

FCC PART 15 SUBPART E



MEASUREMENT AND TEST REPORT

For

**Meru Networks, Inc.**

1309 S. Mary Ave.  
Sunnyvale, CA 94087, USA

**FCC ID: RE7-AP200R2**

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Class II Permissive Change: Supplemental Report		<b>Product type:</b> Single/Dual Radio 802.11a/b/g Wireless LAN Access Point AP200 Rev. 2	
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<b>Report Number:</b>	R0703306-407		
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**TABLE OF CONTENTS**

**GENERAL INFORMATION.....3**

- PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....3
- EUT PHOTO .....3
- MECHANICAL DESCRIPTION .....3
- OBJECTIVE .....4
- RELATED SUBMITTAL(S)/GRANT(S).....4
- TEST METHODOLOGY .....4
- MEASUREMENT UNCERTAINTY .....4
- TEST FACILITY .....4

**SYSTEM TEST CONFIGURATION.....6**

- JUSTIFICATION .....6
- EUT EXERCISE SOFTWARE .....6
- SPECIAL ACCESSORIES .....6
- SCHEMATICS / BLOCK DIAGRAM.....6
- EQUIPMENT MODIFICATIONS .....6
- POWER SUPPLY INFORMATION.....6
- EXTERNAL I/O CABLING LIST AND DETAILS.....7
- CONFIGURATION OF TEST SYSTEM .....7
- TEST SETUP BLOCK DIAGRAM.....8

**SUMMARY OF TEST RESULTS .....9**

**§ 15.407 (F) AND § 2.1091 - RF EXPOSURE .....10**

**§15.203 - ANTENNA REQUIREMENT.....11**

- APPLICABLE STANDARD .....11

**§15.205, §15.209 & 15.407 (B) - RADIATED SPURIOUS EMISSIONS .....12**

- APPLICABLE STANDARD .....12
- TEST SETUP.....13
- TEST EQUIPMENT LIST AND DETAILS.....13
- TEST PROCEDURE .....13
- CORRECTED AMPLITUDE & MARGIN CALCULATION .....14
- TEST SETUP DIAGRAM .....14
- SUMMARY OF TEST RESULTS .....15
- RADIATED EMISSIONS TEST PLOT & DATA:.....18

## GENERAL INFORMATION

### Product Description for Equipment Under Test (EUT)

The Meru Networks product, FCC ID: RE7-AP200R2, or the “EUT” as referred to in this report is a Wireless Single/Dual Radio 802.11a/b/g Access Point, models: AP201 Rev 2 & AP208 Rev 2. Both models are similar; model AP201 Rev 2 is a single radio unit, model AP208 Rev 2 is a dual radio unit. Testing was conducted on model AP208 Rev 2 and is considered representative of both models. Verification testing was conducted on model AP201 Rev 2. The radios utilized in the EUT are capable of transmitting and receiving simultaneously. The EUT is a composite device of DTS and UNII. For the DTS part (802.11a/b/g), the frequency range is 2412.00 – 2462.00 MHz (for 802.11b/g), & 5725.00 – 5850.00 MHz (for 802.11a). For the UNII part (802.11a), the frequency range is 5150.00 – 5250.00 MHz, & 5250.00 – 5350.00 MHz. The EUT receives power through PoE (Power over Ethernet) rated at 48VDC/250mA.

Antenna Type	Gain (dBi)	Frequency
Directional Panel Antenna <b>MP58013XFPT</b>	12.5 dBi	5.15 – 5.25 GHz
Directional Panel Antenna <b>MP51513XFPT</b>	13.0 dBi	5.8 GHz

\* The test data gathered are from production sample, serial number: Unit # 800-00010-0001 Rev A, provided by the manufacturer.

### EUT Photo



*Additional EUT photos in Exhibit C*

### Mechanical Description

The EUT is a Single/Dual Radio 802.11a/b/g Wireless LAN Access Point AP200 Rev. 2. Its approximate dimensions are 210 mmL x 159 mmW x 38 mmH.

## Objective

This type approval report is prepared on behalf of *Meru Networks, Inc.* in accordance with Part 2, Subpart J, Part 15, Subparts A, B, C and E of the Federal Communication Commissions rules.

