

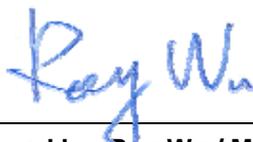
# FCC Test Report

**EQUIPMENT** : Pocket PC Phone  
**MODEL NAME** : CEDA100  
**FCC ID** : NM8CEDA100  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : Digital Transmission System (DTS)  
**APPLICANT** : HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taiwan

The product sample received on Feb. 05, 2009 and completely tested on Feb. 23, 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



**SPORTON INTERNATIONAL INC.**

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



# TABLE OF CONTENTS

**REVISION HISTORY..... 3**

**SUMMARY OF TEST RESULT ..... 4**

**1 GENERAL DESCRIPTION ..... 5**

    1.1 Applicant ..... 5

    1.2 Manufacturer..... 5

    1.3 Feature of Equipment Under Test ..... 5

    1.4 Testing Site..... 6

    1.5 Applied Standards ..... 6

    1.6 Ancillary Equipment List ..... 6

**2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 7**

    2.1 Pre-Scanned RF Power..... 7

    2.2 Test Mode..... 8

    2.3 Connection Diagram of Test System..... 9

    2.4 RF Utility ..... 9

**3 TEST RESULT..... 10**

    3.1 6dB Bandwidth Measurement ..... 10

    3.2 Output Power Measurement..... 15

    3.3 Band Edges Measurement ..... 20

    3.4 Spurious Emission Measurement..... 25

    3.5 Power Spectral Density Measurement ..... 32

    3.6 AC Conducted Emission Measurement..... 37

    3.7 Radiated Emission Measurement..... 41

    3.8 Antenna Requirements ..... 67

**4 LIST OF MEASURING EQUIPMENT ..... 68**

**5 UNCERTAINTY OF EVALUATION ..... 69**

**6 CERTIFICATION OF TAF ACCREDITATION ..... 71**

**APPENDIX A. PHOTOGRAPHS OF EUT**

**APPENDIX B. SETUP PHOTOGRAPHS**





### 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	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$\leq 20\text{dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 15.2 dB at 0.478 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 2.45 dB at 2483.50 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



# 1 General Description

## 1.1 Applicant

HTC Corporation  
No. 23, Xinghua Rd., Taoyuan City, Taiwan

## 1.2 Manufacturer

HTC Corporation  
1F, No. 6-3, Baoqiang Rd., Xindian City, Taipei County, Taiwan

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Pocket PC Phone
Model Name	CEDA100
FCC ID	NM8CEDA100
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 : 17.77 dBm (59.84 mW) 802.11g : 15.62 dBm (36.48 mW)
Antenna Type	Shorting Monopole Antenna with gain 0 dBi
Type of Antenna Connector	N/A
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

## 1.4 Testing Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	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.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DWL-7100AP	KA22003040018-1	N/A	Unshielded, 1.8 m
4.	BT Base Station	Anritsu	8852B	N/A	N/A	Unshielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-100	PYA1YH	N/A	N/A
6.	i-pod Earphone	Apple	N/A	N/A	Unshielded, 1.2 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

2.4GHz 802.11b RF Power (dBm)					
Channel	Frequency (MHz)	Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	<b>16.57</b>	16.34	16.23	16.14
CH 06	2437 MHz	16.17	16.12	16.18	16.24
CH 11	2462 MHz	16.24	16.22	16.43	16.45

#### 802.11g

2.4GHz 802.11g 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	12.58	12.62	11.90	11.99	11.29	11.26	10.75	10.88
CH 06	2437 MHz	12.86	12.82	12.15	12.27	11.35	11.32	10.79	10.75
CH 11	2462 MHz	<b>13.19</b>	13.11	12.39	12.56	12.00	11.84	11.45	11.46

#### 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 1 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 signal continuously for all testing.

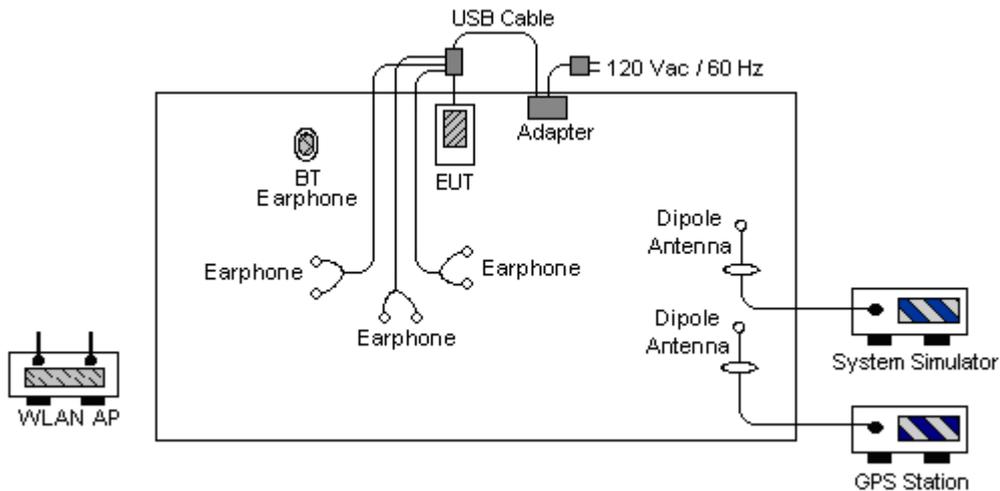
## 2.2 Test Mode

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

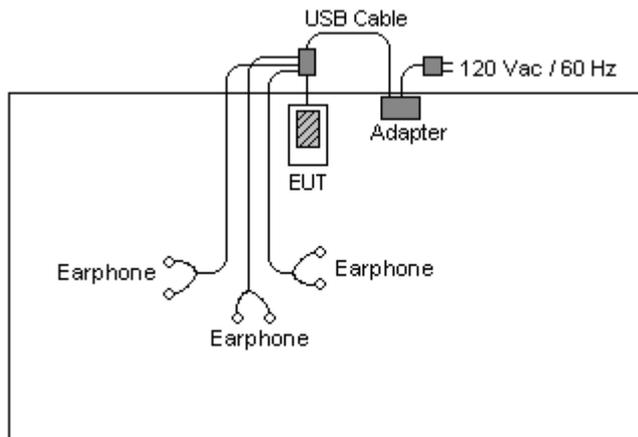
Test Cases		
Test Item	802.11b Modulation : DSSS	802.11g Modulation : OFDM
Conducted TCs	<ul style="list-style-type: none"> <li>■ Mode 1: CH01_2412 MHz</li> <li>■ Mode 2: CH06_2437 MHz</li> <li>■ Mode 3: CH11_2462 MHz</li> </ul>	<ul style="list-style-type: none"> <li>■ Mode 4: CH01_2412 MHz</li> <li>■ Mode 5: CH06_2437 MHz</li> <li>■ Mode 6: CH11_2462 MHz</li> </ul>
Radiated TCs	<ul style="list-style-type: none"> <li>■ Mode 1: CH01_2412 MHz</li> <li>■ Mode 2: CH06_2437 MHz</li> <li>■ Mode 3: CH11_2462 MHz</li> </ul>	<ul style="list-style-type: none"> <li>■ Mode 4: CH01_2412 MHz</li> <li>■ Mode 5: CH06_2437 MHz</li> <li>■ Mode 6: CH11_2462 MHz</li> </ul>
AC Conducted Emission	Mode 1 : GSM850 Idle + WLAN Link + BT Link + GPS Rx + Battery 3 + Multifunction audio cable + USB Cable 2 + Earphone + Adapter	

## 2.3 Connection Diagram of Test System

### <Conducted Emission>



### <Radiated Emission >



## 2.4 RF Utility

The programmed RF Utility "WLAN-EMAPI" 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.

