

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT AND INDUSTRY CANADA RSS 210

OF

Product Name: Rugged Mobile Computer
Brand Name: Janam
Model Name: XG100
Model Different: N/A
FCC ID: UTW-XG100A
IC: 6914A-XG100A
Report No.: EF/2009/C0014
Issue Date: Jan. 22, 2010
FCC Rule Part: §15.247
IC Rule Part: RSS-210 issue 7:2007, Annex 8
Prepared for: Janam Technologies LLC
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Prepared by: SGS Taiwan Ltd.
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VERIFICATION OF COMPLIANCE

Applicant: Janam Technologies LLC
100 Crossways Park West, Suite 105, Woodbury, NY 11797 USA

Manufacturer: Janam Technologies LLC
100 Crossways Park West, Suite 105, Woodbury, NY 11797 USA

Product Name: Rugged Mobile Computer

Brand Name: Janam

FCC ID: UTW-XG100A

IC: 6914A-XG100A

Model No.: XG100

Model Difference: N/A

File Number: EF/2009/C0014

Date of test: Dec. 15, 2009 ~ Jan. 17, 2010

Date of EUT Received: Dec. 15, 2009

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247 and IC RSS 210 issue 7: 2007 Annex 8.

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

Test By:  **Date** Jan. 22, 2010

Bondi Liu/ Engineer

Prepared By:  **Date** Jan. 22, 2010

Alex Hsieh/ Sr. Engineer

Approved By:  **Date** Jan. 22, 2010

Vincent Su / Manager

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Version

Version No.	Date	Description
00	Jan. 22, 2010	

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1 GENERAL INFORMATION

1.1 Product Description

General:

Type Name:	Rugged Mobile Computer		
Brand Name:	Janam		
Model Name:	XG100		
Model Difference:	N/A		
USB Cable	Two provide, Model No.: N/A		
Power Supply:	7.4 Vdc re-chargeable battery or 9~12Vdc by AC/DC power adapter		
	Battery Model:	Model No. SNE102043, Supplier: Janam	
	Adaptor Model:	Model No. EA10302, Brand: EDAC	
Software Version	OAL 2.0		
Hardware Version	Beta		

WLAN: 802.11 a/b/g

Frequency Range	2412MHz– 2462MHz、 5745MHz– 5805 MHz	5180MHz– 5240MHz	5260MHz– 5320MHz	5500MHz– 5700MHz
Channel number	9 channels for 2.4G 4 channels for 5G	4 channels	4 channels	11 channels
Rated Power	802.11 a: 11.43 dBm 802.11 b: 16.77 dBm 802.11 g: 12.97 dBm	12.38 dBm	12.06 dBm	14.79 dBm
Modulation Technology	DSSS, OFDM	OFDM	OFDM	OFDM
Antenna Designation	PIFA Antenna: 0 dBi			
Type of Emission	17M5M5D	17M3M1D	17M4M1D	18M2M4D

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Modulation type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps; 802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps

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

Bluetooth:

Bluetooth Version	<input type="checkbox"/> V1.1 (GFSK) <input type="checkbox"/> V1.2 (GFSK) <input type="checkbox"/> V2.0 (GFSK) <input checked="" type="checkbox"/> V2.0 + EDR (GFSK + $\pi/4$ DQPSK + 8DPSK) <input type="checkbox"/> V2.1 + EDR (GFSK + $\pi/4$ DQPSK + 8DPSK)
Frequency Range	2402 – 2480MHz
Channel number	79 channels max.
Rated Power	2.84 dBm (Peak)
Modulation type	Frequency Hopping Spread Spectrum
Antenna Designation	PIFA Antenna / -5dBi.
Type of Emission	1M26F1D

The EUT is compliance with Bluetooth 2.0 with EDR. The EUT is compliance with Bluetooth V2.0+EDR standard and WLAN 802.11 a/b/g.

This report applies for WLAN 802.11 a/b/g.

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: UTW-XG100A** filing to comply with Section 15.247 of the FCC Part 15, Subpart E Rules and **IC: 6914A-XG100A** filing to comply with Industry Canada RSS-210 issue 7: 2007 Annex 8. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

1.3 Test Methodology

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

1.4 Test Facility

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

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

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.

2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

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

2.2 EUT Exercise

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

2.3 Test Procedure

2.3.1 Conducted Emissions

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

2.3.2 Radiated Emissions

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

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

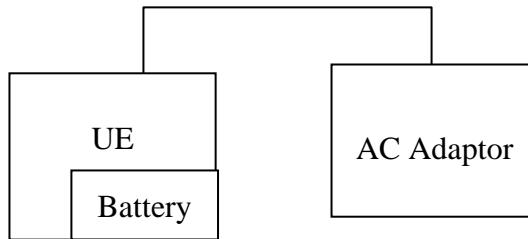


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.
1.	Test software	Summit_ Client_utility	Version 2.01.12	N/A

3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)/ RSS-Gen §7.2.2	AC Power Line Conducted Emission	Compliant
§15.247(b)/ §A8.4(2)	Peak Output Power	Compliant
§15.247(b)/ §A8.2	6dB Bandwidth	Reference to module report
§15.247(c)/ §A8.5	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(c)/ §A8.5	Spurious Emission	Compliant
§15.247/,§A8.3(2)	Peak Power Density	Reference to module report
§15.203/ RSS-GEN 7.1.4, RSS-210 issue 7,§A8.4	Antenna Requirement	Compliant
RSS-Gen §4.4.1	99% Power Bandwidth	Reference to module report

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 a mode: Channel low (5745MHz) 、 mid (5785MHz) and high (5805MHz) with 6Mbps highest data rate are chosen for above items.

802.11 b mode: Channel low (2412MHz) 、 mid (2437MHz) and high (2462MHz) with 1Mbps highest data rate are chosen for above items.

802.11 g mode: Channel low (2412MHz) 、 mid (2437MHz) and high (2462MHz) with 6Mbps highest data rate are chosen for above items.

5 CONDUCTED EMISSION TEST

5.1. Standard Applicable:

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

Frequency range 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. Measurement Equipment Used:

AC Power Line Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2009	09/15/2010
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2009	02/01/2010
LISN	FCC	FCC-LISN-50/250-2 5-2-01	04034	02/02/2009	02/01/2010
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2009	10/29/2010

5.3. 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 EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

5.4. 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.

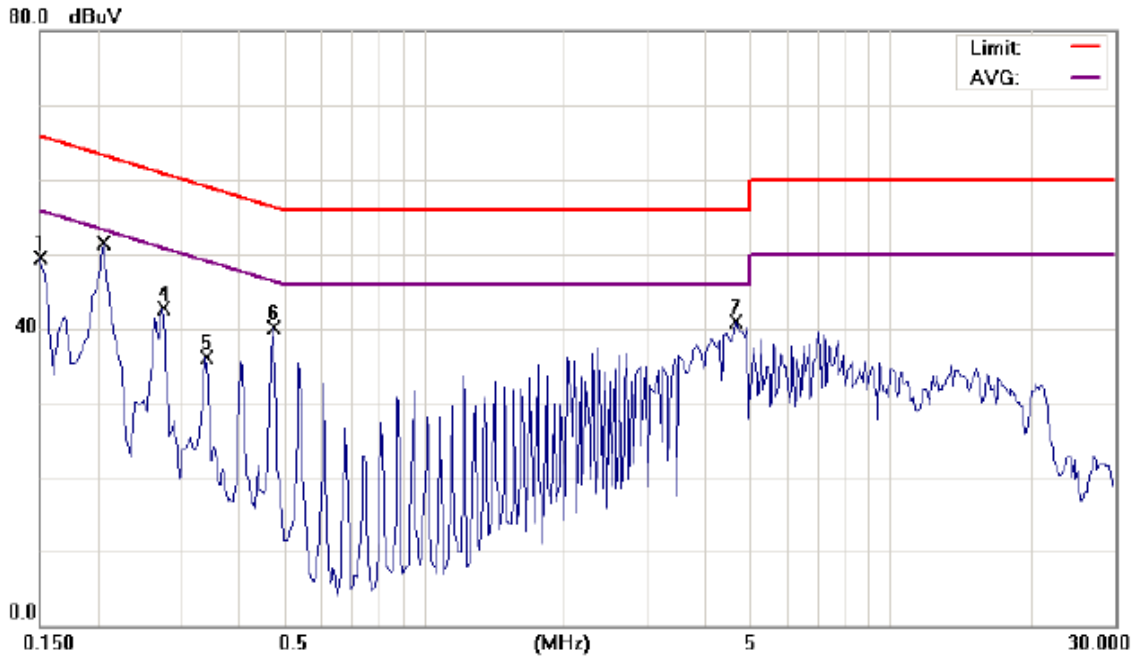
5.5. Measurement Result:

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

Note: Refer to next page for measurement data and plots.