This supplemental testing and report have been conducted due to the addition of two optional antennae. The device was tested with two additional external antennae: 1) MaxRad, MP58013XFPT (12.5 dBi gain) and 2) MaxRad MP51513XFPT (13 dBi gain). The objective of the manufacturer is to demonstrate continued compliance with FCC rules for Antenna Requirements, Out of Band Emission, and Spurious Emission.

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

Please refer to BA CL R0611296 for Original Submission test data to which this is the supplement. Additionally, please see BA CL report R0703306-247 for FCC 15.247 related test data.

## Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

## Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the values range from  $\pm 2.0$  for Conducted Emissions tests and  $\pm 4.0$  dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BA CL.

Detailed instrumentation measurement uncertainties can be found in BA CL report QAP-018.

## Test Facility

The Test site used by BA CL Corp. to collect emissions measurement data is located at it's facility in Sunnyvale, California, USA.

Test site at BA CL has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and is listed under FCC registration number: 90464 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

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Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/hdocs/210/214/scopes/2001670.htm>

## SYSTEM TEST CONFIGURATION

### Justification

The host system was configured for testing according to ANSI C63.4-2003.

The EUT was tested in the testing mode to represent *worst*-case results during the final qualification test.

The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, peak power and PPSD across all data rates bandwidths, and modulations.

### EUT Exercise Software

The EUT operates in Continuous Transmitting operation mode during radiated and conducted testing. The following DAC setting is used.

802.11a (low band)

**DATA RATE = 9 Mbps**

**100% DUTY CYCLE**

**TX POWER = 10 dBm, CH36 ~ CH 48**

802.11a (mid band)

**DATA RATE = 9 Mbps**

**100% DUTY CYCLE**

**TX POWER = 16.5 dBm, CH52 ~ CH 60**

### Special Accessories

As shown in following test setup block diagram, all interface cables used for compliance testing are unshielded.

### Schematics / Block Diagram

Please refer to appropriate exhibits.

### Equipment Modifications

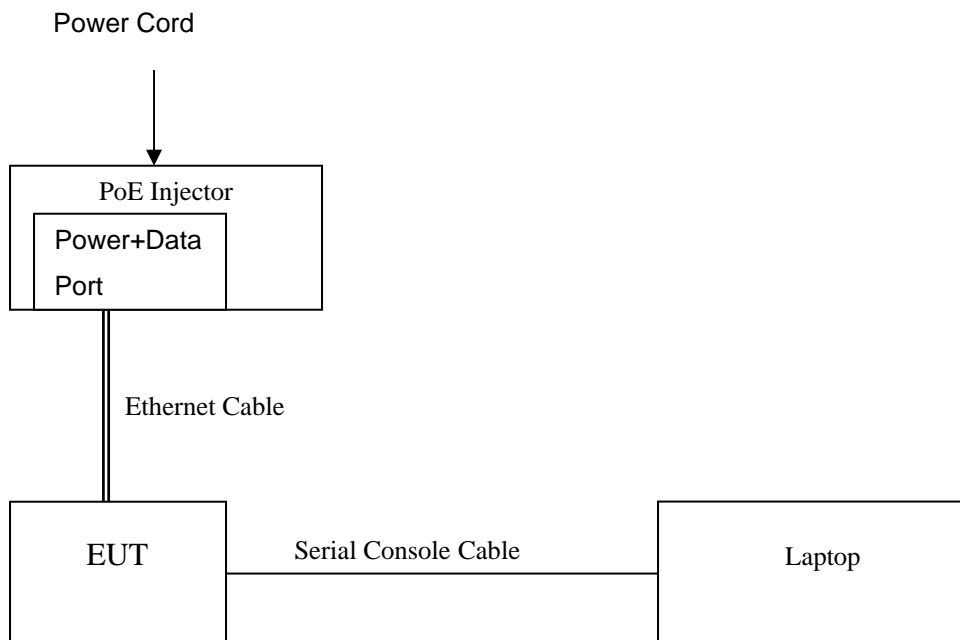
No modifications were made to the EUT.

