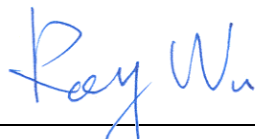


Variant FCC Test Report

APPLICANT : Meru Networks Inc.
EQUIPMENT : Multi Radio 802.11a/b/g/n Wireless LAN Access Point
BRAND NAME : Meru Networks Inc.
MODEL NAME : AP302, AP310, AP311, AP320
FCC ID : RE7-AP300
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : Unlicensed National Information Infrastructure (UNII)

This is a variant report which is only valid combined with the original test report. The product was received on Dec. 24, 2009 and completely tested on Jan. 06, 2010. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Roy Wu / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR9D2415B	Rev. 01	This is a variant report which can be referred to appendix C for product equality declaration. All the test cases were performed on original report which can be referred to appendix D. Based on the original report, only AC Conducted Emission and Radiated Emission was verified.	Jan. 11, 2010

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.407(b)	A9.3	Frequency Band Edges	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	-
3.2	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 6.5 dB at 0.478 MHz
3.3	15.407(b)	A9.3	Transmitter Radiated Emission	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 4.09 dB at 5150 MHz
3.5	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Meru Networks Inc.

894 Ross Drive Sunnyvale, CA 94089 USA

1.2 Manufacturer

Universal Scientific Industrial (Shanghai)

No. 1558, Zhang Dong Road, Zhangjiang Hi-Tech Park, Shanghai, P.R. China 201203

1.3 Feature of Equipment Under

Product Feature & Specification	
Equipment	Multi Radio 802.11a/b/g/n Wireless LAN Access Point
Brand Name	Meru Networks Inc.
Model Name	AP302, AP310, AP311, AP320
FCC ID	RE7-AP300
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz
HW Version	AP300
SW Version	3.6.1-41
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Unlicensed National Information Infrastructure (UNII).

List of Accessory:

Specification of Accessory		
Antenna 1	Model Name	S24493TS
	Antenna Type	Panel Antenna
	Antenna Gain	3.0 dBi for WLAN (2.4G) ; 4.0 dBi for WLAN (5G)
Antenna 2	Model Name	M6025040M01 D2420M
	Antenna Type	Panel Antenna
	Antenna Gain	2.5 dBi for WLAN (2.4G) ; 4.0 dBi for WLAN (5G)

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. For accessories equipped with this EUT, please refer to the appendix of the external photo.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC / IC Registration No.
	CO05-HY	03CH07-HY	TW1022 / 4086B-1

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issued 7

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	AC Adapter 1	UMEC	UP0251P-05PA	N/A	N/A	Shielded, 1.8 m
2.	AC Adapter 2 (for POE)	UMEC	UP0151D-48P	N/A	N/A	Shielded, 1.8 m
3.	POE	PLANET	POE-152	N/A	N/A	N/A
4.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Notebook	ASUS	F9E	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	Notebook	Acer	MS2180	QDS-BRCM1018	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

802.11a Carrier Frequency Channel					
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220

802.11n (BW 20MHz) Carrier Frequency Channel					
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220

802.11n (BW 40MHz) Carrier Frequency Channel			
Channel	Freq. (MHz)	Channel	Freq. (MHz)
38	5190	44	5220

2.2 Test Mode

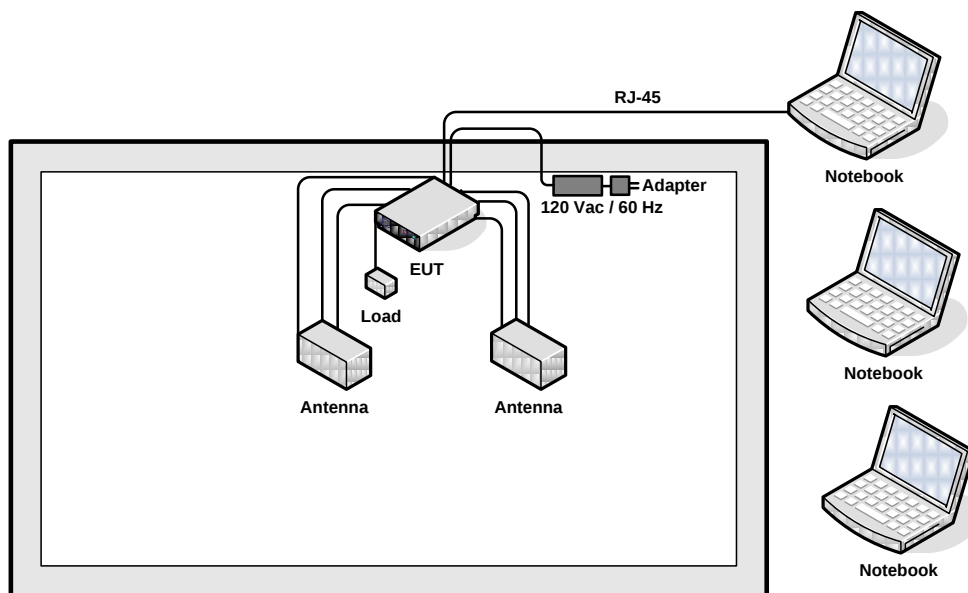
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Cases	
Test Item	802.11a (Modulation : OFDM)
Radiated TCs	■ Mode 1: 802.11a_CH36_5180 MHz for WLAN 1 and Antenna 1 ■ Mode 2: 802.11a_CH40_5200 MHz for WLAN 1 and Antenna 1 ■ Mode 3: 802.11a_CH44_5220 MHz for WLAN 1 and Antenna 1 ■ Mode 4: 802.11a_CH36_5180 MHz for WLAN 2 and Antenna 1 ■ Mode 5: 802.11a_CH36_5180 MHz for WLAN 1 and Antenna 2 ■ Mode 6: 802.11n(a)_CH36_5180 MHz (BW 20MHz) for WLAN 1 and Antenna 1 ■ Mode 7: 802.11n(a)_CH40_5200 MHz (BW 20MHz) for WLAN 1 and Antenna 1 ■ Mode 8: 802.11n(a)_CH44_5220 MHz (BW 20MHz) for WLAN 1 and Antenna 1 ■ Mode 9: 802.11n(a)_CH38_5190 MHz (BW 40MHz) for WLAN 1 and Antenna 1 ■ Mode 10: 802.11n(a)_CH44_5220 MHz (BW 40MHz) for WLAN 1 and Antenna 1 ■ Mode 11: 802.11a_CH36_5180 MHz for WLAN 1 and Antenna 1 + 802.11a_CH36_5180 MHz for WLAN 2 and Antenna 1
AC Conducted Emission	Mode 1 : WLAN 1 (2.4G) Link + WLAN 2 (2.4G) Link + LAN Link + Adapter 1 Mode 2 : WLAN 1 (5G) Link + WLAN 2 (5G) Link + POE + LAN Link + Adapter 2
Remark: - The worst case of AC conducted emission is mode 1; only the test data of it was reported. - Only Antenna 1 was used for AC conducted emission test. - The EUT has two modules which have the same design, and they can transmit simultaneously. - The WLAN 1 (module 1) was tested for full test modes, the WLAN 2 (module 2) was tested based on the worst case of WLAN 1, and the worst case for co-location was mode 11.	

