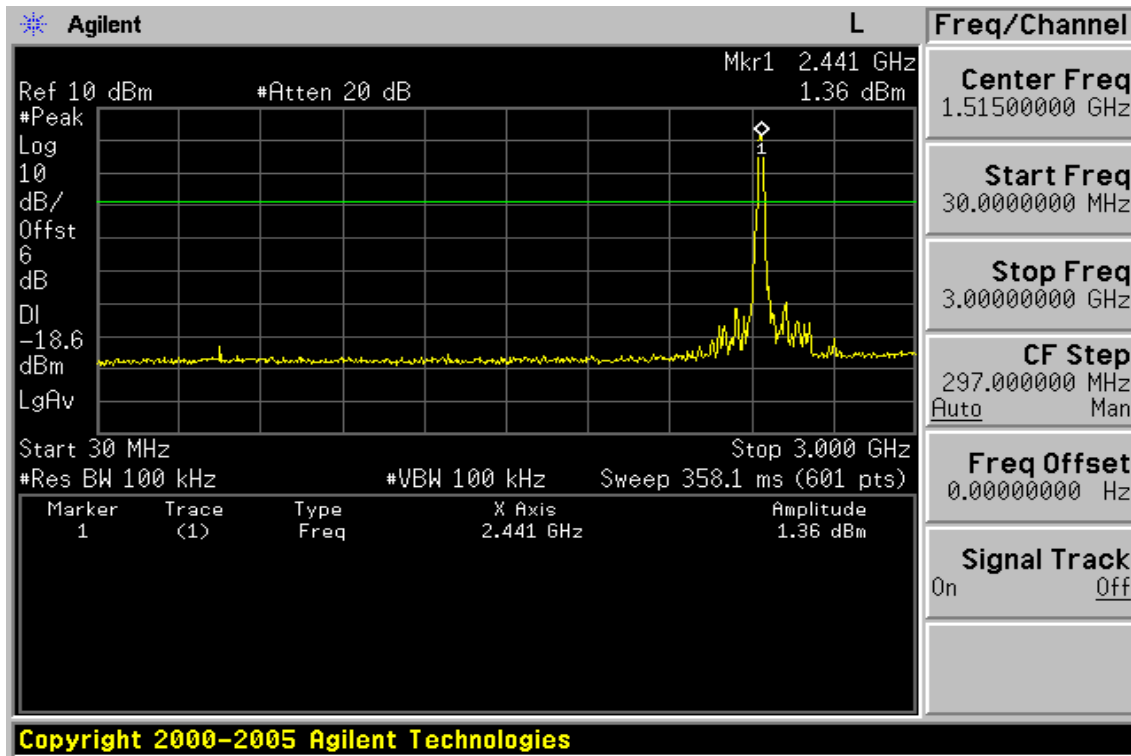


### Ch Low 3GHz – 26.5GHz

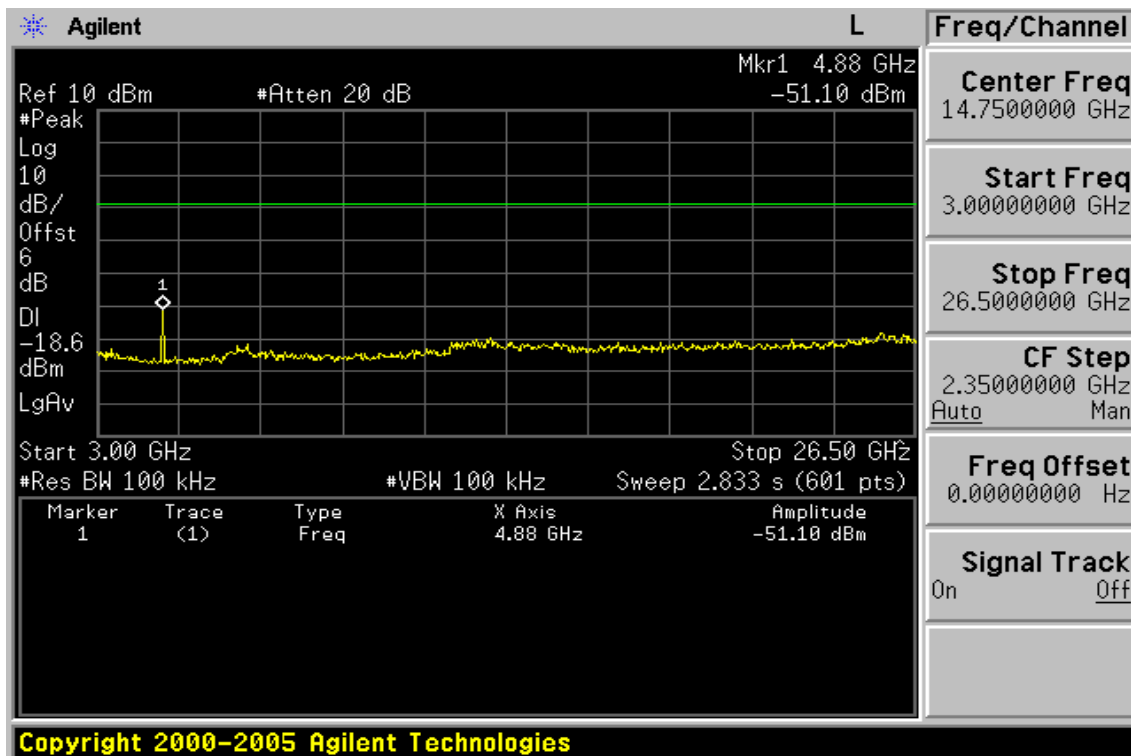


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### Ch Mid 30MHz – 3GHz



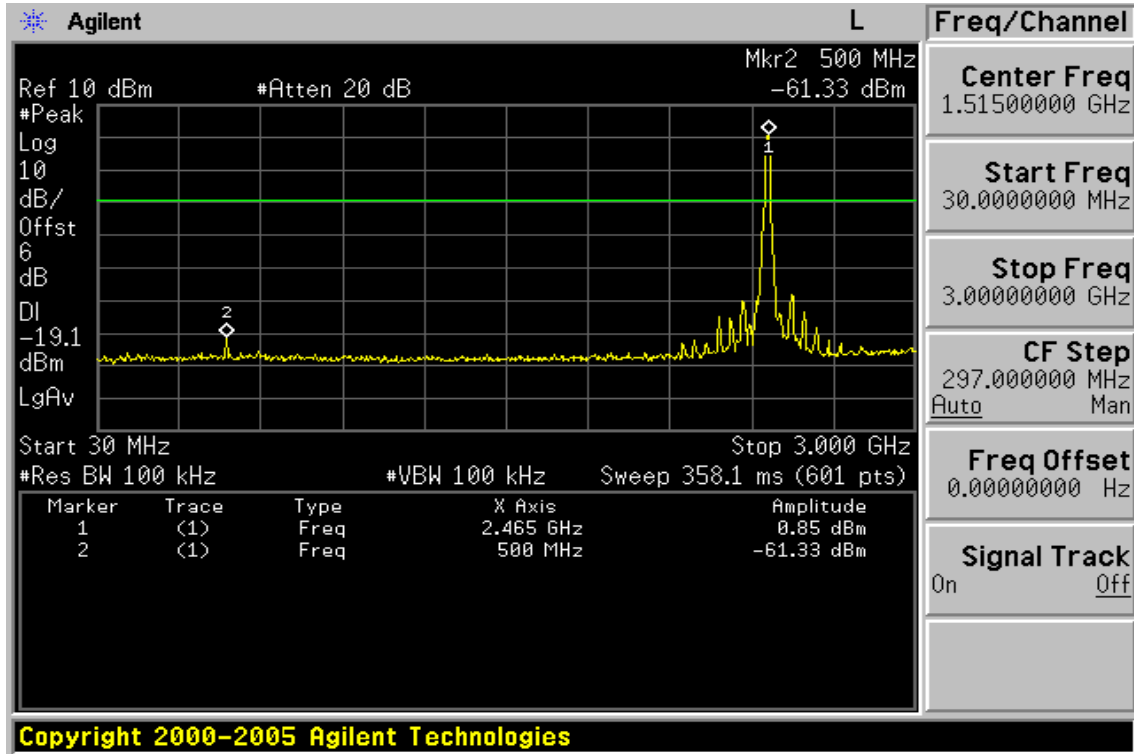
### Ch Mid 3GHz – 26.5GHz



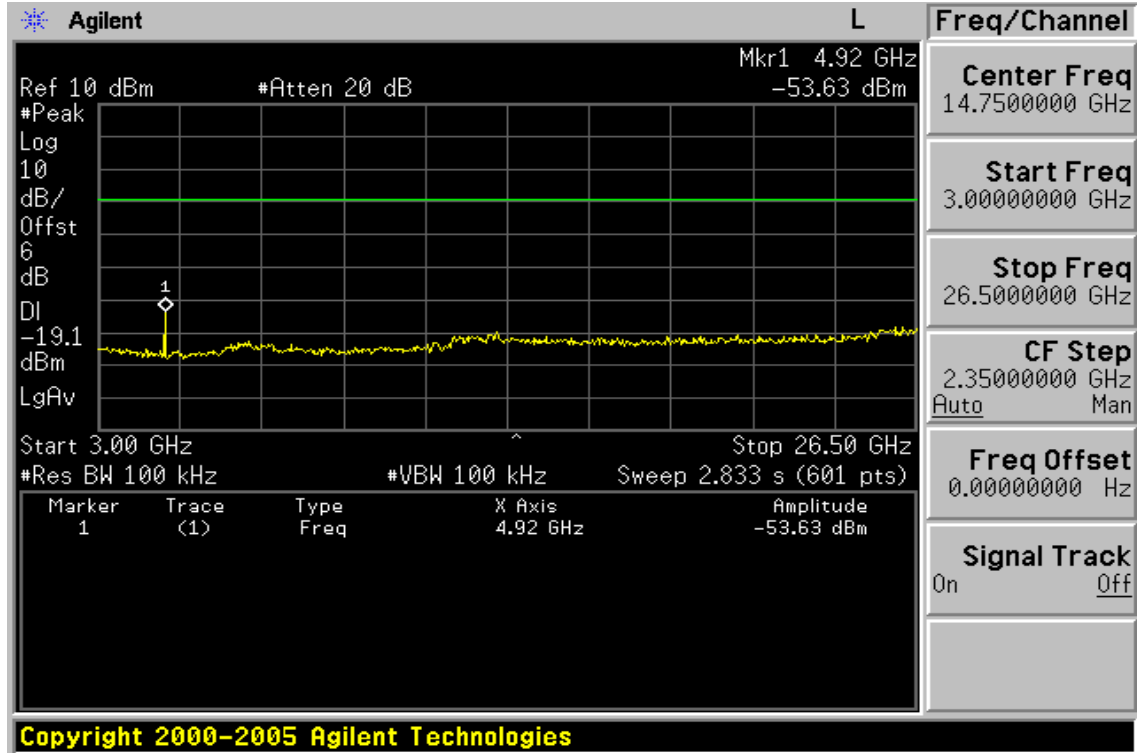
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### Ch High 30MHz – 3GHz



### Ch High 3GHz – 26.5GHz



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

#### (Antenna 1)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	54.48	-25.89	28.59	40.00	-11.41
58.13	V	Peak	55.32	-26.67	28.65	40.00	-11.35
85.29	V	Peak	59.12	-30.75	28.37	40.00	-11.63
101.78	V	Peak	56.80	-30.29	26.51	43.50	-16.99
604.24	V	Peak	46.09	-22.73	23.36	46.00	-22.64
720.64	V	Peak	46.23	-20.96	25.27	46.00	-20.73
58.13	H	Peak	49.98	-26.67	23.31	40.00	-16.69
101.78	H	Peak	50.57	-30.29	20.28	43.50	-23.22
159.98	H	Peak	45.84	-26.99	18.85	43.50	-24.65
672.14	H	Peak	45.04	-21.64	23.40	46.00	-22.60
773.99	H	Peak	44.54	-20.42	24.12	46.00	-21.88
902.03	H	Peak	44.34	-18.97	25.37	46.00	-20.63

#### 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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 26, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
58.13	V	Peak	53.93	-26.67	27.26	40.00	-12.74
70.74	V	Peak	54.14	-29.62	24.52	40.00	-15.48
85.29	V	Peak	54.98	-30.75	24.23	40.00	-15.77
101.78	V	Peak	51.65	-30.29	21.36	43.50	-22.14
691.54	V	Peak	45.31	-21.34	23.97	46.00	-22.03
785.63	V	Peak	44.07	-20.29	23.78	46.00	-22.22
45.52	H	Peak	47.31	-25.89	21.42	40.00	-18.58
58.13	H	Peak	48.04	-26.67	21.37	40.00	-18.63
101.78	H	Peak	51.12	-30.29	20.83	43.50	-22.67
