

Partial FCC RF Test Report

APPLICANT : FOXCONN INTERNATIONAL INC.
EQUIPMENT : 802.11n 1x1 PCIe Minicard
Transceiver
MODEL NAME : AR5B95
FCC ID : WXC-T77H121050
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

This is a partial report which is only valid combined with the WLAN Module (Brand name: Atheros / Model name: AR5B95 / FCC ID: PPD-AR5B95) Report.

The product was installed into Notebook Computer (Model Name: FT2*** ("*" can be 0-9, a-z, A-Z or Blank); FT3*** ("*" can be 0-9, a-z, A-Z or Blank); HSG1121) during test.

The product was received on Jan. 08, 2010 and completely tested on Feb. 11, 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 the 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
FR010835	Rev. 01	Initial issue of report	Mar. 22. 2010



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.2	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 13.4 dB at 0.166 MHz
3.3	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.66 dB at 2483.50 MHz
3.4	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

FOXCONN INTERNATIONAL INC.

No. 2, Tzu Yu St., Tu-Chen City, Taipei Hsien 236, Taiwan

1.2 Manufacturer

FOXCONN INTERNATIONAL INC.

No. 2, Tzu Yu St., Tu-Chen City, Taipei Hsien 236, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	802.11n 1x1 PCIe Minicard Transceiver
Model Name	AR5B95
FCC ID	WXC-T77H121050
Host (Notebook Computer)	Model Name: FT2*** ("*" can be 0-9, a-z, A-Z or Blank); FT3*** ("*" can be 0-9, a-z, A-Z or Blank); HSG1121 Antenna Type: PIFA Antenna with gain -2.82 dBi
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

List of Accessory for Host (Notebook Personal Computer):

Components	Vendor	Model Name
CPU	Intel	Intel CPU up to 1.6GHz
Main Board	Foxconn	CULV02
Power Supply	Huntkey (Adapter 1)	HKA06519034-6C 65W
		INPUT : 100-240V 50-60Hz 1.5A
		OUPUT 19V 3.42A
	DELTA (Adapter 2)	ADP-65JH DB 65W
		INPUT : 100-240V 50-60Hz 1.5A
		OUPUT 19V 3.42A
Battery	SIMPLO	QB-BAT32B (Battery 1)
		QB-BAT36B (Battery 2)
		QB-BAT66B (Battery 3)
		QB-BAT32C (Battery 4)
		QB-BAT36C (Battery 5)
		QB-BAT66C (Battery 6)
Hard Disk Driver	WD	250GB WD2500BEVT
	SAMSUNG	320GB HM320II
		250GB HM250HI
		160GB HM160HI
	FUJITSU	160GB MHZ2160BH
DDR Memory		DDR3 Memory up to 2GB/ Speed:1066MHz
LCD panel	HannStar	HSD121PHW1-A01
Wireless LAN Module	Foxconn	T77H121050 (Atheros AR5B95)
Bluetooth Module	Atheros	T77H056
Camera Module	KYE	32200228201
	FITI	Cam5107

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 Digital Transmission System (DTS).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
4. 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	03CH06-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 C §15.247
- ♦ FCC KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 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.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
4.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Earphone	Ergotech	ET-E200	FCC DoC	Unshielded, 1.8 m	N/A
6.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A

2 Test Configuration of Equipment Under Test

2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	21.03	21.02	20.96	20.93
CH 06	2437 MHz	20.58	20.53	20.57	20.50
CH 11	2462 MHz	20.68	20.75	20.85	20.88

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	24.64	24.85	24.98	25.15	25.07	24.98	24.77	25.16
CH 06	2437 MHz	24.86	25.06	25.03	25.14	25.11	25.14	24.86	25.15
CH 11	2462 MHz	24.81	25.07	25.05	25.15	25.03	25.02	24.79	25.02

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		At OFDM Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 01	2412 MHz	25.09	25.17	25.25	25.21	25.24	25.25	25.17	25.19
CH 06	2437 MHz	25.00	25.15	25.10	25.15	25.23	25.08	25.18	25.27
CH 11	2462 MHz	25.12	25.19	25.17	25.14	25.15	25.10	25.04	25.24

Channel	Frequency	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)							
		At OFDM Data Rate							
		13.5 Mbps	27 Mbps	40.5 Mbps	54 Mbps	81 Mbps	108 Mbps	121.5 Mbps	135 Mbps
CH 03	2422 MHz	21.83	21.89	21.47	21.92	21.64	21.52	21.52	21.45
CH 06	2437 MHz	21.80	11.44	21.61	21.66	21.51	21.50	21.51	21.81
CH 09	2452 MHz	21.71	21.93	21.85	21.57	21.75	21.76	21.60	21.81

Remark:

1. The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 54Mbps for 802.11g, 65Mbps for 802.11n (BW 20MHz), and 27Mbps for 802.11n (BW 40MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.

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: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

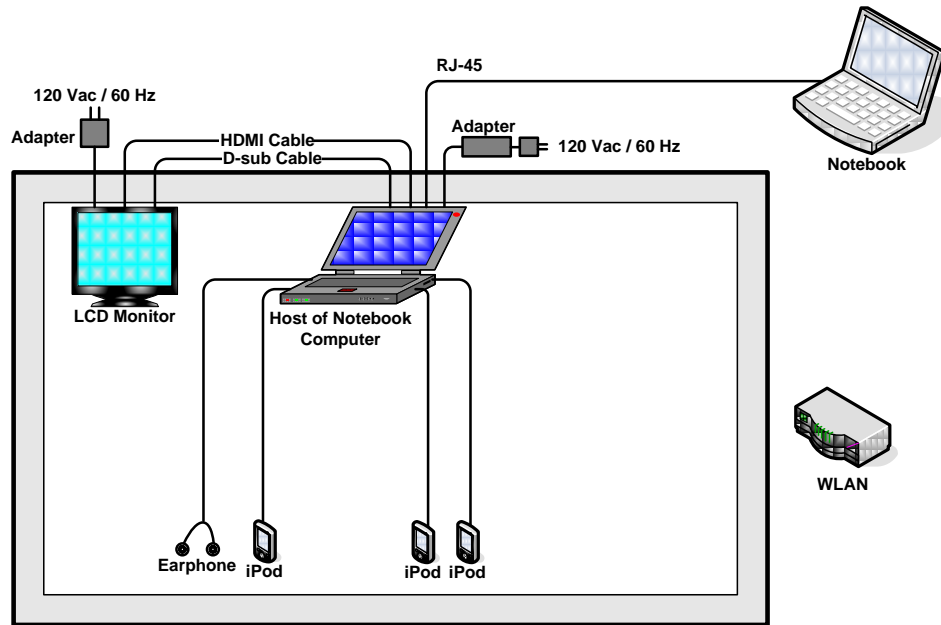
Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

The following tables are showing the test modes as the worst cases and recorded in this report.

