

## FCC 47 CFR PART 15 SUBPART C

Product Type : WLAN Module  
Applicant : Acer Incorporated  
Address : 8F, 88, Sec.1, Hsin Tai Wu Rd. Hsichih, Taipei Hsien 221  
Taiwan, R.O.C.  
Trade Name : acer  
Model Number : AR5B93  
Test Specification : FCC 47 CFR PART 15 SUBPART C: Oct, 2008  
Canada RSS-210 ISSUE 7: Jun, 2007  
Canada RSS-Gen ISSUE 2: Jun, 2007  
ANSI C63.4-2003  
Application Purpose : Class II Permissive Change  
Issue Date : Mar. 04, 2010

### Issue by

A Test Lab Techno Corp.  
No. 140-1, Changan Street, Bade City,  
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Taiwan Accreditation Foundation accreditation number: 1330

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**Revision History**

<b>Rev.</b>	<b>Issue Date</b>	<b>Revisions</b>	<b>Revised By</b>
00	Mar. 04, 2010	Initial Issue	

## Test Report Verification

Issued Date: 2010/03/04

Product Type : WLAN Module  
Applicant : Acer Incorporated  
Address : 8F, 88, Sec.1, Hsin Tai Wu Rd. Hsichih, Taipei Hsien 221  
Taiwan, R.O.C.  
Trade Name : acer  
Model Number : AR5B93  
FCC ID : HLZ-AR5B93  
IC ID : 1754F-AR5B93  
EUT Rated Voltage : AC 100-240V, 50-60Hz, 1A  
Test Voltage : 120 Vac / 60 Hz  
Applicable Standard : FCC 47 CFR PART 15 SUBPART C: Oct, 2008  
Canada RSS-210 ISSUE 7: Jun, 2007  
Canada RSS-Gen ISSUE 2: Jun, 2007  
ANSI C63.4-2003  
Application Purpose : Class II Permissive Change  
Test Result : Complied  
Performed Lab. : A Test Lab Techno Corp.

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<http://www.atl-lab.com.tw/e-index.htm>



The above equipment has been tested by A Test Lab Techno Corp., and found compliance with the requirements set forth in the Electromagnetic Compatibility Directive 2004/108/EC and 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 : Miller Lee Reviewed By : John Cheng  
(Manager) (Miller Lee) (Testing Engineer) (John Cheng)

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## 1 General Information

### 1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-210			
15.247(b)(3)	A8.4	Max. Output Power	PASS	-----
15.247(d)	A8.5	Transmitter Radiated Emissions	PASS	-----
15.247(d)	A8.5	Band Edge Measurement	PASS	-----
15.203	-	Antenna Requirement	PASS	-----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

### 1.2 Measurement Uncertainty

#### Conducted Emission

The measurement uncertainty is evaluated as  $\pm 2.24$  dB.

#### Radiated Emission

The measurement uncertainty of 30 MHz - 1GHz is evaluated as  $\pm 3.072$ dB.

## 2 EUT Description

<b>Product</b>	:	WLAN Module
<b>Trade Name</b>	:	acer
<b>Model Number</b>	:	AR5B93
<b>Applicant</b>	:	Acer Incorporated 8F, 88, Sec.1, Hsin Tai Wu Rd. Hsichih, Taipei Hsien 221 Taiwan, R.O.C.
<b>Manufacturer</b>	:	Quanta Computer Inc. No.211, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, Taiwan, R.O.C.
<b>FCC ID</b>	:	HLZ-AR5B93
<b>IC ID</b>	:	1754F-AR5B93
<b>Frequency Range</b>	:	IEEE 802.11b / IEEE 802.11g: 2412MHz~2462MHz draft 802.11n Standard-20MHz: 2412MHz~2462MHz draft 802.11n Wide-40MHz: 2422MHz~2452MHz
<b>Modulation Type</b>	:	IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM) draft 802.11n Standard-20MHz channel mode: OFDM(6.5,7.2, 13,14.4, 14.44, 19.5,217,26,28.89,28.9,39.43.3,43.33,52,57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67,104,115.56,117,130 and 144.44 Mbps) draft 802.11n Wide-40MHz channel mode: OFDM(13.5,15,27,30,40.5, 45,54,60,81,90,108,120, 121.5,135,150,162,180,216,240,243,270 and 300 Mbps)
<b>Antenna Type</b>	:	PIFA Type
<b>Antenna Gain</b>	:	Main: -0.71 dBi, Aux: 0.27 dBi
<b>Max. RF Output Power</b>	:	IEEE 802.11b: 0.086 W / 19.33 dBm IEEE 802.11g: 0.332 W / 25.21 dBm draft 802.11n Standard-20MHz: 0.324 W / 25.11 dBm draft 802.11n Wide-40MHz: 0.403 W / 26.05 dBm
<b>Component</b>		
<b>Power Adapter</b>	:	HIPRO, HP-A00301R3 Input: 100-240 Vac, 50-60 Hz, 1 A Output: 19 Vdc, 1.58 A Cable in: Non-Shielded, 1.7 m Cable out: Non-Shielded, 1.5 m
<b>Battery</b>	:	11.1 Vdc, 4400mAh

### 3 Test Methodology

#### 3.1. Mode of Operation

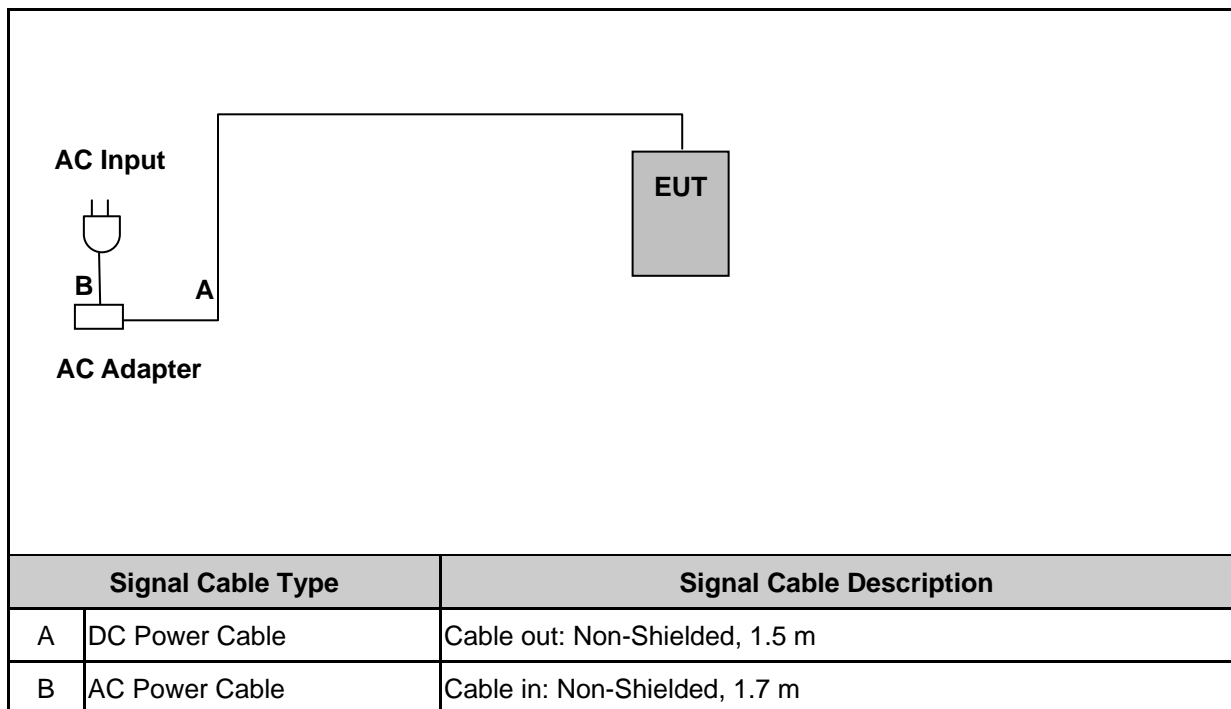
Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal Operation Mode
Mode 2: IEEE 802.11b Link Mode
Mode 3: IEEE 802.11g Link Mode
Mode 4: draft 802.11n Standard-20MHz Link Mode
Mode 5: draft 802.11n Wide-40MHz Link Mode
Mode 6: Receiver Mode

#### 3.2. EUT Exercise Software

1.	Turn on the power of all equipment.
2.	EUT run ART test program.

#### 3.3. Configuration of Test System Details



**3.4. Test Site Environment**

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	25
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

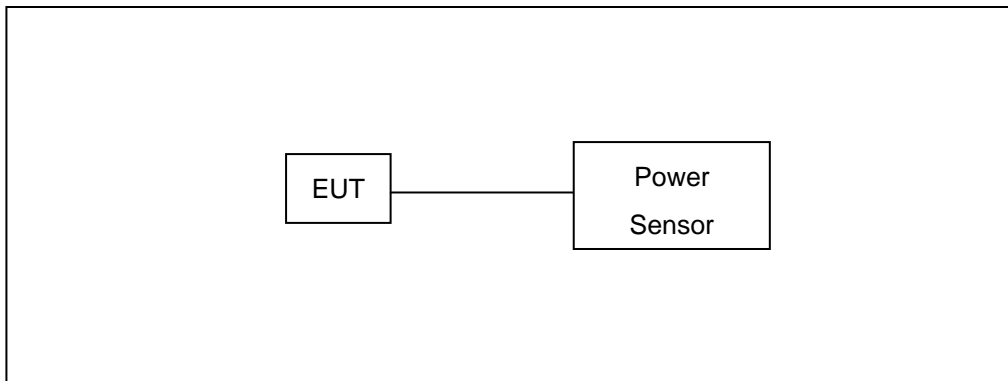


## 4 Maximum Conducted Output Power Measurement

### 4.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

### 4.2. Test Setup



### 4.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Power Sensor	R&S	NRP-Z81	100017	05/17/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: <sup>(1)</sup> Calibration period 1 year. <sup>(2)</sup> Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

### 4.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor.

The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to  $(\text{GAIN} - 6)/3$  dBm.

The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

**4.5. Test Result**

Product	WLAN Module									
Test Item	Maximum Conducted Output Power									
Test Mode	Mode 2: IEEE 802.11b Link Mode									
Date of Test	02/23/2010					Test Site		TE06		
Frequency (MHz)	Data Rate	Average				Peak				Limit (dBm)
		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		
				(dBm)	(W)			(dBm)	(W)	
2412	1	14.05	13.35	16.72	0.047	16.30	16.33	<b>19.33</b>	<b>0.086</b>	< 30
2437	1	12.97	13.40	16.20	0.042	15.95	16.38	19.18	0.083	< 30
2462	1	12.97	13.18	16.09	0.041	16.09	16.14	19.13	0.082	< 30

Product	WLAN Module									
Test Item	Maximum Conducted Output Power									
Test Mode	Mode 3: IEEE 802.11g Link Mode									
Date of Test	02/23/2010					Test Site		TE06		
Frequency (MHz)	Data Rate	Average				Peak				Limit (dBm)
		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		
				(dBm)	(W)			(dBm)	(W)	
2412	6	11.10	11.54	14.34	0.027	19.00	19.60	22.32	0.171	< 30
2437	6	14.33	13.66	17.02	0.050	22.40	22.00	<b>25.21</b>	<b>0.332</b>	< 30
2462	6	10.52	11.40	13.99	0.025	18.64	19.49	22.10	0.162	< 30

Product	WLAN Module									
Test Item	Maximum Conducted Output Power									
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode									
Date of Test	02/23/2010					Test Site		TE06		
Frequency (MHz)	Data Rate	Average				Peak				Limit (dBm)
		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		
				(dBm)	(W)			(dBm)	(W)	
2412	6.5	9.65	10.42	13.06	0.020	17.67	18.45	21.09	0.129	< 30
2437	6.5	14.24	13.61	16.95	0.050	22.39	21.78	<b>25.11</b>	<b>0.324</b>	< 30
2462	6.5	9.91	10.63	13.30	0.021	17.99	18.75	21.40	0.138	< 30

Product	WLAN Module									
Test Item	Maximum Conducted Output Power									
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode									
Date of Test	02/23/2010					Test Site		TE06		
Frequency (MHz)	Data Rate	Average				Peak				Limit (dBm)
		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		Chan 0 (dBm)	Chan 1 (dBm)	Total Power		
				(dBm)	(W)			(dBm)	(W)	
2422	13.5	8.23	8.84	11.56	0.014	16.34	17.11	19.75	0.094	< 30
2437	13.5	14.84	14.81	17.84	0.061	23.06	23.02	<b>26.05</b>	<b>0.403</b>	< 30
2452	13.5	8.78	9.65	12.25	0.017	16.95	17.83	20.42	0.110	< 30

## 5 Transmitter Radiated Emissions Measurement

### 5.1. Limit

Frequency Range (MHz)	Peak (dBuV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

