FCC RF Test Report

APPLICANT	**:**	**Acer Inc.**
EQUIPMENT	**:**	**WLAN Module**
BRAND NAME	**:**	**Acer, Gateway, PackardBell**
MODEL NAME	**:**	**AR5B95**
FCC ID	**:**	**HLZ-AR5B95**
STANDARD	**:**	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	**:**	**Digital Transmission System (DTS)**

The product was installed into Notebook Computer (Brand Name: Acer, Gateway, PackardBell, Model Name: NAV50, NAV60) during the test.

The product was received on Oct. 21, 2009 and completely tested on Nov. 07, 2009. 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

Testing Laboratory 1190

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR9O2108	Rev. 01	Initial issue of report	Nov. 18, 2009

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 3.7 dB at 23.126 MHz
3.3	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.13 dB at 2483.85 MHz
3.4	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Acer Inc.
8F., No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Taipei Hsien 221, Taiwan, R.O.C.

1.2 Manufacturer

1. **Compal Electronics (China) Co., Ltd.**
   No. 988, Tong Feng East Rd., Kunshan Economics & Technical Development Zone, Kunshan, Jiangsu, P.R. China
2. **Compal Information (Kunshan) Co., Ltd.**
   The Third Street, Kunshan Export Processing Zone, Jiangsu, P.R. China
3. **Compal Information Technology (Kunshan) Co., Ltd.**
   No. 58, The 1st Street, Kunshan Export Processing Zone, Jiangsu, P.R. China
4. **Compal Electronics Technology (Kunshan) Co., Ltd.**
   No. 25, The Third Street, Kunshan Export Processing Zone, Jiangsu, P.R. China
5. **Kunshang Botai Electronics Co., Ltd.**
   No. 988, Tong Feng East Rd., Kunshan Economic & Technical Development Zone, Kunshan, Jiangsu, P.R. China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	WLAN Module
Brand Name	Acer, Gateway, PackardBell
Model Name	AR5B95
FCC ID	HLZ-AR5B95
Host (Notebook Computer)	Brand Name : Acer, Gateway, PackardBell Model Name : NAV50, NAV60 HW Version : L02 (MB) SW Version : V0.07_ClkGen (BIOS)
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Channel Spacing	5 MHz
Type of Antenna Connector	IPEX
Antenna Type	**Main Antenna :** PIFA Antenna with gain -2.68 dBi **Aux. Antenna :** PIFA Antenna with gain -2.92 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark: This test report recorded only product characteristics and test results of Digital Transmission System (DTS).

List of Accessory for Host (Notebook Computer):

Specification of Accessory		
AC Adapter	**Brand Name**	HIPRO
	Model Name	HP-A0301R3
	Power Rating	I/P:100-240Vac, 50-60Hz, 1A; O/P: 19Vdc, 1.58A, 30W
	DC Power Cord Type	1.5 meter shielded cable without ferrite core
Battery	**Brand Name**	Panasonic
	Model Name	UM09G51
	Power Rating	10.8Vdc, 2200mAh, 24Wh
	Type	Li-ion
WLAN Module	**Brand Name**	Atheros
	Model Name	AR5B95
Bluetooth Module	**Brand Name**	FOXCONN
	Model Name	BCM92046

Remark: The above information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description of the host (Notebook Computer).

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st 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	03CH07HY	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.	Earphone	Ergotech	ET-E200	FCC DoC	Unshielded, 1.8 m	N/A
5.	Earphone	Sampo	EK-Y652CS	FCC DoC	Shielded, 1.8 m	N/A
6.	USB Cable	Apple	N/A	N/A	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 (MHz)	2.4GHz 802.11b RF Power (dBm)
		At DSSS Data Rate
		1 Mbps
CH 01	2412 MHz	20.22
CH 06	2437 MHz	20.47
CH 11	2462 MHz	**20.96**

Channel	Frequency (MHz)	2.4GHz 802.11g RF Power (dBm)	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)
		At OFDM Data Rate	At OFDM Data Rate
		6 Mbps	6.5M bps
CH 01	2412 MHz	21.65	20.80
CH 06	2437 MHz	**25.09**	25.00
CH 11	2462 MHz	22.91	21.61

Channel	Frequency (MHz)	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)
		At OFDM Data Rate
		13.5M bps
CH 03	2422 MHz	17.24
CH 06	2437 MHz	21.22
CH 09	2452 MHz	17.29

Remark:

1. The EUT is programmed to transmit signals continuously for all testing.
2. The data rates are set in 1Mbps at DSSS for 802.11b modes and 6Mbps at OFDM for 802.11g modes; only these modes were chosen for the complete radiated spurious emission tests due to the maximum RF power. For 802.11n (BW 20MHz) and 802.11n (BW40MHz) modes, only the frequency band edges tests were verified.

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 table is showing the total pre-scanned test modes, and the worst modes are recorded in this report only.

Test Cases	
Test Item	**802.11b (Modulation : DSSS)** **802.11g/n (Modulation : OFDM)**
Radiated TCs	Mode 1: 802.11b_CH01_2412 MHz Mode 2: 802.11b_CH06_2437 MHz Mode 3: 802.11b_CH11_2462 MHz Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n_CH01_2412 MHz (BW 20MHz) Mode 8: 802.11n_CH06_2437 MHz (BW 20MHz) Mode 9: 802.11n_CH11_2462 MHz (BW 20MHz) Mode 10: 802.11n_CH03_2442 MHz (BW 40MHz) Mode 11: 802.11n_CH06_2437 MHz (BW 40MHz) Mode 12: 802.11n_CH09_2452 MHz (BW 40MHz)
AC Conducted Emission	WLAN Link + TC + Adapter

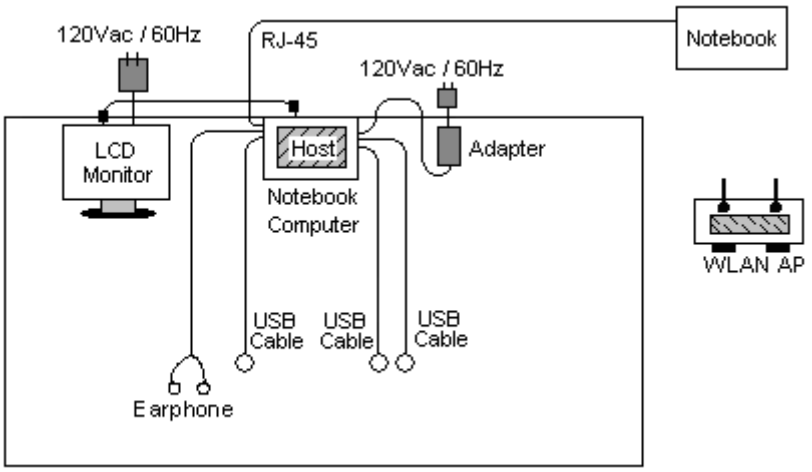
Remark:

1. TC stands for Test Configuration, and consists of USB cable, LCD monitor, earphone, and RJ-45.

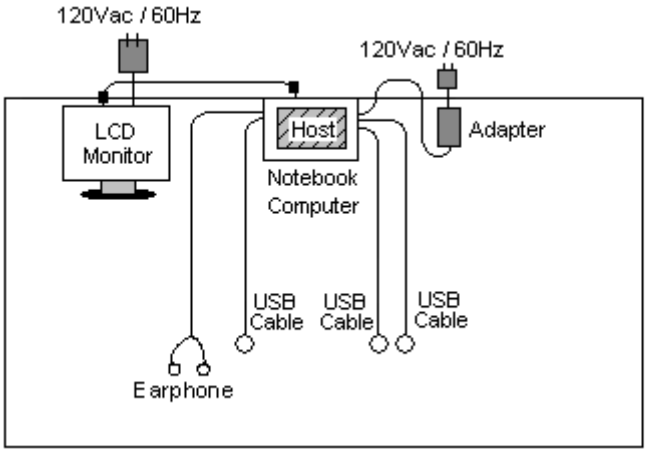
2. Only the radiated emission and conducted emission tests of the WLAN Module on this Notebook Computer was performed in this report and the conducted test cases can be referred to the integrated WLAN module (Brand Name: Atheros / Model Name: AR5B95 / FCC ID: PPD-AR5B95 / CCS Report No. 81029005) report.

2.3 Connection Diagram of Test System

<Conducted Emission Test>



<Radiated Emission Test>



Note: The EUT is a WLAN module which was installed into the host notebook computer (Brand Name: Acer, Gateway, PackardBell, Model Name: NAV50, NAV60) during the test.

2.4 RF Utility

The programmed RF utility “ART”, 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

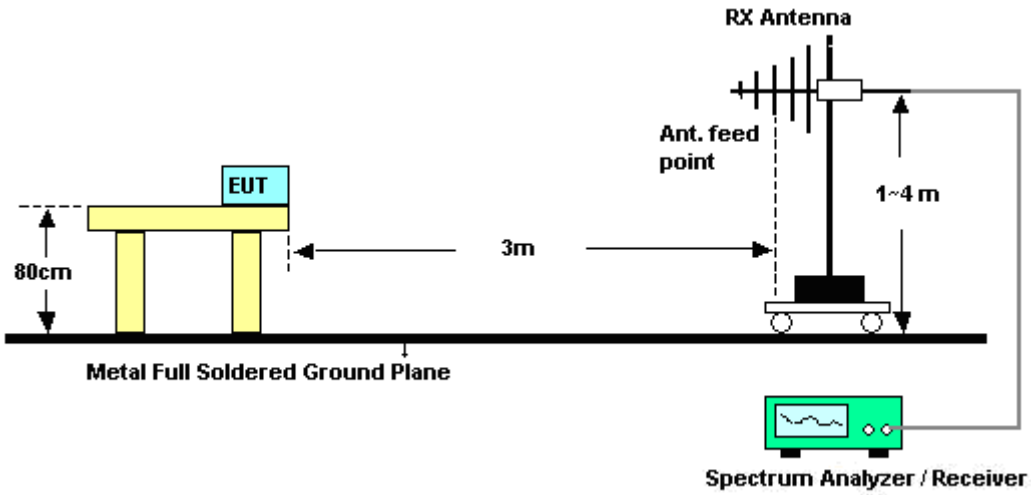
See list of measuring instruments of this test report.

