

Report No.: EH/2011/50007 Issue Date: May. 18, 2011

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT AND INDUSTRY CANADA RSS 210 CLASS II PC REPORT

OF

Product Name: 802.11n 2x2 Minicard

Brand Name: Acer

Model Name: AR5B97
Model Name of Host: P4VC0

Model No. of WLAN

AR5B97

Modular:

Model Difference: N/A

FCC ID: HLZ-AR5B97

IC: 1754F-AR5B97

Report No.: EH/2011/50007

Issue Date: May. 18, 2011

FCC Rule Part: §15.247

IC Rule Part: RSS-210 issue 8 :2010, Annex 8

Prepared for: Acer Incorporated

8F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Taipei Hsien 221,

Taiwan, R.O.C

Prepared by: SGS Taiwan Ltd.

Electronics & Communication Laboratory

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

Taiwan.



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VERIFICATION OF COMPLIANCE

Acer Incorporated

Applicant: 8F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Taipei Hsien 221, Taiwan,

R.O.C

Product Name: 802.11n 2x2 Minicard

Brand Name: Acer

FCC ID: HLZ-AR5B97 IC: 1754F-AR5B97

Model Name: AR5B97
Model Name of Host: P4VC0

Model No. of WLAN

Modular: AR5B97

Model Difference: N/A

File Number: EH/2011/50007

Date of test: May. 05, 2011 ~ May. 18, 2011

Date of EUT Received: May. 05, 2011

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 8: 2010 Annex 8.

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

Test By:	fazz	Huang	Date:	May. 18, 2011	
-	Jazz Huai	ng / Engineer			
Prepared By:	Alex	Hsieh	Date:	May. 18, 2011	
Approved By:	Jin	/ Sr. Engineer Lang g / Supervisor	Date:	May. 18, 2011	

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Version

Version No.	Date	Description
00	May. 18, 2011	Initial creation of document

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GENERAL INFORMATION

Product Description 1.1

Notebook General Information:

totebook General Information.					
Notebook Applicant	Acer No. 188, Wen Hua 2nd Road, Kuei Shan Hsiang, Tao Yuan Hsien, Taiwan				
Product name:	Notebook				
Brand Name:	Acer				
Model Name:	P4VC0				
Model Difference:	N/A				
Display size:	10.1''				
WLAN FCC ID:	HLZ-AR5B97				
WLAN IC ID:	1754F-AR5B97				
Class II Permissive change:	2 · Add 2 a Main: T	an P4VC0 series laptop. Intennas to this EUT: Type: PIFA Antenna, Maximum Gain: -2.89dBi(2.4G) Type: PIFA Antenna, Maximum Gain: -2.15dBi(2.4G)			
		i-lio battery or 19Vdc from AC/DC power adapter			
Dawas Canalan	A 44	Model:ADP-90CD DB,			
Power Supply:	Adapter:	Supplier: DELTA ELECTRONICS INC.			
	Battery:	Model: AS1015E			

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WLAN module:

Modular report:		Report No.:RF980630H04 Supplier: ADT				
Model name:		AR5B97				
Wi-Fi	Frequency Range	Channels	Rated Power (Peak)			
11b/g	2412-2462	11	b : 21.98dBm g : 27.03dBm			
11n (2.4GHz)	HT20 2412-2462	11	n : 27.01dBm			
11n (2.4GHz)	HT40 2422-2452	7	n : 26.65dBm			
Antenna Designation		PIFA Antenna Main Antenna, Part Number: 81.EJT15.GTP: -1.89dBi, Aux Antenna, Part Number: 81.EJT15.GTQ: -2.15dBi				
Modulation type		CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM				
Transition Rate:		802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 130Mbps 802.11 n_40MHz: 13.5 – 270Mbps				

This test report applies for WLAN.

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

This submittal(s) (test report) is intended for FCC ID: <u>HLZ-AR5B97</u> filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules and IC: 1754F-AR5B97 filing to comply with Industry Canada RSS-210 issue 8: 2010 Annex 8.

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.

Test Facility 1.4

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-4.

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.

Special Accessories 1.5

Not available for this EUT intended for grant.

Equipment Modifications 1.6

Not available for this EUT intended for grant.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

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

2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx and RX 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.