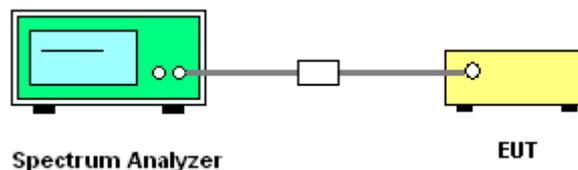
##### 3.1.2 Measuring Instruments

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 :	23~24
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	10.12	0.5	Pass
06	2437	10.12	0.5	Pass
11	2462	10.12	0.5	Pass

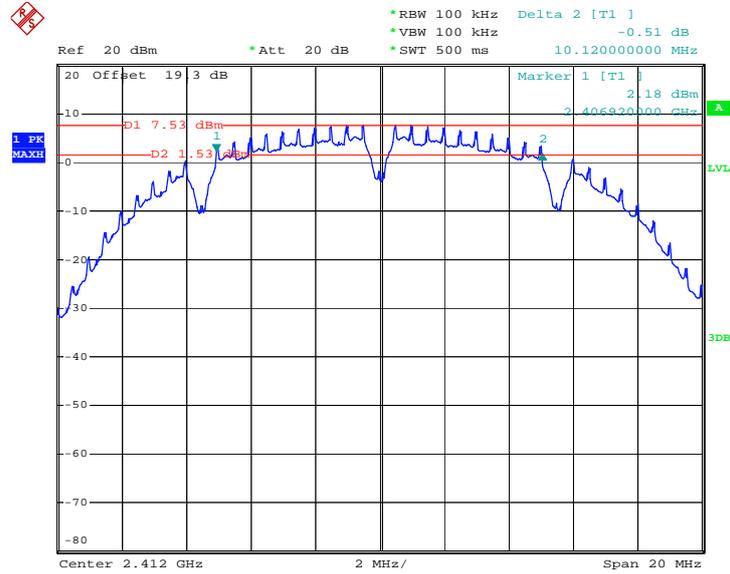
Test Mode :	Mode 4, 5, 6	Temperature :	23~24
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.36	0.5	Pass
06	2437	16.36	0.5	Pass
11	2462	16.36	0.5	Pass



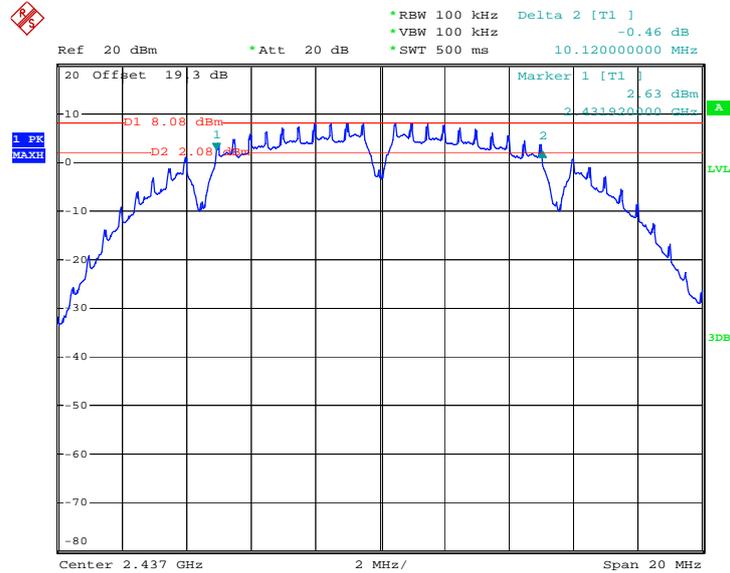
### 3.1.6 Test Result of 6dB Bandwidth Plots

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



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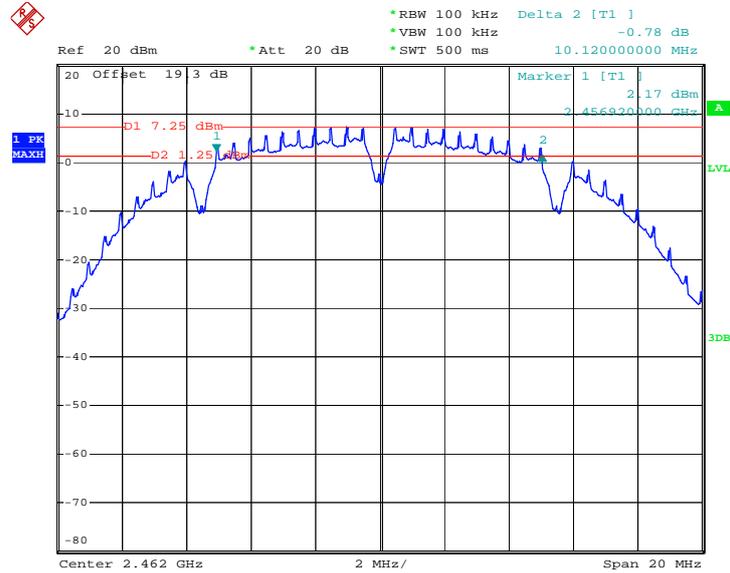
#### Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 23.FEB.2009 03:40:04

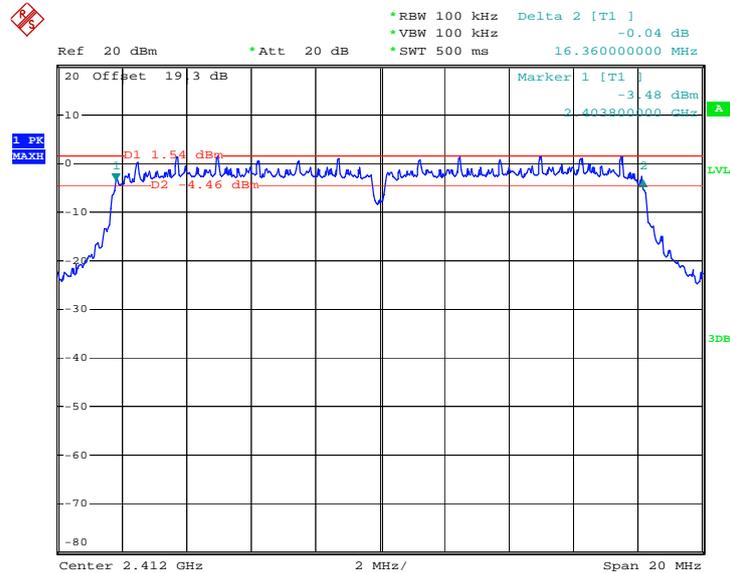


Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



Date: 23.FEB.2009 03:41:35

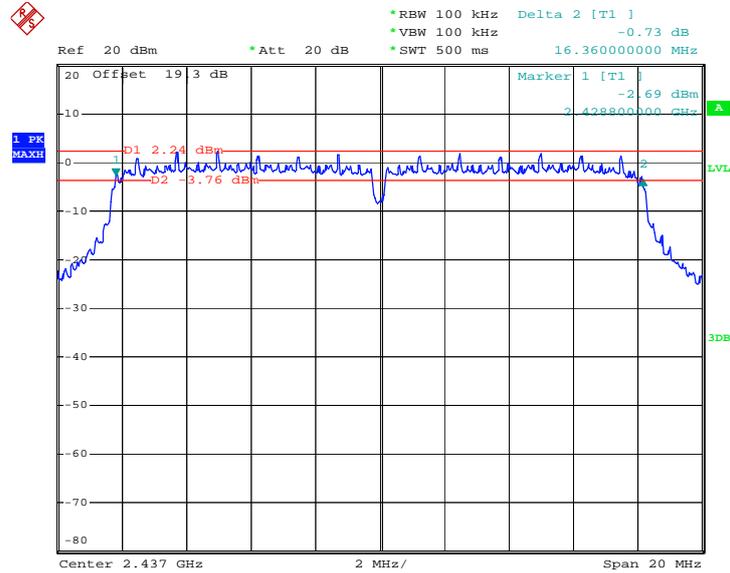
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 23.FEB.2009 03:51:12

