Partial FCC RF Test Report

APPLICANT	:	Acer Inc.
EQUIPMENT	:	WLAN Module
BRAND NAME	:	Acer, Gateway, PackardBell
MODEL NAME	:	BCM94312HMG
FCC ID	:	HLZ-BRCM1030
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: Broadcom / Model Name: BCM94312HMG / FCC ID: QDS-BRCM1030) report. The product was installed into Notebook Computer (Brand Name: Acer, Gateway, PackardBell / Model Name: ZA3 / Marketing Name: Aspire one, AO751, LT30, dot m, dot mr) during test.

The product was received on Aug. 05, 2009 and completely tested on Aug. 14, 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

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
FR940409-12	Rev. 01	Initial issue of report	Aug. 21, 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 13.9 dB at 0.43 MHz
3.3	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.26 dB at 797.70 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

Quanta Computer Inc.

1. No. 2, Lane 58, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P.R. China
2. No. 4, Wen Ming 1st Street, Kuei Shan Hsiang, Taoyuan Shien 333, Taiwan, R.O.C.
3. No. 8, Dongjing Rd., Songjiang Industrial Zone, Shanghai, P.R. China
4. No. 4, Lane 58, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P.R. China
5. North to Songsheng Road, Songjiang Industrial Zone, Shanghai, P.R. China
6. B#, No. 1, South Rongteng Road, Songjiang Export Processing Zone, Shanghai, P.R. China
7. Standard Factory, South to Valqua, Rongxin Road, Songjiang Export Processing Zone, Shanghai, P.R. China
8. C#, No. 1, South Rongteng Road, Songhjang Export Processing Zone, Shanghai, P.R. China
9. No. 6, Lane 66, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P.R. China
10. No. 6, Lane 58, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P.R. China
11. Huade Building, No. 18, ChuangYe Rd., ShandDi Zone, HaiDian District, Beijing, P.R.C.
12. No. 68, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P.R. China
13. 2F., C Building, XinYe Rd., Export Processing District In Torch, Zhongshan, Guangdong, P.R.C.

1.3 Feature of Equipment under Test

Product Feature & Specification	
Equipment	WLAN Module
Brand Name	Acer, Gateway, PackardBell
Model Name	BCM94312HMG
FCC ID	HLZ-BRCM1030
Host (Notebook Computer)	Brand Name : Acer, Gateway, PackardBell Model Name : ZA3 Marketing Name : Aspire one, AO751, LT30, dot m, dot mr HW Version : D (MB) SW Version : V0.2105f (BIOS) Antenna Type : PIFA Antenna
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 : 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**	LITEON
	Model Name	PA-1300-04
	Power Rating	I/P:100-240Vac, 50-60Hz, 1.0A; O/P: 19Vdc, 1.58A
	DC Power Cord Type	1.5 meter shielded cable with ferrite core
Battery	**Brand Name**	SONY
	Model Name	UM09A41
	Power Rating	11.1Vdc, 2200mAh, 25Wh
	Type	Li-ion

Remark: Please refer to the user's manual for more detailed information of host (Brand Name: Acer, Gateway, PackardBell / Model Name: ZA3 / Marketing Name: Aspire one, AO751, LT30, dot m, dot mr).

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	03CH07-HY	TW1022/4086B-1

1.5 Applied Standards

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

- FCC Part 15 Subpart 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.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
3.	Earphone	Sampo	EK-Y652CS	FCC DoC	Shielded, 1.8 m	N/A
4.	Earphone	Kolin	Kit-7460E	FCC DoC	Unshielded, 1.6 m	N/A
5.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
6.	USB Cable	Apple	N/A	N/A	Shielded, 1.0 m	N/A

2 Test Configuration of Equipment under Test

2.1 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.

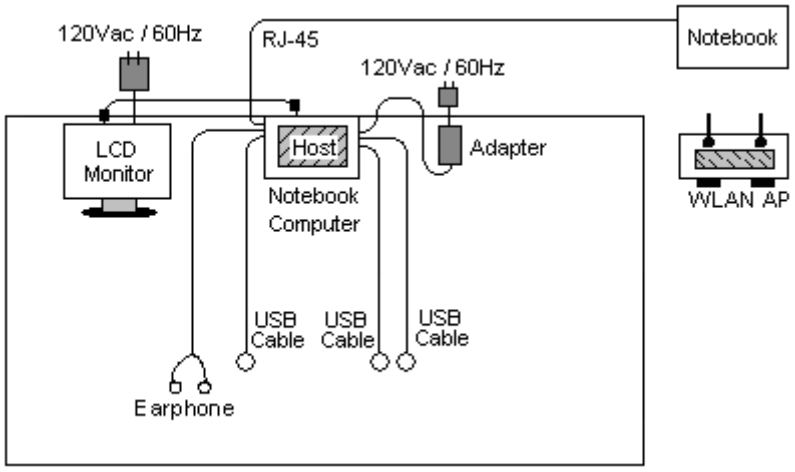
Test Cases		
Test Item	**802.11b**	**802.11g**
Radiated TCs	Mode 1 : CH01_2412 MHz Mode 2 : CH06_2437 MHz Mode 3 : CH11_2462 MHz	Mode 4 : CH01_2412 MHz Mode 5 : CH06_2437 MHz Mode 6 : CH11_2462 MHz
AC Conducted Emission	Mode 1 :WLAN Link + TC	

Remark:

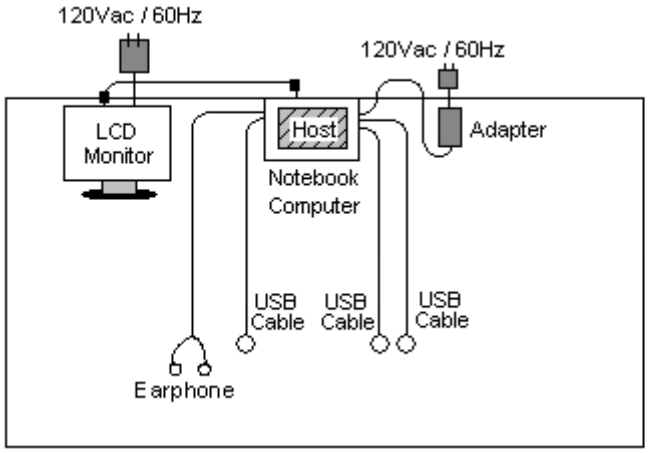
1. TC stands for Test Configuration, and consists of adapter, LCD monitor, earphone, USB cable, and RJ-45.
2. Only the radiated emission and conducted emission tests of the WLAN Module on this Notebook Computer was performed in this report and the conducted test cases can be referred to the WLAN module (Brand Name: Broadcom / Model Name: BCM94312HMG / FCC ID: QDS-BRCM1030) report.

2.2 Connection Diagram of Test System

<Conducted Emission>



<Radiated Emission>



Note: The EUT is a WLAN module which was installed into the host Notebook Computer (Brand Name: Acer, Gateway, PackardBell / Model Name: ZA3 / Marketing Name: Aspire one, AO751, LT30, dot m, dot mr) during the test.

2.3 RF Utility

The EUT was transmitting and receiving signals continuously by AT Command.

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.