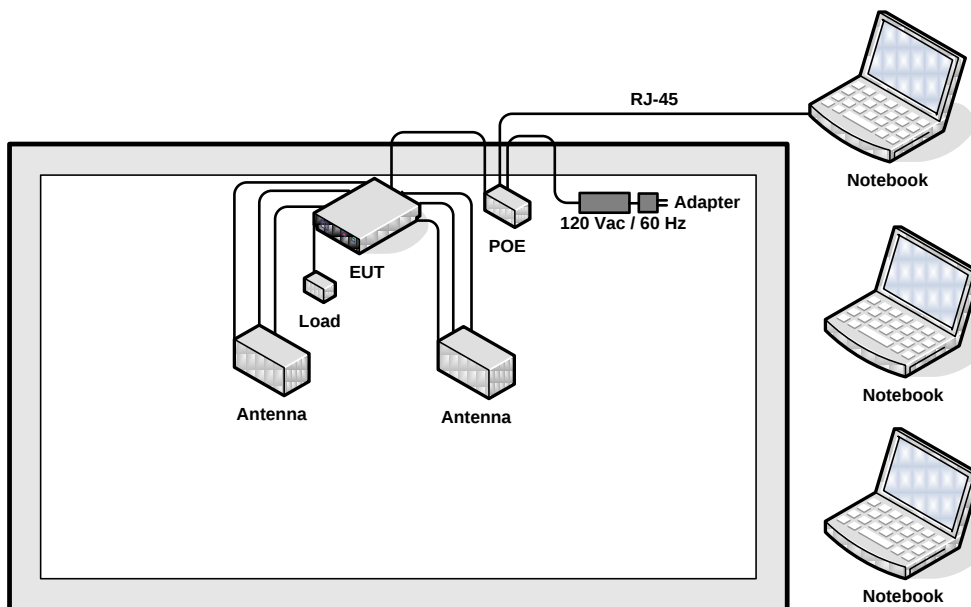
2.3 Connection Diagram of Test System

<Conduction Test>

EUT with Adapter Mode

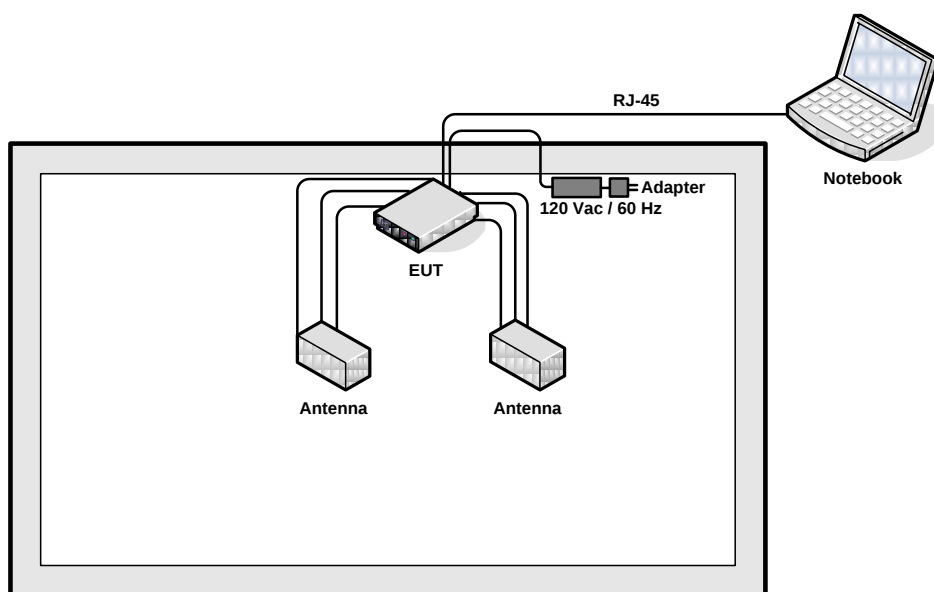


EUT with POE and Adapter Mode

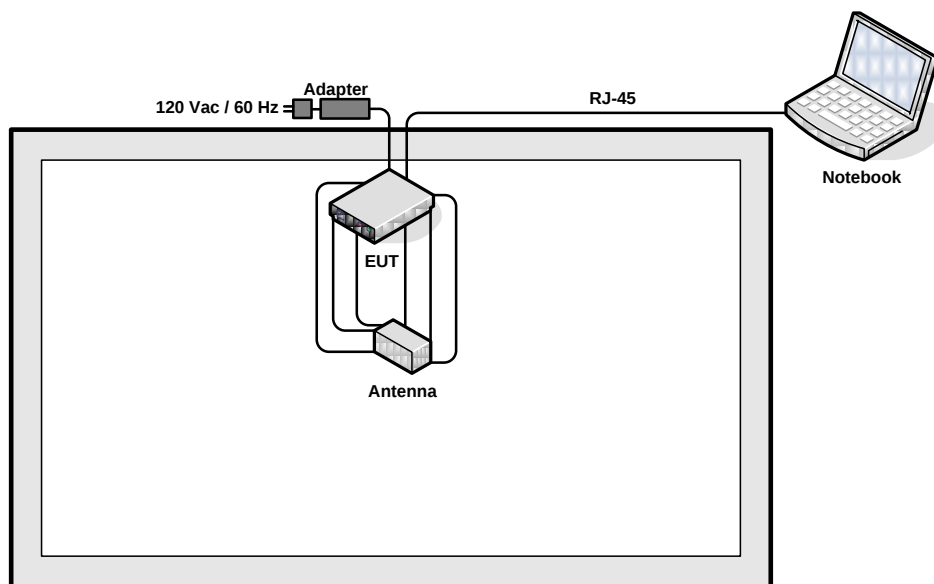


<Radiation Test>

EUT with Antenna 1



EUT with Antenna 2





2.4 RF Utility

The programmed RF utility “ART”, is installed in notebook to provide channel selection, power level, data rate and the application type. RF utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 Band Edges Measurement

3.1.1 Limit of Band Edges

- (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. 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.
- (2) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

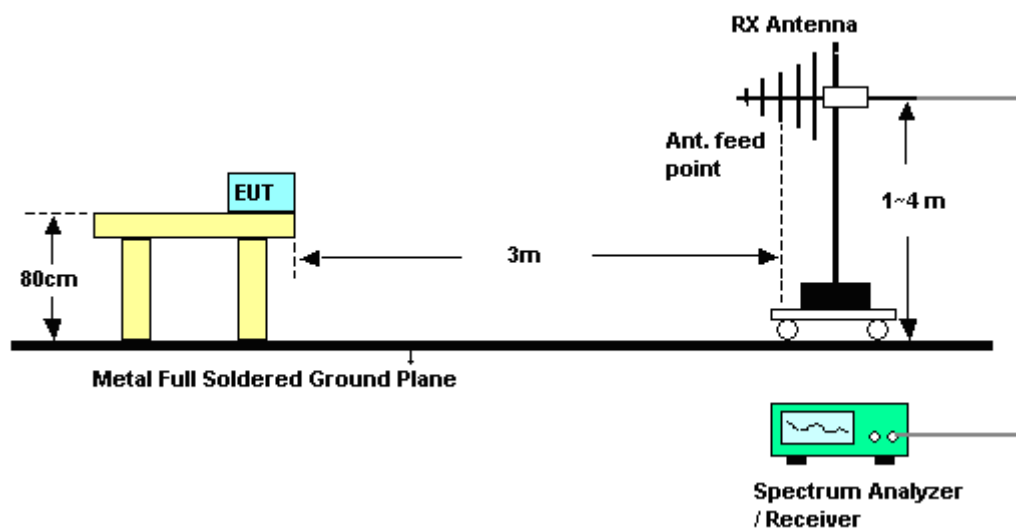
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. Set both RBW and VBW of spectrum analyzer to 1MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

3.1.4 Test Setup



3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	19~20°C
Test Band :	802.11a	Relative Humidity :	48~49%
Test Channel :	36	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	63.85	-10.15	74	55.76	34.49	8.07	34.47	169	42	Peak
5150	41.95	-12.05	54	33.86	34.49	8.07	34.47	169	42	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	67.32	-6.68	74	59.23	34.49	8.07	34.47	100	34	Peak
5150	43.31	-10.69	54	35.22	34.49	8.07	34.47	100	34	Average

Test Mode :	Mode 3	Temperature :	19~20°C
Test Band :	802.11a	Relative Humidity :	48~49%
Test Channel :	44	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.4	-23.6	74	41.99	34.61	8.23	34.43	168	42	Peak
5350	38.71	-15.29	54	30.3	34.61	8.23	34.43	168	42	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.75	-23.25	74	42.34	34.61	8.23	34.43	100	34	Peak
5350	38.89	-15.11	54	30.48	34.61	8.23	34.43	100	34	Average



Test Mode :	Mode 4	Temperature :	19~20°C
Test Band :	802.11a	Relative Humidity :	48~49%
Test Channel :	36	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	64.54	-9.46	74	56.45	34.49	8.07	34.47	132	318	Peak
5150	47.66	-6.34	54	39.57	34.49	8.07	34.47	132	318	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	65.94	-8.06	74	57.85	34.49	8.07	34.47	100	20	Peak
5150	48.27	-5.73	54	40.18	34.49	8.07	34.47	100	20	Average

Test Mode :	Mode 5	Temperature :	19~20°C
Test Band :	802.11a	Relative Humidity :	48~49%
Test Channel :	36	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	57.64	-16.36	74	49.55	34.49	8.07	34.47	100	9	Peak
5150	46.86	-7.14	54	38.77	34.49	8.07	34.47	100	9	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	55.28	-18.72	74	47.19	34.49	8.07	34.47	124	314	Peak
5150	39.65	-14.35	54	31.56	34.49	8.07	34.47	124	314	Average



