FCC RF Test Report

APPLICANT	:	**Mobinnova Hong Kong Limited**
EQUIPMENT	:	**Netbook with (1)WWAN card (2) WLAN+BT combo module**
BRAND NAME	:	**Mobinnova**
MODEL NAME	:	**Beam**
FCC ID	:	**XTT-BEAMATT**
STANDARD	:	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	:	**Digital Transmission System (DTS)**

The product was received on Jun. 18, 2009 and completely tested on Jul. 13, 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
FR961822A	Rev. 01	Initial issue of report	Oct. 29, 2009

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 4.3 dB at 3.646 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 5.51 dB at 374.90 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Mobinnova Hong Kong Limited
unit 1501, 15/F On Hong Commercial Building, 145 Hennessy Road, Hong Kong

1.2 Manufacturer

FOXCONN
No. 4, MingSheng St., TuCheng City, Taipei County, Taiwan R.O.C.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Netbook with (1)WWAN card (2) WLAN+BT combo module
Brand Name	Mobinnova
Model Name	Beam
FCC ID	XTT-BEAMATT
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
Maximum Output Power to Antenna	802.11b: 12.49 dBm (17.74 mW) 802.11g : 7.68 dBm (5.86 mW)
Antenna Type	PCB Antenna with gain -2.30 dBi
HW Version	C
SW Version	BSP 9.4.3
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS).

List of Accessory:

Specification of Accessory		
AC Adapter	**Brand Name**	Delta
	Model Name	ADP-36HH AA
	Power Rating	I/P:100-240Vac, 50-60Hz, 1A; O/P: 15Vdc, 2.4A
	AC Power Cord Type	1.8 meter shielded cable with ferrite core
Battery	**Brand Name**	Sanyo
	Model Name	3UR18650-1-T0512
	Power Rating	10.8Vdc, 2250mAh
	Type	Li-ion
WWAN Module	**Brand Name**	Sierra Wireless
	Model Name	MC 8790
WLAN + Bluetooth Module	**Brand Name**	AMPAK
	Model Name	GC 8601
LCD Panel	**Brand Name**	CMO
	Model Name	N089L6-L03

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 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	03CH06-HY	TW1022/4086B-1

1.5 Applied Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ANSI C63.4-2003
- IC RSS-210 Issue 7

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Mobile Phone	Sony Ericsson	C905	PY7A33502021	N/A	N/A
4.	(mic) Earphone	Kolin	Kit-7460E	FCC DoC	Unshielded, 1.6 m	N/A
5.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
6.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

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

802.11b Pre-Scanned RF Power (dBm)					
Channel	Frequency (MHz)	Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	5.67	5.51	5.48	5.75
CH 06	2437 MHz	5.47	5.67	5.51	5.53
CH 11	2462 MHz	6.85	6.88	6.90	**6.93**

802.11g Pre-Scanned RF Power (dBm)									
Channel	Frequency (MHz)	Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	4.84	4.88	4.81	4.82	4.86	4.75	5.00	4.92
CH 06	2437 MHz	4.99	5.04	4.89	4.88	4.95	4.87	4.98	4.94
CH 11	2462 MHz	**6.34**	6.30	6.19	6.20	6.21	6.20	6.30	6.19

Remark:

1. For WLAN RF power, the pre-scanned RF power was measured by power meter.
2. The 802.11b data rates were set in 11 Mbps and 802.11g data rates were set in 6 Mbps for all the test cases, due to the highest RF output power.
3. The EUT is programmed to transmit signals continuously for all testing.

2.2 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

Test Cases		
Test Item	**802.11b**	**802.11g**
Conducted 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
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 :GSM850 Idle + WLAN Link + BT Link + TC Mode 2 :WCDMA Band II Idle + WLAN Link + BT Link + TC	

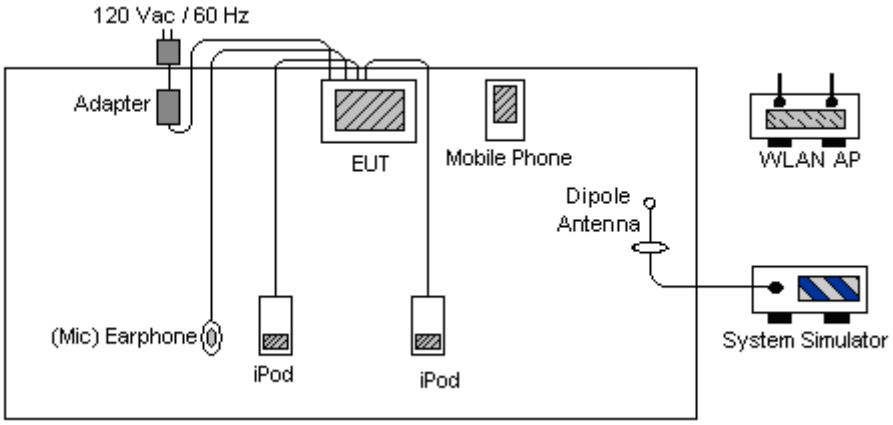
Remark:

1. TC stands for Test Configuration, and consists of iPod, (mic) earphone, and adapter.

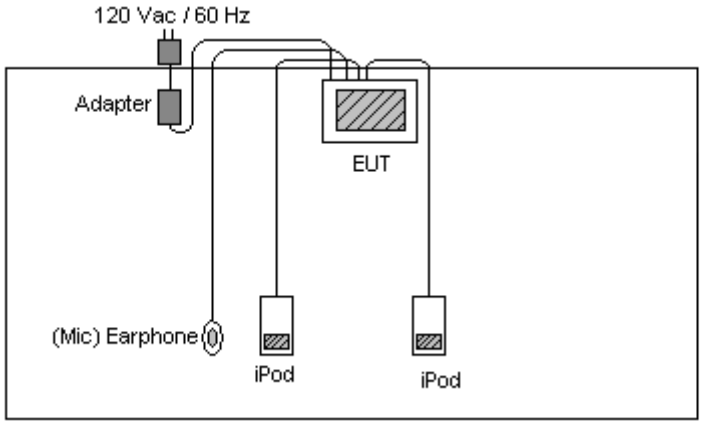
2. For AC conducted emission, the worst case is mode 1; only the test data of this mode was reported.

2.3 Connection Diagram of Test System

<Conducted Emission>



<Radiated Emission>



2.4 RF Utility

The programmed RF utility, “PDA UniTest” 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 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

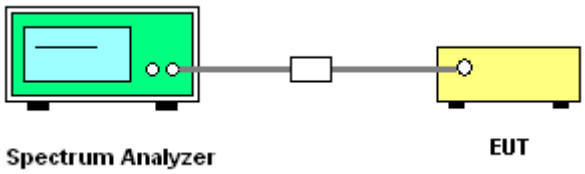
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

3.1.4 Test Setup

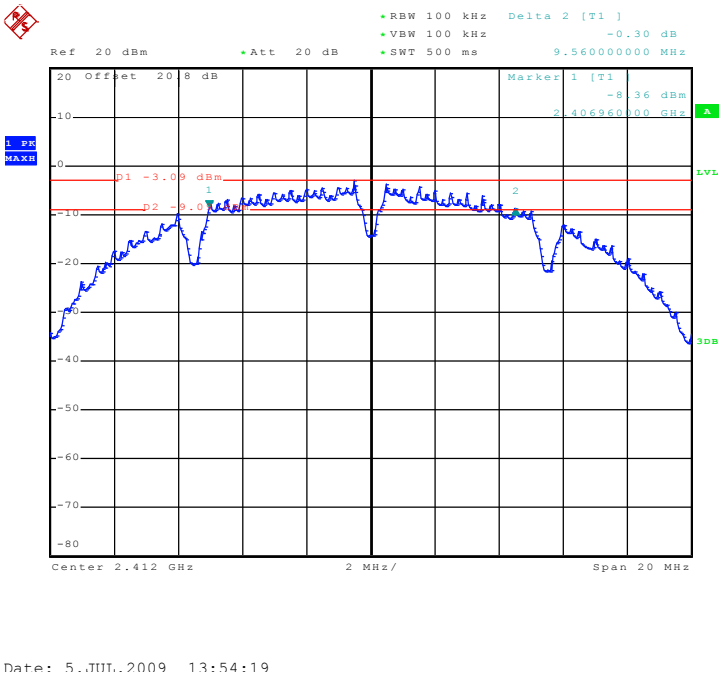


3.1.5 Test Result of 6dB Bandwidth

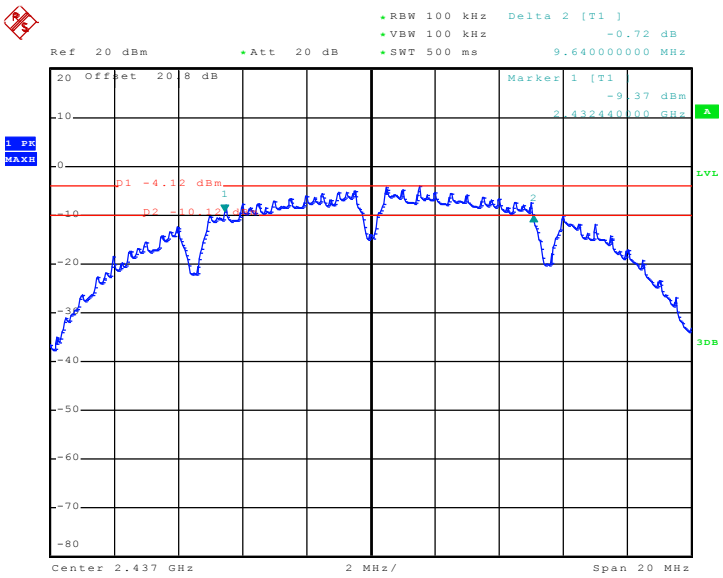
Test Mode :	Mode 1, 2, 3	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.56	0.5	Pass
06	2437	9.64	0.5	Pass
11	2462	10.08	0.5	Pass

Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01

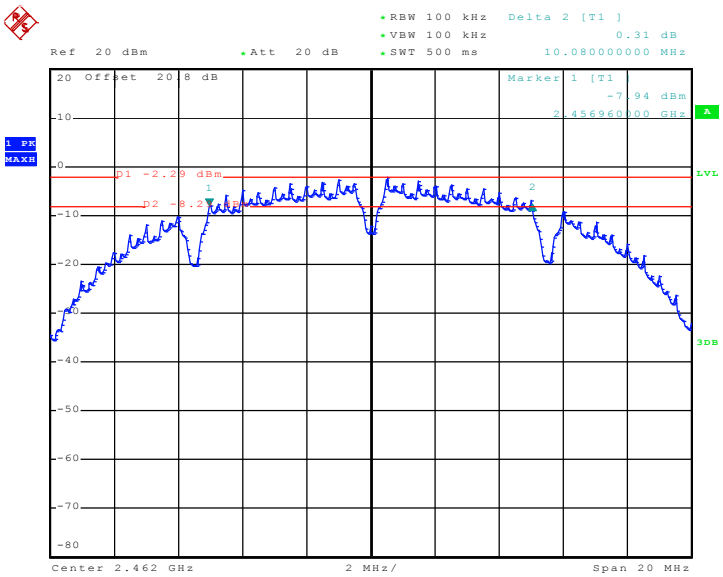


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 5.JUL.2009 13:55:09

Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



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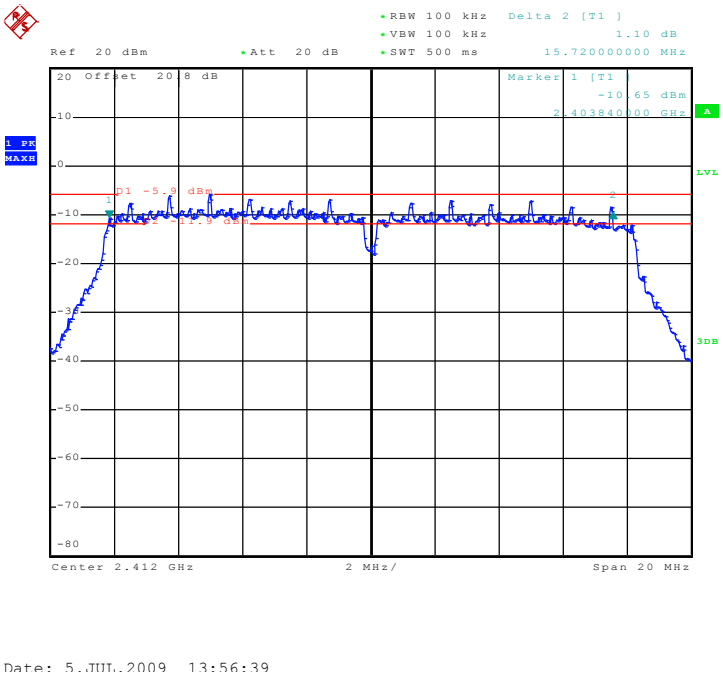
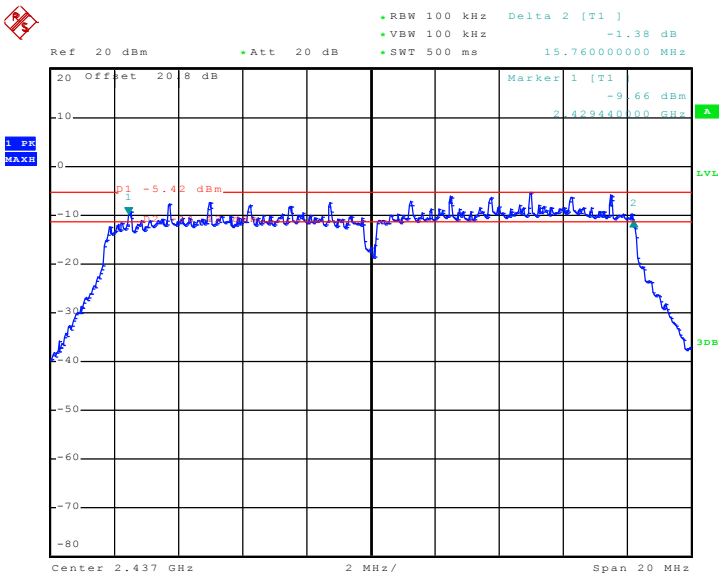
Test Mode :	Mode 4, 5, 6	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.72	0.5	Pass
06	2437	15.76	0.5	Pass
11	2462	16.40	0.5	Pass

Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



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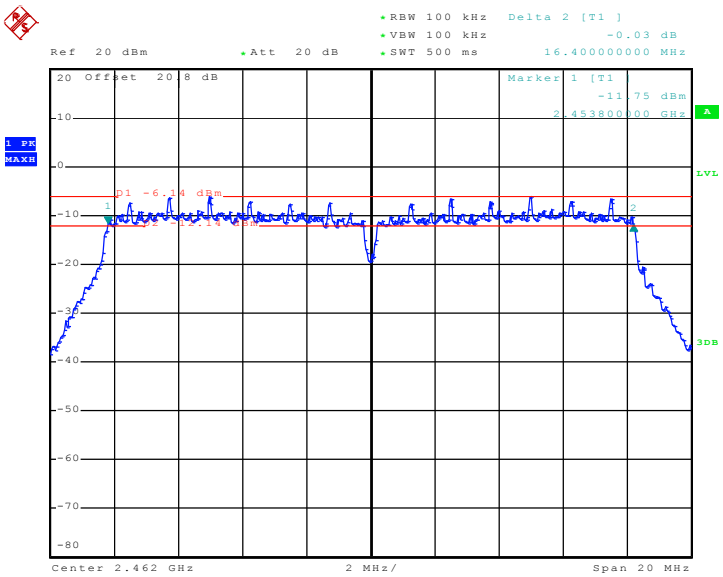
Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11



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3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

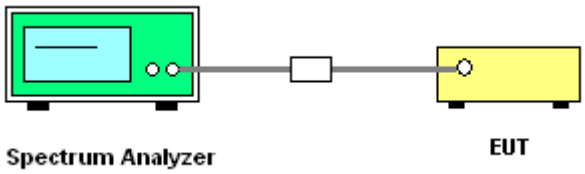
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Measure the power by spectrum analyzer.

3.2.4 Test Setup

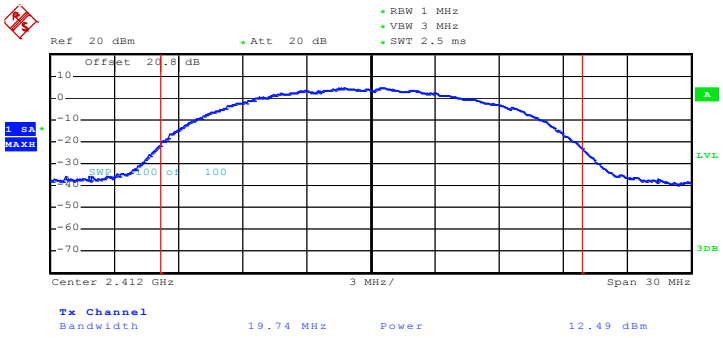


3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	12.49	30	Pass
06	2437	12.17	30	Pass
11	2462	11.94	30	Pass

Mode 1 : Output Power Plot on 802.11b Channel 01



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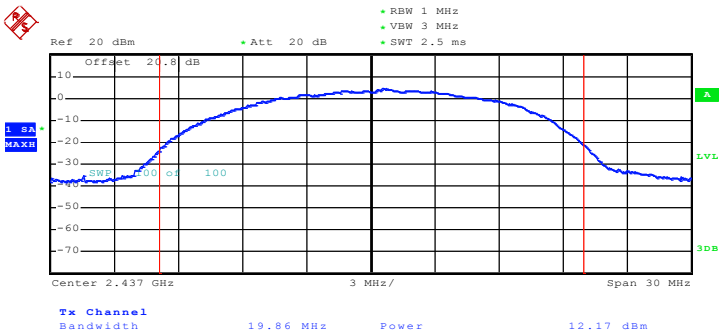
Mode 2 : Output Power Plot on 802.11b Channel 06



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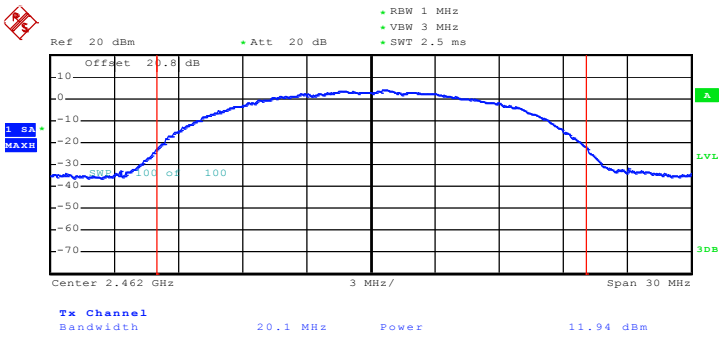
Mode 3 : Output Power Plot on 802.11b Channel 11

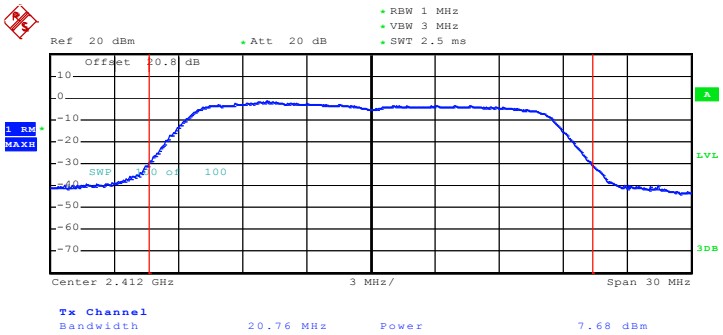


Date: 5.JUL.2009 15:28:33

Test Mode :	Mode 4, 5, 6	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	7.68	30	Pass
06	2437	7.41	30	Pass
11	2462	7.28	30	Pass

Mode 4 : Output Power Plot on 802.11g Channel 01



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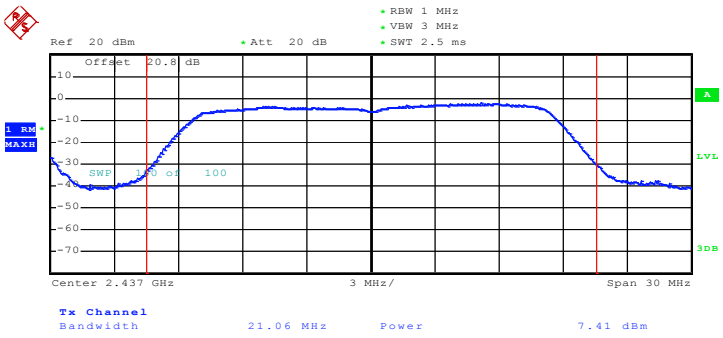
Mode 5 : Output Power Plot on 802.11g Channel 06



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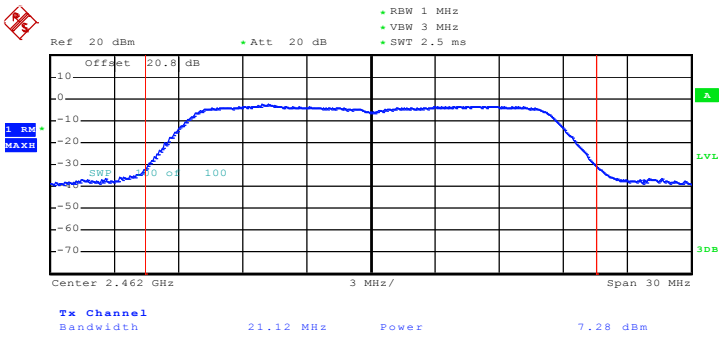
Mode 6 : Output Power Plot on 802.11g Channel 11



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3.3 Band Edges Measurement

3.3.1 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.

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows the guidelines in 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).

3.3.4 Test Setup

3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	26~27°C
Test Band :	802.11b	**Relative Humidity :**	45~46%
Test Channel :	01	**Test Engineer :**	Mac Lin

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**
2383.53	47.52	-26.48	74.00	47.92	31.96	3.92	36.28	100	121	Peak
2383.53	33.83	-20.17	54.00	34.23	31.96	3.92	36.28	100	121	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**
2385.05	47.42	-26.58	74.00	47.82	31.96	3.92	36.28	103	25	Peak
2385.05	34.03	-19.97	54.00	34.43	31.96	3.92	36.28	103	25	Average

Test Mode :	Mode 3	**Temperature :**	26~27°C
Test Band :	802.11b	**Relative Humidity :**	45~46%
Test Channel :	11	**Test Engineer :**	Mac Lin

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**
2487.65	47.46	-26.55	74.00	47.60	32.10	4.05	36.30	100	122	Peak
2487.65	34.68	-19.33	54.00	34.82	32.10	4.05	36.30	100	122	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	**Level (dBuV/m)**	**Over Limit (dB)**	**Limit Line (dBuV/m)**	**Read Level (dBuV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2484.61	46.47	-27.53	74.00	46.64	32.08	4.05	36.30	100	25	Peak
2484.61	32.56	-21.44	54.00	32.73	32.08	4.05	36.30	100	25	Average

Test Mode :	Mode 4	Temperature :	26~27°C
Test Band :	802.11g	Relative Humidity :	45~46%
Test Channel :	01	Test Engineer :	Mac Lin

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
2389.42	52.78	-21.22	74.00	53.16	31.98	3.92	36.28	100	125	Peak
2389.42	39.47	-14.53	54.00	39.85	31.98	3.92	36.28	100	125	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	51.00	-23.00	74.00	51.38	31.98	3.92	36.28	102	24	Peak
2389.42	35.70	-18.30	54.00	36.08	31.98	3.92	36.28	102	24	Average

Test Mode :	Mode 6	Temperature :	26~27°C
Test Band :	802.11g	Relative Humidity :	45~46%
Test Channel :	11	Test Engineer :	Mac Lin

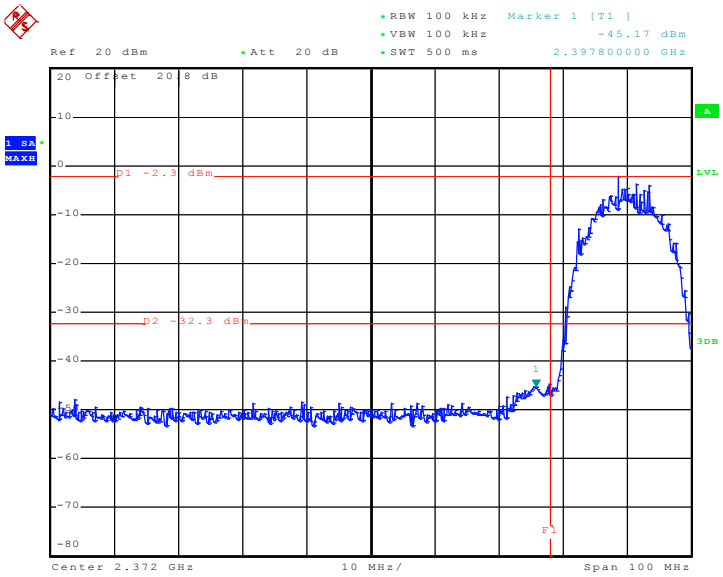
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	52.10	-21.90	74.00	52.27	32.08	4.05	36.30	100	123	Peak
2483.50	37.24	-16.76	54.00	37.41	32.08	4.05	36.30	100	123	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	49.77	-24.23	74.00	49.94	32.08	4.05	36.30	100	25	Peak
2484.42	34.91	-19.09	54.00	35.08	32.08	4.05	36.30	100	25	Average

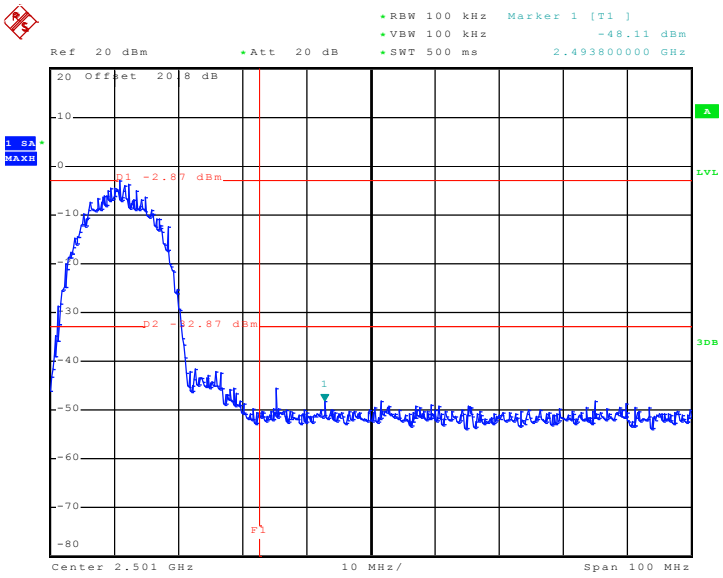
3.3.6 Test Plots of Conducted Band Edges