AC POWER LINE CONDUCTED EMISSION TEST DATA

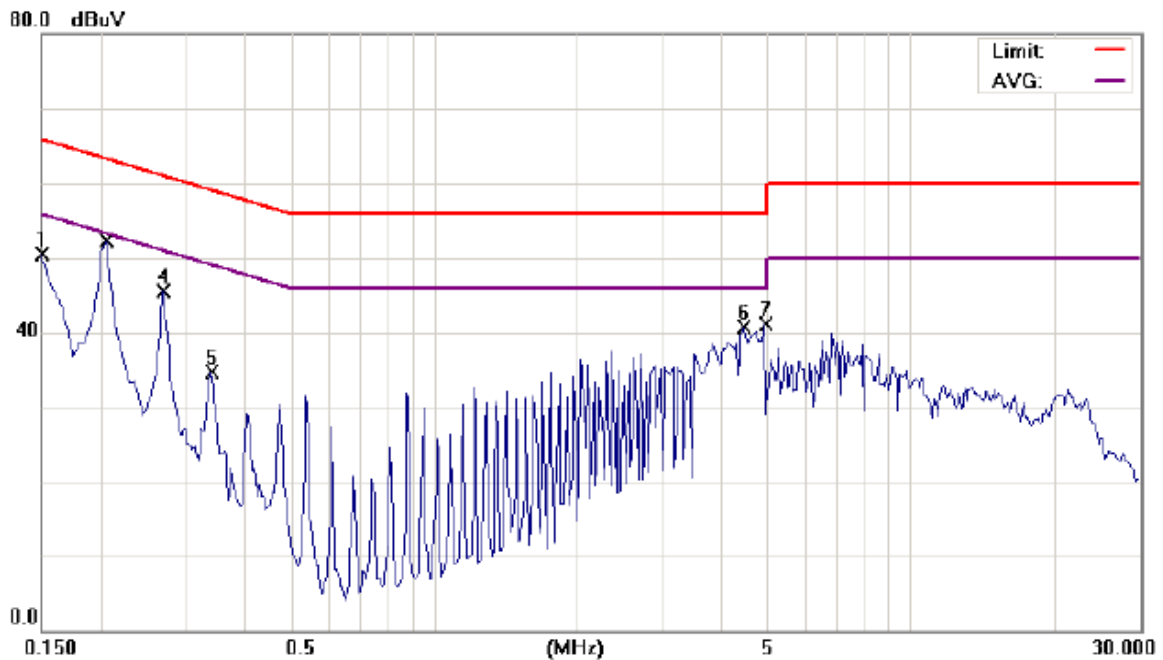
Operation Mode:	WLAN LINK		Test Date:	Jan. 14, 2010	
Temperature:	24 °C	Humidity:	59%	Test By:	Bondi



Site	SGS CONDUCTED #1	Phase:	L1	Temperature:	24 °C
Limit:	FCC Class B Conduction(QP)	Power:	AC 120V/60Hz	Humidity:	59 %
EUT:	Vertical Hand Held Terminal	Distance:		Air Pressure:	hpa
M/N:	XG100				
Note:	WLAN LINK mode				

No.	Mk.	Freq. MHz	Reading Level dBuV	Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	49.32	0.18	49.50	66.00	-16.50	peak	
2	*	0.2048	50.09	0.12	50.21	63.41	-13.20	QP	
3		0.2048	39.67	0.12	39.79	53.41	-13.62	AVG	
4		0.2750	42.69	0.11	42.80	60.97	-18.17	peak	
5		0.3400	35.92	0.09	36.01	59.20	-23.19	peak	
6		0.4750	39.95	0.07	40.02	56.43	-16.41	peak	
7		4.6700	40.66	0.16	40.82	56.00	-15.18	peak	

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Site SGS CONDUCTED #1
Limit: FCC Class B Conduction(QP)
EUT: Vertical Hand Held Terminal
M/N: XG100
Note: WLAN LINK mode

Phase: N
Power: AC 120V/60Hz
Distance:
Temperature: 24 °C
Humidity: 59 %
Air Pressure: hpa

No.	Mk.	Freq. MHz	Reading Level dBuV	Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	50.35	0.20	50.55	66.00	-15.45	peak	
2	*	0.2033	52.09	0.14	52.23	63.47	-11.24	QP	
3		0.2033	39.03	0.14	39.17	53.47	-14.30	AVG	
4		0.2700	45.37	0.13	45.50	61.12	-15.62	peak	
5		0.3400	34.65	0.12	34.77	59.20	-24.43	peak	
6		4.4700	40.48	0.18	40.66	56.00	-15.34	peak	
7		4.9400	40.98	0.18	41.16	56.00	-14.84	peak	

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6 PEAK OUTPUT POWER MEASUREMENT

6.1 Standard Applicable:

According to §15.247(a)(2), (b)

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(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.

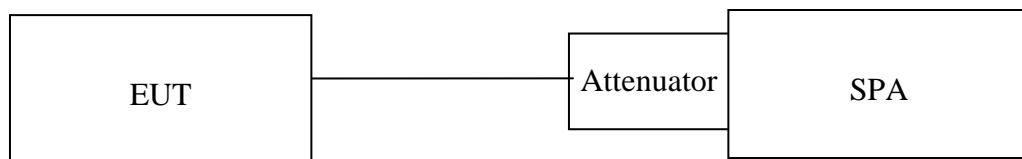
(ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

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 Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2009	01/22/2011
DC Block	Agilent	BLK-18	155452	07/05/2009	07/04/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2010	01/04/2011
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2009	07/04/2010
Splitter	Agilent	11636B	N/A	07/05/2009	07/04/2010

6.3 .Test Set-up:



6.4 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 power meter or spectrum. (Channel power function, RBW, VBW = 1MHz, Bandwidth=26dB occupied Bandwidth)
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

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6.5 Measurement Result:

802.11b

Cable loss = 0	Peak Power Output				Limit
	Frequency (MHz)	Data Rate			
	1	2	5.5	11	30dBm
2412	16.77	16.65	16.52	16.41	30dBm
2437	16.73	16.58	16.43	16.36	30dBm
2462	16.53	16.33	16.27	16.18	30dBm

802.11g

Cable loss = 0	Peak Power Output								Limit
	Frequency (MHz)	Data Rate							
	6	9	12	18	24	36	48	54	30dBm
2412	12.97	11.98	10.57	8.82	7.87	6.88	6.24	5.87	30dBm
2437	12.75	11.82	10.23	8.75	7.66	6.79	6.11	5.63	30dBm
2462	12.73	11.77	10.15	8.67	7.54	6.64	6.03	5.49	30dBm

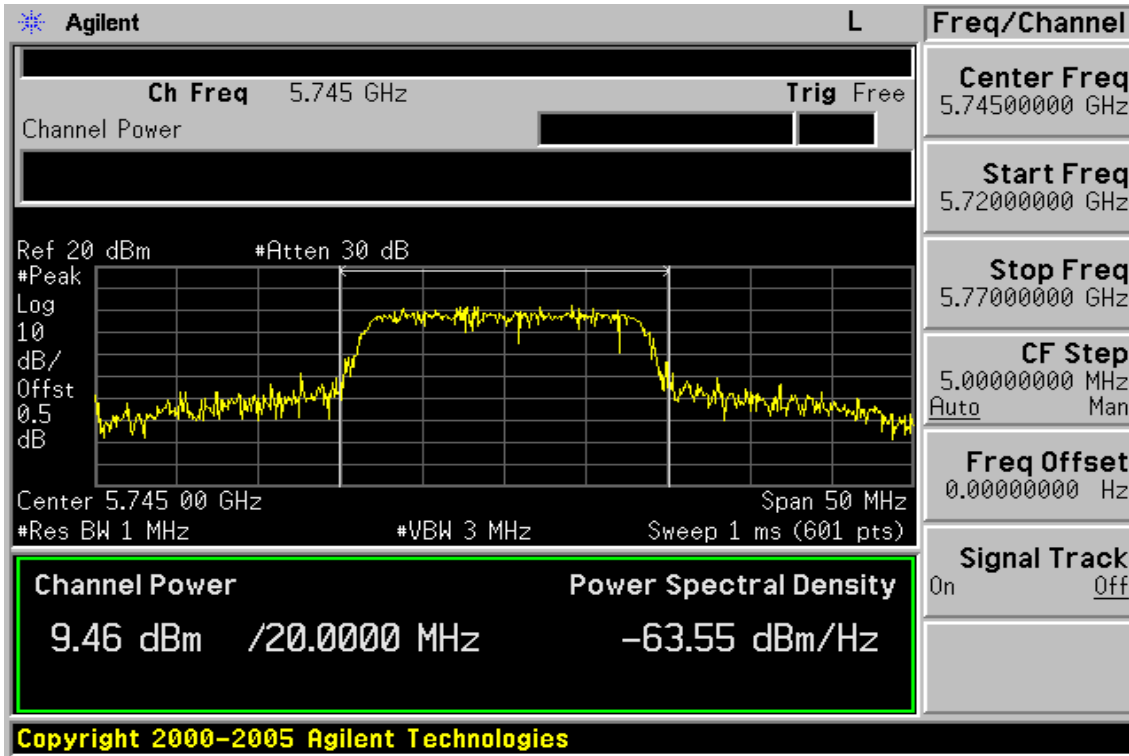
802.11a

Cable loss = 0	Peak Power Output								Limit
	Frequency (MHz)	Data Rate							
	6	9	12	18	24	36	48	54	30dBm
5745	9.46	9.03	8.82	8.13	7.54	6.68	6.21	5.35	30dBm
5785	10.68	9.83	9.12	8.44	7.56	6.77	6.35	5.42	30dBm
5805	11.43	10.52	9.67	8.36	7.71	6.83	6.41	5.54	30dBm

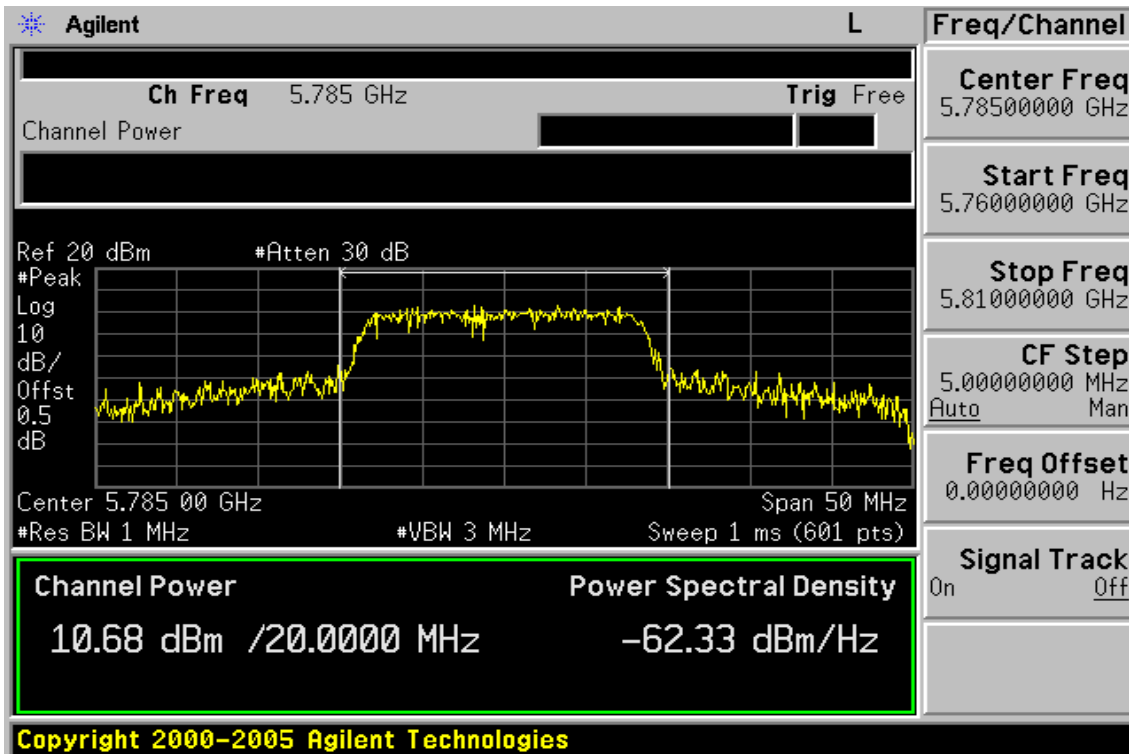
**Note: Offset 0.5dB*

Note: Refer to next page for plots.