Test Mode :	Mode 6	Temperature :	19~20°C
Test Band :	802.11n(a) (BW 20MHz)	Relative Humidity :	48~49%
Test Channel :	36	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	51.87	-22.13	74	43.78	34.49	8.07	34.47	168	47	Peak
5150	38.94	-15.06	54	30.85	34.49	8.07	34.47	168	47	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	52.78	-21.22	74	44.69	34.49	8.07	34.47	100	33	Peak
5150	39.81	-14.19	54	31.72	34.49	8.07	34.47	100	33	Average

Test Mode :	Mode 8	Temperature :	19~20°C
Test Band :	802.11n(a) (BW 20MHz)	Relative Humidity :	48~49%
Test Channel :	44	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	49.6	-24.4	74	41.19	34.61	8.23	34.43	114	39	Peak
5350	38.43	-15.57	54	30.02	34.61	8.23	34.43	114	39	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.04	-23.96	74	41.63	34.61	8.23	34.43	100	33	Peak
5350	38.51	-15.49	54	30.1	34.61	8.23	34.43	100	33	Average



Test Mode :	Mode 9	Temperature :	19~20°C
Test Band :	802.11n(a) (BW 40MHz)	Relative Humidity :	48~49%
Test Channel :	38	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	59.07	-14.93	74	50.98	34.49	8.07	34.47	125	43	Peak
5150	42.57	-11.43	54	34.48	34.49	8.07	34.47	125	43	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	65.21	-8.79	74	57.12	34.49	8.07	34.47	100	35	Peak
5150	44.87	-9.13	54	36.78	34.49	8.07	34.47	100	35	Average

Test Mode :	Mode 10	Temperature :	19~20°C
Test Band :	802.11n(a) (BW 40MHz)	Relative Humidity :	48~49%
Test Channel :	44	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.04	-23.96	74	41.63	34.61	8.23	34.43	141	40	Peak
5350	38.53	-15.47	54	30.12	34.61	8.23	34.43	141	40	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.38	-23.62	74	41.97	34.61	8.23	34.43	100	33	Peak
5350	38.7	-15.3	54	30.29	34.61	8.23	34.43	100	33	Average



Test Mode :	Mode 11	Temperature :	19~20°C
Test Band :	802.11a	Relative Humidity :	48~49%
Test Channel :	36	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	63.13	-10.87	74	55.04	34.49	8.07	34.47	148	320	Peak
5150	48.48	-5.52	54	40.39	34.49	8.07	34.47	148	320	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	65.01	-8.99	74	56.92	34.49	8.07	34.47	100	30	Peak
5150	49.91	-4.09	54	41.82	34.49	8.07	34.47	100	30	Average

3.2 AC Conducted Emission Measurement

3.2.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

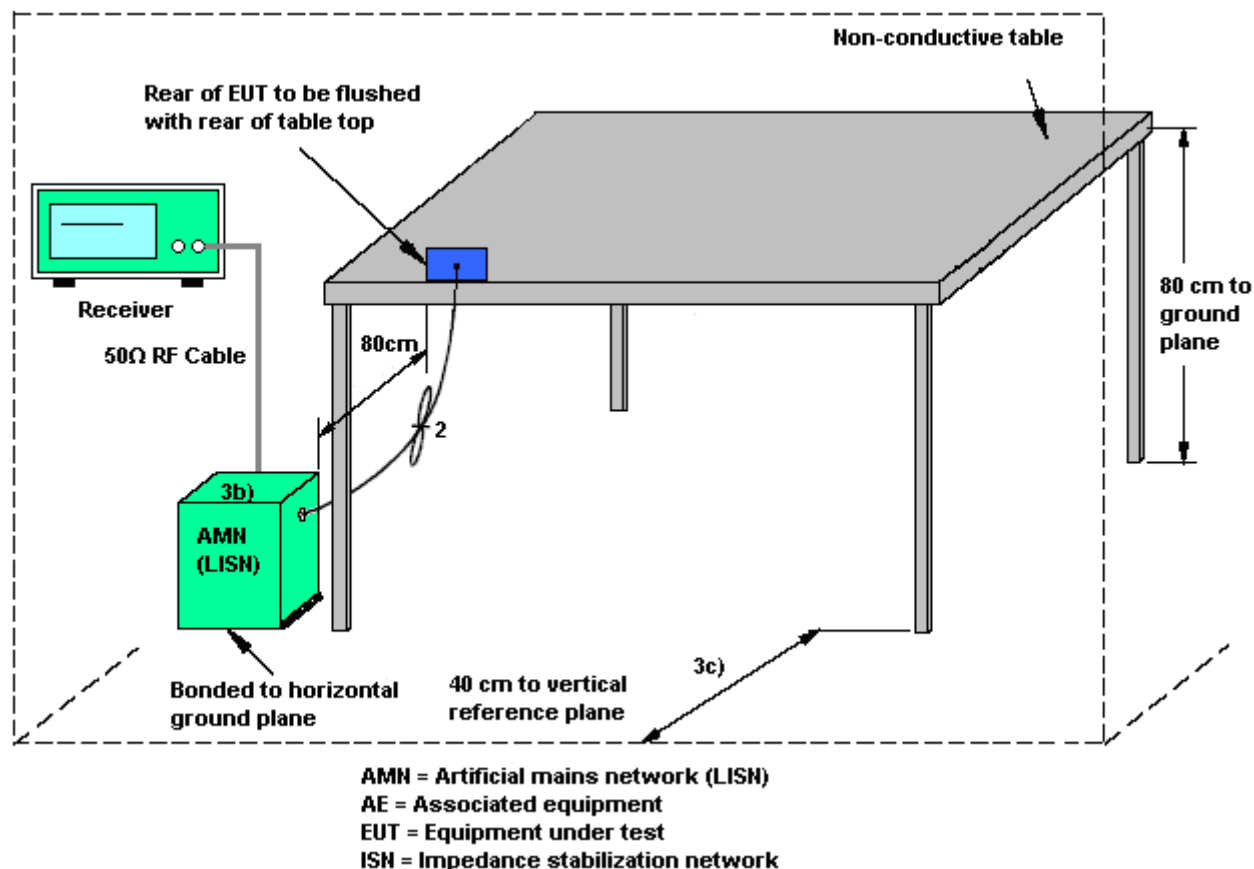
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

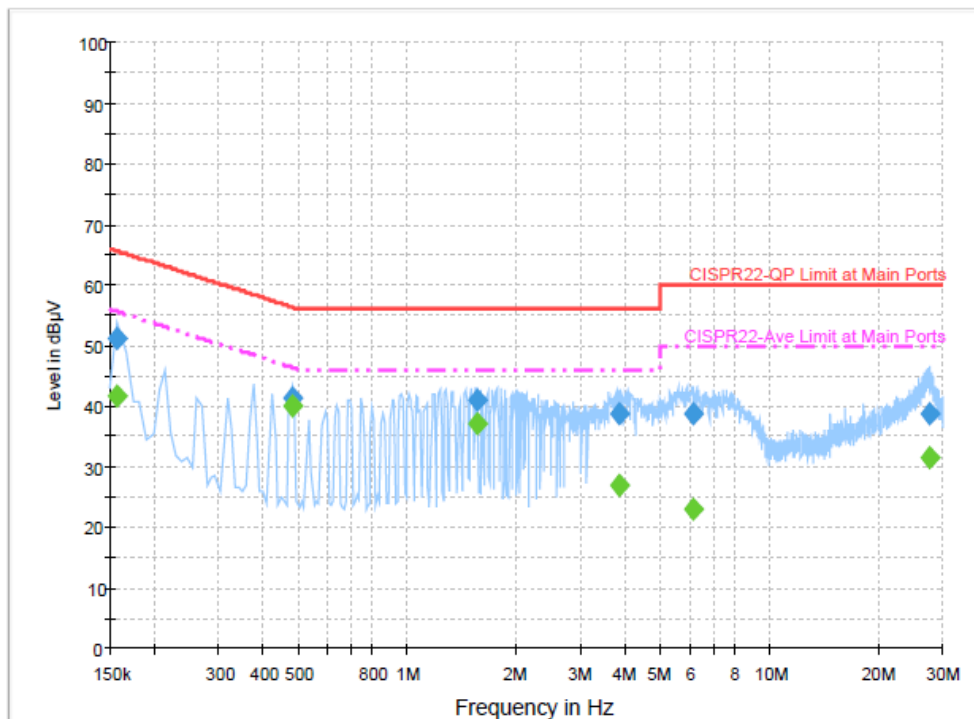
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.2.4 Test Setup