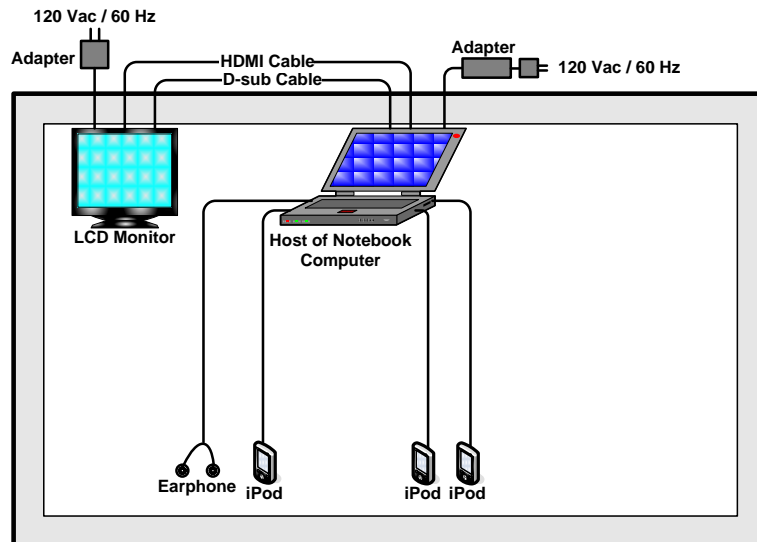
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz for Sample 1 Mode 2 : 802.11b CH06_2437 MHz for Sample 1 Mode 3 : 802.11b CH11_2462 MHz for Sample 1	Mode 4: 802.11g_CH01_2412 MHz for Sample 1 Mode 5: 802.11g_CH06_2437 MHz for Sample 1 Mode 6: 802.11g_CH11_2462 MHz for Sample 1 Mode 7: 802.11n (BW 20M)_CH01_2412 MHz for Sample 1 Mode 8: 802.11n (BW 20M)_CH06_2437 MHz for Sample 1 Mode 9: 802.11n (BW 20M)_CH11_2462 MHz for Sample 1 Mode 10: 802.11n (BW 40M)_CH03_2422 MHz for Sample 1 Mode 11: 802.11n (BW 40M)_CH06_2437 MHz for Sample 1 Mode 12: 802.11n (BW 40M)_CH09_2452 MHz for Sample 1 Mode 13: 802.11n (BW 40M)_CH09_2452 MHz for Sample 2 Mode 14: 802.11n (BW 40M)_CH09_2452 MHz for Sample 3
AC Conducted Emission	Mode 1 : WLAN Link + TC + Adapter 1 for Sample 1	
Remark: <ol style="list-style-type: none"> TC stands for Test Configuration, and consists of iPod, monitor, earphone, and RJ-45. Only the radiated emission tests of the WLAN module on this Notebook Computer was performed in this report, and the conducted test cases can be referred to the integrated WLAN module (Brand name: Atheros / Model name: AR5B95 / FCC ID: PPD-AR5B95 / CCS Report No. 81029005) report. Only band edge test was performed for mode 4~6 and mode 10~12. Sample 1 represents the host model FT34; Sample 2 represents the host model FT30; Sample 3 represents the host model FT20. The only difference between these models is the appearance of host. 		

2.3 Connection Diagram of Test System

<Conduction>



<Radiation>



Note: The EUT is a WLAN module which was installed into the host notebook computer (Model Name: FT2*** ("*" can be 0-9, a-z, A-Z or Blank); FT3*** ("*" can be 0-9, a-z, A-Z or Blank); HSG1121) during the test.



2.4 RF Utility

The programmed RF utility “Art (art/id=30a1)” is installed in EUT 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

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. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3.1.2 Measuring Instruments

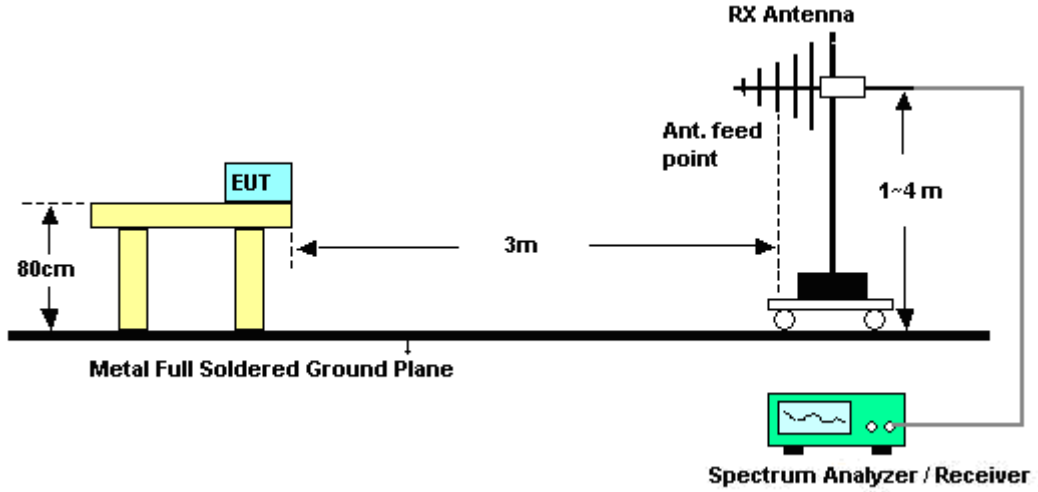
See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c).

3.1.4 Test Setup

<Radiated Band Edges>





3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Kai Wang

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
2389.99	47.01	-26.99	74	47.31	31.86	3.92	36.08	100	337	Peak
2389.99	35.27	-18.73	54	35.57	31.86	3.92	36.08	100	337	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
2388.47	47.86	-26.14	74	48.15	31.86	3.92	36.07	100	20	Peak
2388.47	32.26	-21.74	54	32.55	31.86	3.92	36.07	100	20	Average

Test Mode :	Mode 3	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

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
2483.5	45.59	-28.41	74	45.65	31.98	4.05	36.09	100	334	Peak
2483.5	33.56	-20.44	54	33.62	31.98	4.05	36.09	100	334	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
2498.29	46.86	-27.14	74	46.91	32	4.05	36.1	100	6	Peak
2498.29	32.3	-21.7	54	32.35	32	4.05	36.1	100	6	Average



Test Mode :	Mode 4	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Kai Wang

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
2389.99	59.88	-14.12	74	60.18	31.86	3.92	36.08	100	333	Peak
2389.99	44.86	-9.14	54	45.16	31.86	3.92	36.08	100	333	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
2389.61	54.48	-19.52	74	54.77	31.86	3.92	36.07	100	4	Peak
2389.61	39.07	-14.93	54	39.36	31.86	3.92	36.07	100	4	Average

Test Mode :	Mode 6	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

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
2484.42	65.25	-8.75	74	65.31	31.98	4.05	36.09	100	331	Peak
2484.42	48.03	-5.97	54	48.09	31.98	4.05	36.09	100	331	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
2484.61	61.92	-12.08	74	61.98	31.98	4.05	36.09	100	7	Peak
2484.61	45.5	-8.5	54	45.56	31.98	4.05	36.09	100	7	Average



Test Mode :	Mode 7	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Kai Wang

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
2388.85	62.35	-11.65	74	62.64	31.86	3.92	36.07	100	334	Peak
2388.85	45.41	-8.59	54	45.7	31.86	3.92	36.07	100	334	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
2389.42	55.78	-18.22	74	56.07	31.86	3.92	36.07	100	20	Peak
2389.42	39.6	-14.4	54	39.89	31.86	3.92	36.07	100	20	Average

Test Mode :	Mode 9	Temperature :	22~23°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

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
2483.85	64.34	-9.66	74	64.4	31.98	4.05	36.09	100	334	Peak
2483.85	49.16	-4.84	54	49.22	31.98	4.05	36.09	100	334	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
2483.66	61.79	-12.21	74	61.85	31.98	4.05	36.09	100	7	Peak
2483.66	46.74	-7.26	54	46.8	31.98	4.05	36.09	100	7	Average



Test Mode :	Mode 10	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	46~47%
Test Channel :	03	Test Engineer :	Kai Wang