802.11a, 6Mbps
Power Output Plot (CH Low)

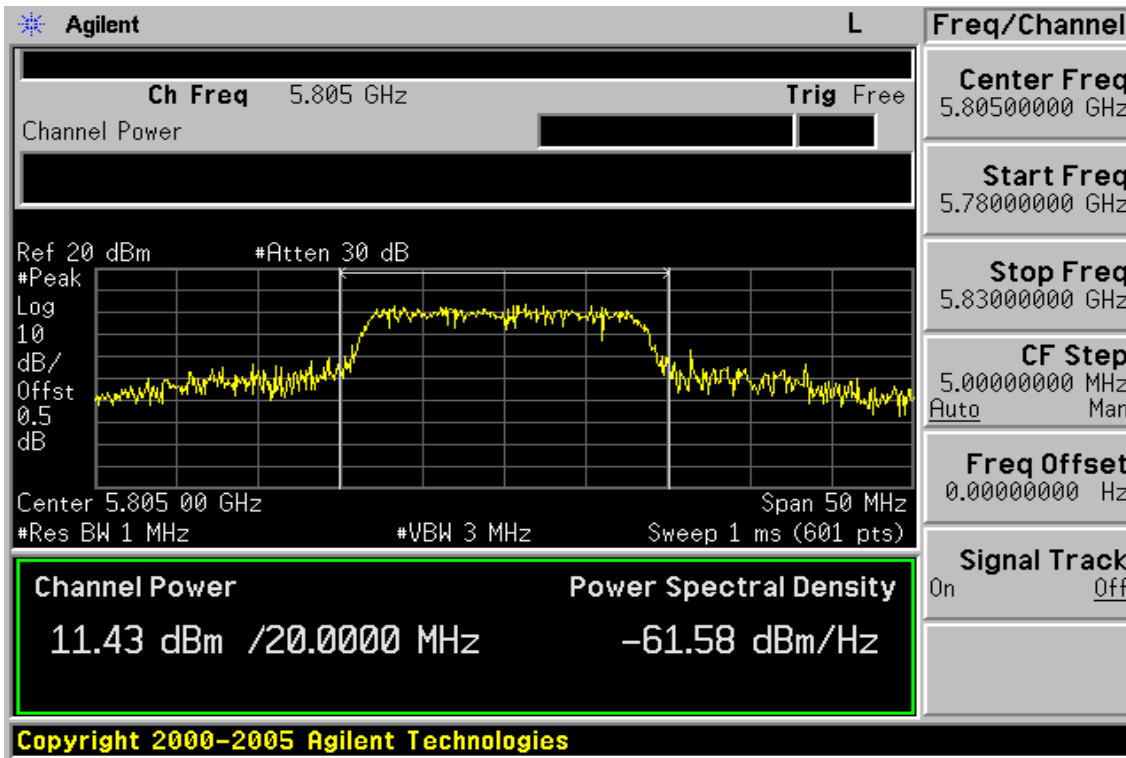


Power Output Plot (CH Mid)



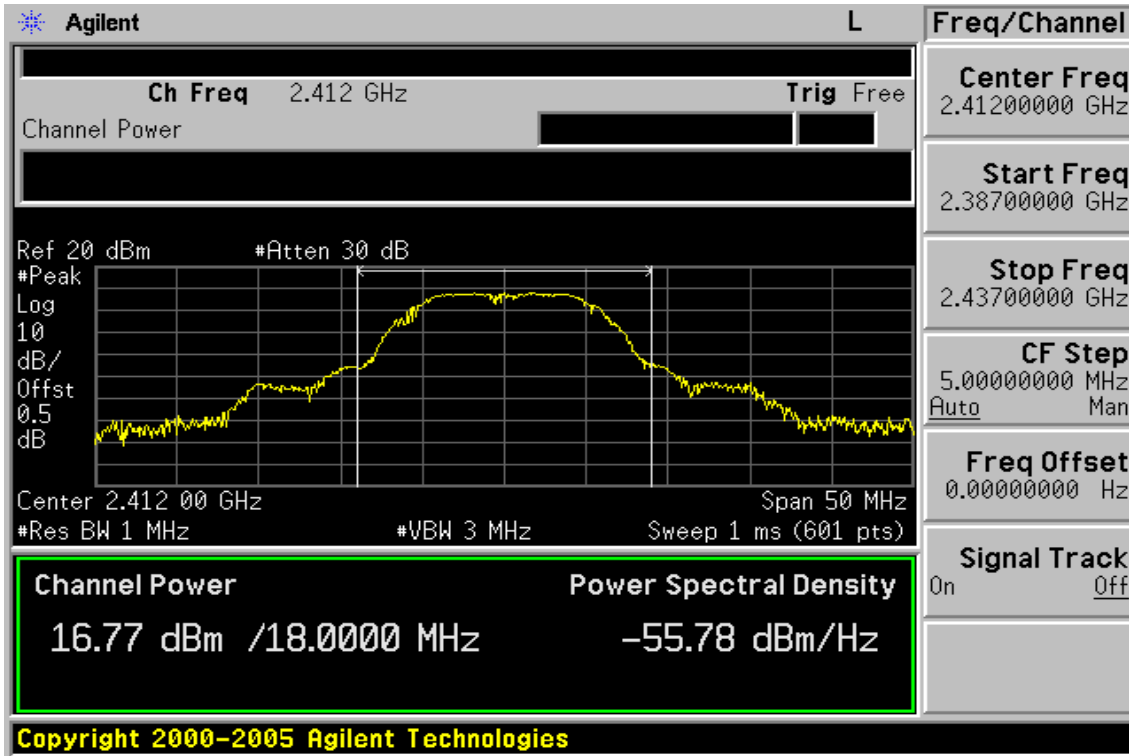
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Power Output Plot (CH High)

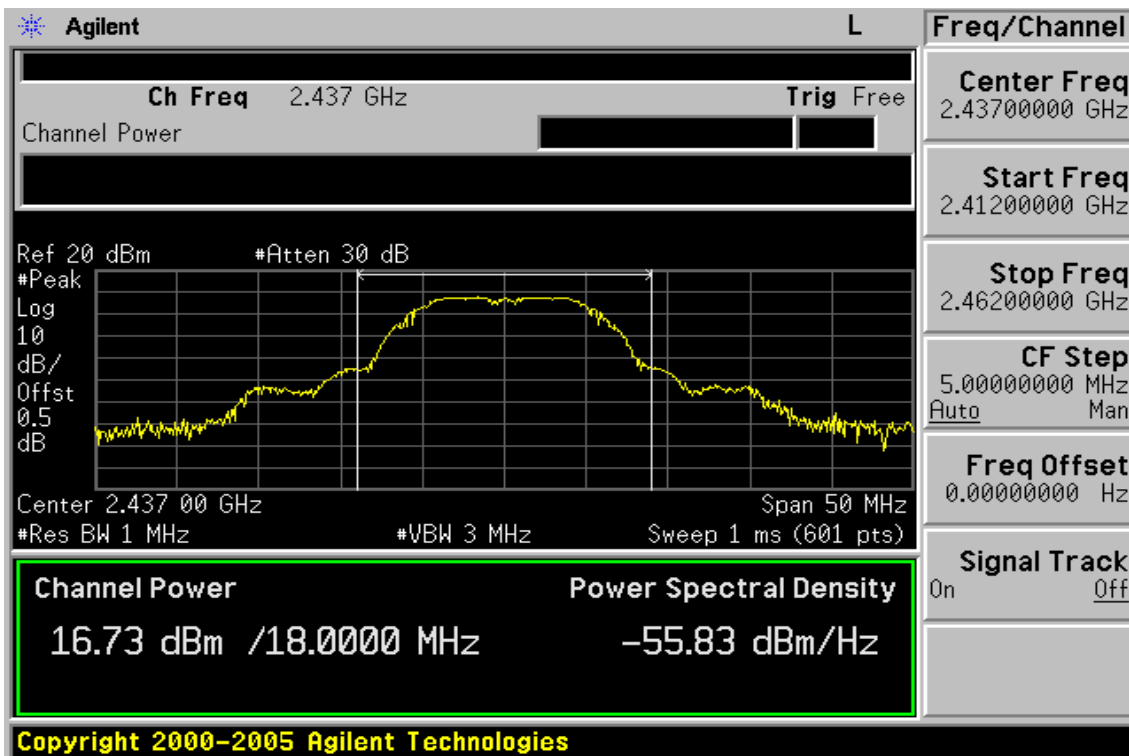


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802.11b, 1Mbps
Power Output Plot (CH Low)