492.69	H	Peak	45.27	-24.86	20.41	46.00	-25.59
674.08	H	Peak	44.18	-21.52	22.66	46.00	-23.34
880.69	H	Peak	43.91	-19.32	24.59	46.00	-21.41

### 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)

#### (Antenna 1)

Operation Mode	802.11b TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25 °C	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	52.83	-25.89	26.94	40.00	-13.06
58.13	V	Peak	52.95	-26.67	26.28	40.00	-13.72
85.29	V	Peak	54.29	-30.75	23.54	40.00	-16.46
101.78	V	Peak	53.14	-30.29	22.85	43.50	-20.65
826.28	V	Peak	45.01	-19.89	25.12	46.00	-20.88
948.59	V	Peak	44.09	-18.40	25.69	46.00	-20.31
101.78	H	Peak	50.11	-30.29	19.82	43.50	-23.68
264.74	H	Peak	45.08	-29.48	15.60	46.00	-30.40
460.68	H	Peak	43.68	-24.89	18.79	46.00	-27.21
712.88	H	Peak	44.58	-21.06	23.52	46.00	-22.48
856.44	H	Peak	43.92	-19.66	24.26	46.00	-21.74
950.53	H	Peak	43.39	-18.39	25.00	46.00	-21.00

#### 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.



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

#### (ANTENNA 2)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	53.95	-25.89	28.06	40.00	-11.94
58.13	V	Peak	55.37	-26.67	28.70	40.00	-11.30
85.29	V	Peak	58.85	-30.75	28.10	40.00	-11.90
101.78	V	Peak	56.19	-30.29	25.90	43.50	-17.60
643.04	V	Peak	45.91	-22.11	23.80	46.00	-22.20
803.09	V	Peak	45.60	-20.17	25.43	46.00	-20.57
5813.00	H	Peak	49.38	-26.67	22.71	54.00	-31.29
101.78	H	Peak	51.42	-30.29	21.13	43.50	-22.37
133.79	H	Peak	46.64	28.02	74.66	43.50	31.16
555.74	H	Peak	45.17	-23.61	21.56	46.00	-24.44
643.04	H	Peak	45.11	-22.11	23.00	46.00	-23.00
706.19	H	Peak	45.11	-21.14	23.97	46.00	-22.03

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.