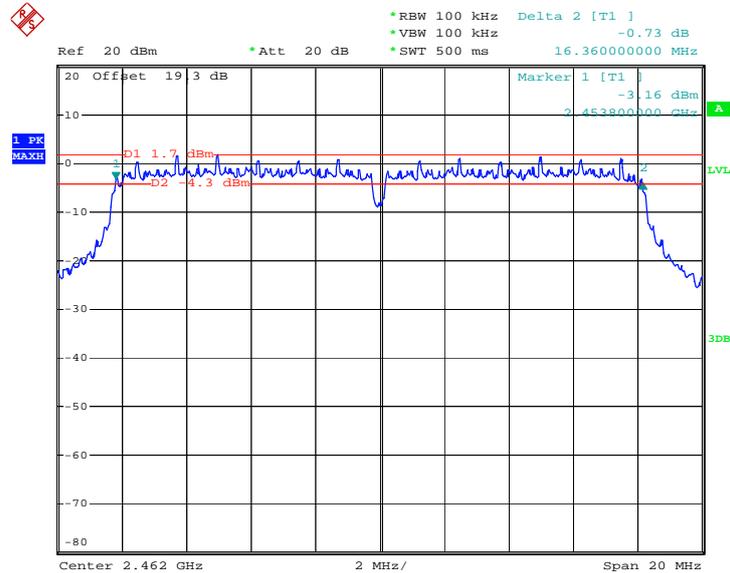


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 23.FEB.2009 03:50:02

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



Date: 23.FEB.2009 03:48:43

## 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.

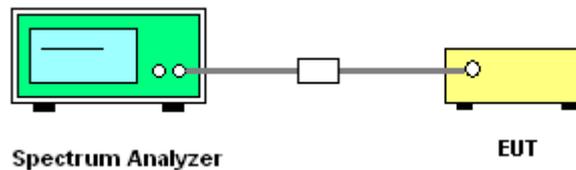
### 3.2.2 Measuring Instruments

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 :	23~24°C
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.16	30	Pass
06	2437	17.77	30	Pass
11	2462	17.04	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.38	30	Pass
06	2437	15.62	30	Pass
11	2462	15.01	30	Pass



### 3.2.6 Test Result of Output Power Plots

#### Mode 1 : Output Power Plot on 802.11b Channel 01



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#### Mode 2 : Output Power Plot on 802.11b Channel 06



Date: 23.FEB.2009 04:04:34

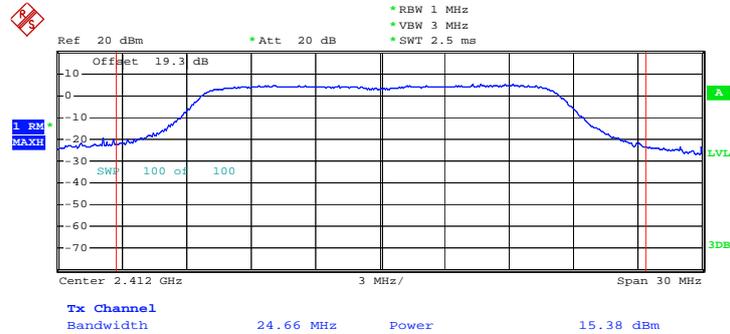


Mode 3 : Output Power Plot on 802.11b Channel 11



Date: 23.FEB.2009 04:04:59

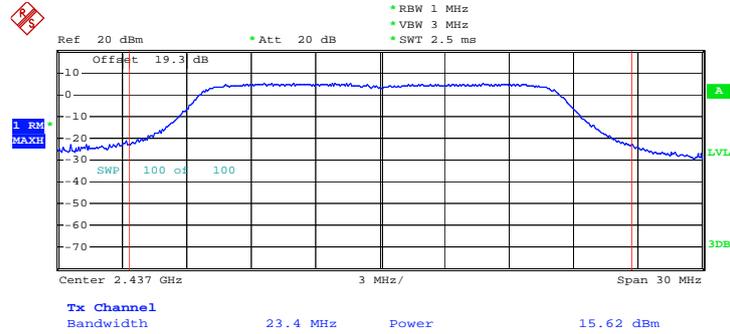
Mode 4 : Output Power Plot on 802.11g Channel 01



Date: 23.FEB.2009 04:06:19

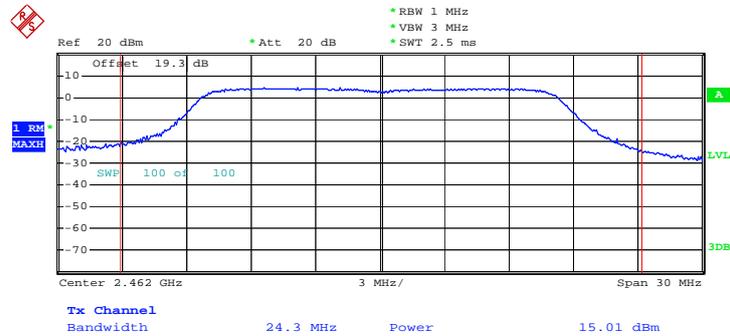


Mode 5 : Output Power Plot on 802.11g Channel 06



Date: 23.FEB.2009 04:07:00

Mode 6 : Output Power Plot on 802.11g Channel 11



Date: 23.FEB.2009 04:08:35

### 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.

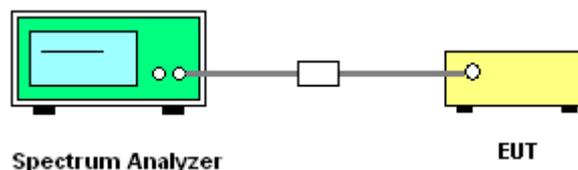
#### 3.3.2 Measuring Instruments

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 :	21~23°C
Test Band :	802.11b	Relative Humidity :	49~52%
Test Channel :	01	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2385.81	52.85	-21.15	74.00	53.23	31.98	3.92	36.28	107	333	Peak
2385.81	42.17	-11.83	54.00	42.55	31.98	3.92	36.28	107	333	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.61	53.96	-20.04	74.00	54.34	31.98	3.92	36.28	100	51	Peak
2389.61	42.63	-11.37	54.00	43.01	31.98	3.92	36.28	100	51	Average

Test Mode :	Mode 3	Temperature :	21~23°C
Test Band :	802.11b	Relative Humidity :	49~52%
Test Channel :	11	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	53.35	-20.65	74.00	53.52	32.08	4.05	36.30	104	329	Peak
2483.50	42.03	-11.97	54.00	42.20	32.08	4.05	36.30	104	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
2484.61	52.86	-21.14	74.00	53.03	32.08	4.05	36.30	100	56	Peak
2484.61	39.90	-14.10	54.00	40.07	32.08	4.05	36.30	100	56	Average



Test Mode :	Mode 4	Temperature :	21~23°C
Test Band :	802.11g	Relative Humidity :	49~52%
Test Channel :	01	Test Engineer :	Kai Wang

802.11g Channel 01										
ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.99	67.54	-6.46	74.00	67.92	31.98	3.92	36.28	105	332	Peak
2389.99	45.02	-8.98	54.00	45.40	31.98	3.92	36.28	105	332	Average

802.11b Channel 01										
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	70.23	-3.77	74.00	70.61	31.98	3.92	36.28	100	56	Peak
2389.99	47.25	-6.75	54.00	47.63	31.98	3.92	36.28	100	56	Average

Test Mode :	Mode 6	Temperature :	21~23°C
Test Band :	802.11g	Relative Humidity :	49~52%
Test Channel :	11	Test Engineer :	Kai Wang

802.11g Channel 11										
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	71.55	-2.45	74.00	71.72	32.08	4.05	36.30	102	331	Peak
2483.50	47.94	-6.06	54.00	48.11	32.08	4.05	36.30	102	331	Average