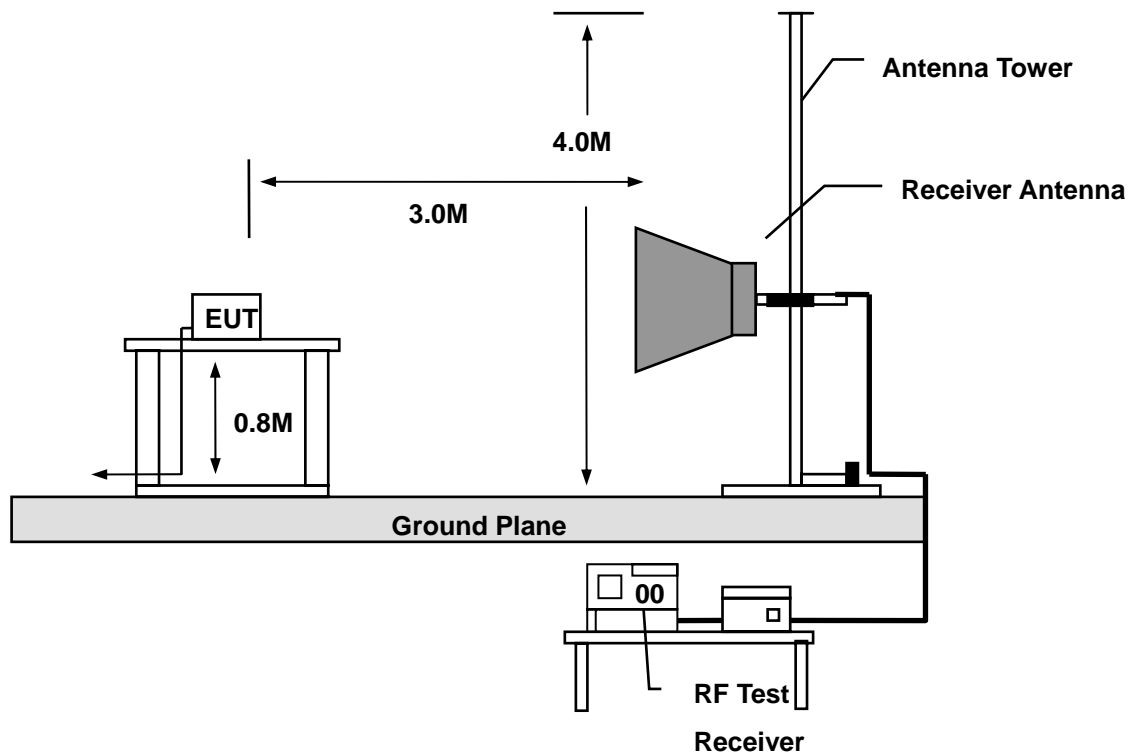
### 5.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/27/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/20/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	07/01/2009	(1)
Pre Amplifier	Agilent	8447D	2944A10961	06/30/2009	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/23/2009	(2)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	07/01/2009	(2)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/30/2009	(2)
Test Site	ATL	TE01	TE01	N.C.R.	-----

Remark: <sup>(1)</sup> Calibration period 1 year. <sup>(2)</sup> Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

### 5.3. Setup



### 5.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (mode VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

## 5.5. Test Result

### Below 1GHz

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 1: Normal Operation Mode						
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
35.00	V	43.40	-13.19	30.21	40.00	-9.79	QP
66.59	V	35.85	-15.05	20.80	40.00	-19.20	QP
92.78	V	42.18	-12.55	29.63	43.50	-13.87	QP
126.39	V	49.31	-15.20	34.11	43.50	-9.39	QP
154.88	V	46.53	-15.91	30.62	43.50	-12.88	QP
278.94	V	43.18	-10.49	32.69	46.00	-13.31	QP
333.25	V	40.52	-9.32	31.20	46.00	-14.80	QP
504.05	V	31.25	-6.82	24.43	46.00	-21.57	QP
647.20	V	27.64	-4.34	23.30	46.00	-22.70	QP
743.80	V	27.13	-3.15	23.98	46.00	-22.02	QP
796.30	V	28.50	-2.35	26.15	46.00	-19.85	QP
970.60	V	26.08	0.72	26.80	54.00	-27.20	QP
35.67	H	45.36	-13.02	32.34	40.00	-7.66	QP
50.25	H	26.52	-12.16	14.36	40.00	-25.64	QP
92.64	H	38.17	-12.57	25.60	43.50	-17.90	QP
124.91	H	41.34	-15.02	26.32	43.50	-17.18	QP
199.43	H	40.67	-13.17	27.50	43.50	-16.00	QP
266.52	H	41.59	-11.01	30.58	46.00	-15.42	QP
333.25	H	39.47	-9.32	30.15	46.00	-15.85	QP
539.40	H	27.13	-6.08	21.05	46.00	-24.95	QP
647.55	H	27.54	-4.31	23.23	46.00	-22.77	QP
720.70	H	26.49	-3.55	22.94	46.00	-23.06	QP
796.65	H	26.57	-2.34	24.23	46.00	-21.77	QP
943.65	H	26.12	0.26	26.38	46.00	-19.62	QP

**Above 1GHz**

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 2: IEEE 802.11b Link Mode				Frequency	2412MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2343.85	V	55.45	0.21	55.66	74.00	-18.34	peak
2343.85	V	38.80	0.21	39.01	54.00	-14.99	AVG
2703.65	V	40.70	21.89	62.59	74.00	-11.41	peak
2703.65	V	23.31	21.89	45.20	54.00	-8.80	AVG
4842.55	V	44.70	7.67	52.37	74.00	-21.63	peak
4842.55	V	43.75	7.67	51.42	54.00	-2.58	AVG
9744.50	V	35.76	17.69	53.45	74.00	-20.55	peak
9744.50	V	23.30	17.69	40.99	54.00	-13.01	AVG
14180.00	V	38.17	18.85	57.02	74.00	-16.98	peak
14180.00	V	26.29	18.85	45.14	54.00	-8.86	AVG
18000.00	V	36.51	25.57	62.08	74.00	-11.92	peak
18000.00	V	16.71	25.57	42.28	54.00	-11.72	AVG
18106.25	V	36.97	23.23	60.20	74.00	-13.80	peak
18106.25	V	19.88	23.23	43.11	54.00	-10.89	AVG
21867.50	V	37.28	21.19	58.47	74.00	-15.53	peak
21867.50	V	19.07	21.19	40.26	54.00	-13.74	AVG
24162.50	V	37.89	19.88	57.77	74.00	-16.23	peak
24162.50	V	19.66	19.88	39.54	54.00	-14.46	AVG
2204.45	H	54.59	0.48	55.07	74.00	-18.93	peak
2204.45	H	38.00	0.48	38.48	54.00	-15.52	AVG
2703.65	H	40.54	21.89	62.43	74.00	-11.57	peak
2703.65	H	18.62	21.89	40.51	54.00	-13.49	AVG
4842.55	H	41.06	7.67	48.73	74.00	-25.27	peak
9974.45	H	36.44	17.86	54.30	74.00	-19.70	peak
9974.45	H	23.26	17.86	41.12	54.00	-12.88	AVG
13340.00	H	38.76	17.59	56.35	74.00	-17.65	peak
13340.00	H	27.60	17.59	45.19	54.00	-8.81	AVG
18000.00	H	36.62	25.57	62.19	74.00	-11.81	peak
18000.00	H	16.98	25.57	42.55	54.00	-11.45	AVG
18297.50	H	37.32	23.20	60.52	74.00	-13.48	peak
18297.50	H	20.04	23.20	43.24	54.00	-10.76	AVG
22505.00	H	37.53	20.89	58.42	74.00	-15.58	peak
22505.00	H	19.37	20.89	40.26	54.00	-13.74	AVG
25437.50	H	39.38	19.02	58.40	74.00	-15.60	peak
25437.50	H	20.44	19.02	39.46	54.00	-14.54	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 2: IEEE 802.11b Link Mode				Frequency	2437MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2241.85	V	55.23	0.44	55.67	74.00	-18.33	peak
2241.85	V	38.06	0.44	38.50	54.00	-15.50	AVG
2703.65	V	40.50	21.89	62.39	74.00	-11.61	peak
2703.65	V	18.59	21.89	40.48	54.00	-13.52	AVG
4893.65	V	43.77	7.73	51.50	74.00	-22.50	peak
4893.65	V	42.32	7.73	50.05	54.00	-3.95	AVG
9974.45	V	35.77	17.86	53.63	74.00	-20.37	peak
9974.45	V	23.26	17.86	41.12	54.00	-12.88	AVG
14260.00	V	37.64	18.66	56.30	74.00	-17.70	peak
14260.00	V	26.87	18.66	45.53	54.00	-8.47	AVG
17980.00	V	36.11	25.21	61.32	74.00	-12.68	peak
17980.00	V	16.89	25.21	42.10	54.00	-11.90	AVG
18191.25	V	37.19	23.22	60.41	74.00	-13.59	peak
18191.25	V	19.87	23.22	43.09	54.00	-10.91	AVG
22526.25	V	38.21	20.89	59.10	74.00	-14.90	peak
22526.25	V	19.70	20.89	40.59	54.00	-13.41	AVG
23142.50	V	37.30	20.83	58.13	74.00	-15.87	peak
23142.50	V	19.25	20.83	40.08	54.00	-13.92	AVG
2156.85	H	37.94	0.03	37.97	54.00	-16.03	AVG
2156.85	H	41.25	21.89	63.14	74.00	-10.86	peak
2703.65	H	18.54	21.89	40.43	54.00	-13.57	AVG
2703.65	H	39.60	7.73	47.33	74.00	-26.67	peak
4893.65	H	36.03	17.85	53.88	74.00	-20.12	peak
9868.60	H	23.15	17.85	41.00	54.00	-13.00	AVG
9868.60	H	38.28	17.97	56.25	74.00	-17.75	peak
14420.00	H	26.97	17.97	44.94	54.00	-9.06	AVG
14420.00	H	36.06	25.57	61.63	74.00	-12.37	peak
18000.00	H	16.54	25.57	42.11	54.00	-11.89	AVG
18000.00	H	38.02	22.97	60.99	74.00	-13.01	peak
19147.50	H	20.59	22.97	43.56	54.00	-10.44	AVG
19147.50	H	37.52	21.31	58.83	74.00	-15.17	peak
21570.00	H	19.86	21.31	41.17	54.00	-12.83	AVG
21570.00	H	37.45	20.78	58.23	74.00	-15.77	peak
23248.75	H	19.20	20.78	39.98	54.00	-14.02	AVG
23248.75	H	37.94	0.03	37.97	54.00	-16.03	AVG



Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 2: IEEE 802.11b Link Mode				Frequency	2462MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2188.30	V	55.15	0.40	55.55	74.00	-18.45	peak
2188.30	V	37.99	0.40	38.39	54.00	-15.61	AVG
2700.00	V	40.74	22.58	63.32	74.00	-10.68	peak
2700.00	V	18.67	22.58	41.25	54.00	-12.75	AVG
4944.75	V	44.94	7.72	52.66	74.00	-21.34	peak
4944.75	V	42.21	7.72	49.93	54.00	-4.07	AVG
9861.30	V	36.67	17.87	54.54	74.00	-19.46	peak
9861.30	V	23.20	17.87	41.07	54.00	-12.93	AVG
14020.00	V	37.69	18.67	56.36	74.00	-17.64	peak
14020.00	V	27.06	18.67	45.73	54.00	-8.27	AVG
18000.00	V	37.54	25.57	63.11	74.00	-10.89	peak
18000.00	V	16.59	25.57	42.16	54.00	-11.84	AVG
18807.50	V	37.42	23.16	60.58	74.00	-13.42	peak
18807.50	V	19.97	23.16	43.13	54.00	-10.87	AVG
21825.00	V	38.17	21.20	59.37	74.00	-14.63	peak
21825.00	V	19.84	21.20	41.04	54.00	-12.96	AVG
25458.75	V	39.46	19.01	58.47	74.00	-15.53	peak
25458.75	V	20.90	19.01	39.91	54.00	-14.09	AVG
2210.40	H	55.93	0.41	56.34	74.00	-17.66	peak
2210.40	H	38.12	0.41	38.53	54.00	-15.47	AVG
2703.65	H	41.08	21.89	62.97	74.00	-11.03	peak
2703.65	H	18.34	21.89	40.23	54.00	-13.77	AVG
4924.00	H	36.46	7.65	44.11	74.00	-29.89	peak
9375.85	H	37.35	17.02	54.37	74.00	-19.63	peak
9375.85	H	23.27	17.02	40.29	54.00	-13.71	AVG
14240.00	H	37.83	18.71	56.54	74.00	-17.46	peak
14240.00	H	27.34	18.71	46.05	54.00	-7.95	AVG
18000.00	H	36.69	25.57	62.26	74.00	-11.74	peak
18000.00	H	16.87	25.57	42.44	54.00	-11.56	AVG
18850.00	H	36.96	23.15	60.11	74.00	-13.89	peak
18850.00	H	20.01	23.15	43.16	54.00	-10.84	AVG
21931.25	H	37.37	21.15	58.52	74.00	-15.48	peak
21931.25	H	19.57	21.15	40.72	54.00	-13.28	AVG
25437.50	H	39.17	19.02	58.19	74.00	-15.81	peak
25437.50	H	20.78	19.02	39.80	54.00	-14.20	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 3: IEEE 802.11g Link Mode				Frequency	2412Hz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2248.65	V	55.73	0.48	56.21	74.00	-17.79	peak
2248.65	V	37.99	0.48	38.47	54.00	-15.53	AVG
2700.00	V	41.57	22.58	64.15	74.00	-9.85	peak
2700.00	V	18.69	22.58	41.27	54.00	-12.73	AVG
4984.90	V	44.07	7.92	51.99	74.00	-22.01	peak
4984.90	V	25.84	7.92	33.76	54.00	-20.24	AVG
7277.10	V	39.95	13.53	53.48	74.00	-20.52	peak
7277.10	V	23.67	13.53	37.20	54.00	-16.80	AVG
9744.50	V	36.48	17.69	54.17	74.00	-19.83	peak
9744.50	V	23.36	17.69	41.05	54.00	-12.95	AVG
14000.00	V	37.91	18.67	56.58	74.00	-17.42	peak
14000.00	V	26.78	18.67	45.45	54.00	-8.55	AVG
17920.00	V	36.87	24.84	61.71	74.00	-12.29	peak
17920.00	V	16.74	24.84	41.58	54.00	-12.42	AVG
18106.25	V	37.39	23.23	60.62	74.00	-13.38	peak
18106.25	V	19.83	23.23	43.06	54.00	-10.94	AVG
22186.25	V	37.57	21.03	58.60	74.00	-15.40	peak
22186.25	V	19.09	21.03	40.12	54.00	-13.88	AVG
23695.00	V	37.87	20.33	58.20	74.00	-15.80	peak
23695.00	V	18.82	20.33	39.15	54.00	-14.85	AVG
2207.00	H	54.73	0.45	55.18	74.00	-18.82	peak
2207.00	H	38.08	0.45	38.53	54.00	-15.47	AVG
2703.65	H	40.48	21.89	62.37	74.00	-11.63	peak
2703.65	H	18.57	21.89	40.46	54.00	-13.54	AVG
4835.25	H	38.73	7.61	46.34	74.00	-27.66	peak
9854.00	H	35.88	17.89	53.77	74.00	-20.23	peak
9854.00	H	23.22	17.89	41.11	54.00	-12.89	AVG
13980.00	H	37.85	18.62	56.47	74.00	-17.53	peak
13980.00	H	26.88	18.62	45.50	54.00	-8.50	AVG
17920.00	H	37.08	24.84	61.92	74.00	-12.08	peak
17920.00	H	16.97	24.84	41.81	54.00	-12.19	AVG
18892.50	H	37.16	23.15	60.31	74.00	-13.69	peak
18892.50	H	19.93	23.15	43.08	54.00	-10.92	AVG
22016.25	H	37.37	21.10	58.47	74.00	-15.53	peak
22016.25	H	19.02	21.10	40.12	54.00	-13.88	AVG
24183.75	H	37.98	19.87	57.85	74.00	-16.15	peak
24183.75	H	19.65	19.87	39.52	54.00	-14.48	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 3: IEEE 802.11g Link Mode				Frequency	2437MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2191.70	V	55.11	0.45	55.56	74.00	-18.44	peak
2191.70	V	38.46	0.45	38.91	54.00	-15.09	AVG
2700.00	V	39.95	22.58	62.53	74.00	-11.47	peak
2700.00	V	18.36	22.58	40.94	54.00	-13.06	AVG
4893.65	V	46.14	7.73	53.87	74.00	-20.13	peak
4893.65	V	38.61	7.73	46.34	54.00	-7.66	AVG
7335.50	V	46.48	13.60	60.08	74.00	-13.92	peak
7335.50	V	35.79	13.60	49.39	54.00	-4.61	AVG
9598.50	V	36.77	17.41	54.18	74.00	-19.82	peak
9598.50	V	23.45	17.41	40.86	54.00	-13.14	AVG
14320.00	V	37.88	18.57	56.45	74.00	-17.55	peak
14320.00	V	27.61	18.57	46.18	54.00	-7.82	AVG
18000.00	V	37.09	25.57	62.66	74.00	-11.34	peak
18000.00	V	16.87	25.57	42.44	54.00	-11.56	AVG
19147.50	V	37.82	22.97	60.79	74.00	-13.21	peak
19147.50	V	19.93	22.97	42.90	54.00	-11.10	AVG
21888.75	V	37.26	21.18	58.44	74.00	-15.56	peak
21888.75	V	18.88	21.18	40.06	54.00	-13.94	AVG
23355.00	V	37.50	20.73	58.23	74.00	-15.77	peak
23355.00	V	18.43	20.73	39.16	54.00	-14.84	AVG
2195.10	H	55.13	0.48	55.61	74.00	-18.39	peak
2195.10	H	38.27	0.48	38.75	54.00	-15.25	AVG
2703.65	H	40.89	21.89	62.78	74.00	-11.22	peak
2703.65	H	18.46	21.89	40.35	54.00	-13.65	AVG
4886.35	H	42.56	7.73	50.29	74.00	-23.71	peak
7350.10	H	42.75	13.72	56.47	74.00	-17.53	peak
7350.10	H	28.75	13.72	42.47	54.00	-11.53	AVG
9335.70	H	37.03	16.92	53.95	74.00	-20.05	peak
9335.70	H	23.15	16.92	40.07	54.00	-13.93	AVG
13980.00	H	37.73	18.62	56.35	74.00	-17.65	peak
13980.00	H	26.93	18.62	45.55	54.00	-8.45	AVG
18000.00	H	36.54	25.57	62.11	74.00	-11.89	peak
18000.00	H	16.96	25.57	42.53	54.00	-11.47	AVG
18276.25	H	37.12	23.21	60.33	74.00	-13.67	peak
18276.25	H	19.88	23.21	43.09	54.00	-10.91	AVG
21931.25	H	37.20	21.15	58.35	74.00	-15.65	peak
21931.25	H	19.10	21.15	40.25	54.00	-13.75	AVG
23631.25	H	37.78	20.42	58.20	74.00	-15.80	peak
23631.25	H	19.00	20.42	39.42	54.00	-14.58	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 3: IEEE 802.11g Link Mode				Frequency	2462MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2237.60	V	55.34	0.44	55.78	74.00	-18.22	peak
2237.60	V	38.03	0.44	38.47	54.00	-15.53	AVG
2700.00	V	41.59	22.58	64.17	74.00	-9.83	peak
2700.00	V	18.35	22.58	40.93	54.00	-13.07	AVG
4981.25	V	42.37	7.89	50.26	74.00	-23.74	peak
9328.40	V	37.05	16.91	53.96	74.00	-20.04	peak
9328.40	V	23.00	16.91	39.91	54.00	-14.09	AVG
14180.00	V	37.18	18.85	56.03	74.00	-17.97	peak
14180.00	V	26.83	18.85	45.68	54.00	-8.32	AVG
18000.00	V	36.05	25.57	61.62	74.00	-12.38	peak
18000.00	V	16.75	25.57	42.32	54.00	-11.68	AVG
19168.75	V	37.88	22.95	60.83	74.00	-13.17	peak
19168.75	V	19.86	22.95	42.81	54.00	-11.19	AVG
21825.00	V	37.76	21.20	58.96	74.00	-15.04	peak
21825.00	V	18.70	21.20	39.90	54.00	-14.10	AVG
23163.75	V	37.77	20.82	58.59	74.00	-15.41	peak
23163.75	V	18.14	20.82	38.96	54.00	-15.04	AVG
2194.25	H	55.28	0.48	55.76	74.00	-18.24	peak
2194.25	H	38.03	0.48	38.51	54.00	-15.49	AVG
2703.65	H	40.41	21.89	62.30	74.00	-11.70	peak
2703.65	H	18.66	21.89	40.55	54.00	-13.45	AVG
3284.00	H	47.34	2.37	49.71	74.00	-24.29	peak
4924.00	H	36.86	7.65	44.51	74.00	-29.49	peak
9744.50	H	36.72	17.69	54.41	74.00	-19.59	peak
9744.50	H	23.22	17.69	40.91	54.00	-13.09	AVG
14120.00	H	37.85	18.87	56.72	74.00	-17.28	peak
14120.00	H	26.57	18.87	45.44	54.00	-8.56	AVG
17980.00	H	36.70	25.21	61.91	74.00	-12.09	peak
17980.00	H	16.38	25.21	41.59	54.00	-12.41	AVG
18148.75	H	37.07	23.22	60.29	74.00	-13.71	peak
18148.75	H	19.96	23.22	43.18	54.00	-10.82	AVG
22122.50	H	38.03	21.05	59.08	74.00	-14.92	peak
22122.50	H	19.21	21.05	40.26	54.00	-13.74	AVG
25522.50	H	38.99	18.97	57.96	74.00	-16.04	peak
25522.50	H	20.32	18.97	39.29	54.00	-14.71	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode				Frequency	2412MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2191.70	V	55.29	0.45	55.74	74.00	-18.26	peak
2191.70	V	38.08	0.45	38.53	54.00	-15.47	AVG
2703.65	V	40.97	21.89	62.86	74.00	-11.14	peak
2703.65	V	18.50	21.89	40.39	54.00	-13.61	AVG
4981.25	V	43.18	7.89	51.07	74.00	-22.93	peak
4981.25	V	25.63	7.89	33.52	54.00	-20.48	AVG
9777.35	V	36.47	17.69	54.16	74.00	-19.84	peak
9777.35	V	23.06	17.69	40.75	54.00	-13.25	AVG
14180.00	V	37.52	18.85	56.37	74.00	-17.63	peak
14180.00	V	26.39	18.85	45.24	54.00	-8.76	AVG
17920.00	V	37.44	24.84	62.28	74.00	-11.72	peak
17920.00	V	16.87	24.84	41.71	54.00	-12.29	AVG
18595.00	V	37.34	23.07	60.41	74.00	-13.59	peak
18595.00	V	20.13	23.07	43.20	54.00	-10.80	AVG
21910.00	V	37.31	21.16	58.47	74.00	-15.53	peak
21910.00	V	19.19	21.16	40.35	54.00	-13.65	AVG
23078.75	V	37.02	20.84	57.86	74.00	-16.14	peak
23078.75	V	18.67	20.84	39.51	54.00	-14.49	AVG
2210.40	H	55.56	0.41	55.97	74.00	-18.03	peak
2210.40	H	38.09	0.41	38.50	54.00	-15.50	AVG
2700.00	H	40.03	22.58	62.61	74.00	-11.39	peak
2700.00	H	18.64	22.58	41.22	54.00	-12.78	AVG
4824.00	H	35.91	7.48	43.39	74.00	-30.61	peak
9905.10	H	36.19	17.77	53.96	74.00	-20.04	peak
9905.10	H	23.06	17.77	40.83	54.00	-13.17	AVG
14240.00	H	38.27	18.71	56.98	74.00	-17.02	peak
14240.00	H	27.36	18.71	46.07	54.00	-7.93	AVG
18000.00	H	36.44	25.57	62.01	74.00	-11.99	peak
18000.00	H	17.02	25.57	42.59	54.00	-11.41	AVG
18701.25	H	37.99	23.11	61.10	74.00	-12.90	peak
18701.25	H	20.35	23.11	43.46	54.00	-10.54	AVG
21910.00	H	37.62	21.16	58.78	74.00	-15.22	peak
21910.00	H	19.19	21.16	40.35	54.00	-13.65	AVG
23100.00	H	37.89	20.84	58.73	74.00	-15.27	peak
23100.00	H	18.67	20.84	39.51	54.00	-14.49	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode				Frequency	2437MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2211.25	V	55.51	0.40	55.91	74.00	-18.09	peak
2211.25	V	38.30	0.40	38.70	54.00	-15.30	AVG
2703.65	V	41.47	21.89	63.36	74.00	-10.64	peak
2703.65	V	18.47	21.89	40.36	54.00	-13.64	AVG
4893.65	V	47.04	7.73	54.77	74.00	-19.23	peak
4893.65	V	33.21	7.73	40.94	54.00	-13.06	AVG
7328.20	V	46.34	13.54	59.88	74.00	-14.12	peak
7328.20	V	27.21	13.54	40.75	54.00	-13.25	AVG
9401.40	V	36.74	17.08	53.82	74.00	-20.18	peak
9401.40	V	23.26	17.08	40.34	54.00	-13.66	AVG
14180.00	V	38.05	18.85	56.90	74.00	-17.10	peak
14180.00	V	27.06	18.85	45.91	54.00	-8.09	AVG
18000.00	V	36.37	25.57	61.94	74.00	-12.06	peak
18000.00	V	16.57	25.57	42.14	54.00	-11.86	AVG
18637.50	V	37.01	23.08	60.09	74.00	-13.91	peak
18637.50	V	20.33	23.08	43.41	54.00	-10.59	AVG
22037.50	V	37.69	21.09	58.78	74.00	-15.22	peak
22037.50	V	19.28	21.09	40.37	54.00	-13.63	AVG
23886.25	V	38.03	20.15	58.18	74.00	-15.82	peak
23886.25	V	19.40	20.15	39.55	54.00	-14.45	AVG
2225.70	H	55.72	0.41	56.13	74.00	-17.87	peak
2225.70	H	38.04	0.41	38.45	54.00	-15.55	AVG
2703.65	H	40.96	21.89	62.85	74.00	-11.15	peak
2703.65	H	18.61	21.89	40.50	54.00	-13.50	AVG
4897.30	H	41.68	7.72	49.40	74.00	-24.60	peak
7339.15	H	42.83	13.63	56.46	74.00	-17.54	peak
7339.15	H	29.17	13.63	42.80	54.00	-11.20	AVG
9704.35	H	36.48	17.48	53.96	74.00	-20.04	peak
9704.35	H	23.47	17.48	40.95	54.00	-13.05	AVG
14100.00	H	38.17	18.90	57.07	74.00	-16.93	peak
14100.00	H	27.02	18.90	45.92	54.00	-8.08	AVG
18000.00	H	36.44	25.57	62.01	74.00	-11.99	peak
18000.00	H	16.78	25.57	42.35	54.00	-11.65	AVG
18085.00	H	37.37	23.25	60.62	74.00	-13.38	peak
18085.00	H	19.98	23.25	43.23	54.00	-10.77	AVG
21995.00	H	37.88	21.12	59.00	74.00	-15.00	peak
21995.00	H	19.55	21.12	40.67	54.00	-13.33	AVG
25437.50	H	39.18	19.02	58.20	74.00	-15.80	peak
25437.50	H	20.41	19.02	39.43	54.00	-14.57	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode				Frequency	2462MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2254.60	V	55.02	0.48	55.50	74.00	-18.50	peak
2254.60	V	38.01	0.48	38.49	54.00	-15.51	AVG
2703.65	V	40.61	21.89	62.50	74.00	-11.50	peak
2703.65	V	18.36	21.89	40.25	54.00	-13.75	AVG
4924.00	V	35.91	7.65	43.56	74.00	-30.44	peak
9861.30	V	36.04	17.87	53.91	74.00	-20.09	peak
9861.30	V	23.23	17.87	41.10	54.00	-12.90	AVG
14200.00	V	37.72	18.86	56.58	74.00	-17.42	peak
14200.00	V	26.78	18.86	45.64	54.00	-8.36	AVG
18000.00	V	36.07	25.57	61.64	74.00	-12.36	peak
18000.00	V	16.78	25.57	42.35	54.00	-11.65	AVG
18573.75	V	37.16	23.07	60.23	74.00	-13.77	peak
18573.75	V	20.28	23.07	43.35	54.00	-10.65	AVG
21910.00	V	37.68	21.16	58.84	74.00	-15.16	peak
21910.00	V	19.46	21.16	40.62	54.00	-13.38	AVG
23843.75	V	38.42	20.21	58.63	74.00	-15.37	peak
23843.75	V	19.49	20.21	39.70	54.00	-14.30	AVG
2313.25	H	55.50	0.34	55.84	74.00	-18.16	peak
2313.25	H	38.08	0.34	38.42	54.00	-15.58	AVG
2700.00	H	40.13	22.58	62.71	74.00	-11.29	peak
2700.00	H	18.27	22.58	40.85	54.00	-13.15	AVG
4924.00	H	36.89	7.65	44.54	74.00	-29.46	peak
9868.60	H	35.71	17.85	53.56	74.00	-20.44	peak
9868.60	H	23.16	17.85	41.01	54.00	-12.99	AVG
14100.00	H	37.26	18.90	56.16	74.00	-17.84	peak
14100.00	H	26.85	18.90	45.75	54.00	-8.25	AVG
18000.00	H	36.27	25.57	61.84	74.00	-12.16	peak
18000.00	H	16.78	25.57	42.35	54.00	-11.65	AVG
18722.50	H	37.72	23.12	60.84	74.00	-13.16	peak
18722.50	H	20.52	23.12	43.64	54.00	-10.36	AVG
22122.50	H	38.73	21.05	59.78	74.00	-14.22	peak
22122.50	H	19.57	21.05	40.62	54.00	-13.38	AVG
23036.25	H	38.46	20.87	59.33	74.00	-14.67	peak
23036.25	H	18.85	20.87	39.72	54.00	-14.28	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode				Frequency	2422MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2281.80	V	56.16	0.44	56.60	74.00	-17.40	peak
2281.80	V	38.07	0.44	38.51	54.00	-15.49	AVG
2703.65	V	40.42	21.89	62.31	74.00	-11.69	peak
2703.65	V	18.44	21.89	40.33	54.00	-13.67	AVG
4844.00	V	37.01	7.67	44.68	74.00	-29.32	peak
9981.75	V	35.88	17.88	53.76	74.00	-20.24	peak
9981.75	V	23.29	17.88	41.17	54.00	-12.83	AVG
13900.00	V	27.79	28.07	55.86	74.00	-18.14	peak
13900.00	V	17.38	28.07	45.45	54.00	-8.55	AVG
17880.00	V	27.35	33.90	61.25	74.00	-12.75	peak
17880.00	V	7.38	33.90	41.28	54.00	-12.72	AVG
18191.25	V	37.19	23.22	60.41	74.00	-13.59	peak
18191.25	V	19.87	23.22	43.09	54.00	-10.91	AVG
22101.25	V	37.70	21.06	58.76	74.00	-15.24	peak
22101.25	V	19.32	21.06	40.38	54.00	-13.62	AVG
25331.25	V	38.99	19.09	58.08	74.00	-15.92	peak
25331.25	V	20.74	19.09	39.83	54.00	-14.17	AVG
2276.70	H	55.03	0.45	55.48	74.00	-18.52	peak
2276.70	H	37.95	0.45	38.40	54.00	-15.60	AVG
2700.00	H	40.47	22.58	63.05	74.00	-10.95	peak
2700.00	H	18.16	22.58	40.74	54.00	-13.26	AVG
4844.00	H	36.50	7.67	44.17	74.00	-29.83	peak
9722.60	H	36.28	17.56	53.84	74.00	-20.16	peak
9722.60	H	23.41	17.56	40.97	54.00	-13.03	AVG
14240.00	H	27.57	28.25	55.82	74.00	-18.18	peak
14240.00	H	17.52	28.25	45.77	54.00	-8.23	AVG
18000.00	H	26.52	35.11	61.63	74.00	-12.37	peak
18000.00	H	7.00	35.11	42.11	54.00	-11.89	AVG
19147.50	H	38.02	22.97	60.99	74.00	-13.01	peak
19147.50	H	20.59	22.97	43.56	54.00	-10.44	AVG
21570.00	H	37.52	21.31	58.83	74.00	-15.17	peak
21570.00	H	19.86	21.31	41.17	54.00	-12.83	AVG
25373.75	H	39.07	19.05	58.12	74.00	-15.88	peak
25373.75	H	20.72	19.05	39.77	54.00	-14.23	AVG



Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode				Frequency	2437MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2318.35	V	56.59	0.27	56.86	74.00	-17.14	peak
2318.35	V	41.30	0.27	41.57	54.00	-12.43	AVG
2703.65	V	41.18	21.89	63.07	74.00	-10.93	peak
2703.65	V	18.49	21.89	40.38	54.00	-13.62	AVG
4874.00	V	39.19	7.72	46.91	74.00	-27.09	peak
9890.50	V	36.76	17.80	54.56	74.00	-19.44	peak
9890.50	V	23.15	17.80	40.95	54.00	-13.05	AVG
14060.00	V	27.92	28.26	56.18	74.00	-17.82	peak
14060.00	V	17.05	28.26	45.31	54.00	-8.69	AVG
18000.00	V	26.97	35.11	62.08	74.00	-11.92	peak
18000.00	V	7.17	35.11	42.28	54.00	-11.72	AVG
18446.25	V	36.84	23.13	59.97	74.00	-14.03	peak
18446.25	V	20.08	23.13	43.21	54.00	-10.79	AVG
21867.50	V	37.28	21.19	58.47	74.00	-15.53	peak
21867.50	V	19.07	21.19	40.26	54.00	-13.74	AVG
24162.50	V	37.89	19.88	57.77	74.00	-16.23	peak
24162.50	V	19.66	19.88	39.54	54.00	-14.46	AVG
2212.95	H	54.85	0.39	55.24	74.00	-18.76	peak
2212.95	H	38.50	0.39	38.89	54.00	-15.11	AVG
2703.65	H	41.18	21.89	63.07	74.00	-10.93	peak
2703.65	H	18.64	21.89	40.53	54.00	-13.47	AVG
4874.00	H	36.51	7.72	44.23	74.00	-29.77	peak
9729.90	H	37.51	17.62	55.13	74.00	-18.87	peak
9729.90	H	23.46	17.62	41.08	54.00	-12.92	AVG
14180.00	H	27.96	28.39	56.35	74.00	-17.65	peak
14180.00	H	18.31	28.39	46.70	54.00	-7.30	AVG
18000.00	H	27.08	35.11	62.19	74.00	-11.81	peak
18000.00	H	7.44	35.11	42.55	54.00	-11.45	AVG
18297.50	H	37.32	23.20	60.52	74.00	-13.48	peak
18297.50	H	20.07	23.20	43.27	54.00	-10.73	AVG
22505.00	H	37.53	20.89	58.42	74.00	-15.58	peak
22505.00	H	19.37	20.89	40.26	54.00	-13.74	AVG
25841.25	H	38.82	18.69	57.51	74.00	-16.49	peak
25841.25	H	20.83	18.69	39.52	54.00	-14.48	AVG

Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode				Frequency	2452MHz	
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2295.40	V	55.01	0.48	55.49	74.00	-18.51	peak
2295.40	V	38.25	0.48	38.73	54.00	-15.27	AVG
2703.65	V	40.88	21.89	62.77	74.00	-11.23	peak
2703.65	V	18.32	21.89	40.21	54.00	-13.79	AVG
4904.00	V	37.05	7.71	44.76	74.00	-29.24	peak
9598.50	V	36.39	17.41	53.80	74.00	-20.20	peak
9598.50	V	23.44	17.41	40.85	54.00	-13.15	AVG
14020.00	V	28.15	28.21	56.36	74.00	-17.64	peak
14020.00	V	17.52	28.21	45.73	54.00	-8.27	AVG
18000.00	V	28.00	35.11	63.11	74.00	-10.89	peak
18000.00	V	7.05	35.11	42.16	54.00	-11.84	AVG
19147.50	V	37.02	22.97	59.99	74.00	-14.01	peak
19147.50	V	20.21	22.97	43.18	54.00	-10.82	AVG
22611.25	V	37.51	20.90	58.41	74.00	-15.59	peak
22611.25	V	19.72	20.90	40.62	54.00	-13.38	AVG
25458.75	V	39.46	19.01	58.47	74.00	-15.53	peak
25458.75	V	20.90	19.01	39.91	54.00	-14.09	AVG
2197.65	H	54.94	0.51	55.45	74.00	-18.55	peak
2197.65	H	38.09	0.51	38.60	54.00	-15.40	AVG
2700.00	H	40.10	22.58	62.68	74.00	-11.32	peak
2700.00	H	18.67	22.58	41.25	54.00	-12.75	AVG
4904.00	H	36.01	7.71	43.72	74.00	-30.28	peak
9583.90	H	36.06	17.33	53.39	74.00	-20.61	peak
9583.90	H	23.30	17.33	40.63	54.00	-13.37	AVG
13960.00	H	28.41	28.11	56.52	74.00	-17.48	peak
13960.00	H	17.69	28.11	45.80	54.00	-8.20	AVG
18000.00	H	27.15	35.11	62.26	74.00	-11.74	peak
18000.00	H	7.35	35.11	42.46	54.00	-11.54	AVG
18850.00	H	36.96	23.15	60.11	74.00	-13.89	peak
18850.00	H	19.96	23.15	43.11	54.00	-10.89	AVG
21931.25	H	37.37	21.15	58.52	74.00	-15.48	peak
21931.25	H	19.39	21.15	40.54	54.00	-13.46	AVG
25437.50	H	39.17	19.02	58.19	74.00	-15.81	peak
25437.50	H	20.78	19.02	39.80	54.00	-14.20	AVG

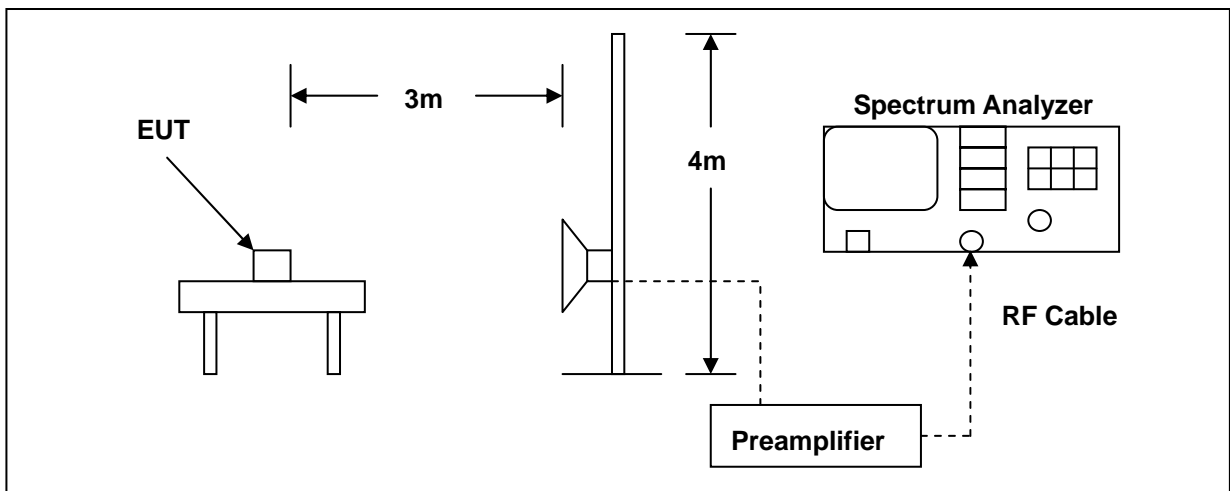
Product	WLAN Module						
Test Item	Transmitter Radiated Emissions						
Test Mode	Mode 6: Receiver Mode						
Date of Test	02/28/2010				Test Site	TE02	
Freq	Polarization (V/H)	Rd_level (dBuV)	Factor	Level (dBuV/m)	Limit (dBuV/m)	Over	detector
2667.70	V	54.80	1.00	55.80	74.00	-18.20	peak
2667.70	V	38.12	1.00	39.12	54.00	-14.88	AVG
2703.65	V	40.42	21.89	62.31	74.00	-11.69	peak
2703.65	V	18.48	21.89	40.37	54.00	-13.63	AVG
9605.80	V	35.86	17.36	53.22	74.00	-20.78	peak
9605.80	V	23.41	17.36	40.77	54.00	-13.23	AVG
14160.00	V	27.37	28.37	55.74	74.00	-18.26	peak
14160.00	V	17.58	28.37	45.95	54.00	-8.05	AVG
17920.00	V	26.49	34.38	60.87	74.00	-13.13	peak
17920.00	V	7.36	34.38	41.74	54.00	-12.26	AVG
18531.25	V	36.35	23.09	59.44	74.00	-14.56	peak
18531.25	V	20.16	23.09	43.25	54.00	-10.75	AVG
22377.50	V	36.89	20.94	57.83	74.00	-16.17	peak
22377.50	V	20.08	20.94	41.02	54.00	-12.98	AVG
25735.00	V	38.66	18.79	57.45	74.00	-16.55	peak
25735.00	V	21.18	18.79	39.97	54.00	-14.03	AVG
2496.00	H	55.62	0.25	55.87	74.00	-18.13	peak
2496.00	H	37.97	0.25	38.22	54.00	-15.78	AVG
2700.00	H	40.47	22.58	63.05	74.00	-10.95	peak
2700.00	H	18.24	22.58	40.82	54.00	-13.18	AVG
9405.05	H	36.42	17.09	53.51	74.00	-20.49	peak
9405.05	H	23.53	17.09	40.62	54.00	-13.38	AVG
14240.00	H	27.57	28.25	55.82	74.00	-18.18	peak
14240.00	H	17.50	28.25	45.75	54.00	-8.25	AVG
18000.00	H	26.52	35.11	61.63	74.00	-12.37	peak
18000.00	H	7.12	35.11	42.23	54.00	-11.77	AVG
18616.25	H	36.88	23.07	59.95	74.00	-14.05	peak
18616.25	H	20.05	23.07	43.12	54.00	-10.88	AVG
22313.75	H	37.52	20.97	58.49	74.00	-15.51	peak
22313.75	H	20.06	20.97	41.03	54.00	-12.97	AVG
25947.50	H	38.21	18.60	56.81	74.00	-17.19	peak
25947.50	H	21.41	18.60	40.01	54.00	-13.99	AVG