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

**(ANTENNA 2)**

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 26, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	52.45	-25.89	26.56	40.00	-13.44
58.13	V	Peak	51.85	-26.67	25.18	40.00	-14.82
70.74	V	Peak	52.01	-29.62	22.39	40.00	-17.61
85.29	V	Peak	54.15	-30.75	23.40	40.00	-16.60
101.78	V	Peak	51.80	-30.29	21.51	43.50	-21.99
737.13	V	Peak	44.43	-20.82	23.61	46.00	-22.39
58.13	H	Peak	50.65	-26.67	23.98	40.00	-16.02
85.29	H	Peak	50.37	-30.75	19.62	40.00	-20.38
101.78	H	Peak	51.50	-30.29	21.21	43.50	-22.29
159.98	H	Peak	45.56	-26.99	18.57	43.50	-24.93
706.09	H	Peak	44.36	-21.14	23.22	46.00	-22.78
744.89	H	Peak	44.55	-20.73	23.82	46.00	-22.18

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.

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

#### (ANTENNA 2)

Operation Mode	802.11b TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	51.08	-25.89	25.19	40.00	-14.81
58.13	V	Peak	51.50	-26.67	24.83	40.00	-15.17
85.29	V	Peak	53.25	-30.75	22.50	40.00	-17.50
101.78	V	Peak	52.17	-30.29	21.88	43.50	-21.62
853.53	V	Peak	43.49	-19.68	23.81	46.00	-22.19
938.89	V	Peak	43.48	-18.47	25.01	46.00	-20.99
58.13	H	Peak	47.52	-26.67	20.85	40.00	-19.15
85.29	H	Peak	48.62	-30.75	17.87	40.00	-22.13
133.79	H	Peak	46.70	-28.02	18.68	43.50	-24.82
150.28	H	Peak	45.09	-26.97	18.12	43.50	-25.38
848.68	H	Peak	43.24	-19.72	23.52	46.00	-22.48
950.53	H	Peak	42.80	-18.39	24.41	46.00	-21.59

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.

**Radiated Spurious Emission Measurement Result (below 1GHz) (802.11b)**  
**(ANTENNA 3)**

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	52.05	-25.89	26.16	40.00	-13.84
58.13	V	Peak	52.39	-26.67	25.72	40.00	-14.28
85.29	V	Peak	54.37	-30.75	23.62	40.00	-16.38
101.78	V	Peak	52.23	-30.29	21.94	43.50	-21.56
633.34	V	Peak	45.14	-22.23	22.91	46.00	-23.09
698.33	V	Peak	45.19	-21.26	23.93	46.00	-22.07
101.78	H	Peak	49.54	-30.29	19.25	43.50	-24.25
133.79	H	Peak	46.43	-28.02	18.41	43.50	-25.09
356.89	H	Peak	44.18	-26.95	17.23	46.00	-28.77
570.29	H	Peak	44.30	-23.33	20.97	46.00	-25.03
725.49	H	Peak	44.30	-20.91	23.39	46.00	-22.61
843.83	H	Peak	43.71	-19.76	23.95	46.00	-22.05

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.

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

#### (ANTENNA 3)

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 26, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	53.16	-25.89	27.27	40.00	-12.73
58.13	V	Peak	53.67	-26.67	27.00	40.00	-13.00
85.29	V	Peak	55.25	-30.75	24.50	40.00	-15.50
101.78	V	Peak	53.17	-30.29	22.88	43.50	-20.62
749.74	V	Peak	45.47	-20.66	24.81	46.00	-21.19
897.18	V	Peak	44.81	-19.03	25.78	46.00	-20.22
58.13	H	Peak	48.60	-26.67	21.93	40.00	-18.07
85.29	H	Peak	47.83	-30.75	17.08	40.00	-22.92
101.78	H	Peak	50.21	-30.29	19.92	43.50	-23.58
749.74	H	Peak	44.00	-20.66	23.34	46.00	-22.66
834.13	H	Peak	44.58	-19.83	24.75	46.00	-21.25
922.40	H	Peak	43.87	-18.75	25.12	46.00	-20.88

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.

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

**(ANTENNA 3)**

Operation Mode	802.11b TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	51.49	-25.89	25.60	40.00	-14.40
58.13	V	Peak	52.18	-26.67	25.51	40.00	-14.49
85.29	V	Peak	53.86	-30.75	23.11	40.00	-16.89
101.78	V	Peak	51.80	-30.29	21.51	43.50	-21.99
803.09	V	Peak	43.48	-20.17	23.31	46.00	-22.69
866.14	V	Peak	44.55	-19.50	25.05	46.00	-20.95
85.29	H	Peak	48.49	-30.75	17.74	40.00	-22.26
101.78	H	Peak	47.77	-30.29	17.48	43.50	-26.02
133.79	H	Peak	46.92	-28.02	18.90	43.50	-24.60
526.64	H	Peak	44.65	-24.20	20.45	46.00	-25.55
591.63	H	Peak	44.11	-22.91	21.20	46.00	-24.80
701.24	H	Peak	44.33	-21.21	23.12	46.00	-22.88

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.

**Radiated Spurious Emission Measurement Result (below 1GHz) (802.11b)**  
**(ANTENNA 4)**

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	54.44	-25.89	28.55	40.00	-11.45
58.13	V	Peak	55.22	-26.67	28.55	40.00	-11.45
85.29	V	Peak	58.73	-30.75	27.98	40.00	-12.02
101.78	V	Peak	55.19	-30.29	24.90	43.50	-18.60
509.18	V	Peak	45.98	-24.61	21.37	46.00	-24.63
693.48	V	Peak	45.41	-21.32	24.09	46.00	-21.91
58.13	H	Peak	48.79	-26.67	22.12	40.00	-17.88
85.29	H	Peak	49.98	-30.75	19.23	40.00	-20.77
101.78	H	Peak	50.91	-30.29	20.62	43.50	-22.88
523.73	H	Peak	45.91	-24.26	21.65	46.00	-24.35
683.78	H	Peak	44.74	-21.42	23.32	46.00	-22.68
776.90	H	Peak	44.06	-20.41	23.65	46.00	-22.35

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.

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

#### (ANTENNA 4)

Operation Mode	802.11b TX CH Mid	Test Date	Jun. 26, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	52.50	-25.89	26.61	40.00	-13.39
72.68	V	Peak	52.28	-29.92	22.36	40.00	-17.64
85.29	V	Peak	54.39	-30.75	23.64	40.00	-16.36
101.78	V	Peak	51.98	-30.29	21.69	43.50	-21.81
647.89	V	Peak	45.29	-21.93	23.36	46.00	-22.64
766.23	V	Peak	44.43	-20.51	23.92	46.00	-22.08
58.13	H	Peak	51.00	-26.67	24.33	40.00	-15.67
70.74	H	Peak	51.80	-29.62	22.18	40.00	-17.82
85.29	H	Peak	53.26	-30.75	22.51	40.00	-17.49
101.78	H	Peak	52.72	-30.29	22.43	43.50	-21.07
822.49	H	Peak	44.63	-19.95	24.68	46.00	-21.32
914.64	H	Peak	43.26	-18.85	24.41	46.00	-21.59

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)**

**(ANTENNA 4)**

Operation Mode	802.11b TX CH High	Test Date	Jun. 26, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	60 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Mar- gin (dB)
46.49	V	Peak	51.53	-25.89	25.64	40.00	-14.36
72.68	V	Peak	52.74	-29.92	22.82	40.00	-17.18
85.29	V	Peak	53.06	-30.75	22.31	40.00	-17.69
101.78	V	Peak	51.87	-30.29	21.58	43.50	-21.92
880.69	V	Peak	43.17	-19.31	23.86	46.00	-22.14
929.19	V	Peak	42.96	-18.69	24.27	46.00	-21.73
58.13	H	Peak	47.48	-26.67	20.81	40.00	-19.19
101.78	H	Peak	48.39	-30.29	18.10	43.50	-25.40
688.63	H	Peak	44.74	-21.36	23.38	46.00	-22.62
798.24	H	Peak	44.08	-21.21	22.87	46.00	-23.13
843.83	H	Peak	43.65	-19.76	23.89	46.00	-22.11
938.89	H	Peak	42.88	-18.47	24.41	46.00	-21.59