Test Mode :	Mode 1 and 3	**Temperature :**	25.0℃
Test Band :	802.11b	**Relative Humidity :**	48%
Test Channel :	01 and 11	**Test Engineer :**	Eric Hum

Low Band Edge Plot on 802.11b Channel 01

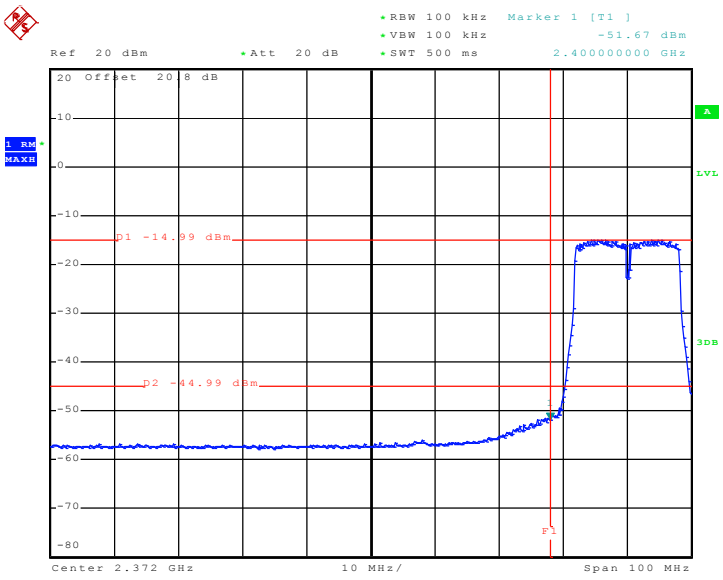


High Band Edge Plot on 802.11b Channel 11



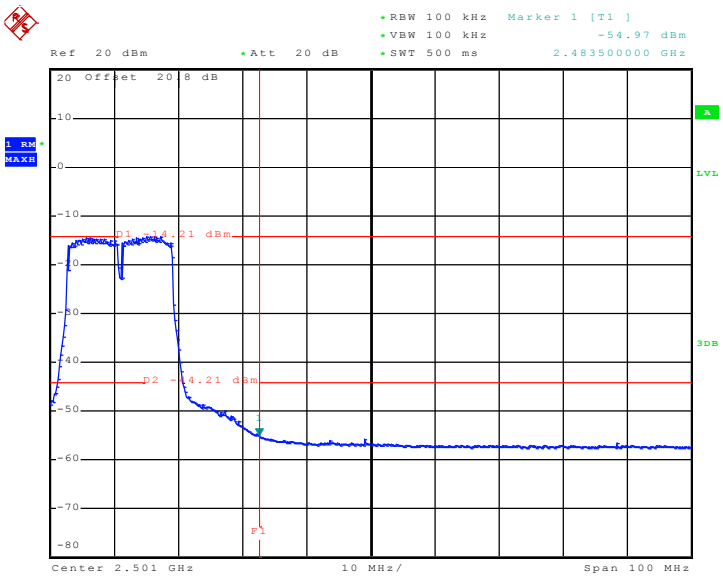
Test Mode :	Mode 4 and 6	Temperature :	25.0℃
Test Band :	802.11g	Relative Humidity :	48%
Test Channel :	01 and 11	Test Engineer :	Eric Hum

Low Band Edge Plot on 802.11g Channel 01



Date: 13.JUL.2009 17:23:06

High Band Edge Plot on 802.11g Channel 11



Date: 13.JUL.2009 17:21:39

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurs must be at least 30 dB down from the highest emission level within the authorized band.

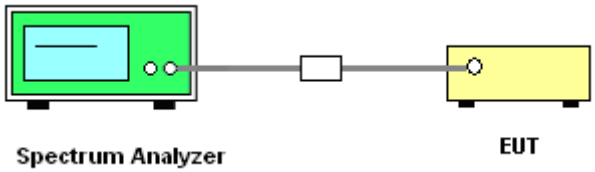
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 30 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

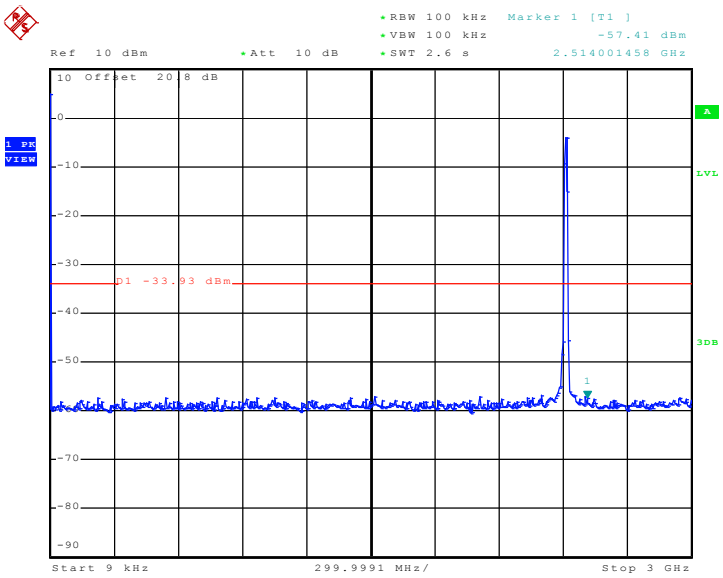
3.4.4 Test Setup



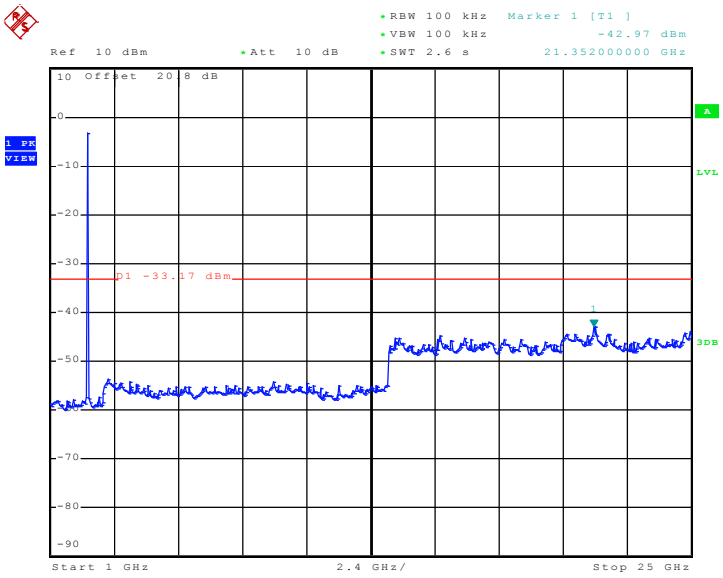
3.4.5 Test Plots of Spurious Emission

Test Mode :	Mode 1	**Temperature :**	25.0℃
Test Channel :	01	**Relative Humidity :**	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

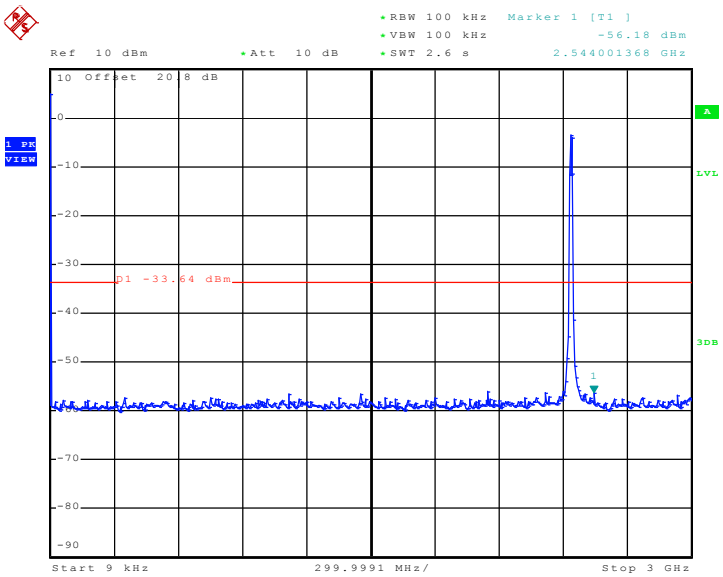


Conducted Spurious Emission Plot between 1GHz ~ 25 GHz

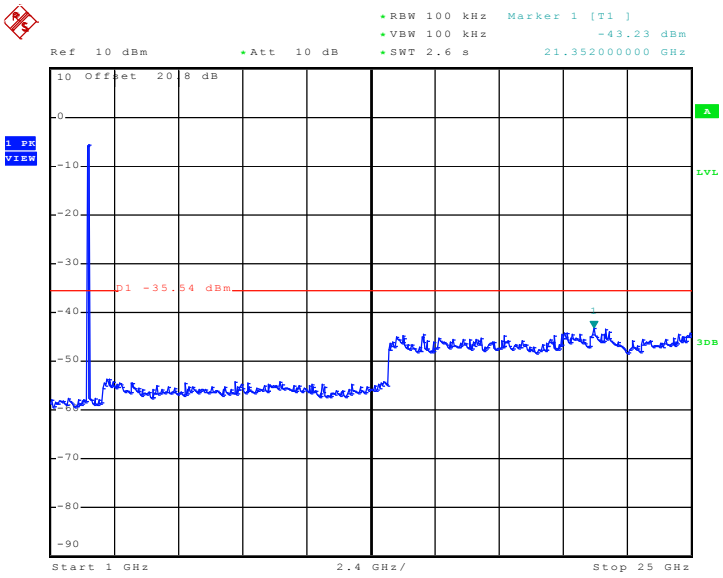


Test Mode :	Mode 2	**Temperature :**	25.0℃
Test Channel :	06	**Relative Humidity :**	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

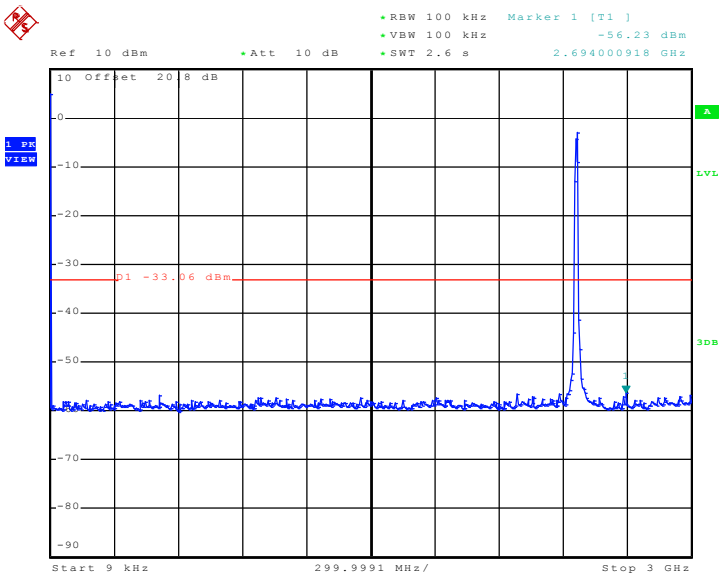


Conducted Spurious Emission Plot between 1GHz ~ 25 GHz

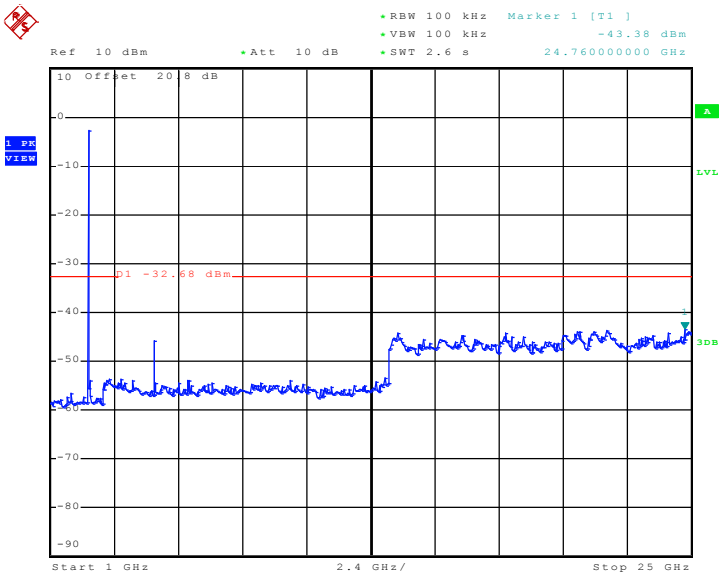


Test Mode :	Mode 3	Temperature :	25.0℃
Test Channel :	11	Relative Humidity :	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

