

FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4:2003 TEST REPORT (Class II Permissive Change Report)

For

1X1 802.11b/g/n - BT Combo PCIe minicard

Model : AR5B225

Trade Name : Atheros

Issued for

Qualcomm Atheros, Inc

1700 Technology Drive, San Jose, CA 95110

Issued by

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	05/26/2012	Initial Issue	All Page 75	Kelly Tsai
01	08/15/2012	Update MAXIMUM PEAK OUTPUT POWER data and Add plot	Page 5,17 ~ 24	Liz Ou



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Compliance Certification Services Inc.

FCC ID : PPD-AR5B225

1. TEST REPORT CERTIFICATION

Applicant	:	Qualcomm Atheros, Inc
Address	:	1700 Technology Drive, San Jose, CA 95110
Equipment Under Test	:	1X1 802.11b/g/n - BT Combo PCIe minicard
Model	:	AR5B225
Trade Name	:	Atheros
Tested Date	:	March 28 ~ August 14, 2012

APPLICABLE STANDARD			
Standard	Test Result		
FCC Part 15 Subpart C AND ANSI C63.4:2003	PASS		

WE HEREBY CERTIFY THAT: The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Rex Liao Deputy Section Manager

Reviewed by:

Sb Lu Sr. Engineer



2. EUT DESCRIPTION

Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard		
Model Number	AR5B225		
Identify Number	T120328107		
Received Date	March 28, 2012		
	IEEE 802.11b/g, 802.11n HT20 : 2412MHz~2462MHz		
Frequency Range	IEEE 802.11n HT40 : 2422MHz~2452MHz		
	Bluetooth 2.1 + EDR / 4.0 : 2402MHz ~ 2480MHz		
	IEEE 802.11b : 20.04 dBm (0.1009 W)		
	IEEE 802.11g : 21.97 dBm (0.1574 W)		
Tronomit Dowor	IEEE 802.11n HT20: 20.50 dBm (0.1122 W)		
Transmit Power	IEEE 802.11n HT40: 20.60 dBm (0.1148 W)		
	Bluetooth 2.1 + EDR: 12.35 dBm (0.017W)		
	Bluetooth 4.0: 9.41 dBm (0.0087 W)		
	IEEE 802.11b/g : 5MHz		
Channel Spacing	Bluetooth : 1MHz		
	Bluetooth 4.0 : 2MHz		
	IEEE 802.11b/g, 802.11n HT20: 11 Channels		
Channel Number	IEEE 802.11n HT40 : 7 Channels		
	Bluetooth 2.1 + EDR : 79 Channels		
	Bluetooth 4.0: 40 Channels		
	IEEE 802.11b : 11, 5.5, 2, 1 Mbps		
	IEEE 802.11g : 54, 48, 36, 24, 18, 12, 9, 6 Mbps		
	IEEE 802.11n HT20 : 72.2, 65, 58.5, 57.78, 52, 43.33, 39, 28.89, 26, 21.7, 19.5, 14.44, 13, 7.2, 6.5 Mbps		
Transmit Data Rate	IEEE 802.11n HT40 : 150, 135, 121.5, 120, 108, 90, 81, 60, 54, 45, 40.5, 30, 27, 15, 13.5Mbps		
	Bluetooth 2.1 + EDR : GFSK (1Mbps), π /4-DQPSK (2Mbps),		
	8-DPSK (3Mbps)		
	Bluetooth 4.0 : Additional GFSK		



FCC ID : PPD-AR5B225

	IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK)	
	IEEE 802.11g : OFDM (64QAM, 16QAM, QPSK, BPSK)	
Type of Modulation	IEEE 802.11n HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK)	
	Bluetooth 2.1 + EDR : Frequency Hopping Spread Spectrum	
	Bluetooth 4.0 : DSSS	
Frequency Selection	by software / firmware	
Antonno Typo	WiFi : PIFA Antenna, Antenna 1 (MAIN) Gain 1.73dBi	
Antenna Type	Bluetooth : PIFA Antenna, Antenna 2 (ALT) Gain 1.7dBi	
Power Rating	20Vdc, 3.25A (From Power Adapter)	
Test Voltage	120Vac/60Hz	
DC Power Cable Type	Non-shielded cable 1.8m (Non-detachable)	
I/O Port	USB 2.0 Port × 1, RJ-45 Port × 1, HDMI Port × 1, USB 3.0 Port × 2 , Audio Port × 1 , SD Card Port × 1, Power Port × 1	

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	lenovo	ADP-65KH B	100-240Vac, 50/60Hz, 1.5A	20Vdc, 3.25A
2	lenovo	PA-1650-56LC	100-240Vac, 50/60Hz, 1.7A	20Vdc, 3.25A

Remark :

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

2. For more details, please refer to the User's manual of the EUT.

3. This submittal(s) (test report) is intended for FCC ID: PPD-AR5B225 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

3. DESCRIPTION OF CLASS II CHANGE

The subject approved module is being used in different host (Portable category Configuration, Host brand/Model:lenove / 20169, 4375, Lenovo IdeaPad U310) with a closer antenna to end user distance of 7.4mm.





4. DESCRIPTION OF TEST MODES

The EUT is an 802.11n transceiver in 1X1 802.11b/g/n - BT Combo PCIe minicard form factor.

WiFi : Chain 1 (MAIN) transmits.

Bluetooth : Chain 2 (ALT) transmits.

Radiated Emission Test (Below 1 GHz)

TX Mode

Conducted / Radiated Emission Test (Above 1 GHz) IEEE 802.11b, 802.11g, 802.11n HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)	
Low	2412	
Middle	2437	
High	2462	

IEEE 802.11b mode : 1Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11g mode : 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode : 6.5Mbps data rate (worst case) were chosen for full testing.

EEE 802.11n HT40 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)	
Low	2422	
Middle	2437	
High	2452	

IEEE 802.11n HT40 mode : 13.5Mbps data rate (worst case) were chosen for full testing.