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
2389.61	59.29	-14.71	74	59.58	31.86	3.92	36.07	100	335	Peak
2389.61	44.9	-9.1	54	45.19	31.86	3.92	36.07	100	335	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
2389.99	53.25	-20.75	74	53.55	31.86	3.92	36.08	100	3	Peak
2389.99	39.21	-14.79	54	39.51	31.86	3.92	36.08	100	3	Average

Test Mode :	Mode 12	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	46~47%
Test Channel :	09	Test Engineer :	Kai Wang

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
2484.42	63.55	-10.45	74	63.61	31.98	4.05	36.09	100	335	Peak
2484.42	50.07	-3.93	54	50.13	31.98	4.05	36.09	100	335	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
2483.5	61.19	-12.81	74	61.25	31.98	4.05	36.09	100	4	Peak
2483.5	47.79	-6.21	54	47.85	31.98	4.05	36.09	100	4	Average



Test Mode :	Mode 13	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	46~47%
Test Channel :	09	Test Engineer :	Kai Wang

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
2483.5	63.12	-10.88	74	63.18	31.98	4.05	36.09	100	340	Peak
2483.5	47.12	-6.88	54	47.18	31.98	4.05	36.09	100	340	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
2483.5	58.65	-15.35	74	58.71	31.98	4.05	36.09	100	36	Peak
2483.5	42.64	-11.36	54	42.7	31.98	4.05	36.09	100	36	Average

Test Mode :	Mode 14	Temperature :	22~23°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	46~47%
Test Channel :	09	Test Engineer :	Kai Wang

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
2483.5	68.13	-5.87	74	68.19	31.98	4.05	36.09	100	338	Peak
2483.5	52.34	-1.66	54	52.4	31.98	4.05	36.09	100	338	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
2483.5	67.25	-6.75	74	67.31	31.98	4.05	36.09	100	21	Peak
2483.5	51.18	-2.82	54	51.24	31.98	4.05	36.09	100	21	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.

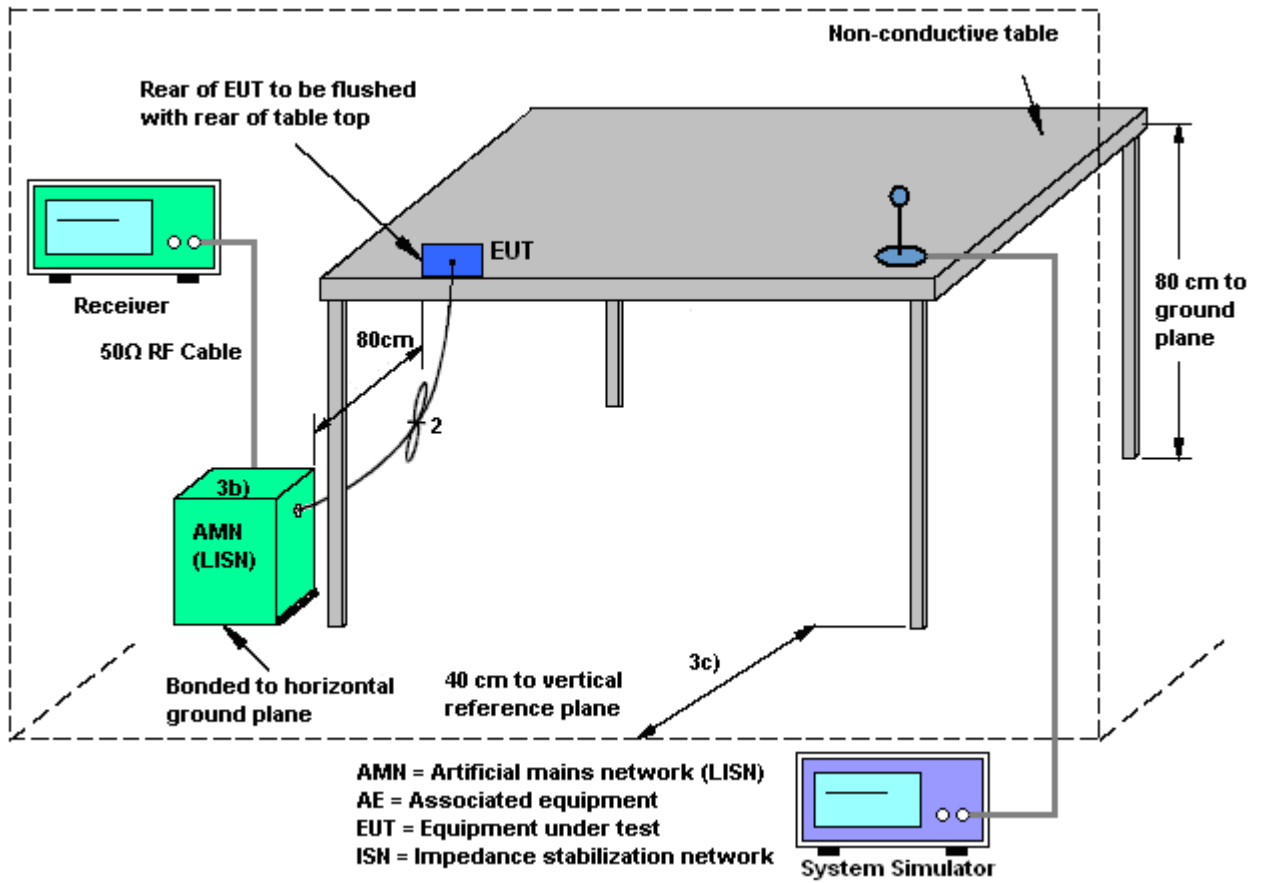
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

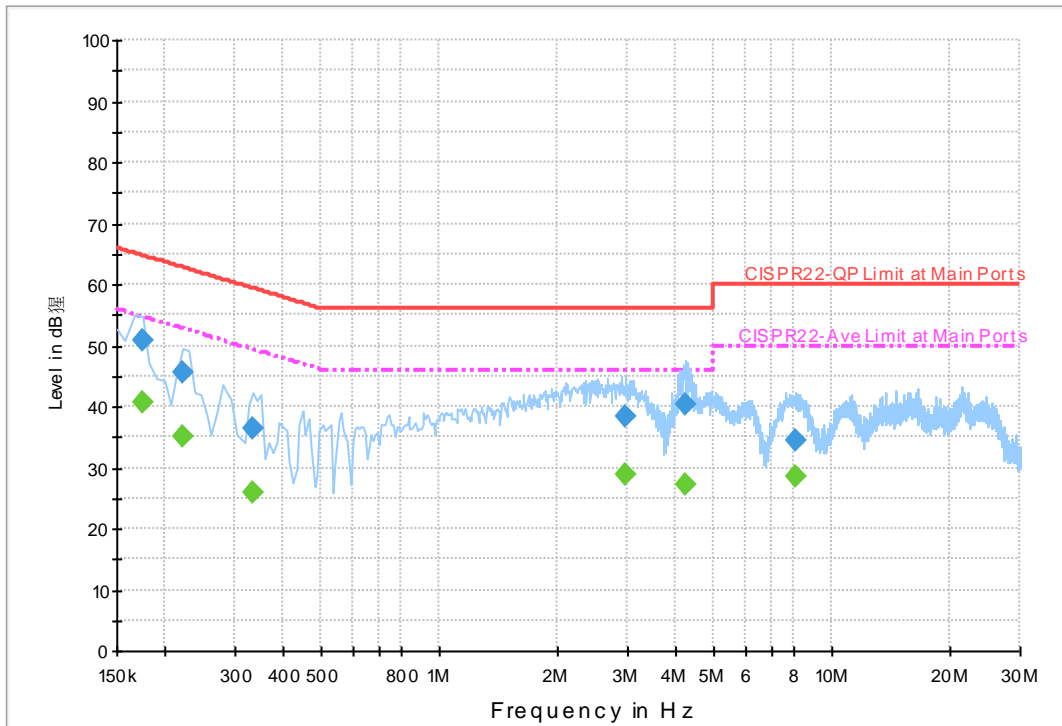
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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°C
Test Engineer :	Hayden Wu	Relative Humidity :	41~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + TC + Adapter 1 for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