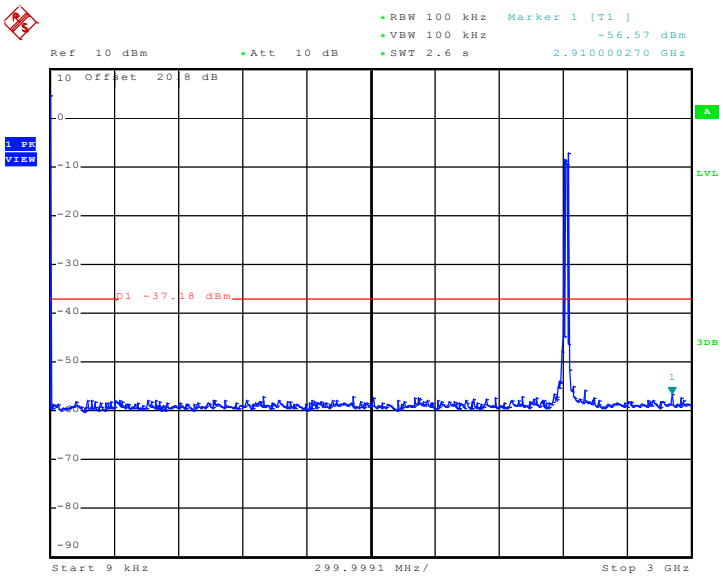


Conducted Spurious Emission Plot between 1GHz ~ 25 GHz

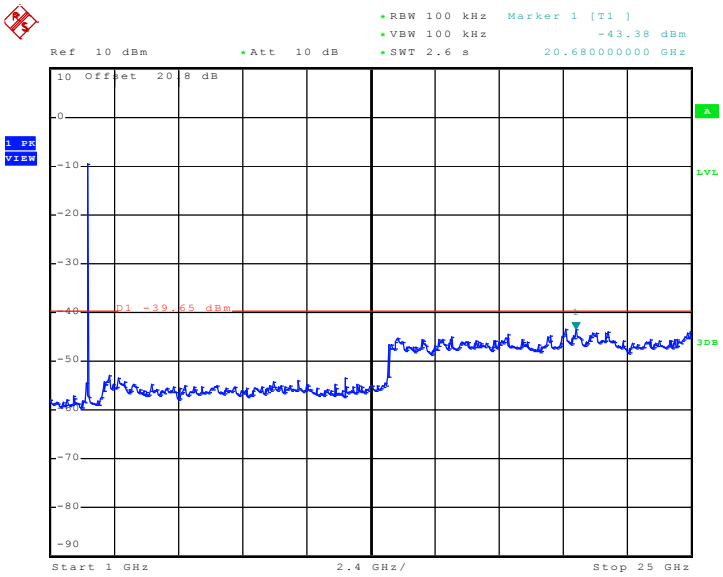


Test Mode :	Mode 4	Temperature :	25.0℃
Test Channel :	01	Relative Humidity :	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

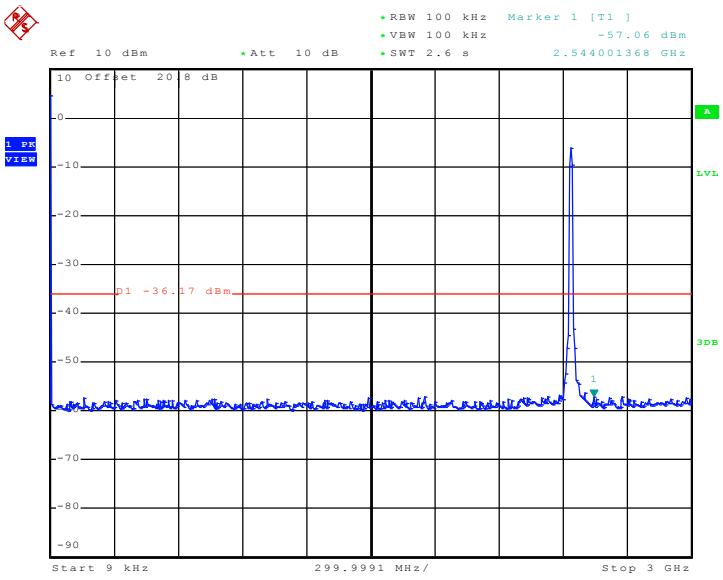


Conducted Spurious Emission Plot between 1GHz ~ 25 GHz

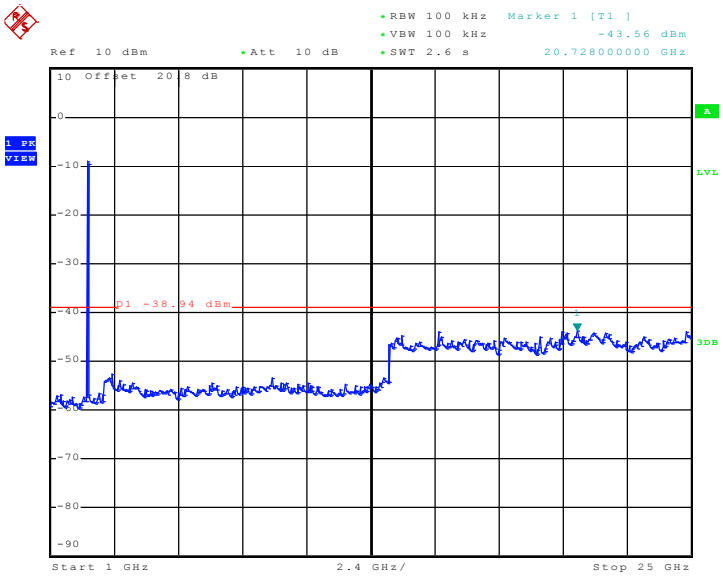


Test Mode :	Mode 5	Temperature :	25.0℃
Test Channel :	06	Relative Humidity :	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

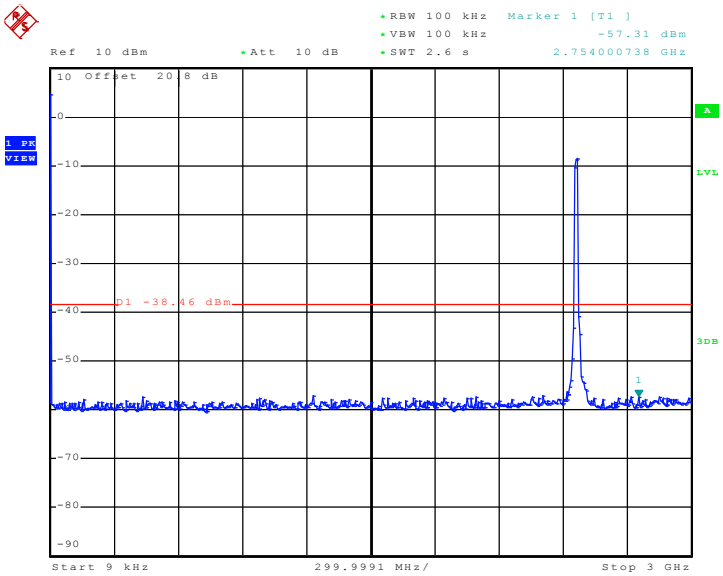


Conducted Spurious Emission Plot between 1GHz ~ 25 GHz

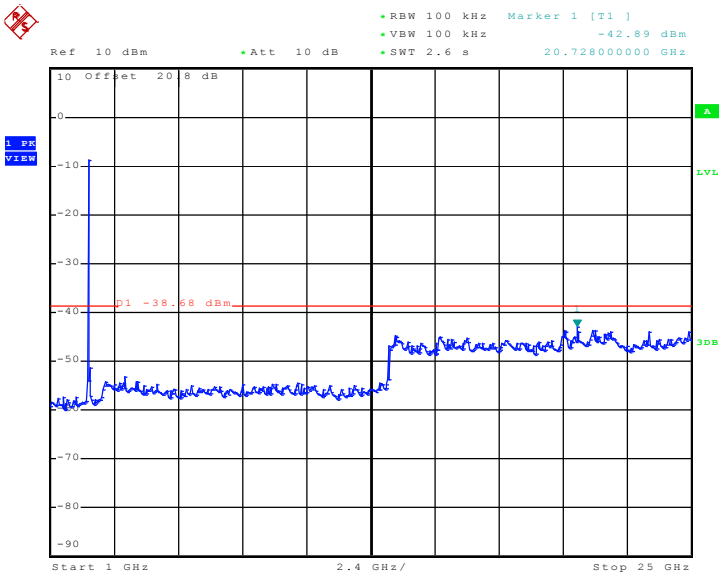


Test Mode :	Mode 6	**Temperature :**	25.0℃
Test Channel :	11	**Relative Humidity :**	48%
		Test Engineer :	Eric Hum

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Conducted Spurious Emission Plot between 1GHz ~ 25 GHz



3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

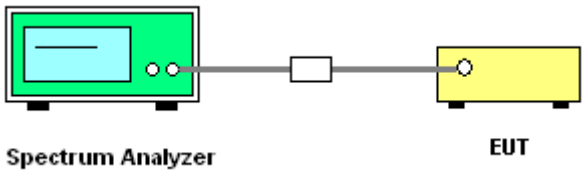
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The test follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Take the measured data from spectrum analyzer.

3.5.4 Test Setup

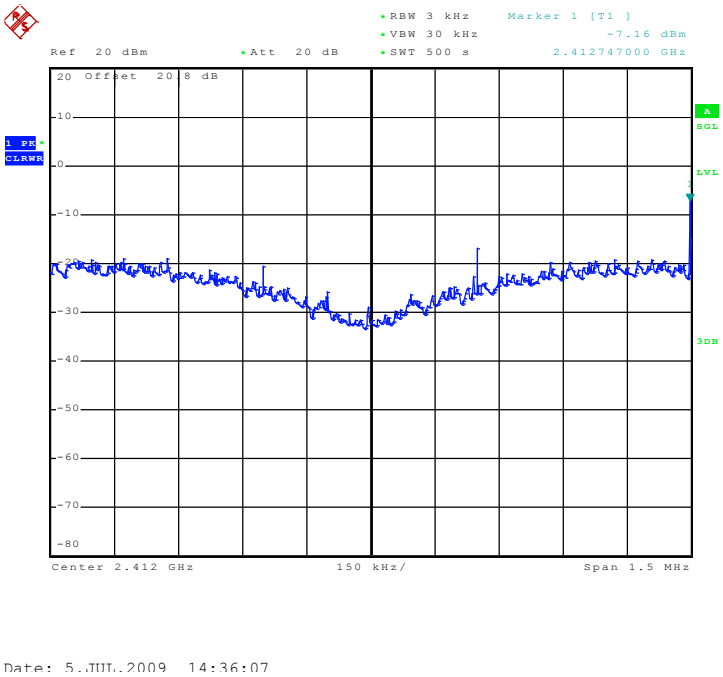


3.5.5 Test Result of Power Spectral Density

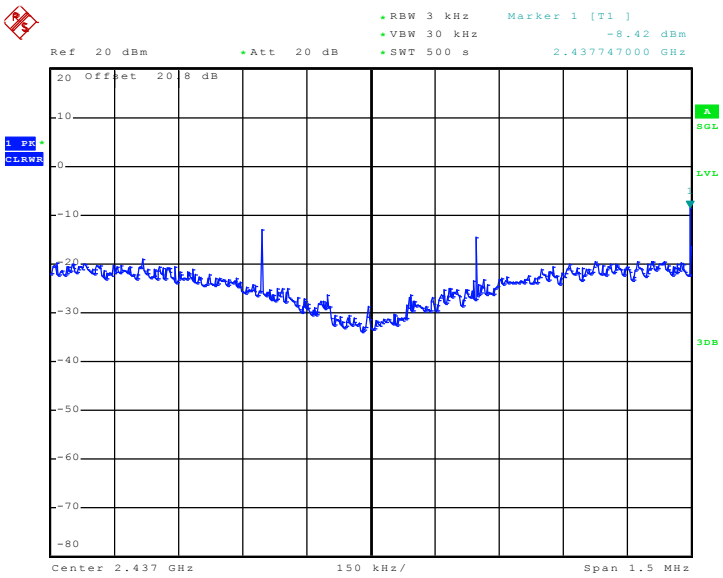
Test Mode :	Mode 1, 2, 3	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-7.16	8	Pass
06	2437	-8.42	8	Pass
11	2462	-5.38	8	Pass