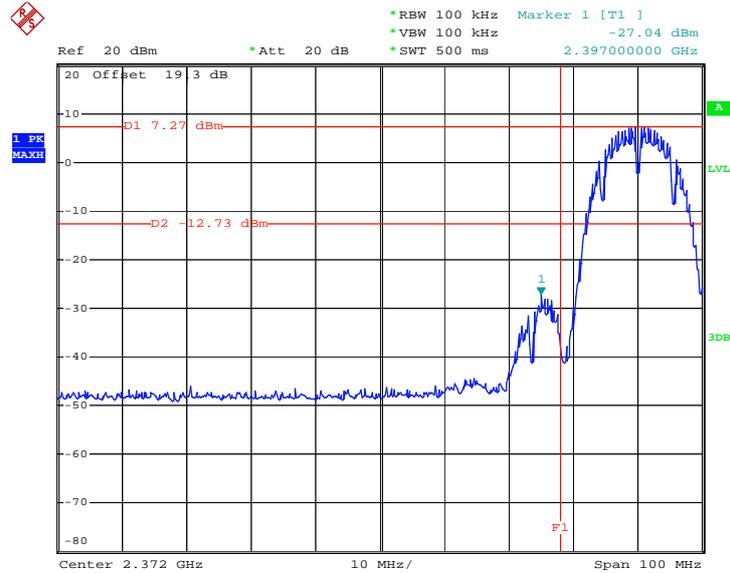
802.11b Channel 11										
ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	65.69	-8.31	74.00	65.86	32.08	4.05	36.30	100	56	Peak
2483.50	45.20	-8.80	54.00	45.37	32.08	4.05	36.30	100	56	Average



### 3.3.6 Test Result of Conducted Band Edges

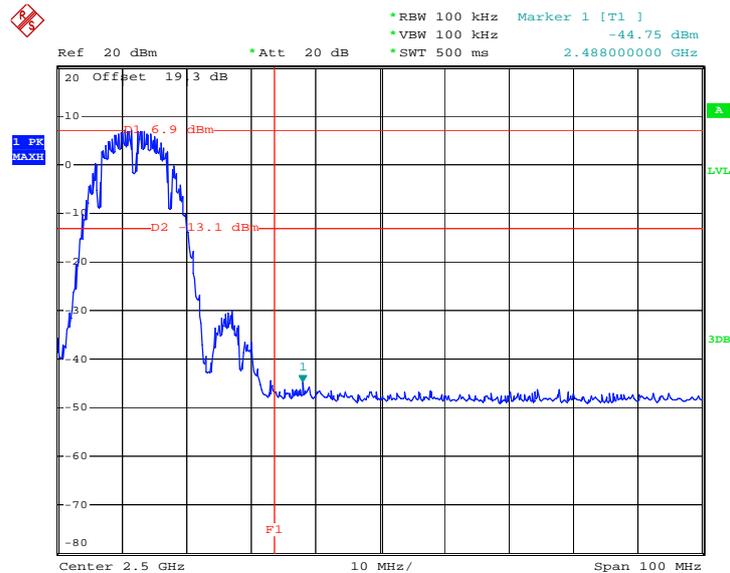
Test Mode :	Mode 1 and 3	Temperature :	23~24
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	01 and 11	Test Engineer :	James Huang

Low Band Edge Plot on 802.11b Channel 01



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High Band Edge Plot on 802.11b Channel 11

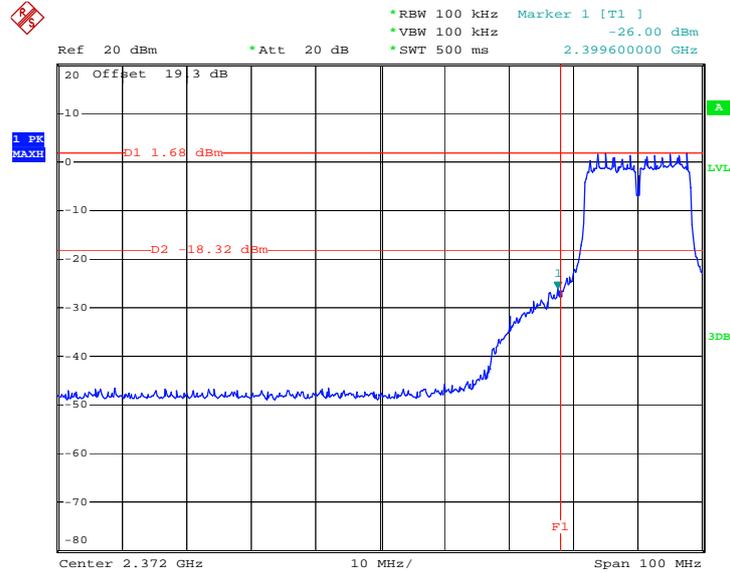


Date: 23.FEB.2009 03:42:43



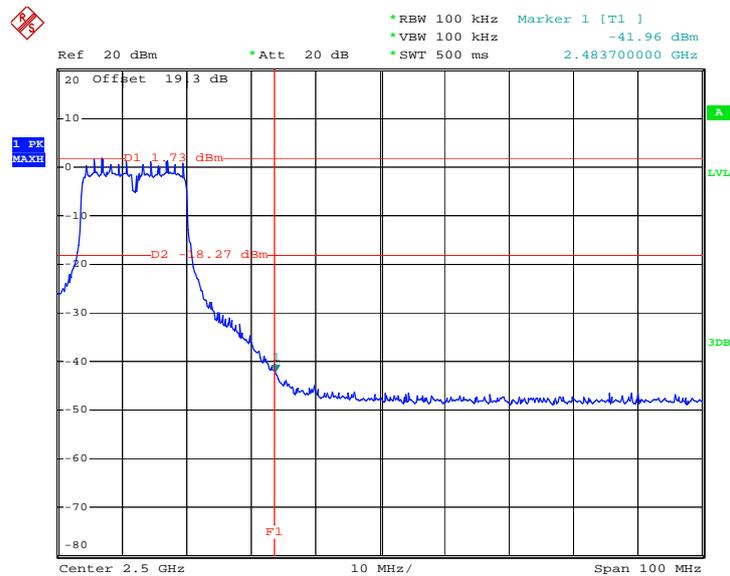
Test Mode :	Mode 4 and 6	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	01 and 11	Test Engineer :	James Huang

Low Band Edge Plot on 802.11g Channel 01



Date: 23.FEB.2009 03:45:39

High Band Edge Plot on 802.11g Channel 11



Date: 23.FEB.2009 03:47:26

## 3.4 Spurious Emission Measurement

### 3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

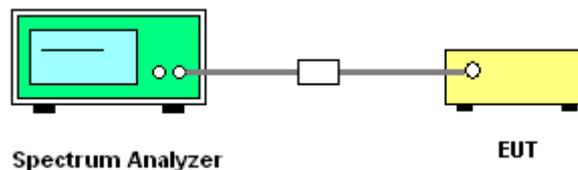
### 3.4.2 Measuring Instruments

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 the RBW of spectrum analyzer to 100kHz, VBW  $\geq$  RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