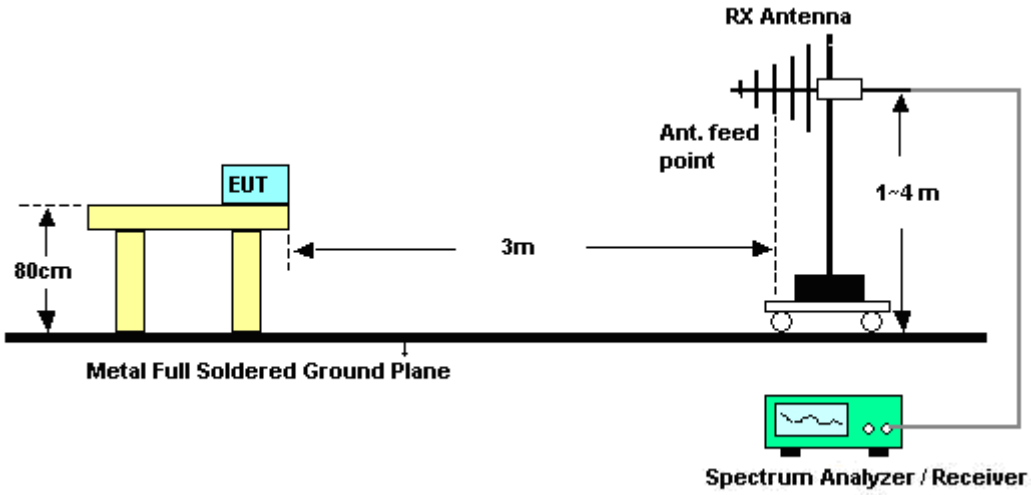
3.1.2 Measuring Instruments

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) > RBW, scan up through 10th harmonic. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band as measured with a 100 kHz 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



3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	27~28°C
Test Band :	802.11b	Relative Humidity :	39~40%
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
2379.92	60.44	-13.56	74.00	57.34	32.00	5.47	34.38	100	329	Peak
2379.92	40.47	-13.53	54.00	37.37	32.00	5.47	34.38	100	329	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	61.94	-12.06	74.00	58.85	32.02	5.46	34.38	161	211	Peak
2389.61	39.64	-14.36	54.00	36.55	32.02	5.46	34.38	161	211	Average

Test Mode :	Mode 3	Temperature :	27~28°C
Test Band :	802.11b	Relative Humidity :	39~40%
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
2483.66	58.16	-15.84	74.00	55.09	32.09	5.38	34.40	100	313	Peak
2483.66	35.20	-18.80	54.00	32.13	32.09	5.38	34.40	100	313	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	64.46	-9.54	74.00	61.39	32.09	5.38	34.40	163	183	Peak
2484.42	38.12	-15.88	54.00	35.05	32.09	5.38	34.40	163	183	Average

Test Mode :	Mode 4	Temperature :	27~28°C
Test Band :	802.11g	Relative Humidity :	39~40%
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
2388.05	61.16	-12.84	74.00	58.07	32.02	5.46	34.38	100	328	Peak
2388.05	40.66	-13.34	54.00	37.57	32.02	5.46	34.38	100	328	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	64.43	-9.57	74.00	61.34	32.02	5.46	34.38	167	183	Peak
2389.99	42.43	-11.57	54.00	39.34	32.02	5.46	34.38	167	183	Average

Test Mode :	Mode 6	Temperature :	27~28°C
Test Band :	802.11g	Relative Humidity :	39~40%
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
2483.66	58.05	-15.95	74.00	54.98	32.09	5.38	34.40	100	313	Peak
2483.66	36.75	-17.25	54.00	33.68	32.09	5.38	34.40	100	313	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	64.14	-9.86	74.00	61.07	32.09	5.38	34.40	160	183	Peak
2483.5	41.16	-12.84	54.00	38.09	32.09	5.38	34.40	160	183	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.

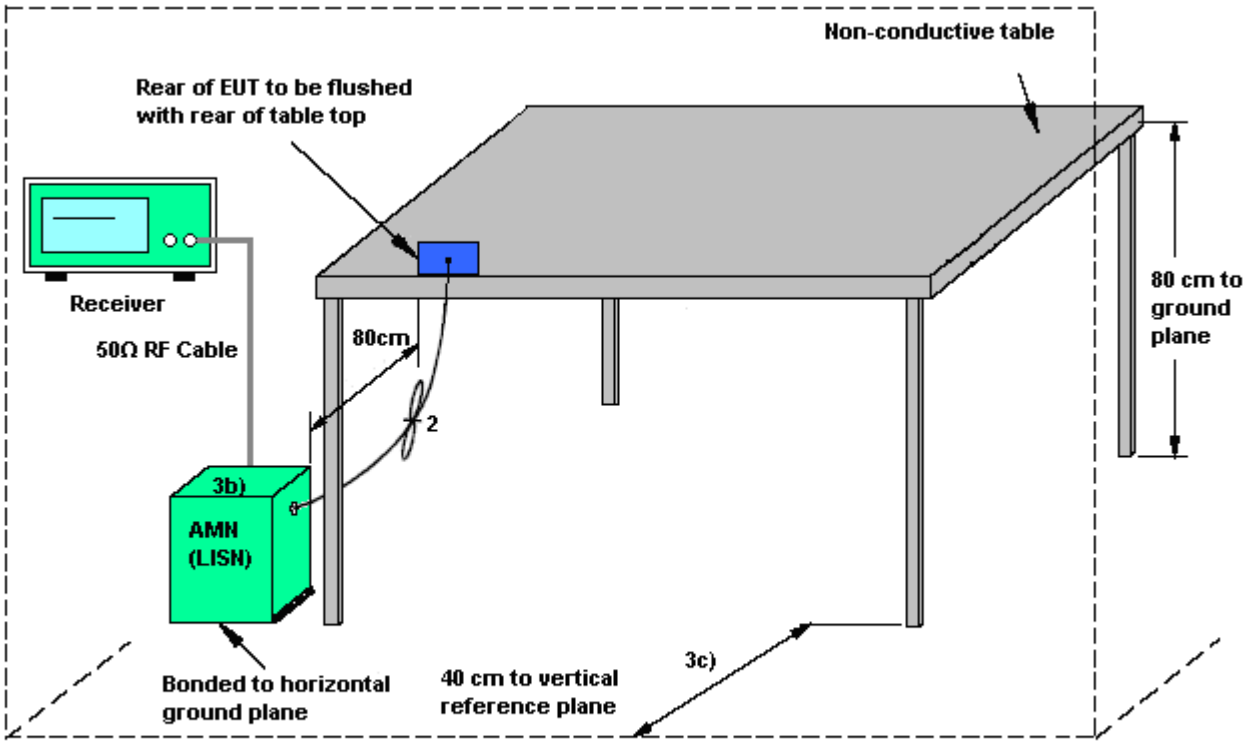
3.2.2 Measuring Instruments

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.

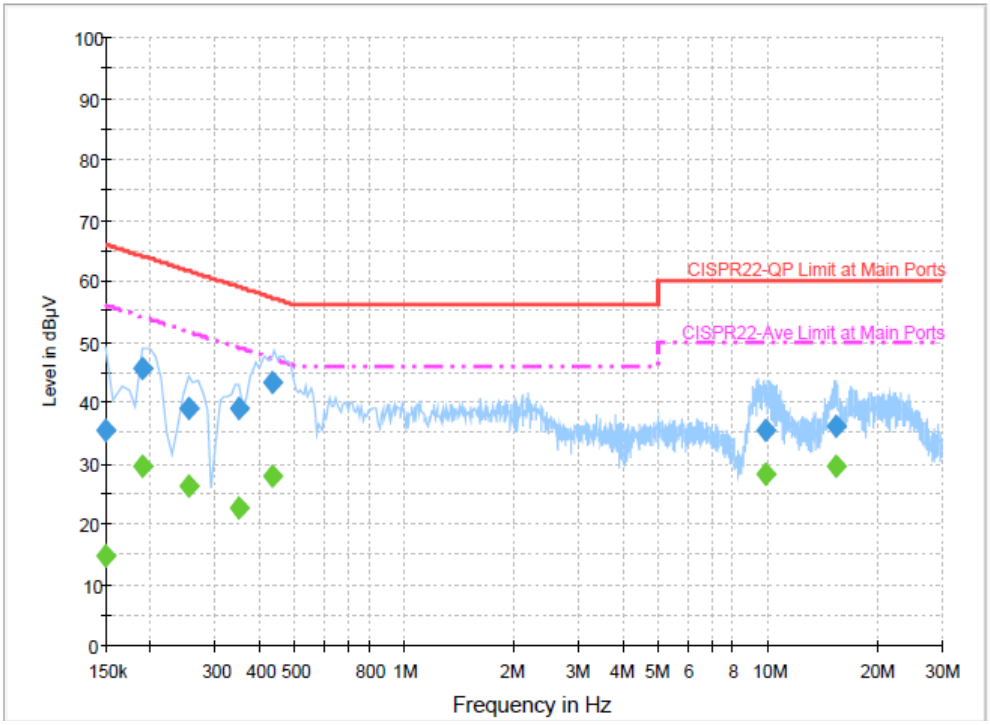
3.2.4 Test Setup



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 :**	24~25℃
Test Engineer :	Cona Huang	**Relative Humidity :**	46~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN Link + TC		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