### Power Supply Information

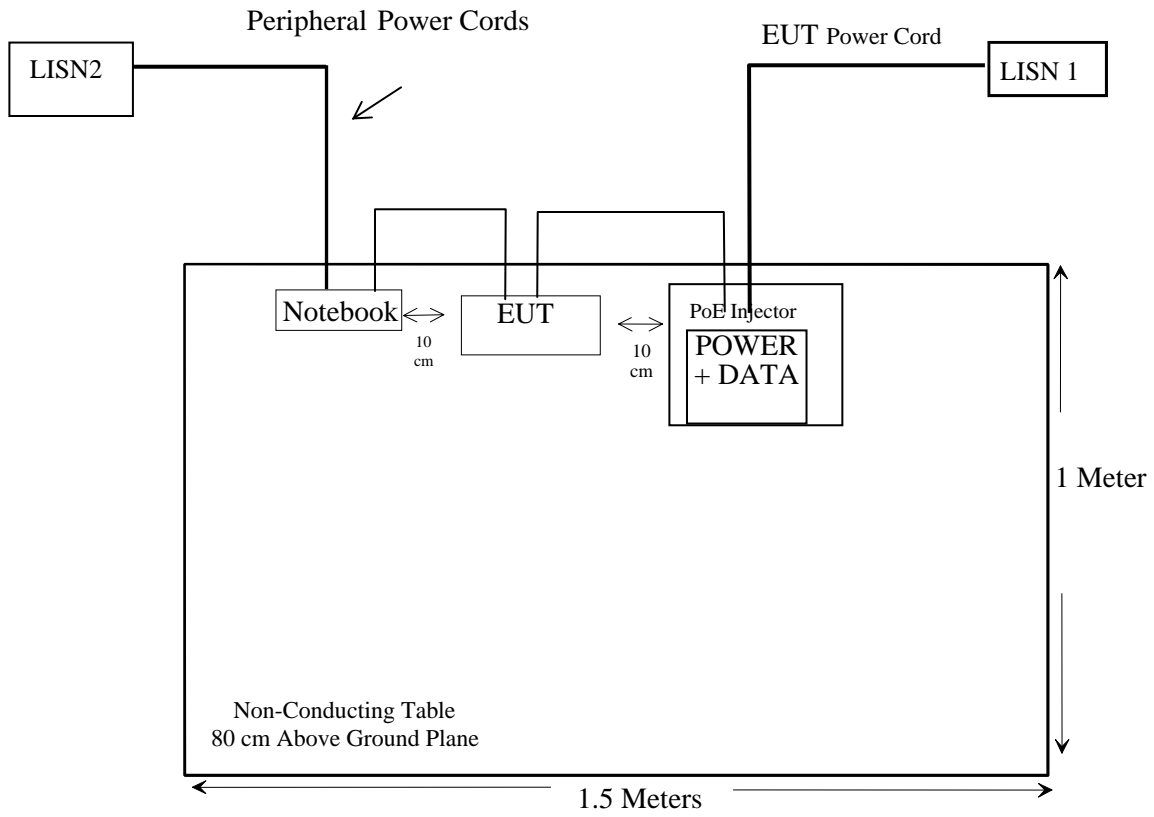
Manufacturer	Description	Model	Serial Number
3Com	PoE Injector	PW130	61-0127-001

**External I/O Cabling List and Details**

Cable Description	Length (M)	Port/From	To
Unshielded RJ45 Cable	1.5	EUT	PoE Injector
Serial console Cable	1	EUT	Laptop

**Configuration of Test System**

### Test Setup Block Diagram





## SUMMARY OF TEST RESULTS

Results reported relate only to the product tested.

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.407 (f) §2.1091	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§ 15.207 (a)	Conducted Emissions	Compliant
§ 15.407 (b)(1) & (b)(2)	Spurious Emissions at Antenna Port	Compliant
§15.205	Restricted Band	Compliant
§15.209 (a) & §15.407(a)(1) & (a)(2)	Spurious Radiated Emissions	Compliant
§15.247 (a)(2)	99% & 26 dB Bandwidth	Compliant
§15.407 (a)(1) & (a)(2)	Maximum Peak Output Power	Compliant
§15.407 (a)(1) & (a)(2)	Power Spectral Density	Compliant
§ 15.407 (a)(6)	Peak Excursion	Compliant
§15.407 (b)	Out Of Band Emission	Compliant
§15.407 (c)	Discontinue Transmitting with Absence of Data or Operational Failure	Compliant
§15.407 (g)	Frequency Stability	Compliant