3.2.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Hayden Wu	Relative Humidity :	42~45%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN 1 (2.4G) Link + WLAN 2 (2.4G) Link + LAN Link + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



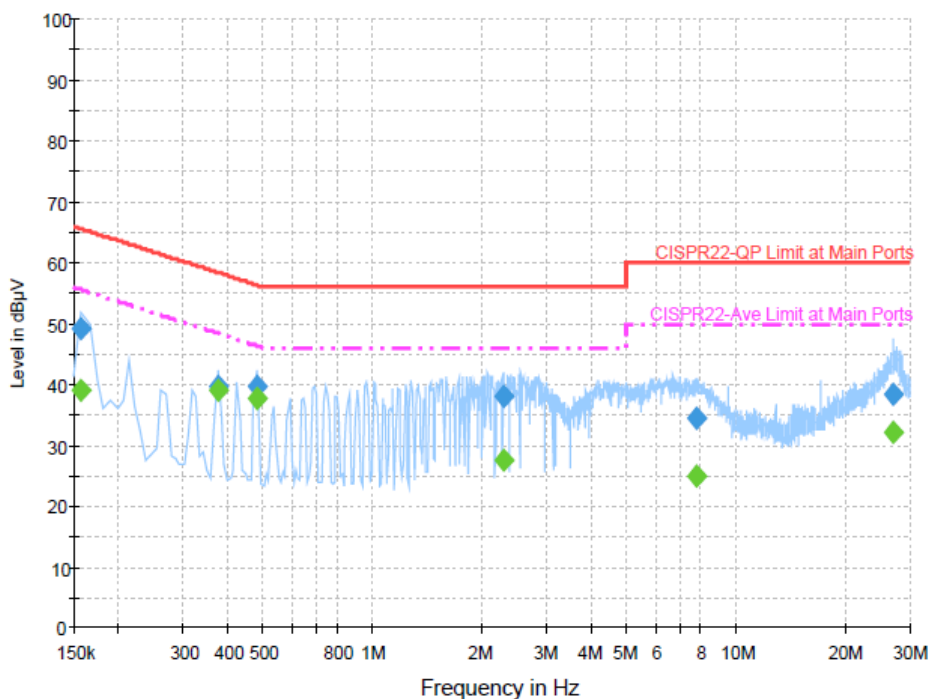
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	51.3	Off	L1	19.5	14.3	65.6
0.478000	41.4	Off	L1	19.4	15.0	56.4
1.550000	41.0	Off	L1	19.5	15.0	56.0
3.854000	38.7	Off	L1	19.5	17.3	56.0
6.158000	38.6	Off	L1	19.5	21.4	60.0
27.574000	38.7	Off	L1	19.7	21.3	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	41.7	Off	L1	19.5	13.9	55.6
0.478000	39.9	Off	L1	19.4	6.5	46.4
1.550000	37.0	Off	L1	19.5	9.0	46.0
3.854000	26.9	Off	L1	19.5	19.1	46.0
6.158000	22.9	Off	L1	19.5	27.1	50.0
27.574000	31.3	Off	L1	19.7	18.7	50.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Hayden Wu	Relative Humidity :	42~45%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN 1 (2.4G) Link + WLAN 2 (2.4G) Link + LAN Link + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	49.3	Off	N	19.5	16.3	65.6
0.374000	39.5	Off	N	19.4	18.9	58.4
0.478000	39.7	Off	N	19.4	16.7	56.4
2.294000	38.0	Off	N	19.5	18.0	56.0
7.774000	34.5	Off	N	19.6	25.5	60.0
26.998000	38.3	Off	N	19.9	21.7	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	38.9	Off	N	19.5	16.7	55.6
0.374000	39.2	Off	N	19.4	9.2	48.4
0.478000	37.8	Off	N	19.4	8.6	46.4
2.294000	27.7	Off	N	19.5	18.3	46.0
7.774000	24.8	Off	N	19.6	25.2	50.0
26.998000	32.2	Off	N	19.9	17.8	50.0

3.3 Radiated Emission Measurement

3.3.1 Limit of Radiated Emission

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

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

- (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. (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of –27 dBm/MHz.
- (2) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

3.3.2 Measuring Instruments

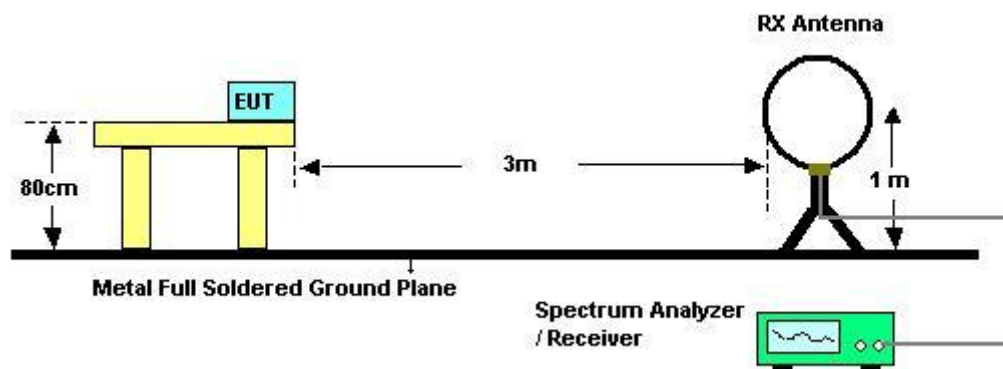
See list of measuring instruments of this test report.

3.3.3 Test Procedures

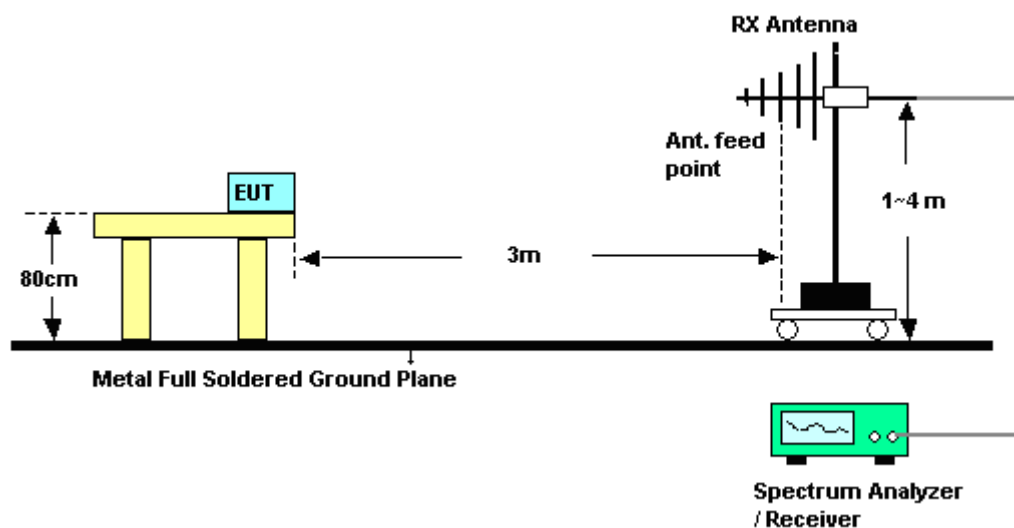
1. The testing follows the guidelines in FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
8. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
9. 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 average 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.