### 3.4.4 Test Setup

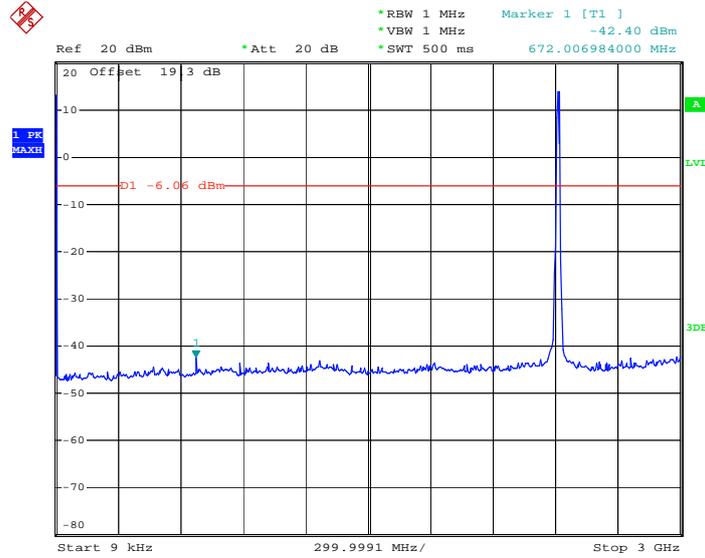




3.4.5 Test Result

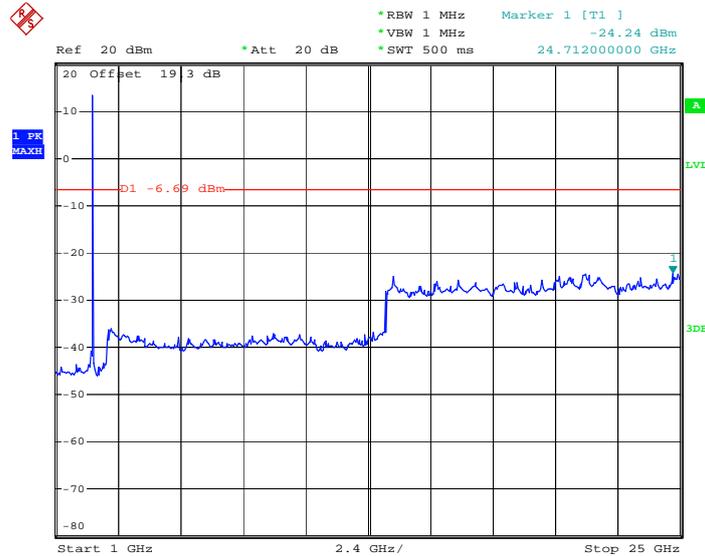
Test Mode :	Mode 1	Temperature :	23~24
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 19:17:47

Conducted Emission Plot between 1G-25G

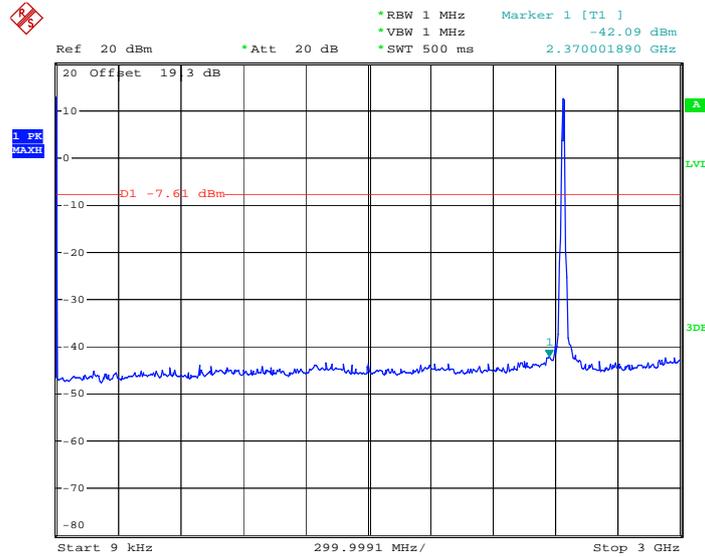


Date: 25.FEB.2009 19:07:47



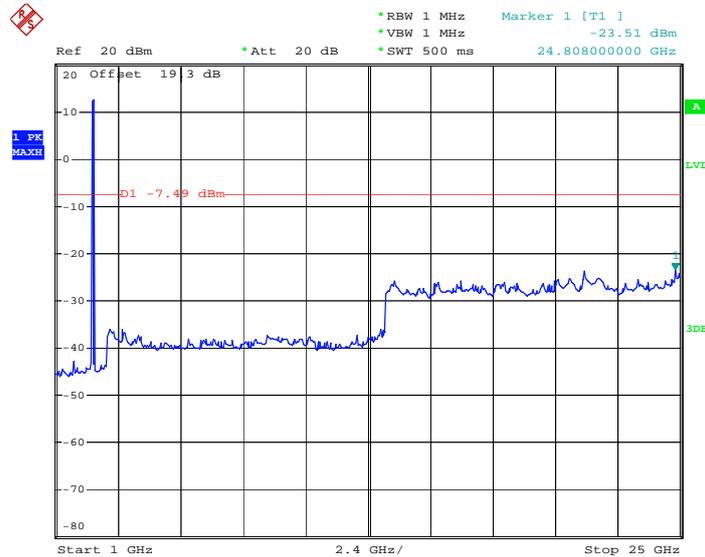
Test Mode :	Mode 2	Temperature :	23~24
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	06	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 19:17:07

Conducted Emission Plot between 1G-25G

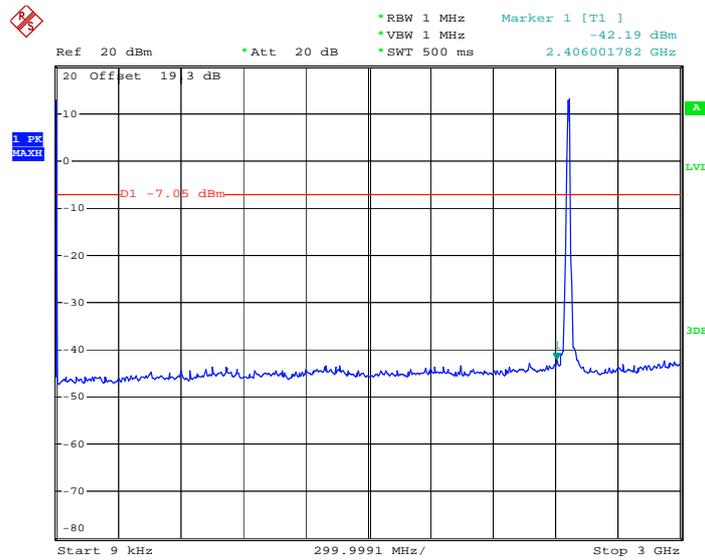


Date: 25.FEB.2009 19:06:31



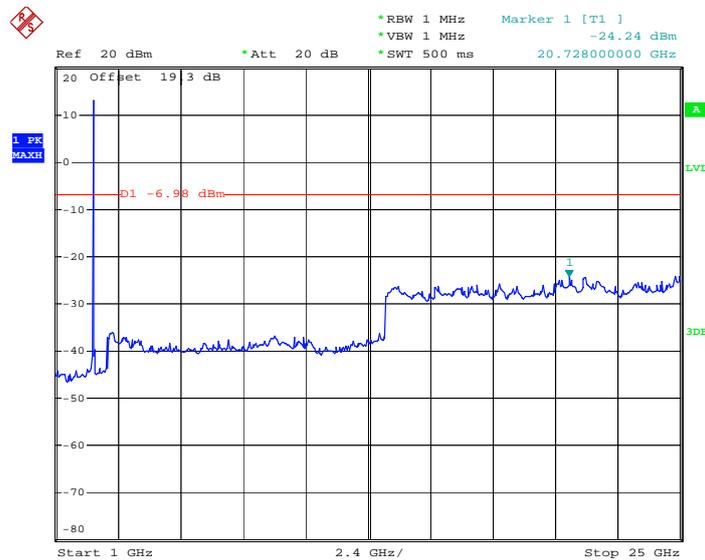
Test Mode :	Mode 3	Temperature :	23~24
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 19:16:32