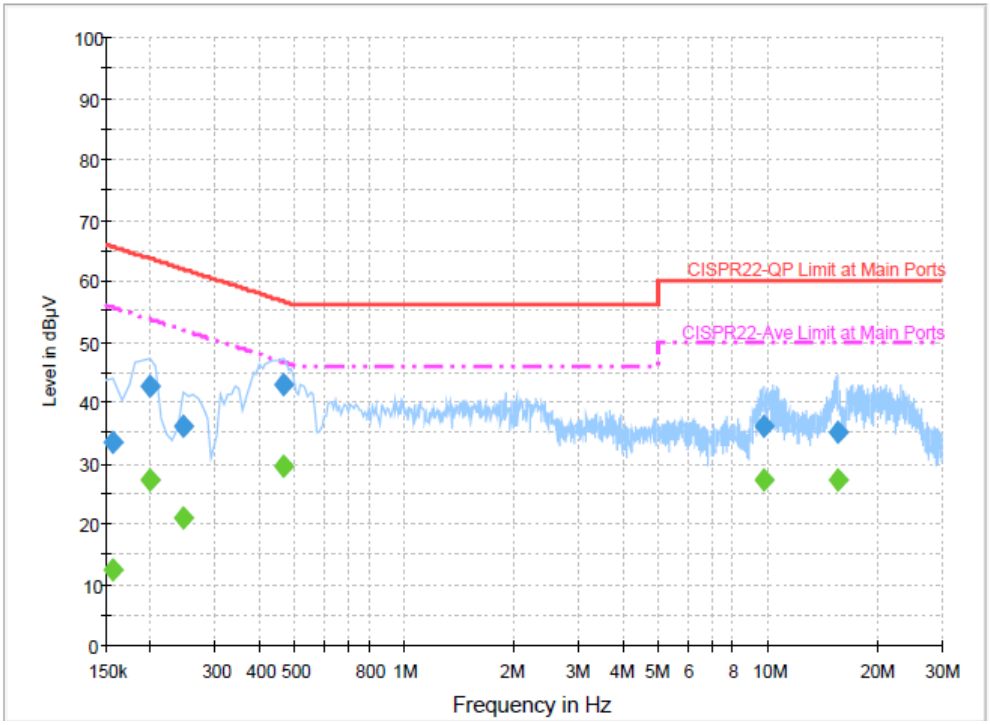
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	35.4	Off	L1	19.5	30.6	66.0
0.190000	45.4	Off	L1	19.5	18.6	64.0
0.254000	38.9	Off	L1	19.4	22.7	61.6
0.350000	39.1	Off	L1	19.4	19.9	59.0
0.430000	43.4	Off	L1	19.4	13.9	57.3
9.830000	35.5	Off	L1	19.6	24.5	60.0
15.318000	36.1	Off	L1	19.7	23.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	14.8	Off	L1	19.5	41.2	56.0
0.190000	29.7	Off	L1	19.5	24.3	54.0
0.254000	26.2	Off	L1	19.4	25.4	51.6
0.350000	22.8	Off	L1	19.4	26.2	49.0
0.430000	27.8	Off	L1	19.4	19.5	47.3
9.830000	28.1	Off	L1	19.6	21.9	50.0
15.318000	29.4	Off	L1	19.7	20.6	50.0

Test Mode :	Mode 1	Temperature :	24~25℃
Test Engineer :	Cona Huang	Relative Humidity :	46~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + TC		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	33.5	Off	N	19.5	32.1	65.6
0.198000	42.6	Off	N	19.5	21.1	63.7
0.246000	36.1	Off	N	19.5	25.8	61.9
0.462000	42.8	Off	N	19.4	13.9	56.7
9.758000	36.1	Off	N	19.6	23.9	60.0
15.598000	34.9	Off	N	19.8	25.1	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	12.6	Off	N	19.5	43.0	55.6
0.198000	27.2	Off	N	19.5	26.5	53.7
0.246000	21.0	Off	N	19.5	30.9	51.9
0.462000	29.6	Off	N	19.4	17.1	46.7
9.758000	27.2	Off	N	19.6	22.8	50.0
15.598000	27.2	Off	N	19.8	22.8	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

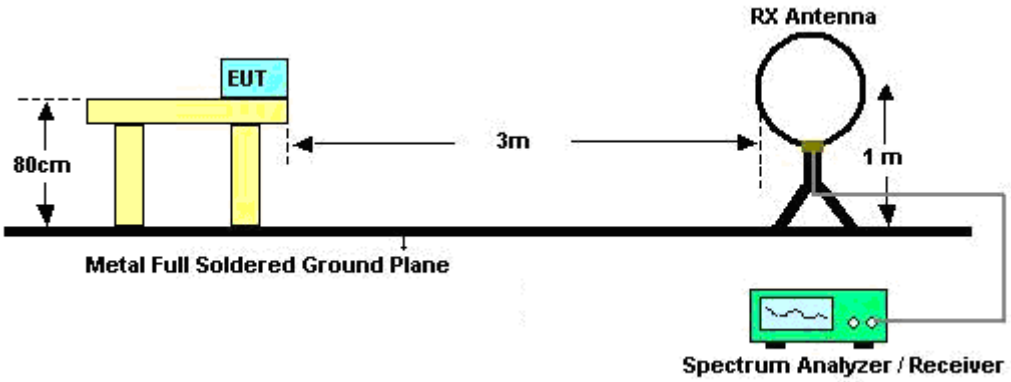
See list of measuring instruments of this test report.

3.3.3 Test Procedures

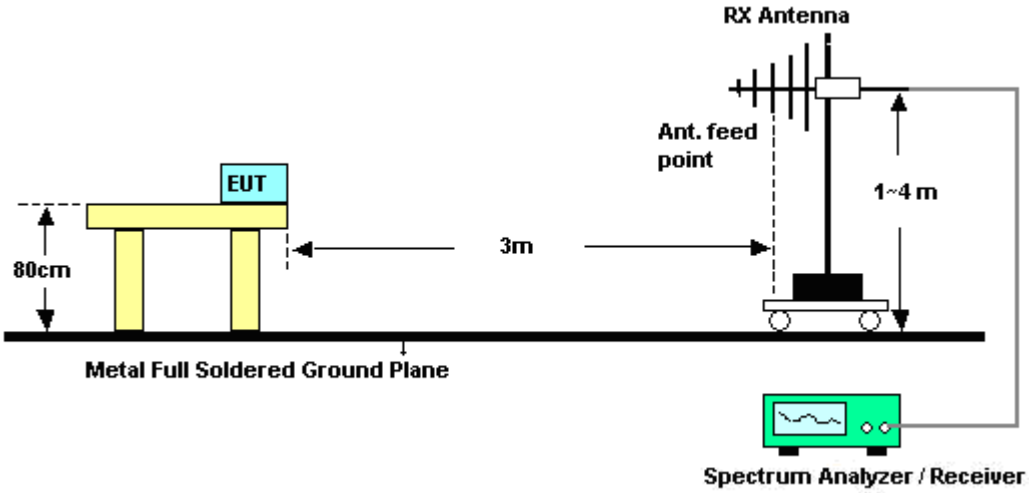
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector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