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Bluetooth 2.1 + EDR

There are three channels have been tested as following :

Channel	Frequency (MHz)	
Low	2402	
Middle	2441	
High	2480	

Radiated Emission Test (Above 1 GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

Tested Channel	Modulation Technology	Modulation Type	Packet Type
Low, Mid, High	FHSS	GFSK	DH5
Low, Mid, High	FHSS	8-DPSK	3-DH5

Bandedge Measurement :

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

Tested Channel	Modulation Technology	Modulation Type	Packet Type
Low, High	FHSS	GFSK	DH5
Low, High	FHSS	8-DPSK	3-DH5



Antenna Port Conducted Measurement :

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

Tested Channel	Modulation Technology	Modulation Type	Packet Type	
Low, Mid, High	FHSS	GFSK	DH5	
Low, Mid, High	FHSS	8-DPSK	3-DH5	

Bluetooth 4.0 mode

Conducted / Radiated Emission Test (Above 1 GHz)

There are three channels have been tested as following :

Channel	Frequency (MHz)	
Low	2402	
Middle	2442	
High	2480	

5. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47, 15.207, 15.209 and 15.247.



6. FACILITIES AND ACCREDITATION

6.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

NO. 989-1 Wen Shan Rd., Shang Shan Village, Qionglin Shiang Hsinchu County 30741, Taiwan, R.O.C

The sites are constructed in conformance with the requirements of ANSI C63.4:2003 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

6.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Taiwan TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	INDUSTRY CANADA
Japan	VCCI
Taiwan	BSMI
USA	FCC MRA

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsrf.com



6.3 MEASUREMENT UNCERTAINTY

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2.

PARAMETER	UNCERTAINTY
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.5189
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 2.5164
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 2.4967
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 2.7655

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.



7. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	DELL	INSPIRON 640m PP19L	CN-0MG532-70166-7 1G-03EC	DoC

No.	Signal Cable Description
1	Non-shielded RJ-45 cable 10m × 1

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

WiFi

- 1. Setup all computers like the setup diagram.
- 2. Run art Test software ..
- 3. Select the following settings
- 4. TX Mode:
 - 1.run cart.bat ,nart.bat.artgui.exe
 - 2.select :Tests->contTX
 - 3.select:frequency,rate,tx power
 - 4.select:TX mask:chain
- 5.All of the functions are under run.
- 6.Start test.



Bluetooth 2.1 + EDR

- 1. Setup all computers like the setup diagram.
- 2. Run BtUSBTool Test software..
- 3. Key in>mb
- 4. Select the following settings

TX mode:

Key in> select "c"	#set TX	

- Key in> select "t" #set change channel
- Key in> select "p" #set packet type
- Key in> select "o" #set power
- Key in> select "e" #start TX
- 5. All of the functions are under run.
- 6. Start test

Bluetooth 4.0

- 1. Setup all computers like the setup diagram.
- 2. Run BtUSBTool Test software ...
- 3. Key in>mb
- 4. Select the following settings

TX mode:

Key in> select "w"	#set TX
Key in> select "t"	#set change channel
Key in> select "I"	#set dataLen
Key in> select "j"	#start TX

- 5. All of the functions are under run.
- 6. Start test



8. FCC PART 15.247 REQUIREMENTS

8.1 MAXIMUM PEAK OUTPUT POWER (WIFI)

LIMITS

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

§ 15.247(b) (4) Except as shown in paragraphs (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (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.

<u>TEST EQUIPMENT</u>

Name of Equipment	of Equipment Manufacturer Model		Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/07/2012
Power Sensor	Anritsu	MA2411B	1126148	12/14/2012

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to the peak power detection.

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TEST RESULTS

IEEE 802.11b Mode

Channol	Channel Peak F		Power Peak Pov		wer Limit	Dass / Eail
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	F 455 / F 411
Low	2412	20.04	0.1009	30	1	PASS
Middle	2437	19.77	0.0948	30	1	PASS
High	2462	19.65	0.0923	30	1	PASS

Remark:

1. At finial test to get the worst-case emission at 1Mbps.

2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11g Mode

Channel Frequency		Peak Power		Peak Power Limit		Pass / Fail
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	F 455 / F 411
Low	2412	20.10	0.1023	30	1	PASS
Middle	2437	21.97	0.1574	30	1	PASS
High	2462	18.83	0.0764	30	1	PASS

Remark:

1. At finial test to get the worst-case emission at 6Mbps.

2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11n HT20 Mode

Channel Frequency		Peak Power		Peak Power Limit		Bass / Eail
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	Fa557 Faii
Low	2412	19.68	0.0929	30	1	PASS
Middle	2437	20.50	0.1122	30	1	PASS
High	2462	18.38	0.0689	30	1	PASS

Remark:

1. At finial test to get the worst-case emission at 6.5Mbps.

2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

Channol	Channel	Peak Power		Peak Po	Pass / Fail	
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	rass / raii
Low	2422	18.35	0.0684	30	1	PASS
Middle	2437	20.60	0.1148	30	1	PASS
High	2452	17.50	0.0562	30	1	PASS

IEEE 802.11g HT40 Mode

Remark:

1. At finial test to get the worst-case emission at 13.5Mbps.

2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.



8.2 MAXIMUM PEAK OUTPUT POWER (BLUETOOTH)

LIMITS

§15.247(b)(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	AGILENT	E4446A	MY43360132	06/14/2013

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3 MHz RBW and 8 MHz VBW.