Conducted Emission Plot between 1G-25G

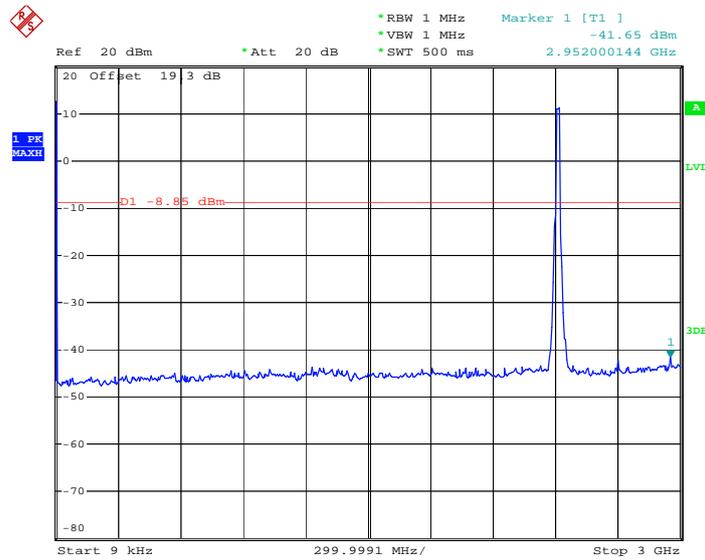


Date: 25.FEB.2009 19:08:31



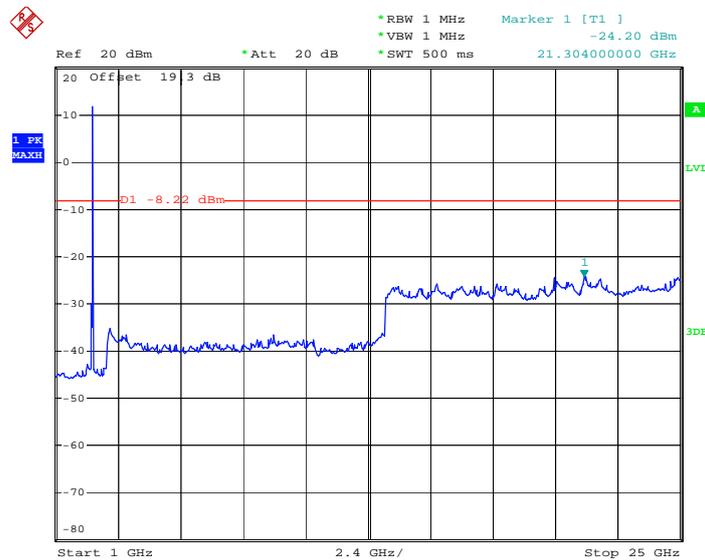
Test Mode :	Mode 4	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 22:38:08

Conducted Emission Plot between 1G-25G

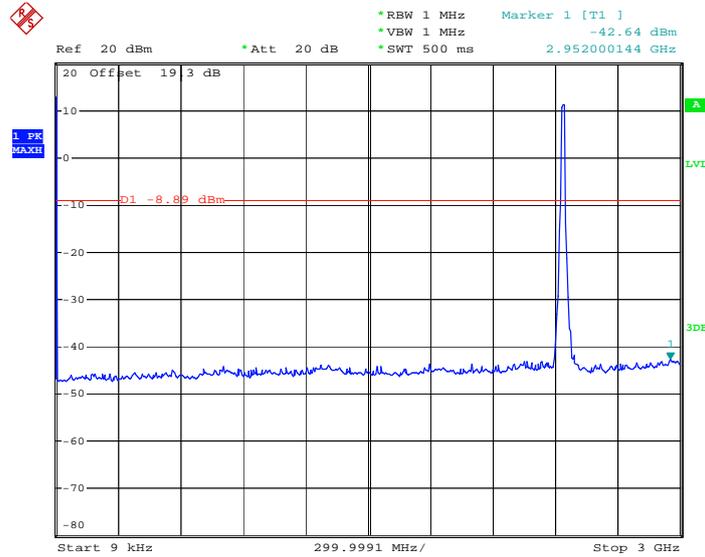


Date: 25.FEB.2009 19:11:19



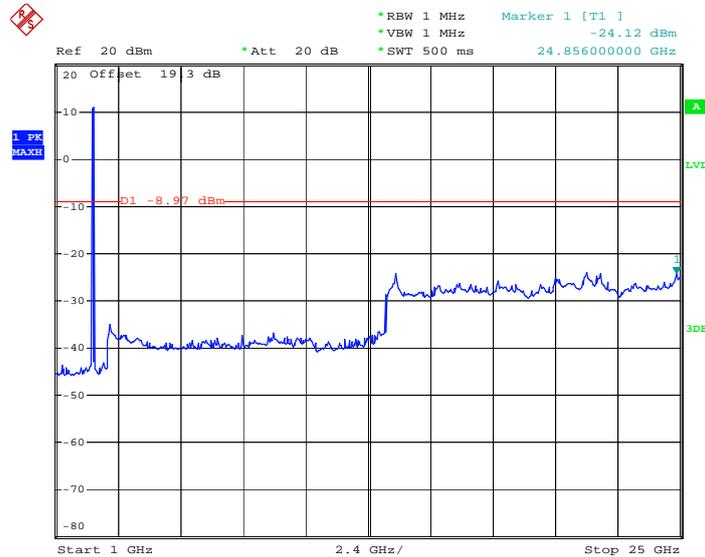
Test Mode :	Mode 5	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	06	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 22:36:45

Conducted Emission Plot between 1G-25G

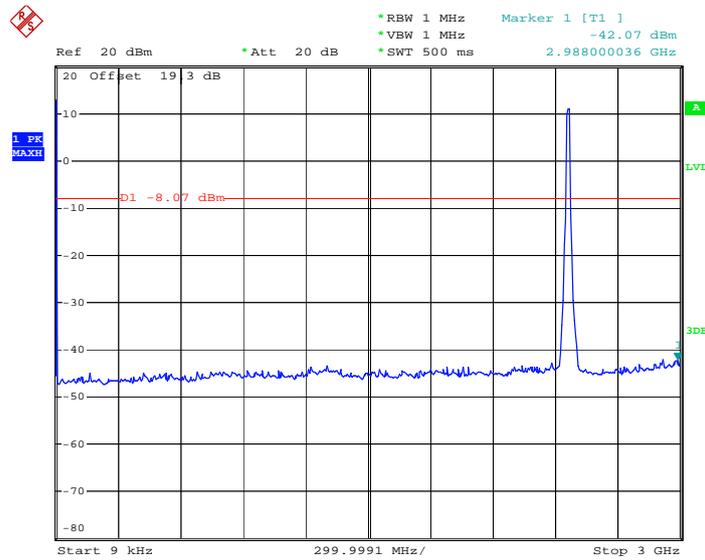


Date: 25.FEB.2009 19:10:21



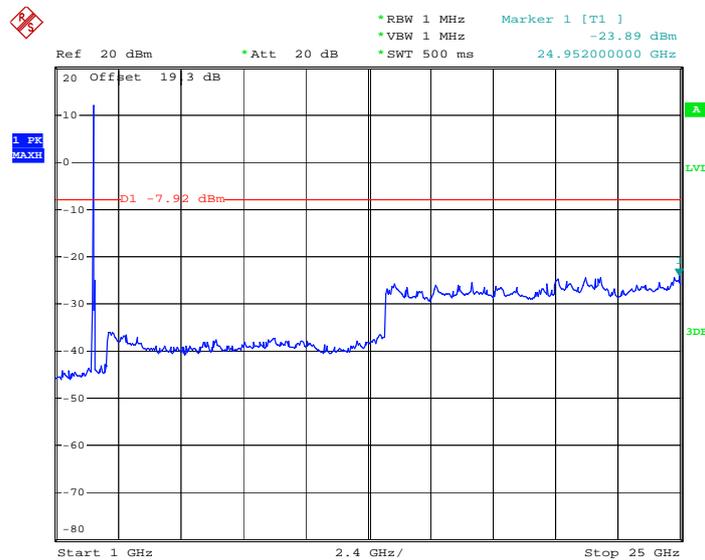
Test Mode :	Mode 6	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	James Huang