3.1.3 Test Procedures

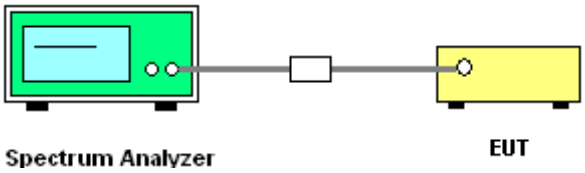
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 1 MHz, Video bandwidth (VBW) > RBW. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band as measured with a 1 MHz RBW. Note: If the output power of this device was measured by power meter, 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>



<Conducted Band Edges>



3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	24~25°C
Test Band :	802.11b	**Relative Humidity :**	42~43%
Test Channel :	01	**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**
2389.61	54.45	-19.55	74.00	51.24	32.13	5.46	34.38	106	14	Peak
2389.61	42.81	-11.19	54.00	39.60	32.13	5.46	34.38	106	14	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	52.18	-21.82	74.00	48.97	32.13	5.46	34.38	108	358	Peak
2389.42	39.88	-14.12	54.00	36.67	32.13	5.46	34.38	108	358	Average

Test Mode :	Mode 3	**Temperature :**	24~25°C
Test Band :	802.11b	**Relative Humidity :**	42~43%
Test Channel :	11	**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**
2488.22	58.37	-15.63	74.00	55.11	32.27	5.38	34.40	102	19	Peak
2488.22	48.88	-5.12	54.00	45.61	32.30	5.37	34.40	102	19	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**
2483.50	56.79	-17.21	74.00	53.53	32.27	5.38	34.40	131	322	Peak
2483.50	46.02	-7.98	54.00	42.76	32.27	5.38	34.40	131	322	Average

Test Mode :	Mode 4	Temperature :	24~25°C
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	01	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
2389.61	65.00	-9.00	74.00	61.79	32.13	5.46	34.38	103	16	Peak
2389.61	46.19	-7.81	54.00	42.98	32.13	5.46	34.38	103	16	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	60.29	-13.71	74.00	57.08	32.13	5.46	34.38	135	322	Peak
2389.61	42.02	-11.98	54.00	38.81	32.13	5.46	34.38	135	322	Average

Test Mode :	Mode 6	Temperature :	24~25°C
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	11	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
2483.50	72.03	-1.97	74.00	68.77	32.27	5.38	34.40	102	19	Peak
2483.50	53.65	-0.35	54.00	50.39	32.27	5.38	34.40	102	19	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	71.58	-2.42	74.00	68.32	32.27	5.38	34.40	135	321	Peak
2483.66	52.92	-1.08	54.00	49.66	32.27	5.38	34.40	135	321	Average

Test Mode :	Mode 7	Temperature :	24~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	42~43%
Test Channel :	01	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
2389.61	70.83	-3.17	74.00	67.62	32.13	5.46	34.38	104	14	Peak
2389.61	52.99	-1.01	54.00	49.78	32.13	5.46	34.38	104	14	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	66.53	-7.47	74.00	63.32	32.13	5.46	34.38	101	141	Peak
2389.42	48.56	-5.44	54.00	45.35	32.13	5.46	34.38	101	141	Average

Test Mode :	Mode 9	Temperature :	24~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	42~43%
Test Channel :	11	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
2483.85	72.89	-1.11	74.00	69.63	32.27	5.38	34.40	101	18	Peak
2483.85	53.87	-0.13	54.00	50.61	32.27	5.38	34.40	101	18	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
2483.85	69.96	-4.04	74.00	66.70	32.27	5.38	34.40	134	343	Peak
2483.85	51.26	-2.74	54.00	48.00	32.27	5.38	34.40	135	343	Average

Test Mode :	Mode 10	Temperature :	24~25°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	42~43%
Test Channel :	03	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
2389.99	65.36	-8.64	74.00	62.15	32.13	5.46	34.38	131	16	Peak
2389.99	47.62	-6.38	54.00	44.41	32.13	5.46	34.38	131	16	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	61.48	-12.52	74.00	58.27	32.13	5.46	34.38	100	142	Peak
2389.61	43.26	-10.74	54.00	40.05	32.13	5.46	34.38	100	142	Average

Test Mode :	Mode 12	Temperature :	24~25°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	42~43%
Test Channel :	09	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
2483.66	70.73	-3.27	74.00	67.47	32.27	5.38	34.40	100	16	Peak
2483.66	53.70	-0.30	54.00	50.44	32.27	5.38	34.40	100	16	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
2484.42	67.87	-6.13	74.00	64.61	32.27	5.38	34.40	133	141	Peak
2484.42	50.56	-3.44	54.00	47.30	32.27	5.38	34.40	133	141	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.

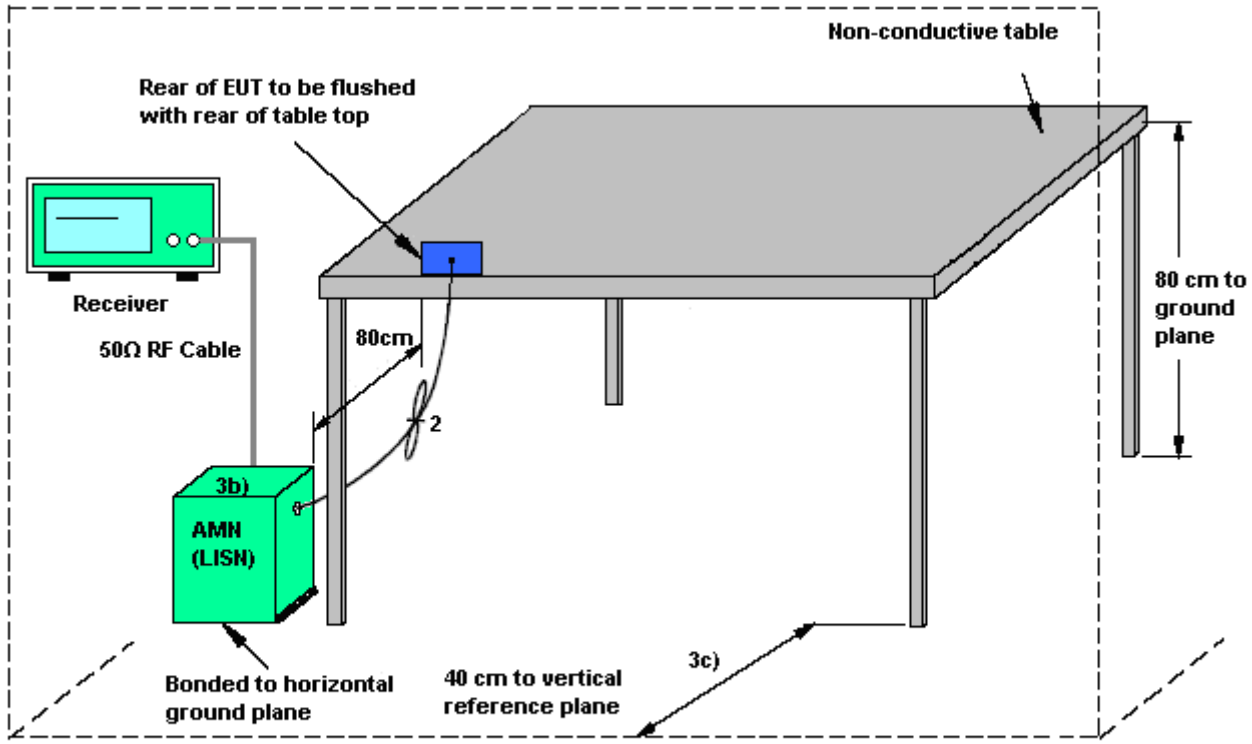
3.2.2 Measuring Instruments

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.

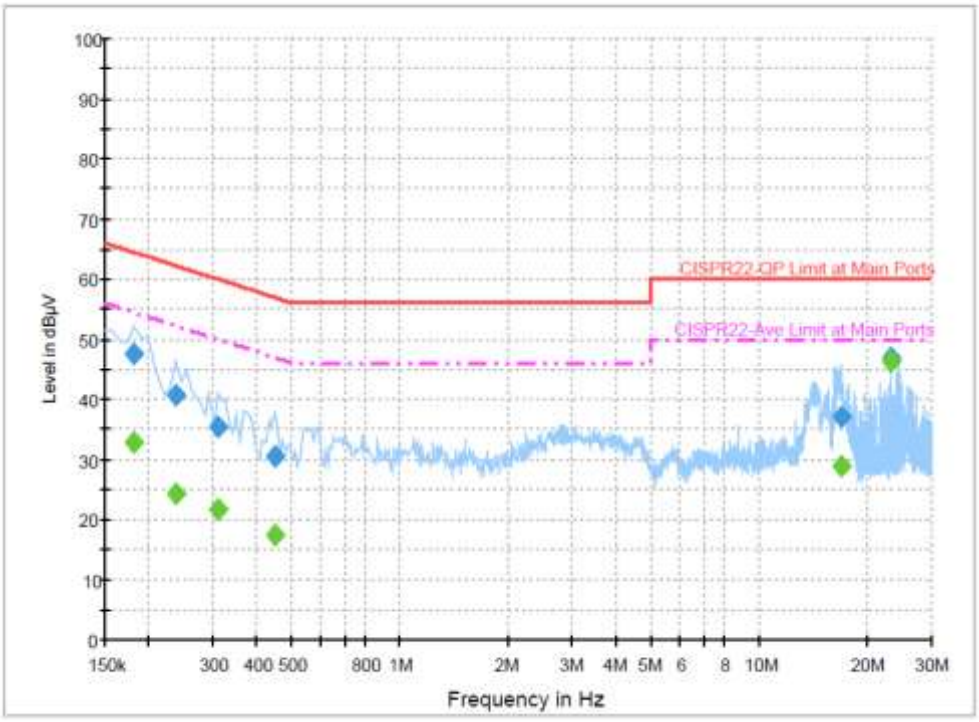
3.2.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.2.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	22~24℃
Test Engineer :	Cona Huang	**Relative Humidity :**	54~57%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN Link + TC + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



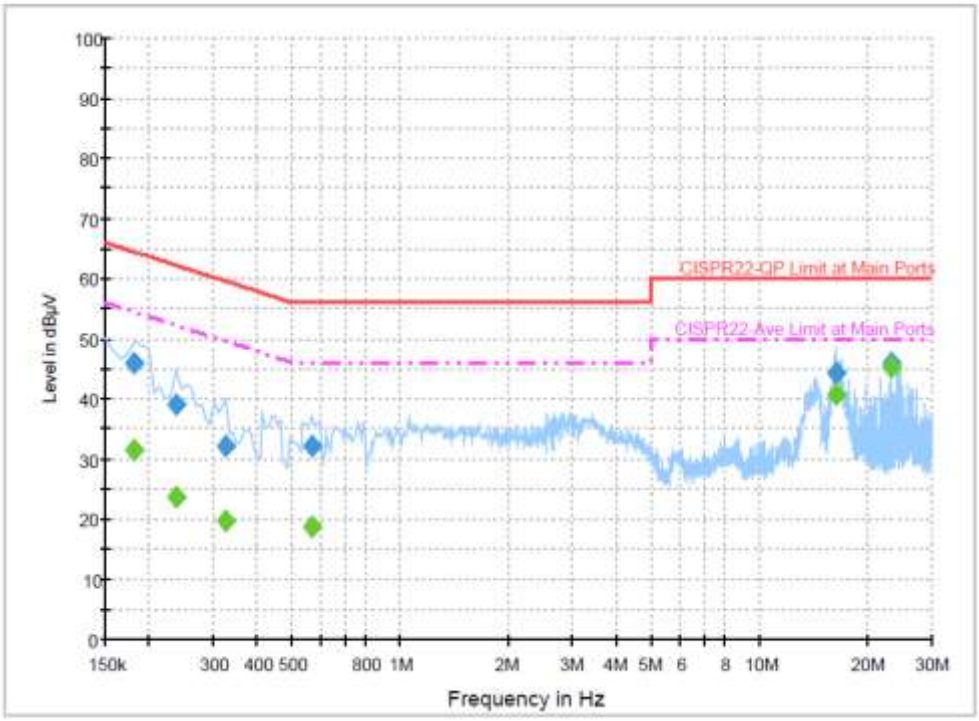
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	47.4	Off	L1	19.5	17.0	64.4
0.238000	40.8	Off	L1	19.6	21.4	62.2
0.310000	35.5	Off	L1	19.5	24.5	60.0
0.446000	30.5	Off	L1	19.5	26.4	56.9
16.822000	36.9	Off	L1	19.7	23.1	60.0
23.126000	47.0	Off	L1	19.8	13.0	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	32.9	Off	L1	19.5	21.5	54.4
0.238000	24.2	Off	L1	19.6	28.0	52.2
0.310000	21.7	Off	L1	19.5	28.3	50.0
0.446000	17.5	Off	L1	19.5	29.4	46.9
16.822000	28.8	Off	L1	19.7	21.2	50.0
23.126000	46.3	Off	L1	19.8	3.7	50.0