4. Measure the captured power within the band and recording the plot.

5. Repeat above procedures until all frequencies measured were complete.

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TEST RESULTS

Bluetooth 2.1 + EDR Mode

Modulation Type: GFSK, CFG PKT Packet Type: 15 Packet Size: 339 (DH5)

Channel Frequency		Peak Power		Peak Power Limit		Pocult
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	Nesult
Low	2402	9.28	0.0085	20.97	0.125	PASS
Middle	2441	9.50	0.0089	20.97	0.125	PASS
High	2480	8.37	0.0069	20.97	0.125	PASS

Remark: The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

Modulation Type: 8-DPSK, CFG PKT Packet Type: 31 Packet Size: 1021 (3-DH5)

Channol	Channel Peak Power		Peak Pov	Posult		
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	Result
Low	2402	12.35	0.0172	20.97	0.125	PASS
Middle	2441	12.30	0.0170	20.97	0.125	PASS
High	2480	11.55	0.0143	20.97	0.125	PASS

Remark: The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

Bluetooth 4.0 Mode

Channol	Channel Channel		Peak Power		Peak Power Limit		
Channel	(MHz)	(dBm)	(W)	(dBm)	(W)	Result	
Low	2402	9.12	0.0082	20.97	0.125	PASS	
Middle	2442	9.41	0.0087	20.97	0.125	PASS	
High	2480	8.24	0.0067	20.97	0.125	PASS	

Remark: The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.



FCC ID : PPD-AR5B225

MAXIMUM PEAK OUTPUT POWER

























FCC ID : PPD-AR5B225

8.3 RADIATED EMISSION

LIMITS

(1) According to § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	(²)
13.36 - 13.41			

Remark:

1.¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

2.² Above 38.6

(2) According to § 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

Remark: **Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

(4) According to § 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

TEST EQUIPMENT

Radiated Emission / 966Chamber B

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/19/2012
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	826547/004	10/27/2012
Broadband Hybrid Bi-Log Antenna	Sunol Sciences	JB1	A100209-4	10/05/2012
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078733	12/06/2012
Horn Antenna	COM-POWER	AH-840	03077	12/06/2012
LOOP Antenna	EMCO	6502	8905-2356	06/10/2012
Pre-Amplifier	Agilent	8447D	2944A10052	07/19/2012
Pre-Amplifier	Agilent	8449B	3008A01916	09/18/2012
Band Reject Notch Filter	Micro-Tronics	BRM05702-01	009	N.C.R

Remark: 1. Each piece of equipment is scheduled for calibration once a year.

2. N.C.R = No Calibration Request.



TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from below 1GHz.

9kHz ~ 30MHz









The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



TEST PROCEDURE

- 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. While measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. While measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna.
- 3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.
- 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Remark :

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

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TEST RESULTS

Below 1 GHz (9kHz ~ 30MHz)

No emission found between lowest internal used/generated frequency to 30MHz.

Below 1 GHz (30MHz ~ 1GHz)

Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/19
Test Mode	IEEE 802.11b TX / CH Middle (worst case)	Temp. & Humidity	26 [°] C, 59%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
106.63	50.95	-16.10	34.86	43.50	-8.64	Peak
193.93	53.30	-13.86	39.45	43.50	-4.05	Peak
295.78	50.00	-11.88	38.13	46.00	-7.87	Peak
480.08	39.27	-8.62	30.65	46.00	-15.35	Peak
762.35	36.45	-4.44	32.01	46.00	-13.99	Peak
875.84	37.64	-2.57	35.06	46.00	-10.94	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
30.97	39.95	-6.80	33.15	40.00	-6.85	Peak
137.67	49.65	-13.47	36.18	43.50	-7.32	Peak
239.52	45.22	-13.95	31.27	46.00	-14.73	Peak
306.45	43.46	-11.72	31.74	46.00	-14.26	Peak
665.35	42.51	-5.79	36.73	46.00	-9.27	Peak
842.86	34.71	-3.11	31.60	46.00	-14.40	Peak

Remark:

1. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.

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. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)

4. Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

5. Margin (dB) = Remark result (dBuV/m) - Quasi-peak limit (dBuV/m).



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/19
Test Mode	Bluetooth 2.1+EDR / GFSK TX / CH Middle (worst case)	Temp. & Humidity	26 [°] C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark			
106.63	51.56	-16.10	35.46	43.50	-8.04	Peak			
193.93	54.38	-13.86	40.52	43.50	-2.98	Peak			
240.49	50.67	-13.91	36.76	46.00	-9.24	Peak			
297.72	48.76	-11.86	36.90	46.00	-9.10	Peak			
689.60	35.95	-5.61	30.35	46.00	-15.65	Peak			
859.35	37.31	-2.85	34.46	46.00	-11.54	Peak			

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark			
33.88	40.41	-8.89	31.52	40.00	-8.48	Peak			
136.70	49.88	-13.48	36.40	43.50	-7.10	Peak			
301.60	45.22	-11.82	33.40	46.00	-12.60	Peak			
403.45	39.60	-9.93	29.68	46.00	-16.32	Peak			
666.32	40.04	-5.78	34.27	46.00	-11.73	Peak			
913.67	38.67	-2.09	36.58	46.00	-9.42	Peak			

1. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.

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. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)

4. Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

5. Margin (dB) = Remark result (dBuV/m) - Quasi-peak limit (dBuV/m).

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Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/19
Test Mode	Bluetooth 4.0 / TX / CH Middle (worst case)	Temp. & Humidity	26 [°] C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark			
104.69	52.10	-16.45	35.65	43.50	-7.85	Peak			
193.93	54.20	-13.86	40.34	43.50	-3.16	Peak			
239.52	49.58	-13.95	35.63	46.00	-10.37	Peak			
296.75	49.71	-11.87	37.84	46.00	-8.16	Peak			
692.51	37.45	-5.59	31.86	46.00	-14.14	Peak			
865.17	37.12	-2.75	34.37	46.00	-11.63	Peak			

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark			
30.97	38.44	-6.80	31.64	40.00	-8.36	Peak			
140.58	49.15	-13.48	35.67	43.50	-7.83	Peak			
240.49	45.64	-13.91	31.73	46.00	-14.27	Peak			
297.72	45.18	-11.86	33.32	46.00	-12.68	Peak			
664.38	40.60	-5.79	34.80	46.00	-11.20	Peak			
999.03	36.41	-0.55	35.86	54.00	-18.14	Peak			

Remark:

1. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.