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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23 °C	Pol	Ver.
Humidity	54 %		

Freq. (MHz)	Peak	AV	Actual FS	Peak	AV	Margin (dB)
	Reading (dBuV)	Reading (dBuV)		Ant./CL CF(dB)	Peak (dBuV/m)	
4815.5	57.46	49.76	-6.01	51.45	43.75	74.00 54.00 -10.25
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

### 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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23 °C	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Actual FS	Peak	AV	Margin
	Reading (dBuV)	Reading (dBuV)		Ant./CL CF(dB)	Peak (dBuV/m)	
4815.5	55.17	47.73	-6.01	49.16	41.72	74.00 54.00 -12.28 AV
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

### 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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23 °C	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Actual FS	Peak	AV	Margin (dB)
	Reading (dBuV)	Reading (dBuV)		Ant./CL CF(dB)	Peak (dBuV/m)	
4861.0	51.37	---	-5.97	45.40	---	74.00 54.00 -8.60 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

### 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.

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

**(Antenna 1)**

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23 °C	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4861.0	50.22	---	-5.97	44.25	---	74.00	54.00	-9.75	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		

**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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23 °C	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	51.17	---	-5.91	45.26	---	74.00	54.00	-8.74	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 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.

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

### (Antenna 1)

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23 °C	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	46.37	---	-5.91	40.46	---	74.00	54.00	-13.54	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 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.

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

### (ANTENNA 2)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Ver.
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4815.5	59.67	51.22	-6.01	53.66	45.21	74.00	54.00	-8.79	AV
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		

#### 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.



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

### (ANTENNA 2)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)	
4815.5	57.25	48.87	-6.01	51.24	42.86	74.00	54.00	-11.14 AV
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	

#### 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.

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

### (ANTENNA2)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4861.0	58.60	46.67	-5.97	52.63	40.70	74.00	54.00	-13.30	AV
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		

#### 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.

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

### (ANTENNA 2)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4861.0	56.77	45.94	-5.97	50.80	39.97	74.00	54.00	-14.03	AV
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		

#### 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.

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

**(ANTENNA 2)**

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	57.17	46.28	-5.91	51.26	40.37	74.00	54.00	-13.63	AV
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.

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

### (ANTENNA 2)

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	55.96	44.72	-5.91	50.05	38.81	74.00	54.00	-15.19	AV
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.

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

**(ANTENNA 3)**

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Ver.
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4815.5	60.84	49.08	-1.07	59.77	48.01	74.00	54.00	-5.99	AV
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		

**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.

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

### (ANTENNA 3)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4815.5	56.95	44.56	-1.07	55.88	43.49	74.00	54.00	-10.51	
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		

#### 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.

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

### (ANTENNA 3)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4861.0	57.42	45.97	-0.96	56.46	45.01	74.00	54.00	-8.99	AV
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		

#### 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.



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

### (ANTENNA 3)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4861.0	55.67	44.81	-0.96	54.71	43.85	74.00	54.00	-10.15	
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		

#### 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.

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

**(ANTENNA 3)**

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	56.98	45.84	-5.91	51.07	39.93	74.00	54.00	-14.07	AV
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.

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

### (ANTENNA 3)

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	54.49	44.41	-5.91	48.58	38.50	74.00	54.00	-15.50	
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.

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

### (ANTENNA 4)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Ver.
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4815.5	60.09	51.84	-6.01	54.08	45.83	74.00	54.00	-8.17	AV
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		

#### 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.

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

### (ANTENNA 4)

Operation Mode	802.11b TX CH Low	Test Date	Jun. 26, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4815.5	58.59	49.95	-6.01	52.58	43.94	74.00	54.00	-10.06	
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		

### 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.

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

### (ANTENNA 4)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4874.0	59.95	48.07	-5.97	53.98	42.10	74.00	54.00	-11.90	
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 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.

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

### (ANTENNA 4)

Operation Mode	802.11b TX CH Mid	Test Date	Dec. 26, 2007
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4874.0	57.19	46.27	-5.97	51.22	40.30	74.00	54.00	-13.70	
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 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.

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

**(ANTENNA 4)**

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Ver
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)	
4924.0	58.76	48.19	-5.91	52.85	42.28	74.00	54.00	-11.72 AV
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.

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

### (ANTENNA 4)

Operation Mode	802.11b TX CH High	Test Date	Dec. 26, 2007
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	23	Pol	Hor
Humidity	54 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	AV
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4924.0	56.72	45.69	-5.91	50.81	39.78	74.00	54.00	-14.22	
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.

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

### (Antenna 1)

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	52.16	-25.89	26.27	40.00	-13.73
58.13	V	Peak	52.13	-26.67	25.46	40.00	-14.54
96.93	V	Peak	61.25	-30.63	30.62	43.50	-12.88
159.98	V	Peak	45.85	-26.99	18.86	43.50	-24.64
286.08	V	Peak	52.02	-28.84	23.18	46.00	-22.82
599.39	V	Peak	44.96	-22.80	22.16	46.00	-23.84
53.28	H	Peak	47.90	-26.36	21.54	40.00	-18.46
96.93	H	Peak	51.46	-30.63	20.83	43.50	-22.67
153.19	H	Peak	45.43	-26.97	18.46	43.50	-25.04
286.08	H	Peak	52.79	-28.84	23.95	46.00	-22.05
492.69	H	Peak	45.80	-24.86	20.94	46.00	-25.06
659.53	H	Peak	45.12	-21.78	23.34	46.00	-22.66

### 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 Datas 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.

**Radiated Spurious Emission Measurement Result (below 1GHz)**

**(Antenna 1)**

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.85	-25.89	25.96	40.00	-14.04
58.13	V	Peak	52.93	-26.67	26.26	40.00	-13.74
96.93	V	Peak	57.95	-30.63	27.32	43.50	-16.18
143.49	V	Peak	46.44	-27.31	19.13	43.50	-24.37
286.08	V	Peak	51.84	-28.84	23.00	46.00	-23.00
633.34	V	Peak	44.99	-22.23	22.76	46.00	-23.24
33.88	H	Peak	49.33	-26.00	23.33	40.00	-16.67
96.93	H	Peak	50.87	-30.63	20.24	43.50	-23.26
153.19	V	Peak	45.78	-26.97	18.81	43.50	-24.69
286.08	V	Peak	51.89	-28.84	23.05	46.00	-22.95
526.64	V	Peak	45.09	-24.20	20.89	46.00	-25.11
667.29	V	Peak	45.24	-21.69	23.55	46.00	-22.45

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 Datas 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.