\* Please refer to original submission BACL R0611296 for test results

## § 15.407 (f) and § 2.1091 - RF EXPOSURE

According to §15.407 (f) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

### Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

### MPE Prediction

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

### 802.11a

Maximum peak output power at antenna input terminal: 16.50 (dBm)

Maximum peak output power at antenna input terminal: 44.67 (mW)

Prediction distance: 20 (cm)

Predication frequency: 5300 (MHz)

Antenna Gain (typical): 13 (dBi)

antenna gain: 19.95 (numeric)

Power density at predication frequency at 20 cm: 0.1773 (mW/cm<sup>2</sup>)

MPE limit for uncontrolled exposure at prediction frequency: 1.0 (mW/cm<sup>2</sup>)

### Test Result

The EUT is a mobile device. The worst power density levels at 20 cm for the maximum output power is 0.1773 mW/cm, which is below the uncontrolled limit of 1.0mW/cm<sup>2</sup>.

## §15.203 - ANTENNA REQUIREMENT

### Applicable Standard

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.407 (a)(1) & (a)(2), 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 6 dBi.

**Result: Compliant:** This device uses one of two external panel antennae that connect with the EUT using a proprietary reverse polarity connector; please refer to the following photo that details the connectors on the EUT.



## §15.205, §15.209 & 15.407 (b) - RADIATED SPURIOUS EMISSIONS

### Applicable Standard

As per 15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per 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 (micro volts/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

\*\* 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.

As Per 15.407(a)(1) & (a)(2): for the 5.15-5.35 GHz band, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

As Per 15.205(a) except as show 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	960 – 1240	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5.35 – 5.46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 – 167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As Per 15.407 (b): Undesirable emission limits: Except as shown in paragraph (b)(6) of this section, the peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.

(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.

### Test Setup

The radiated emissions tests were performed in the 3-meter open area test site, using the setup in accordance with ANSI C63.4-2003. The specification used was the FCC 15 Subpart C and E limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Sonoma Instruments	Pre amplifier	317	260408	2007-03-02
Agilent	Pre amplifier	8449B	3008A01978	2006-08-10
Sunol Science Corp	Combination Antenna	JB3 Antenna	A020106-3	2007-02-14
Agilent	Spectrum Analyzer	8568EC	3946A00131	2006-01-24
A.R.A	Antenna Horn	DRG-118/A	1132	2006-08-17
Rohde & Schwaz	EMI Test Receiver	ESCI 1166.5950K03	100338	2007-04-05

\* **Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

### Test Procedure

For the radiated emissions test, the EUT, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000MHz:

$$\text{RBW} = 100 \text{ kHz} / \text{VBW} = 300 \text{ kHz} / \text{Sweep} = \text{Auto}$$

Above 1000MHz:

$$(1) \text{ Peak: RBW} = 1\text{MHz} / \text{VBW} = 1\text{MHz} / \text{Sweep} = \text{Auto}$$

$$(2) \text{ Average: RBW} = 1\text{MHz} / \text{VBW} = 10\text{Hz} / \text{Sweep} = \text{Auto}$$

### Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

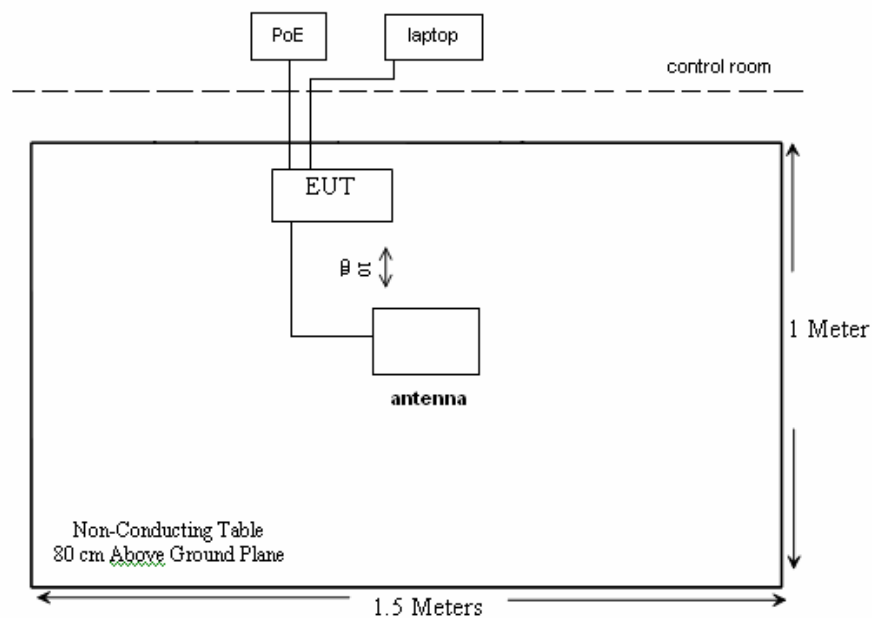
$$\text{Corrected Amplitude} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit.