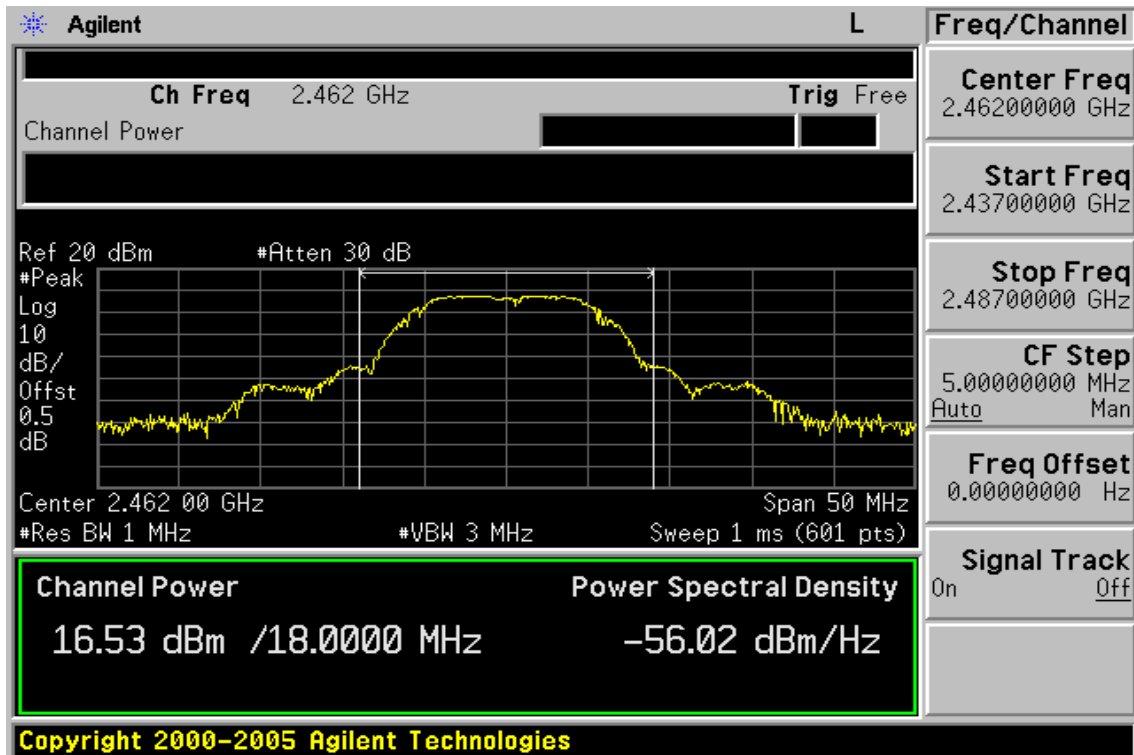


Power Output Plot (CH Mid)



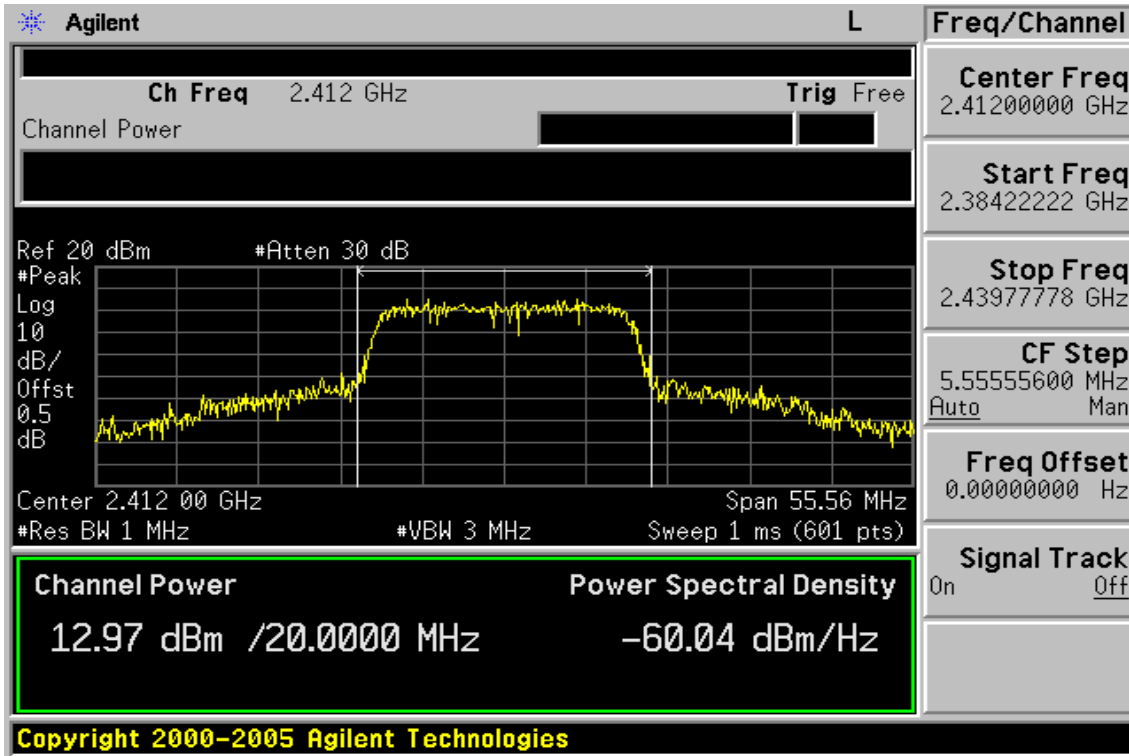
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Power Output Plot (CH High)

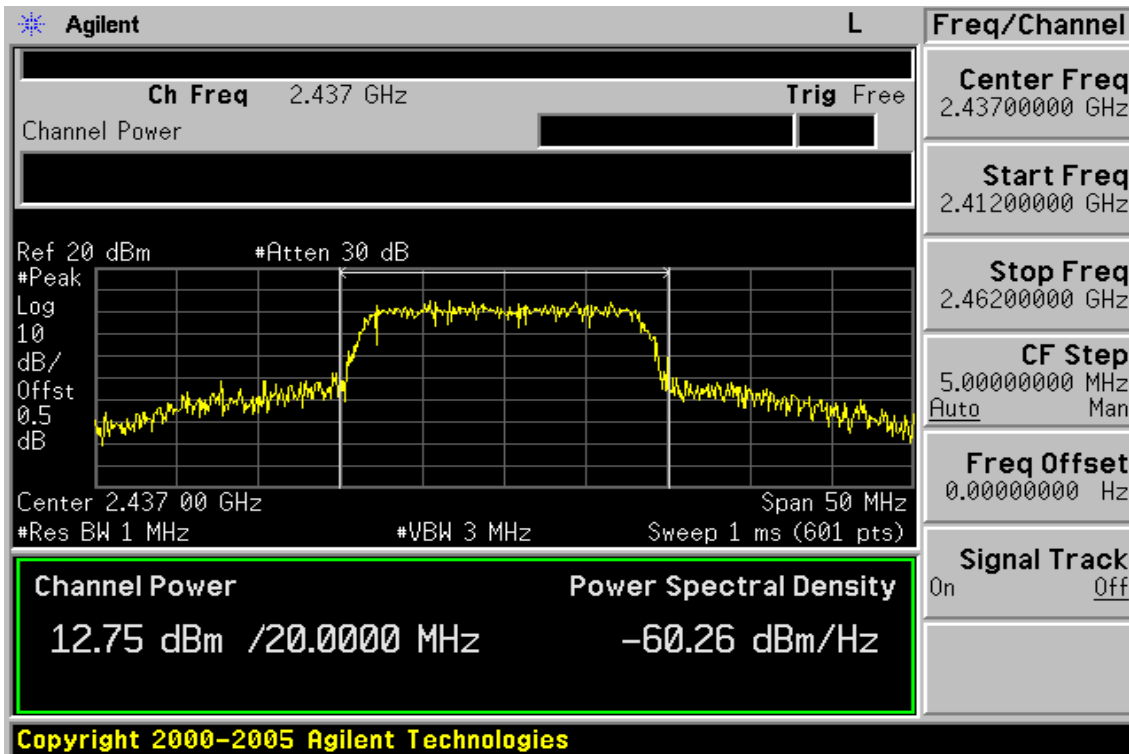


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802.11g, 6Mbps Power Output Plot (CH Low)

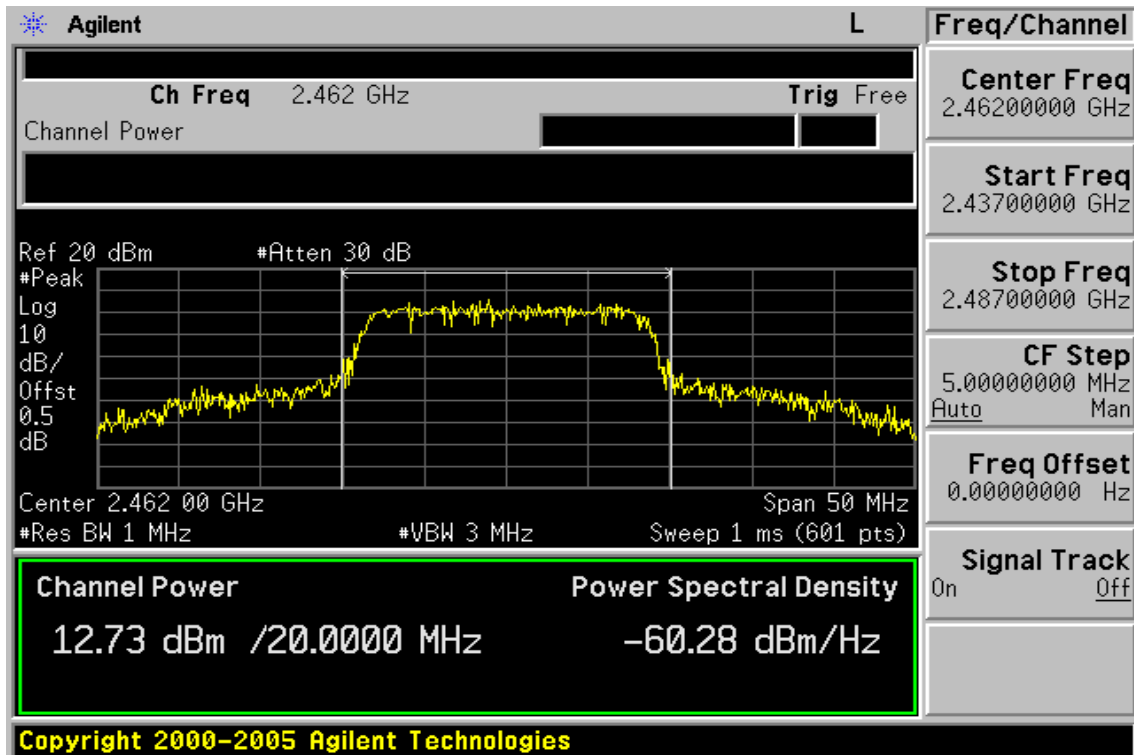


Power Output Plot (CH Mid)



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Power Output 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.

According to RSS 210 issue 7: 2007 Annex 8.2. Systems employing digital modulation techniques (which includes direct sequence) can now be certified under RSS-210 provided they comply with the following requirements: The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 Measurement Equipment Used:

Refer to section 6.2 for details.

7.3 Test Set-up:

Refer to section 6.3 for details.