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

### (Antenna 1)

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65%		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	52.02	-25.89	26.13	40.00	-13.87
58.13	V	Peak	52.81	-26.67	26.14	40.00	-13.86
96.96	V	Peak	57.94	-30.63	27.31	43.50	-16.19
159.98	V	Peak	45.74	-26.99	18.75	43.50	-24.75
286.08	V	Peak	49.08	-28.84	20.24	46.00	-25.76
460.68	V	Peak	44.98	-24.89	20.09	46.00	-25.91
46.61	H	Peak	47.99	-25.64	22.35	40.00	-17.65
96.93	H	Peak	49.30	-30.63	18.67	43.50	-24.83
150.28	H	Peak	46.10	-26.97	19.13	43.50	-24.37
286.08	H	Peak	51.45	-28.84	22.61	46.00	-23.39
572.23	H	Peak	45.16	-23.30	21.86	46.00	-24.14
722.58	H	Peak	44.89	-20.94	23.95	46.00	-22.05

### 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 Datas 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.

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

### (Antenna 2)

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.61	-25.89	25.72	40.00	-14.28
58.13	V	Peak	52.60	-26.67	25.93	40.00	-14.07
96.93	V	Peak	61.46	-30.63	30.83	43.50	-12.67
153.19	V	Peak	46.71	-26.97	19.74	43.50	-23.76
286.08	V	Peak	52.42	-28.84	23.58	46.00	-22.42
589.69	V	Peak	44.67	-22.95	21.72	46.00	-24.28
85.29	H	Peak	51.15	-30.75	20.40	40.00	-19.60
96.93	H	Peak	50.73	-30.63	20.10	43.50	-23.40
150.28	H	Peak	46.93	-26.97	19.96	43.50	-23.54
286.08	H	Peak	52.00	-28.84	23.16	46.00	-22.84
475.23	H	Peak	45.72	-24.99	20.73	46.00	-25.27
691.54	H	Peak	44.47	-21.34	23.13	46.00	-22.87

### 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 Datas 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.

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

### (Antenna 2)

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.37	-25.89	25.48	40.00	-14.52
58.13	V	Peak	52.34	-26.67	25.67	40.00	-14.33
96.93	V	Peak	58.46	-30.63	27.83	43.50	-15.67
159.98	V	Peak	46.36	-26.99	19.37	43.50	-24.13
286.08	V	Peak	50.74	-28.84	21.90	46.00	-24.10
378.23	V	Peak	44.73	-26.52	18.21	46.00	-27.79
46.49	H	Peak	47.83	-25.89	21.94	40.00	-18.06
85.29	H	Peak	50.18	-30.75	19.43	40.00	-20.57
135.73	H	Peak	47.16	-27.87	19.29	43.50	-24.21
286.08	H	Peak	49.22	-28.84	20.38	46.00	-25.62
502.39	H	Peak	45.35	-24.71	20.64	46.00	-25.36
749.74	H	Peak	45.00	-20.66	24.34	46.00	-21.66

### 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 Datas 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.

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

### (Antenna 2)

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65%		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.53	-25.89	25.64	40.00	-14.36
58.13	V	Peak	52.63	-26.67	25.96	40.00	-14.04
96.93	V	Peak	58.70	-30.63	28.07	43.50	-15.43
153.19	V	Peak	45.31	-26.97	18.34	43.50	-25.16
284.14	V	Peak	49.61	-28.89	20.72	46.00	-25.28
819.58	V	Peak	45.61	-19.96	25.65	46.00	-20.35
58.13	H	Peak	49.24	-26.67	22.57	40.00	-17.43
96.93	H	Peak	55.54	-30.63	24.91	43.50	-18.59
143.49	H	Peak	46.43	-27.31	19.12	43.50	-24.38
177.44	H	Peak	47.01	-29.22	17.79	43.50	-25.71
286.08	H	Peak	51.97	-28.84	23.13	46.00	-22.87
715.79	H	Peak	45.42	-21.04	24.38	46.00	-21.62

### 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 Datas 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.

**Radiated Spurious Emission Measurement Result (below 1GHz)**

**(Antenna 3)**

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.59	-25.89	25.70	40.00	-14.30
58.13	V	Peak	52.71	-26.67	26.04	40.00	-13.96
96.93	V	Peak	57.29	-30.63	26.66	43.50	-16.84
135.73	V	Peak	47.18	-27.87	19.31	43.50	-24.19
286.08	V	Peak	49.78	-28.84	20.94	46.00	-25.06
892.33	V	Peak	45.02	-19.08	25.94	46.00	-20.06
30.00	H	Peak	53.29	-26.11	27.18	40.00	-12.82
58.13	H	Peak	51.93	-26.67	25.26	40.00	-14.74
85.29	H	Peak	51.04	-30.75	20.29	40.00	-19.71
96.93	H	Peak	53.92	-30.63	23.29	43.50	-20.21
159.98	H	Peak	45.77	-26.99	18.78	43.50	-24.72
286.08	H	Peak	49.30	-28.84	20.46	46.00	-25.54

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 Datas 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.



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

#### (Antenna 3)

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2441MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
30.97	V	Peak	52.81	-26.05	26.76	40.00	-13.24
96.93	V	Peak	59.01	-30.63	28.38	43.50	-15.12
159.98	V	Peak	46.37	-26.99	19.38	43.50	-24.12
286.08	V	Peak	49.42	-28.84	20.58	46.00	-25.42
436.43	V	Peak	44.29	-25.34	18.95	46.00	-27.05
880.69	V	Peak	44.93	-19.31	25.62	46.00	-20.38
46.49	H	Peak	50.31	-25.89	24.42	40.00	-15.58
58.13	H	Peak	50.28	-26.67	23.61	40.00	-16.39
96.93	H	Peak	58.15	-30.63	27.52	43.50	-15.98
153.19	H	Peak	45.39	-26.97	18.42	43.50	-25.08
286.08	H	Peak	49.43	-28.84	20.59	46.00	-25.41
987.39	H	Peak	45.75	-18.36	27.39	54.00	-26.61

#### 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 Datas 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)

### (Antenna 3)

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65%		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.83	-25.89	25.94	40.00	-14.06
58.13	V	Peak	52.43	-26.67	25.76	40.00	-14.24
96.93	V	Peak	61.05	-30.63	30.42	43.50	-13.08
150.28	V	Peak	46.01	-26.97	19.04	43.50	-24.46
286.08	V	Peak	49.75	-28.84	20.91	46.00	-25.09
785.63	V	Peak	44.48	-20.29	24.19	46.00	-21.81
85.29	H	Peak	50.90	-30.75	20.15	40.00	-19.85
101.78	H	Peak	50.21	30.29	80.50	43.50	37.00
159.98	H	Peak	45.10	-26.99	18.11	43.50	-25.39
286.08	H	Peak	49.04	-28.84	20.20	46.00	-25.80
473.29	H	Peak	46.17	-25.01	21.16	46.00	-24.84
809.88	H	Peak	44.41	-20.02	24.39	46.00	-21.61

### 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 Datas 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.

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

#### (Antenna 4)

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	52.13	-25.89	26.24	40.00	-13.76
58.13	V	Peak	52.11	-26.67	25.44	40.00	-14.56
96.93	V	Peak	58.64	-30.63	28.01	43.50	-15.49
153.19	V	Peak	44.90	-26.97	17.93	43.50	-25.57
286.08	V	Peak	48.93	-28.84	20.09	46.00	-25.91
562.53	V	Peak	44.94	-23.50	21.44	46.00	-24.56
96.93	H	Peak	54.45	-30.63	23.82	43.50	-19.68
153.19	H	Peak	45.65	-26.97	18.68	43.50	-24.82
286.08	H	Peak	49.25	-28.84	20.41	46.00	-25.59
339.43	H	Peak	45.76	-27.37	18.39	46.00	-27.61
482.99	H	Peak	46.22	-24.89	21.33	46.00	-24.67
615.88	H	Peak	45.28	-22.50	22.78	46.00	-23.22

#### 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 Datas 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.

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

### (Antenna 4)

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2437MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	52.45	-25.89	26.56	40.00	-13.44
58.13	V	Peak	52.32	-26.67	25.65	40.00	-14.35
96.93	V	Peak	54.78	-30.63	24.15	43.50	-19.35
153.19	V	Peak	45.19	-26.97	18.22	43.50	-25.28
286.08	V	Peak	47.53	-28.84	18.69	46.00	-27.31
502.39	V	Peak	45.36	-24.71	20.65	46.00	-25.35
67.83	H	Peak	49.04	-28.92	20.12	40.00	-19.88
96.93	H	Peak	49.56	-30.63	18.93	43.50	-24.57
153.19	H	Peak	45.24	-26.97	18.27	43.50	-25.23
286.08	H	Peak	49.42	-28.84	20.58	46.00	-25.42
581.93	H	Peak	44.60	-23.10	21.50	46.00	-24.50
798.24	H	Peak	44.48	-20.21	24.27	46.00	-21.73