Test Mode :	Mode 1	**Temperature :**	22~24℃
Test Engineer :	Cona Huang	**Relative Humidity :**	54~57%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	WLAN Link + TC + Adapter		
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)
0.182000	45.8	Off	N	19.5	18.6	64.4
0.238000	38.9	Off	N	19.6	23.3	62.2
0.326000	32.1	Off	N	19.5	27.5	59.6
0.566000	32.1	Off	N	19.5	23.9	56.0
16.230000	44.1	Off	N	19.8	15.9	60.0
23.126000	45.8	Off	N	19.9	14.2	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.182000	31.4	Off	N	19.5	23.0	54.4
0.238000	23.5	Off	N	19.6	28.7	52.2
0.326000	19.5	Off	N	19.5	30.1	49.6
0.566000	18.7	Off	N	19.5	27.3	46.0
16.230000	40.7	Off	N	19.8	9.3	50.0
23.126000	45.3	Off	N	19.9	4.7	50.0

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

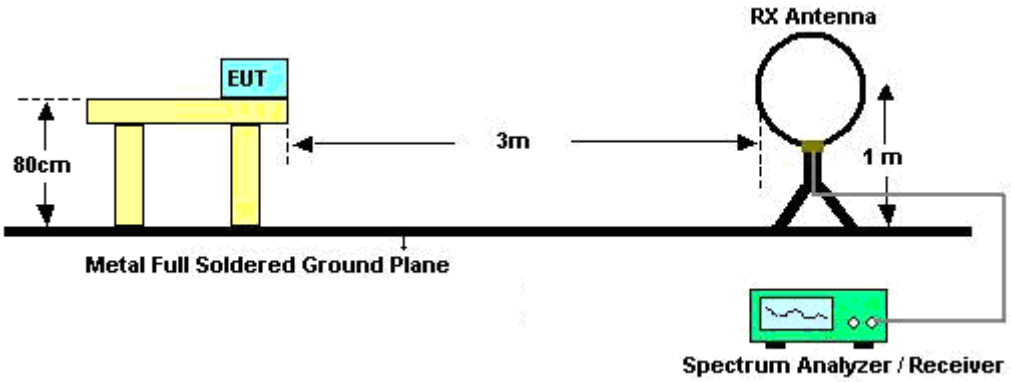
See list of measuring instruments of this test report.

3.3.3 Test Procedures

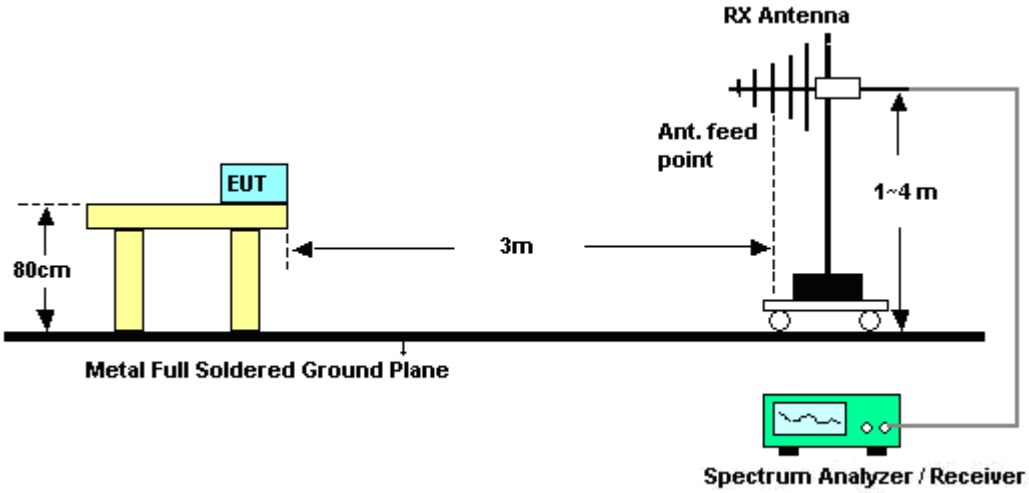
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
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 (9kHz ~ 30MHz)

Test Engineer :	Kay Wu	Temperature :	24~25°C
		Relative Humidity :	42~43%

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

Note:

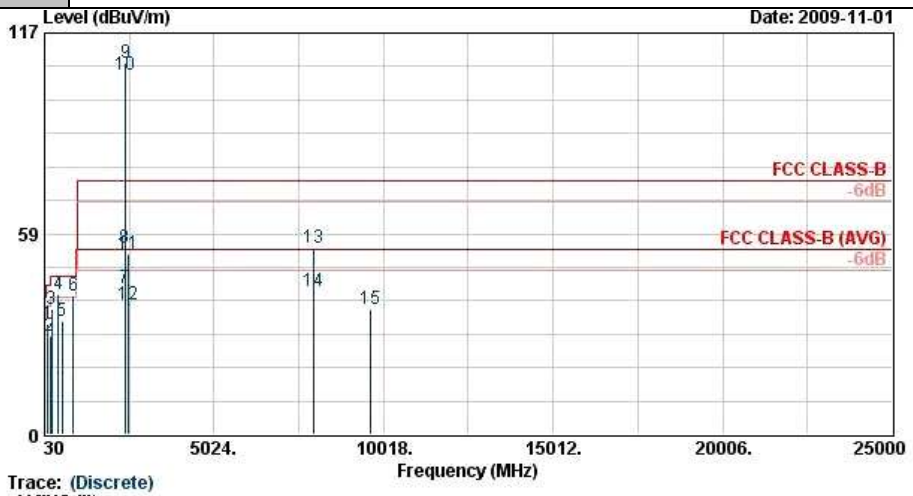
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

3.3.6 Test Result of Radiated Emission (30MHz ~ 10th Harmonic / 1GHz ~ 3GHz)

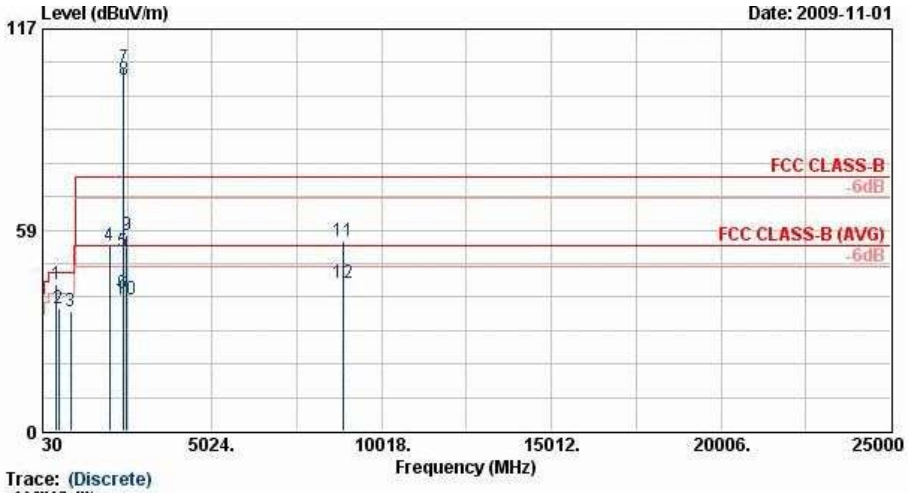
Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		123.69	31.98	-11.52	43.50	50.43	11.89	1.34	31.68	---	---	Peak
2		196.86	28.64	-14.86	43.50	49.72	8.84	1.69	31.60	---	---	Peak
3		246.81	36.68	-9.32	46.00	53.86	12.42	1.91	31.50	---	---	Peak
4	!	430.90	40.78	-5.22	46.00	52.48	16.75	2.73	31.17	100	175	Peak
5		556.20	33.03	-12.97	46.00	41.74	19.23	3.11	31.04	---	---	Peak
6	!	867.70	40.27	-5.73	46.00	44.07	22.87	4.03	30.70	---	---	Peak
7		2389.61	42.81	-11.19	54.00	39.60	32.13	5.46	34.38	106	14	Average
8		2389.61	54.45	-19.55	74.00	51.24	32.13	5.46	34.38	106	14	Peak
9	X	2412.00	108.10			104.88	32.16	5.44	34.38	106	14	Peak
10	@	2412.00	104.94			101.72	32.16	5.44	34.38	106	14	Average
11		2486.00	52.46	-21.54	74.00	49.20	32.27	5.38	34.40	106	14	Peak
12		2486.00	37.88	-16.12	54.00	34.62	32.27	5.38	34.40	106	14	Average
13		7974.00	54.16	-19.84	74.00	43.63	35.99	9.83	35.29	100	263	Peak
14		7974.00	41.95	-12.05	54.00	31.42	35.99	9.83	35.29	100	263	Average
15		9645.00	36.65	-37.35	74.00	71.57	-10.09	10.74	35.57	100	0	Peak

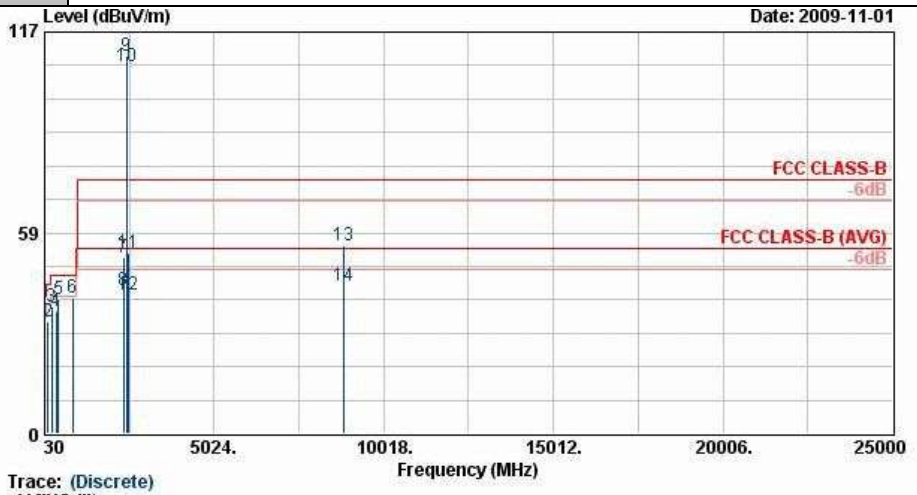
Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#7 and #8 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	!	433.00	42.66	-3.34	46.00	54.31	16.79	2.73	31.17	100	127	Peak
2		495.30	35.67	-10.33	46.00	45.77	18.08	2.92	31.10	---	---	Peak
3		864.90	34.82	-11.18	46.00	38.65	22.84	4.02	30.70	---	---	Peak
4		1998.00	54.15	-19.85	74.00	51.16	31.50	5.79	34.30	100	0	Peak
5		2389.42	52.18	-21.82	74.00	48.97	32.13	5.46	34.38	108	358	Peak
6		2389.42	39.88	-14.12	54.00	36.67	32.13	5.46	34.38	108	358	Average
7	X	2412.00	105.57			102.35	32.16	5.44	34.38	108	358	Peak
8	@	2412.00	102.30			99.08	32.16	5.44	34.38	108	358	Average
9		2500.00	57.08	-16.92	74.00	53.81	32.30	5.37	34.40	108	358	Peak
10		2500.00	38.14	-15.86	54.00	34.87	32.30	5.37	34.40	108	358	Average
11		8886.00	55.05	-18.95	74.00	43.89	36.23	10.30	35.38	100	39	Peak
12		8886.00	42.92	-11.08	54.00	31.76	36.23	10.30	35.38	100	39	Average

Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		

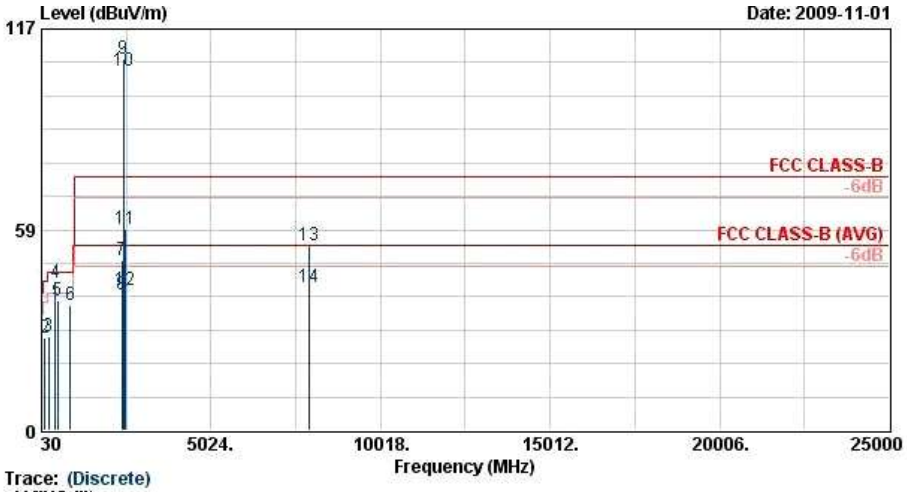


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	22.46	-17.54	40.00	34.01	19.51	0.64	31.70	---	---	Peak
2	123.69	32.69	-10.81	43.50	51.13	11.89	1.34	31.68	---	---	Peak
3	247.89	36.90	-9.10	46.00	53.96	12.54	1.91	31.50	---	---	Peak
4	369.30	35.63	-10.37	46.00	49.14	15.31	2.44	31.26	---	---	Peak
5	433.00	39.25	-6.75	46.00	50.90	16.79	2.73	31.17	---	---	Peak
6	864.90	39.73	-6.27	46.00	43.56	22.84	4.02	30.70	100	176	Peak
7	2364.00	51.26	-22.74	74.00	48.07	32.08	5.49	34.37	103	17	Peak
8	2364.00	41.59	-12.41	54.00	38.40	32.08	5.49	34.37	103	17	Average
9 X	2437.00	110.12			106.88	32.22	5.41	34.39	103	17	Peak
10 @	2437.00	107.06			103.82	32.22	5.41	34.39	103	17	Average
11	2500.00	52.52	-21.48	74.00	49.25	32.30	5.37	34.40	103	17	Peak
12	2500.00	40.65	-13.35	54.00	37.38	32.30	5.37	34.40	103	17	Average
13	8826.00	55.00	-19.00	74.00	43.89	36.19	10.28	35.36	100	106	Peak
14	8826.00	42.90	-11.10	54.00	31.79	36.19	10.28	35.36	100	106	Average

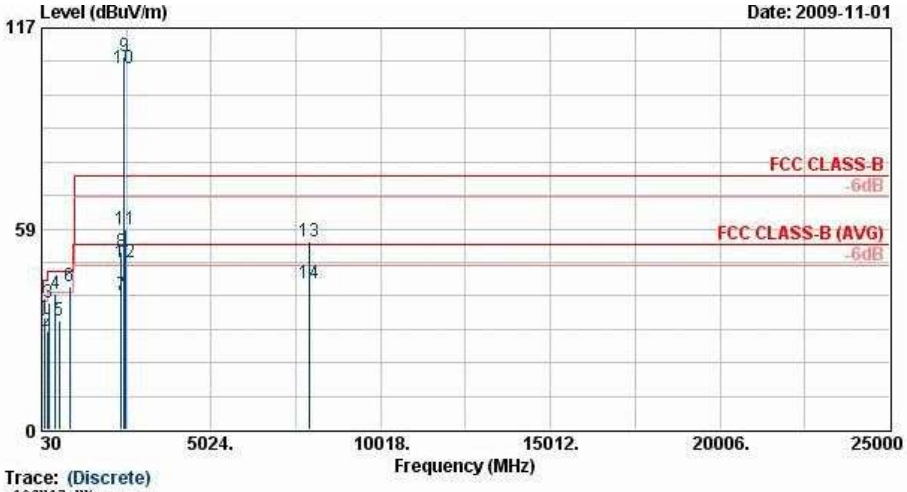
Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 2

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		30.00	23.02	-16.98	40.00	34.57	19.51	0.64	31.70	---	---	Peak
2		123.42	26.97	-16.53	43.50	45.35	11.98	1.32	31.68	---	---	Peak
3		247.89	27.52	-18.48	46.00	44.58	12.54	1.91	31.50	---	---	Peak
4	!	430.90	42.98	-3.02	46.00	54.68	16.75	2.73	31.17	---	---	Peak
5		495.30	37.99	-8.01	46.00	48.09	18.08	2.92	31.10	---	---	Peak
6		867.70	36.58	-9.42	46.00	40.37	22.87	4.03	30.70	---	---	Peak
7		2390.00	49.47	-24.53	74.00	46.26	32.13	5.46	34.38	134	324	Peak
8		2390.00	39.61	-14.39	54.00	36.40	32.13	5.46	34.38	134	324	Average
9	X	2437.00	108.49			105.26	32.19	5.43	34.39	134	324	Peak
10	@	2437.00	104.94			101.70	32.22	5.41	34.39	134	324	Average
11		2500.00	58.80	-15.20	74.00	55.53	32.30	5.37	34.40	134	324	Peak
12		2500.00	40.82	-13.18	54.00	37.55	32.30	5.37	34.40	134	324	Average
13		7917.00	54.14	-19.86	74.00	43.63	35.98	9.81	35.28	100	219	Peak
14		7917.00	41.79	-12.22	54.00	31.28	35.98	9.81	35.28	100	219	Average

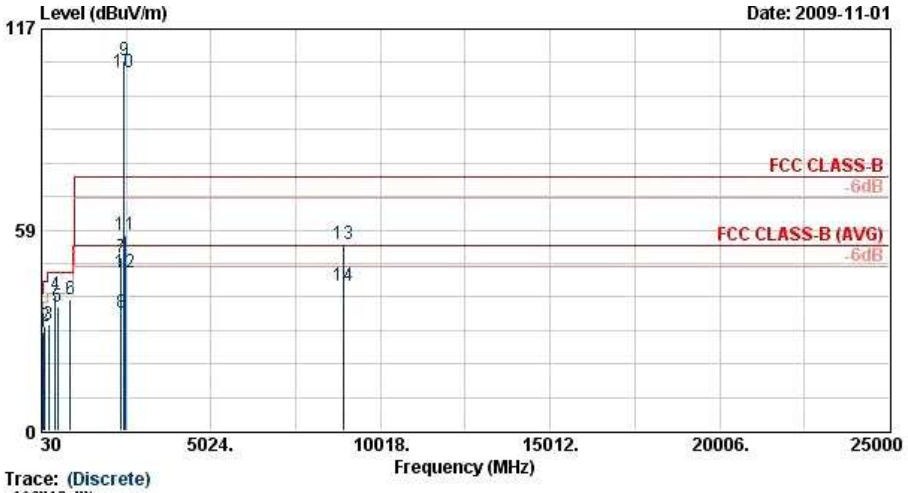
Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 3

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		123.69	32.64	-10.86	43.50	51.09	11.89	1.34	31.68	---	---	Peak
2		196.86	28.79	-14.71	43.50	49.87	8.84	1.69	31.60	---	---	Peak
3		246.81	37.05	-8.95	46.00	54.22	12.42	1.91	31.50	---	---	Peak
4		430.90	39.38	-6.62	46.00	51.07	16.75	2.73	31.17	---	---	Peak
5		556.90	31.64	-14.36	46.00	40.33	19.24	3.11	31.04	---	---	Peak
6	!	864.90	41.64	-4.36	46.00	45.47	22.84	4.02	30.70	100	185	Peak
7		2380.00	39.30	-14.70	54.00	36.10	32.11	5.47	34.38	102	19	Average
8		2380.00	51.55	-22.45	74.00	48.34	32.11	5.47	34.38	102	19	Peak
9	X	2462.00	108.83			105.58	32.24	5.40	34.39	102	19	Peak
10	@	2462.00	105.29			102.04	32.24	5.40	34.39	102	19	Average
11		2488.22	58.37	-15.63	74.00	55.11	32.27	5.38	34.40	102	19	Peak
12	!	2488.22	48.88	-5.12	54.00	45.61	32.30	5.37	34.40	102	19	Average
13		7905.00	54.63	-19.37	74.00	44.13	35.98	9.80	35.28	100	295	Peak
14		7905.00	42.51	-11.49	54.00	32.01	35.98	9.80	35.28	100	295	Average