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. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)

4. Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

5. Margin (dB) = Remark result (dBuV/m) - Quasi-peak limit (dBuV/m).



TX Above 1 GHz

Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11b TX / CH Low	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1330.00	52.44		-2.82	49.62		74.00	54.00	-4.38	Peak
1708.00	49.25		-0.40	48.85		74.00	54.00	-5.15	Peak
2056.00	46.73		2.40	49.13		74.00	54.00	-4.87	Peak
2668.00	43.28		4.38	47.66		74.00	54.00	-6.34	Peak
2996.00	43.74		5.40	49.14		74.00	54.00	-4.86	Peak
3990.00	41.80		6.98	48.78		74.00	54.00	-5.22	Peak
4830.00	39.71		9.50	49.22		74.00	54.00	-4.78	Peak

	966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1332.00	50.32		-2.81	47.51		74.00	54.00	-6.49	Peak	
1984.00	46.68		2.08	48.76		74.00	54.00	-5.24	Peak	
2222.00	46.82		2.95	49.77		74.00	54.00	-4.23	Peak	
2656.00	53.13	34.81	4.34	57.47	39.15	74.00	54.00	-14.85	AVG	
2990.00	46.36		5.38	51.74		74.00	54.00	-2.26	Peak	
3000.00	44.03		5.41	49.44		74.00	54.00	-4.56	Peak	
3990.00	45.70		6.98	52.68		74.00	54.00	-1.32	Peak	
4830.00	42.92		9.50	52.42		74.00	54.00	-1.58	Peak	
5010.00	41.34		9.94	51.27		74.00	54.00	-2.73	Peak	

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11b TX / CH Middle	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1332.00	55.13		-2.81	52.32		74.00	54.00	-1.68	Peak	
1578.00	47.58		-1.57	46.01		74.00	54.00	-7.99	Peak	
1764.00	46.23		0.10	46.33		74.00	54.00	-7.67	Peak	
2000.00	46.35		2.22	48.57		74.00	54.00	-5.43	Peak	
2740.00	43.93		4.60	48.54		74.00	54.00	-5.46	Peak	
3210.00	41.58		5.64	47.21		74.00	54.00	-6.79	Peak	
4875.00	40.82		9.61	50.43		74.00	54.00	-3.57	Peak	

	966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1334.00	49.39		-2.80	46.58		74.00	54.00	-7.42	Peak	
1746.00	47.48		-0.06	47.42		74.00	54.00	-6.58	Peak	
1948.00	48.38		1.75	50.13		74.00	54.00	-3.87	Peak	
2182.00	46.00		2.82	48.82		74.00	54.00	-5.18	Peak	
2662.00	47.89		4.36	52.25		74.00	54.00	-1.75	Peak	
3990.00	41.38		6.98	48.36		74.00	54.00	-5.64	Peak	
4875.00	42.16		9.61	51.77		74.00	54.00	-2.23	Peak	

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5. Result = Reading + Correction Factor Margin = Result – Limit Remark Peak = Result(PK) – Limit(AV) Remark AVG = Result(AV) – Limit(AV)

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Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11b TX / CH High	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1332.00	54.02		-2.81	51.21		74.00	54.00	-2.79	Peak	
1662.00	50.67		-0.82	49.86		74.00	54.00	-4.14	Peak	
1858.00	49.59		0.94	50.54		74.00	54.00	-3.46	Peak	
2102.00	46.00		2.55	48.56		74.00	54.00	-5.44	Peak	
2336.00	47.89		3.32	51.21		74.00	54.00	-2.79	Peak	
3180.00	42.13		5.60	47.73		74.00	54.00	-6.27	Peak	
4920.00	45.21	43.62	9.72	54.93	53.34	74.00	54.00	-0.66	AVG	

966 Chamber_B at 3Meter / Vertical											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1328.00	51.11		-2.82	48.29		74.00	54.00	-5.71	Peak		
1562.00	48.42		-1.71	46.71		74.00	54.00	-7.29	Peak		
1866.00	49.02		1.02	50.03		74.00	54.00	-3.97	Peak		
2336.00	48.20		3.32	51.52		74.00	54.00	-2.48	Peak		
2664.00	45.98		4.37	50.35		74.00	54.00	-3.65	Peak		
3285.00	42.97		5.72	48.69		74.00	54.00	-5.31	Peak		
3990.00	42.51		6.98	49.48		74.00	54.00	-4.52	Peak		
4920.00	41.73		9.72	51.45		74.00	54.00	-2.55	Peak		

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin		
Test Model	AR5B225	Test Date	2012/05/18		
Test Mode	IEEE 802.11g TX / CH Low	Temp. & Humidity	26°C, 59%		

966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1330.00	52.76		-2.82	49.94		74.00	54.00	-4.06	Peak	
1490.00	48.31		-2.30	46.01		74.00	54.00	-7.99	Peak	
1584.00	49.55		-1.52	48.04		74.00	54.00	-5.96	Peak	
1744.00	48.69		-0.08	48.61		74.00	54.00	-5.39	Peak	
2092.00	45.60		2.52	48.13		74.00	54.00	-5.87	Peak	
4110.00	39.98		7.37	47.36		74.00	54.00	-6.64	Peak	
4980.00	39.12		9.87	48.99		74.00	54.00	-5.01	Peak	

966 Chamber_B at 3Meter / Vertical										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1332.00	52.35		-2.81	49.54		74.00	54.00	-4.46	Peak	
1566.00	47.33		-1.68	45.65		74.00	54.00	-8.35	Peak	
1984.00	46.69		2.08	48.76		74.00	54.00	-5.24	Peak	
2128.00	48.95		2.64	51.59		74.00	54.00	-2.41	Peak	
2656.00	45.04		4.34	49.38		74.00	54.00	-4.62	Peak	
2988.00	46.33		5.37	51.70		74.00	54.00	-2.30	Peak	
3210.00	42.03		5.64	47.66		74.00	54.00	-6.34	Peak	
3990.00	41.67		6.98	48.65		74.00	54.00	-5.35	Peak	
4875.00	39.58		9.61	49.19		74.00	54.00	-4.81	Peak	