Mode 1 : PSD Plot on 802.11b Channel 01

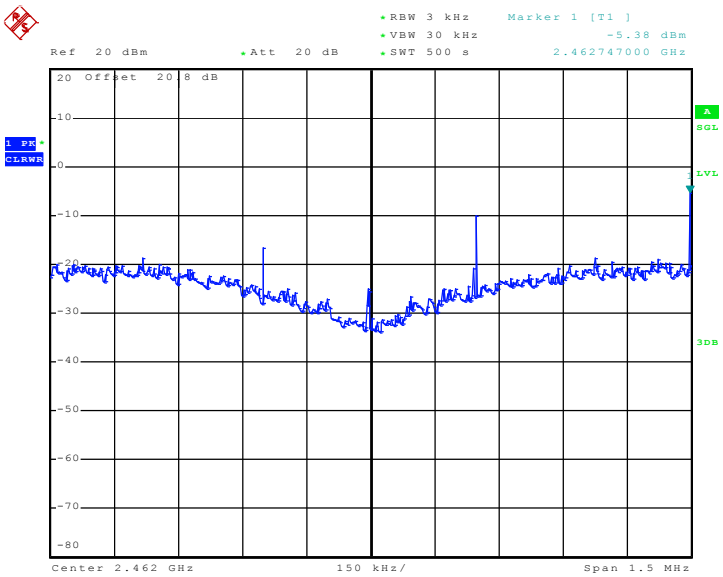


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 5.JUL.2009 14:45:28

Mode 3 : PSD Plot on 802.11b Channel 11

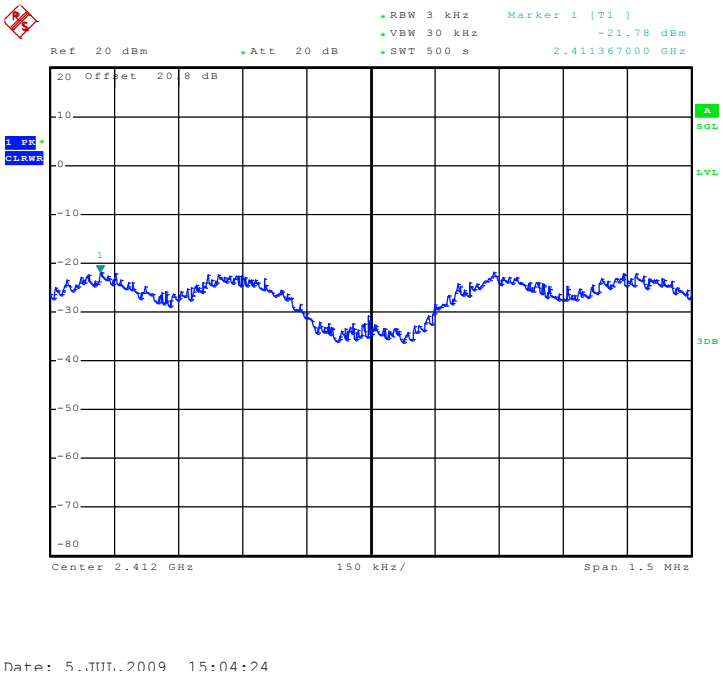


Date: 5.JUL.2009 14:55:34

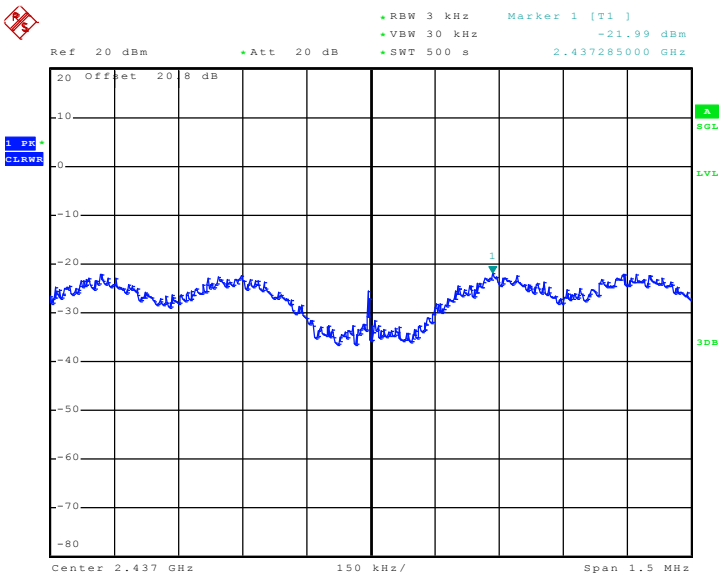
Test Mode :	Mode 4, 5, 6	Temperature :	25.0℃
Test Engineer :	Eric Hum	Relative Humidity :	48%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-21.78	8	Pass
06	2437	-21.99	8	Pass
11	2462	-22.07	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01

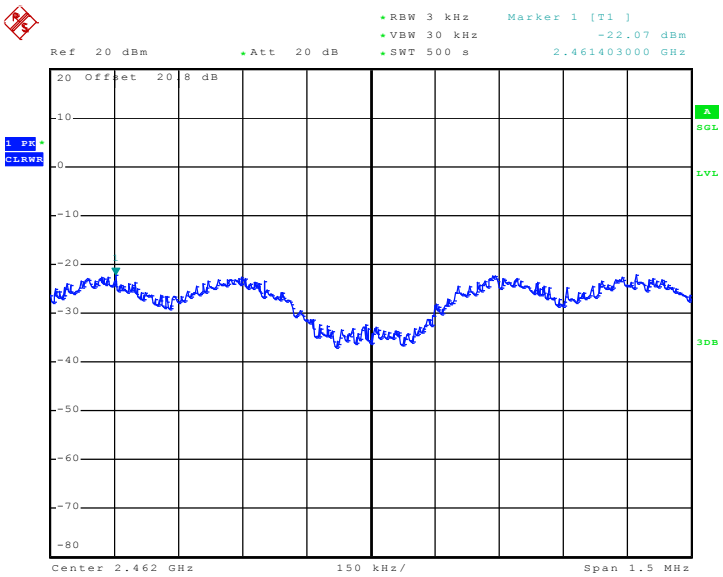


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 5.JUL.2009 15:13:09

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 5.JUL.2009 15:24:40

3.6 AC Conducted Emission Measurement

3.6.1 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.

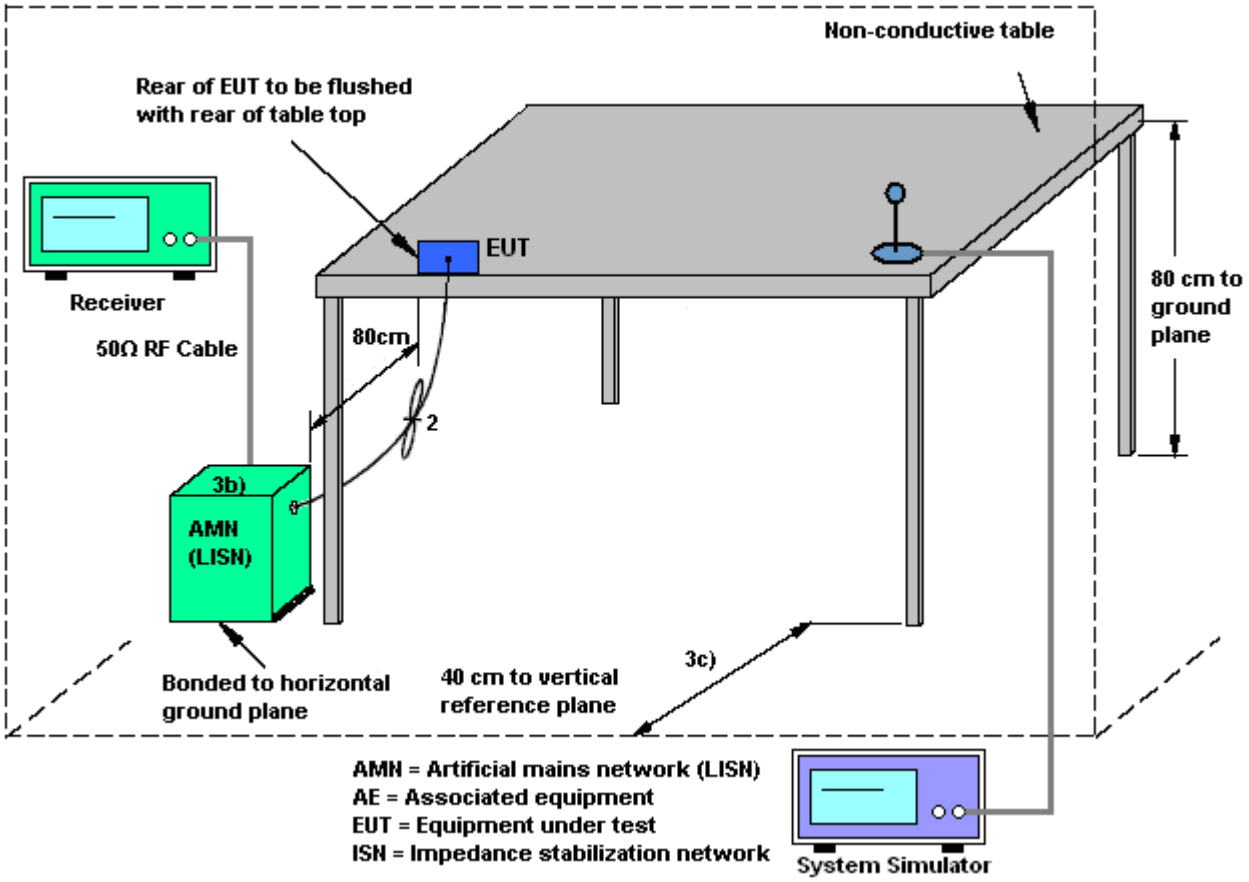
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

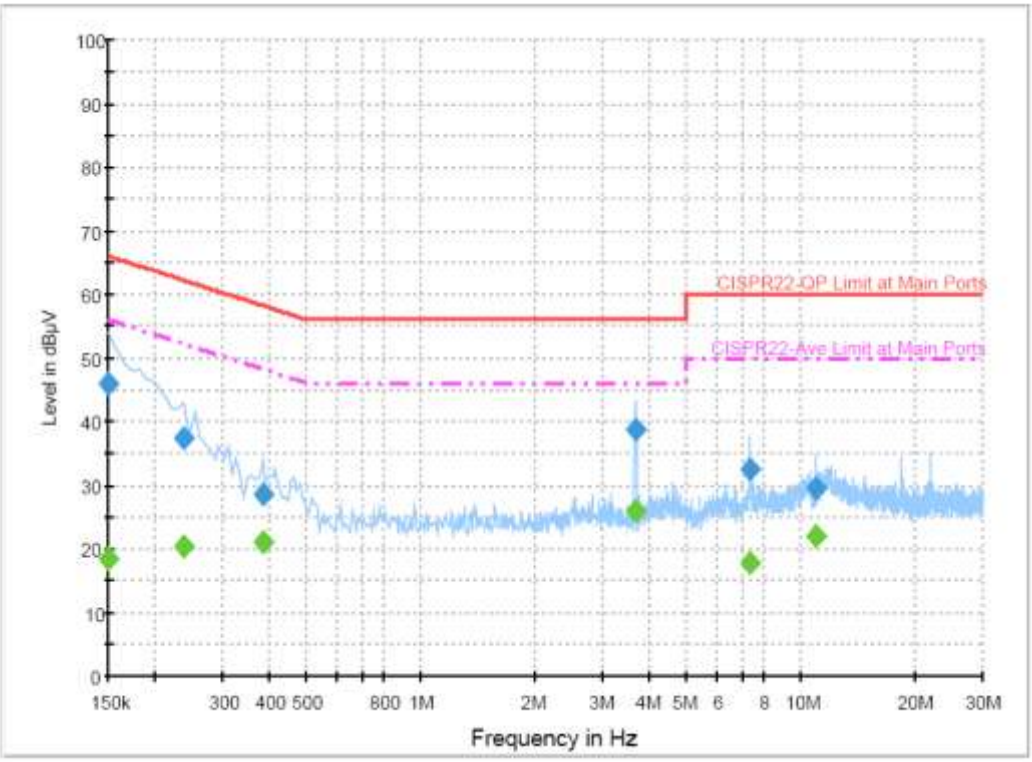
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	23~24℃
Test Engineer :	Cona Huang	**Relative Humidity :**	45~46%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + WLAN Link + BT Link + TC		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



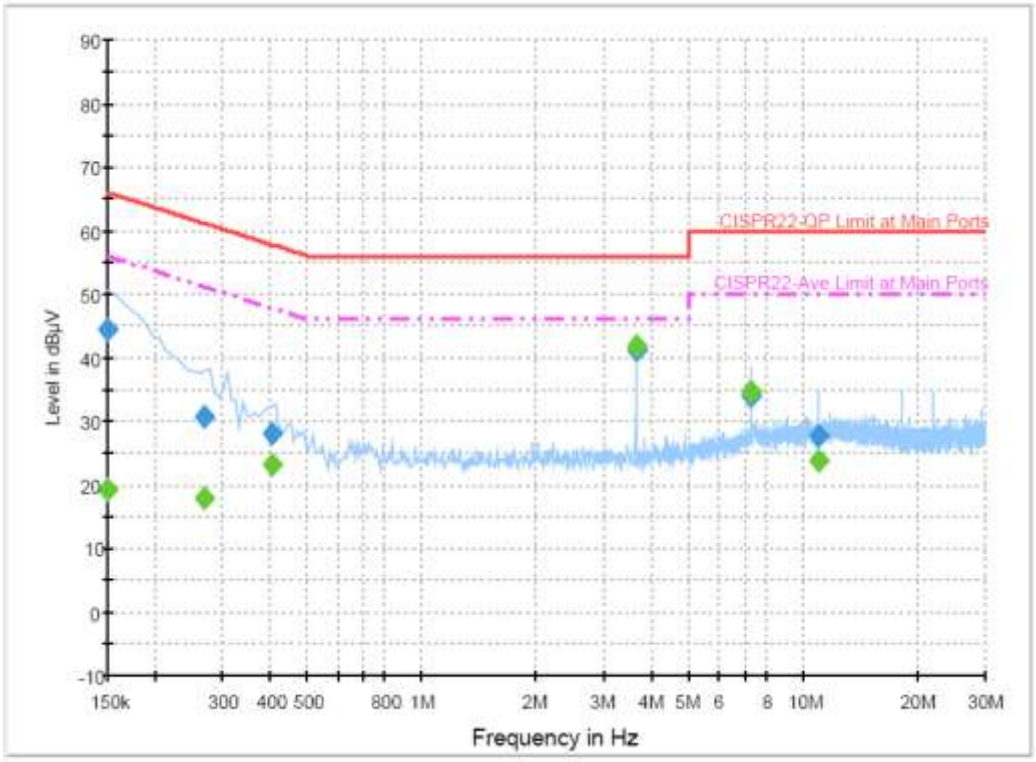
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	46.0	Off	L1	19.5	20.0	66.0
0.238000	37.5	Off	L1	19.5	24.7	62.2
0.382000	28.4	Off	L1	19.4	29.8	58.2
3.670000	38.6	Off	L1	19.5	17.4	56.0
7.326000	32.5	Off	L1	19.6	27.5	60.0
10.958000	29.5	Off	L1	19.6	30.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	18.4	Off	L1	19.5	37.6	56.0
0.238000	20.5	Off	L1	19.5	31.7	52.2
0.382000	21.0	Off	L1	19.4	27.2	48.2
3.670000	25.9	Off	L1	19.5	20.1	46.0
7.326000	17.6	Off	L1	19.6	32.4	50.0
10.958000	22.0	Off	L1	19.6	28.0	50.0

Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Cona Huang	Relative Humidity :	45~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + WLAN Link + BT 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	44.6	Off	N	19.5	21.4	66.0
0.270000	30.8	Off	N	19.4	30.3	61.1
0.406000	28.1	Off	N	19.5	29.6	57.7
3.646000	41.3	Off	N	19.5	14.7	56.0
7.294000	33.8	Off	N	19.6	26.2	60.0
10.942000	27.6	Off	N	19.7	32.4	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	19.2	Off	N	19.5	36.8	56.0
0.270000	17.8	Off	N	19.4	33.3	51.1
0.406000	23.2	Off	N	19.5	24.5	47.7
3.646000	41.7	Off	N	19.5	4.3	46.0
7.294000	34.5	Off	N	19.6	15.5	50.0
10.942000	23.7	Off	N	19.7	26.3	50.0

3.7 Radiated Emission Measurement

3.7.1 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

3.7.2 Measuring Instruments

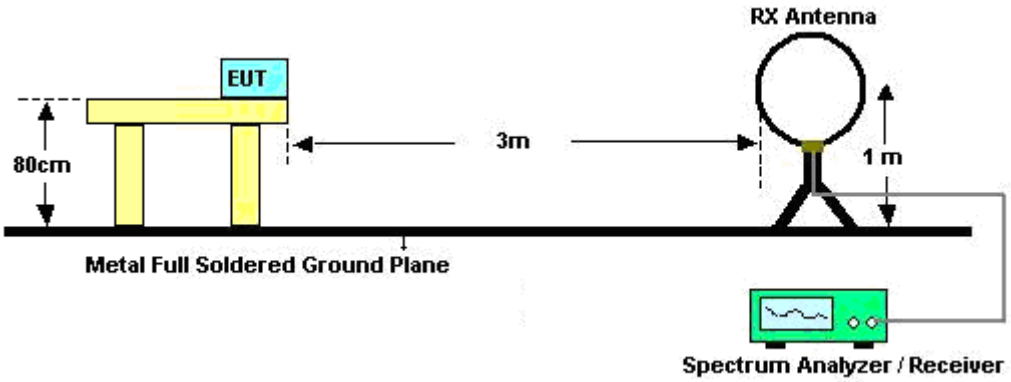
See list of measuring instruments of this test report.

3.7.3 Test Procedures

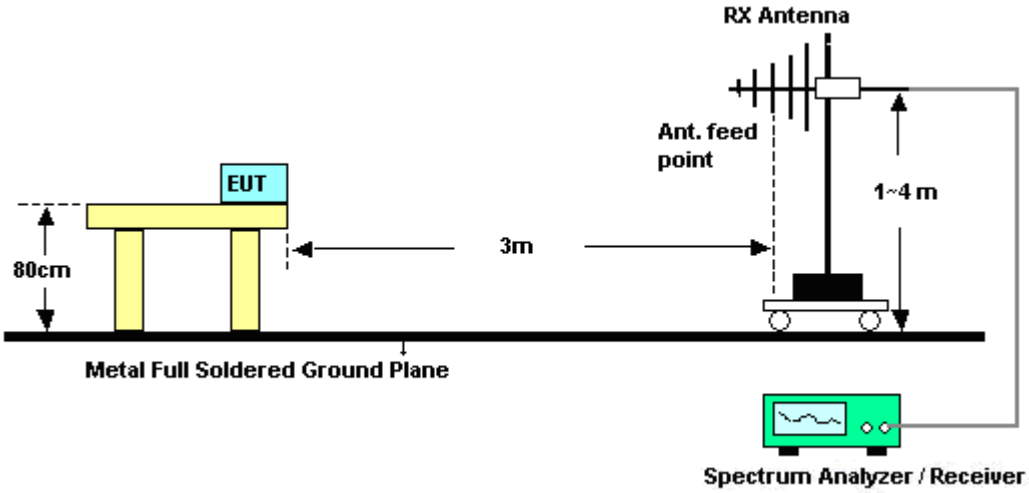
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector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

3.7.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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

Test Engineer :	Mac Lin	Temperature :	26~27°C
		Relative Humidity :	45~46%

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

Note:

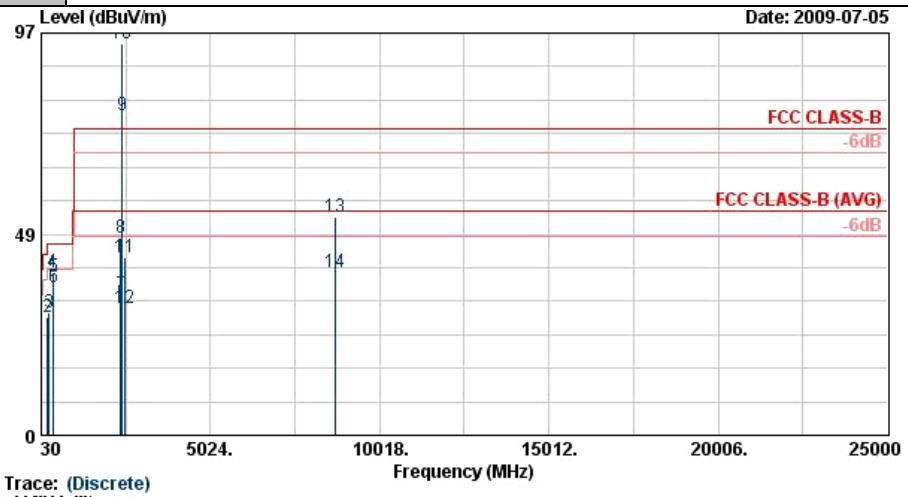
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

3.7.6 Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)

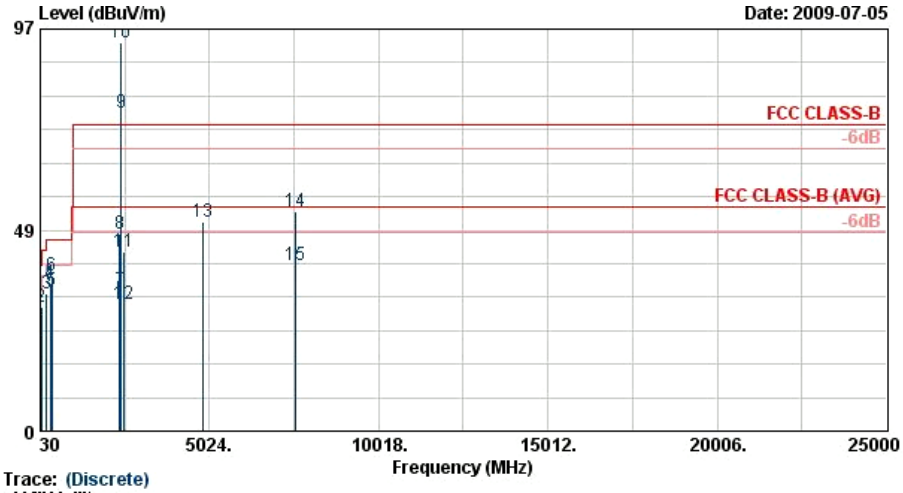
Test Mode :	Mode 1	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822
Memo : Mode 1
Temp, : 26 °C
Humidity : 45 %

	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	45.39	27.56	-12.44	40.00	48.36	10.67	0.30	31.77	---	---	Peak
2	224.94	28.66	-17.34	46.00	49.06	10.85	0.70	31.95	---	---	Peak
3	258.69	29.64	-16.36	46.00	47.10	13.70	0.70	31.85	---	---	Peak
4	374.90	39.26	-6.74	46.00	54.29	15.91	0.85	31.79	100	227	Peak
5	386.80	38.09	-7.91	46.00	52.90	16.19	0.83	31.84	---	---	Peak
6	395.90	35.57	-10.43	46.00	50.18	16.41	0.86	31.87	---	---	Peak
7	2383.53	33.83	-20.17	54.00	34.23	31.96	3.92	36.28	100	121	Average
8	2383.53	47.52	-26.48	74.00	47.92	31.96	3.92	36.28	100	121	Peak
9 @	2412.00	77.34			77.67	32.00	3.95	36.28	100	121	Average
10 X	2412.00	94.32			94.65	32.00	3.95	36.28	100	121	Peak
11	2494.00	42.98	-31.02	74.00	43.13	32.10	4.05	36.30	100	121	Peak
12	2494.00	30.77	-23.23	54.00	30.92	32.10	4.05	36.30	100	121	Average
13	8721.00	52.80	-21.20	74.00	46.20	35.92	7.48	36.79	100	116	Peak
14	8721.00	39.47	-14.53	54.00	32.87	35.92	7.48	36.79	100	116	Average

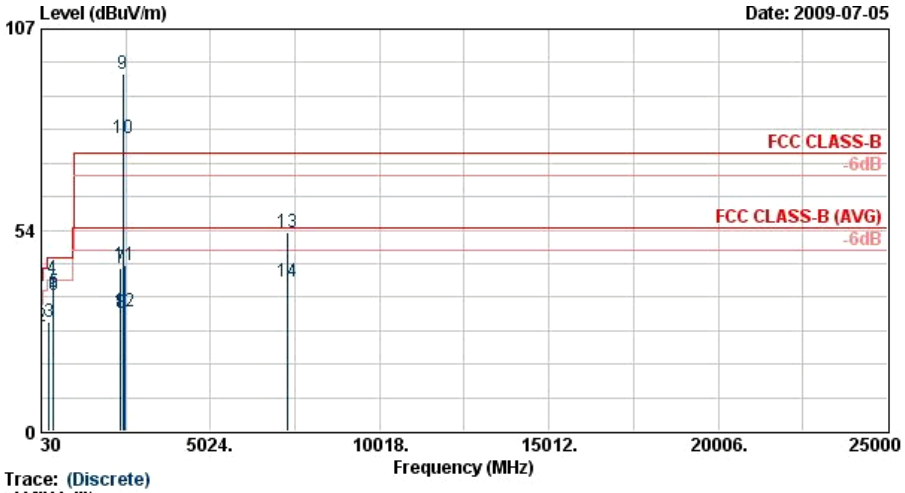
Test Mode :	Mode 1	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 1
Temp. : 26 °C
Humidity : 45 %

	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	45.39	31.50	-8.50	40.00	52.30	10.67	0.30	31.77	100	28	Peak
2	56.19	29.82	-10.18	40.00	53.73	7.62	0.40	31.93	---	---	Peak
3	224.94	33.18	-12.82	46.00	53.58	10.85	0.70	31.95	---	---	Peak
4	322.40	35.68	-10.32	46.00	52.31	14.52	0.80	31.95	---	---	Peak
5	358.80	33.73	-12.27	46.00	49.23	15.51	0.71	31.73	---	---	Peak
6	374.90	37.42	-8.58	46.00	52.45	15.91	0.85	31.79	---	---	Peak
7	2385.05	34.03	-19.97	54.00	34.43	31.96	3.92	36.28	103	25	Average
8	2385.05	47.42	-26.58	74.00	47.82	31.96	3.92	36.28	103	25	Peak
9 @	2412.00	76.83			77.16	32.00	3.95	36.28	103	25	Average
10 X	2412.00	93.84			94.17	32.00	3.95	36.28	103	25	Peak
11	2486.00	43.22	-30.78	74.00	43.38	32.08	4.05	36.30	103	25	Peak
12	2486.00	30.78	-23.22	54.00	30.95	32.08	4.05	36.30	103	25	Average
13	4824.00	50.41	-23.59	74.00	46.35	34.43	5.77	36.14	100	0	Peak
14	7557.00	52.97	-21.03	74.00	46.76	35.53	7.29	36.61	100	148	Peak
15	7557.00	40.02	-13.98	54.00	33.81	35.53	7.29	36.61	100	148	Average

Test Mode :	Mode 2	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822
Memo : Mode 2
Temp. : 26 °C
Humidity : 45 %

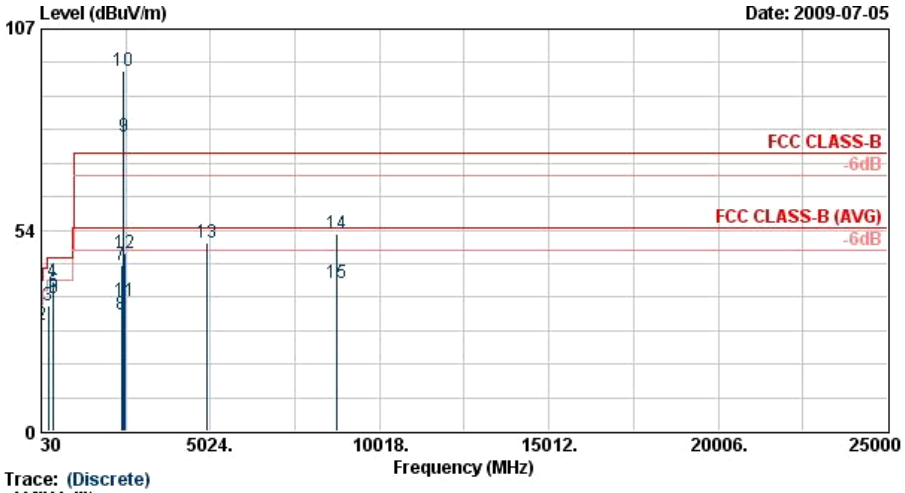
		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		30.54	21.23	-18.77	40.00	33.24	19.30	0.30	31.61	---	---	Peak
2		45.93	27.92	-12.08	40.00	48.72	10.67	0.30	31.77	---	---	Peak
3		258.69	28.92	-17.08	46.00	46.38	13.70	0.70	31.85	---	---	Peak
4	!	374.90	40.49	-5.51	46.00	55.52	15.91	0.85	31.79	100	230	Peak
5		386.80	36.99	-9.01	46.00	51.81	16.19	0.83	31.84	---	---	Peak
6		395.90	36.31	-9.69	46.00	50.92	16.41	0.86	31.87	---	---	Peak
7		2382.00	43.50	-30.50	74.00	43.90	31.96	3.92	36.28	100	123	Peak
8		2382.00	31.51	-22.49	54.00	31.91	31.96	3.92	36.28	100	123	Average
9	X	2437.00	95.12			95.38	32.04	3.99	36.29	100	123	Peak
10	@	2437.00	77.81			78.07	32.04	3.99	36.29	100	123	Average
11		2500.00	44.25	-29.75	74.00	44.40	32.10	4.05	36.30	100	123	Peak
12		2500.00	31.76	-22.24	54.00	31.91	32.10	4.05	36.30	100	123	Average
13		7302.00	52.74	-21.26	74.00	46.48	35.58	7.20	36.52	100	229	Peak
14		7302.00	39.82	-14.18	54.00	33.56	35.58	7.20	36.52	100	229	Average