Conducted Emission Plot between 9k-3G



Date: 25.FEB.2009 22:39:23

Conducted Emission Plot between 1G-25G



Date: 25.FEB.2009 19:09:45

### 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.

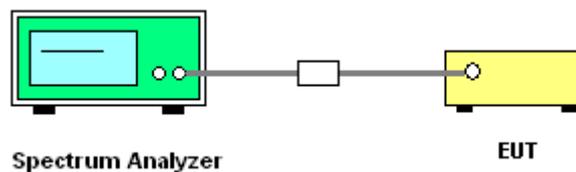
#### 3.5.2 Measuring Instruments

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 :	23~24°C
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-5.66	8	Pass
06	2437	-5.33	8	Pass
11	2462	-6.09	8	Pass

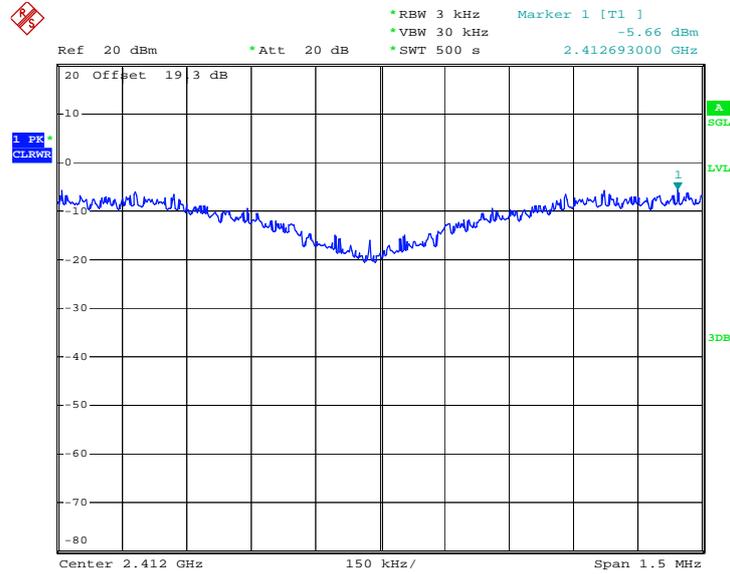
Test Mode :	Mode 4, 5, 6	Temperature :	23~24
Test Engineer :	James Huang	Relative Humidity :	42~43%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-13.97	8	Pass
06	2437	-11.60	8	Pass
11	2462	-12.05	8	Pass



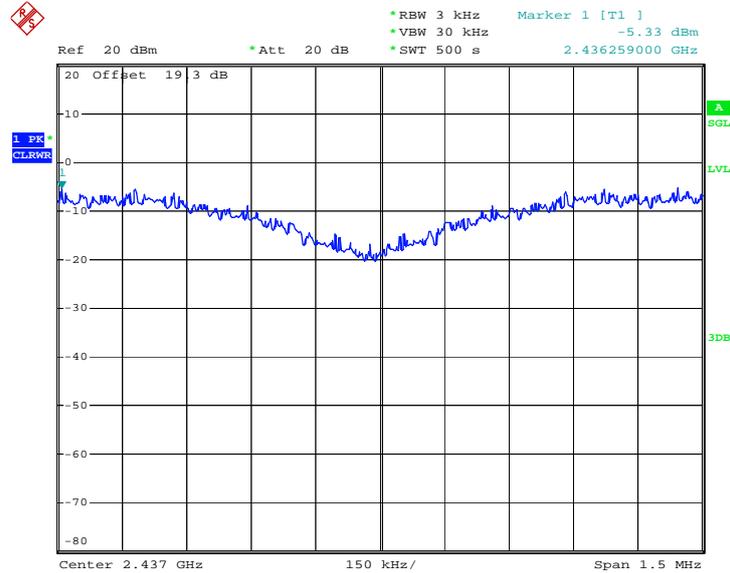
### 3.5.6 Test Result of Power Spectral Density Plots

#### Mode 1 : PSD Plot on 802.11b Channel 01



Date: 23.FEB.2009 03:23:55

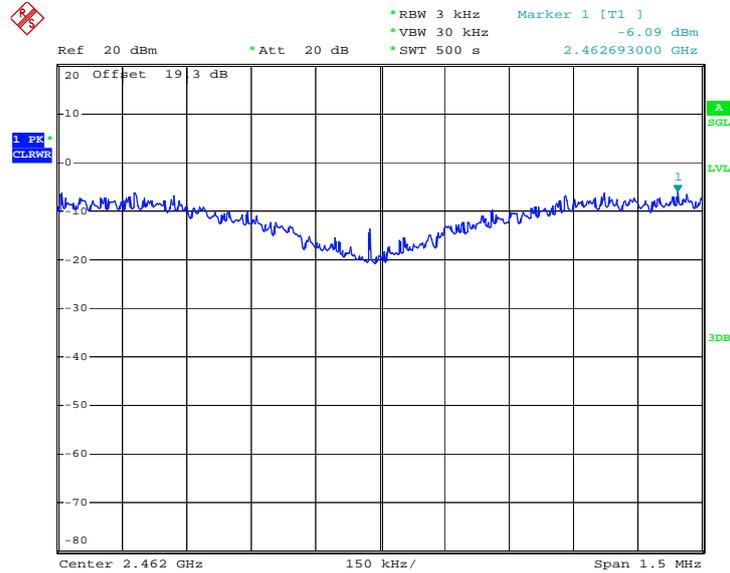
#### Mode 2 : PSD Plot on 802.11b Channel 06



Date: 23.FEB.2009 03:15:07

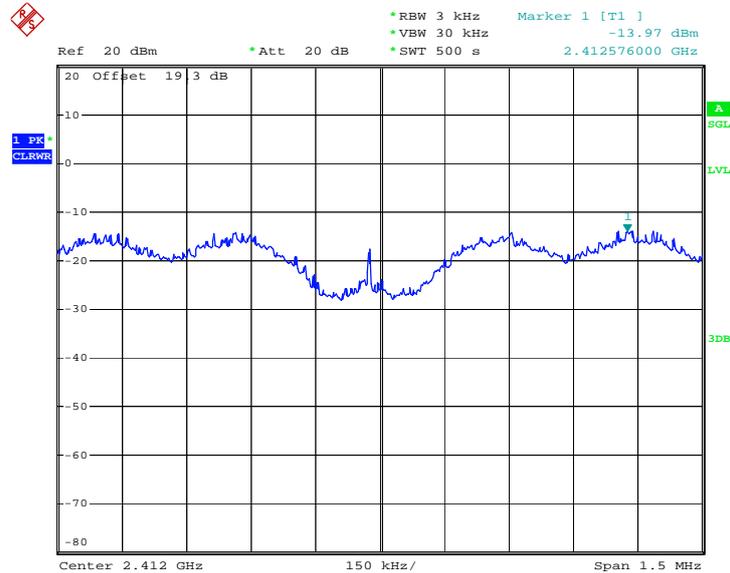


Mode 3 : PSD Plot on 802.11b Channel 11



Date: 23.FEB.2009 03:06:08

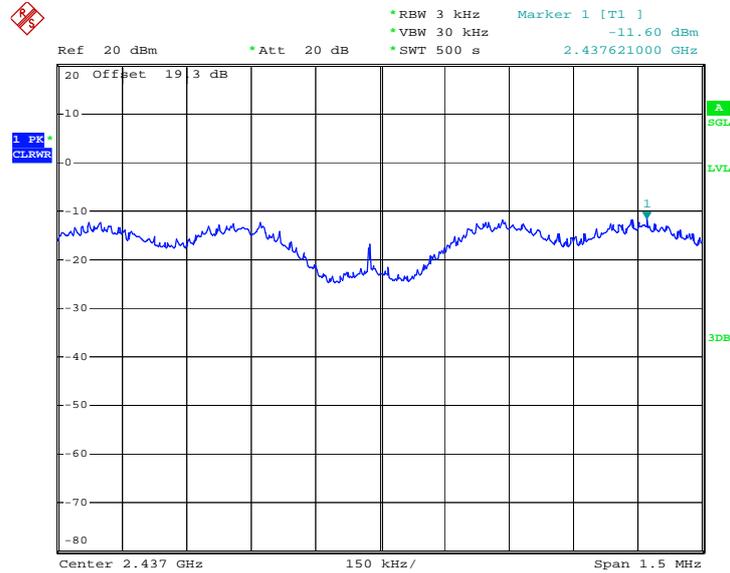
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 23.FEB.2009 02:36:21