7.4 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 3. antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW = 3*RBW, Span= 30M/50MHz, Sweep=auto
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

7.5 Measurement Result:

N/A. Refer to Elliott Laboratories. EMC Department WLAN module report Number: R74979 Rev 1

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 Equipment Used:

8.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

8.2.2. Radiated emission:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2009	02/11/2010
Loop antenna	MESSTEC	FLA30	03/10086	06/06/2009	06/05/2010
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2009	11/14/2010
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2008	05/08/2010
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2010	01/04/2011
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2010	01/04/2011
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2010	01/04/2011
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010

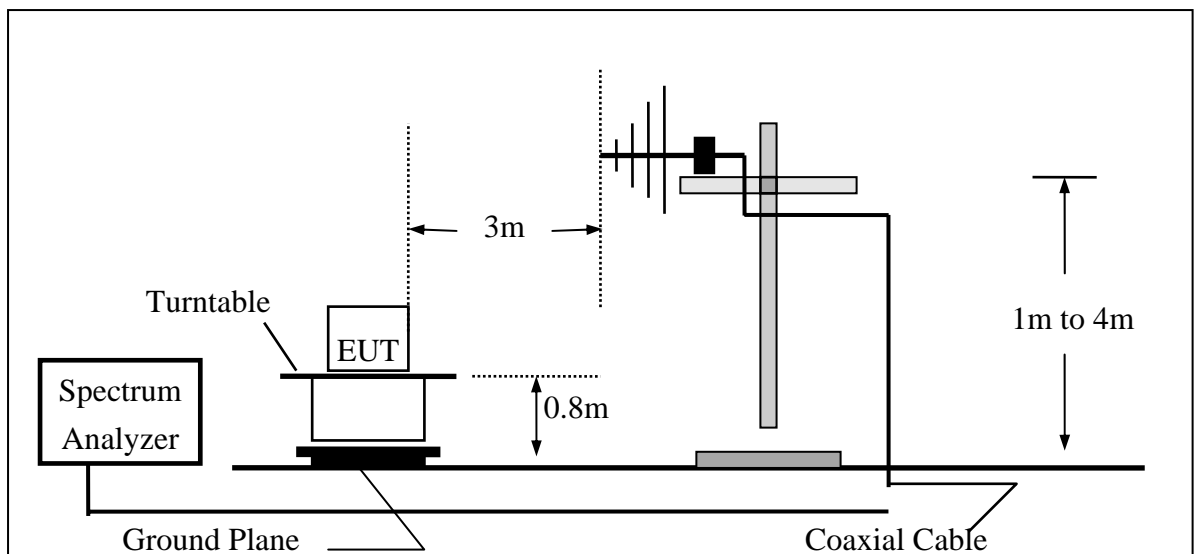
8.3 Test SET-UP:

8.3.1 Conducted Emission at antenna port:

Refer to section 6.3 for details.

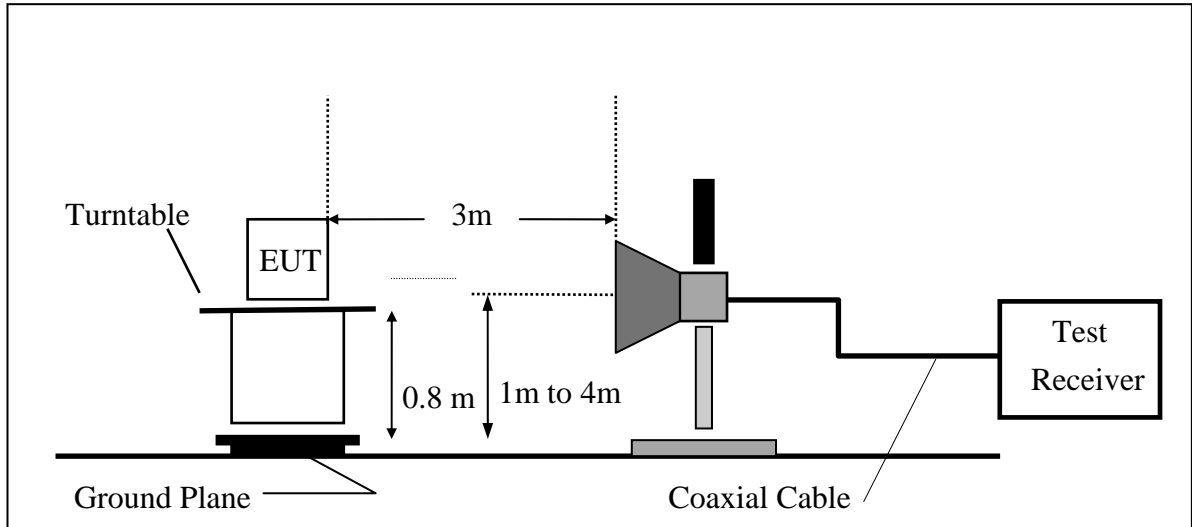
8.3.2 Radiated emission:

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



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



8.4 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 center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW, VBW=100KHz, Span=25MHz, 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.

8.5 Field Strength Calculation:

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

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

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

8.6 Measurement Result:

Conducted Measurement Result

N/A. Refer to Elliott Laboratories. EMC Department WLAN module report Number: R74979 Rev 1

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Radiated Emission: 802.11 a mode

Operation Mode	TX CH Low	Test Date	Jan. 15, 2010
Fundamental Frequency	5745 MHz	Test By	Bondi
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)		
5725.00	58.30	42.30	8.03	66.33	50.33	74.00	54.00	-3.67	Av

Operation Mode	TX CH Low	Test Date	Jan. 15, 2010
Fundamental Frequency	5745 MHz	Test By	Bondi
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)		
5725.00	56.75	41.69	8.03	64.78	49.72	74.00	54.00	-4.28	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission: 802.11 a mode

Operation Mode	TX CH High	Test Date	Jan. 15, 2010
Fundamental Frequency	5805 MHz	Test By	Bondi
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)		
5850.00	48.23	38.01	8.39	56.62	46.40	74.00	54.00	-7.60	Av

Operation Mode	TX CH High	Test Date	Jan. 15, 2010
Fundamental Frequency	5805 MHz	Test By	Bondi
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)		
5850.00	49.34	38.31	8.39	57.73	46.70	74.00	54.00	-7.30	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission: 802.11 b mode

Operation Mode	TX CH Low	Test Date	Jan. 15, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
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	49.18	39.16	-1.39	47.79	37.77	74.00	54.00	-16.23	Av

Operation Mode	TX CH Low	Test Date	Jan. 15, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
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	50.35	39.82	-1.39	48.96	38.43	74.00	54.00	-15.57	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission: 802.11 b mode

Operation Mode	TX CH High	Test Date	Jan. 15, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
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	50.51	41.85	-0.92	49.59	40.93	74.00	54.00	-13.07	Av

Operation Mode	TX CH High	Test Date	Jan. 15, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
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	51.75	43.28	-0.92	50.83	42.36	74.00	54.00	-11.64	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission: 802.11 g mode

Operation Mode TX CH Low
Fundamental Frequency 2412 MHz
Temperature 25 °C
Humidity 65 %

Test Date Jan. 15, 2010
Test By Bondi
Pol Ver.

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	55.01	41.38	-1.39	53.62	39.99	74.00	54.00	-14.01	Av

Operation Mode TX CH Low
Fundamental Frequency 2412 MHz
Temperature 25 °C
Humidity 65 %

Test Date Jan. 15, 2010
Test By Bondi
Pol Hor.

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	55.45	42.86	-1.39	54.06	41.47	74.00	54.00	-12.53	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission: 802.11 g mode

Operation Mode TX CH High
Fundamental Frequency 2462 MHz
Temperature 25 °C
Humidity 65 %

Test Date Jan. 15, 2010
Test By Bondi
Pol Ver.

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	58.56	44.47	-0.92	57.64	43.55	74.00	54.00	-10.45	Av

Operation Mode TX CH High
Fundamental Frequency 2462 MHz
Temperature 25 °C
Humidity 65 %

Test Date Jan. 15, 2010
Test By Bondi
Pol Hor.

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	59.24	44.77	-0.92	58.32	43.85	74.00	54.00	-10.15	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, 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 Measurement Equipment Used:

9.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

9.2.2. Radiated emission:

Refer to section 7.2 for details.

9.3 Test SET-UP:

9.3.1. Conducted Emission at antenna port:

Refer to section 6.3 for details.

9.3.2. Radiated emission:

Refer to section 7.3 for details.

9.4 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.

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3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Repeat above procedures until all frequency measured were complete.

9.5 Field Strength Calculation

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

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

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

9.6 Measurement Result:

Conducted Spurious Emission Measurement Result

N/A. Refer to Elliott Laboratories. EMC Department WLAN module report Number: R74979 Rev 1

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

Operation Mode	802.11a TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	59.76	-26.70	33.06	40.00	-6.94
227.88	V	Peak	51.90	-28.94	22.96	46.00	-23.04
356.89	V	Peak	55.26	-25.72	29.54	46.00	-16.46
381.14	V	Peak	52.42	-25.25	27.17	46.00	-18.83
492.69	V	Peak	49.17	-23.57	25.60	46.00	-20.40
235.64	H	Peak	58.89	-28.69	30.20	46.00	-15.80
356.89	H	Peak	62.11	-25.72	36.39	46.00	-9.61
381.14	H	Peak	59.07	-25.25	33.82	46.00	-12.18
405.39	H	Peak	60.08	-24.75	35.33	46.00	-10.67
504.33	H	Peak	55.76	-23.39	32.37	46.00	-13.63

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) (802.11a)

Operation Mode	802.11a TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	58.97	-26.70	32.27	40.00	-7.73
221.09	V	Peak	52.85	-29.67	23.18	46.00	-22.82
356.89	V	Peak	54.77	-25.72	29.05	46.00	-16.95
381.14	V	Peak	51.62	-25.25	26.37	46.00	-19.63
492.69	V	Peak	51.12	-23.57	27.55	46.00	-18.45
953.44	V	Peak	49.24	-17.45	31.79	46.00	-14.21
240.49	H	Peak	59.61	-28.59	31.02	46.00	-14.98
356.89	H	Peak	61.96	-25.72	36.24	46.00	-9.76
381.14	H	Peak	59.09	-25.25	33.84	46.00	-12.16
405.39	H	Peak	60.50	-24.75	35.75	46.00	-10.25
504.33	H	Peak	55.16	-23.39	31.77	46.00	-14.23
953.44	H	Peak	48.72	-17.45	31.27	46.00	-14.73