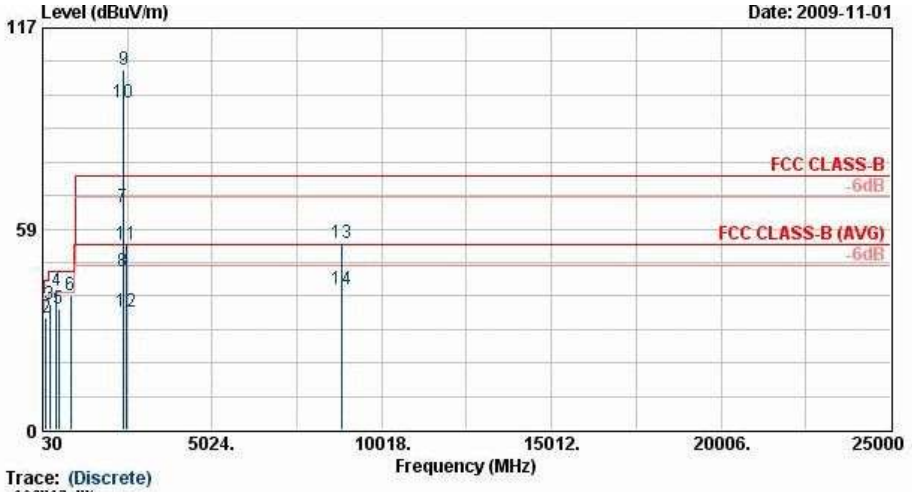
Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	78.06	28.62	-11.38	40.00	51.93	7.39	0.99	31.70	---	---	Peak
2	123.69	30.49	-13.01	43.50	48.93	11.89	1.34	31.68	---	---	Peak
3	247.62	30.90	-15.10	46.00	48.08	12.42	1.91	31.50	---	---	Peak
4	433.70	39.47	-6.53	46.00	51.09	16.81	2.74	31.17	100	172	Peak
5	495.30	35.96	-10.04	46.00	46.06	18.08	2.92	31.10	---	---	Peak
6	867.70	38.24	-7.76	46.00	42.03	22.87	4.03	30.70	---	---	Peak
7	2380.00	50.30	-23.70	74.00	47.09	32.11	5.47	34.38	131	322	Peak
8	2380.00	34.42	-19.58	54.00	31.22	32.11	5.47	34.38	131	322	Average
9 X	2462.00	107.94			104.69	32.24	5.40	34.39	131	322	Peak
10 @	2462.00	104.21			100.96	32.24	5.40	34.39	131	322	Average
11	2483.50	56.79	-17.21	74.00	53.53	32.27	5.38	34.40	131	322	Peak
12	2483.50	46.02	-7.98	54.00	42.76	32.27	5.38	34.40	131	322	Average
13	8925.00	54.32	-19.68	74.00	43.14	36.25	10.31	35.38	100	201	Peak
14	8925.00	42.24	-11.76	54.00	31.06	36.25	10.31	35.38	100	201	Average

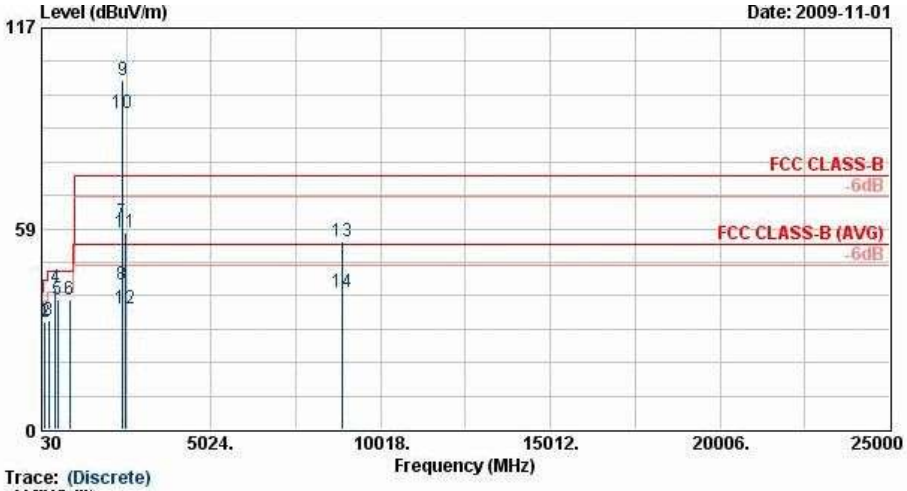
Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 4

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		30.00	22.76	-17.24	40.00	34.31	19.51	0.64	31.70	---	---	Peak
2		123.69	32.76	-10.74	43.50	51.20	11.89	1.34	31.68	---	---	Peak
3		247.62	36.73	-9.27	46.00	53.90	12.42	1.91	31.50	---	---	Peak
4	!	433.00	40.41	-5.59	46.00	52.06	16.79	2.73	31.17	100	214	Peak
5		495.30	35.03	-10.97	46.00	45.13	18.08	2.92	31.10	---	---	Peak
6		864.90	38.98	-7.02	46.00	42.81	22.84	4.02	30.70	---	---	Peak
7		2389.61	65.00	-9.00	74.00	61.79	32.13	5.46	34.38	103	16	Peak
8		2389.61	46.19	-7.81	54.00	42.98	32.13	5.46	34.38	103	16	Average
9	X	2412.00	104.76			101.54	32.16	5.44	34.38	103	16	Peak
10	@	2412.00	95.14			91.92	32.16	5.44	34.38	103	16	Average
11		2492.00	53.92	-20.08	74.00	50.65	32.30	5.37	34.40	103	16	Peak
12		2492.00	34.20	-19.80	54.00	30.93	32.30	5.37	34.40	103	16	Average
13		8850.00	54.34	-19.66	74.00	43.20	36.21	10.29	35.37	100	195	Peak
14		8850.00	40.99	-13.01	54.00	29.86	36.21	10.29	35.37	100	195	Average

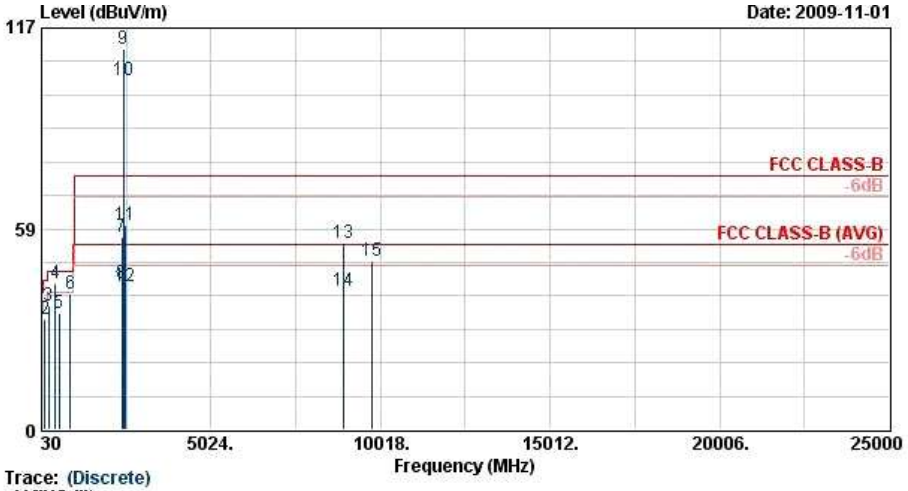
Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 4

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		123.69	31.28	-12.22	43.50	49.72	11.89	1.34	31.68	---	---	Peak
2		123.69	31.28	-12.22	43.50	49.72	11.89	1.34	31.68	---	---	Peak
3		247.89	31.64	-14.36	46.00	48.70	12.54	1.91	31.50	---	---	Peak
4	!	430.90	41.41	-4.59	46.00	53.11	16.75	2.73	31.17	100	78	Peak
5		495.30	37.81	-8.19	46.00	47.91	18.08	2.92	31.10	---	---	Peak
6		864.90	37.74	-8.26	46.00	41.58	22.84	4.02	30.70	---	---	Peak
7		2389.61	60.29	-13.71	74.00	57.08	32.13	5.46	34.38	135	322	Peak
8		2389.61	42.02	-11.98	54.00	38.81	32.13	5.46	34.38	135	322	Average
9	X	2412.00	101.88			98.66	32.16	5.44	34.38	135	322	Peak
10	@	2412.00	92.15	-----	-----	88.93	32.16	5.44	34.38	135	322	Average
11		2492.00	57.54	-16.46	74.00	54.27	32.30	5.37	34.40	135	322	Peak
12		2492.00	35.27	-18.73	54.00	32.00	32.30	5.37	34.40	135	322	Average
13		8865.00	54.80	-19.20	74.00	43.66	36.22	10.30	35.37	100	175	Peak
14		8865.00	40.02	-13.98	54.00	28.88	36.22	10.30	35.37	100	175	Average

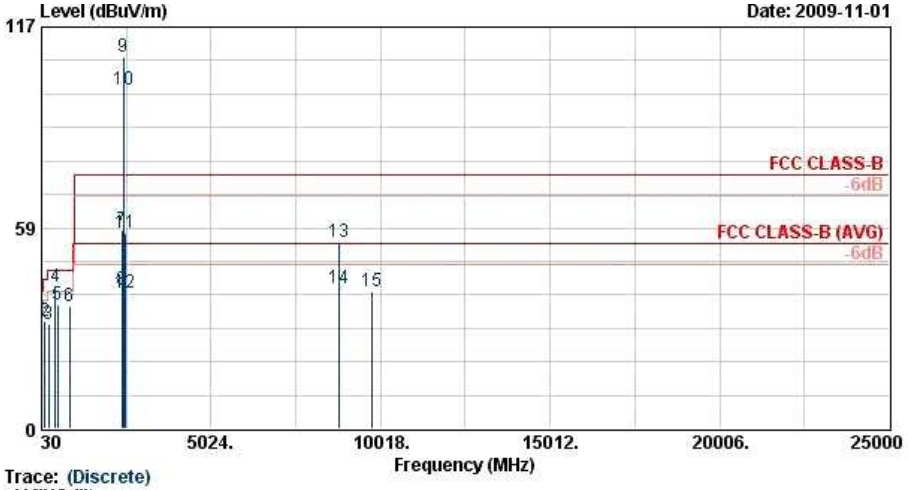
Test Mode :	Mode 5	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 5

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		30.00	22.61	-17.39	40.00	34.16	19.51	0.64	31.70	---	---	Peak
2		123.69	32.38	-11.12	43.50	50.83	11.89	1.34	31.68	---	---	Peak
3		246.81	36.22	-9.78	46.00	53.39	12.42	1.91	31.50	---	---	Peak
4	!	433.00	42.76	-3.24	46.00	54.41	16.79	2.73	31.17	100	277	Peak
5		556.20	33.79	-12.21	46.00	42.50	19.23	3.11	31.04	---	---	Peak
6		867.70	39.70	-6.30	46.00	43.50	22.87	4.03	30.70	---	---	Peak
7		2390.00	56.06	-17.94	74.00	52.85	32.13	5.46	34.38	102	17	Peak
8		2390.00	42.62	-11.38	54.00	39.41	32.13	5.46	34.38	102	17	Average
9	X	2437.00	111.06			107.82	32.22	5.41	34.39	102	17	Peak
10	@	2437.00	101.69			98.45	32.22	5.41	34.39	102	17	Average
11		2484.00	59.46	-14.54	74.00	56.20	32.27	5.38	34.40	102	17	Peak
12		2484.00	41.54	-12.46	54.00	38.28	32.27	5.38	34.40	102	17	Average
13		8937.00	54.18	-19.82	74.00	42.99	36.26	10.32	35.39	100	132	Peak
14		8937.00	40.58	-13.42	54.00	29.39	36.26	10.32	35.39	100	132	Average
15		9748.00	49.34	-24.66	74.00	83.96	-9.87	10.81	35.55	100	0	Peak