3.3.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



3.3.5 Test Results of Radiated Emissions (9kHz ~ 30MHz)

Temperature	19~20°C	Humidity	48~49%
Test Engineer	Kay Wu		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

3.3.6 Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.8	-13.2	40	38.35	19.51	0.64	31.7	100	56	Peak
106.41	29.23	-14.27	43.5	48.75	10.97	1.2	31.69	-	-	Peak
144.21	24.65	-18.85	43.5	43.41	11.47	1.43	31.66	-	-	Peak
561.8	29.15	-16.85	46	37.72	19.34	3.13	31.04	-	-	Peak
624.1	27.99	-18.01	46	35.39	20.25	3.33	30.98	-	-	Peak
875.4	28.84	-17.16	46	32.53	22.95	4.06	30.7	-	-	Peak
5150	41.95	-12.05	54	33.86	34.49	8.07	34.47	169	42	Average
5150	63.85	-10.15	74	55.76	34.49	8.07	34.47	169	42	Peak
5180	110.88	-	-	102.73	34.51	8.1	34.46	169	42	Peak
5180	99.03	-	-	90.88	34.51	8.1	34.46	169	42	Average
5350	38.76	-15.24	54	30.35	34.61	8.23	34.43	169	42	Average
5350	50.39	-23.61	74	41.98	34.61	8.23	34.43	169	42	Peak
8838	54.73	-19.27	74	43.41	36.2	10.29	35.17	100	192	Peak
8838	40.98	-13.02	54	29.66	36.2	10.29	35.17	100	192	Average
10360	41.25	-27.05	68.3	73.88	-8.74	11.06	34.95	100	0	Peak
15540	40.53	-33.47	74	68.31	-7.19	14.34	34.93	100	0	Peak



Test Mode :	Mode 1	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.11	-5.89	40	45.66	19.51	0.64	31.7	100	42	Peak
42.69	32.01	-7.99	40	50.81	12.18	0.72	31.7	-	-	Peak
124.77	31.14	-12.36	43.5	49.65	11.81	1.35	31.67	-	-	Peak
500.2	24.02	-21.98	46	34	18.18	2.94	31.1	-	-	Peak
629.7	27.96	-18.04	46	35.3	20.29	3.34	30.97	-	-	Peak
875.4	29.11	-16.89	46	32.8	22.95	4.06	30.7	-	-	Peak
5150	43.31	-10.69	54	35.22	34.49	8.07	34.47	100	34	Average
5150	67.32	-6.68	74	59.23	34.49	8.07	34.47	100	34	Peak
5180	112.34	-	-	104.22	34.5	8.08	34.46	100	34	Peak
5180	100.11	-	-	91.96	34.51	8.1	34.46	100	34	Average
5350	38.79	-15.21	54	30.38	34.61	8.23	34.43	100	34	Average
5350	50.99	-23.01	74	42.58	34.61	8.23	34.43	100	34	Peak
8822	55.04	-18.96	74	43.74	36.19	10.28	35.17	100	327	Peak
8822	41.19	-12.81	54	29.89	36.19	10.28	35.17	100	327	Average
10360	45.85	-22.45	68.3	78.45	-8.72	11.07	34.95	100	0	Peak
15540	42.36	-31.64	74	70.01	-7.05	14.33	34.93	100	0	Peak



Test Mode :	Mode 2	Temperature :	19~20°C
Test Channel :	40	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5200 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.05	-12.95	40	38.6	19.51	0.64	31.7	-	-	Peak
86.97	31.99	-8.01	40	54.12	8.49	1.08	31.7	100	221	Peak
125.58	27.29	-16.21	43.5	45.81	11.8	1.35	31.67	-	-	Peak
500.2	24.54	-21.46	46	34.52	18.18	2.94	31.1	-	-	Peak
624.1	27.69	-18.31	46	35.09	20.25	3.33	30.98	-	-	Peak
903.4	30.42	-15.58	46	33.73	23.22	4.17	30.7	-	-	Peak
5150	39.35	-14.65	54	31.26	34.49	8.07	34.47	174	44	Average
5150	51.82	-22.18	74	43.73	34.49	8.07	34.47	174	44	Peak
5200	110.13	-	-	101.96	34.52	8.11	34.46	174	44	Peak
5200	98.69	-	-	90.52	34.52	8.11	34.46	174	44	Average
5350	38.75	-15.25	54	30.34	34.61	8.23	34.43	174	44	Average
5350	51.11	-22.89	74	42.7	34.61	8.23	34.43	174	44	Peak
8966	54.55	-19.45	74	43.13	36.28	10.33	35.19	100	143	Peak
8966	40.86	-13.14	54	29.44	36.28	10.33	35.19	100	143	Average
10400	38.5	-29.8	68.3	70.99	-8.66	11.07	34.9	100	0	Peak
15600	42.05	-31.95	74	69.44	-6.7	14.29	34.98	100	0	Peak



Test Mode :	Mode 2	Temperature :	19~20°C
Test Channel :	40	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5200 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.26	-5.74	40	45.81	19.51	0.64	31.7	100	42	Peak
43.5	31.61	-8.39	40	51.04	11.55	0.72	31.7	-	-	Peak
92.37	33.91	-9.59	43.5	55.32	9.17	1.12	31.7	-	-	Peak
500.2	23.39	-22.61	46	33.37	18.18	2.94	31.1	-	-	Peak
624.1	26.82	-19.18	46	34.22	20.25	3.33	30.98	-	-	Peak
940.5	28.09	-17.91	46	30.71	23.8	4.24	30.66	-	-	Peak
5150	38.11	-15.89	54	30.02	34.49	8.07	34.47	100	30	Average
5150	51.42	-22.58	74	43.33	34.49	8.07	34.47	100	30	Peak
5200	111.52	-	-	103.35	34.52	8.11	34.46	100	30	Peak
5200	99.89	-	-	91.72	34.52	8.11	34.46	100	30	Average
5350	39.1	-14.9	54	30.69	34.61	8.23	34.43	100	30	Average
5350	49.88	-24.12	74	41.47	34.61	8.23	34.43	100	30	Peak
8844	54.98	-19.02	74	43.66	36.2	10.29	35.17	100	62	Peak
8844	41.42	-12.58	54	30.1	36.2	10.29	35.17	100	62	Average
10400	44.38	-23.92	68.3	76.87	-8.66	11.07	34.9	100	0	Peak
15600	41.32	-32.68	74	68.84	-6.84	14.3	34.98	100	0	Peak



Test Mode :	Mode 3	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.58	24.8	-15.2	40	44.86	10.92	0.72	31.7	-	-	Peak
124.77	27.27	-16.23	43.5	45.78	11.81	1.35	31.67	-	-	Peak
177.42	31.19	-12.31	43.5	52.03	9.18	1.6	31.62	100	137	Peak
324.5	28.76	-17.24	46	43.74	14.13	2.24	31.35	-	-	Peak
624.1	27.14	-18.86	46	34.54	20.25	3.33	30.98	-	-	Peak
875.4	27.36	-18.64	46	31.05	22.95	4.06	30.7	-	-	Peak
5150	39.19	-14.81	54	31.1	34.49	8.07	34.47	168	42	Average
5150	50.34	-23.66	74	42.25	34.49	8.07	34.47	168	42	Peak
5220	110.54	-	-	102.35	34.53	8.12	34.46	168	42	Peak
5220	97.69	-	-	89.5	34.53	8.12	34.46	168	42	Average
5350	38.71	-15.29	54	30.3	34.61	8.23	34.43	168	42	Average
5350	50.4	-23.6	74	41.99	34.61	8.23	34.43	168	42	Peak
8870	54.79	-19.21	74	43.44	36.22	10.3	35.17	100	26	Peak
8870	41.83	-12.17	54	30.48	36.22	10.3	35.17	100	26	Average
10440	38.27	-30.03	68.3	70.62	-8.58	11.08	34.85	100	0	Peak
15660	43.45	-30.55	74	70.61	-6.35	14.25	35.06	100	0	Peak



Test Mode :	Mode 3	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.13	-5.87	40	45.68	19.51	0.64	31.7	100	285	Peak
45.93	32.36	-7.64	40	52.89	10.43	0.74	31.7	-	-	Peak
123.42	31.02	-12.48	43.5	49.4	11.98	1.32	31.68	-	-	Peak
500.2	22.93	-23.07	46	32.91	18.18	2.94	31.1	-	-	Peak
624.1	27.79	-18.21	46	35.19	20.25	3.33	30.98	-	-	Peak
875.4	28.38	-17.62	46	32.07	22.95	4.06	30.7	-	-	Peak
5150	40.15	-13.85	54	32.06	34.49	8.07	34.47	100	34	Average
5150	52.47	-21.53	74	44.38	34.49	8.07	34.47	100	34	Peak
5220	110.62	-	-	102.43	34.53	8.12	34.46	100	34	Peak
5220	98.81	-	-	90.62	34.53	8.12	34.46	100	34	Average
5350	38.89	-15.11	54	30.48	34.61	8.23	34.43	100	34	Average
5350	50.75	-23.25	74	42.34	34.61	8.23	34.43	100	34	Peak
8854	54.68	-19.32	74	43.35	36.21	10.29	35.17	100	259	Peak
8854	41.97	-12.03	54	30.64	36.21	10.29	35.17	100	259	Average
10440	43.14	-25.16	68.3	75.55	-8.61	11.08	34.88	100	0	Peak
15660	41.41	-32.59	74	68.44	-6.21	14.24	35.06	100	0	Peak