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) 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) (802.11a)

Operation Mode	802.11a TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	60.03	-26.70	33.33	40.00	-6.67
227.88	V	Peak	53.32	-28.94	24.38	46.00	-21.62
356.89	V	Peak	55.27	-25.72	29.55	46.00	-16.45
381.14	V	Peak	51.59	-25.25	26.34	46.00	-19.66
492.69	V	Peak	48.62	-23.57	25.05	46.00	-20.95
948.59	V	Peak	46.58	-17.47	29.11	46.00	-16.89
232.73	H	Peak	59.53	-28.78	30.75	46.00	-15.25
356.89	H	Peak	62.01	-25.72	36.29	46.00	-9.71
381.14	H	Peak	59.75	-25.25	34.50	46.00	-11.50
405.39	H	Peak	60.64	-24.75	35.89	46.00	-10.11
429.64	H	Peak	55.86	-24.35	31.51	46.00	-14.49
504.33	H	Peak	55.03	-23.39	31.64	46.00	-14.36

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)

Operation Mode	802.11b TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
56.19	V	Peak	58.18	-26.54	31.64	40.00	-8.36
235.64	V	Peak	53.06	-28.69	24.37	46.00	-21.63
356.89	V	Peak	55.70	-25.72	29.98	46.00	-16.02
381.14	V	Peak	52.45	-25.25	27.20	46.00	-18.80
405.39	V	Peak	51.06	-24.75	26.31	46.00	-19.69
232.73	H	Peak	61.11	-28.78	32.33	46.00	-13.67
356.89	H	Peak	63.05	-25.72	37.33	46.00	-8.67
381.14	H	Peak	60.77	-25.25	35.52	46.00	-10.48
405.39	H	Peak	61.06	-24.75	36.31	46.00	-9.69
429.64	H	Peak	56.94	-24.35	32.59	46.00	-13.41

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.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
51.34	V	Peak	55.43	-26.23	29.20	40.00	-10.80
221.09	V	Peak	55.64	-29.67	25.97	46.00	-20.03
356.89	V	Peak	55.09	-25.72	29.37	46.00	-16.63
381.14	V	Peak	52.09	-25.25	26.84	46.00	-19.16
405.39	V	Peak	50.28	-24.75	25.53	46.00	-20.47
429.64	V	Peak	48.85	-24.35	24.50	46.00	-21.50
240.49	H	Peak	58.33	-28.59	29.74	46.00	-16.26
332.64	H	Peak	58.39	-26.15	32.24	46.00	-13.76
356.89	H	Peak	62.64	-25.72	36.92	46.00	-9.08
381.14	H	Peak	60.21	-25.25	34.96	46.00	-11.04
405.39	H	Peak	61.66	-24.75	36.91	46.00	-9.09
504.33	H	Peak	55.87	-23.39	32.48	46.00	-13.52

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)

Operation Mode	802.11b TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	59.07	-26.70	32.37	40.00	-7.63
227.88	V	Peak	53.06	-28.94	24.12	46.00	-21.88
356.89	V	Peak	54.89	-25.72	29.17	46.00	-16.83
381.14	V	Peak	51.78	-25.25	26.53	46.00	-19.47
405.39	V	Peak	50.19	-24.75	25.44	46.00	-20.56
429.64	V	Peak	48.08	-24.35	23.73	46.00	-22.27
235.64	H	Peak	60.31	-28.69	31.62	46.00	-14.38
332.64	H	Peak	58.01	-26.15	31.86	46.00	-14.14
356.89	H	Peak	62.63	-25.72	36.91	46.00	-9.09
381.14	H	Peak	60.77	-25.25	35.52	46.00	-10.48
405.39	H	Peak	61.10	-24.75	36.35	46.00	-9.65
429.64	H	Peak	56.56	-24.35	32.21	46.00	-13.79

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) (802.11g)

Operation Mode	802.11g TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	59.96	-26.70	33.26	40.00	-6.74
133.79	V	Peak	50.83	-27.59	23.24	43.50	-20.26
227.88	V	Peak	54.49	-28.94	25.55	46.00	-20.45
356.89	V	Peak	54.67	-25.72	28.95	46.00	-17.05
381.14	V	Peak	51.56	-25.25	26.31	46.00	-19.69
235.64	H	Peak	60.02	-28.78	31.24	46.00	-14.76
332.64	H	Peak	58.21	-26.15	32.06	46.00	-13.94
356.89	H	Peak	62.79	-25.72	37.07	46.00	-8.93
381.14	H	Peak	60.51	-25.25	35.26	46.00	-10.74
405.39	H	Peak	60.97	-24.75	36.22	46.00	-9.78

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) (802.11g)

Operation Mode	802.11g TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	60.11	-26.70	33.41	40.00	-6.59
133.79	V	Peak	50.24	-27.59	22.65	43.50	-20.85
227.88	V	Peak	54.81	-28.94	25.87	46.00	-20.13
356.89	V	Peak	55.19	-25.72	29.47	46.00	-16.53
381.14	V	Peak	51.12	-25.25	25.87	46.00	-20.13
405.39	V	Peak	49.81	-24.75	25.06	46.00	-20.94
235.64	H	Peak	60.26	-28.69	31.57	46.00	-14.43
332.64	H	Peak	58.02	-26.15	31.87	46.00	-14.13
356.89	H	Peak	62.71	-25.72	36.99	46.00	-9.01
381.14	H	Peak	59.98	-25.25	34.73	46.00	-11.27
405.39	H	Peak	61.72	-24.75	36.97	46.00	-9.03
504.33	H	Peak	56.21	-23.39	32.82	46.00	-13.18

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) (802.11g)

Operation Mode	802.11g TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	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 Mar- gin (dB)
58.13	V	Peak	58.59	-26.70	31.89	40.00	-8.11
232.73	V	Peak	53.63	-28.78	24.85	46.00	-21.15
356.89	V	Peak	55.13	-25.72	29.41	46.00	-16.59
381.14	V	Peak	50.93	-25.25	25.68	46.00	-20.32
405.39	V	Peak	49.97	-24.75	25.22	46.00	-20.78
492.69	V	Peak	47.48	-23.57	23.91	46.00	-22.09
240.49	H	Peak	60.00	-28.59	31.41	46.00	-14.59
332.64	H	Peak	58.61	-26.15	32.46	46.00	-13.54
356.89	H	Peak	62.53	-25.72	36.81	46.00	-9.19
381.14	H	Peak	59.72	-25.25	34.47	46.00	-11.53
405.39	H	Peak	60.61	-24.75	35.86	46.00	-10.14
504.33	H	Peak	55.72	-23.69	32.03	46.00	-13.97

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) (802.11a)

Operation Mode	802.11a TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

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)		
3832.00	46.52	---	-7.19	39.33	---	74.00	54.00	-14.67	Peak
7654.50	44.31	---	3.67	47.98	---	74.00	54.00	-6.02	Peak
11490.0	----					74.00	54.00		
17235.0	----					74.00	54.00		
22980.0	----					74.00	54.00		
28725.0	----					74.00	54.00		
34470.0	----					74.00	54.00		
40215.0	----					74.00	54.00		
45960.0	----					74.00	54.00		
51705.0	----					74.00	54.00		
57450.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11a TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3832.00	53.68	---	-7.19	46.49	---	74.00	54.00	-7.51	Peak
7654.50	43.85	---	3.67	47.52	---	74.00	54.00	-6.48	Peak
11490.0	----					74.00	54.00		
17235.0	----					74.00	54.00		
22980.0	----					74.00	54.00		
28725.0	----					74.00	54.00		
34470.0	----					74.00	54.00		
40215.0	----					74.00	54.00		
45960.0	----					74.00	54.00		
51705.0	----					74.00	54.00		
57450.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11a TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
1744.00	54.87	---	-12.65	42.22	---	74.00	54.00	-11.78	Peak
3862.00	46.20	---	-7.24	38.96	---	74.00	54.00	-15.04	Peak
7709.50	43.18	---	3.82	47.00	---	74.00	54.00	-7.00	Peak
11570.0	----					74.00	54.00		
17355.0	----					74.00	54.00		
23140.0	----					74.00	54.00		
28925.0	----					74.00	54.00		
34710.0	----					74.00	54.00		
40495.0	----					74.00	54.00		
46280.0	----					74.00	54.00		
52065.0	----					74.00	54.00		
57850.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11a TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3862.00	53.70	---	-7.24	46.46	---	74.00	54.00	-7.54	Peak
7709.50	43.48	---	3.82	47.30	---	74.00	54.00	-6.70	Peak
11570.0	----					74.00	54.00		
17355.0	----					74.00	54.00		
23140.0	----					74.00	54.00		
28925.0	----					74.00	54.00		
34710.0	----					74.00	54.00		
40495.0	----					74.00	54.00		
46280.0	----					74.00	54.00		
52065.0	----					74.00	54.00		
57850.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11a TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
3862.00	46.78	---	-7.24	39.54	---	74.00	54.00	-14.46	Peak
7737.00	43.95	---	3.87	47.82	---	74.00	54.00	-6.18	Peak
11610.0	----					74.00	54.00		
17415.0	----					74.00	54.00		
23220.0	----					74.00	54.00		
29025.0	----					74.00	54.00		
34830.0	----					74.00	54.00		
40635.0	----					74.00	54.00		
46440.0	----					74.00	54.00		
52245.0	----					74.00	54.00		
58050.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11a TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3862.00	53.59	---	-7.24	46.35	---	74.00	54.00	-7.65	Peak
7737.00	43.08	---	3.87	46.95	---	74.00	54.00	-7.05	Peak
11610.0	----					74.00	54.00		
17415.0	----					74.00	54.00		
23220.0	----					74.00	54.00		
29025.0	----					74.00	54.00		
34830.0	----					74.00	54.00		
40635.0	----					74.00	54.00		
46440.0	----					74.00	54.00		
52245.0	----					74.00	54.00		
58050.0	----					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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