The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corrected Amplitude} - \text{FCC Limit}$$

### Test Setup Diagram



### Environmental Conditions

Temperature:	21° C
Relative Humidity:	45 %
ATM Pressure:	103.8 kPa

\* The testing was performed by Oscar Au from 2007-04-09

### Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part 15 section 15.205, 15.209 and Subpart E 15.407, and had the worst margin of:

#### 802.11a: 5180 – 5240 MHz

- 8.0 dB at 6893.0000 MHz in the **Vertical** polarization for Low Channel, 1GHz – 40GHz
- 9.6 dB at 6949.7000 MHz in the **Vertical** polarization for Middle Channel, 1GHz – 40GHz
- 12.4 dB at 10480.0000 MHz in the **Vertical** polarization for High Channel, 1GHz – 40GHz

#### 802.11a: 5260 – 5320 MHz

- 3.4 dB at 10520.0000 MHz in the **Vertical** polarization for Low Channel, 1GHz – 40GHz
- 0.6 dB at 10600.0000 MHz in the **Vertical** polarization for Middle Channel, 1GHz – 40GHz
- 8.0 dB at 10640.0000 MHz in the **Vertical** polarization for High Channel, 1GHz – 40GHz

#### Unintentional Radiated Emissions:

- 0.7 dB at 32.97 MHz in the **Vertical** polarization, 30 – 1000 MHz

*Please refer to the following plots and tables for detailed test results*

**802.11a: 5180 – 5240 MHz, Measured at 3 meters**

## Low channel 5180 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
6893.0000	55.5	20	1.4	V	35.4	4.6	35.3	60.3	68.3	-8	Ave
10360.0000	35.2	23	1.7	V	38.0	5.7	36.8	42.1	54	-11.9	Ave
6893.0000	50.0	330	1.9	H	35.4	4.6	35.3	54.8	68.3	-13.5	Ave
10360.0000	51.8	23	1.7	V	38.0	5.7	36.8	58.7	74	-15.3	Peak
10360.0000	31.6	20	1.7	H	38.0	5.7	36.8	38.5	54	-15.5	Ave
10360.0000	47.5	20	1.7	H	38.0	5.7	36.8	54.4	74	-19.6	Peak
6893.0000	57.7	20	1.4	V	35.4	4.6	35.3	62.5	88.3	-25.8	Peak
6893.0000	53.2	330	1.9	H	35.4	4.6	35.3	58.0	88.3	-30.3	Peak

## Mid channel 5200 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
6946.7000	53.3	340	1.8	V	35.4	4.7	34.7	58.7	68.3	-9.6	Ave
10440.0000	32.3	15	1.4	V	38.0	5.8	36.8	39.3	54	-14.7	Ave
6946.7000	47.7	330	1.4	H	35.4	4.7	34.7	53.1	68.3	-15.2	Ave
10440.0000	30.1	15	1.6	H	38.0	5.8	36.8	37.1	54	-16.9	Ave
10440.0000	47.3	15	1.4	V	38.0	5.8	36.8	54.3	74	-19.7	Peak
10440.0000	44.6	15	1.6	H	38.0	5.8	36.8	51.6	74	-22.4	Peak
6946.7000	54.3	340	1.8	V	35.4	4.7	34.7	59.7	88.3	-28.6	Peak
6946.7000	50.2	330	1.4	H	35.4	4.7	34.7	55.6	88.3	-32.7	Peak