Test Engineer :	Kay Wu	Temperature :	27~28°C
		Relative Humidity :	39~40%

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

Note:

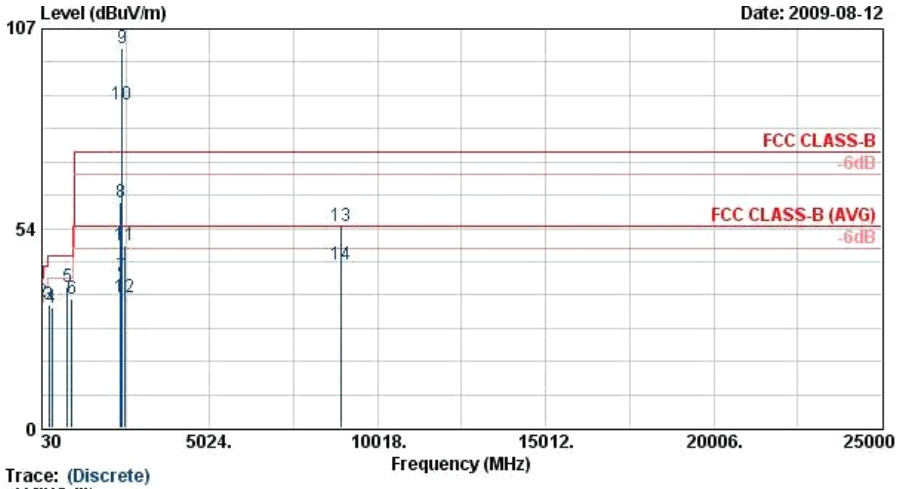
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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 (30 MHz ~ 10th Harmonic)

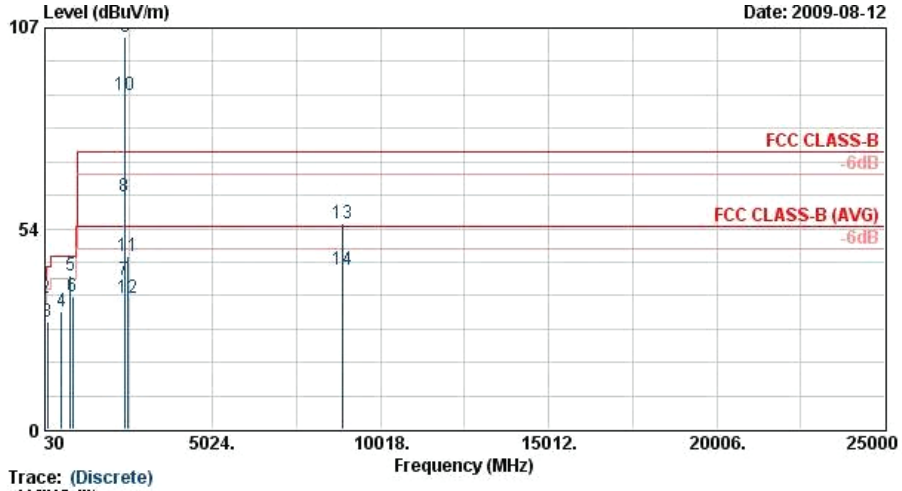
Test Mode :	Mode 1	Temperature :	27~28°C
Test Channel :	01	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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	36.21	27.92	-12.08	40.00	42.31	16.62	0.69	31.70	---	---	Peak
2	42.69	33.90	-6.10	40.00	52.19	12.68	0.72	31.70	100	104	Peak
3	240.06	32.97	-13.03	46.00	50.63	11.98	1.88	31.52	---	---	Peak
4	335.00	32.05	-13.95	46.00	46.33	14.77	2.28	31.33	---	---	Peak
5	797.00	37.75	-8.25	46.00	42.73	21.89	3.84	30.71	---	---	Peak
6	932.10	34.58	-11.42	46.00	37.16	23.87	4.22	30.67	---	---	Peak
7	2379.92	40.47	-13.53	54.00	37.37	32.00	5.47	34.38	100	329	Average
8	2379.92	60.44	-13.56	74.00	57.34	32.00	5.47	34.38	100	329	Peak
9 X	2412.00	101.78			98.69	32.03	5.44	34.38	100	329	Peak
10 X	2412.00	86.90			83.81	32.03	5.44	34.38	100	329	Average
11	2492.00	48.98	-25.02	74.00	45.91	32.10	5.37	34.40	100	329	Peak
12	2492.00	34.98	-19.02	54.00	31.91	32.10	5.37	34.40	100	329	Average
13	8922.00	54.17	-19.83	74.00	43.20	36.03	10.31	35.38	100	100	Peak
14	8922.00	43.66	-10.34	54.00	32.70	36.03	10.31	35.38	100	100	Average

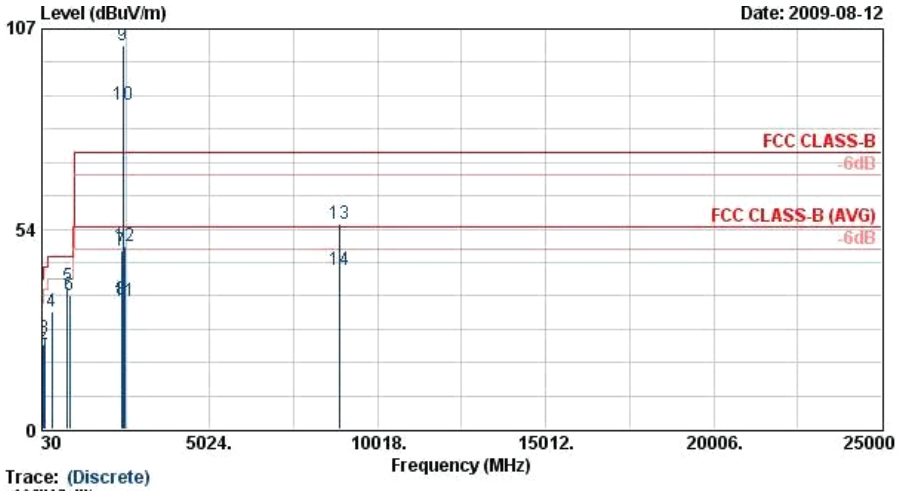
Test Mode :	Mode 1	Temperature :	27~28°C
Test Channel :	01	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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		30.00	32.42	-7.58	40.00	43.58	19.90	0.64	31.70	---	---	Peak
2	!	42.69	35.10	-4.90	40.00	53.40	12.68	0.72	31.70	100	222	Peak
3		101.82	28.78	-14.72	43.50	48.61	10.70	1.17	31.70	---	---	Peak
4		531.70	31.28	-14.72	46.00	40.67	18.64	3.03	31.07	---	---	Peak
5	!	797.00	40.85	-5.15	46.00	45.82	21.89	3.84	30.71	---	---	Peak
6		864.20	35.30	-10.70	46.00	39.01	22.97	4.02	30.70	---	---	Peak
7		2389.61	39.64	-14.36	54.00	36.55	32.02	5.46	34.38	161	211	Average
8		2389.61	61.94	-12.06	74.00	58.85	32.02	5.46	34.38	161	211	Peak
9	X	2412.00	104.43			101.34	32.03	5.44	34.38	161	211	Peak
10	@	2412.00	89.11			86.02	32.03	5.44	34.38	161	211	Average
11		2492.00	46.28	-27.72	74.00	43.21	32.10	5.37	34.40	161	211	Peak
12		2492.00	34.86	-19.14	54.00	31.79	32.10	5.37	34.40	161	211	Average
13		8877.00	54.71	-19.29	74.00	43.80	35.99	10.30	35.37	100	57	Peak
14		8877.00	42.66	-11.34	54.00	31.74	35.99	10.30	35.37	100	57	Average