## 6 Band Edges Measurement

### 6.1. Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

### 6.2. Test Setup



### 6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	01/27/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	01/20/2009	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	07/01/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: <sup>(1)</sup> Calibration period 1 year. <sup>(2)</sup> Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

#### 6.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

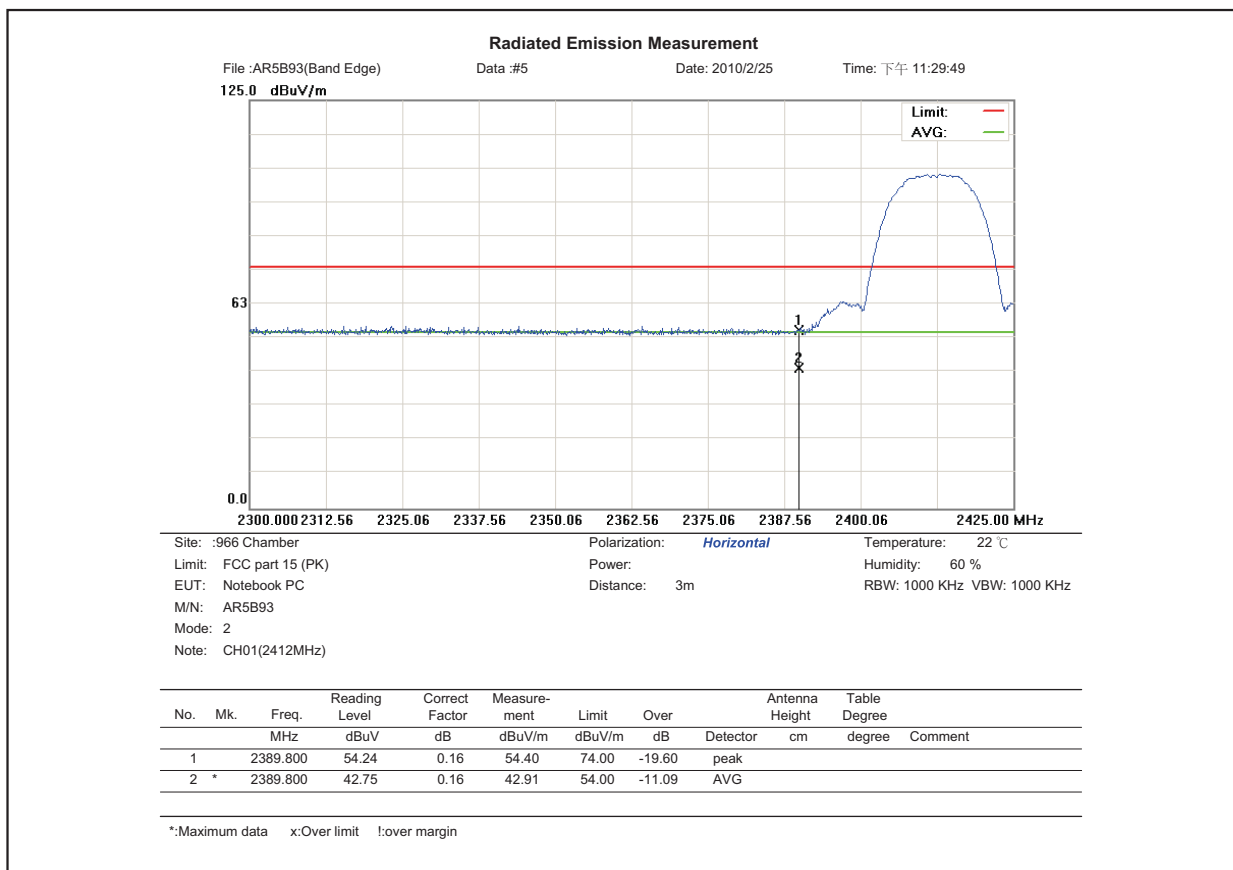
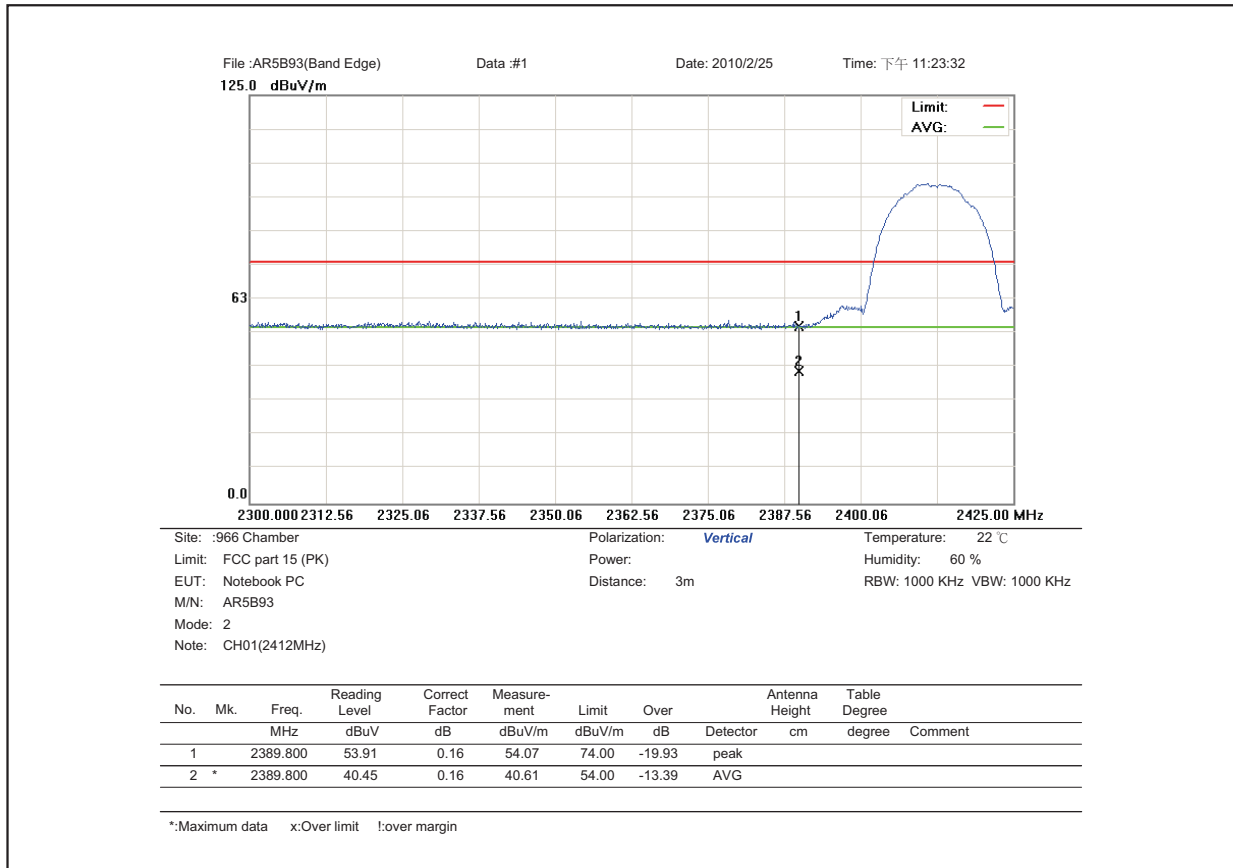
The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

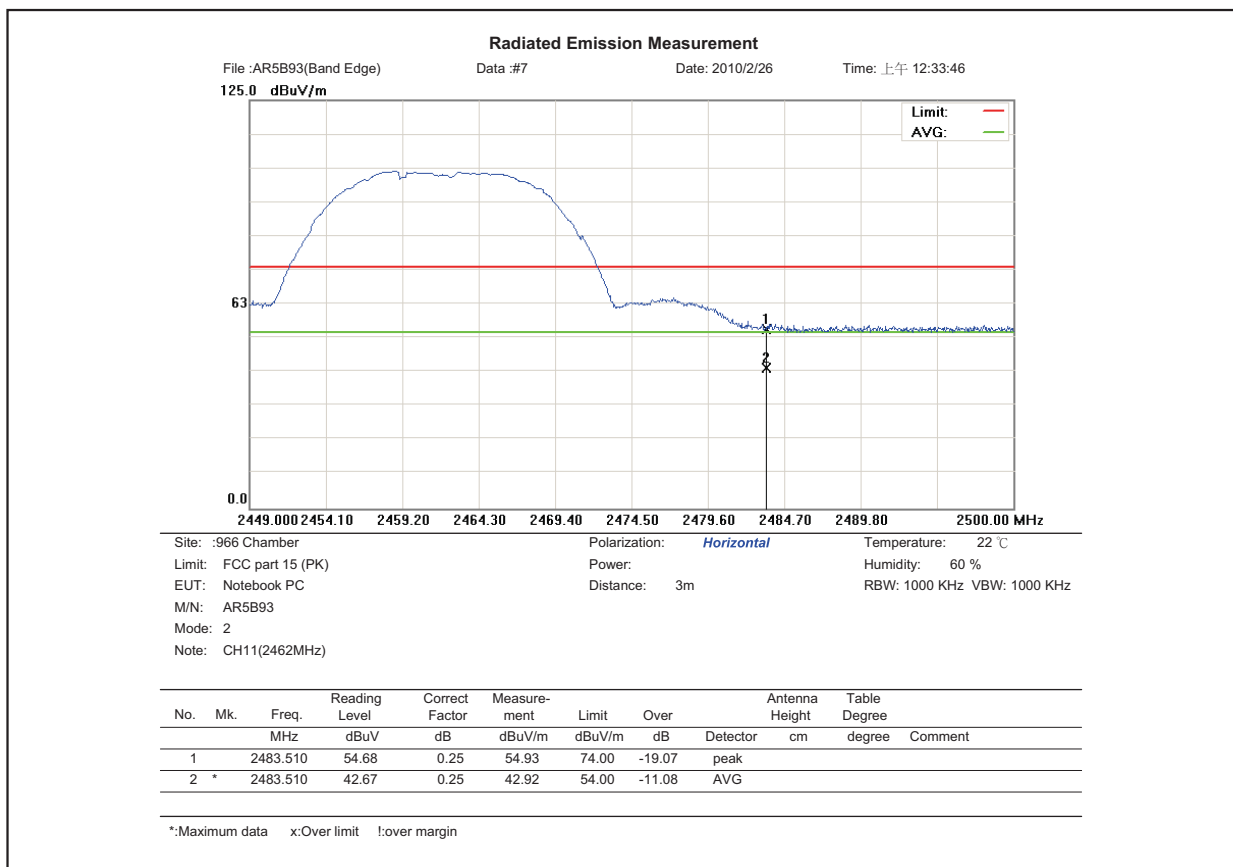
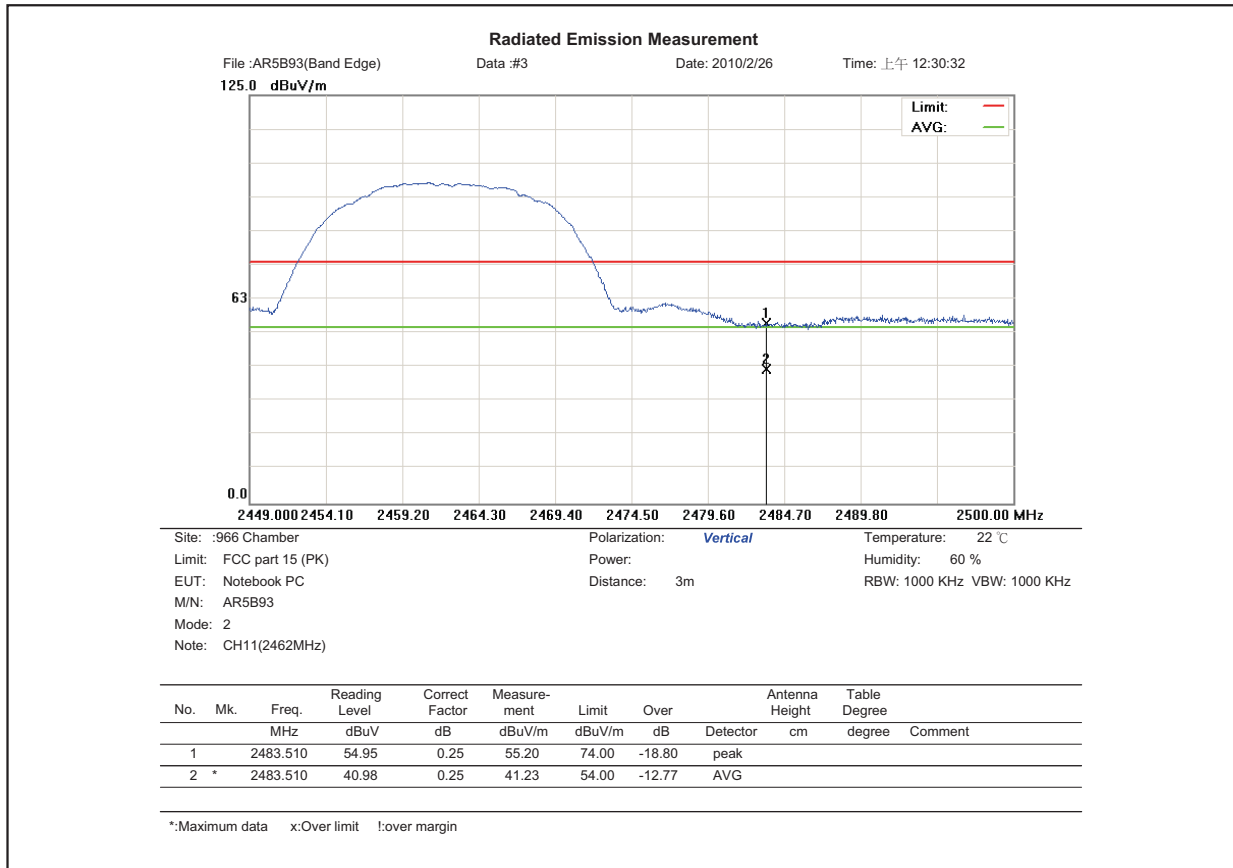
The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