Test Mode :	Mode 5	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		

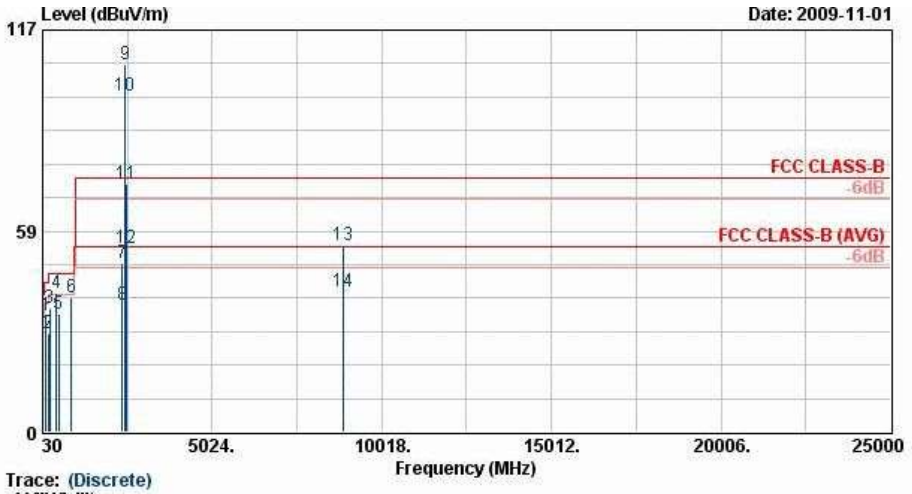


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.81	23.62	-16.38	40.00	35.72	18.95	0.65	31.70	---	---	Peak
2	123.42	31.42	-12.08	43.50	49.79	11.98	1.32	31.68	---	---	Peak
3	247.62	30.24	-15.76	46.00	47.42	12.42	1.91	31.50	---	---	Peak
4 !	433.70	41.46	-4.54	46.00	53.09	16.81	2.74	31.17	100	212	Peak
5	492.50	36.27	-9.73	46.00	46.45	18.02	2.91	31.11	---	---	Peak
6	864.90	35.52	-10.48	46.00	39.35	22.84	4.02	30.70	---	---	Peak
7	2390.00	57.79	-16.21	74.00	54.58	32.13	5.46	34.38	137	139	Peak
8	2390.00	40.33	-13.67	54.00	37.12	32.13	5.46	34.38	137	139	Average
9 X	2437.00	108.26			105.02	32.22	5.41	34.39	137	139	Peak
10 @	2437.00	98.80			95.56	32.22	5.41	34.39	137	139	Average
11	2494.00	56.87	-17.13	74.00	53.60	32.30	5.37	34.40	137	139	Peak
12	2494.00	39.79	-14.21	54.00	36.52	32.30	5.37	34.40	137	139	Average
13	8805.00	54.24	-19.76	74.00	43.15	36.18	10.28	35.36	100	176	Peak
14	8805.00	41.06	-12.94	54.00	29.96	36.18	10.28	35.36	100	176	Average
15	9748.00	40.04	-33.96	74.00	74.69	-9.89	10.80	35.56	100	0	Peak

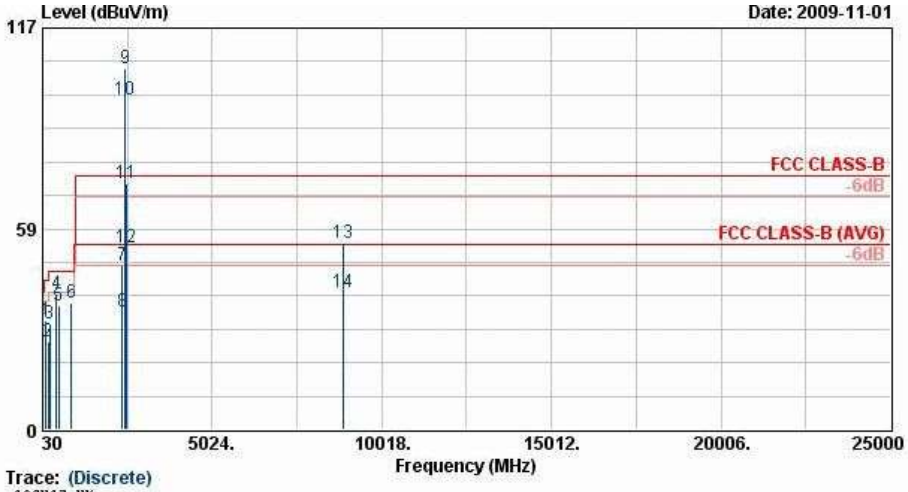
Test Mode :	Mode 6	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 902108
Mode : Mode 6

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		123.42	33.75	-9.75	43.50	52.12	11.98	1.32	31.68	---	---	Peak
2		197.13	28.65	-14.85	43.50	49.73	8.84	1.69	31.60	---	---	Peak
3		246.81	36.08	-9.92	46.00	53.25	12.42	1.91	31.50	---	---	Peak
4	!	430.90	40.57	-5.43	46.00	52.26	16.75	2.73	31.17	100	97	Peak
5		494.60	34.41	-11.59	46.00	44.53	18.06	2.92	31.11	---	---	Peak
6		867.70	39.28	-6.72	46.00	43.07	22.87	4.03	30.70	---	---	Peak
7		2380.00	49.11	-24.89	74.00	45.91	32.11	5.47	34.38	102	19	Peak
8		2380.00	36.88	-17.12	54.00	33.68	32.11	5.47	34.38	102	19	Average
9	X	2462.00	106.98			103.73	32.24	5.40	34.39	102	19	Peak
10	@	2462.00	97.73			94.48	32.24	5.40	34.39	102	19	Average
11	!	2483.50	72.03	-1.97	74.00	68.77	32.27	5.38	34.40	102	19	Peak
12	!	2483.50	53.65	-0.35	54.00	50.39	32.27	5.38	34.40	102	19	Average
13		8898.00	54.57	-19.43	74.00	43.40	36.24	10.31	35.38	100	27	Peak
14		8898.00	41.03	-12.97	54.00	29.86	36.24	10.31	35.38	100	27	Average

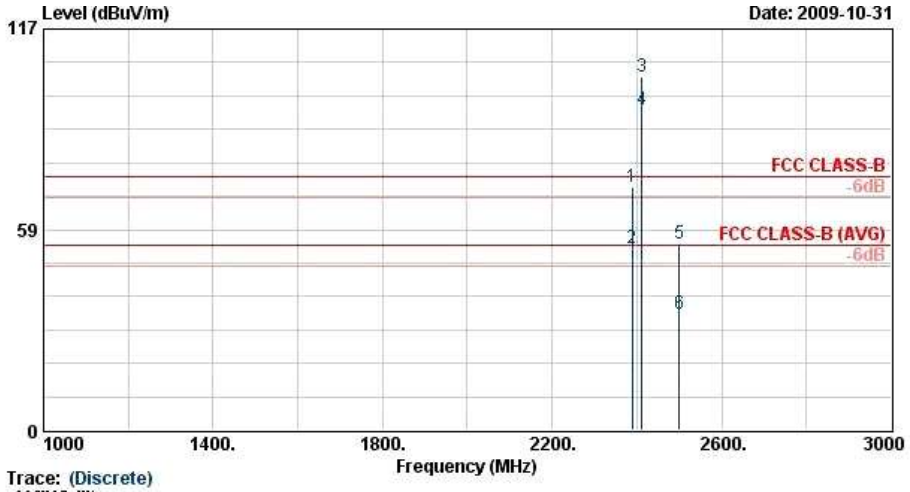
Test Mode :	Mode 6	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 902108
Mode : Mode 6

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		123.42	31.78	-11.72	43.50	50.16	11.98	1.32	31.68	---	---	Peak
2		186.06	25.47	-18.03	43.50	46.47	8.97	1.64	31.61	---	---	Peak
3		247.89	30.71	-15.29	46.00	47.76	12.54	1.91	31.50	---	---	Peak
4		433.00	39.72	-6.28	46.00	51.37	16.79	2.73	31.17	100	34	Peak
5		494.60	36.18	-9.82	46.00	46.31	18.06	2.92	31.11	---	---	Peak
6		867.70	36.97	-9.03	46.00	40.77	22.87	4.03	30.70	---	---	Peak
7		2380.00	47.65	-26.35	74.00	44.45	32.11	5.47	34.38	135	321	Peak
8		2380.00	34.52	-19.48	54.00	31.32	32.11	5.47	34.38	135	321	Average
9	X	2462.00	105.30			102.05	32.24	5.40	34.39	135	321	Peak
10	@	2462.00	96.11			92.86	32.24	5.40	34.39	135	321	Average
11	!	2483.66	71.58	-2.42	74.00	68.32	32.27	5.38	34.40	135	321	Peak
12	!	2483.66	52.92	-1.08	54.00	49.66	32.27	5.38	34.40	135	321	Average
13		8889.00	54.29	-19.71	74.00	43.13	36.23	10.30	35.38	100	27	Peak
14		8889.00	40.05	-13.95	54.00	28.89	36.23	10.30	35.38	100	27	Average

Test Mode :	Mode 7	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

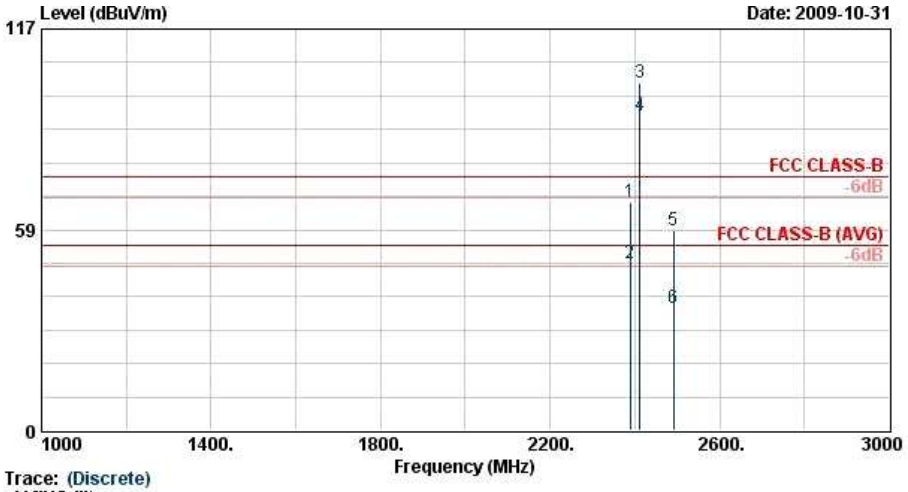


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 902108
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	2389.61	70.83	-3.17	74.00	67.62	32.13	5.46	34.38	104	14	Peak
2 !	2389.61	52.99	-1.01	54.00	49.78	32.13	5.46	34.38	104	14	Average
3 X	2412.00	103.14			99.92	32.16	5.44	34.38	104	14	Peak
4 @	2412.00	93.44			90.22	32.16	5.44	34.38	104	14	Average
5	2500.00	54.42	-19.58	74.00	51.15	32.30	5.37	34.40	104	14	Peak
6	2500.00	33.83	-20.17	54.00	30.56	32.30	5.37	34.40	104	14	Average