### 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 Datas 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.

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

### (Antenna 4)

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462MHz	Test By	Sky
Temperature	25	Pol	Ver./Hor
Humidity	65%		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
46.49	V	Peak	51.51	-25.89	25.62	40.00	-14.38
58.13	V	Peak	52.79	-26.67	26.12	40.00	-13.88
99.84	V	Peak	52.66	-30.49	22.17	43.50	-21.33
159.98	V	Peak	45.29	-26.99	18.30	43.50	-25.20
284.14	V	Peak	52.26	-28.89	23.37	46.00	-22.63
744.89	V	Peak	44.44	-20.73	23.71	46.00	-22.29
46.49	H	Peak	48.23	-25.89	22.34	40.00	-17.66
96.93	H	Peak	50.08	-30.63	19.45	43.50	-24.05
159.98	H	Peak	45.80	-26.99	18.81	43.50	-24.69
284.14	H	Peak	49.75	-28.89	20.86	46.00	-25.14
575.14	H	Peak	44.51	-23.26	21.25	46.00	-24.75
706.09	H	Peak	44.79	-21.14	23.65	46.00	-22.35

### 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 Datas 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.

**Radiated Spurious Emission Measurement Result (above 1GHz)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
---	----	----	----	----	----	----	----	----	Peak
4824.0	----								
7236.0	----								
9648.0	----								
12060.0	----								
14472.0	----								
16884.0	----								
19296.0	----								
21708.0	----								
24120.0	----								

Remark :

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH Low	Test Date	Jul. 04, 2008
Fundamental Frequency	2412 MHz	Test By	Sky
Temperature	25	Pol	Hor
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
----	----	----	----	----	----	----	----	----	Peak
4824.0	----								
7236.0	----								
9648.0	----								
12060.0	----								
14472.0	----								
16884.0	----								
19296.0	----								
21708.0	----								
24120.0	----								

**Remark :**

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2437 MHz	Test By	Sky
Temperature	25	Pol	Ver
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
----	----	----	----	----	----	----	----	----	Peak
4874.0	----								
7311.0	----								
9748.0	----								
12185.0	----								
14622.0	----								
17059.0	----								
19496.0	----								
21933.0	----								
24370.0	----								

**Remark :**

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH Mid	Test Date	Jul. 04, 2008
Fundamental Frequency	2437 MHz	Test By	Sky
Temperature	25	Pol	Hor
Humidity	65%		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
----	----	----	----	----	----	----	----	----	
4874.0	----								
7311.0	----								
9748.0	----								
12185.0	----								
14622.0	----								
17059.0	----								
19496.0	----								
21933.0	----								
24370.0	----								

**Remark :**

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25	Pol	Ver
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
----	----	----	----	----	----	----	----	----	
4924.0	----								
7386.0	----								
9848.0	----								
12310.0	----								
14772.0	----								
17234.0	----								
19696.0	----								
22158.0	----								
24620.0	----								

**Remark :**

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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)**

**Antenna 1, 2, 3, 4**

Operation Mode	802.11b RX CH High	Test Date	Jul. 04, 2008
Fundamental Frequency	2462 MHz	Test By	Sky
Temperature	25	Pol	Hor
Humidity	65 %		

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	Peak
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
----	----	----	----	----	----	----	----	----	
4924.0	----								
7386.0	----								
9848.0	----								
12310.0	----								
14772.0	----								
17234.0	----								
19696.0	----								
22158.0	----								
24620.0	----								

**Remark :**

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas 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= 3MHz, VBW= 1MHz, 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 RSS-210 issue 7, §A8.2(2) and §A8.3(2), The transmitter power spectral density (into the antenna) shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0 second duration.

### 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 Result

#### 802.11b

CH	RF Power Density Reading (dBm)	Cable loss (dB)	RF Power Density Level (dBm)	Maximum Limit (dBm)
Low	-11.39	0.00	-11.39	8
Mid	-11.21	0.00	-11.21	8
High	-11.54	0.00	-11.54	8