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2.4 Configuration of Tested System

Fig. 2-1 Radiated Emission Configuration

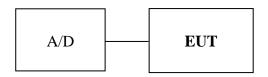


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.
1.	WiFi Software	Atheros Radio Test	ART	N/A

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3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.247(b)/	Output Power	Compliant
RSS-210 §A8.4(4)		
§15.247(c)/	100 KHz Bandwidth Of	Compliant
RSS-210 §A8.4(4)	Frequency Band Edges	
§15.247(c)/	Spurious Emission	Compliant
RSS-210 §A8.4(4)		
§15.203/	Antenna Requirement	Compliant
RSS-GEN §7.1.2,		

4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

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

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

802.11 n_20MHz mode: Channel low (2412MHz) • mid (2437MHz) and high (2462MHz) with 6.5Mbps data rate are chosen for full testing.

802.11 n_40MHz mode: Channel low (2422MHz) • mid (2437MHz) and high (2452MHz) with 13.5Mbps data rate are chosen for full testing.

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5 OUTPUT POWER MEASUREMENT

5.1 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.

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According to RSS-210 issue 8,§A8.4(4), for systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling 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 transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

5.2 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2010	04/18/2012			
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/25/2011	01/24/2012			
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011			
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2011	01/04/2012			
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2010	07/04/2011			
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2010	07/04/2011			
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2010	07/04/2011			
Splitter	Agilent	11636B	N/A	07/05/2010	07/04/2011			
Power Sensor	Anritsu	MA2411B	917032	01/21/2010	01/20/2012			
Power Meter	Anritsu	ML2495A	1005007	02/17/2012	02/16/2014			

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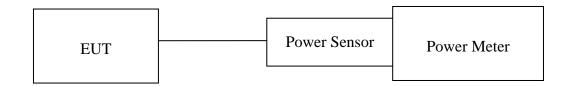
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5.3 .Test Set-up:



5.4 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.
- 3. Record the max. reading.
- 4. Repeat above procedures until all frequency measured was completed.

5.5 Measurement Result:

802.11b

Frequency (MHz)	Peak Reading Power (dBm)	Avg. Reading Power (dBm)	Cable Loss	Peak Output Power (dBm)	Avg. Output Power (dBm)	Peak Output Power (W)	Limit (W)
2412.00	21.93	19.96	0.00	21.93	19.96	0.15596	1
2437.00	21.98	19.98	0.00	21.98	19.98	0.15776	1
2462.00	21.24	19.18	0.00	21.24	19.18	0.13305	1

*Note: Offset 0.8dB

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802.11g

Frequency (MHz)	Peak Reading Power (dBm)	Avg. Reading Power (dBm)	Cable Loss	Peak Output Power (dBm)	Avg. Output Power (dBm)	Peak Output Power (W)	Limit (W)
2412.00	25.69	18.81	0.00	25.69	18.81	0.37068	1
2437.00	27.03	20.15	0.00	27.03	20.15	0.50466	1
2462.00	23.90	17.02	0.00	23.90	17.02	0.24547	1

*Note: Offset 0.8dB

802.11n_20M

Frequency (MHz)	Peak Reading Power (dBm)	Avg. Reading Power (dBm)	Cable Loss	Peak Output Power (dBm)	Avg. Output Power (dBm)	Peak Output Power (W)	Limit (W)
2412.00	25.38	15.49	0.00	25.38	15.49	0.34514	1
2437.00	27.01	17.36	0.00	27.01	17.36	0.50234	1
2462.00	23.62	13.69	0.00	23.62	13.69	0.23014	1

*Note: Offset 0.8dB

802.11n_40M

Frequency (MHz)	Peak Reading Power (dBm)	Avg. Reading Power (dBm)	Cable Loss	Peak Output Power (dBm)	Avg. Output Power (dBm)	Output Power (W)	Limit (W)
2422.00	25.52	15.04	0.00	25.52	15.04	0.35645	1
2437.00	26.65	17.24	0.00	26.65	17.24	0.46238	1
2452.00	23.92	12.76	0.00	23.92	12.76	0.24660	1

*Note: Offset 0.8dB

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100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

Standard Applicable: 6.1

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

According to RSS-210 issue 8,§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.