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin		
Test Model	AR5B225	Test Date	2012/05/18		
Test Mode	IEEE 802.11g TX / CH Middle	Temp. & Humidity	26°C, 59%		

966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1330.00	52.80		-2.82	49.98		74.00	54.00	-4.02	Peak	
1642.00	47.24		-0.99	46.24		74.00	54.00	-7.76	Peak	
1962.00	46.97		1.88	48.84		74.00	54.00	-5.16	Peak	
2310.00	45.90		3.24	49.14		74.00	54.00	-4.86	Peak	
2782.00	43.00		4.73	47.74		74.00	54.00	-6.26	Peak	
3900.00	39.71		6.79	46.50		74.00	54.00	-7.50	Peak	
4950.00	39.35		9.80	49.15		74.00	54.00	-4.85	Peak	

966 Chamber_B at 3Meter / Vertical										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1328.00	52.08		-2.82	49.26		74.00	54.00	-4.74	Peak	
2000.00	47.09		2.22	49.31		74.00	54.00	-4.69	Peak	
2182.00	46.60		2.82	49.42		74.00	54.00	-4.58	Peak	
2658.00	46.92		4.35	51.27		74.00	54.00	-2.73	Peak	
2992.00	45.55		5.39	50.93		74.00	54.00	-3.07	Peak	
3930.00	41.02		6.85	47.87		74.00	54.00	-6.13	Peak	
4515.00	40.26		8.73	48.98		74.00	54.00	-5.02	Peak	
4950.00	39.63		9.80	49.42		74.00	54.00	-4.58	Peak	

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.


Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11g TX / CH High	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1288.00	48.76		-2.95	45.81		74.00	54.00	-8.19	Peak		
1334.00	54.97		-2.80	52.16		74.00	54.00	-1.84	Peak		
1680.00	49.39		-0.65	48.73		74.00	54.00	-5.27	Peak		
1866.00	45.63		1.02	46.65		74.00	54.00	-7.35	Peak		
2088.00	45.26		2.51	47.77		74.00	54.00	-6.23	Peak		
4425.00	39.73		8.44	48.17		74.00	54.00	-5.83	Peak		
4920.00	39.55		9.72	49.28		74.00	54.00	-4.72	Peak		

	966 Chamber_B at 3Meter / Vertical											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark			
1288.00	48.63		-2.95	45.68		74.00	54.00	-8.32	Peak			
1328.00	52.81		-2.82	49.99		74.00	54.00	-4.01	Peak			
1964.00	50.13		1.90	52.02		74.00	54.00	-1.98	Peak			
2166.00	48.05		2.76	50.82		74.00	54.00	-3.18	Peak			
2666.00	46.69		4.37	51.06		74.00	54.00	-2.94	Peak			
3990.00	41.90		6.98	48.88		74.00	54.00	-5.12	Peak			
4920.00	39.80		9.72	49.52		74.00	54.00	-4.48	Peak			

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5. Result = Reading + Correction Factor Margin = Result – Limit Remark Peak = Result(PK) – Limit(AV) Remark AVG = Result(AV) – Limit(AV)

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Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	Test Model AR5B225		2012/05/18
Test Mode	IEEE 802.11n HT20 TX / CH Low	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1334.00	55.44		-2.80	52.64		74.00	54.00	-1.36	Peak		
1638.00	48.34		-1.03	47.31		74.00	54.00	-6.69	Peak		
1872.00	45.88		1.07	46.95		74.00	54.00	-7.05	Peak		
2190.00	43.78		2.84	46.62		74.00	54.00	-7.38	Peak		
4245.00	40.33		7.83	48.15		74.00	54.00	-5.85	Peak		
4995.00	39.57		9.91	49.48		74.00	54.00	-4.52	Peak		

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1334.00	53.02		-2.80	50.22		74.00	54.00	-3.78	Peak
1442.00	47.37		-2.46	44.91		74.00	54.00	-9.09	Peak
1970.00	48.07		1.95	50.02		74.00	54.00	-3.98	Peak
2170.00	47.16		2.78	49.94		74.00	54.00	-4.06	Peak
2662.00	47.27		4.36	51.63		74.00	54.00	-2.37	Peak
3225.00	42.03		5.65	47.68		74.00	54.00	-6.32	Peak
4920.00	38.70		9.72	48.42		74.00	54.00	-5.58	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11n HT20 TX / CH Middle	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1332.00	53.22		-2.81	50.41		74.00	54.00	-3.59	Peak		
1566.00	49.18		-1.68	47.50		74.00	54.00	-6.50	Peak		
1866.00	46.36		1.02	47.38		74.00	54.00	-6.62	Peak		
2316.00	45.95		3.26	49.21		74.00	54.00	-4.79	Peak		
3870.00	40.49		6.73	47.22		74.00	54.00	-6.78	Peak		
4755.00	38.92		9.32	48.24		74.00	54.00	-5.76	Peak		

				—					
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1332.00	52.15		-2.81	49.34		74.00	54.00	-4.66	Peak
1572.00	48.12		-1.62	46.50		74.00	54.00	-7.50	Peak
1744.00	46.67		-0.08	46.59		74.00	54.00	-7.41	Peak
1990.00	48.00		2.13	50.13		74.00	54.00	-3.87	Peak
2184.00	45.69		2.82	48.52		74.00	54.00	-5.48	Peak
2662.00	45.45		4.36	49.81		74.00	54.00	-4.19	Peak
4005.00	41.45		7.02	48.47		74.00	54.00	-5.53	Peak
4905.00	39.64		9.69	49.32		74.00	54.00	-4.68	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11n HT20 TX / CH High	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark			
1328.00	55.49		-2.82	52.67		74.00	54.00	-1.33	Peak			
1606.00	49.73		-1.32	48.41		74.00	54.00	-5.59	Peak			
1926.00	46.12		1.56	47.68		74.00	54.00	-6.32	Peak			
2078.00	44.95		2.48	47.42		74.00	54.00	-6.58	Peak			
2400.00	46.63		3.53	50.17		74.00	54.00	-3.83	Peak			
3615.00	40.65		6.19	46.84		74.00	54.00	-7.16	Peak			
4920.00	39.86		9.72	49.58		74.00	54.00	-4.42	Peak			