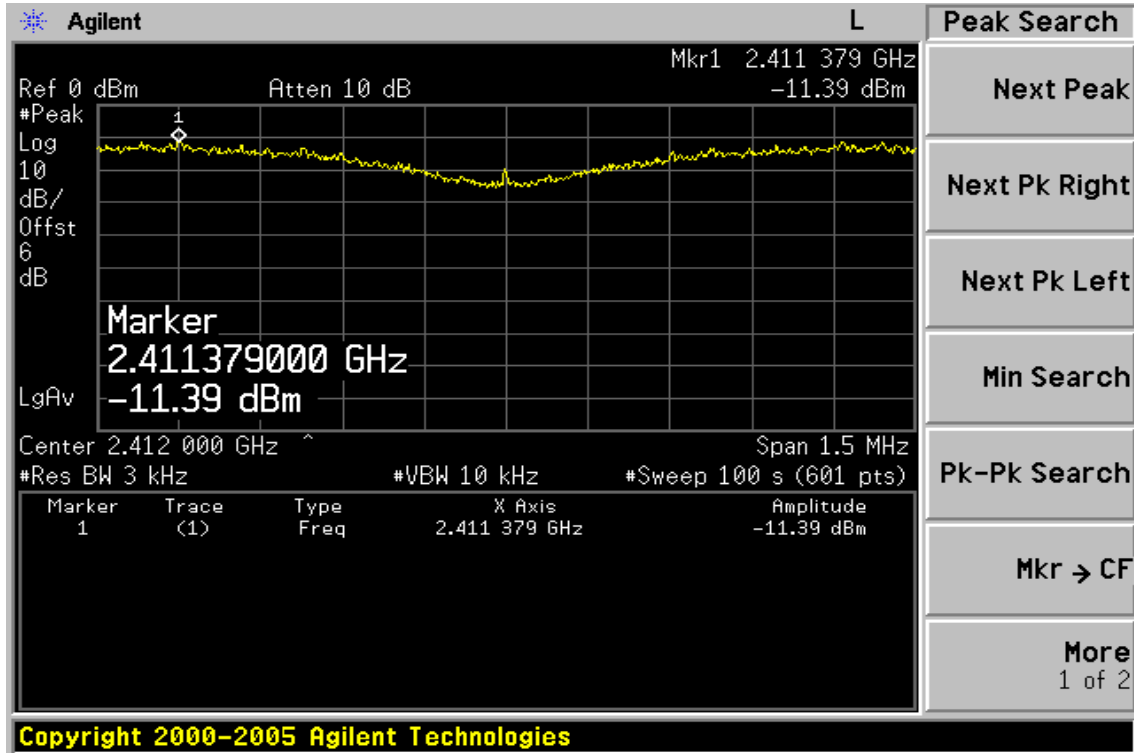
*Note: offset 0.6 dB*

### 10.4. Measurement Equipment Used:

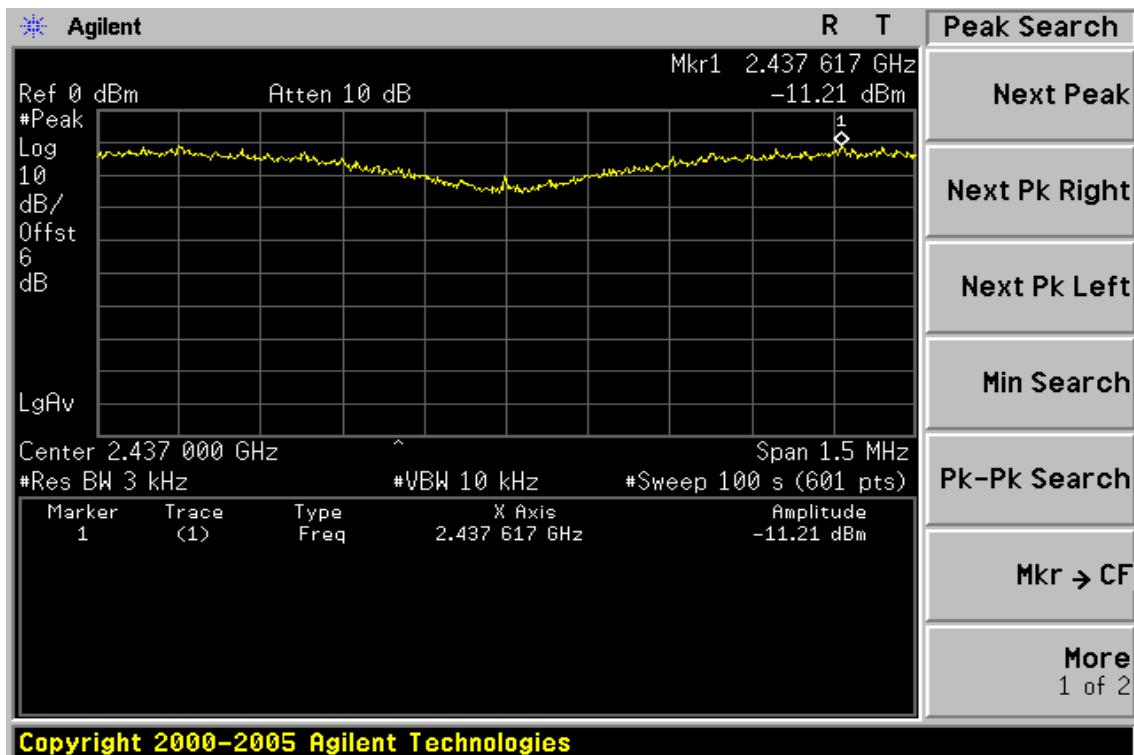
Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/27/2009
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit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

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

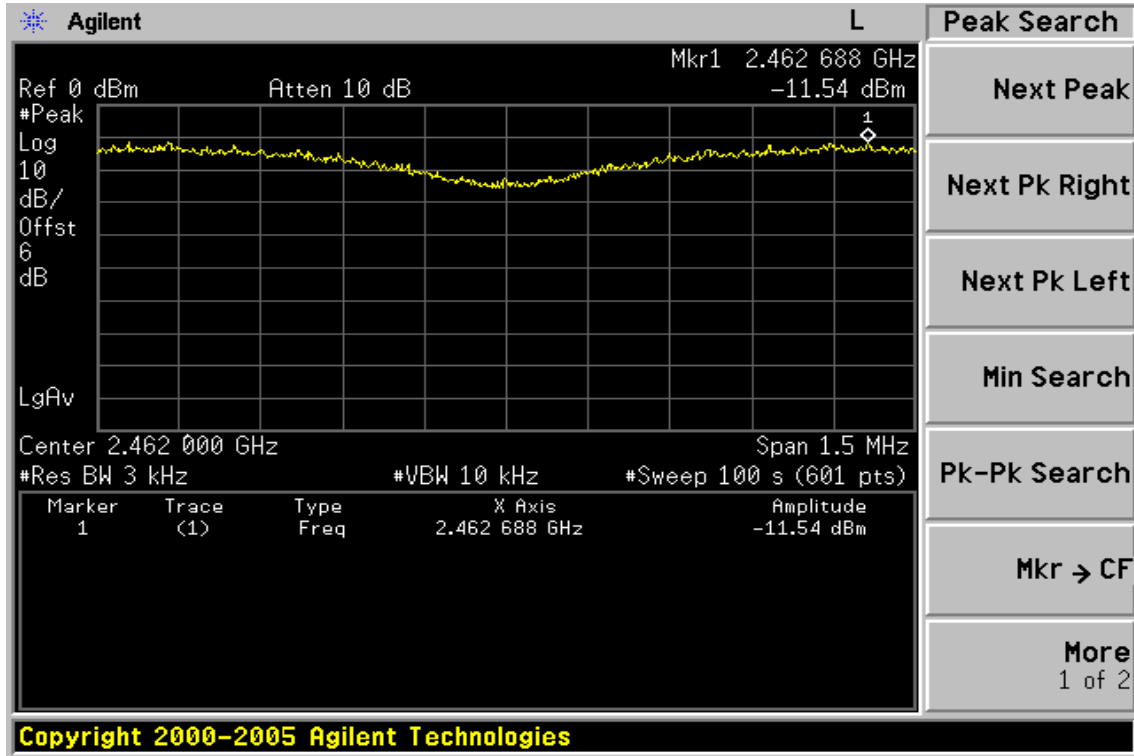


**Power Spectral Density Test Plot (CH-Mid)**



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



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## 11. 99% Bandwidth Measurement

### 11.1. Standard Applicable

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

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

The span between the two recorded frequencies is the occupied bandwidth.

### 11.2. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2008	03/28/2009
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2008	06/29/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	10/07/2007	10/06/2008
Attenuator	Mini-Circuit	BW-S6W5	N/A	10/07/2007	10/06/2008
Splitter	Agilent	Power Biviber	51818	01/05/2008	01/04/2009

### 11.3. Test Set-up:

Refer to section 2.4.

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#### 11.4. 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=1% of the approximate emission bandwidth, VBW = 3 times RBW, Span= approximately 20dB below the peak level. Sweep=auto
4. Turn on the 99% bandwidth function, max reading..
5. Repeat above procedures until all frequency measured were complete.