Test Mode :	Mode 7	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

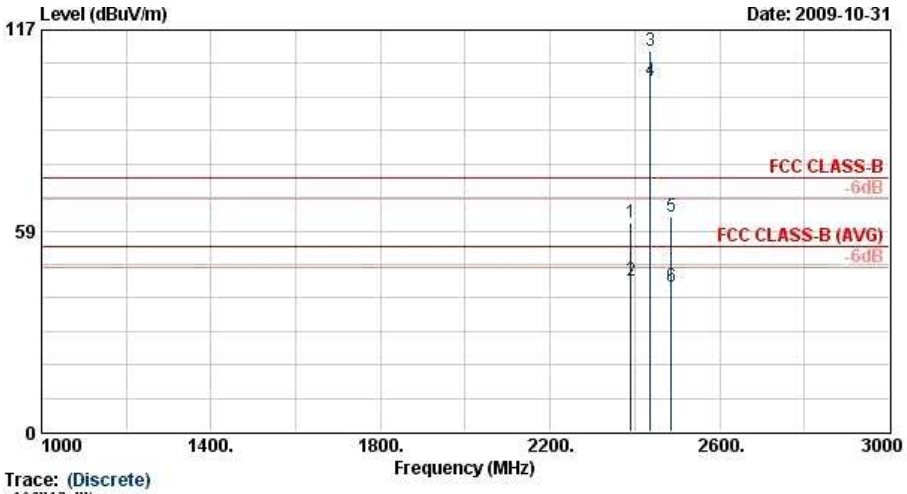


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 9O2108
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.42	66.53	-7.47	74.00	63.32	32.13	5.46	34.38	101	141	Peak
2 !	2389.42	48.56	-5.44	54.00	45.35	32.13	5.46	34.38	101	141	Average
3 X	2412.00	101.14			97.92	32.16	5.44	34.38	101	141	Peak
4 @	2412.00	91.86			88.64	32.16	5.44	34.38	101	141	Average
5	2492.00	58.07	-15.93	74.00	54.80	32.30	5.37	34.40	101	141	Peak
6	2492.00	35.83	-18.17	54.00	32.56	32.30	5.37	34.40	101	141	Average

Test Mode :	Mode 8	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

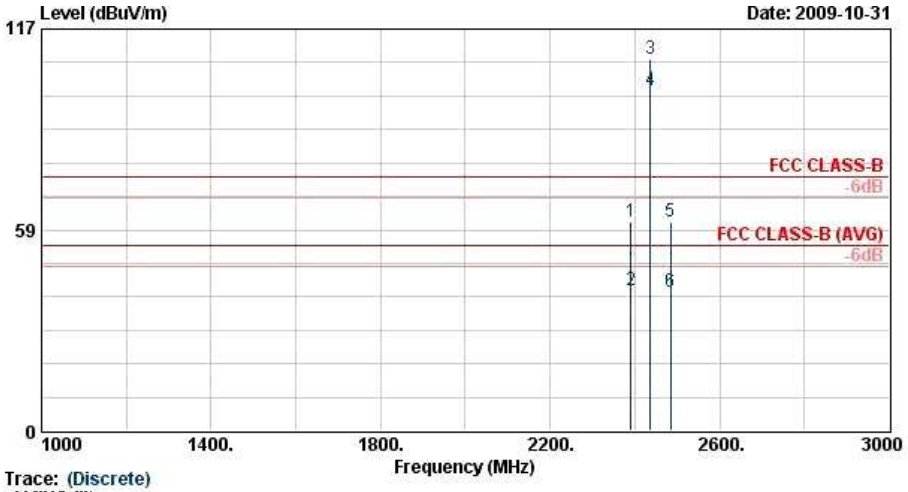


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 902108
Mode : Mode 6

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	60.77	-13.23	74.00	57.56	32.13	5.46	34.38	103	16	Peak
2	2390.00	43.75	-10.25	54.00	40.54	32.13	5.46	34.38	103	16	Average
3 X	2437.00	111.03			107.79	32.22	5.41	34.39	103	16	Peak
4 @	2437.00	102.02			98.78	32.22	5.41	34.39	103	16	Average
5	2486.00	62.50	-11.50	74.00	59.24	32.27	5.38	34.40	103	16	Peak
6	2486.00	42.21	-11.79	54.00	38.95	32.27	5.38	34.40	103	16	Average

Test Mode :	Mode 8	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

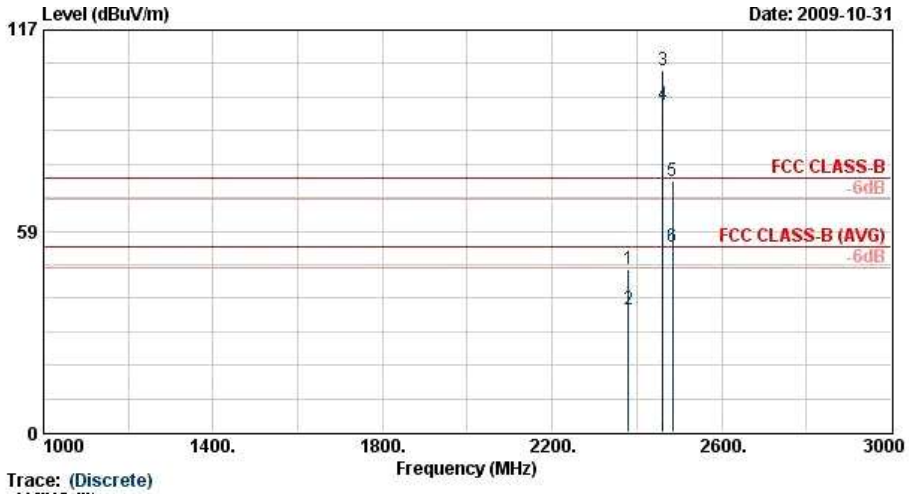


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 902108
Mode : Mode 8

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	60.77	-13.23	74.00	57.56	32.13	5.46	34.38	136	140	Peak
2	2390.00	40.96	-13.04	54.00	37.75	32.13	5.46	34.38	136	140	Average
3 X	2437.00	108.12			104.88	32.22	5.41	34.39	136	140	Peak
4 @	2437.00	99.05			95.81	32.22	5.41	34.39	136	140	Average
5	2484.00	61.10	-12.90	74.00	57.84	32.27	5.38	34.40	136	140	Peak
6	2484.00	40.64	-13.36	54.00	37.38	32.27	5.38	34.40	136	140	Average

Test Mode :	Mode 9	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

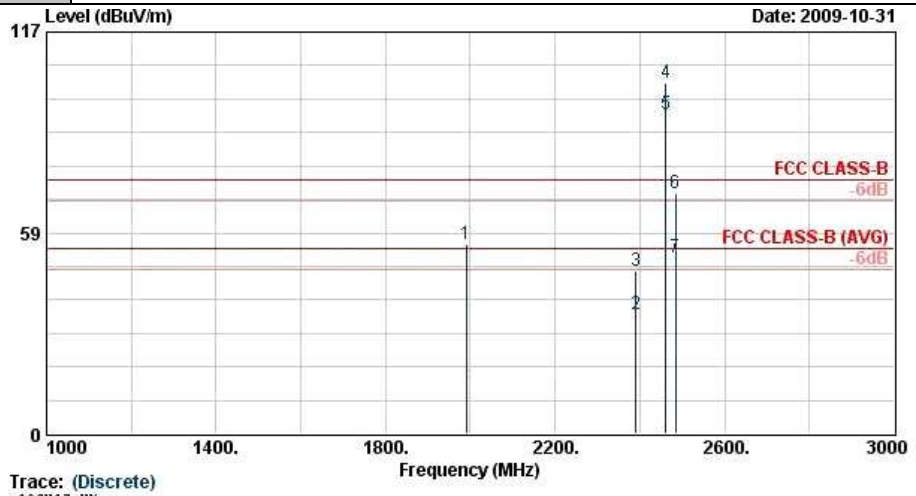


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 902108
Mode : Mode 9

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2380.00	47.54	-26.46	74.00	44.34	32.11	5.47	34.38	101	18	Peak
2	2380.00	35.71	-18.29	54.00	32.51	32.11	5.47	34.38	101	18	Average
3 X	2462.00	105.14			101.89	32.24	5.40	34.39	101	18	Peak
4 @	2462.00	95.39			92.14	32.24	5.40	34.39	101	18	Average
5 !	2483.85	72.89	-1.11	74.00	69.63	32.27	5.38	34.40	101	18	Peak
6 !	2483.85	53.87	-0.13	54.00	50.61	32.27	5.38	34.40	101	18	Average

Test Mode :	Mode 9	Temperature :	24~25°C
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#4 and #5 are Fundamental Signals which can be ignored.		

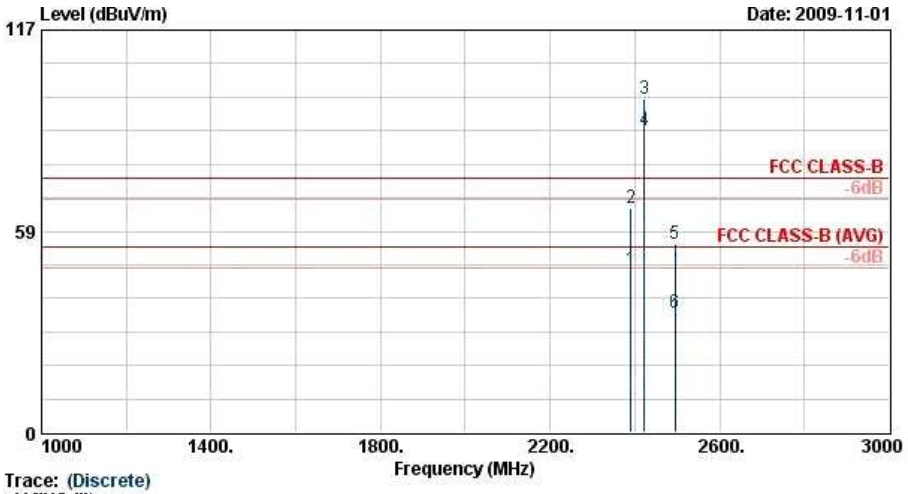


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 902108
Mode : Mode 9

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1990.00	55.17	-18.83	74.00	52.36	31.38	5.74	34.30	100	0	Peak
2	2390.00	34.74	-19.26	54.00	31.53	32.13	5.46	34.38	135	343	Average
3	2390.00	47.53	-26.47	74.00	44.32	32.13	5.46	34.38	135	343	Peak
4 X	2462.00	102.39			99.14	32.24	5.40	34.39	135	343	Peak
5 @	2462.00	93.24			89.99	32.24	5.40	34.39	135	343	Average
6 !	2483.85	69.96	-4.04	74.00	66.70	32.27	5.38	34.40	134	343	Peak
7 !	2483.85	51.26	-2.74	54.00	48.00	32.27	5.38	34.40	135	343	Average

Test Mode :	Mode 10	Temperature :	24~25°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