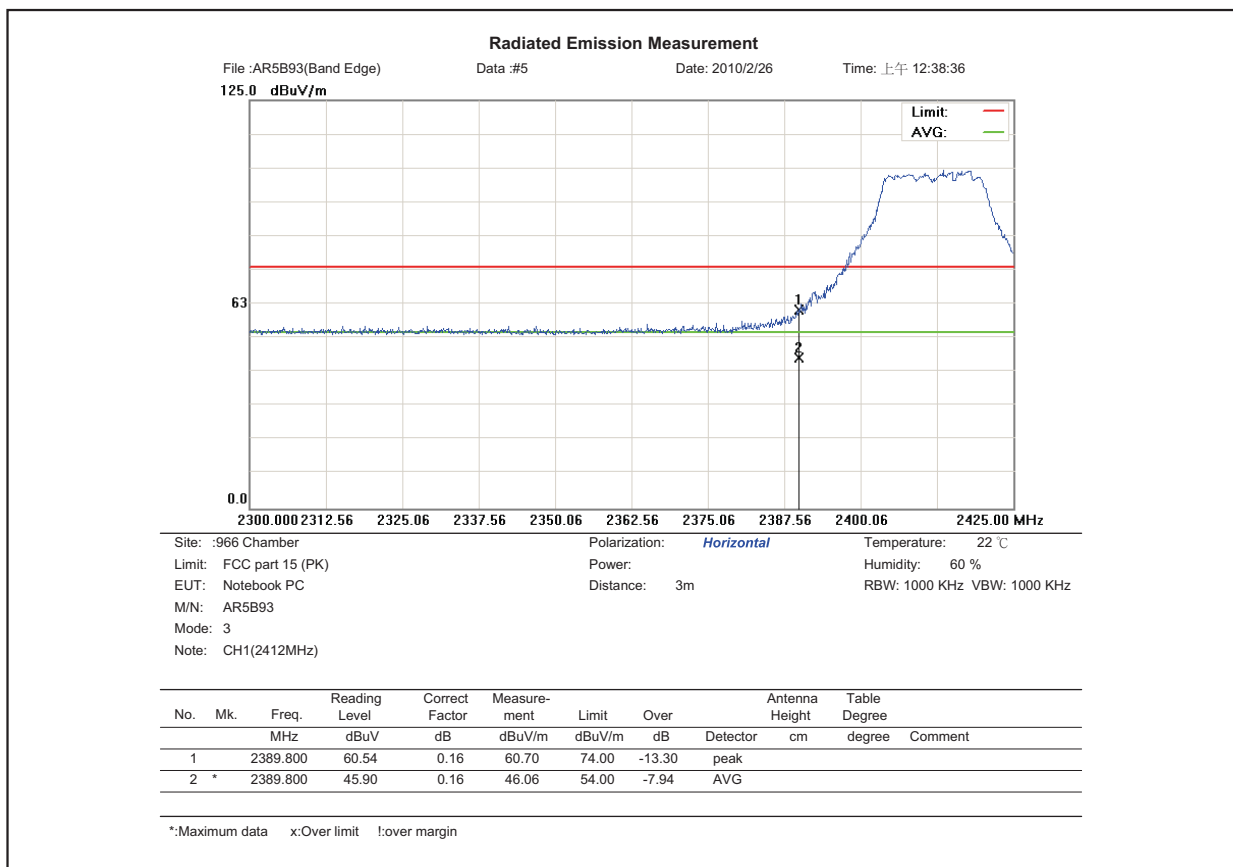
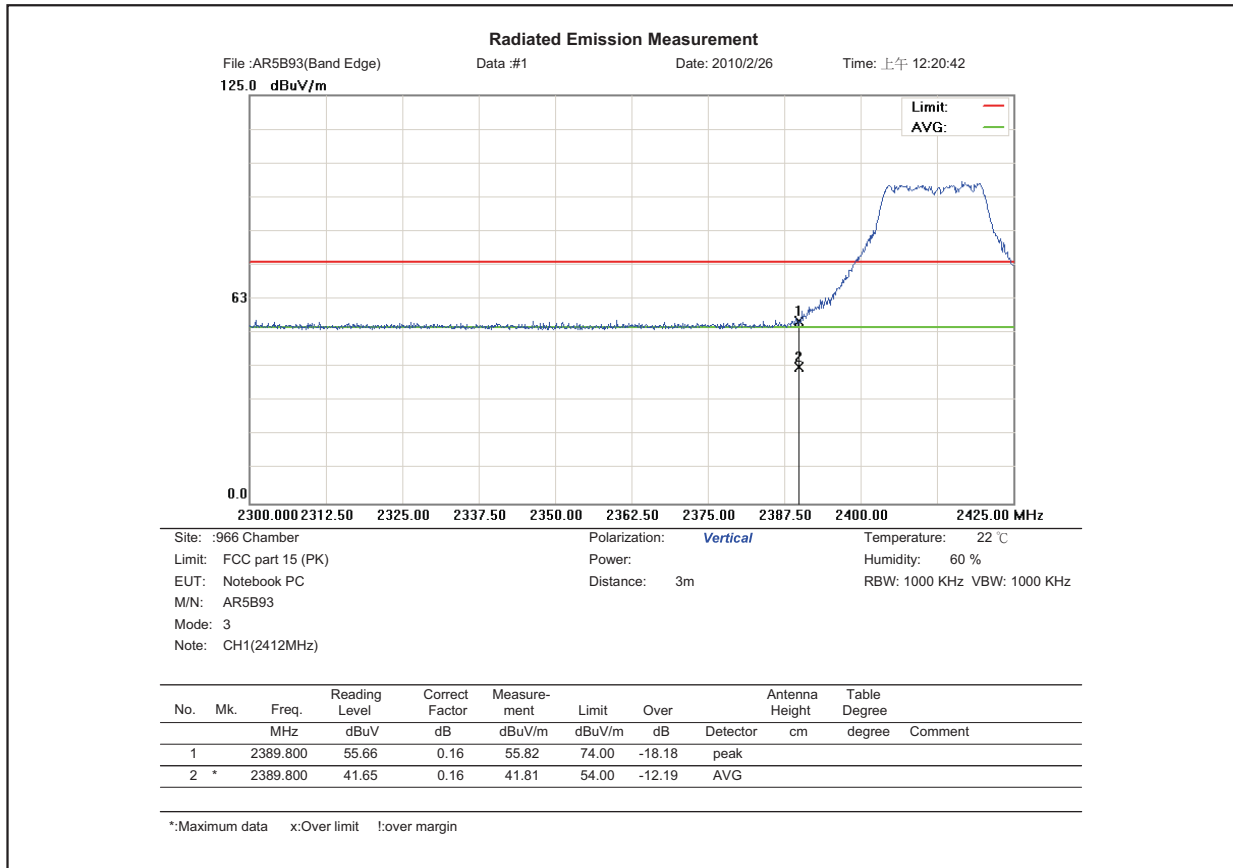
The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

#### 6.5. Test Graphs

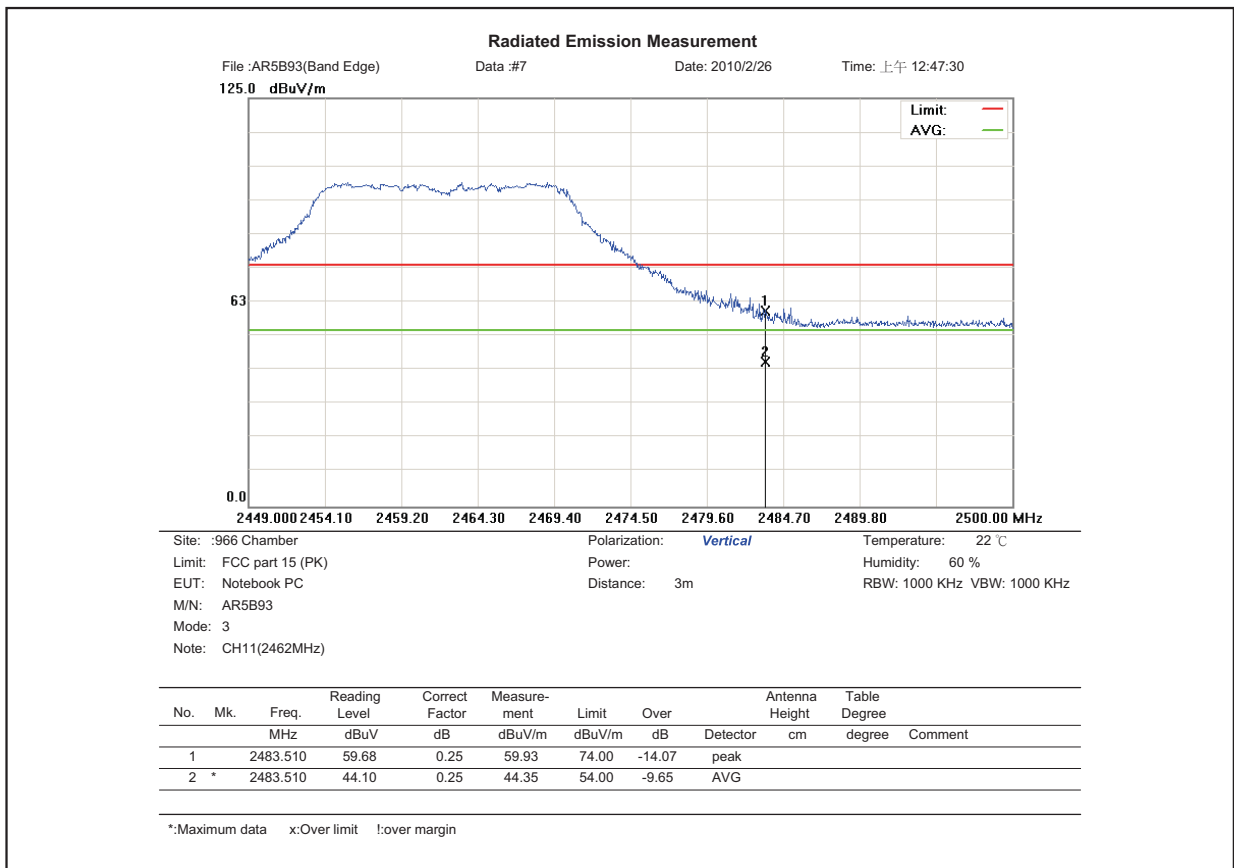
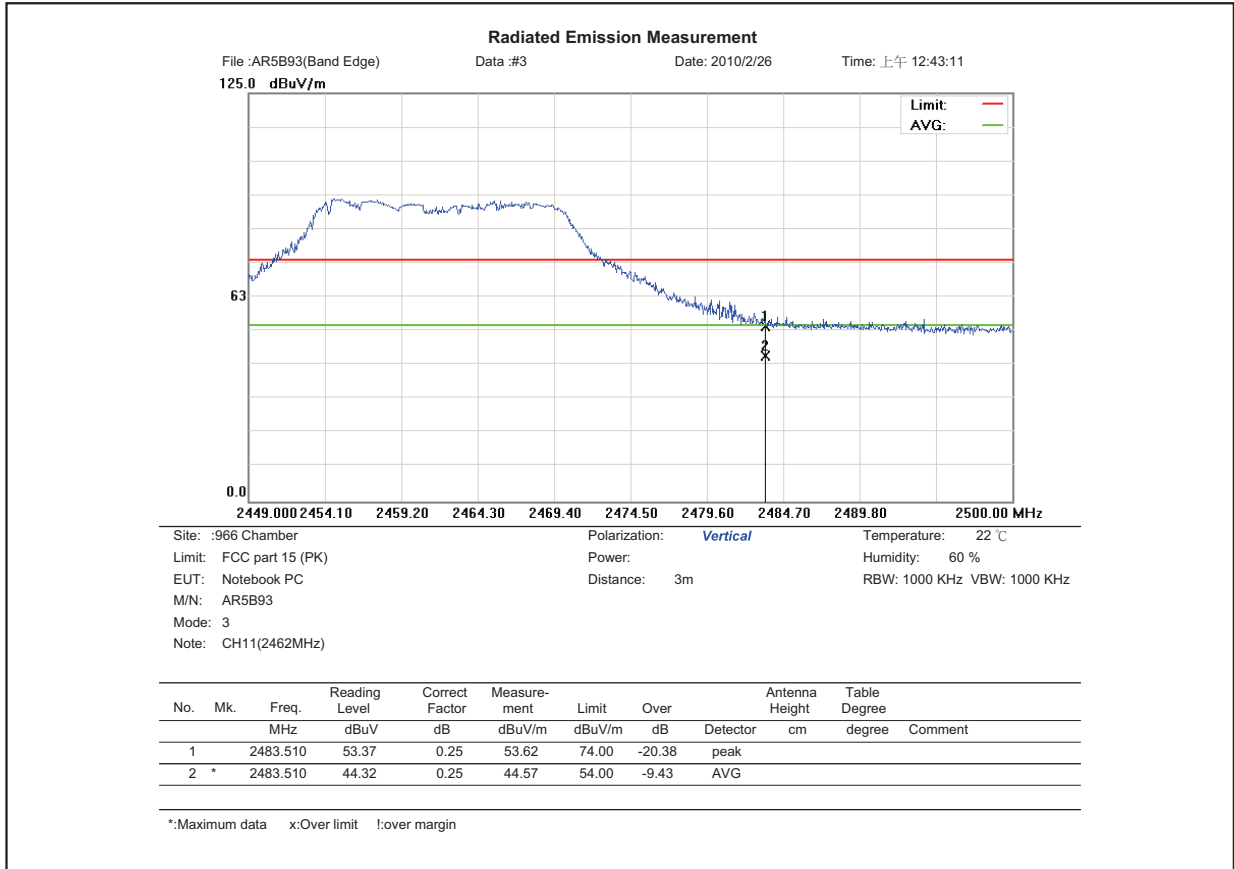
Product	WLAN Module		
Test Item	Band Edges		
Test Mode	Mode 2: IEEE 802.11b Link Mode Mode 3: IEEE 802.11g Link Mode Mode 4: draft 802.11n Standard-20MHz Link Mode Mode 5: draft 802.11n Wide-40MHz Link Mode		
Date of Test	02/25 ~ 02/26/2010	Test Site	TE02