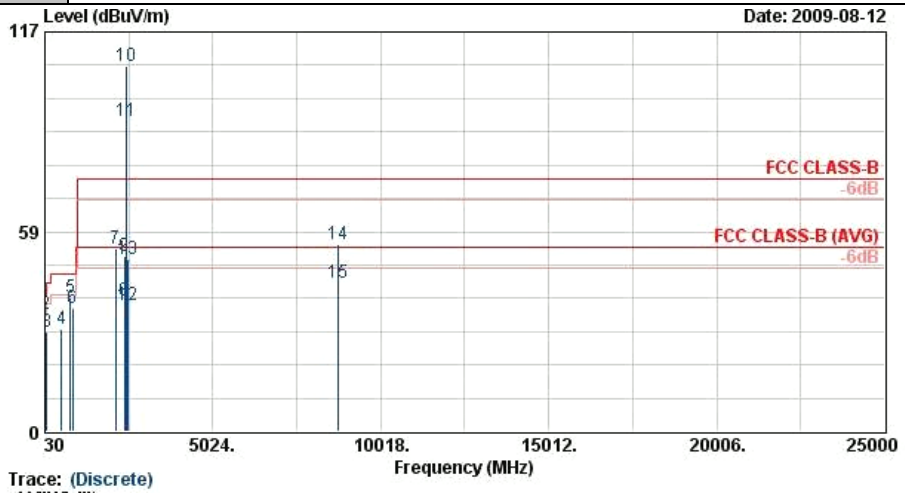
Test Mode :	Mode 2	Temperature :	27~28°C
Test Channel :	06	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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	!	42.69	34.85	-5.15	40.00	53.15	12.68	0.72	31.70	100	67	Peak
2		79.41	22.50	-17.50	40.00	45.67	7.53	1.00	31.70	---	---	Peak
3		99.66	24.15	-19.35	43.50	44.19	10.50	1.16	31.70	---	---	Peak
4		335.00	31.61	-14.39	46.00	45.89	14.77	2.28	31.33	---	---	Peak
5		797.70	38.18	-7.82	46.00	43.15	21.89	3.84	30.71	---	---	Peak
6		862.10	35.71	-10.29	46.00	39.42	22.98	4.01	30.70	---	---	Peak
7		2390.00	47.89	-26.11	74.00	44.79	32.02	5.46	34.38	100	311	Peak
8		2390.00	34.70	-19.30	54.00	31.61	32.02	5.46	34.38	100	311	Average
9	X	2437.00	102.65			99.57	32.06	5.41	34.39	100	311	Peak
10	X	2437.00	86.56			83.48	32.06	5.41	34.39	100	311	Average
11		2492.00	34.28	-19.72	54.00	31.21	32.10	5.37	34.40	100	311	Average
12		2492.00	49.02	-24.98	74.00	45.95	32.10	5.37	34.40	100	311	Peak
13		8862.00	54.77	-19.23	74.00	43.86	35.98	10.29	35.37	100	97	Peak
14		8862.00	42.47	-11.53	54.00	31.57	35.98	10.29	35.37	100	97	Average

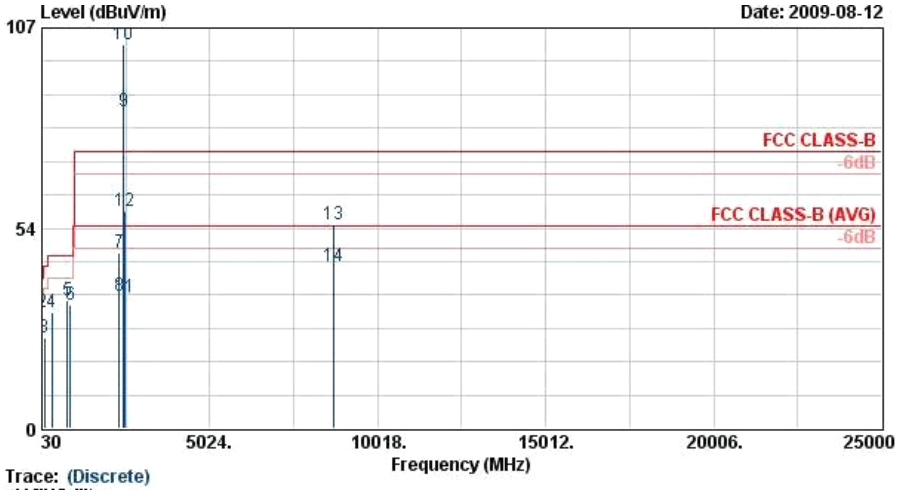
Test Mode :	Mode 2	Temperature :	27~28°C
Test Channel :	06	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#10 and #11 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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		36.21	33.40	-6.60	40.00	47.79	16.62	0.69	31.70	---	---	Peak
2	!	42.69	34.56	-5.44	40.00	52.85	12.68	0.72	31.70	100	301	Peak
3		92.37	28.93	-14.57	43.50	50.05	9.46	1.12	31.70	---	---	Peak
4		531.00	30.05	-15.95	46.00	39.46	18.63	3.03	31.07	---	---	Peak
5		799.80	39.26	-6.74	46.00	44.21	21.90	3.85	30.70	---	---	Peak
6		864.90	36.04	-9.96	46.00	39.74	22.97	4.02	30.70	---	---	Peak
7		2132.00	53.30	-20.70	74.00	50.14	31.81	5.67	34.33	100	0	Peak
8		2390.00	38.38	-15.62	54.00	35.29	32.02	5.46	34.38	165	183	Average
9		2390.00	51.53	-22.47	74.00	48.43	32.02	5.46	34.38	165	183	Peak
10	X	2437.00	107.04			103.96	32.06	5.41	34.39	165	183	Peak
11	@	2437.00	90.80			87.72	32.06	5.41	34.39	165	183	Average
12		2492.00	36.85	-17.15	54.00	33.78	32.10	5.37	34.40	165	183	Average
13		2492.00	50.45	-23.55	74.00	47.38	32.10	5.37	34.40	165	183	Peak
14		8757.00	54.62	-19.38	74.00	43.81	35.90	10.26	35.35	100	25	Peak
15		8757.00	43.35	-10.65	54.00	32.54	35.90	10.26	35.35	100	25	Average