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1328.00	50.87		-2.82	48.05		74.00	54.00	-5.95	Peak	
1556.00	45.79		-1.77	44.02		74.00	54.00	-9.98	Peak	
1998.00	48.00		2.20	50.21		74.00	54.00	-3.79	Peak	
2182.00	45.78		2.82	48.60		74.00	54.00	-5.40	Peak	
2662.00	43.43		4.36	47.80		74.00	54.00	-6.20	Peak	
3285.00	41.46		5.72	47.18		74.00	54.00	-6.82	Peak	
4920.00	39.91		9.72	49.63		74.00	54.00	-4.37	Peak	

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11n HT40 TX / CH Low	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1328.00	55.44		-2.82	52.61		74.00	54.00	-1.39	Peak		
1646.00	49.70		-0.96	48.74		74.00	54.00	-5.26	Peak		
1708.00	48.24		-0.40	47.84		74.00	54.00	-6.16	Peak		
1854.00	46.94		0.91	47.85		74.00	54.00	-6.15	Peak		
2194.00	45.00		2.86	47.86		74.00	54.00	-6.14	Peak		
3915.00	40.85		6.82	47.68		74.00	54.00	-6.32	Peak		
4935.00	39.83		9.76	49.59		74.00	54.00	-4.41	Peak		

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1328.00	52.44		-2.82	49.61		74.00	54.00	-4.39	Peak		
1580.00	47.36		-1.55	45.81		74.00	54.00	-8.19	Peak		
1954.00	47.69		1.81	49.49		74.00	54.00	-4.51	Peak		
2192.00	45.53		2.85	48.38		74.00	54.00	-5.62	Peak		
2994.00	46.12		5.39	51.52		74.00	54.00	-2.48	Peak		
3990.00	42.00		6.98	48.98		74.00	54.00	-5.02	Peak		
4920.00	38.99		9.72	48.71		74.00	54.00	-5.29	Peak		

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11n HT40 TX / CH Middle	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1332.00	54.41		-2.81	51.60		74.00	54.00	-2.40	Peak		
1562.00	47.93		-1.71	46.21		74.00	54.00	-7.79	Peak		
1708.00	47.44		-0.40	47.04		74.00	54.00	-6.96	Peak		
1830.00	46.27		0.69	46.96		74.00	54.00	-7.04	Peak		
2322.00	46.06		3.28	49.34		74.00	54.00	-4.66	Peak		
3240.00	42.46		5.67	48.13		74.00	54.00	-5.87	Peak		
4935.00	40.47		9.76	50.23		74.00	54.00	-3.77	Peak		

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1332.00	52.50		-2.81	49.69		74.00	54.00	-4.31	Peak		
1582.00	47.89		-1.53	46.35		74.00	54.00	-7.65	Peak		
1972.00	50.28		1.97	52.25		74.00	54.00	-1.75	Peak		
2664.00	44.59		4.37	48.96		74.00	54.00	-5.04	Peak		
2996.00	45.13		5.40	50.53		74.00	54.00	-3.47	Peak		
3600.00	42.00		6.16	48.16		74.00	54.00	-5.84	Peak		
4845.00	39.63		9.54	49.17		74.00	54.00	-4.83	Peak		

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

- 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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5. Result = Reading + Correction Factor Margin = Result – Limit Remark Peak = Result(PK) – Limit(AV) Remark AVG = Result(AV) – Limit(AV)

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Product Name	1X1 802.11b/g/n - BT Combo PCle minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	IEEE 802.11n HT40 TX / CH High	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1328.00	53.74		-2.82	50.91		74.00	54.00	-3.09	Peak		
1566.00	49.31		-1.68	47.63		74.00	54.00	-6.37	Peak		
1708.00	49.03		-0.40	48.63		74.00	54.00	-5.37	Peak		
2096.00	44.74		2.53	47.27		74.00	54.00	-6.73	Peak		
2370.00	45.17		3.43	48.60		74.00	54.00	-5.40	Peak		
4140.00	40.90		7.47	48.37		74.00	54.00	-5.63	Peak		
5025.00	39.61		9.96	49.57		74.00	54.00	-4.43	Peak		

		•				or the di			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1330.00	50.15		-2.82	47.34		74.00	54.00	-6.66	Peak
1570.00	47.09		-1.64	45.45		74.00	54.00	-8.55	Peak
1992.00	47.33		2.15	49.48		74.00	54.00	-4.52	Peak
2172.00	47.25		2.78	50.03		74.00	54.00	-3.97	Peak
2662.00	46.48		4.36	50.84		74.00	54.00	-3.16	Peak
3990.00	41.72		6.98	48.70		74.00	54.00	-5.30	Peak
5010.00	40.09		9.94	50.03		74.00	54.00	-3.97	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / GFSK TX / CH Low	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1332.00	49.94		-2.81	47.13		74.00	54.00	-6.87	Peak		
1582.00	48.14		-1.53	46.60		74.00	54.00	-7.40	Peak		
1998.00	45.30		2.20	47.50		74.00	54.00	-6.50	Peak		
2232.00	45.03		2.98	48.01		74.00	54.00	-5.99	Peak		
2654.00	47.98		4.34	52.32		74.00	54.00	-1.68	Peak		
3405.00	41.59		5.85	47.44		74.00	54.00	-6.56	Peak		
4800.00	38.73		9.43	48.16		74.00	54.00	-5.84	Peak		

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark				
1328.00	50.37		-2.82	47.55		74.00	54.00	-6.45	Peak				
1956.00	48.87		1.82	50.69		74.00	54.00	-3.31	Peak				
2184.00	46.74		2.82	49.56		74.00	54.00	-4.44	Peak				
2658.00	47.81		4.35	52.16		74.00	54.00	-1.84	Peak				
2994.00	52.11	32.79	5.39	57.50	38.18	74.00	54.00	-15.82	AVG				
3180.00	42.14		5.60	47.75		74.00	54.00	-6.25	Peak				
4905.00	39.52		9.69	49.21		74.00	54.00	-4.79	Peak				