Test Mode :	Mode 4	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.75	-13.25	40	38.3	19.51	0.64	31.7	100	271	Peak
106.41	26.01	-17.49	43.5	45.53	10.97	1.2	31.69	-	-	Peak
125.85	27.05	-16.45	43.5	45.57	11.8	1.35	31.67	-	-	Peak
500.2	25.28	-20.72	46	35.26	18.18	2.94	31.1	-	-	Peak
624.1	27.31	-18.69	46	34.71	20.25	3.33	30.98	-	-	Peak
875.4	28.07	-17.93	46	31.76	22.95	4.06	30.7	-	-	Peak
5150	64.54	-9.46	74	56.45	34.49	8.07	34.47	132	318	Peak
5150	47.66	-6.34	54	39.57	34.49	8.07	34.47	132	318	Average
5180	103.31	-	-	95.16	34.51	8.1	34.46	132	318	Average
5180	115.46	-	-	107.31	34.51	8.1	34.46	132	318	Peak
5350	53.25	-20.75	74	44.84	34.61	8.23	34.43	132	318	Peak
5350	47.46	-6.54	54	39.05	34.61	8.23	34.43	132	318	Average
8918	54.88	-19.12	74	43.51	36.25	10.31	35.19	100	68	Peak
8918	41.04	-12.96	54	29.67	36.25	10.31	35.19	100	68	Average
10360	39.47	-28.83	68.3	72.1	-8.74	11.06	34.95	100	0	Peak
15540	41.03	-32.97	74	68.74	-7.12	14.34	34.93	100	0	Peak

Test Mode :	Mode 4	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	33.03	-6.97	40	45.13	18.95	0.65	31.7	-	-	Peak
42.69	31.91	-8.09	40	50.71	12.18	0.72	31.7	-	-	Peak
127.74	36.78	-6.72	43.5	55.3	11.79	1.36	31.67	100	117	Peak
624.1	28.96	-17.04	46	36.36	20.25	3.33	30.98	-	-	Peak
750.1	26.05	-19.95	46	31.63	21.52	3.7	30.8	-	-	Peak
875.4	27.92	-18.08	46	31.61	22.95	4.06	30.7	-	-	Peak
5150	48.27	-5.73	54	40.18	34.49	8.07	34.47	100	20	Average
5150	65.94	-8.06	74	57.85	34.49	8.07	34.47	100	20	Peak
5180	116.18	-	-	108.03	34.51	8.1	34.46	100	20	Peak
5180	104.57	-	-	96.42	34.51	8.1	34.46	100	20	Average
5350	46.66	-7.34	54	38.25	34.61	8.23	34.43	100	20	Average
5350	49.97	-24.03	74	41.56	34.61	8.23	34.43	100	20	Peak
8844	54.61	-19.39	74	43.29	36.2	10.29	35.17	100	56	Peak
8844	42.09	-11.91	54	30.77	36.2	10.29	35.17	100	56	Average
10360	45.9	-22.4	68.3	78.53	-8.74	11.06	34.95	100	0	Peak
15540	41.41	-32.59	74	69.24	-7.26	14.36	34.93	100	0	Peak

Test Mode :	Mode 5	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
44.58	25.61	-14.39	40	45.67	10.92	0.72	31.7	100	84	Peak
96.42	27.86	-15.64	43.5	48.66	9.76	1.14	31.7	-	-	Peak
125.85	26.93	-16.57	43.5	45.45	11.8	1.35	31.67	-	-	Peak
500.2	24.79	-21.21	46	34.77	18.18	2.94	31.1	-	-	Peak
624.1	27.87	-18.13	46	35.27	20.25	3.33	30.98	-	-	Peak
875.4	27.57	-18.43	46	31.26	22.95	4.06	30.7	-	-	Peak
5150	46.86	-7.14	54	38.77	34.49	8.07	34.47	100	9	Average
5150	57.64	-16.36	74	49.55	34.49	8.07	34.47	100	9	Peak
5180	110.6	-	-	102.45	34.51	8.1	34.46	100	9	Peak
5180	97.64	-	-	89.49	34.51	8.1	34.46	100	9	Average
5350	46.54	-7.46	54	38.13	34.61	8.23	34.43	100	9	Average
5350	50.02	-23.98	74	41.61	34.61	8.23	34.43	100	9	Peak
8830	53.01	-20.99	74	41.69	36.2	10.29	35.17	100	67	Peak
8830	41.03	-12.97	54	29.71	36.2	10.29	35.17	100	67	Average
10360	43.97	-24.33	68.3	76.6	-8.74	11.06	34.95	100	0	Peak
15540	44.38	-29.62	74	72.09	-7.12	14.34	34.93	100	0	Peak

Test Mode :	Mode 5	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
43.5	32.2	-7.8	40	51.63	11.55	0.72	31.7	100	74	Peak
92.1	32.18	-11.32	43.5	53.59	9.17	1.12	31.7	-	-	Peak
105.33	32.86	-10.64	43.5	52.48	10.88	1.19	31.69	-	-	Peak
449.8	23.65	-22.35	46	34.84	17.15	2.81	31.15	-	-	Peak
624.1	29.25	-16.75	46	36.65	20.25	3.33	30.98	-	-	Peak
903.4	28.26	-17.74	46	31.57	23.22	4.17	30.7	-	-	Peak
5150	39.65	-14.35	54	31.56	34.49	8.07	34.47	124	314	Average
5150	55.28	-18.72	74	47.19	34.49	8.07	34.47	124	314	Peak
5180	108.94	-	-	100.79	34.51	8.1	34.46	124	314	Peak
5180	97.06	-	-	88.91	34.51	8.1	34.46	124	314	Average
5350	38.71	-15.29	54	30.3	34.61	8.23	34.43	124	314	Average
5350	49.69	-24.31	74	41.28	34.61	8.23	34.43	124	314	Peak
8822	52.61	-21.39	74	41.31	36.19	10.28	35.17	100	39	Peak
8822	40.72	-13.28	54	29.42	36.19	10.28	35.17	100	39	Average
10360	47.33	-20.97	68.3	79.93	-8.72	11.07	34.95	100	0	Peak
15540	42.07	-31.93	74	69.78	-7.12	14.34	34.93	100	0	Peak



Test Mode :	Mode 6	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	27.04	-12.96	40	38.59	19.51	0.64	31.7	100	136	Peak
44.58	24.87	-15.13	40	44.93	10.92	0.72	31.7	-	-	Peak
96.42	27.93	-15.57	43.5	48.73	9.76	1.14	31.7	-	-	Peak
500.2	24.87	-21.13	46	34.85	18.18	2.94	31.1	-	-	Peak
624.1	27.37	-18.63	46	34.77	20.25	3.33	30.98	-	-	Peak
875.4	28.5	-17.5	46	32.19	22.95	4.06	30.7	-	-	Peak
5150	38.94	-15.06	54	30.85	34.49	8.07	34.47	168	47	Average
5150	51.87	-22.13	74	43.78	34.49	8.07	34.47	168	47	Peak
5180	106.32	-	-	98.17	34.51	8.1	34.46	168	47	Peak
5180	95.45	-	-	87.3	34.51	8.1	34.46	168	47	Average
5350	38.69	-15.31	54	30.28	34.61	8.23	34.43	168	47	Average
5350	50.41	-23.59	74	42	34.61	8.23	34.43	168	47	Peak
8948	54.39	-19.61	74	42.99	36.27	10.32	35.19	100	57	Peak
8948	40.88	-13.12	54	29.48	36.27	10.32	35.19	100	57	Average

Test Mode :	Mode 6	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	33.88	-6.12	40	45.43	19.51	0.64	31.7	100	57	Peak
43.5	32.42	-7.58	40	51.85	11.55	0.72	31.7	-	-	Peak
93.18	31.86	-11.64	43.5	53.12	9.32	1.12	31.7	-	-	Peak
500.2	24.6	-21.4	46	34.58	18.18	2.94	31.1	-	-	Peak
624.1	27.97	-18.03	46	35.37	20.25	3.33	30.98	-	-	Peak
875.4	28.41	-17.59	46	32.1	22.95	4.06	30.7	-	-	Peak
5150	39.81	-14.19	54	31.72	34.49	8.07	34.47	100	33	Average
5150	52.78	-21.22	74	44.69	34.49	8.07	34.47	100	33	Peak
5180	108.66	-	-	100.51	34.51	8.1	34.46	100	33	Peak
5180	96.84	-	-	88.69	34.51	8.1	34.46	100	33	Average
5350	38.53	-15.47	54	30.12	34.61	8.23	34.43	100	33	Average
5350	50.11	-23.89	74	41.7	34.61	8.23	34.43	100	33	Peak
8814	54.73	-19.27	74	43.42	36.19	10.28	35.16	100	79	Peak
8814	41.05	-12.95	54	29.74	36.19	10.28	35.16	100	79	Average
10360	41.37	-26.93	68.3	74	-8.74	11.06	34.95	100	0	Peak