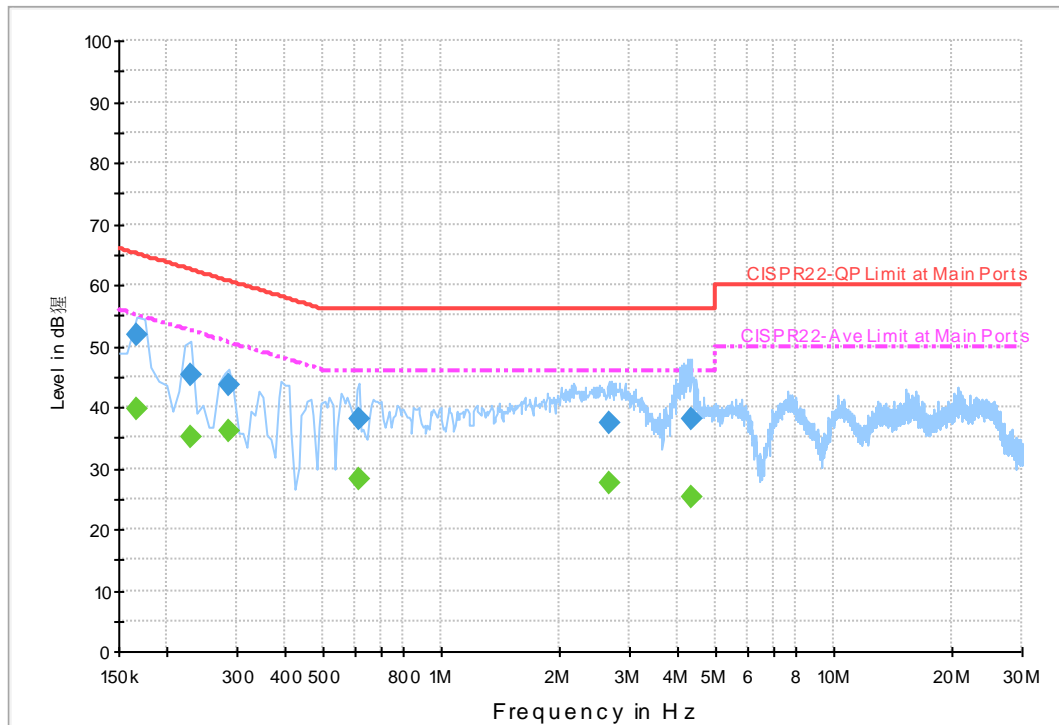
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	51.0	Off	L1	19.5	13.8	64.8
0.222000	45.6	Off	L1	19.6	17.1	62.7
0.334000	36.3	Off	L1	19.5	23.1	59.4
2.974000	38.4	Off	L1	19.5	17.6	56.0
4.222000	40.3	Off	L1	19.6	15.7	56.0
8.038000	34.4	Off	L1	19.6	25.6	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	40.6	Off	L1	19.5	14.2	54.8
0.222000	35.1	Off	L1	19.6	17.6	52.7
0.334000	25.9	Off	L1	19.5	23.5	49.4
2.974000	28.8	Off	L1	19.5	17.2	46.0
4.222000	27.3	Off	L1	19.6	18.7	46.0
8.038000	28.6	Off	L1	19.6	21.4	50.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Hayden Wu	Relative Humidity :	41~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + TC + Adapter 1 for Sample 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)
0.166000	51.8	Off	N	19.5	13.4	65.2
0.230000	45.3	Off	N	19.5	17.1	62.4
0.286000	43.5	Off	N	19.4	17.1	60.6
0.614000	38.1	Off	N	19.5	17.9	56.0
2.654000	37.3	Off	N	19.5	18.7	56.0
4.310000	38.0	Off	N	19.5	18.0	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	39.6	Off	N	19.5	15.6	55.2
0.230000	35.1	Off	N	19.5	17.4	52.4
0.286000	36.1	Off	N	19.4	14.5	50.6
0.614000	28.4	Off	N	19.5	17.6	46.0
2.654000	27.4	Off	N	19.5	18.6	46.0
4.310000	25.2	Off	N	19.5	20.8	46.0

3.3 Radiated Emission Measurement

3.3.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.3.2 Measuring Instruments

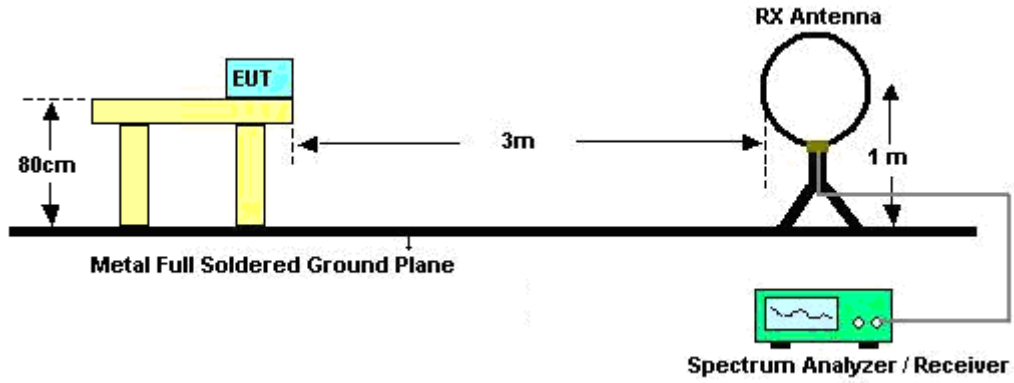
See list of measuring instruments of this test report.

3.3.3 Test Procedures

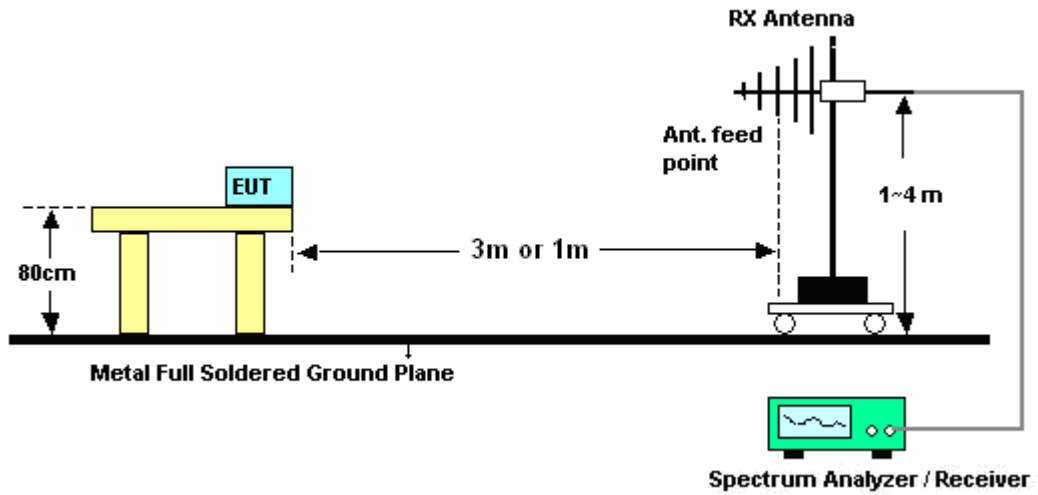
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
 - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
 Distance extrapolation factor = $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