Test Mode :	Mode 2	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 2
Temp. : 26 °C
Humidity : 45 %

	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	45.93	32.22	-7.78	40.00	53.02	10.67	0.30	31.77	100	30	Peak
2	56.73	28.51	-11.49	40.00	52.68	7.39	0.40	31.96	---	---	Peak
3	270.03	34.15	-11.85	46.00	51.88	13.50	0.70	31.93	---	---	Peak
4	322.40	36.53	-9.47	46.00	53.16	14.52	0.80	31.95	---	---	Peak
5	358.80	34.16	-11.84	46.00	49.66	15.51	0.71	31.73	---	---	Peak
6	374.90	34.77	-11.23	46.00	49.80	15.91	0.85	31.79	---	---	Peak
7	2380.00	43.87	-30.13	74.00	44.27	31.96	3.92	36.28	100	26	Peak
8	2380.00	31.11	-22.89	54.00	31.51	31.96	3.92	36.28	100	26	Average
9 X	2437.00	94.04			94.31	32.04	3.99	36.29	100	26	Peak
10 @	2437.00	77.06			77.32	32.04	3.99	36.29	100	26	Average
11	2484.00	44.85	-29.15	74.00	45.02	32.08	4.05	36.30	100	26	Peak
12	2484.00	31.42	-22.58	54.00	31.59	32.08	4.05	36.30	100	26	Average
13	8937.00	53.15	-20.85	74.00	46.14	36.13	7.74	36.87	100	247	Peak
14	8937.00	40.09	-13.91	54.00	33.09	36.13	7.74	36.87	100	247	Average

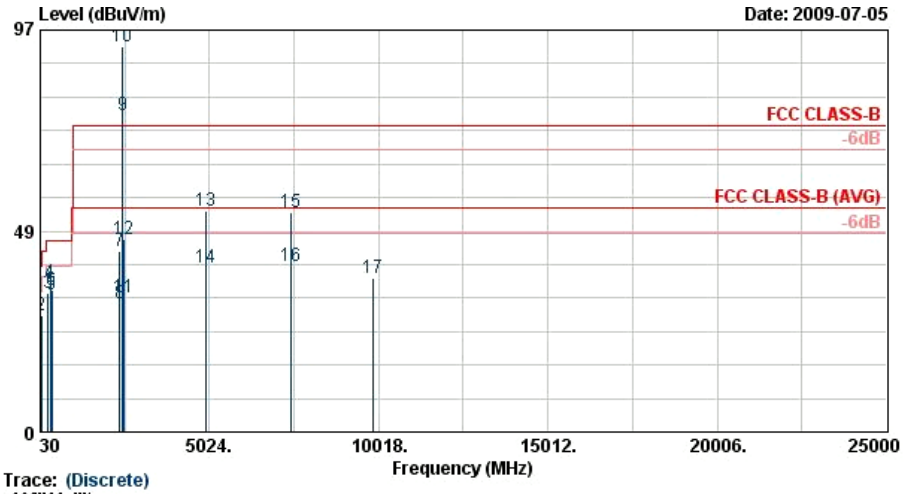
Test Mode :	Mode 3	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822
Memo : Mode 3
Temp. : 26 °C
Humidity : 45 %

	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	39.18	28.37	-11.63	40.00	45.29	14.50	0.30	31.72	---	---	Peak
2	45.93	28.06	-11.94	40.00	48.86	10.67	0.30	31.77	---	---	Peak
3	249.78	33.38	-12.62	46.00	51.67	12.80	0.70	31.79	---	---	Peak
4	374.90	39.68	-6.32	46.00	54.71	15.91	0.85	31.79	100	220	Peak
5	386.80	37.06	-8.94	46.00	51.87	16.19	0.83	31.84	---	---	Peak
6	404.30	35.22	-10.78	46.00	49.66	16.57	0.90	31.90	---	---	Peak
7	2388.00	44.30	-29.70	74.00	44.68	31.98	3.92	36.28	100	122	Peak
8	2388.00	31.02	-22.98	54.00	31.40	31.98	3.92	36.28	100	122	Average
9 @	2462.00	78.46			78.67	32.06	4.02	36.29	100	122	Average
10 X	2462.00	95.84			96.05	32.06	4.02	36.29	100	122	Peak
11	2487.65	34.68	-19.33	54.00	34.82	32.10	4.05	36.30	100	122	Average
12	2487.65	47.46	-26.55	74.00	47.60	32.10	4.05	36.30	100	122	Peak
13	4924.00	50.17	-23.83	74.00	45.98	34.47	5.83	36.12	100	0	Peak
14	8742.00	52.42	-21.58	74.00	45.78	35.93	7.50	36.80	100	159	Peak
15	8742.00	39.50	-14.50	54.00	32.86	35.93	7.50	36.80	100	159	Average

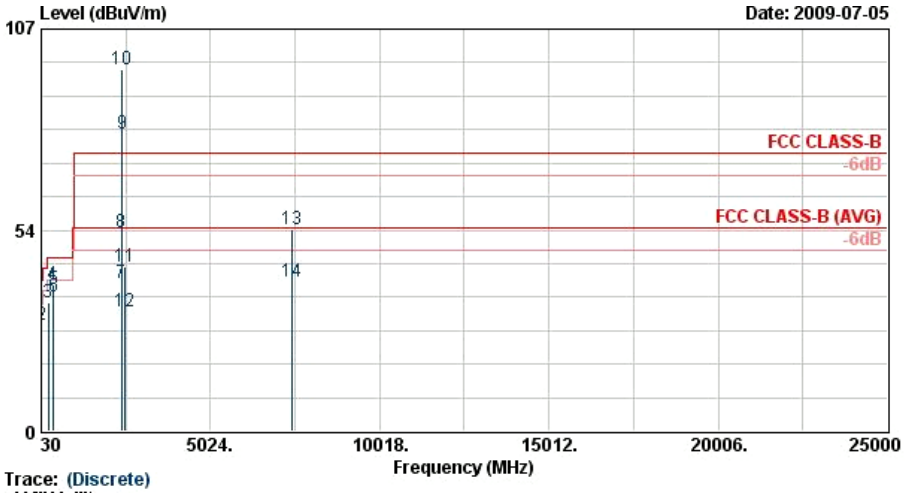
Test Mode :	Mode 3	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 3
Temp. : 26 °C
Humidity : 45 %

	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	45.93	31.55	-8.45	40.00	52.35	10.67	0.30	31.77	100	33	Peak
2	56.73	28.29	-11.71	40.00	52.46	7.39	0.40	31.96	---	---	Peak
3	270.03	33.43	-12.57	46.00	51.16	13.50	0.70	31.93	---	---	Peak
4	322.40	36.20	-9.80	46.00	52.83	14.52	0.80	31.95	---	---	Peak
5	358.80	33.23	-12.77	46.00	48.74	15.51	0.71	31.73	---	---	Peak
6	374.90	34.41	-11.59	46.00	49.44	15.91	0.85	31.79	---	---	Peak
7	2380.00	43.70	-30.30	74.00	44.10	31.96	3.92	36.28	100	25	Peak
8	2380.00	30.90	-23.10	54.00	31.30	31.96	3.92	36.28	100	25	Average
9 @	2462.00	76.31			76.52	32.06	4.02	36.29	100	25	Average
10 X	2462.00	93.01			93.22	32.06	4.02	36.29	100	25	Peak
11	2484.61	32.56	-21.44	54.00	32.73	32.08	4.05	36.30	100	25	Average
12	2484.61	46.47	-27.53	74.00	46.64	32.08	4.05	36.30	100	25	Peak
13	4924.00	53.45	-20.55	74.00	49.25	34.47	5.85	36.12	100	239	Peak
14	4924.00	39.76	-14.24	54.00	35.55	34.47	5.85	36.12	100	239	Average
15	7416.00	53.03	-20.97	74.00	46.83	35.53	7.24	36.57	100	258	Peak
16	7416.00	40.14	-13.86	54.00	33.94	35.53	7.24	36.57	100	258	Average
17	9848.00	37.08	-36.92	74.00	75.94	-9.77	8.04	37.14	100	0	Peak

Test Mode :	Mode 4	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



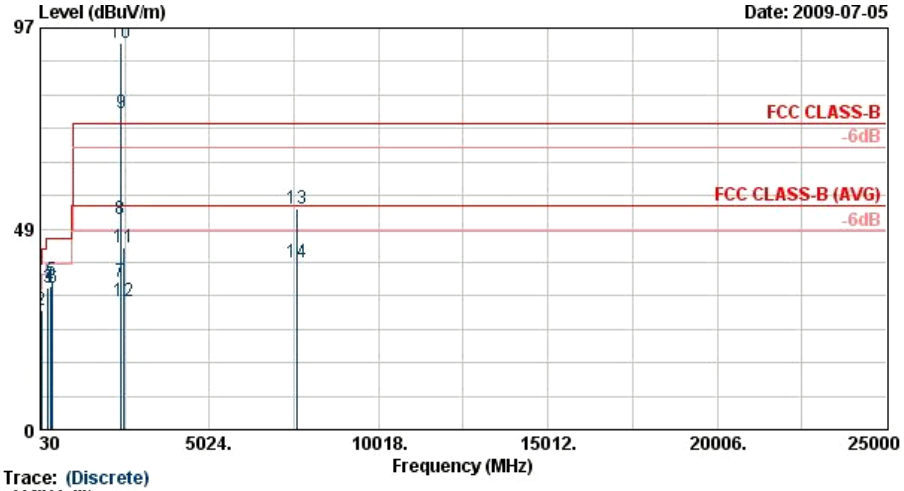
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822

Temp. : 26 °C
Humidity : 45 %

	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	26.93	-13.07	40.00	38.94	19.30	0.30	31.61	---	---	Peak
2	45.93	28.12	-11.88	40.00	48.92	10.67	0.30	31.77	---	---	Peak
3	249.78	34.14	-11.86	46.00	52.43	12.80	0.70	31.79	---	---	Peak
4	374.90	38.87	-7.13	46.00	53.90	15.91	0.85	31.79	100	224	Peak
5	386.80	37.71	-8.29	46.00	52.53	16.19	0.83	31.84	---	---	Peak
6	399.40	35.82	-10.18	46.00	50.31	16.50	0.90	31.89	---	---	Peak
7	2389.42	39.47	-14.53	54.00	39.85	31.98	3.92	36.28	100	125	Average
8	2389.42	52.78	-21.22	74.00	53.16	31.98	3.92	36.28	100	125	Peak
9 @	2412.00	79.00			79.33	32.00	3.95	36.28	100	125	Average
10 X	2412.00	96.18			96.51	32.00	3.95	36.28	100	125	Peak
11	2500.00	43.92	-30.08	74.00	44.07	32.10	4.05	36.30	100	125	Peak
12	2500.00	31.90	-22.10	54.00	32.05	32.10	4.05	36.30	100	125	Average
13	7416.00	53.81	-20.19	74.00	47.61	35.53	7.24	36.57	100	238	Peak
14	7416.00	39.75	-14.25	54.00	33.55	35.53	7.24	36.57	100	238	Average

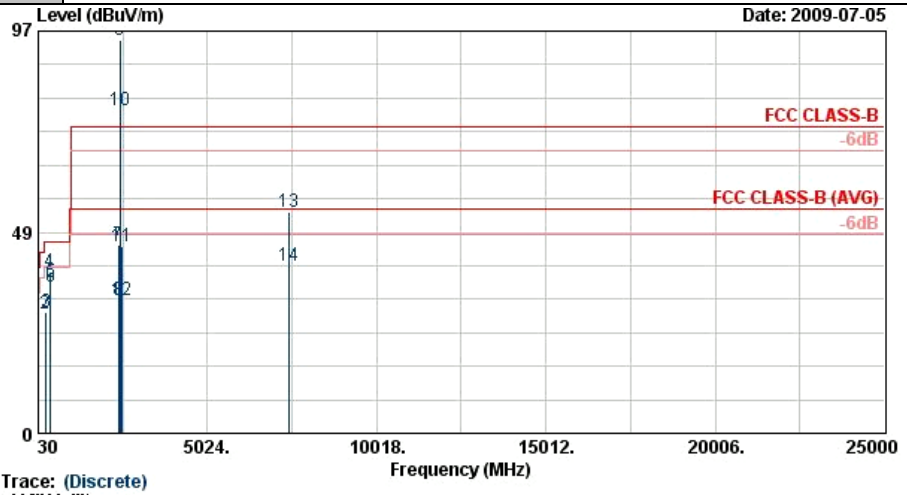
Test Mode :	Mode 4	Temperature :	26~27°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 4
Temp. : 26 °C
Humidity : 45 %