Measurement Equipment Used:

6.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

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6.2.2. Radiated emission:

	90	66 Chamber			
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2011	02/11/2012
Loop antenna	MESSTEC	FLA30	03/10086	07/08/2009	07/07/2011
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/19/2010	11/18/2011
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2010	05/08/2012
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2010	11/27/2011
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2011	01/04/2012
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	01/05/2011	01/04/2012
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2011	01/04/2012
3m Site	SGS	966 chamber	N/A	11/08/2010	11/09/2011

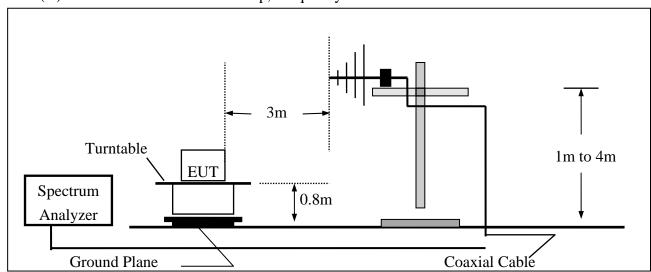
6.3 Test SET-UP:

6.3.1 **Conducted Emission at antenna port:**

Refer to section 6.3 for details.

6.3.2 **Radiated emission:**

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



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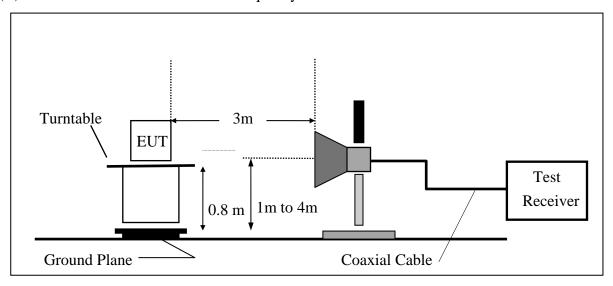
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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 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, 5,725 and 5,850GHz and record the max. level.
- 6. Repeat above procedures until all frequency measured were complete.

6.5 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	

6.6 Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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Radiated Emission: 802.11 b mode

Operation Mode TX CH Low Test Date May. 17, 2011

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

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	dBuV/m	(dB)	
2390.00	43.64	'	-1.06	42.58	'	74.00	54.00	-11.42	Pk
Operation 1	Mode	TX C	H Low			Test	Date 1	May. 17, 2	011
Fundament	tal Frequer	ncy 2412	MHz			Test	By J	lazz	
Temperatu	re	25 °C	·			Pol]	Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2390.00	41 51	'	-1.06	40.45	'	74.00	54.00	-13 55	Pk

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Emission: 802.11 b mode

Operation Mode TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462 MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2483.50	41.60	'	-0.59	41.01	'	74.00	54.00	-12.99	Pk
Operation 1	Mode	TX C	H High			Test	Date 1	May. 17, 2	011
Fundament	tal Frequer	ncy 2462	MHz			Test	By .	Jazz	
Temperatu	re	25 °C	·			Pol]	Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dBuV/m	(dB)	
2483.50	40.26	'	-0.59	39.67	'	74.00	54.00	-14.33	Pk

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Emission: 802.11 g mode

Operation Mode TX CH Low May. 17, 2011 Test Date

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

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	dBuV/m	(dB)	
2390.00	65.29	43.13	-1.06	64.23	42.07	74.00	54.00	-11.93	AV
Operation 1	Mode	TX C	H Low			Test	Date	May. 17, 2	011
Fundament	tal Frequer	ncy 2412	MHz			Test	By .	Jazz	
Temperatu	re	25 ℃				Pol		Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2390.00	52.91	36.84	-1.06	51.85	35.78	74.00	54.00	-18.22	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 columno
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Emission: 802.11 g mode

Operation Mode TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462 MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	dBuV/m	(dB)	
2483.50	51.18	'	-0.59	50.59	'	74.00	54.00	-3.41	Pk
Operation 1	Mode	TX C	H High			Test	Date :	May. 17, 2	011
Fundament	tal Frequer	ncy 2462	MHz			Test	By .	Jazz	
Temperatu	re	25 ℃				Pol]	Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)(dBuV/m)	(dB)	
2483.50	46.69	'	-0.59	46.10	'	74.00	54.00	-7.90	Pk

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Emission: 802.11n 20M mode

TX CH Low Test Date May. 17, 2011 Operation Mode

Fundamental Frequency 2412 MHz Test By Jazz Temperature Pol Ver. 27 °C

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2390.00	61.36	41.02	-1.06	60.30	39.96	74.00	54.00	-14.04	AV
Operation 1	Mode	TX C	H Low			Test	Date	May. 17, 2	011
Fundament	tal Frequer	ncy 2412	MHz			Test	By .	Jazz	
Temperatu	re	27 °C				Pol]	Hor.	
Humidity		66 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2390.00	66.98	43.01	-1.06	65.92	41.95	74.00	54.00	-12.05	AV

Remark:

- Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (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.
- 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.