3.3.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz





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

Test Engineer :	Kai Wang	Temperature :	22~23°C	
		Relative Humidity :	46~47%	
Frequency (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 (30 MHz ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2412 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	17.59	-22.41	40	29.81	18.51	0.83	31.56	-	-	Peak
176.34	27.52	-15.98	43.5	47.89	9.44	2.21	32.02	-	-	Peak
216.03	24.99	-21.01	46	45.7	8.82	2.49	32.02	-	-	Peak
386.8	33.18	-12.82	46	46.21	15.34	3.47	31.84	100	108	Peak
799.8	27.89	-18.11	46	34.89	20.07	5.11	32.18	-	-	Peak
899.9	26.84	-19.16	46	32.32	20.73	5.46	31.67	-	-	Peak
2389.99	35.27	-18.73	54	35.57	31.86	3.92	36.08	100	337	Average
2389.99	47.01	-26.99	74	47.31	31.86	3.92	36.08	100	337	Peak
2412	96.91	-	-	97.16	31.88	3.95	36.08	100	337	Average
2412	100.89	-	-	101.14	31.88	3.95	36.08	100	337	Peak
2494	46.89	-27.11	74	46.94	32	4.05	36.1	100	337	Peak
2494	34.19	-19.81	54	34.24	32	4.05	36.1	100	337	Average
7362	52.79	-21.21	74	46.38	35.63	7.22	36.44	100	238	Peak
7362	39.52	-14.48	54	33.11	35.63	7.22	36.44	100	238	Average



Test Mode :	Mode 1	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2412 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
36.48	28.18	-11.82	40	44.37	14.65	0.93	31.77	100	56	Peak
59.43	21.28	-18.72	40	45.15	6.91	1.24	32.02	-	-	Peak
175.53	29.77	-13.73	43.5	50.06	9.51	2.2	32	-	-	Peak
504.4	30.31	-15.69	46	40.87	17.53	3.98	32.07	-	-	Peak
647.9	30.82	-15.18	46	39.18	18.97	4.56	31.89	-	-	Peak
939.8	29.02	-16.98	46	34.07	20.89	5.54	31.48	-	-	Peak
2388.47	32.26	-21.74	54	32.55	31.86	3.92	36.07	100	20	Average
2388.47	47.86	-26.14	74	48.15	31.86	3.92	36.07	100	20	Peak
2412	93.29	-	-	93.54	31.88	3.95	36.08	100	20	Average
2412	97.1	-	-	97.35	31.88	3.95	36.08	100	20	Peak
2500	46.41	-27.59	74	46.46	32	4.05	36.1	100	20	Peak
2500	33.25	-20.75	54	33.3	32	4.05	36.1	100	20	Average
7416	53.14	-20.86	74	46.75	35.62	7.24	36.47	100	222	Peak
7416	39.67	-14.33	54	33.28	35.62	7.24	36.47	100	222	Average



Test Mode :	Mode 2	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2437 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
31.08	18.07	-21.93	40	30.85	17.98	0.85	31.61	-	-	Peak
175.53	22.83	-20.67	43.5	43.12	9.51	2.2	32	-	-	Peak
216.03	24.45	-21.55	46	45.16	8.82	2.49	32.02	-	-	Peak
386.8	33.46	-12.54	46	46.49	15.34	3.47	31.84	100	183	Peak
418.3	30.26	-15.74	46	42.6	15.99	3.61	31.94	-	-	Peak
929.3	27.17	-18.83	46	32.33	20.85	5.52	31.53	-	-	Peak
2388	45.22	-28.78	74	45.51	31.86	3.92	36.07	100	335	Peak
2388	31.55	-22.45	54	31.84	31.86	3.92	36.07	100	335	Average
2437	100.65	-	-	100.81	31.93	3.99	36.08	100	335	Peak
2437	97	-	-	97.16	31.93	3.99	36.08	100	335	Average
2486	46.08	-27.92	74	46.14	31.98	4.05	36.09	100	335	Peak
2486	32.91	-21.09	54	32.97	31.98	4.05	36.09	100	335	Average
7407	52.5	-21.5	74	46.1	35.62	7.24	36.46	100	61	Peak
7407	39.4	-14.6	54	33	35.62	7.24	36.46	100	61	Average



Test Mode :	Mode 2	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2437 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
31.08	24.88	-15.12	40	37.66	17.98	0.85	31.61	-	-	Peak
37.83	27.58	-12.42	40	44.34	14.04	0.95	31.75	100	59	Peak
166.08	27.68	-15.82	43.5	47.58	9.88	2.13	31.91	-	-	Peak
504.4	30.86	-15.14	46	41.42	17.53	3.98	32.07	-	-	Peak
647.9	31.58	-14.42	46	39.94	18.97	4.56	31.89	-	-	Peak
899.9	32.15	-13.85	46	37.63	20.73	5.46	31.67	-	-	Peak
2372	42.96	-31.04	74	43.31	31.83	3.89	36.07	100	19	Peak
2372	31.1	-22.9	54	31.45	31.83	3.89	36.07	100	19	Average
2437	95.72	-	-	95.88	31.93	3.99	36.08	100	19	Peak
2437	91.99	-	-	92.15	31.93	3.99	36.08	100	19	Average
2492	48.06	-25.94	74	48.11	32	4.05	36.1	100	19	Peak
2492	33.26	-20.74	54	33.31	32	4.05	36.1	100	19	Average
7446	52.64	-21.36	74	46.26	35.61	7.25	36.48	100	341	Peak
7446	39.48	-14.52	54	33.1	35.61	7.25	36.48	100	341	Average



Test Mode :	Mode 3	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2462 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	17.61	-22.39	40	29.83	18.51	0.83	31.56	-	-	Peak
170.94	20.95	-22.55	43.5	41	9.71	2.15	31.91	-	-	Peak
216.03	23.47	-22.53	46	44.18	8.82	2.49	32.02	-	-	Peak
386.8	34.03	-11.97	46	47.06	15.34	3.47	31.84	100	293	Peak
413.4	30.68	-15.32	46	43.12	15.9	3.59	31.93	-	-	Peak
932.8	29.19	-16.81	46	34.3	20.87	5.53	31.51	-	-	Peak
2388	43.54	-30.46	74	43.83	31.86	3.92	36.07	100	334	Peak
2388	31.05	-22.95	54	31.34	31.86	3.92	36.07	100	334	Average
2462	94.8	-	-	94.92	31.95	4.02	36.09	100	334	Average
2462	98.56	-	-	98.68	31.95	4.02	36.09	100	334	Peak
2483.5	33.56	-20.44	54	33.62	31.98	4.05	36.09	100	334	Average
2483.5	45.59	-28.41	74	45.65	31.98	4.05	36.09	100	334	Peak
7491	52.64	-21.36	74	46.28	35.6	7.26	36.5	100	254	Peak
7491	39.45	-14.55	54	33.09	35.6	7.26	36.5	100	254	Average