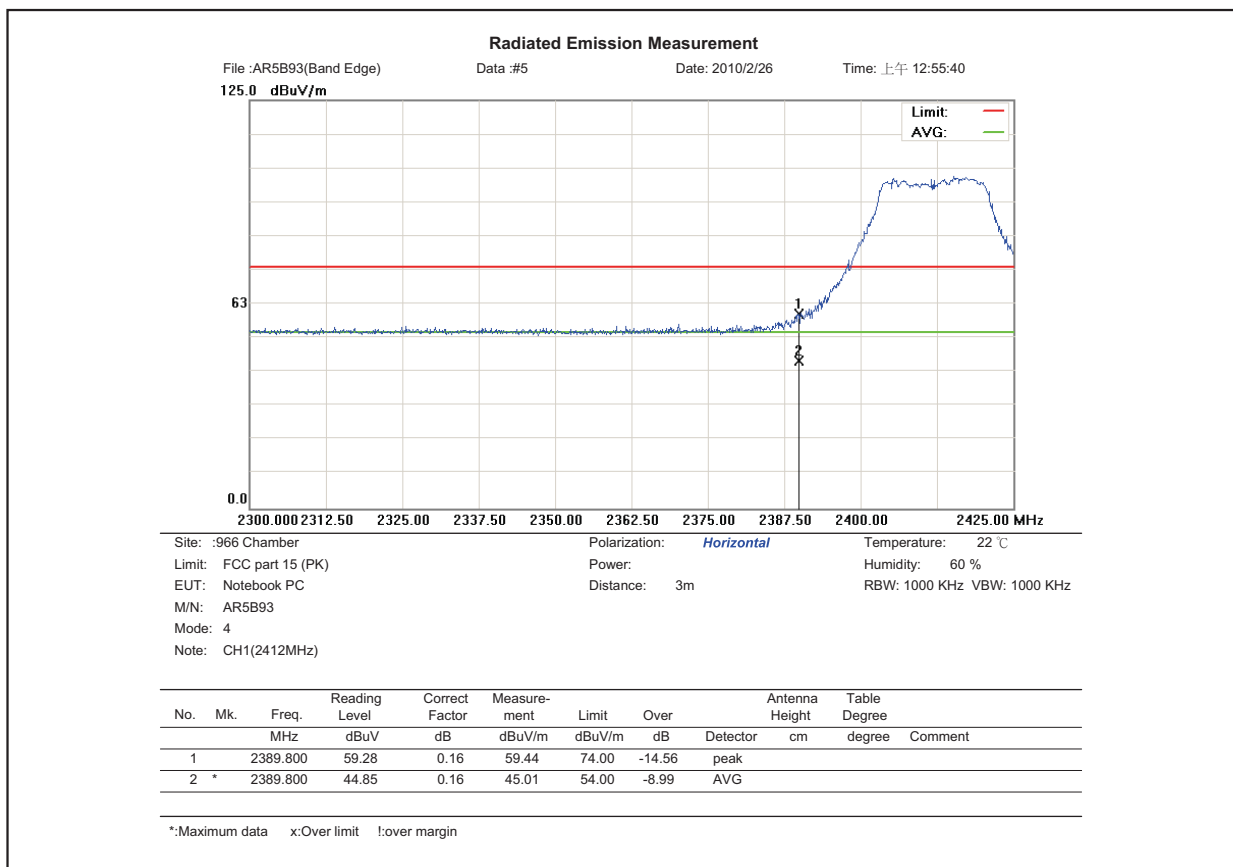
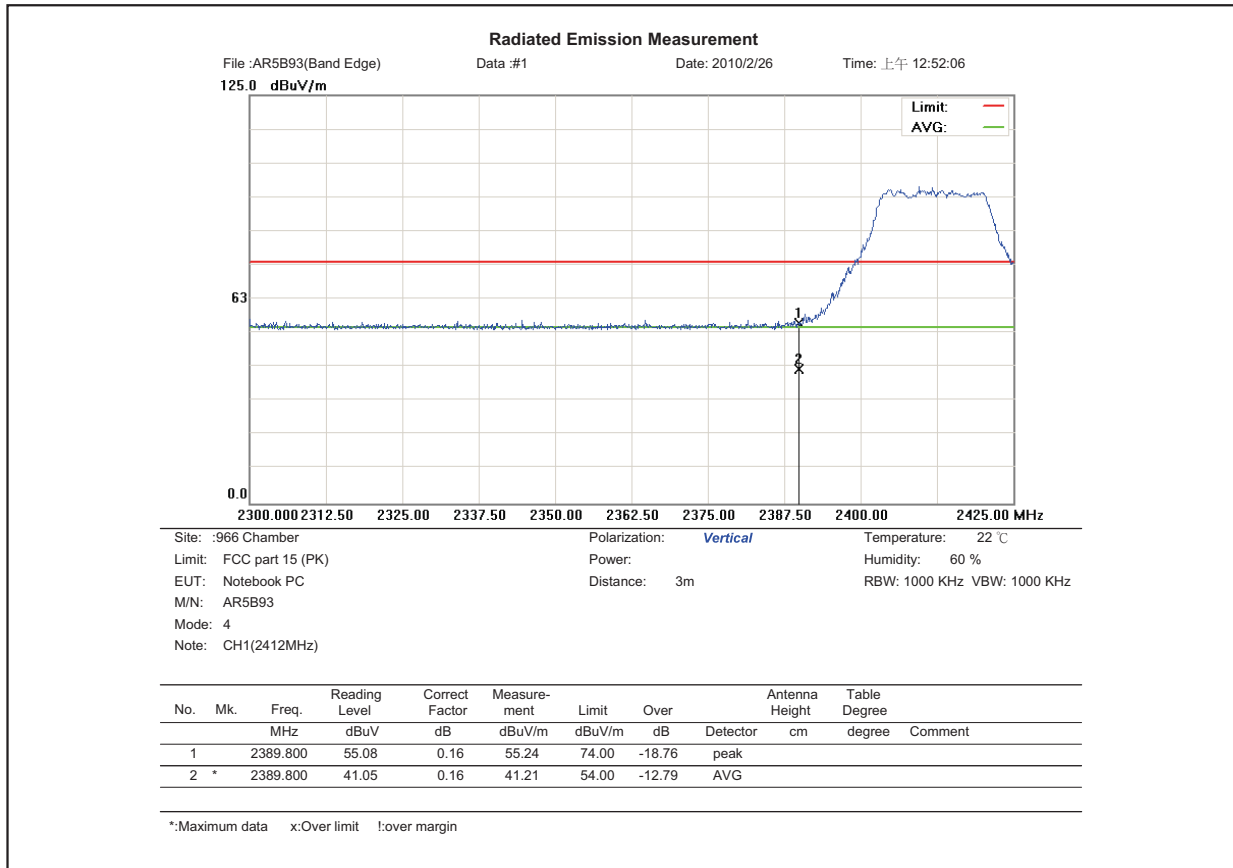


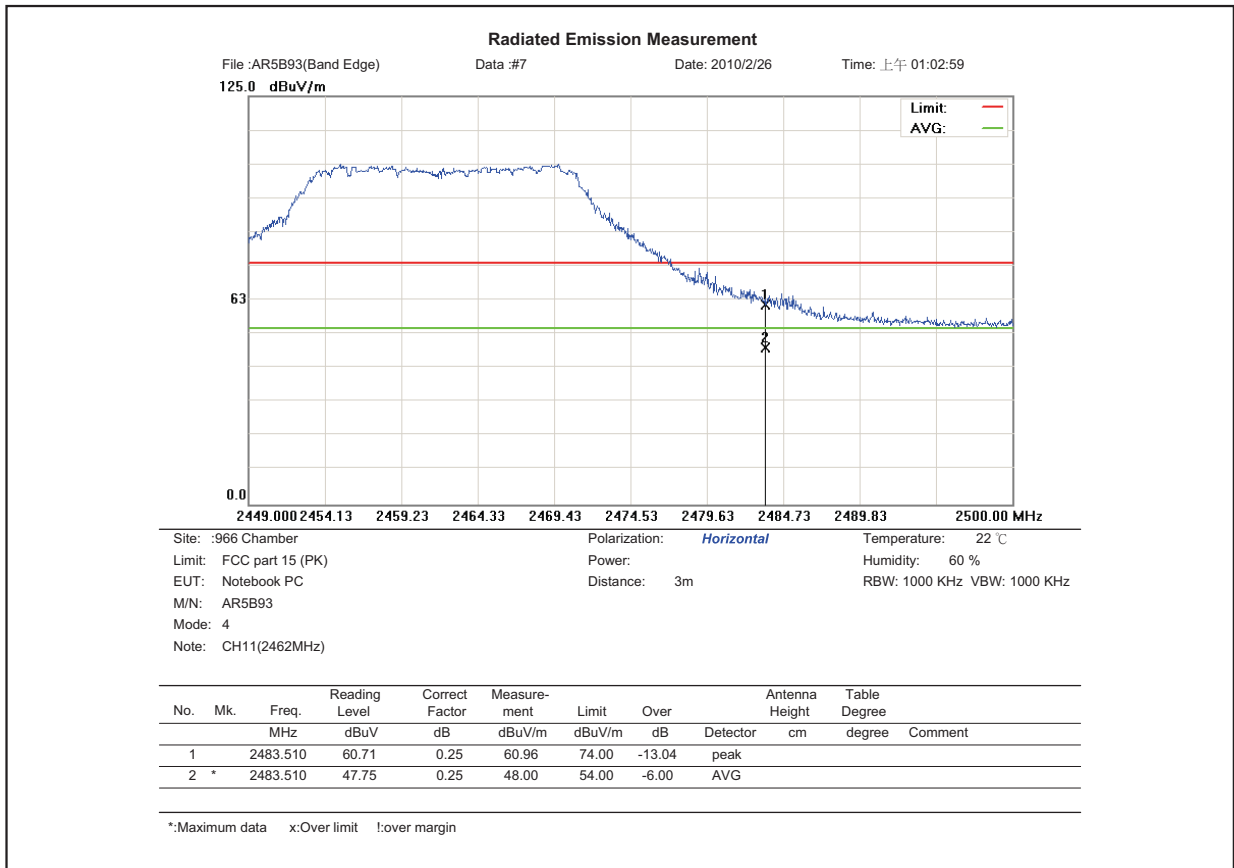
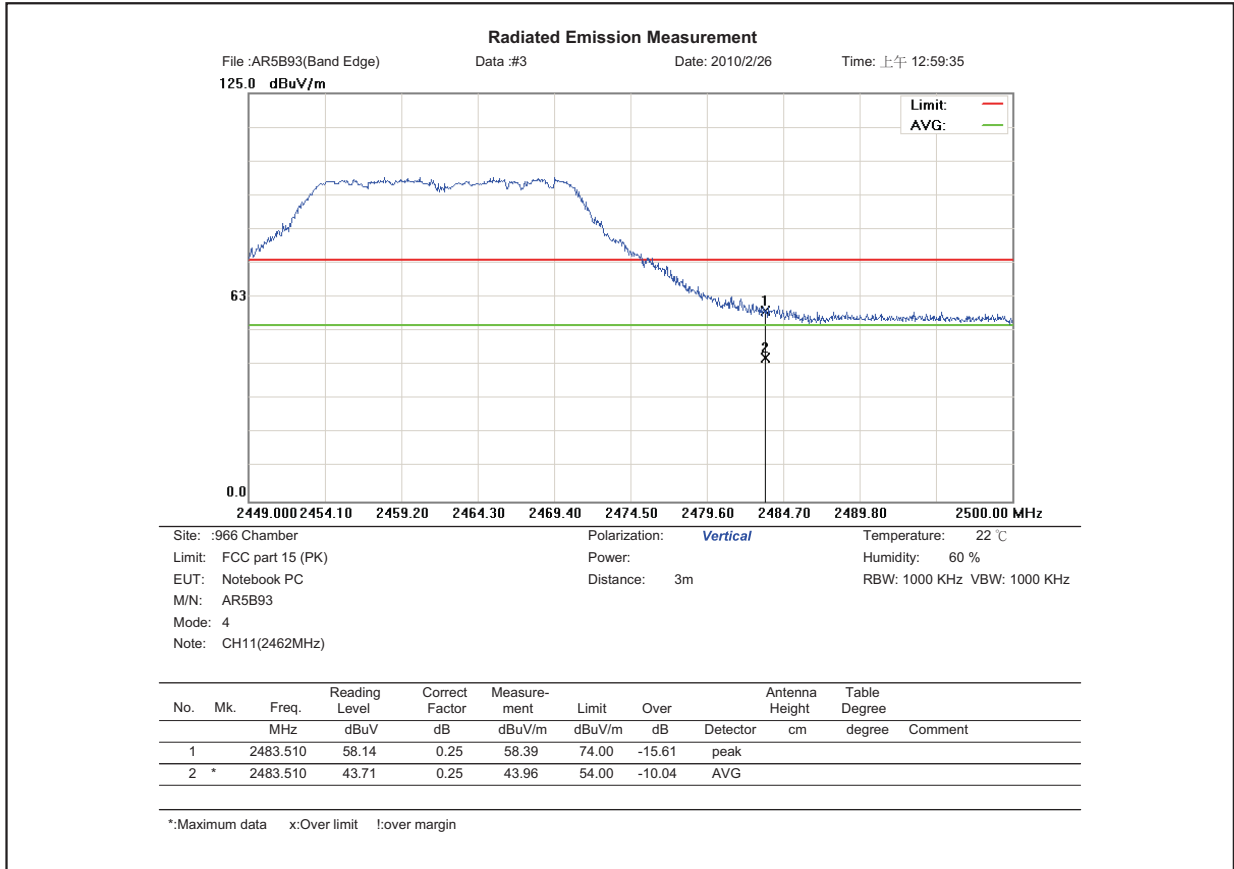