## High channel 5240 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
10480.0000	34.6	18	1.7	V	38.0	5.8	36.8	41.6	54	-12.4	Ave
6973.4000	50.0	17	1.9	V	35.4	4.6	34.7	55.4	68.3	-12.9	Ave
10480.0000	31.4	20	1.7	H	38.0	5.8	36.8	38.4	54	-15.6	Ave
6973.4000	45.7	330	1.9	H	35.4	4.6	34.7	51.1	68.3	-16.8	Ave
10480.0000	49.7	18	1.7	V	38.0	5.8	36.8	56.7	74	-17.3	Peak
10480.0000	45.2	20	1.7	H	38.0	5.8	36.8	52.2	74	-21.8	Peak
6973.4000	52.3	17	1.9	V	35.4	4.6	34.7	57.7	88.3	-30.6	Peak
6973.4000	49.3	330	1.9	H	35.4	4.6	34.7	54.7	88.3	-33.6	Peak

**Note:** The restricted band limit is 54 dB $\mu$ V/m, the out of band limit is 68.3 dB $\mu$ V/m.



**802.11a: 5260 – 5320 MHz, Measured at 3 meters**

## Low channel 5260 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
10520.0000	45.0	16	1.7	V	38.7	5.8	39.0	50.6	54	-3.4	Ave
10520.0000	40.3	13	1.5	H	38.7	5.8	39.0	45.9	54	-8.1	Ave
10520.0000	59.8	16	1.7	V	38.7	5.8	39.0	65.4	74	-8.6	Peak
7000.0000	48.5	25	1.7	V	35.4	4.6	34.7	55.4	68.3	-12.9	Ave
10520.0000	53.8	13	1.5	H	38.7	5.8	39.0	59.4	74	-14.6	Peak
7000.0000	50.5	330	1.9	H	35.4	4.6	34.7	51.1	68.3	-16.8	Ave
7000.0000	51.3	25	1.7	V	35.4	4.6	34.7	57.7	88.3	-30.6	Peak
7000.0000	54.4	330	1.9	H	35.4	4.6	34.7	54.7	88.3	-33.6	Peak

## Mid channel 5300 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
10600.0000	47.7	340	1.7	V	38.7	5.9	39.0	53.4	54	-0.6	Ave
10600.0000	62.4	340	1.7	V	38.7	5.9	39.0	68.1	74	-5.9	Peak
10600.0000	41.9	70	1.7	H	38.7	5.9	39.0	47.6	54	-6.4	Ave
10600.0000	54.7	70	1.7	H	38.7	5.9	39.0	60.4	74	-13.6	Peak
7053.3000	42.5	350	1.7	V	36.7	4.7	34.7	49.2	68.3	-19.1	Ave
7053.3000	38.5	340	1.8	H	36.7	4.7	34.7	45.2	68.3	-23.1	Ave
7053.3000	47.3	350	1.7	V	36.7	4.7	34.7	54.0	88.3	-34.3	Peak
7053.3000	45.2	340	1.8	H	36.7	4.7	34.7	51.9	88.3	-36.4	Peak