	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	45.93	31.42	-8.58	40.00	52.23	10.67	0.30	31.77	100	33	Peak
2	54.03	28.97	-11.03	40.00	52.43	8.08	0.38	31.92	---	---	Peak
3	270.03	34.24	-11.76	46.00	51.97	13.50	0.70	31.93	---	---	Peak
4	322.40	34.50	-11.50	46.00	51.13	14.52	0.80	31.95	---	---	Peak
5	374.90	36.10	-9.90	46.00	51.13	15.91	0.85	31.79	---	---	Peak
6	395.90	34.10	-11.90	46.00	48.71	16.41	0.86	31.87	---	---	Peak
7	2389.42	35.70	-18.30	54.00	36.08	31.98	3.92	36.28	102	24	Average
8	2389.42	51.00	-23.00	74.00	51.38	31.98	3.92	36.28	102	24	Peak
9 @	2412.00	76.56			76.89	32.00	3.95	36.28	102	24	Average
10 X	2412.00	93.31			93.64	32.00	3.95	36.28	102	24	Peak
11	2494.00	44.04	-29.96	74.00	44.19	32.10	4.05	36.30	102	24	Peak
12	2494.00	30.98	-23.02	54.00	31.13	32.10	4.05	36.30	102	24	Average
13	7617.00	53.50	-20.50	74.00	47.25	35.55	7.33	36.62	100	138	Peak
14	7617.00	40.36	-13.64	54.00	34.10	35.55	7.33	36.62	100	138	Average

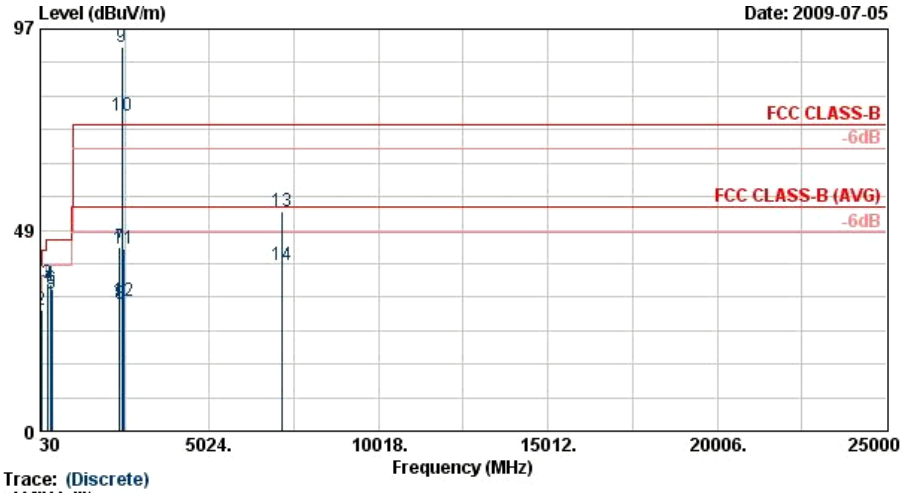
Test Mode :	Mode 5	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822
Memo : Mode 5
Temp. : 26 °C
Humidity : 45 %

	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	45.93	28.00	-12.00	40.00	48.81	10.67	0.30	31.77	---	---	Peak
2	249.78	28.96	-17.04	46.00	47.25	12.80	0.70	31.79	---	---	Peak
3	258.69	29.14	-16.86	46.00	46.59	13.70	0.70	31.85	---	---	Peak
4	374.90	38.87	-7.13	46.00	53.90	15.91	0.85	31.79	100	221	Peak
5	386.80	36.32	-9.68	46.00	51.14	16.19	0.83	31.84	---	---	Peak
6	404.30	35.39	-10.61	46.00	49.82	16.57	0.90	31.90	---	---	Peak
7	2390.00	45.26	-28.74	74.00	45.65	31.98	3.92	36.28	100	122	Peak
8	2390.00	32.16	-21.84	54.00	32.54	31.98	3.92	36.28	100	122	Average
9 X	2437.00	94.81			95.10	32.02	3.99	36.29	100	122	Peak
10 @	2437.00	77.91			78.17	32.04	3.99	36.29	100	122	Average
11	2484.00	44.97	-29.03	74.00	45.14	32.08	4.05	36.30	100	122	Peak
12	2484.00	32.22	-21.78	54.00	32.39	32.08	4.05	36.30	100	122	Average
13	7407.00	53.50	-20.50	74.00	47.29	35.53	7.24	36.56	100	315	Peak
14	7407.00	40.39	-13.61	54.00	34.18	35.53	7.24	36.56	100	315	Average

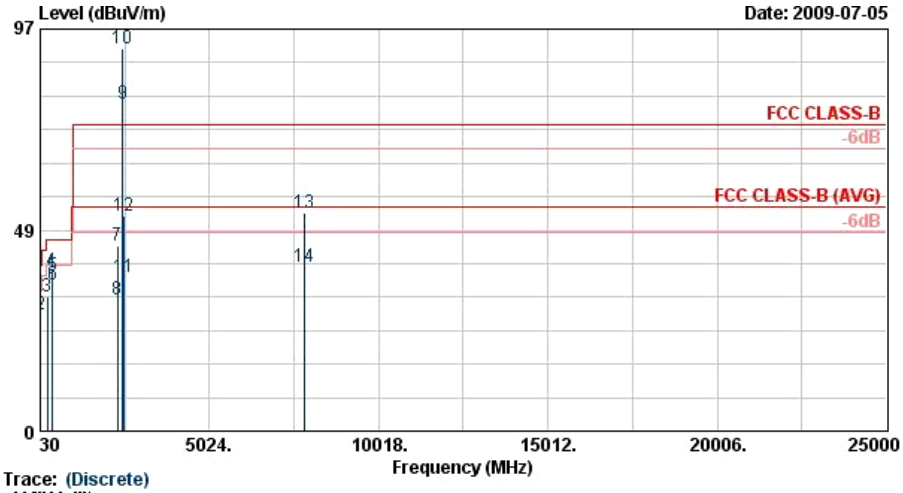
Test Mode :	Mode 5	Temperature :	26~27°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 5
Temp. : 26 °C
Humidity : 45 %

	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	45.93	31.94	-8.06	40.00	52.74	10.67	0.30	31.77	100	31	Peak
2	56.73	29.38	-10.62	40.00	53.55	7.39	0.40	31.96	---	---	Peak
3	249.78	35.71	-10.29	46.00	54.00	12.80	0.70	31.79	---	---	Peak
4	322.40	35.42	-10.58	46.00	52.05	14.52	0.80	31.95	---	---	Peak
5	358.80	33.31	-12.69	46.00	48.82	15.51	0.71	31.73	---	---	Peak
6	374.90	34.20	-11.80	46.00	49.23	15.91	0.85	31.79	---	---	Peak
7	2366.00	44.43	-29.57	74.00	44.88	31.93	3.89	36.28	100	25	Peak
8	2366.00	30.62	-23.38	54.00	31.07	31.93	3.89	36.28	100	25	Average
9 X	2437.00	92.75			93.03	32.02	3.99	36.29	100	25	Peak
10 @	2437.00	76.11			76.37	32.04	3.99	36.29	100	25	Average
11	2484.00	43.90	-30.10	74.00	44.07	32.08	4.05	36.30	100	25	Peak
12	2484.00	31.32	-22.68	54.00	31.49	32.08	4.05	36.30	100	25	Average
13	7167.00	52.99	-21.01	74.00	46.68	35.63	7.15	36.47	100	313	Peak
14	7167.00	40.08	-13.92	54.00	33.77	35.63	7.15	36.47	100	313	Average

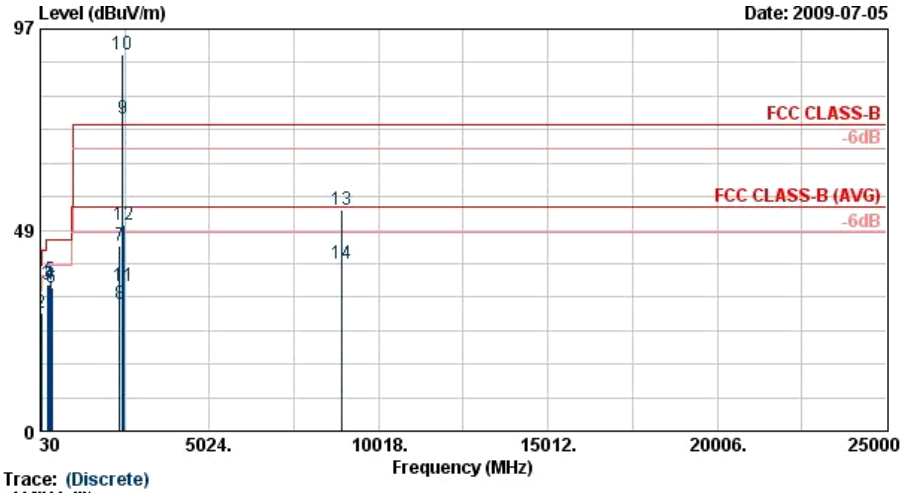
Test Mode :	Mode 6	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 961822
Memo : Mode 6
Temp. : 26 °C
Humidity : 45 %

	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	31.08	25.85	-14.15	40.00	37.87	19.30	0.30	31.61	---	---	Peak
2	45.93	28.12	-11.88	40.00	48.93	10.67	0.30	31.77	---	---	Peak
3	249.78	32.48	-13.52	46.00	50.77	12.80	0.70	31.79	---	---	Peak
4	374.90	38.68	-7.32	46.00	53.71	15.91	0.85	31.79	100	225	Peak
5	386.80	37.58	-8.42	46.00	52.40	16.19	0.83	31.84	---	---	Peak
6	400.80	35.23	-10.77	46.00	49.71	16.51	0.90	31.89	---	---	Peak
7	2318.00	44.75	-29.25	74.00	45.30	31.89	3.82	36.27	100	123	Peak
8	2318.00	31.82	-22.18	54.00	32.37	31.89	3.82	36.27	100	123	Average
9 @	2462.00	79.05			79.26	32.06	4.02	36.29	100	123	Average
10 X	2462.00	92.47			92.69	32.06	4.02	36.30	100	123	Peak
11	2483.50	37.24	-16.76	54.00	37.41	32.08	4.05	36.30	100	123	Average
12	2483.50	52.10	-21.90	74.00	52.27	32.08	4.05	36.30	100	123	Peak
13	7806.00	52.70	-21.30	74.00	46.31	35.62	7.42	36.66	100	237	Peak
14	7806.00	39.80	-14.20	54.00	33.42	35.62	7.42	36.66	100	237	Average

Test Mode :	Mode 6	Temperature :	26~27°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Mac Lin	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 961822
Memo : Mode 6
Temp. : 26 °C
Humidity : 45 %

	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	45.93	30.92	-9.08	40.00	51.72	10.67	0.30	31.77	100	27	Peak
2	56.19	28.48	-11.52	40.00	52.39	7.62	0.40	31.93	---	---	Peak
3	249.78	35.23	-10.77	46.00	53.52	12.80	0.70	31.79	---	---	Peak
4	315.40	35.19	-10.81	46.00	52.07	14.33	0.80	32.01	---	---	Peak
5	322.40	36.27	-9.73	46.00	52.90	14.52	0.80	31.95	---	---	Peak
6	374.90	34.54	-11.46	46.00	49.57	15.91	0.85	31.79	---	---	Peak
7	2366.00	44.81	-29.19	74.00	45.26	31.93	3.89	36.28	100	25	Peak
8	2366.00	30.74	-23.26	54.00	31.19	31.93	3.89	36.28	100	25	Average
9 @	2462.00	75.38			75.59	32.06	4.02	36.29	100	25	Average
10 X	2462.00	90.81			91.02	32.06	4.02	36.29	100	25	Peak
11	2484.42	34.91	-19.09	54.00	35.08	32.08	4.05	36.30	100	25	Average
12	2484.42	49.77	-24.23	74.00	49.94	32.08	4.05	36.30	100	25	Peak
13	8922.00	53.30	-20.70	74.00	46.34	36.12	7.71	36.87	100	111	Peak
14	8922.00	40.41	-13.59	54.00	33.45	36.12	7.71	36.87	100	111	Average

3.8 Antenna Requirements

3.8.1 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.

3.8.2 Antenna Connected Construction

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

3.8.3 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
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 23, 2009	Jun. 22, 2010	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
EMI Receiver	R&S	ESCS 30	100356	9kHz~2.75GHz	Aug. 01, 2008	Jul. 31, 2009	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)
System Simulator	R&S	CMU200	117591	N/A	Oct. 23, 2008	Oct. 22, 2010	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz~26.5GHz	Oct. 24, 2008	Oct. 23, 2009	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP40	100057	9kHz~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz~1000MHz	Apr. 28, 2009	Apr. 27, 2010	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz~2GHz	Nov. 12, 2008	Nov. 11, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1G~18GHz	Aug. 18, 2008	Aug. 17, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AF-0801	95119	8G~18G	Oct. 28, 2008	Oct. 27, 2009	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	BBHA9170251	15G~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G~26.5GHz	Nov. 11, 2008	Nov. 10, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	310N	186713	9kHz~1GHz	Apr. 20, 2009	Apr. 19, 2010	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	May 22, 2008	May 21, 2010	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

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

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver 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 EP961822 as below.