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Radiated Emission: 802.11 n 20M mode

Operation Mode TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462 MHz Test By Jazz Pol Ver. Temperature 27 °C

Humidity 66 %

	Peak	\mathbf{AV}		Act	ual FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dBuV/n	n) (dB)	
2483.50	51.96	35.15	-0.59	51.37	34.56	74.00	54.00	-19.44	AV
Operation 1	Mode	TX C	H High			Test	Date	May. 17, 2	011
Fundament	tal Frequer	ncy 2462	MHz			Test	By	Jazz	
Temperatu	re	27 °C	,			Pol		Hor.	
Humidity		66 %							

Peak \mathbf{AV} Peak \mathbf{AV} **Actual FS** Reading Reading Ant./CL Limit Freq. Peak AVLimit Margin Remark CF(dB) (dBuV/m) (dBuV/m) (dBuV/m)(MHz) (dBuV) (dBuV) (dB)2483.50 56.71 38.52 -0.59 56.12 37.93 74.00 -16.0754.00 AV

Remark:

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

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Radiated Emission: 802.11n_40M mode

Operation Mode TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2422 MHz Test By Jazz Temperature 27 $^{\circ}$ C Pol Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2390.00	65.40	43.41	-1.06	64.34	42.35	74.00	54.00	-11.65	AV
Operation 1	Mode	TX C	H Low			Test	Date 1	May. 17, 2	011
Fundament	tal Frequer	ncy 2422	MHz			Test	By J	lazz	
Temperatu	re	27 °C	·			Pol]	Hor.	
Humidity		66 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)(dBuV/m	(dB)	
2390.00	68.44	48.03	-1.06	67.38	46.97	74.00	54.00	-7.03	ΑV

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.

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Radiated Emission: 802.11 n 40M mode

Operation Mode TX CH High Test Date May. 17, 2011

Fundamental Frequency 2452 MHz Test By Jazz Temperature 27 °C Pol Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Acti	ual FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dBuV/n	n) (dB)	
2483.50	56.82	38.07	-0.59	56.23	37.48	74.00	54.00	-16.52	AV
Operation 1	Mode	TX C	H High			Test	Date	May. 17, 2	011
Fundament	tal Frequer	ncy 2452	MHz			Test	By	Jazz	
Temperatu	re	27 °C	·			Pol		Hor.	
Humidity		66 %							

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

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.

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7 SPURIOUS RADIATED EMISSION TEST

7.1 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 8,§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.

7.2 Measurement Equipment Used:

7.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

7.2.2. Radiated emission:

Refer to section 7.2.2 for details.

7.3 Test SET-UP:

7.3.1. Conducted Emission at antenna port:

Refer to section 6.3 for details.

7.3.2. Radiated emission:

Refer to section 7.3 for details.

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7.4 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.
- 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.

Conducted Emission:

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. Set RBW = 100K & VBW = 100K on Spectrum.
- 3. Sweep the frequency to determine spurious emission as seen on spectrum from span of 30 to 3G, 3G to 8G, 8G to 13G, 13G to 18G and 18G to 26.5GHz
- 4. Via Software, combine 5 spans of frequency range into one plot

7.5 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	

7.6 Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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

Operation Mode 802.11b TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.69	-14.45	33.24	43.50	-10.26
206.54	V	Peak	40.18	-15.86	24.32	43.50	-19.18
262.80	V	Peak	46.19	-13.43	32.76	46.00	-13.24
348.16	V	Peak	39.23	-11.56	27.67	46.00	-18.33
667.29	V	Peak	41.29	-5.70	35.59	46.00	-10.41
799.21	V	Peak	32.03	-3.66	28.37	46.00	-17.63
141.55	Н	Peak	37.05	-12.95	24.10	43.50	-19.40
214.30	Н	Peak	41.78	-15.45	26.33	43.50	-17.17
264.74	Н	Peak	53.64	-13.37	40.27	46.00	-5.73
352.04	Н	Peak	39.96	-11.52	28.44	46.00	-17.56
667.29	Н	Peak	41.16	-5.70	35.46	46.00	-10.54
789.51	Н	Peak	31.91	-3.76	28.15	46.00	-17.85