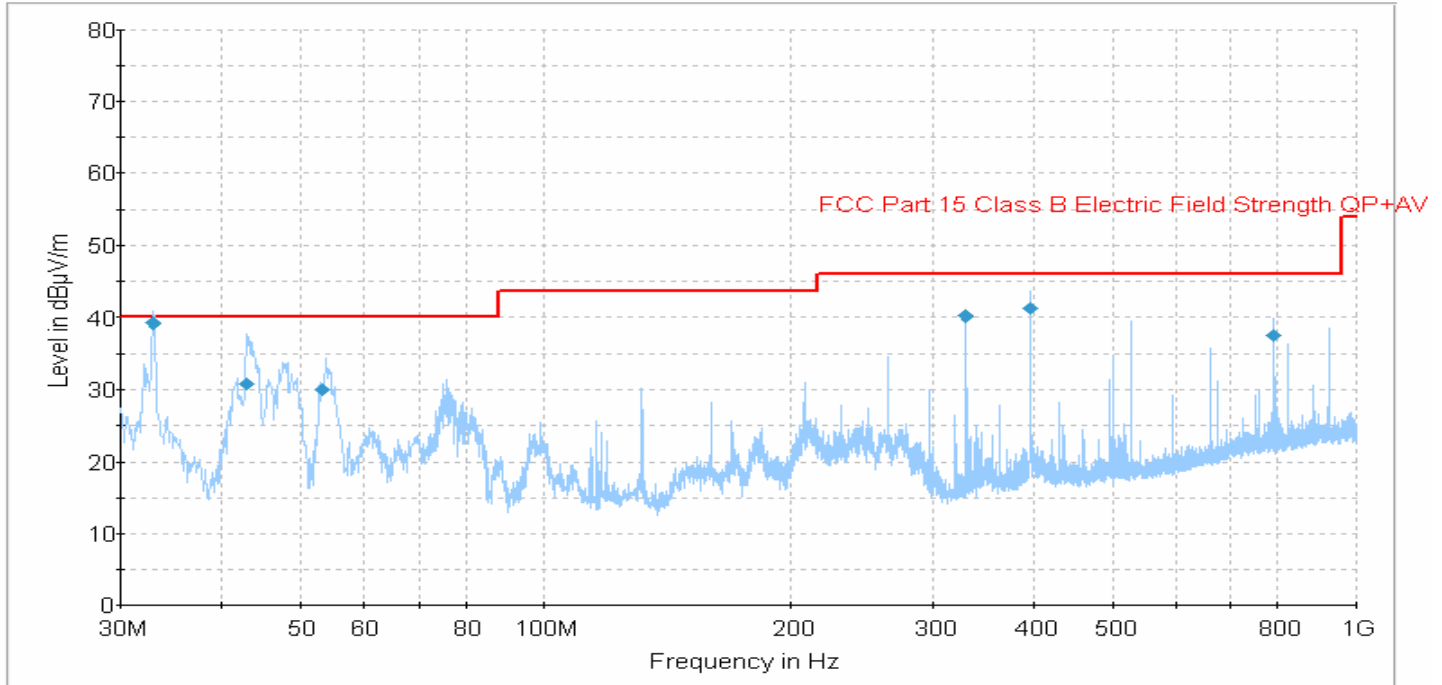
## High channel 5320 MHz

Frequency (MHz)	Reading (dB $\mu$ V)	Direction Degree	Height (m)	Polar. H / V	Antenna Factor (dB/m)	Cable loss (dB)	Pre-Amplifier (dB)	Corrected Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Comments
10640.0000	40.3	345	1.7	V	38.7	5.9	39.0	46.0	54	-8.0	Ave
10640.0000	38.8	35	1.4	H	38.7	5.9	39.0	44.5	54	-9.5	Ave
10640.0000	54.2	345	1.7	V	38.7	5.9	39.0	59.9	74	-14.1	Peak
10640.0000	53.0	35	1.4	H	38.7	5.9	39.0	58.7	74	-15.3	Peak
7080.2000	41.8	25	1.7	V	36.7	4.7	34.7	48.5	68.3	-19.8	Ave
7080.2000	35.2	335	1.8	H	36.7	4.7	34.7	41.9	68.3	-26.4	Ave
7080.2000	46.8	25	1.7	V	36.7	4.7	34.7	53.5	88.3	-34.8	Peak
7080.2000	43.5	335	1.8	H	36.7	4.7	34.7	50.2	88.3	-38.1	Peak

**Note:** The restricted band limit is 54 dB $\mu$ V/m, the out of band limit is 68.3 dB $\mu$ V/m.

**Radiated Emissions Test plot & data:**

Primary scan 30MHz -1GHz



Frequency (MHz)	Corrected Quasi Peak (dBµV/m)	Antenna Height (cm)	Polarity (H/V)	Turntable Position (deg)	Limit (dBµV/m)	Margin (dB)
32.970000	39.3	100.9	V	190.0	40.0	-0.7
395.993750	41.2	264.0	H	100.0	46.0	-4.8
329.972500	40.1	100.9	H	113.0	46.0	-5.9
791.996250	37.7	100.9	H	288.0	46.0	-8.3
43.033750	30.8	128.0	V	4.0	40.0	-9.2
53.165000	30.0	111.9	V	7.0	40.0	-10.0