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / GFSK TX / CH Middle	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal												
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark				
1328.00	48.27		-2.82	45.44		74.00	54.00	-8.56	Peak				
1584.00	47.95		-1.52	46.44		74.00	54.00	-7.56	Peak				
1922.00	45.70		1.52	47.22		74.00	54.00	-6.78	Peak				
2176.00	44.02		2.80	46.82		74.00	54.00	-7.18	Peak				
2666.00	46.10		4.37	50.47		74.00	54.00	-3.53	Peak				
3885.00	40.27		6.76	47.03		74.00	54.00	-6.97	Peak				
4920.00	39.88		9.72	49.61		74.00	54.00	-4.39	Peak				

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark			
1330.00	53.50		-2.82	50.69		74.00	54.00	-3.31	Peak			
1994.00	48.92		2.17	51.08		74.00	54.00	-2.92	Peak			
2172.00	46.94		2.78	49.73		74.00	54.00	-4.27	Peak			
2666.00	54.39	36.33	4.37	58.76	40.70	74.00	54.00	-13.30	AVG			
3000.00	52.51	33.28	5.41	57.92	38.69	74.00	54.00	-15.31	AVG			
3330.00	41.49		5.77	47.26		74.00	54.00	-6.74	Peak			
4935.00	39.53		9.76	49.29		74.00	54.00	-4.71	Peak			

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / GFSK TX / CH High	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal												
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark				
1330.00	49.29		-2.82	46.47		74.00	54.00	-7.53	Peak				
1580.00	46.49		-1.55	44.94		74.00	54.00	-9.06	Peak				
1950.00	45.13		1.77	46.90		74.00	54.00	-7.10	Peak				
2174.00	44.36		2.79	47.15		74.00	54.00	-6.85	Peak				
2662.00	46.32		4.36	50.68		74.00	54.00	-3.32	Peak				
3420.00	40.39		5.86	46.25		74.00	54.00	-7.75	Peak				
4950.00	39.54		9.80	49.34		74.00	54.00	-4.66	Peak				

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark				
1330.00	50.84		-2.82	48.03		74.00	54.00	-5.97	Peak				
1990.00	47.58		2.13	49.71		74.00	54.00	-4.29	Peak				
2204.00	45.78		2.89	48.67		74.00	54.00	-5.33	Peak				
2662.00	52.42	35.31	4.36	56.78	39.67	74.00	54.00	-14.33	AVG				
3000.00	51.31	32.98	5.41	56.72	38.39	74.00	54.00	-15.61	AVG				
3450.00	40.93		5.90	46.82		74.00	54.00	-7.18	Peak				
4845.00	38.98		9.54	48.52		74.00	54.00	-5.48	Peak				

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / 8-DPSK TX / CH Low	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal													
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark					
1328.00	48.75		-2.82	45.92		74.00	54.00	-8.08	Peak					
1558.00	48.30		-1.75	46.55		74.00	54.00	-7.45	Peak					
1902.00	46.99		1.34	48.33		74.00	54.00	-5.67	Peak					
2662.00	45.49		4.36	49.86		74.00	54.00	-4.14	Peak					
3105.00	41.94		5.52	47.46		74.00	54.00	-6.54	Peak					
4920.00	38.98		9.72	48.70		74.00	54.00	-5.30	Peak					

									-
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1328.00	49.34		-2.82	46.51		74.00	54.00	-7.49	Peak
1596.00	48.97		-1.41	47.56		74.00	54.00	-6.44	Peak
1998.00	48.71		2.20	50.92		74.00	54.00	-3.08	Peak
2664.00	48.46		4.37	52.83		74.00	54.00	-1.17	Peak
2992.00	48.26		5.39	53.64		74.00	54.00	-0.36	Peak
3150.00	42.27		5.57	47.84		74.00	54.00	-6.16	Peak
4920.00	39.11		9.72	48.84		74.00	54.00	-5.16	Peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / 8-DPSK TX / CH Middle	Temp. & Humidity	26°C, 59%

	966 Chamber_B at 3Meter / Horizontal												
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark				
1332.00	49.55		-2.81	46.74		74.00	54.00	-7.26	Peak				
1576.00	50.46		-1.59	48.87		74.00	54.00	-5.13	Peak				
1938.00	46.84		1.66	48.50		74.00	54.00	-5.50	Peak				
2170.00	44.95		2.78	47.73		74.00	54.00	-6.27	Peak				
2662.00	44.95		4.36	49.31		74.00	54.00	-4.69	Peak				
4290.00	39.89		7.98	47.87		74.00	54.00	-6.13	Peak				
4950.00	39.44		9.80	49.24		74.00	54.00	-4.76	Peak				

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1328.00	53.44		-2.82	50.61		74.00	54.00	-3.39	Peak	
1904.00	49.53		1.36	50.89		74.00	54.00	-3.11	Peak	
1984.00	48.05		2.08	50.13		74.00	54.00	-3.87	Peak	
2156.00	49.87		2.73	52.60		74.00	54.00	-1.40	Peak	
2656.00	46.81		4.34	51.15		74.00	54.00	-2.85	Peak	
2990.00	46.61		5.38	51.99		74.00	54.00	-2.01	Peak	
3990.00	40.65		6.98	47.63		74.00	54.00	-6.37	Peak	
4935.00	39.34		9.76	49.10		74.00	54.00	-4.90	Peak	

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 2.1+ EDR / 8-DPSK TX / CH High	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1332.00	49.84		-2.81	47.03		74.00	54.00	-6.97	Peak
1582.00	46.70		-1.53	45.17		74.00	54.00	-8.83	Peak
1924.00	45.10		1.54	46.63		74.00	54.00	-7.37	Peak
2162.00	45.01		2.75	47.76		74.00	54.00	-6.24	Peak
2656.00	42.96		4.34	47.30		74.00	54.00	-6.70	Peak
3195.00	41.44		5.62	47.06		74.00	54.00	-6.94	Peak
4935.00	39.47		9.76	49.23		74.00	54.00	-4.77	Peak

Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1328.00	48.36		-2.82	45.54		74.00	54.00	-8.46	Peak	
1956.00	53.21	36.88	1.82	55.03	38.70	74.00	54.00	-15.30	AVG	
2230.00	45.48		2.97	48.46		74.00	54.00	-5.54	Peak	
2654.00	52.33	33.47	4.34	56.67	37.81	74.00	54.00	-16.19	AVG	
4050.00	40.16		7.17	47.33		74.00	54.00	-6.67	Peak	
4980.00	39.39		9.87	49.26		74.00	54.00	-4.74	Peak	

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.



Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 4.0 / TX / CH Low	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1006.00	48.37		-3.86	44.51		74.00	54.00	-9.49	Peak
1330.00	48.74		-2.82	45.93		74.00	54.00	-8.07	Peak
1996.00	45.78		2.18	47.97		74.00	54.00	-6.03	Peak
2188.00	44.37		2.84	47.21		74.00	54.00	-6.79	Peak
2662.00	44.22		4.36	48.58		74.00	54.00	-5.42	Peak
3090.00	41.44		5.51	46.95		74.00	54.00	-7.05	Peak
5070.00	39.90		10.04	49.94		74.00	54.00	-4.06	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1034.00	51.38		-3.77	47.61		74.00	54.00	-6.39	Peak
1334.00	49.85		-2.80	47.05		74.00	54.00	-6.95	Peak
1992.00	48.28		2.15	50.43		74.00	54.00	-3.57	Peak
2188.00	48.01		2.84	50.84		74.00	54.00	-3.16	Peak
2656.00	48.58		4.34	52.93		74.00	54.00	-1.07	Peak
2988.00	51.93	32.37	5.37	57.30	37.74	74.00	54.00	-16.26	AVG
3495.00	41.40		5.94	47.34		74.00	54.00	-6.66	Peak
4800.00	40.54		9.43	49.97		74.00	54.00	-4.03	Peak

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

2. Average test would be performed if the peak result were greater than the average limit.

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. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5. Result = Reading + Correction Factor Margin = Result – Limit Remark Peak = Result(PK) – Limit(AV) Remark AVG = Result(AV) – Limit(AV)

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Product Name	1X1 802.11b/g/n - BT Combo PCIe minicard	Test By	Rueyyan Lin
Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 4.0 / TX / CH Middle	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1334.00	50.40		-2.80	47.59		74.00	54.00	-6.41	Peak
1520.00	48.77		-2.09	46.68		74.00	54.00	-7.32	Peak
1998.00	46.00		2.20	48.20		74.00	54.00	-5.80	Peak
2658.00	44.21		4.35	48.56		74.00	54.00	-5.44	Peak
3330.00	41.51		5.77	47.28		74.00	54.00	-6.72	Peak
5070.00	39.11		10.04	49.15		74.00	54.00	-4.85	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1332.00	54.04		-2.81	51.23		74.00	54.00	-2.77	Peak
1936.00	49.27		1.65	50.92		74.00	54.00	-3.08	Peak
2160.00	46.47		2.74	49.21		74.00	54.00	-4.79	Peak
2658.00	46.58		4.35	50.93		74.00	54.00	-3.07	Peak
2986.00	51.22	33.05	5.37	56.59	38.42	74.00	54.00	-15.58	AVG
4530.00	39.68		8.76	48.45		74.00	54.00	-5.55	Peak
6525.00	40.10		12.38	52.48		74.00	54.00	-1.52	Peak

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Test Model	AR5B225	Test Date	2012/05/18
Test Mode	Bluetooth 4.0 / TX / CH High	Temp. & Humidity	26°C, 59%

966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1332.00	47.33		-2.81	44.52		74.00	54.00	-9.48	Peak	
1572.00	46.04		-1.62	44.41		74.00	54.00	-9.59	Peak	
1954.00	46.71		1.81	48.52		74.00	54.00	-5.48	Peak	
2182.00	44.09		2.82	46.91		74.00	54.00	-7.09	Peak	
2660.00	44.58		4.36	48.93		74.00	54.00	-5.07	Peak	
4590.00	40.01		8.91	48.92		74.00	54.00	-5.08	Peak	
6060.00	40.54		11.88	52.42		74.00	54.00	-1.58	Peak	

966 Chamber_B at 3Meter / Vertical											
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1330.00	50.61		-2.82	47.79		74.00	54.00	-6.21	Peak		
1912.00	49.20		1.43	50.63		74.00	54.00	-3.37	Peak		
2158.00	46.81		2.74	49.55		74.00	54.00	-4.45	Peak		
2664.00	46.44		4.37	50.81		74.00	54.00	-3.19	Peak		
2998.00	50.98	32.56	5.40	56.38	37.96	74.00	54.00	-16.04	AVG		
3705.00	41.08		6.38	47.46		74.00	54.00	-6.54	Peak		
6555.00	39.48		12.37	51.86		74.00	54.00	-2.14	Peak		

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Restricted Band Edges
















































































































































Detector Mode : Peak Polarity : Horizontal Bluetooth 4.0 / CH Low 🔆 Agilent Mkr3 2.390 00 GHz Ref 127 dB**µ**V #Atten 20 dB 57.89 dBµV Peak Log 10 dB/ 1 Offst 10 dB DI 74.0 dB**µ**V LgAv M1 S2 Start 2.310 00 GHz Stop 2.410 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 100 ms (601 pts) X Axis 2.402 00 GHz 2.400 00 GHz Marker Trace (1) Type Freq Amplitude 94.98 dBµV 1 2 (1)Freq 63.56 dBµV 3 (1)Freq 2.390 00 GHz 57.89 dBuV























APPENDIX SETUP PHOTOS

RADIATED EMISSION SETUP