Test Mode :	Mode 7	Temperature :	19~20°C
Test Channel :	40	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5200 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.91	-13.09	40	38.46	19.51	0.64	31.7	100	264	Peak
106.41	25.27	-18.23	43.5	44.79	10.97	1.2	31.69	-	-	Peak
124.77	26.68	-16.82	43.5	45.19	11.81	1.35	31.67	-	-	Peak
500.2	24.75	-21.25	46	34.73	18.18	2.94	31.1	-	-	Peak
624.1	28.03	-17.97	46	35.43	20.25	3.33	30.98	-	-	Peak
875.4	28.85	-17.15	46	32.54	22.95	4.06	30.7	-	-	Peak
5150	38.71	-15.29	54	30.62	34.49	8.07	34.47	154	44	Average
5150	51.1	-22.9	74	43.01	34.49	8.07	34.47	154	44	Peak
5200	106.88	-	-	98.71	34.52	8.11	34.46	154	44	Peak
5200	94.52	-	-	86.35	34.52	8.11	34.46	154	44	Average
5350	38.58	-15.42	54	30.17	34.61	8.23	34.43	154	44	Average
5350	50.73	-23.27	74	42.32	34.61	8.23	34.43	154	44	Peak
8884	54.49	-19.51	74	43.13	36.23	10.3	35.17	100	61	Peak
8884	40.81	-13.19	54	29.45	36.23	10.3	35.17	100	61	Average

Test Mode :	Mode 7	Temperature :	19~20°C
Test Channel :	40	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5200 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	33.36	-6.64	40	44.91	19.51	0.64	31.7	100	82	Peak
45.66	32.45	-7.55	40	52.98	10.43	0.74	31.7	-	-	Peak
93.18	34.14	-9.36	43.5	55.4	9.32	1.12	31.7	-	-	Peak
624.1	28.69	-17.31	46	36.09	20.25	3.33	30.98	-	-	Peak
696.9	26.96	-19.04	46	33.5	20.82	3.54	30.9	-	-	Peak
875.4	27.73	-18.27	46	31.42	22.95	4.06	30.7	-	-	Peak
5150	39.16	-14.84	54	31.07	34.49	8.07	34.47	100	36	Average
5150	50.67	-23.33	74	42.58	34.49	8.07	34.47	100	36	Peak
5200	108.73	-	-	100.56	34.52	8.11	34.46	100	36	Peak
5200	96.44	-	-	88.27	34.52	8.11	34.46	100	36	Average
5350	38.28	-15.72	54	29.87	34.61	8.23	34.43	100	36	Average
5350	49.85	-24.15	74	41.44	34.61	8.23	34.43	100	36	Peak
8948	54.46	-19.54	74	43.06	36.27	10.32	35.19	100	162	Peak
8948	40.84	-13.16	54	29.44	36.27	10.32	35.19	100	162	Average
10400	40.07	-28.23	68.3	72.56	-8.66	11.07	34.9	100	0	Peak

Test Mode :	Mode 8	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.67	-13.33	40	38.22	19.51	0.64	31.7	100	103	Peak
44.58	24.18	-15.82	40	44.24	10.92	0.72	31.7	-	-	Peak
124.77	26.51	-16.99	43.5	45.02	11.81	1.35	31.67	-	-	Peak
324.5	33.48	-12.52	46	48.46	14.13	2.24	31.35	-	-	Peak
624.1	28.27	-17.73	46	35.67	20.25	3.33	30.98	-	-	Peak
875.4	28.27	-17.73	46	31.96	22.95	4.06	30.7	-	-	Peak
5150	38.72	-15.28	54	30.63	34.49	8.07	34.47	114	39	Average
5150	50.35	-23.65	74	42.26	34.49	8.07	34.47	114	39	Peak
5220	107.9	-	-	99.7	34.53	8.12	34.45	114	39	Peak
5220	96.19	-	-	88	34.53	8.12	34.46	114	39	Average
5350	38.43	-15.57	54	30.02	34.61	8.23	34.43	114	39	Average
5350	49.6	-24.4	74	41.19	34.61	8.23	34.43	114	39	Peak
8878	54.62	-19.38	74	43.27	36.22	10.3	35.17	100	38	Peak
8878	41.01	-12.99	54	29.66	36.22	10.3	35.17	100	38	Average

Test Mode :	Mode 8	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.3	-5.7	40	45.85	19.51	0.64	31.7	100	164	Peak
42.69	32.07	-7.93	40	50.87	12.18	0.72	31.7	-	-	Peak
93.18	34.45	-9.05	43.5	55.71	9.32	1.12	31.7	-	-	Peak
624.1	28.4	-17.6	46	35.8	20.25	3.33	30.98	-	-	Peak
696.2	26.43	-19.57	46	32.98	20.81	3.54	30.9	-	-	Peak
951	27.37	-18.63	46	29.82	23.94	4.26	30.65	-	-	Peak
5150	39.16	-14.84	54	31.07	34.49	8.07	34.47	100	33	Average
5150	51.82	-22.18	74	43.73	34.49	8.07	34.47	100	33	Peak
5220	107.36	-	-	99.13	34.54	8.14	34.45	100	33	Peak
5220	96.42	-	-	88.23	34.53	8.12	34.46	100	33	Average
5350	38.51	-15.49	54	30.1	34.61	8.23	34.43	100	33	Average
5350	50.04	-23.96	74	41.63	34.61	8.23	34.43	100	33	Peak
8950	54.82	-19.18	74	43.42	36.27	10.32	35.19	100	207	Peak
8950	41.25	-12.75	54	29.85	36.27	10.32	35.19	100	207	Average
10440	39.23	-29.07	68.3	71.63	-8.6	11.08	34.88	100	0	Peak

Test Mode :	Mode 9	Temperature :	19~20°C
Test Channel :	38	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5190 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.98	-13.02	40	38.53	19.51	0.64	31.7	100	54	Peak
96.42	26.87	-16.63	43.5	47.67	9.76	1.14	31.7	-	-	Peak
124.77	26.98	-16.52	43.5	45.49	11.81	1.35	31.67	-	-	Peak
624.1	28.27	-17.73	46	35.67	20.25	3.33	30.98	-	-	Peak
750.1	26.73	-19.27	46	32.31	21.52	3.7	30.8	-	-	Peak
875.4	28.65	-17.35	46	32.34	22.95	4.06	30.7	-	-	Peak
5150	42.57	-11.43	54	34.48	34.49	8.07	34.47	125	43	Average
5150	59.07	-14.93	74	50.98	34.49	8.07	34.47	125	43	Peak
5190	102.26	-	-	94.09	34.52	8.11	34.46	125	43	Peak
5190	90.03	-	-	81.88	34.51	8.1	34.46	125	43	Average
5350	38.74	-15.26	54	30.33	34.61	8.23	34.43	125	43	Average
5350	50.16	-23.84	74	41.75	34.61	8.23	34.43	125	43	Peak
8958	54.64	-19.36	74	43.24	36.27	10.32	35.19	100	162	Peak
8958	41.5	-12.5	54	30.1	36.27	10.32	35.19	100	162	Average

Test Mode :	Mode 9	Temperature :	19~20°C
Test Channel :	38	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5190 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.54	-5.46	40	46.09	19.51	0.64	31.7	100	84	Peak
43.5	31.85	-8.15	40	51.28	11.55	0.72	31.7	-	-	Peak
122.61	31.32	-12.18	43.5	49.63	12.06	1.31	31.68	-	-	Peak
624.1	29.01	-16.99	46	36.41	20.25	3.33	30.98	-	-	Peak
693.4	25.34	-20.66	46	31.93	20.79	3.53	30.91	-	-	Peak
903.4	31.82	-14.18	46	35.13	23.22	4.17	30.7	-	-	Peak
5150	44.87	-9.13	54	36.78	34.49	8.07	34.47	100	35	Average
5150	65.21	-8.79	74	57.12	34.49	8.07	34.47	100	35	Peak
5190	104.2	-	-	96.05	34.51	8.1	34.46	100	35	Peak
5190	90.98	-	-	82.83	34.51	8.1	34.46	100	35	Average
5350	38.47	-15.53	54	30.06	34.61	8.23	34.43	100	35	Average
5350	49.54	-24.46	74	41.13	34.61	8.23	34.43	100	35	Peak
8812	54.99	-19.01	74	43.68	36.19	10.28	35.16	100	51	Peak
8812	40.43	-13.57	54	29.12	36.19	10.28	35.16	100	51	Average