#### 11.5. Measurement Result

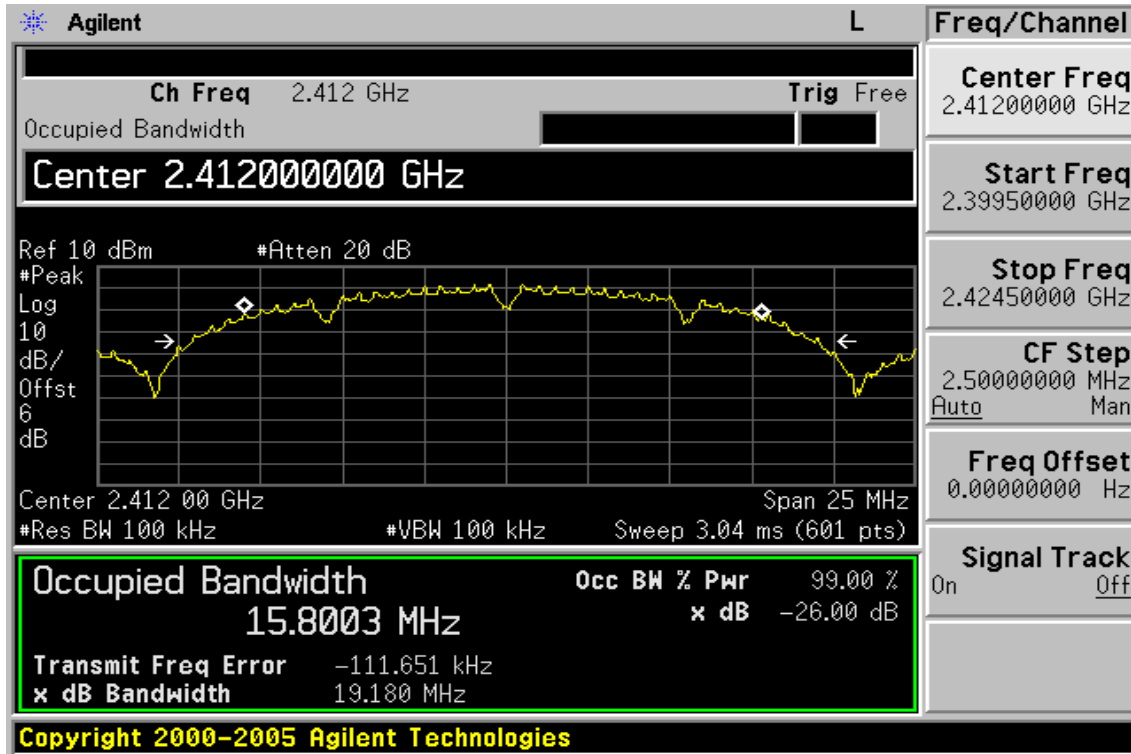
##### 802.11b

CH	Bandwidth (MHz)
Lower	15.8003
Mid	15.8430
Higher	15.7187

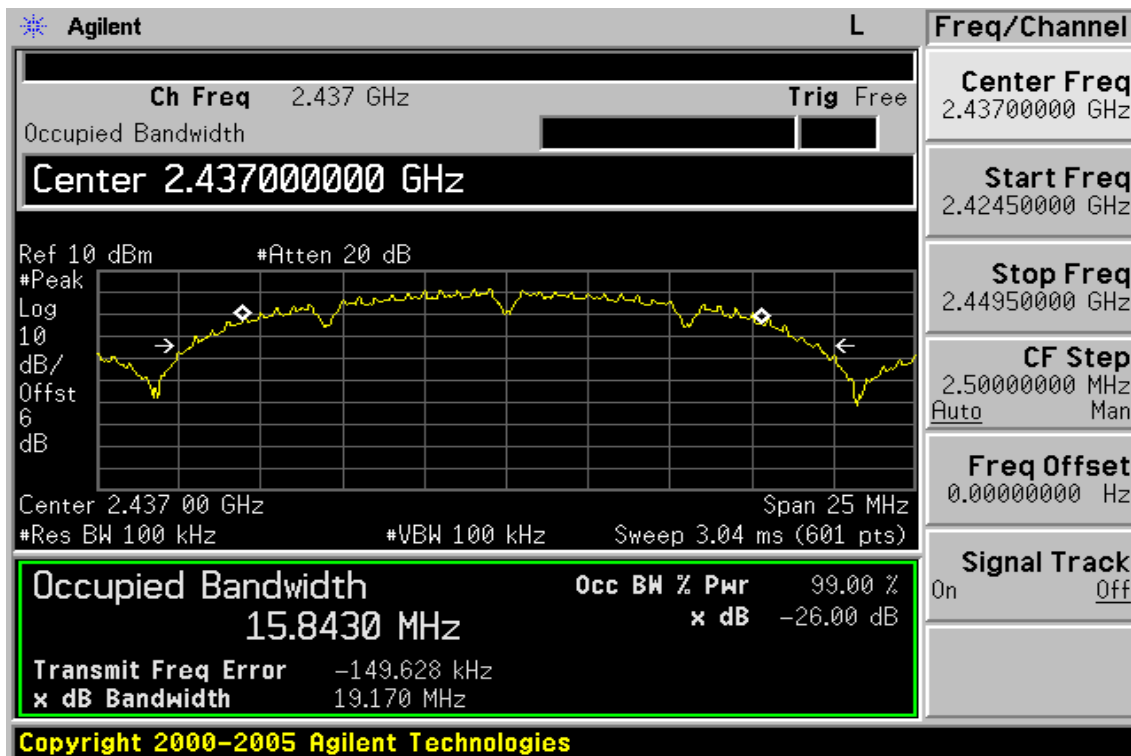


802.11b

99% Band Width Test Data CH-Low



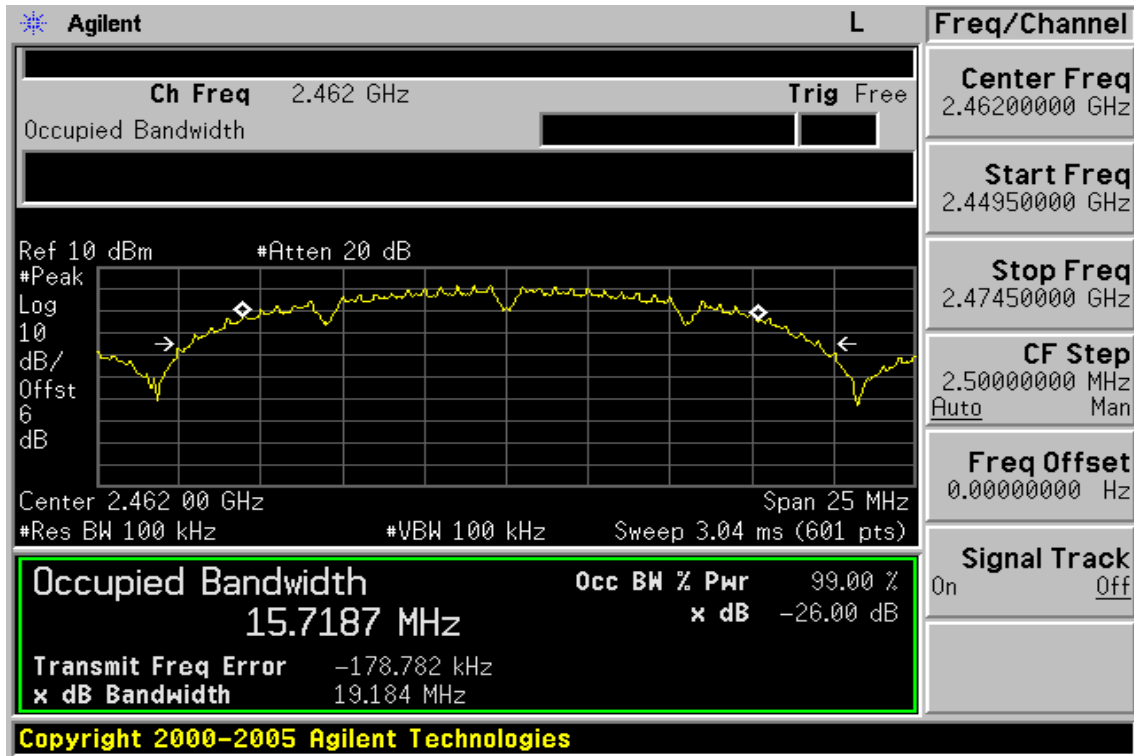
99% Band Width Test Data CH-Mid



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### 99% Band Width Test Data CH-High



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## 12. ANTENNA REQUIREMENT

### 12.1 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.

According to RSS-GEN 7.1.4, a transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

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## 12.2 Antenna Connected Construction

The antenna connector is designed with permanent attachment and no consideration of replacement. Please see next page and EUT photo for details.

### Antenna Specification:

Item no.	Model/Type	
Antenna 1.	Antenna Type	Monopole Integrated Whip Antenna
	Manufacture:	N/A
	Model:	RN111B
	Frequency Range:	2.4GHz~2.5GHz
	Antenna Gain:	1dBi
	Impedance	50 ohms
	VSWR	<2
	Radiation pattern	Omni
Antenna 2.	Antenna Type	Dipole Antenna
	Manufacture:	Central
	Model:	6602803081-000
	Frequency Range:	2.4GHz~2.5GHz
	Antenna Gain:	3dBi
	Impedance	50 ohm nominal
	VSWR	<2
	Radiation pattern	Omni
Antenna 3.	Antenna Type	Dipole Antenna
	Manufacture:	Central
	Model:	6602803081-000
	Frequency Range:	2.4GHz
	Antenna Gain:	2.6dBi
	Impedance	50 ohms
	VSWR	<2
	Radiation pattern	Omni
Antenna 4.	Antenna Type	Chip Antenna
	Manufacture:	WALSIN
	Model:	N/A
	Frequency Range:	2.45GHz
	Antenna Gain:	2dBi max
	Impedance	50 ohms
	VSWR	2 max
	Radiation pattern	Omni-directional

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