Test Mode :	Mode 3	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2462 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
31.08	26.4	-13.6	40	39.18	17.98	0.85	31.61	-	-	Peak
36.48	28.11	-11.89	40	44.3	14.65	0.93	31.77	100	45	Peak
168.78	26.73	-16.77	43.5	46.71	9.77	2.14	31.89	-	-	Peak
504.4	30.64	-15.36	46	41.2	17.53	3.98	32.07	-	-	Peak
647.9	31.64	-14.36	46	40	18.97	4.56	31.89	-	-	Peak
932.8	30.84	-15.16	46	35.95	20.87	5.53	31.51	-	-	Peak
2390	48.31	-25.69	74	48.61	31.86	3.92	36.08	100	6	Peak
2390	30.77	-23.23	54	31.07	31.86	3.92	36.08	100	6	Average
2462	90.86	-	-	90.98	31.95	4.02	36.09	100	6	Average
2462	94.68	-	-	94.8	31.95	4.02	36.09	100	6	Peak
2498.29	32.3	-21.7	54	32.35	32	4.05	36.1	100	6	Average
2498.29	46.86	-27.14	74	46.91	32	4.05	36.1	100	6	Peak
7536	53.22	-20.78	74	46.84	35.61	7.28	36.51	100	144	Peak
7536	39.72	-14.28	54	33.34	35.61	7.28	36.51	100	144	Average



Test Mode :	Mode 4	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2412 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
2389.99	44.86	-9.14	54	45.16	31.86	3.92	36.08	100	333	Average
2389.99	59.88	-14.12	74	60.18	31.86	3.92	36.08	100	333	Peak
2412	92.19	-	-	92.44	31.88	3.95	36.08	100	333	Average
2412	103.37	-	-	103.62	31.88	3.95	36.08	100	333	Peak
2494	45.13	-28.87	74	45.18	32	4.05	36.1	100	333	Peak
2494	32.27	-21.73	54	32.32	32	4.05	36.1	100	333	Average



Test Mode :	Mode 4	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2412 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
2389.61	39.07	-14.93	54	39.36	31.86	3.92	36.07	100	4	Average
2389.61	54.48	-19.52	74	54.77	31.86	3.92	36.07	100	4	Peak
2412	88.06	-	-	88.31	31.88	3.95	36.08	100	4	Average
2412	99	-	-	99.23	31.9	3.95	36.08	100	4	Peak
2500	47.35	-26.65	74	47.4	32	4.05	36.1	100	4	Peak
2500	32.48	-21.52	54	32.53	32	4.05	36.1	100	4	Average



Test Mode :	Mode 5	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2437 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
2390	49.41	-24.59	74	49.71	31.86	3.92	36.08	100	333	Peak
2390	33.89	-20.11	54	34.19	31.86	3.92	36.08	100	333	Average
2437	102.74	-	-	102.91	31.93	3.99	36.09	100	333	Peak
2437	91.96	-	-	92.12	31.93	3.99	36.08	100	333	Average
2484	51.41	-22.59	74	51.47	31.98	4.05	36.09	100	333	Peak
2484	34.87	-19.13	54	34.93	31.98	4.05	36.09	100	333	Average



Test Mode :	Mode 5	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2437 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
2390	49.6	-24.4	74	49.9	31.86	3.92	36.08	100	0	Peak
2390	31.7	-22.3	54	32	31.86	3.92	36.08	100	0	Average
2437	98.15	-	-	98.34	31.9	3.99	36.08	100	0	Peak
2437	87.91	-	-	88.07	31.93	3.99	36.08	100	0	Average
2492	47.2	-26.8	74	47.25	32	4.05	36.1	100	0	Peak
2492	32.22	-21.78	54	32.27	32	4.05	36.1	100	0	Average



Test Mode :	Mode 6	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2462 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
2388	42.65	-31.35	74	42.94	31.86	3.92	36.07	100	331	Peak
2388	30.7	-23.3	54	30.99	31.86	3.92	36.07	100	331	Average
2462	89.71	-	-	89.83	31.95	4.02	36.09	100	331	Average
2462	100.8	-	-	100.92	31.95	4.02	36.09	100	331	Peak
2484.42	48.03	-5.97	54	48.09	31.98	4.05	36.09	100	331	Average
2484.42	65.25	-8.75	74	65.31	31.98	4.05	36.09	100	331	Peak



Test Mode :	Mode 6	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2462 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
2390	43.04	-30.96	74	43.34	31.86	3.92	36.08	100	7	Peak
2390	30.75	-23.25	54	31.05	31.86	3.92	36.08	100	7	Average
2462	85.29	-	-	85.41	31.95	4.02	36.09	100	7	Average
2462	96.66	-	-	96.78	31.95	4.02	36.09	100	7	Peak
2484.61	45.5	-8.5	54	45.56	31.98	4.05	36.09	100	7	Average
2484.61	61.92	-12.08	74	61.98	31.98	4.05	36.09	100	7	Peak



Test Mode :	Mode 7	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2412 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	25.59	-14.41	40	37.81	18.51	0.83	31.56	-	-	Peak
176.88	21.53	-21.97	43.5	41.9	9.44	2.21	32.02	-	-	Peak
216.03	25.53	-20.47	46	46.24	8.82	2.49	32.02	-	-	Peak
386.8	33	-13	46	46.03	15.34	3.47	31.84	100	29	Peak
418.3	30.62	-15.38	46	42.96	15.99	3.61	31.94	-	-	Peak
896.4	28.21	-17.79	46	33.79	20.7	5.45	31.73	-	-	Peak
2388.85	45.41	-8.59	54	45.7	31.86	3.92	36.07	100	334	Average
2388.85	62.35	-11.65	74	62.64	31.86	3.92	36.07	100	334	Peak
2412	101.76	-	-	101.99	31.9	3.95	36.08	100	334	Peak
2412	90.97	-	-	91.22	31.88	3.95	36.08	100	334	Average
2486	45.19	-28.81	74	45.25	31.98	4.05	36.09	100	334	Peak
2486	31.95	-22.05	54	32.01	31.98	4.05	36.09	100	334	Average
7347	53.04	-20.96	74	46.64	35.63	7.21	36.44	100	172	Peak
7347	39.64	-14.36	54	33.24	35.63	7.21	36.44	100	172	Average



Test Mode :	Mode 7	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2412 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
31.08	28.22	-11.78	40	41	17.98	0.85	31.61	100	193	Peak
37.83	27.07	-12.93	40	43.83	14.04	0.95	31.75	-	-	Peak
177.69	25.49	-18.01	43.5	45.93	9.38	2.22	32.04	-	-	Peak
504.4	30.38	-15.62	46	40.94	17.53	3.98	32.07	-	-	Peak
647.9	31.49	-14.51	46	39.85	18.97	4.56	31.89	-	-	Peak
899.9	30.27	-15.73	46	35.75	20.73	5.46	31.67	-	-	Peak
2389.42	39.6	-14.4	54	39.89	31.86	3.92	36.07	100	20	Average
2389.42	55.78	-18.22	74	56.07	31.86	3.92	36.07	100	20	Peak
2412	87.55	-	-	87.8	31.88	3.95	36.08	100	20	Average
2412	98.9	-	-	99.13	31.9	3.95	36.08	100	20	Peak
2492	47.24	-26.76	74	47.29	32	4.05	36.1	100	20	Peak
2492	32.26	-21.74	54	32.31	32	4.05	36.1	100	20	Average
7821	52.82	-21.18	74	46.23	35.73	7.42	36.56	100	298	Peak
7821	39.65	-14.35	54	33.06	35.73	7.42	36.56	100	298	Average