Test Mode :	Mode 10	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	26.84	-13.16	40	38.94	18.95	0.65	31.7	-	-	Peak
121.26	32.13	-11.37	43.5	50.37	12.15	1.29	31.68	100	55	Peak
135.57	26.43	-17.07	43.5	44.97	11.73	1.39	31.66	-	-	Peak
624.1	28.19	-17.81	46	35.59	20.25	3.33	30.98	-	-	Peak
830.6	25.59	-20.41	46	29.86	22.51	3.92	30.7	-	-	Peak
875.4	28	-18	46	31.69	22.95	4.06	30.7	-	-	Peak
5150	51.24	-22.76	74	43.15	34.49	8.07	34.47	141	40	Peak
5150	38.92	-15.08	54	30.83	34.49	8.07	34.47	141	40	Average
5220	102.85	-	-	94.65	34.53	8.12	34.45	141	40	Peak
5220	89.52	-	-	81.33	34.53	8.12	34.46	141	40	Average
5350	50.04	-23.96	74	41.63	34.61	8.23	34.43	141	40	Peak
5350	38.53	-15.47	54	30.12	34.61	8.23	34.43	141	40	Average
8830	54.33	-19.67	74	43.01	36.2	10.29	35.17	100	64	Peak
8830	41	-13	54	29.68	36.2	10.29	35.17	100	64	Average

Test Mode :	Mode 10	Temperature :	19~20°C
Test Channel :	44	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	33.4	-6.6	40	44.95	19.51	0.64	31.7	100	32	Peak
42.69	29.3	-10.7	40	48.1	12.18	0.72	31.7	-	-	Peak
121.53	30.62	-12.88	43.5	48.86	12.15	1.29	31.68	-	-	Peak
450.5	27.46	-18.54	46	38.64	17.16	2.81	31.15	-	-	Peak
632.5	28.74	-17.26	46	36.04	20.32	3.35	30.97	-	-	Peak
696.9	26.5	-19.5	46	33.04	20.82	3.54	30.9	-	-	Peak
5150	39.5	-14.5	54	31.41	34.49	8.07	34.47	100	33	Average
5150	51.2	-22.8	74	43.11	34.49	8.07	34.47	100	33	Peak
5220	103.46	-	-	95.23	34.54	8.14	34.45	100	33	Peak
5220	90.61	-	-	82.42	34.53	8.12	34.46	100	33	Average
5350	38.7	-15.3	54	30.29	34.61	8.23	34.43	100	33	Average
5350	50.38	-23.62	74	41.97	34.61	8.23	34.43	100	33	Peak
8862	54.91	-19.09	74	43.58	36.21	10.29	35.17	100	37	Peak
8862	40.78	-13.22	54	29.45	36.21	10.29	35.17	100	37	Average

Test Mode :	Mode 11	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.47	-13.53	40	38.02	19.51	0.64	31.7	100	75	Peak
44.58	25.08	-14.92	40	45.14	10.92	0.72	31.7	-	-	Peak
126.66	26.8	-16.7	43.5	45.31	11.8	1.36	31.67	-	-	Peak
500.2	24.44	-21.56	46	34.42	18.18	2.94	31.1	-	-	Peak
624.1	27.41	-18.59	46	34.81	20.25	3.33	30.98	-	-	Peak
875.4	27.69	-18.31	46	31.38	22.95	4.06	30.7	-	-	Peak
5150	48.48	-5.52	54	40.39	34.49	8.07	34.47	148	320	Average
5150	63.13	-10.87	74	55.04	34.49	8.07	34.47	148	320	Peak
5180	115.34	-	-	107.19	34.51	8.1	34.46	148	320	Peak
5180	104	-	-	95.85	34.51	8.1	34.46	148	320	Average
5350	47.14	-6.86	54	38.73	34.61	8.23	34.43	148	320	Average
5350	52.11	-21.89	74	43.7	34.61	8.23	34.43	148	320	Peak
8820	53.03	-20.97	74	41.73	36.19	10.28	35.17	100	57	Peak
8820	41.01	-12.99	54	29.71	36.19	10.28	35.17	100	57	Average
10360	42.29	-26.01	68.3	74.92	-8.74	11.06	34.95	100	0	Peak
15540	45.56	-28.44	74	73.27	-7.12	14.34	34.93	100	0	Peak



Test Mode :	Mode 11	Temperature :	19~20°C
Test Channel :	36	Relative Humidity :	48~49%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	34.23	-5.77	40	45.78	19.51	0.64	31.7	100	61	Peak
43.5	31.88	-8.12	40	51.31	11.55	0.72	31.7	-	-	Peak
123.42	31.25	-12.25	43.5	49.63	11.98	1.32	31.68	-	-	Peak
500.2	23.78	-22.22	46	33.76	18.18	2.94	31.1	-	-	Peak
624.1	27.93	-18.07	46	35.33	20.25	3.33	30.98	-	-	Peak
875.4	28.91	-17.09	46	32.6	22.95	4.06	30.7	-	-	Peak
5150	49.91	-4.09	54	41.82	34.49	8.07	34.47	100	30	Average
5150	65.01	-8.99	74	56.92	34.49	8.07	34.47	100	30	Peak
5180	117.08	-	-	108.93	34.51	8.1	34.46	100	30	Peak
5180	105.27	-	-	97.12	34.51	8.1	34.46	100	30	Average
5350	46.87	-7.13	54	38.46	34.61	8.23	34.43	100	30	Average
5350	52.74	-21.26	74	44.33	34.61	8.23	34.43	100	30	Peak
8868	52.28	-21.72	74	40.93	36.22	10.3	35.17	100	273	Peak
8868	41.46	-12.54	54	30.11	36.22	10.3	35.17	100	273	Average
10360	49.17	-19.13	68.3	81.8	-8.74	11.06	34.95	100	0	Peak
15540	47.52	-26.48	74	75.3	-7.19	14.34	34.93	100	0	Peak

3.4 Automatically Discontinue Transmission

3.4.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Result of Automatically Discontinue Transmission

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.5 Antenna Requirements

3.5.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit 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.

3.5.2 Antenna Connected Construction

The antenna type used in this product is Panel Antenna without connector and it is considered to meet antenna requirement of FCC.

3.5.3 Antenna Gain

The antenna gain is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMI Test Receive	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Aug. 05, 2009	Aug. 04, 2010	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9kHz~30MHz	Nov. 30, 2009	Nov. 29, 2010	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz~30MHz	Nov. 23, 2009	Nov. 22, 2010	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2009	Oct. 30, 2010	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 04, 2009	Dec. 03, 2010	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 20, 2009	Aug. 19, 2010	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 14, 2009	Oct. 13, 2010	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec.09,2009	Dec. 08, 2010	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 27, 2009	Mar. 26, 2010	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 KHz~30 MHz	May 22, 2008	May 21, 2010	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	± 0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	± 1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	± 0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site Imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				

6 Certification of TAF Accreditation



Certificate No. : L1190-091230

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	: ISO/IEC 17025:2005
Accreditation Number	: 1190
Originally Accredited	: December 15, 2003
Effective Period	: January 10, 2010 to January 09, 2013
Accredited Scope	: Testing Field, see described in the Appendix
Specific Accreditation Program	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : December 30, 2009

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The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix.



Appendix A. Photographs of EUT

Please refer to Sporton report number EP9D2415 as below.



Appendix C. Product Equality Declaration

Meru Networks Inc.

894 Ross Drive Sunnyvale, CA 94089 USA
Tel: 408 431 6032 ; Fax: 408 215 5301

Federal Communications Commission
Authorization and Evaluation Division
1435 Oakland Mills Road
Columbia, MD 21046

SUBJECT: Class II Permissive Change for FCC ID: RE7-AP300

The product, Multi Radio 802.11a/b/g/n Wireless LAN Access Point, has been granted by FCC dated 10/15/2007, FCC ID: RE7-AP300. The intension of this application is to apply for Class II Permissive Change for the modification of antenna type. Except the modification above, the other portions are remained the same as previous version.

Contact Person: Srinivas Sivaprakasam
Company: Meru Networks Inc.
TEL: 408 431 6032
FAX: 408 215 5301
E-mail: ssrinivas@merunetworks.com



Appendix D. Original Report

Please refer to Sporton Report Number FZ791302A as below.