Remark:

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

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

Operation Mode 802.11b TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.47	-14.45	33.02	43.50	-10.48
211.39	V	Peak	40.13	-15.59	24.54	43.50	-18.96
262.80	V	Peak	46.11	-13.43	32.68	46.00	-13.32
348.16	V	Peak	39.08	-11.56	27.52	46.00	-18.48
667.29	V	Peak	41.62	-5.70	35.92	46.00	-10.08
878.75	V	Peak	28.75	-2.74	26.01	46.00	-19.99
139.61	Н	Peak	37.34	-13.10	24.24	43.50	-19.26
219.15	Н	Peak	41.94	-15.08	26.86	46.00	-19.14
260.86	Н	Peak	53.98	-13.61	40.37	46.00	-5.63
364.65	Н	Peak	39.71	-11.38	28.33	46.00	-17.67
667.29	Н	Peak	41.18	-5.70	35.48	46.00	-10.52
833.16	Н	Peak	31.72	-3.35	28.37	46.00	-17.63

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.

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

Operation Mode 802.11b TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.02	-14.45	32.57	43.50	-10.93
209.45	V	Peak	40.42	-15.71	24.71	43.50	-18.79
260.86	V	Peak	45.67	-13.61	32.06	46.00	-13.94
350.10	V	Peak	39.75	-11.54	28.21	46.00	-17.79
663.41	V	Peak	41.20	-5.74	35.46	46.00	-10.54
878.75	V	Peak	29.59	-2.74	26.85	46.00	-19.15
141.55	Н	Peak	36.81	-12.95	23.86	43.50	-19.64
217.21	Н	Peak	41.39	-15.20	26.19	46.00	-19.81
262.80	Н	Peak	54.06	-13.43	40.63	46.00	-5.37
359.80	Н	Peak	39.96	-11.42	28.54	46.00	-17.46
663.41	Н	Peak	40.71	-5.74	34.97	46.00	-11.03
833.16	Н	Peak	34.02	-3.35	30.67	46.00	-15.33

Remark:

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

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

Operation Mode 802.11g TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	46.94	-14.45	32.49	43.50	-11.01
211.39	V	Peak	39.86	-15.59	24.27	43.50	-19.23
264.74	V	Peak	45.74	-13.37	32.37	46.00	-13.63
342.34	V	Peak	39.59	-11.62	27.97	46.00	-18.03
667.29	V	Peak	41.18	-5.70	35.48	46.00	-10.52
735.19	V	Peak	34.08	-4.67	29.41	46.00	-16.59
141.55	Н	Peak	37.21	-12.95	24.26	43.50	-19.24
219.15	Н	Peak	41.40	-15.08	26.32	46.00	-19.68
262.80	Н	Peak	53.90	-13.43	40.47	46.00	-5.53
400.54	Н	Peak	41.51	-10.91	30.60	46.00	-15.40
667.29	Н	Peak	40.88	-5.70	35.18	46.00	-10.82
799.21	Н	Peak	35.67	-3.66	32.01	46.00	-13.99

Remark:

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

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

Operation Mode 802.11g TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.59	-14.45	33.14	43.50	-10.36
209.45	V	Peak	40.16	-15.71	24.45	43.50	-19.05
260.86	V	Peak	46.07	-13.61	32.46	46.00	-13.54
350.10	V	Peak	40.04	-11.54	28.50	46.00	-17.50
667.29	V	Peak	41.34	-5.70	35.64	46.00	-10.36
799.21	V	Peak	31.54	-3.66	27.88	46.00	-18.12
144.46	Н	Peak	36.37	-12.66	23.71	43.50	-19.79
219.15	Н	Peak	41.51	-15.08	26.43	46.00	-19.57
260.86	Н	Peak	54.26	-13.61	40.65	46.00	-5.35
352.04	Н	Peak	40.38	-11.52	28.86	46.00	-17.14
663.41	Н	Peak	40.68	-5.74	34.94	46.00	-11.06
789.51	H	Peak	32.07	-3.76	28.31	46.00	-17.69

Remark:

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

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

Operation Mode 802.11g TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.47	-14.45	33.02	43.50	-10.48
212.36	V	Peak	40.44	-15.58	24.86	43.50	-18.64
260.86	V	Peak	46.11	-13.61	32.50	46.00	-13.50
345.25	V	Peak	39.42	-11.60	27.82	46.00	-18.18
667.29	V	Peak	41.26	-5.70	35.56	46.00	-10.44
799.21	V	Peak	31.47	-3.66	27.81	46.00	-18.19
143.49	Н	Peak	37.05	-12.80	24.25	43.50	-19.25
219.15	Н	Peak	41.54	-15.08	26.46	46.00	-19.54
262.80	Н	Peak	52.98	-13.43	39.55	46.00	-6.45
359.80	Н	Peak	39.90	-11.42	28.48	46.00	-17.52
667.29	Н	Peak	41.43	-5.70	35.73	46.00	-10.27
807.94	H	Peak	34.68	-3.59	31.09	46.00	-14.91

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.56	-14.45	33.11	43.50	-10.39
211.39	V	Peak	40.54	-15.59	24.95	43.50	-18.55
262.80	V	Peak	45.45	-13.43	32.02	46.00	-13.98
350.10	V	Peak	40.84	-11.54	29.30	46.00	-16.70
663.41	V	Peak	41.47	-5.74	35.73	46.00	-10.27
849.65	V	Peak	30.26	-3.22	27.04	46.00	-18.96
141.55	Н	Peak	37.07	-12.95	24.12	43.50	-19.38
217.21	Н	Peak	41.48	-15.20	26.28	46.00	-19.72
262.80	Н	Peak	53.69	-13.43	40.26	46.00	-5.74
400.54	Н	Peak	41.48	-10.91	30.57	46.00	-15.43
667.29	Н	Peak	41.29	-5.70	35.59	46.00	-10.41
841.89	Н	Peak	32.71	-3.33	29.38	46.00	-16.62

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.11	-14.45	32.66	43.50	-10.84
209.45	V	Peak	40.55	-15.71	24.84	43.50	-18.66
262.80	V	Peak	46.02	-13.43	32.59	46.00	-13.41
348.16	V	Peak	39.54	-11.56	27.98	46.00	-18.02
667.29	V	Peak	41.68	-5.70	35.98	46.00	-10.02
799.21	V	Peak	32.18	-3.66	28.52	46.00	-17.48
141.55	Н	Peak	36.89	-12.95	23.94	43.50	-19.56
222.06	Н	Peak	41.15	-14.95	26.20	46.00	-19.80
262.80	Н	Peak	53.97	-13.43	40.54	46.00	-5.46
352.04	Н	Peak	39.29	-11.52	27.77	46.00	-18.23
667.29	Н	Peak	41.18	-5.70	35.48	46.00	-10.52
833.16	Н	Peak	31.30	-3.35	27.95	46.00	-18.05

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
119.24	V	Peak	48.39	-14.63	33.76	43.50	-9.74
211.39	V	Peak	40.78	-15.59	25.19	43.50	-18.31
262.80	V	Peak	45.50	-13.43	32.07	46.00	-13.93
345.25	V	Peak	40.44	-11.60	28.84	46.00	-17.16
667.29	V	Peak	41.49	-5.70	35.79	46.00	-10.21
793.39	V	Peak	29.96	-3.73	26.23	46.00	-19.77
141.55	Н	Peak	37.99	-12.95	25.04	43.50	-18.46
224.00	Н	Peak	41.44	-14.82	26.62	46.00	-19.38
262.80	Н	Peak	52.95	-13.43	39.52	46.00	-6.48
400.54	Н	Peak	41.10	-10.91	30.19	46.00	-15.81
667.29	Н	Peak	41.07	-5.70	35.37	46.00	-10.63
799.21	Н	Peak	34.58	-3.66	30.92	46.00	-15.08

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2422MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	48.03	-14.45	33.58	43.50	-9.92
219.15	V	Peak	39.40	-15.08	24.32	46.00	-21.68
262.80	V	Peak	46.66	-13.43	33.23	46.00	-12.77
352.04	V	Peak	39.94	-11.52	28.42	46.00	-17.58
667.29	V	Peak	40.76	-5.70	35.06	46.00	-10.94
799.21	V	Peak	31.62	-3.66	27.96	46.00	-18.04
141.55	Н	Peak	37.20	-12.95	24.25	43.50	-19.25
219.15	Н	Peak	41.73	-15.08	26.65	46.00	-19.35
260.86	Н	Peak	53.72	-13.61	40.11	46.00	-5.89
400.54	Н	Peak	40.79	-10.91	29.88	46.00	-16.12
667.29	Н	Peak	40.96	-5.70	35.26	46.00	-10.74
799.21	Н	Peak	33.44	-3.66	29.78	46.00	-16.22