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)		
1609.0	44.46	---	-13.13	31.33	---	74.00	54.00	-22.67	Peak
4824.0	49.93	---	-4.95	44.98	---	74.00	54.00	-9.02	Peak
7236.0	----					74.00	54.00		
9648.0	----					74.00	54.00		
12060.0	----					74.00	54.00		
14472.0	----					74.00	54.00		
16884.0	----					74.00	54.00		
19296.0	----					74.00	54.00		
21708.0	----					74.00	54.00		
24120.0	----					74.00	54.00		

Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
1609.0	46.76	---	-13.13	33.63	---	74.00	54.00	-20.37	Peak
4824.0	53.24	---	-4.95	48.29	---	74.00	54.00	-5.71	Peak
7236.0	----					74.00	54.00		
9648.0	----					74.00	54.00		
12060.0	----					74.00	54.00		
14472.0	----					74.00	54.00		
16884.0	----					74.00	54.00		
19296.0	----					74.00	54.00		
21708.0	----					74.00	54.00		
24120.0	----					74.00	54.00		

Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
1623.0	44.82	---	-13.10	31.72	---	74.00	54.00	-22.28	Peak
4874.0	50.16	---	-4.85	45.31	---	74.00	54.00	-8.69	Peak
7311.0	----					74.00	54.00		
9748.0	----					74.00	54.00		
12185.0	----					74.00	54.00		
14622.0	----					74.00	54.00		
17059.0	----					74.00	54.00		
19496.0	----					74.00	54.00		
21933.0	----					74.00	54.00		
24370.0	----					74.00	54.00		

Remark :

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
1623.0	47.70	---	-5.37	42.33	---	74.00	54.00	-11.67	Peak
4874.0	54.52	53.72	-4.85	49.67	48.87	74.00	54.00	-5.13	Av
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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
1644.0	44.19	---	-13.02	31.17	---	74.00	54.00	-22.83	Peak
4924.0	52.86	---	-4.72	48.14	---	74.00	54.00	-5.86	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11b TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
1644.0	49.13	---	-5.22	43.91	---	74.00	54.00	-10.09	Peak
4924.0	54.89	53.22	-4.72	50.17	48.50	74.00	54.00	-5.50	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver.
Humidity	65 %		

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)		
1609.0	43.75	---	-13.13	30.62	---	74.00	54.00	-23.38	Peak
4824.0	---					74.00	54.00		
7236.0	---					74.00	54.00		
9648.0	---					74.00	54.00		
12060.0	---					74.00	54.00		
14472.0	---					74.00	54.00		
16884.0	---					74.00	54.00		
19296.0	---					74.00	54.00		
21708.0	---					74.00	54.00		
24120.0	---					74.00	54.00		

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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
1609.0	46.92	---	-13.13	33.79	---	74.00	54.00	-20.21	Peak
4824.0	---					74.00	54.00		
7236.0	---					74.00	54.00		
9648.0	---					74.00	54.00		
12060.0	---					74.00	54.00		
14472.0	---					74.00	54.00		
16884.0	---					74.00	54.00		
19296.0	---					74.00	54.00		
21708.0	---					74.00	54.00		
24120.0	---					74.00	54.00		

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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
1623.0	44.39	---	-13.10	31.29	---	74.00	54.00	-22.71	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

Freq. (MHz)	Peak	AV	Actual FS Ant./CL CF(dB)	Peak	AV	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)				
1623.0	47.30	---	-13.10	34.20	---	74.00	54.00	-19.80	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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
1644.0	46.50	---	-13.02	33.48	---	74.00	54.00	-20.52	Peak
4924.0	---					74.00	54.00		
7386.0	---					74.00	54.00		
9848.0	---					74.00	54.00		
12310.0	---					74.00	54.00		
14772.0	---					74.00	54.00		
17234.0	---					74.00	54.00		
19696.0	---					74.00	54.00		
22158.0	---					74.00	54.00		
24620.0	---					74.00	54.00		

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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode	802.11g TX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
1644.0	48.14	---	-13.02	35.12	---	74.00	54.00	-18.88	Peak
4924.0	---					74.00	54.00		
7386.0	---					74.00	54.00		
9848.0	---					74.00	54.00		
12310.0	---					74.00	54.00		
14772.0	---					74.00	54.00		
17234.0	---					74.00	54.00		
19696.0	---					74.00	54.00		
22158.0	---					74.00	54.00		
24620.0	---					74.00	54.00		

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- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	802.11a RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745MHz	Test By	Bondi
Temperature	25 °C	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)
56.19	V	Peak	60.98	-26.54	34.44	40.00	-5.56
133.79	V	Peak	49.26	-27.59	21.67	43.50	-21.83
187.14	V	Peak	52.71	-29.50	23.21	43.50	-20.29
356.89	V	Peak	55.19	-25.72	29.47	46.00	-16.53
381.14	V	Peak	50.46	-25.25	25.21	46.00	-20.79
504.33	V	Peak	47.79	-23.39	24.40	46.00	-21.60
332.64	H	Peak	58.46	-26.15	32.31	46.00	-13.69
356.89	H	Peak	64.62	-25.72	38.90	46.00	-7.10
381.14	H	Peak	60.29	-25.25	35.04	46.00	-10.96
405.39	H	Peak	59.28	-24.75	34.53	46.00	-11.47
429.64	H	Peak	55.40	-24.35	31.05	46.00	-14.95
504.33	H	Peak	57.07	-23.39	33.68	46.00	-12.32

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)

Operation Mode	802.11a RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785MHz	Test By	Bondi
Temperature	25°C	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)
58.13	V	Peak	59.66	-26.70	32.96	40.00	-7.04
133.79	V	Peak	51.85	-27.59	24.26	43.50	-19.24
216.24	V	Peak	53.25	-30.01	23.24	46.00	-22.76
356.89	V	Peak	57.01	-25.72	31.29	46.00	-14.71
381.14	V	Peak	53.67	-25.25	28.42	46.00	-17.58
405.39	V	Peak	51.33	-24.75	26.58	46.00	-19.42
332.64	H	Peak	58.44	-26.15	32.29	46.00	-13.71
356.89	H	Peak	63.95	-25.72	38.23	46.00	-7.77
381.14	H	Peak	59.65	-25.25	34.40	46.00	-11.60
405.39	H	Peak	60.76	-24.75	36.01	46.00	-9.99
429.64	H	Peak	57.02	-24.35	32.67	46.00	-13.33
504.33	H	Peak	57.44	-23.39	34.05	46.00	-11.95

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)

Operation Mode	802.11a RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805MHz	Test By	Bondi
Temperature	25 °C	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)
58.13	V	Peak	59.91	-26.70	33.21	40.00	-6.79
133.79	V	Peak	52.43	-27.59	24.84	43.50	-18.66
223.03	V	Peak	52.95	-29.55	23.40	46.00	-22.60
356.89	V	Peak	56.93	-25.72	31.21	46.00	-14.79
381.14	V	Peak	53.34	-25.25	28.09	46.00	-17.91
405.39	V	Peak	51.22	-24.75	26.47	46.00	-19.53
332.64	H	Peak	58.46	-26.15	32.31	46.00	-13.69
356.89	H	Peak	63.62	-25.72	37.90	46.00	-8.10
381.14	H	Peak	59.29	-25.25	34.04	46.00	-11.96
405.39	H	Peak	60.28	-24.75	35.53	46.00	-10.47
429.64	H	Peak	56.40	-24.35	32.05	46.00	-13.95
504.33	H	Peak	57.07	-23.39	33.68	46.00	-12.32

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)

Operation Mode	802.11b RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	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)
58.13	V	Peak	60.29	-26.70	33.59	40.00	-6.41
133.79	V	Peak	52.80	-27.59	25.21	43.50	-18.29
213.33	V	Peak	53.80	-30.12	23.68	43.50	-19.82
356.89	V	Peak	57.37	-25.72	31.65	46.00	-14.35
381.14	V	Peak	52.89	-25.25	27.64	46.00	-18.36
504.33	V	Peak	48.19	-23.39	24.80	46.00	-21.20
332.64	H	Peak	58.81	-26.15	32.66	46.00	-13.34
356.89	H	Peak	63.77	-25.72	38.05	46.00	-7.95
381.14	H	Peak	59.85	-25.25	34.60	46.00	-11.40
405.39	H	Peak	60.42	-24.75	35.67	46.00	-10.33
429.64	H	Peak	56.72	-24.35	32.37	46.00	-13.63
504.33	H	Peak	57.11	-23.39	33.72	46.00	-12.28

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)

Operation Mode	802.11b RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25°C	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)
58.13	V	Peak	59.02	-26.70	32.32	40.00	-7.68
133.79	V	Peak	51.78	-27.59	24.19	43.50	-19.31
191.99	V	Peak	52.85	-30.09	22.76	43.50	-20.74
356.89	V	Peak	57.82	-25.72	32.10	46.00	-13.90
381.14	V	Peak	52.76	-25.25	27.51	46.00	-18.49
405.39	V	Peak	50.83	-24.75	26.08	46.00	-19.92
332.64	H	Peak	58.81	-26.15	32.66	46.00	-13.34
356.89	H	Peak	62.77	-25.72	37.05	46.00	-8.95
381.14	H	Peak	60.85	-25.25	35.60	46.00	-10.40
405.39	H	Peak	59.42	-24.75	34.67	46.00	-11.33
429.64	H	Peak	56.72	-24.35	32.37	46.00	-13.63
504.33	H	Peak	57.11	-23.39	33.72	46.00	-12.28

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)

Operation Mode	802.11b RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	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)
58.13	V	Peak	59.53	-26.70	32.83	40.00	-7.17
126.03	V	Peak	51.73	-27.95	23.78	43.50	-19.72
193.93	V	Peak	52.80	-30.21	22.59	43.50	-20.91
356.89	V	Peak	56.79	-25.72	31.07	46.00	-14.93
381.14	V	Peak	52.74	-25.25	27.49	46.00	-18.51
405.39	V	Peak	51.17	-24.75	26.42	46.00	-19.58
332.64	H	Peak	58.46	-26.15	32.31	46.00	-13.69
356.89	H	Peak	64.62	-25.72	38.90	46.00	-7.10
381.14	H	Peak	60.29	-25.25	35.04	46.00	-10.96
405.39	H	Peak	59.28	-24.75	34.53	46.00	-11.47
429.64	H	Peak	55.40	-24.35	31.05	46.00	-14.95
504.33	H	Peak	57.07	-23.39	33.68	46.00	-12.32

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)