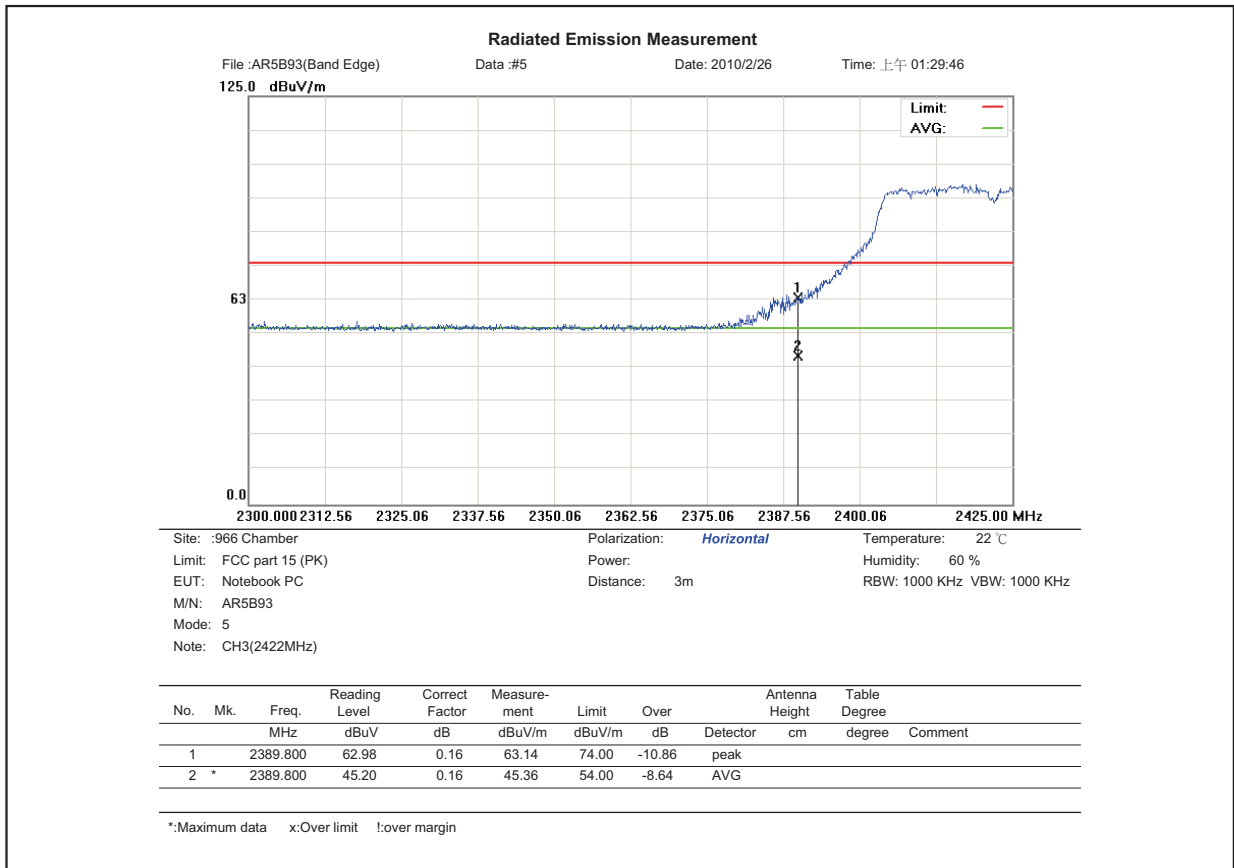
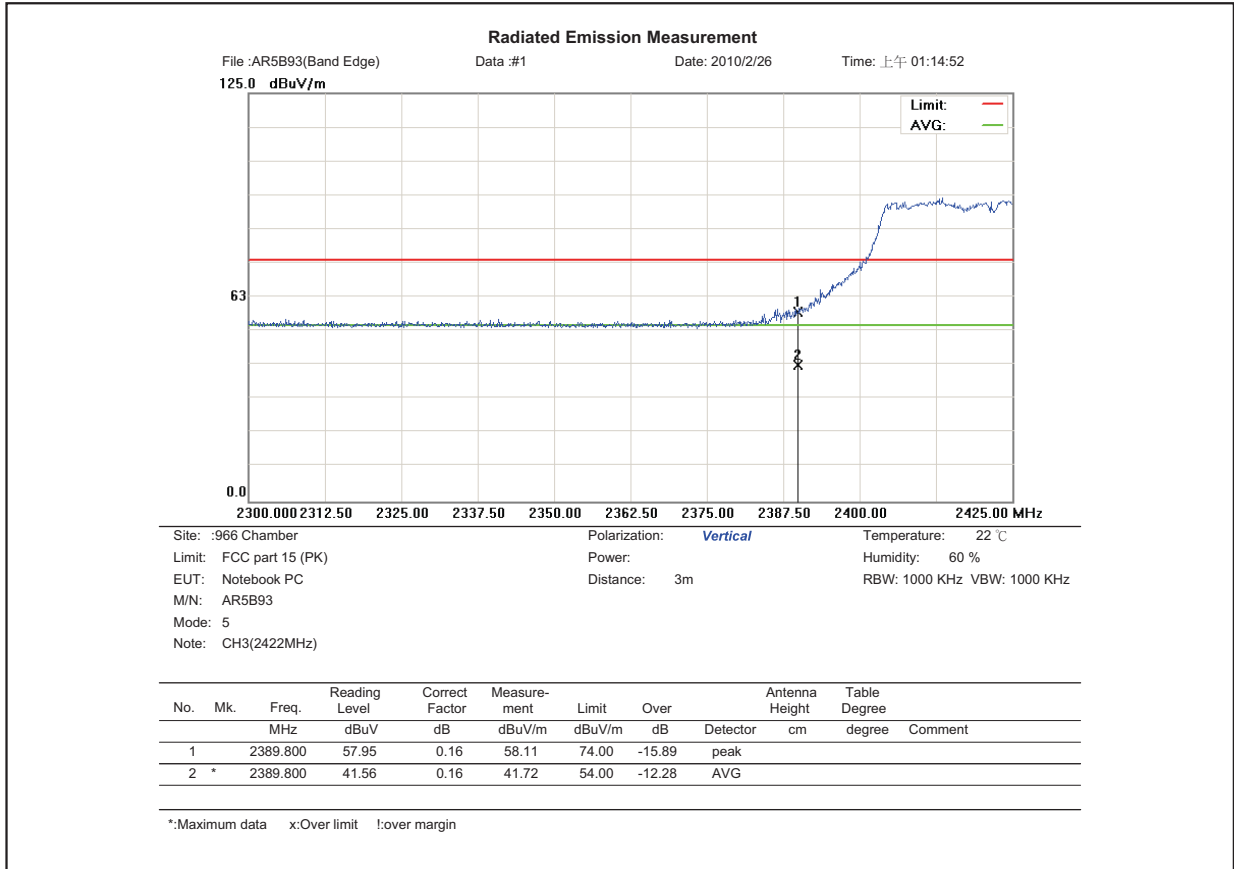


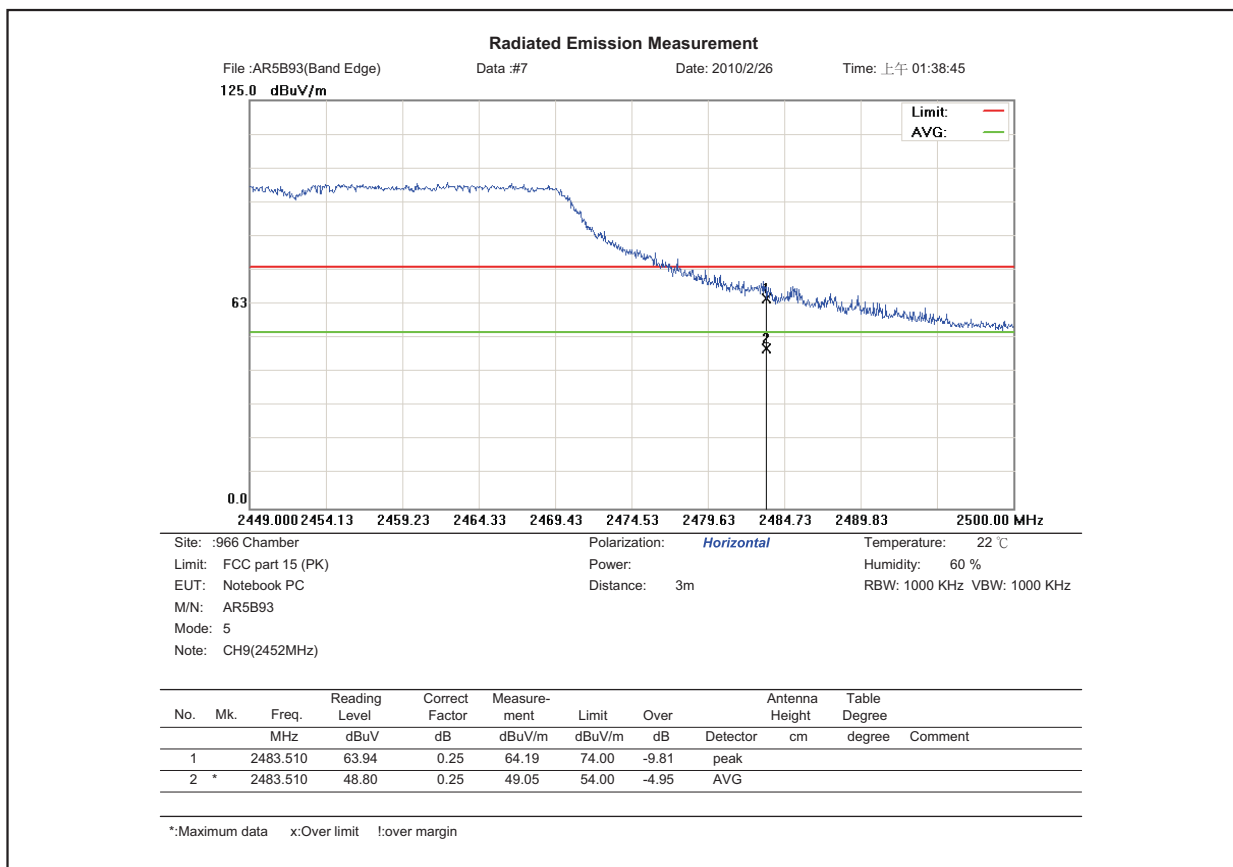
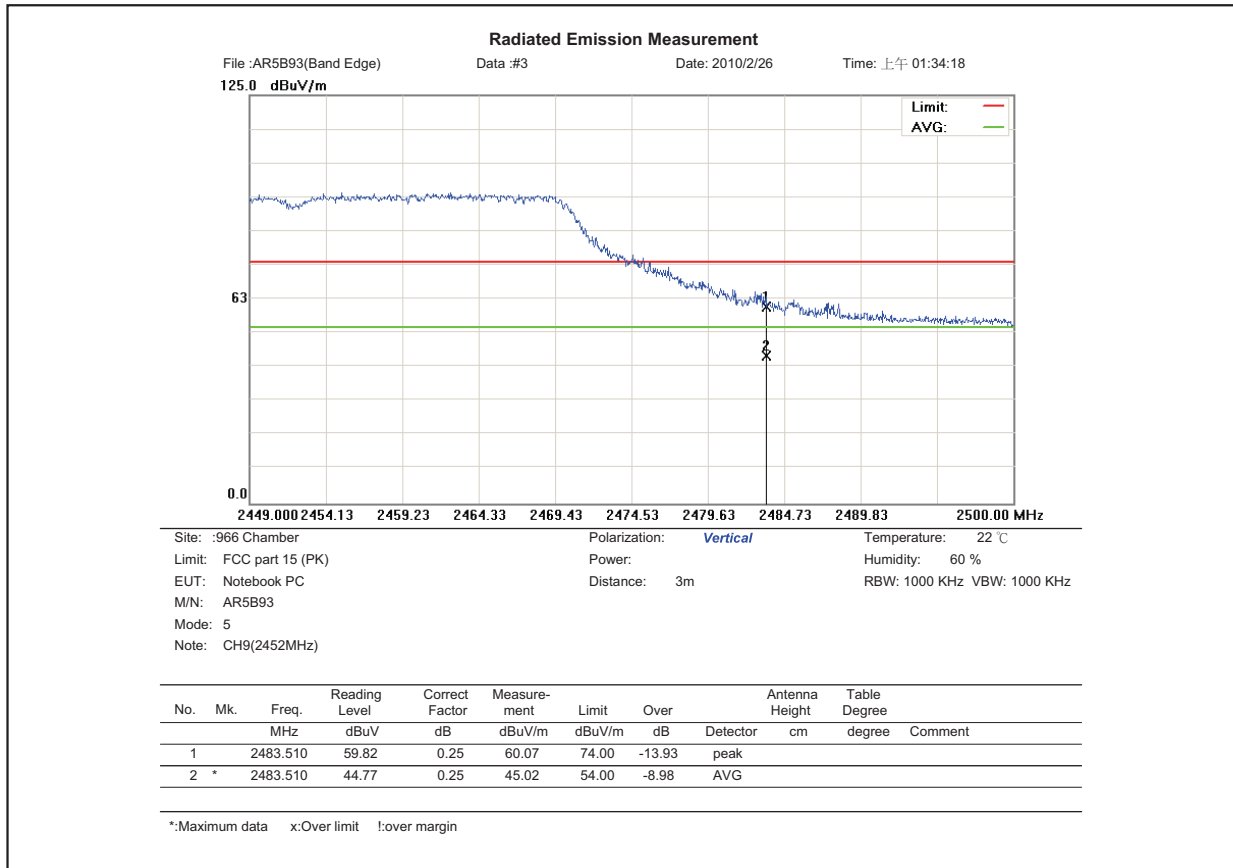












## 7 Antenna Requirements

### 7.1. Limit

For intentional device, according to 15.203, 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.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 7.2. Antenna Connector Construction

The antenna used in this product is **PIFA antenna**. The gain of the main antenna is -0.71dBi and aux antenna is 0.27dBi.