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
119.24	V	Peak	47.51	-14.63	32.88	43.50	-10.62
216.24	V	Peak	39.66	-15.33	24.33	46.00	-21.67
260.86	V	Peak	45.29	-13.61	31.68	46.00	-14.32
345.25	V	Peak	39.30	-11.60	27.70	46.00	-18.30
667.29	V	Peak	41.96	-5.70	36.26	46.00	-9.74
767.20	V	Peak	30.79	-4.04	-1.49	46.00	-47.49
141.55	Н	Peak	37.24	-12.95	24.29	43.50	-19.21
214.30	Н	Peak	41.74	-15.45	26.29	43.50	-17.21
260.86	Н	Peak	53.97	-13.61	40.36	46.00	-5.64
352.04	Н	Peak	39.35	-11.52	27.83	46.00	-18.17
667.29	Н	Peak	40.88	-5.70	35.18	46.00	-10.82
822.49	Н	Peak	33.89	-3.42	30.47	46.00	-15.53

Remark:

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

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Radiated Spurious Emission Measurement Result (below 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH High Test Date May. 17, 2011

Fundamental Frequency 2452MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
122.15	V	Peak	47.55	-14.33	33.22	43.50	-10.28
217.21	V	Peak	39.62	-15.20	24.42	46.00	-21.58
260.86	V	Peak	45.74	-13.61	32.13	46.00	-13.87
377.26	V	Peak	38.96	-11.15	27.81	46.00	-18.19
667.29	V	Peak	41.09	-5.70	35.39	46.00	-10.61
730.34	V	Peak	33.23	-4.75	28.48	46.00	-17.52
143.49	Н	Peak	36.81	-12.80	24.01	43.50	-19.49
219.15	Н	Peak	41.53	-15.08	26.45	46.00	-19.55
262.80	Н	Peak	52.86	-13.43	39.43	46.00	-6.57
400.54	Н	Peak	40.10	-10.91	29.19	46.00	-16.81
667.29	Н	Peak	40.98	-5.70	35.28	46.00	-10.72
847.71	Н	Peak	31.44	-3.23	28.21	46.00	-17.79

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.

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

Operation Mode 802.11b TX CH Low Test Date May. 17, 2011

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

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0	42.08		5.24	47.32		74.00	54.00	-6.68	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0	42.38		5.24	47.62		74.00	54.00	-6.38	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz-26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4874.0	34.37		5.38	39.75		74.00	54.00	-14.25	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4874.0	31.11		5.38	36.49		74.00	54.00	-17.51	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b TX CH High Test Date May. 17, 2011

Fundamental Frequency $2462 \mathrm{MHz}$ Test By Jazz Temperature $25~^{\circ}\mathrm{C}$ Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4924.0	32.28		5.50	37.78		74.00	54.00	-16.22	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4924.0	29.87		5.50	35.37		74.00	54.00	-18.63	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0	27.35		5.24	32.59		74.00	54.00	-21.41	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0	26.73		5.24	31.97		74.00	54.00	-22.03	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4874.0	27.42		5.38	32.80		74.00	54.00	-21.20	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4874.0	26.13		5.38	31.51		74.00	54.00	-22.49	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH High Test Date May. 17, 2011

Fundamental Frequency $2462 \mathrm{MHz}$ Test By Jazz Temperature $25~^{\circ}\mathrm{C}$ Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11g TX CH High Test Date May. 17, 2011

Fundamental Frequency $2462 \mathrm{MHz}$ Test By Jazz Temperature $25~^{\circ}\mathrm{C}$ Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Low Test Date May. 17, 2011

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

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3223.0	37.66		0.99	38.65		74.00	54.00	-15.35	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2412MHz Test By Jazz Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3223.0	40.99		0.99	41.98		74.00	54.00	-12.02	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3255.5	39.03		1.04	40.07		74.00	54.00	-13.93	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3255.5	41.85		1.04	42.89		74.00	54.00	-11.11	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3288.0	35.90		0.98	36.88		74.00	54.00	-17.12	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_20M)

Operation Mode 802.11n_20M TX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3288.0	39.36		0.98	40.34		74.00	54.00	-13.66	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40)