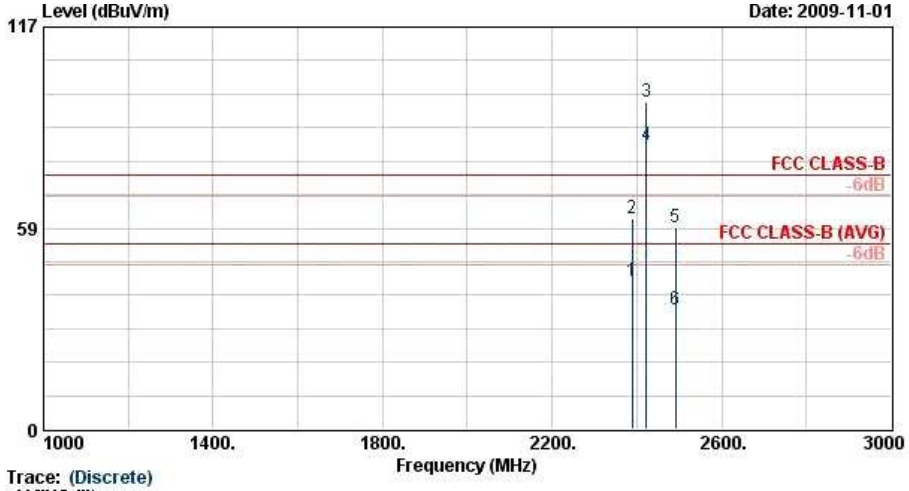


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 9O2108
Mode : Mode 10

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.99	47.62	-6.38	54.00	44.41	32.13	5.46	34.38	131	16	Average
2	2389.99	65.36	-8.64	74.00	62.15	32.13	5.46	34.38	131	16	Peak
3 X	2422.00	96.98			93.76	32.16	5.44	34.38	131	16	Peak
4 @	2422.00	88.00			84.77	32.19	5.43	34.39	131	16	Average
5	2494.00	54.98	-19.02	74.00	51.71	32.30	5.37	34.40	131	16	Peak
6	2494.00	34.60	-19.40	54.00	31.33	32.30	5.37	34.40	131	16	Average

Test Mode :	Mode 10	Temperature :	24~25°C
Test Channel :	03	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

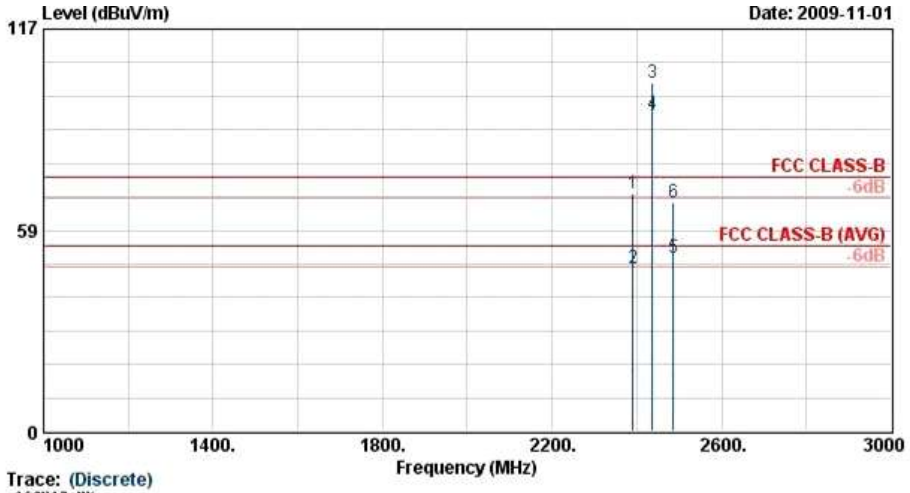


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 902108
Mode : Mode 10

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.61	43.26	-10.74	54.00	40.05	32.13	5.46	34.38	100	142	Average
2	2389.61	61.48	-12.52	74.00	58.27	32.13	5.46	34.38	100	142	Peak
3 X	2422.00	95.40			92.16	32.19	5.43	34.39	100	142	Peak
4 @	2422.00	82.83			79.60	32.19	5.43	34.39	100	142	Average
5	2492.00	58.65	-15.35	74.00	55.38	32.30	5.37	34.40	100	142	Peak
6	2492.00	34.65	-19.35	54.00	31.38	32.30	5.37	34.40	100	142	Average

Test Mode :	Mode 11	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

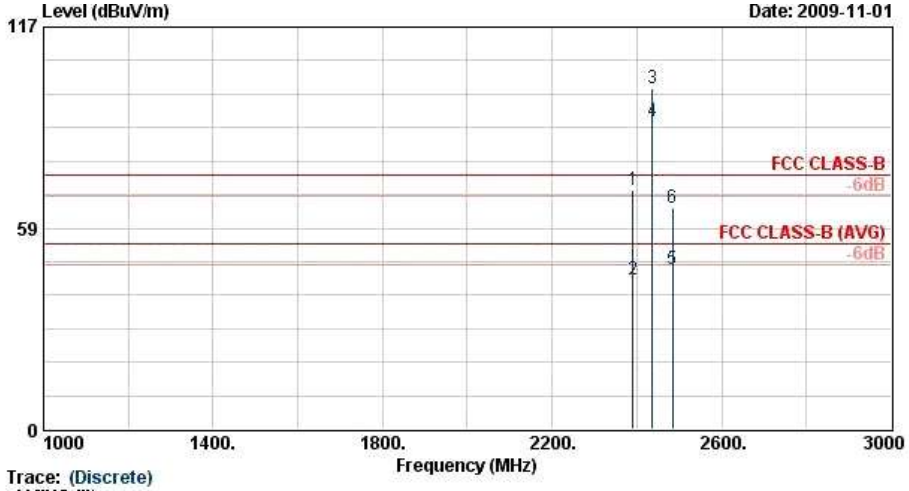


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 902108
Mode : Mode 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	2390.00	69.28	-4.72	74.00	66.07	32.13	5.46	34.38	103	16	Peak
2	2390.00	47.42	-6.58	54.00	44.21	32.13	5.46	34.38	103	16	Average
3 X	2437.00	101.26			98.02	32.22	5.41	34.39	103	16	Peak
4 @	2437.00	92.34			89.10	32.22	5.41	34.39	103	16	Average
5 !	2486.00	50.32	-3.68	54.00	47.06	32.27	5.38	34.40	103	16	Average
6	2486.00	66.55	-7.45	74.00	63.29	32.27	5.38	34.40	103	16	Peak

Test Mode :	Mode 11	Temperature :	24~25°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

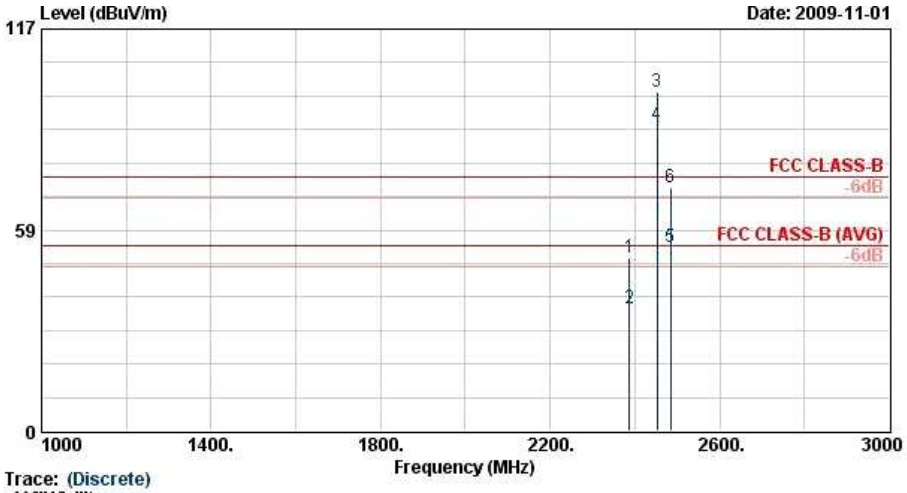


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 902108
Mode : Mode 11

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	2390.00	69.67	-4.33	74.00	66.46	32.13	5.46	34.38	105	163	Peak
2	2390.00	43.46	-10.54	54.00	40.25	32.13	5.46	34.38	105	163	Average
3 X	2437.00	99.19			95.96	32.19	5.43	34.39	105	163	Peak
4 @	2437.00	89.79			86.55	32.22	5.41	34.39	105	163	Average
5	2484.00	46.43	-7.57	54.00	43.17	32.27	5.38	34.40	105	163	Average
6	2484.00	64.35	-9.65	74.00	61.09	32.27	5.38	34.40	105	163	Peak

Test Mode :	Mode 12	Temperature :	24~25°C
Test Channel :	09	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		

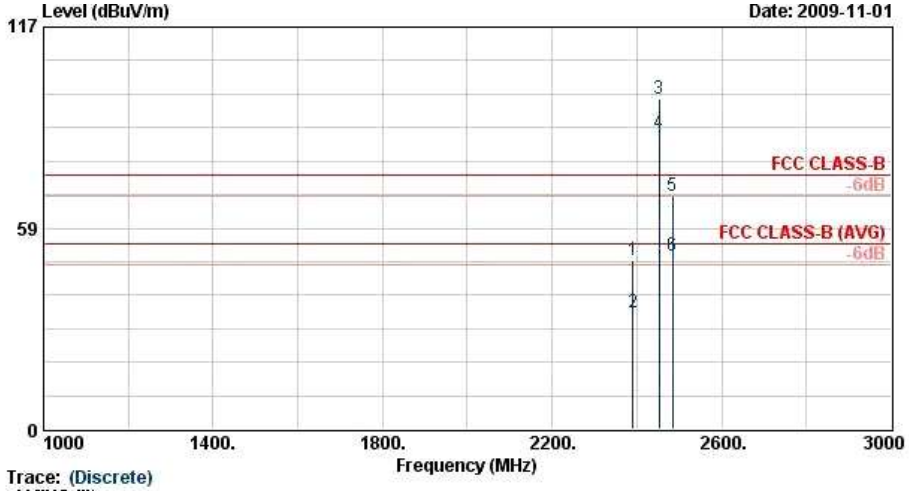


Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 HORIZONTAL
Project : FR 902108
Mode : Mode 12

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2388.00	50.45	-23.55	74.00	47.23	32.13	5.46	34.38	100	16	Peak
2	2388.00	35.71	-18.29	54.00	32.50	32.13	5.46	34.38	100	16	Average
3 X	2452.00	98.90			95.65	32.24	5.40	34.39	100	16	Peak
4 @	2452.00	89.21			85.97	32.22	5.41	34.39	100	16	Average
5 !	2483.66	53.70	-0.30	54.00	50.44	32.27	5.38	34.40	100	16	Average
6 !	2483.66	70.73	-3.27	74.00	67.47	32.27	5.38	34.40	100	16	Peak

Test Mode :	Mode 12	Temperature :	24~25°C
Test Channel :	09	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals which can be ignored.		



Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_090824 VERTICAL
Project : FR 902108
Mode : Mode 12

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	48.94	-25.06	74.00	45.73	32.13	5.46	34.38	133	141	Peak
2	2390.00	34.06	-19.94	54.00	30.85	32.13	5.46	34.38	133	141	Average
3 X	2452.00	96.31			93.05	32.24	5.40	34.39	133	141	Peak
4 @	2452.00	86.26			83.02	32.22	5.41	34.39	133	141	Average
5	2484.42	67.87	-6.13	74.00	64.61	32.27	5.38	34.40	133	141	Peak
6 !	2484.42	50.56	-3.44	54.00	47.30	32.27	5.38	34.40	133	141	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 with IPEX 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. 26, 2008	Nov. 25, 2009	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz~30MHz	Nov. 26, 2008	Nov. 25, 2009	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. 02, 2008	Dec. 01, 2009	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. 17, 2008	Dec. 16, 2009	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 Uc(y)	**1.13**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(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 Uc(y)	**1.27**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(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 Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				

6 Certification of TAF Accreditation

Certificate No. : L1190-090417

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, 2007 to January 09, 2010
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 Arrangment with Foreign Authorities

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : April 17, 2009

P1, total 20 pages

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 EP9O2108 as below.