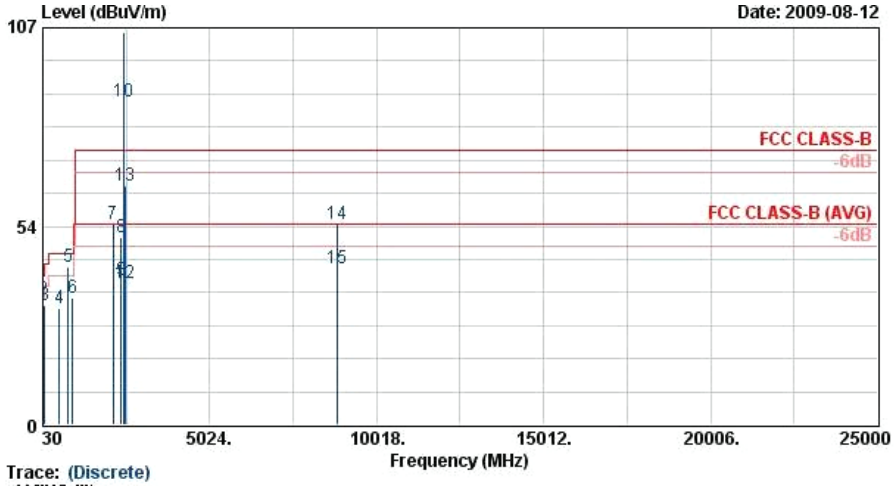
Test Mode :	Mode 3	Temperature :	27~28°C
Test Channel :	11	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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	30.00	30.01	-9.99	40.00	41.17	19.90	0.64	31.70	---	---	Peak
2	42.69	31.11	-8.89	40.00	49.41	12.68	0.72	31.70	100	57	Peak
3	116.13	24.43	-19.07	43.50	42.97	11.88	1.26	31.68	---	---	Peak
4	335.00	30.90	-15.10	46.00	45.18	14.77	2.28	31.33	---	---	Peak
5	797.70	34.15	-11.85	46.00	39.12	21.89	3.84	30.71	---	---	Peak
6	867.70	32.95	-13.05	46.00	36.66	22.96	4.03	30.70	---	---	Peak
7	2342.00	46.77	-27.23	74.00	43.67	31.98	5.50	34.37	100	313	Peak
8	2342.00	35.33	-18.67	54.00	32.22	31.98	5.50	34.37	100	313	Average
9 X	2462.00	84.56			81.48	32.07	5.40	34.39	100	313	Average
10 X	2462.00	102.43			99.35	32.07	5.40	34.39	100	313	Peak
11	2483.66	35.20	-18.80	54.00	32.13	32.09	5.38	34.40	100	313	Average
12	2483.66	58.16	-15.84	74.00	55.09	32.09	5.38	34.40	100	313	Peak
13	8694.00	54.69	-19.31	74.00	43.92	35.86	10.24	35.34	100	247	Peak
14	8694.00	43.28	-10.72	54.00	32.52	35.86	10.24	35.34	100	247	Average

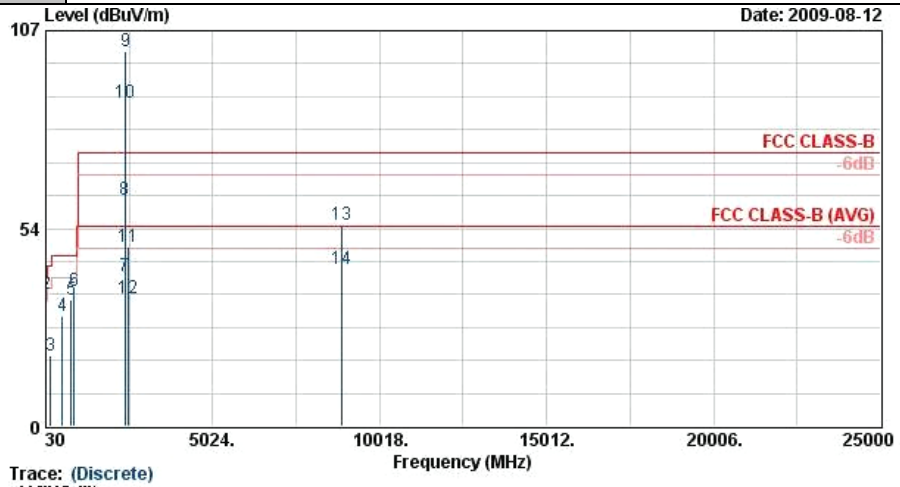
Test Mode :	Mode 3	Temperature :	27~28°C
Test Channel :	11	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#10 and #11 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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		36.21	32.82	-7.18	40.00	47.21	16.62	0.69	31.70	---	---	Peak
2		42.69	33.73	-6.27	40.00	52.02	12.68	0.72	31.70	---	---	Peak
3		92.37	32.11	-11.39	43.50	53.23	9.46	1.12	31.70	---	---	Peak
4		531.00	31.55	-14.45	46.00	40.96	18.63	3.03	31.07	---	---	Peak
5	!	797.70	42.74	-3.26	46.00	47.71	21.89	3.84	30.71	100	174	Peak
6		929.30	34.04	-11.96	46.00	36.71	23.78	4.22	30.67	---	---	Peak
7		2132.00	54.17	-19.83	74.00	51.01	31.81	5.67	34.33	100	0	Peak
8		2380.00	50.64	-23.36	74.00	47.54	32.00	5.47	34.38	163	183	Peak
9		2380.00	38.87	-15.13	54.00	35.77	32.00	5.47	34.38	163	183	Average
10	@	2462.00	86.99			83.91	32.07	5.40	34.39	163	183	Average
11	X	2462.00	105.87			102.79	32.07	5.40	34.39	163	183	Peak
12		2484.42	38.12	-15.88	54.00	35.05	32.09	5.38	34.40	163	183	Average
13		2484.42	64.46	-9.54	74.00	61.39	32.09	5.38	34.40	163	183	Peak
14		8838.00	54.20	-19.80	74.00	43.31	35.97	10.29	35.37	100	75	Peak
15		8838.00	42.14	-11.86	54.00	31.25	35.97	10.29	35.37	100	75	Average

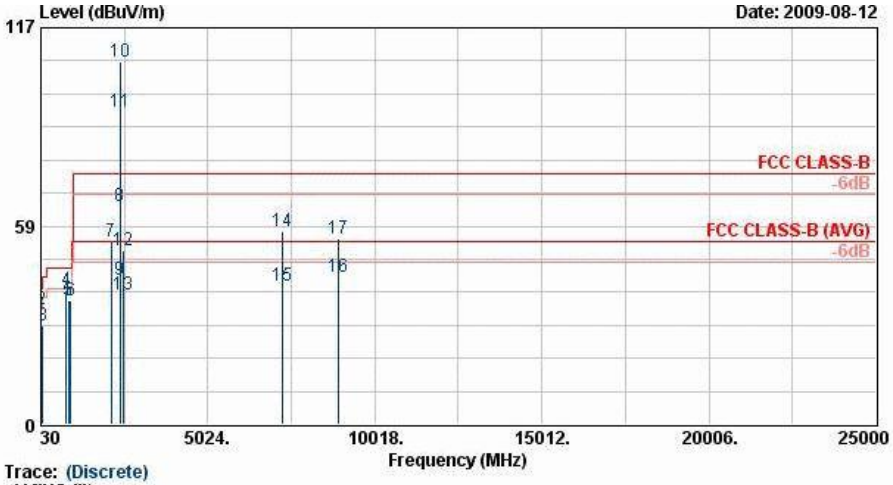
Test Mode :	Mode 4	Temperature :	27~28°C
Test Channel :	01	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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		34.86	27.73	-12.27	40.00	41.55	17.20	0.68	31.70	---	---	Peak
2	!	42.69	35.82	-4.18	40.00	54.11	12.68	0.72	31.70	100	310	Peak
3		167.97	19.25	-24.25	43.50	39.04	10.30	1.54	31.63	---	---	Peak
4		531.00	29.74	-16.26	46.00	39.15	18.63	3.03	31.07	---	---	Peak
5		797.00	34.03	-11.97	46.00	39.00	21.89	3.84	30.71	---	---	Peak
6		867.00	36.58	-9.42	46.00	40.29	22.97	4.03	30.70	---	---	Peak
7		2388.05	40.66	-13.34	54.00	37.57	32.02	5.46	34.38	100	328	Average
8		2388.05	61.16	-12.84	74.00	58.07	32.02	5.46	34.38	100	328	Peak
9	X	2412.00	101.38			98.29	32.03	5.44	34.38	100	328	Peak
10	X	2412.00	87.69			84.60	32.03	5.44	34.38	100	328	Average
11		2494.00	48.57	-25.43	74.00	45.50	32.10	5.37	34.40	100	328	Peak
12		2494.00	34.45	-19.55	54.00	31.38	32.10	5.37	34.40	100	328	Average
13		8877.00	54.43	-19.57	74.00	43.51	35.99	10.30	35.37	100	45	Peak
14		8877.00	42.46	-11.54	54.00	31.54	35.99	10.30	35.37	100	45	Average