Operation Mode	802.11g RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412MHz	Test By	Bondi
Temperature	25 °C	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)
58.13	V	Peak	59.48	-26.70	32.78	40.00	-7.22
128.94	V	Peak	52.30	-27.84	24.46	43.50	-19.04
223.03	V	Peak	52.70	-29.55	23.15	46.00	-22.85
356.89	V	Peak	57.46	-25.72	31.74	46.00	-14.26
381.14	V	Peak	53.24	-25.25	27.99	46.00	-18.01
405.39	V	Peak	50.68	-24.75	25.93	46.00	-20.07
332.64	H	Peak	58.39	-26.15	32.24	46.00	-13.76
356.89	H	Peak	63.71	-25.72	37.99	46.00	-8.01
381.14	H	Peak	59.57	-25.25	34.32	46.00	-11.68
405.39	H	Peak	60.29	-24.75	35.54	46.00	-10.46
429.64	H	Peak	56.55	-24.35	32.20	46.00	-13.80
504.33	H	Peak	57.04	-23.39	33.65	46.00	-12.35

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)

Operation Mode	802.11g RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437MHz	Test By	Bondi
Temperature	25°C	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)
56.19	V	Peak	60.98	-26.54	34.44	40.00	-5.56
133.79	V	Peak	49.26	-27.59	21.67	43.50	-21.83
187.14	V	Peak	52.71	-29.50	23.21	43.50	-20.29
356.89	V	Peak	55.19	-25.72	29.47	46.00	-16.53
381.14	V	Peak	50.46	-25.25	25.21	46.00	-20.79
504.33	V	Peak	47.79	-23.39	24.40	46.00	-21.60
332.64	H	Peak	58.92	-26.15	32.77	46.00	-13.23
356.89	H	Peak	64.38	-25.72	38.66	54.00	-15.34
381.14	H	Peak	59.90	-25.25	34.65	46.00	-11.35
405.39	H	Peak	60.53	-24.75	35.78	46.00	-10.22
429.64	H	Peak	56.95	-24.35	32.60	46.00	-13.40
504.33	H	Peak	57.73	-23.39	34.34	46.00	-11.66

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) 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)

Operation Mode	802.11g RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462MHz	Test By	Bondi
Temperature	25 °C	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)
58.13	V	Peak	59.53	-26.70	32.83	40.00	-7.17
133.79	V	Peak	51.37	-27.59	23.78	43.50	-19.72
221.09	V	Peak	52.23	-29.67	22.56	46.00	-23.44
356.89	V	Peak	56.79	-25.72	31.07	46.00	-14.93
381.14	V	Peak	52.74	-25.25	27.49	46.00	-18.51
405.39	V	Peak	51.17	-24.75	26.42	46.00	-19.58
332.64	H	Peak	58.39	-26.15	32.24	46.00	-13.76
356.89	H	Peak	62.71	-25.72	36.99	46.00	-9.01
381.14	H	Peak	60.57	-25.25	35.32	46.00	-10.68
405.39	H	Peak	59.29	-24.75	34.54	46.00	-11.46
429.64	H	Peak	56.55	-24.35	32.20	46.00	-13.80
504.33	H	Peak	57.04	-23.39	33.65	46.00	-12.35

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 (above 1GHz)

Operation Mode	802.11a RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745 MHz	Test By	Bondi
Temperature	25°C	Pol	Ver.
Humidity	65 %		

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)		
3832.0	47.52	---	-7.19	40.3	---	74.0	54.0	-13.67	Peak
7462.0	42.12	---	3.21	45.3	---	74.0	54.0	-8.67	Peak
11490.0	----					74.0	54.0		
17235.0	----					74.0	54.0		
22980.0	----					74.0	54.0		
28725.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11a RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	5745 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3832.0	52.68	---	-7.19	45.5	---	74.0	54.0	-8.51	Peak
7258.5	43.19	---	2.86	46.1	---	74.0	54.0	-7.95	Peak
11490.0	----					74.0	54.0		
17235.0	----					74.0	54.0		
22980.0	----					74.0	54.0		
28725.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11a RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
3862.0	46.20	---	-7.24	39.0	---	74.0	54.0	-15.04	Peak
7104.5	43.00	---	2.76	45.8	---	74.0	54.0	-8.24	Peak
11570.0	----					74.0	54.0		
17355.0	----					74.0	54.0		
23140.0	----					74.0	54.0		
28925.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11a RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	5785 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65%		

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)		
3862.0	52.70	---	-7.24	45.5	---	74.0	54.0	-8.54	Peak
7533.5	42.41	---	3.39	45.8	---	74.0	54.0	-8.20	Peak
11570.0	----					74.0	54.0		
17355.0	----					74.0	54.0		
23140.0	----					74.0	54.0		
28925.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11a RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

Freq. (MHz)	Peak	AV	Actual FS Ant./CL CF(dB)	Peak	AV	Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
3862.0	45.78	---	-7.24	38.5	---	74.0	54.0	-15.46	Peak
7506.0	42.45	---	3.33	45.8	---	74.0	54.0	-8.22	Peak
11610.0	----					74.0	54.0		
17415.0	----					74.0	54.0		
23220.0	----					74.0	54.0		
29025.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11a RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	5805 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3862.0	52.59	---	-7.24	45.4	---	74.0	54.0	-8.65	Peak
7902.0	41.89	---	4.46	46.4	---	74.0	54.0	-7.65	Peak
11610.0	----					74.0	54.0		
17415.0	----					74.0	54.0		
23220.0	----					74.0	54.0		
29025.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
Temperature	25°C	Pol	Ver.
Humidity	65 %		

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)		
3814.0	43.42	---	-7.13	36.3	---	74.0	54.0	-17.71	Peak
4824.0	----					74.0	54.0		
7236.0	----					74.0	54.0		
9648.0	----					74.0	54.0		
12060.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
3968.0	43.20	---	-7.34	35.9	---	74.0	54.0	-18.14	Peak
4824.0	----					74.0	54.0		
7236.0	----					74.0	54.0		
9648.0	----					74.0	54.0		
12060.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
4808.0	42.17	---	-4.98	37.2	---	74.0	54.0	-16.81	Peak
4874.0	----					74.0	54.0		
7311.0	----					74.0	54.0		
9748.0	----					74.0	54.0		
12185.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65%		

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)		
3884.0	43.04	---	-7.26	35.8	---	74.0	54.0	-18.22	Peak
4874.0	----					74.0	54.0		
7311.0	----					74.0	54.0		
9748.0	----					74.0	54.0		
12185.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)	
4339.0	43.26	---	-6.41	36.9	---	74.0	54.0	-17.15 Peak
4924.0	----					74.0	54.0	
7386.0	----					74.0	54.0	
9848.0	----					74.0	54.0	
12310.0	----					74.0	54.0	

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11b RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
4388.0	42.96	---	-6.33	36.6	---	74.0	54.0	-17.37	Peak
4924.0	---					74.0	54.0		
7386.0	---					74.0	54.0		
9848.0	---					74.0	54.0		
12310.0	---					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
Temperature	25°C	Pol	Ver.
Humidity	65 %		

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)	
4824.0	----					74.0	54.0	
4899.0	43.21	---	-4.77	38.4	---	74.0	54.0	-15.56 Peak
7236.0	----					74.0	54.0	
9648.0	----					74.0	54.0	
12060.0	----					74.0	54.0	

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH Low	Test Date	Jan. 14, 2010
Fundamental Frequency	2412 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

Freq. (MHz)	Peak	AV	Actual FS Ant./CL CF(dB)	Peak	AV	Peak	AV	Margin (dB)
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)	
4824.0	----					74.0	54.0	
5249.0	43.11	---	-3.94	39.2	---	74.0	54.0	-14.83 Peak
7236.0	----					74.0	54.0	
9648.0	----					74.0	54.0	
12060.0	----					74.0	54.0	

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
2464.0	42.66	---	-9.86	32.8	---	74.0	54.0	-21.20	Peak
4874.0	----					74.0	54.0		
7311.0	----					74.0	54.0		
9748.0	----					74.0	54.0		
12185.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH Mid	Test Date	Jan. 14, 2010
Fundamental Frequency	2437 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65%		

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)		
3093.0	43.44	---	-9.54	33.9	---	74.0	54.0	-20.10	Peak
4874.0	----					74.0	54.0		
7311.0	----					74.0	54.0		
9748.0	----					74.0	54.0		
12185.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
Temperature	25 °C	Pol	Ver
Humidity	65 %		

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)		
4808.0	42.98	---	-4.98	38.0	---	74.0	54.0	-16.00	Peak
4924.0	----					74.0	54.0		
7386.0	----					74.0	54.0		
9848.0	----					74.0	54.0		
12310.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11g RX CH High	Test Date	Jan. 14, 2010
Fundamental Frequency	2462 MHz	Test By	Bondi
Temperature	25 °C	Pol	Hor
Humidity	65 %		

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)		
4094.0	42.97	---	-7.09	35.9	---	74.0	54.0	-18.12	Peak
4924.0	----					74.0	54.0		
7386.0	----					74.0	54.0		
9848.0	----					74.0	54.0		
12310.0	----					74.0	54.0		

Remark :

- (1) Measuring frequencies 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- 40GHz, RBW= 3MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

10 Peak Power Spectral Density

10.1 Standard Applicable:

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

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 Equipment Used:

Refer to section 6.2 for details.

10.3 Test Set-up:

Refer to section 6.3 for details.

10.4 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 = 3KHz, VBW = 10KHz, Span = 1.5MHz, Sweep=100s
4. Record the max. reading.
5. Repeat above procedures until all frequency measured were complete.

10.5 Measurement Result:

N/A. Refer to Elliott Laboratories. EMC Department WLAN module report Number: R74979 Rev 1

11 ANTENNA REQUIREMENT

11.1. Standard Applicable:

According to §15.203, Antenna requirement.

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

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

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the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

11.2. Antenna Connected Construction:

The directional gains of antenna used for transmitting is 0dBi for 2.4GHz and the antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec.for details.

12 99% Bandwidth Measurement

12.1. 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.

12.2. Measurement Equipment Used:

Refer to section 6.2 for details.

12.3. Test Set-up:

Refer to section 6.3 for details.

12.4. 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.

12.5. Measurement Result:

N/A. Refer to Elliott Laboratories. EMC Department WLAN module report Number: R74979 Rev 1