Test Mode :	Mode 8	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2437 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	23.91	-16.09	40	36.69	17.98	0.85	31.61	-	-	Peak
161.49	21.58	-21.92	43.5	41.37	10.01	2.12	31.92	-	-	Peak
216.03	24.5	-21.5	46	45.21	8.82	2.49	32.02	-	-	Peak
386.8	32.21	-13.79	46	45.24	15.34	3.47	31.84	100	219	Peak
420.4	29.93	-16.07	46	42.23	16.03	3.62	31.95	-	-	Peak
903.4	28.52	-17.48	46	33.97	20.74	5.47	31.66	-	-	Peak
2390	47.92	-26.08	74	48.22	31.86	3.92	36.08	100	334	Peak
2390	32.97	-21.03	54	33.27	31.86	3.92	36.08	100	334	Average
2437	101.93	-	-	102.09	31.93	3.99	36.08	100	334	Peak
2437	90.47	-	-	90.63	31.93	3.99	36.08	100	334	Average
2484	48.18	-25.82	74	48.24	31.98	4.05	36.09	100	334	Peak
2484	34.23	-19.77	54	34.29	31.98	4.05	36.09	100	334	Average
7152	53.1	-20.9	74	46.65	35.67	7.14	36.36	100	239	Peak
7152	39.76	-14.24	54	33.31	35.67	7.14	36.36	100	239	Average



Test Mode :	Mode 8	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2437 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
34.59	26.68	-13.32	40	41.72	15.88	0.91	31.83	100	288	Peak
161.49	23.97	-19.53	43.5	43.76	10.01	2.12	31.92	-	-	Peak
176.88	24.44	-19.06	43.5	44.81	9.44	2.21	32.02	-	-	Peak
504.4	31.35	-14.65	46	41.91	17.53	3.98	32.07	-	-	Peak
647.9	32.57	-13.43	46	40.93	18.97	4.56	31.89	-	-	Peak
897.8	31.33	-14.67	46	36.86	20.72	5.45	31.7	-	-	Peak
2390	48.09	-25.91	74	48.39	31.86	3.92	36.08	100	0	Peak
2390	31.65	-22.35	54	31.95	31.86	3.92	36.08	100	0	Average
2437	97.84	-	-	98.03	31.9	3.99	36.08	100	0	Peak
2437	86.42	-	-	86.58	31.93	3.99	36.08	100	0	Average
2494	47.26	-26.74	74	47.31	32	4.05	36.1	100	0	Peak
2494	32.3	-21.7	54	32.35	32	4.05	36.1	100	0	Average
7566	53.31	-20.69	74	46.88	35.63	7.31	36.51	100	103	Peak
7566	39.91	-14.09	54	33.48	35.63	7.31	36.51	100	103	Average



Test Mode :	Mode 9	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2462 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	23.13	-16.87	40	35.35	18.51	0.83	31.56	-	-	Peak
181.74	21.58	-21.92	43.5	42.26	9.14	2.26	32.08	-	-	Peak
216.03	24.29	-21.71	46	45	8.82	2.49	32.02	-	-	Peak
386.8	32.07	-13.93	46	45.1	15.34	3.47	31.84	100	281	Peak
413.4	30.17	-15.83	46	42.61	15.9	3.59	31.93	-	-	Peak
910.4	28.16	-17.84	46	33.53	20.77	5.48	31.62	-	-	Peak
2358	42.88	-31.12	74	43.25	31.81	3.89	36.07	100	334	Peak
2358	30.72	-23.28	54	31.09	31.81	3.89	36.07	100	334	Average
2462	89.51	-	-	89.63	31.95	4.02	36.09	100	334	Average
2462	100.53	-	-	100.65	31.95	4.02	36.09	100	334	Peak
2483.85	49.16	-4.84	54	49.22	31.98	4.05	36.09	100	334	Average
2483.85	64.34	-9.66	74	64.4	31.98	4.05	36.09	100	334	Peak
7422	53.24	-20.76	74	46.86	35.61	7.24	36.47	100	106	Peak
7422	39.98	-14.02	54	33.6	35.61	7.24	36.47	100	106	Average



Test Mode :	Mode 9	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2462 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	29.91	-10.09	40	42.13	18.51	0.83	31.56	100	106	Peak
37.29	26.28	-13.72	40	43.04	14.04	0.95	31.75	-	-	Peak
176.88	25.34	-18.16	43.5	45.71	9.44	2.21	32.02	-	-	Peak
504.4	30.89	-15.11	46	41.45	17.53	3.98	32.07	-	-	Peak
647.9	30.46	-15.54	46	38.82	18.97	4.56	31.89	-	-	Peak
896.4	31.6	-14.4	46	37.18	20.7	5.45	31.73	-	-	Peak
2390	48.3	-25.7	74	48.6	31.86	3.92	36.08	100	7	Peak
2390	30.85	-23.15	54	31.15	31.86	3.92	36.08	100	7	Average
2462	84.92	-	-	85.04	31.95	4.02	36.09	100	7	Average
2462	96.86	-	-	96.98	31.95	4.02	36.09	100	7	Peak
2483.66	46.74	-7.26	54	46.8	31.98	4.05	36.09	100	7	Average
2483.66	61.79	-12.21	74	61.85	31.98	4.05	36.09	100	7	Peak
8016	52.87	-21.13	74	46.15	35.8	7.52	36.6	100	208	Peak
8016	39.74	-14.26	54	33.02	35.8	7.52	36.6	100	208	Average



Test Mode :	Mode 10	Temperature :	22~23°C
Test Channel :	03	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2422 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
2389.61	44.9	-9.1	54	45.19	31.86	3.92	36.07	100	335	Average
2389.61	59.29	-14.71	74	59.58	31.86	3.92	36.07	100	335	Peak
2422	82.81	-	-	83.04	31.9	3.95	36.08	100	335	Average
2422	92.95	-	-	93.11	31.93	3.99	36.08	100	335	Peak
2492	43.5	-30.5	74	43.55	32	4.05	36.1	100	335	Peak
2492	31.29	-22.71	54	31.34	32	4.05	36.1	100	335	Average



Test Mode :	Mode 10	Temperature :	22~23°C
Test Channel :	03	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2422 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
2389.99	39.21	-14.79	54	39.51	31.86	3.92	36.08	100	3	Average
2389.99	53.25	-20.75	74	53.55	31.86	3.92	36.08	100	3	Peak
2422	79.7	-	-	79.93	31.9	3.95	36.08	100	3	Average
2422	90	-	-	90.19	31.9	3.99	36.08	100	3	Peak
2494	46.41	-27.59	74	46.46	32	4.05	36.1	100	3	Peak
2494	32.18	-21.82	54	32.23	32	4.05	36.1	100	3	Average



Test Mode :	Mode 11	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2437 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
2390	59.66	-14.34	74	59.96	31.86	3.92	36.08	100	334	Peak
2390	41.04	-12.96	54	41.34	31.86	3.92	36.08	100	334	Average
2437	94.72	-	-	94.88	31.93	3.99	36.08	100	334	Peak
2437	83.64	-	-	83.8	31.93	3.99	36.08	100	334	Average
2484	61.12	-12.88	74	61.18	31.98	4.05	36.09	100	334	Peak
2484	42.62	-11.38	54	42.68	31.98	4.05	36.09	100	334	Average



Test Mode :	Mode 11	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2437 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
2390	53.72	-20.28	74	54.02	31.86	3.92	36.08	100	0	Peak
2390	36.97	-17.03	54	37.27	31.86	3.92	36.08	100	0	Average
2437	90.65	-	-	90.84	31.9	3.99	36.08	100	0	Peak
2437	79.86	-	-	80.02	31.93	3.99	36.08	100	0	Average
2484	54.26	-19.74	74	54.32	31.98	4.05	36.09	100	0	Peak
2484	37.96	-16.04	54	38.02	31.98	4.05	36.09	100	0	Average