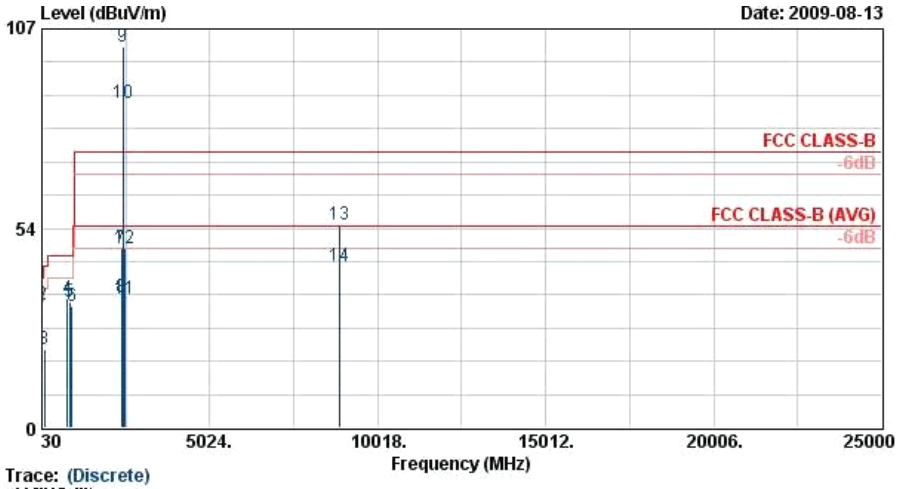
Test Mode :	Mode 4	Temperature :	27~28°C
Test Channel :	01	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#10 and #11 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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	31.82	-8.18	40.00	42.98	19.90	0.64	31.70	---	---	Peak
2	!	42.69	34.11	-5.89	40.00	52.40	12.68	0.72	31.70	100	84	Peak
3		92.37	29.10	-14.40	43.50	50.22	9.46	1.12	31.70	---	---	Peak
4		797.00	39.37	-6.63	46.00	44.34	21.89	3.84	30.71	---	---	Peak
5		864.90	36.51	-9.49	46.00	40.22	22.97	4.02	30.70	---	---	Peak
6		932.10	36.47	-9.53	46.00	39.04	23.87	4.22	30.67	---	---	Peak
7		2124.00	53.97	-20.03	74.00	50.81	31.80	5.69	34.32	100	0	Peak
8		2389.99	64.43	-9.57	74.00	61.34	32.02	5.46	34.38	167	183	Peak
9		2389.99	42.43	-11.57	54.00	39.34	32.02	5.46	34.38	167	183	Average
10	X	2412.00	106.88			103.79	32.03	5.44	34.38	167	183	Peak
11	@	2412.00	92.13			89.04	32.03	5.44	34.38	167	183	Average
12		2492.00	51.22	-22.78	74.00	48.15	32.10	5.37	34.40	167	183	Peak
13		2492.00	38.08	-15.92	54.00	35.01	32.10	5.37	34.40	167	183	Average
14		7236.00	56.98	-17.02	74.00	46.70	35.50	9.88	35.10	100	298	Peak
15		7236.00	40.82	-13.18	54.00	30.54	35.50	9.88	35.10	100	298	Average
16		8937.00	43.52	-10.48	54.00	32.54	36.05	10.32	35.39	100	244	Average
17		8937.00	54.70	-19.30	74.00	43.72	36.05	10.32	35.39	100	244	Peak

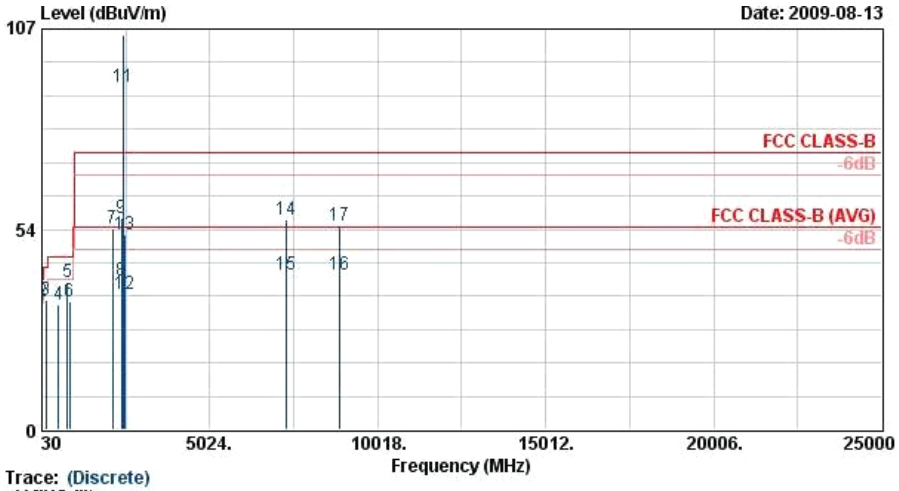
Test Mode :	Mode 5	Temperature :	27~28°C
Test Channel :	06	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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	36.21	28.72	-11.28	40.00	43.11	16.62	0.69	31.70	---	---	Peak
2	42.69	33.16	-6.84	40.00	51.45	12.68	0.72	31.70	100	123	Peak
3	107.49	20.93	-22.57	43.50	40.11	11.30	1.21	31.69	---	---	Peak
4	797.00	34.71	-11.29	46.00	39.68	21.89	3.84	30.71	---	---	Peak
5	864.20	34.00	-12.00	46.00	37.71	22.97	4.02	30.70	---	---	Peak
6	929.30	32.79	-13.21	46.00	35.46	23.78	4.22	30.67	---	---	Peak
7	2390.00	48.15	-25.85	74.00	45.06	32.02	5.46	34.38	100	310	Peak
8	2390.00	35.03	-18.97	54.00	31.94	32.02	5.46	34.38	100	310	Average
9 X	2437.00	102.06			98.98	32.06	5.41	34.39	100	310	Peak
10 X	2437.00	87.24			84.16	32.06	5.41	34.39	100	310	Average
11	2492.00	34.58	-19.42	54.00	31.51	32.10	5.37	34.40	100	310	Average
12	2492.00	48.28	-25.72	74.00	45.21	32.10	5.37	34.40	100	310	Peak
13	8889.00	54.57	-19.43	74.00	43.63	36.01	10.30	35.38	100	274	Peak
14	8889.00	43.47	-10.53	54.00	32.54	36.01	10.30	35.38	100	274	Average