Operation Mode 802.11n_40M TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2422MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3229.5	37.85		1.01	38.86		74.00	54.00	-15.14	Peak
4844.0						74.00	54.00		
7266.0						74.00	54.00		
9688.0						74.00	54.00		
12110.0						74.00	54.00		
14532.0						74.00	54.00		
16954.0						74.00	54.00		
19376.0						74.00	54.00		
21798.0						74.00	54.00		
24220.0						74.00	54.00		

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- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH Low Test Date May. 17, 2011

Fundamental Frequency 2422MHz Test By Jazz Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3229.5	41.83		1.01	42.84		74.00	54.00	-11.16	Peak
4844.0						74.00	54.00		
7266.0						74.00	54.00		
9688.0						74.00	54.00		
12110.0						74.00	54.00		
14532.0						74.00	54.00		
16954.0						74.00	54.00		
19376.0						74.00	54.00		
21798.0						74.00	54.00		
24220.0						74.00	54.00		

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- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3255.5	38.78		1.04	39.82		74.00	54.00	-14.18	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH Mid Test Date May. 17, 2011

Fundamental Frequency 2437MHz Test By Jazz Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3255.5	41.61		1.04	42.65		74.00	54.00	-11.35	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 from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH High Test Date May. 17, 2011

Fundamental Frequency $2452 \mathrm{MHz}$ Test By Jazz Temperature $25~^{\circ}\mathrm{C}$ Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3262.0	35.36		0.98	36.34		74.00	54.00	-17.66	Peak
4904.0						74.00	54.00		
7356.0						74.00	54.00		
9808.0						74.00	54.00		
12260.0						74.00	54.00		
14712.0						74.00	54.00		
17164.0						74.00	54.00		
19616.0						74.00	54.00		
22068.0						74.00	54.00		
24520.0						74.00	54.00		

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- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11n_40M)

Operation Mode 802.11n_40M TX CH High Test Date May. 17, 2011

Fundamental Frequency 2452MHz Test By Jazz Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS Peak		\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3262.0	40.91		0.98	41.89		74.00	54.00	-12.11	Peak
4904.0						74.00	54.00		
7356.0						74.00	54.00		
9808.0						74.00	54.00		
12260.0						74.00	54.00		
14712.0						74.00	54.00		
17164.0						74.00	54.00		
19616.0						74.00	54.00		
22068.0						74.00	54.00		
24520.0						74.00	54.00		

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- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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

Operation Mode 802.11b RX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.		Detector					
•	Ant.Pol.	Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
120.21	V	Peak	47.53	-14.45	33.08	43.50	-10.42
211.39	V	Peak	39.57	-15.59	23.98	43.50	-19.52
262.80	V	Peak	45.44	-13.43	32.01	46.00	-13.99
350.10	V	Peak	40.48	-11.54	28.94	46.00	-17.06
667.29	V	Peak	41.37	-5.70	35.67	46.00	-10.33
900.09	V	Peak	29.72	-2.32	27.40	46.00	-18.60
141.55	Н	Peak	36.81	-12.95	23.86	43.50	-19.64
219.15	Н	Peak	41.49	-15.08	26.41	46.00	-19.59
260.86	Н	Peak	53.38	-13.61	39.77	46.00	-6.23
400.54	Н	Peak	39.69	-10.91	28.78	46.00	-17.22
663.41	Н	Peak	41.09	-5.74	35.35	46.00	-10.65
799.21	Н	Peak	36.33	-3.66	32.67	46.00	-13.33

Remark:

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

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Radiated Spurious Emission Measurement Result (above 1GHz) (802.11_b) (worst case)

Operation Mode 802.11b RX CH High Test Date May. 17, 2011

Fundamental Frequency 2462MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor

Humidity 65 %

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Ant.Pol.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4802.5	V	24.41		5.19	29.60		74.00	54.00	-24.40	Peak
4924.0	V						74.00	54.00		
7386.0	V						74.00	54.00		
9848.0	V						74.00	54.00		
12310.0	V						74.00	54.00		
4724.5	Н	25.21		4.97	30.18		74.00	54.00	-23.82	Peak
4924.0	Н						74.00	54.00		
7386.0	Н						74.00	54.00		
9848.0	Н						74.00	54.00		
12310.0	H						74.00	54.00		

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-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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8. ANTENNA REQUIREMENT

8.1. **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

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.

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

8.2. Antenna Connected Construction:

The directional gins of antenna used for transmitting is Main: --1.89dBi, AUX:-2.15dBi 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.

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