Test Mode :	Mode 12	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2452 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
2390	45.98	-28.02	74	46.28	31.86	3.92	36.08	100	335	Peak
2390	31.63	-22.37	54	31.93	31.86	3.92	36.08	100	335	Average
2452	83.21	-	-	83.38	31.93	3.99	36.09	100	335	Average
2452	93.7	-	-	93.87	31.93	3.99	36.09	100	335	Peak
2484.42	63.55	-10.45	74	63.61	31.98	4.05	36.09	100	335	Peak
2484.42	50.07	-3.93	54	50.13	31.98	4.05	36.09	100	335	Average



Test Mode :	Mode 12	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2452 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
2390	43.42	-30.58	74	43.72	31.86	3.92	36.08	100	4	Peak
2390	30.67	-23.33	54	30.97	31.86	3.92	36.08	100	4	Average
2452	79.12	-	-	79.29	31.93	3.99	36.09	100	4	Average
2452	89.66	-	-	89.83	31.93	3.99	36.09	100	4	Peak
2483.5	47.79	-6.21	54	47.85	31.98	4.05	36.09	100	4	Average
2483.5	61.19	-12.81	74	61.25	31.98	4.05	36.09	100	4	Peak



Test Mode :	Mode 13	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2452 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
184.44	28.69	-14.81	43.5	49.47	8.99	2.29	32.06	-	-	Peak
236.28	32.45	-13.55	46	51.16	10.59	2.61	31.91	100	217	Peak
252.48	31.57	-14.43	46	48.37	12.3	2.7	31.8	-	-	Peak
322.4	30.81	-15.19	46	45.94	13.68	3.14	31.95	-	-	Peak
386.8	30.19	-15.81	46	43.22	15.34	3.47	31.84	-	-	Peak
432.3	26.76	-19.24	46	38.83	16.25	3.67	31.99	-	-	Peak
2390	45.57	-28.43	74	46.74	31.37	3.47	36.01	100	340	Peak
2390	30.62	-23.38	54	31.79	31.37	3.47	36.01	100	340	Average
2452	93.77	-	-	93.94	31.93	3.99	36.09	100	340	Peak
2452	82	-	-	82.17	31.93	3.99	36.09	100	340	Average
2483.5	63.12	-10.88	74	63.18	31.98	4.05	36.09	100	340	Peak
2483.5	47.12	-6.88	54	47.18	31.98	4.05	36.09	100	340	Average
7776	53.45	-20.55	74	46.9	35.71	7.4	36.56	100	293	Peak
7776	40.27	-13.73	54	33.72	35.71	7.4	36.56	100	293	Average



Test Mode :	Mode 13	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2452 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
36.48	26.42	-13.58	40	42.61	14.65	0.93	31.77	-	-	Peak
67.53	29.2	-10.8	40	53.16	6.56	1.31	31.83	100	77	Peak
181.74	32.29	-11.21	43.5	52.97	9.14	2.26	32.08	-	-	Peak
504.4	29.55	-16.45	46	40.11	17.53	3.98	32.07	-	-	Peak
600.3	30.64	-15.36	46	39.66	18.72	4.44	32.18	-	-	Peak
747.3	34.46	-11.54	46	41.98	19.63	4.93	32.08	-	-	Peak
2390	44.01	-29.99	74	44.31	31.86	3.92	36.08	100	36	Peak
2390	30.59	-23.41	54	30.89	31.86	3.92	36.08	100	36	Average
2452	92.78	-	-	92.95	31.93	3.99	36.09	100	36	Peak
2452	81.47	-	-	81.64	31.93	3.99	36.09	100	36	Average
2483.5	58.65	-15.35	74	58.71	31.98	4.05	36.09	100	36	Peak
2483.5	42.64	-11.36	54	42.7	31.98	4.05	36.09	100	36	Average
7377	53.12	-20.88	74	46.72	35.62	7.23	36.45	100	83	Peak
7377	39.89	-14.11	54	33.49	35.62	7.23	36.45	100	83	Average



Test Mode :	Mode 14	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	2452 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
182.28	23.17	-20.33	43.5	43.89	9.09	2.27	32.08	-	-	Peak
257.88	25.62	-20.38	46	42.33	12.4	2.74	31.85	-	-	Peak
299.73	27.28	-18.72	46	43.31	13.11	3.01	32.15	-	-	Peak
386.8	31.32	-14.68	46	44.35	15.34	3.47	31.84	-	-	Peak
425.3	29.96	-16.04	46	42.16	16.13	3.64	31.97	-	-	Peak
799.8	31.45	-14.55	46	38.45	20.07	5.11	32.18	100	207	Peak
2390	51.27	-22.73	74	51.57	31.86	3.92	36.08	100	338	Peak
2390	32.92	-21.08	54	33.22	31.86	3.92	36.08	100	338	Average
2452	93.38	-	-	93.55	31.93	3.99	36.09	100	338	Peak
2452	81.64	-	-	81.81	31.93	3.99	36.09	100	338	Average
2483.5	68.13	-5.87	74	68.19	31.98	4.05	36.09	100	338	Peak
2483.5	52.34	-1.66	54	52.4	31.98	4.05	36.09	100	338	Average
7281	53.17	-20.83	74	46.75	35.64	7.19	36.41	100	281	Peak
7281	40.1	-13.9	54	33.68	35.64	7.19	36.41	100	281	Average



Test Mode :	Mode 14	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	2452 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
35.13	27.35	-12.65	40	42.39	15.88	0.91	31.83	-	-	Peak
147.18	27.46	-16.04	43.5	46.64	10.52	1.99	31.69	-	-	Peak
176.88	30.93	-12.57	43.5	51.3	9.44	2.21	32.02	100	207	Peak
504.4	32.03	-13.97	46	42.59	17.53	3.98	32.07	-	-	Peak
600.3	32.63	-13.37	46	41.65	18.72	4.44	32.18	-	-	Peak
799.8	33.35	-12.65	46	40.35	20.07	5.11	32.18	-	-	Peak
2390	44.73	-29.27	74	45.03	31.86	3.92	36.08	100	21	Peak
2390	31.52	-22.48	54	31.82	31.86	3.92	36.08	100	21	Average
2452	91.51	-	-	91.68	31.93	3.99	36.09	100	21	Peak
2452	79.56	-	-	79.73	31.93	3.99	36.09	100	21	Average
2483.5	67.25	-6.75	74	67.31	31.98	4.05	36.09	100	21	Peak
2483.5	51.18	-2.82	54	51.24	31.98	4.05	36.09	100	21	Average
7347	52.91	-21.09	74	46.51	35.63	7.21	36.44	100	193	Peak
7347	39.58	-14.42	54	33.18	35.63	7.21	36.44	100	193	Average



3.4 Antenna Requirements

3.4.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

3.4.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

3.4.3 Antenna Gain

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



4 List of Measuring Equipment

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-1000 W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 23, 2009	Oct. 22, 2010	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 20, 2009	Oct. 19, 2010	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz-1000MHz	Apr. 28, 2009	Apr. 27, 2010	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Oct. 31, 2009	Oct. 30, 2010	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 20, 2009	Aug. 19, 2010	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AH-0801	95119	8GHz~18GHz	Nov. 02, 2009	Nov. 01, 2010	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 14, 2009	Oct. 13, 2010	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Nov. 11, 2009	Nov. 10, 2010	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz~1GHz	Apr. 20, 2009	Apr. 19, 2010	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz~30MHz	May 22, 2008	May 21, 2010	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

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

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 (30 MHz ~ 1000 MHz)

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 (1 GHz ~ 40 GHz)

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				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP010835 as below.