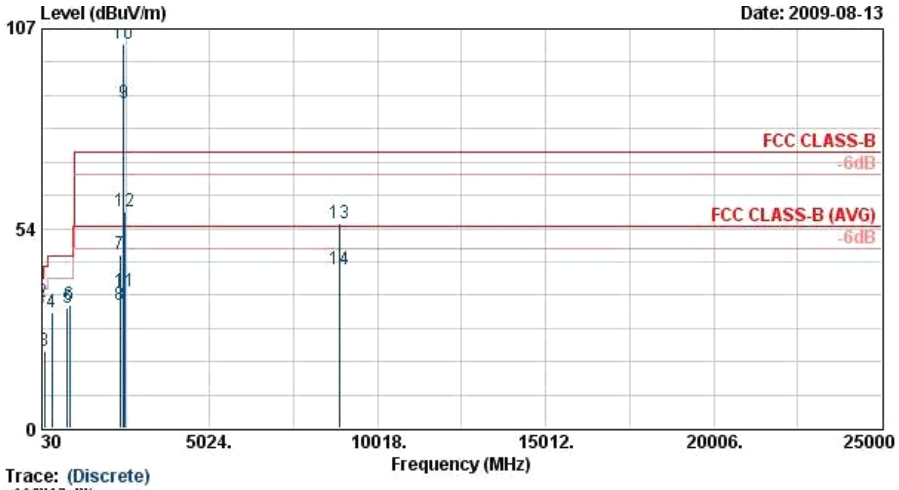
Test Mode :	Mode 5	Temperature :	27~28°C
Test Channel :	06	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#10 and #11 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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	32.65	-7.35	40.00	43.81	19.90	0.64	31.70	---	---	Peak
2	!	42.69	34.06	-5.94	40.00	52.35	12.68	0.72	31.70	100	162	Peak
3		151.77	34.74	-8.76	43.50	53.33	11.58	1.48	31.65	---	---	Peak
4		531.70	33.35	-12.65	46.00	42.74	18.64	3.03	31.07	---	---	Peak
5		797.70	39.18	-6.82	46.00	44.15	21.89	3.84	30.71	---	---	Peak
6		864.90	34.22	-11.78	46.00	37.93	22.97	4.02	30.70	---	---	Peak
7		2126.00	53.74	-20.26	74.00	50.58	31.80	5.69	34.32	100	0	Peak
8		2390.00	39.83	-14.17	54.00	36.74	32.02	5.46	34.38	170	182	Average
9		2390.00	56.49	-17.51	74.00	53.40	32.02	5.46	34.38	170	182	Peak
10	X	2437.00	105.60			102.52	32.06	5.41	34.39	170	182	Peak
11	@	2437.00	91.30			88.22	32.06	5.41	34.39	170	182	Average
12		2486.00	36.13	-17.87	54.00	33.06	32.09	5.38	34.40	170	182	Average
13		2486.00	52.06	-21.94	74.00	48.99	32.09	5.38	34.40	170	182	Peak
14		7311.00	56.05	-17.95	74.00	45.86	35.50	9.81	35.12	100	258	Peak
15		7311.00	41.39	-12.61	54.00	31.20	35.50	9.81	35.12	100	258	Average
16		8865.00	41.46	-12.54	54.00	30.54	35.99	10.30	35.37	100	274	Average
17		8865.00	54.61	-19.39	74.00	43.69	35.99	10.30	35.37	100	274	Peak

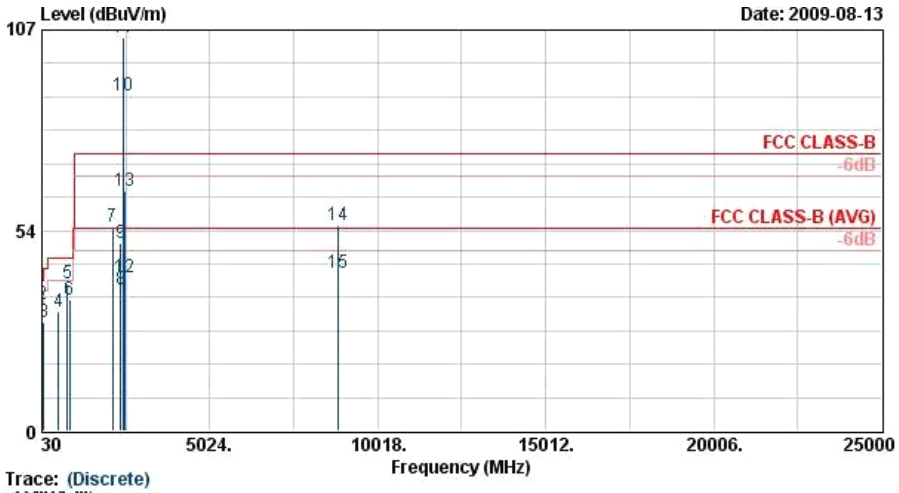
Test Mode :	Mode 6	Temperature :	27~28°C
Test Channel :	11	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 940409-12
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		35.94	29.41	-10.59	40.00	43.80	16.62	0.69	31.70	---	---	Peak
2		42.69	33.83	-6.17	40.00	52.12	12.68	0.72	31.70	100	41	Peak
3		107.49	20.58	-22.92	43.50	39.76	11.30	1.21	31.69	---	---	Peak
4		335.00	31.00	-15.00	46.00	45.28	14.77	2.28	31.33	---	---	Peak
5		797.70	32.27	-13.73	46.00	37.24	21.89	3.84	30.71	---	---	Peak
6		864.90	33.05	-12.95	46.00	36.75	22.97	4.02	30.70	---	---	Peak
7		2348.00	46.59	-27.41	74.00	43.48	31.98	5.50	34.37	100	313	Peak
8		2348.00	33.13	-20.87	54.00	30.02	31.98	5.50	34.37	100	313	Average
9	X	2462.00	87.10			84.02	32.07	5.40	34.39	100	313	Average
10	X	2462.00	102.87			99.79	32.07	5.40	34.39	100	313	Peak
11		2483.66	36.75	-17.25	54.00	33.68	32.09	5.38	34.40	100	313	Average
12		2483.66	58.05	-15.95	74.00	54.98	32.09	5.38	34.40	100	313	Peak
13		8877.00	54.81	-19.19	74.00	43.90	35.99	10.30	35.37	100	76	Peak
14		8877.00	42.43	-11.57	54.00	31.51	35.99	10.30	35.37	100	76	Average

Test Mode :	Mode 6	Temperature :	27~28°C
Test Channel :	11	Relative Humidity :	39~40%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	#10 and #11 are Fundamental Signals which can be ignored.		



Site : 03CH07-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 940409-12
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		30.54	32.57	-7.43	40.00	44.26	19.36	0.65	31.70	---	---	Peak
2		42.69	33.88	-6.12	40.00	52.17	12.68	0.72	31.70	100	242	Peak
3		92.37	29.23	-14.27	43.50	50.35	9.46	1.12	31.70	---	---	Peak
4		531.70	31.89	-14.11	46.00	41.29	18.64	3.03	31.07	---	---	Peak
5		799.10	39.51	-6.49	46.00	44.46	21.90	3.85	30.70	---	---	Peak
6		862.10	35.02	-10.98	46.00	38.74	22.98	4.01	30.70	---	---	Peak
7		2132.00	54.65	-19.35	74.00	51.50	31.81	5.67	34.33	100	0	Peak
8		2380.00	37.94	-16.06	54.00	34.84	32.00	5.47	34.38	160	183	Average
9		2380.00	49.96	-24.04	74.00	46.86	32.00	5.47	34.38	160	183	Peak
10	@	2462.00	89.53			86.45	32.07	5.40	34.39	160	183	Average
11	X	2462.00	104.95			101.88	32.07	5.40	34.39	160	183	Peak
12		2483.50	41.16	-12.84	54.00	38.09	32.09	5.38	34.40	160	183	Average
13		2483.50	64.14	-9.86	74.00	61.07	32.09	5.38	34.40	160	183	Peak
14		8850.00	54.83	-19.17	74.00	43.93	35.98	10.29	35.37	100	184	Peak
15		8850.00	41.97	-12.03	54.00	31.07	35.98	10.29	35.37	100	184	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. 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	Nov. 20, 2008	Nov. 19, 2009	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	1G~18GHz	Aug. 18, 2008	Aug. 17, 2009	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1G~26.5GHz	Dec. 17, 2008	Dec. 16, 2009	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10~1000MHz. 32dB.GAIN	Mar. 27, 2009	Mar. 26, 2010	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00066584	1G~18GHz	Aug. 05, 2009	Aug. 04. 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)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	BBHA9170251	15G~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH07-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 Spec	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 (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-shaped	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 (1 GHz ~ 40 GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	Ci	$Ci*u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	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-shaped	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 EP940409-12 as below.