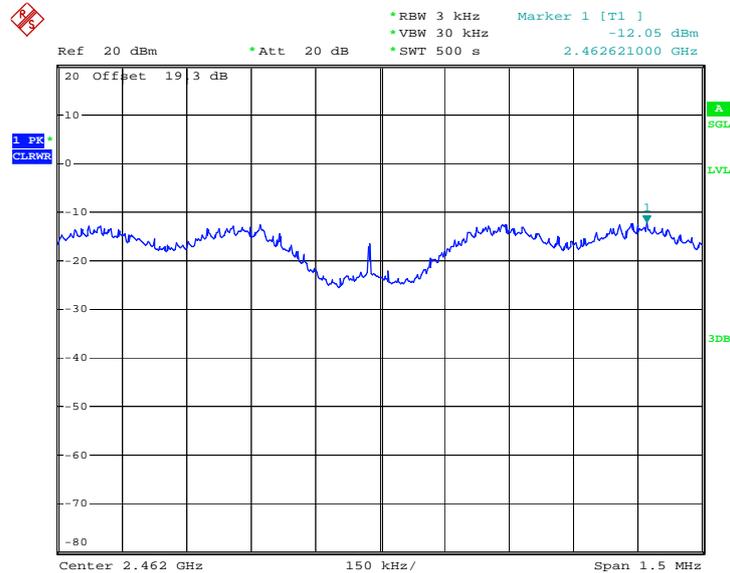


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 23.FEB.2009 02:46:51

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 23.FEB.2009 02:55:56

### 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.

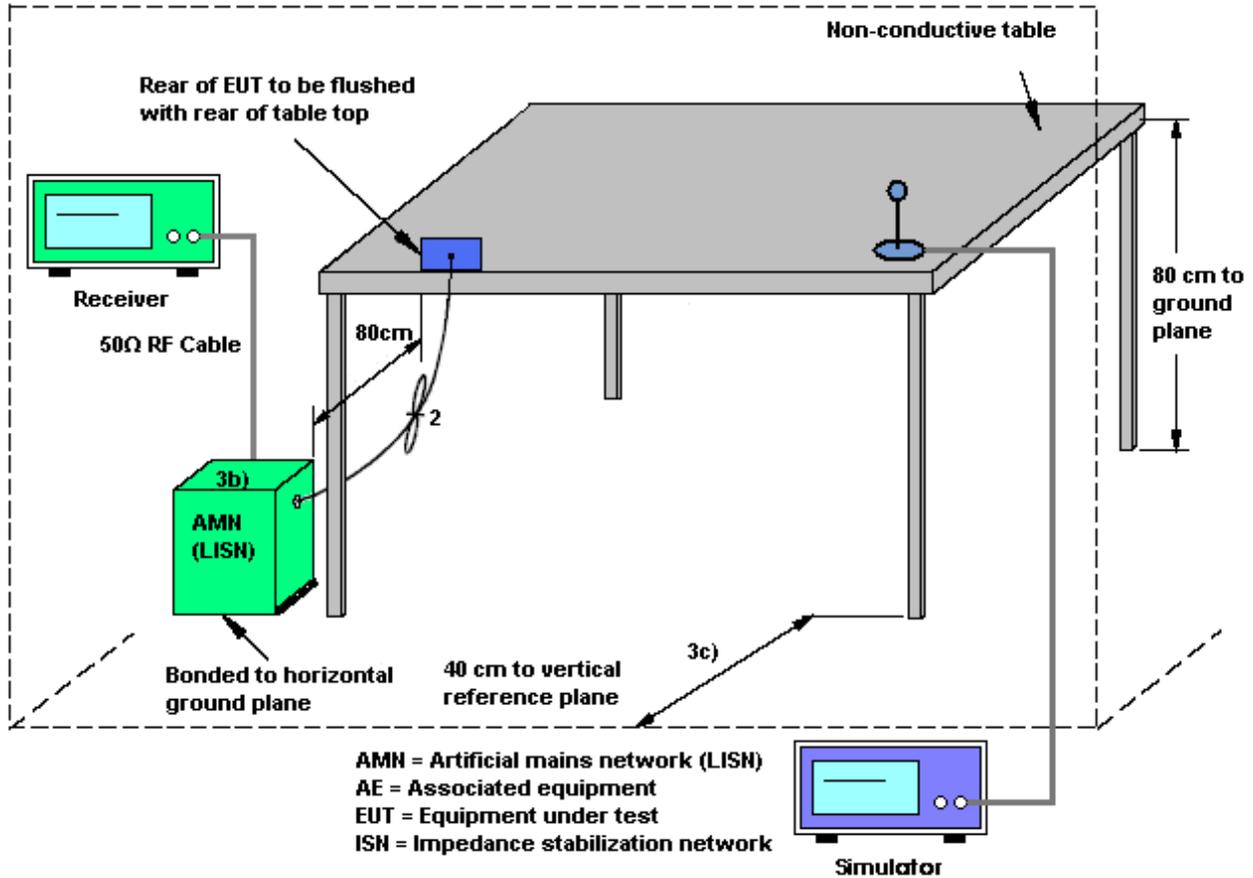
#### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.6.3 Test Procedures

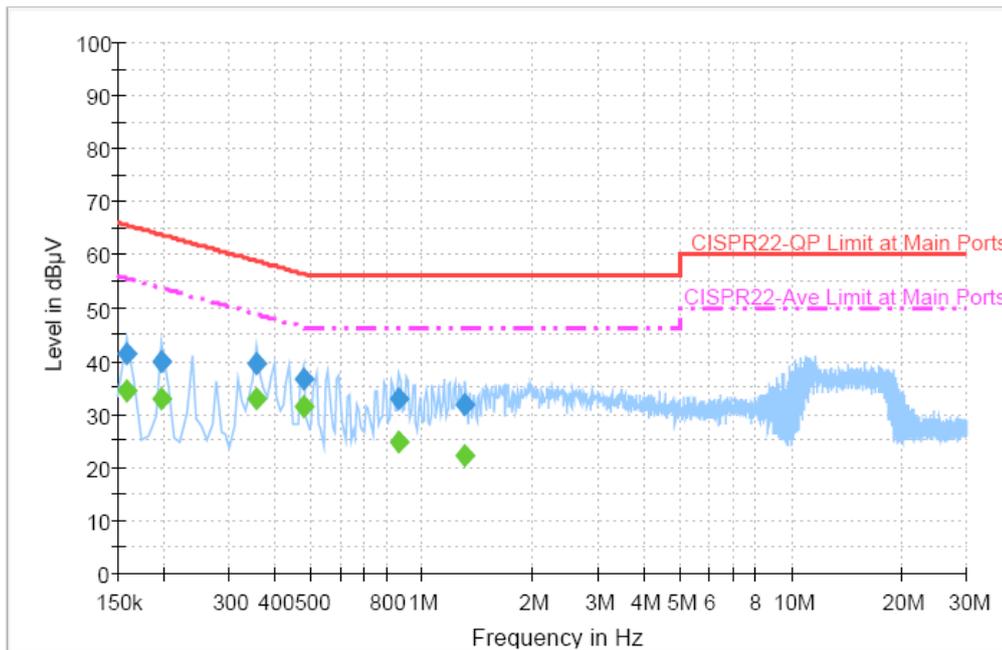
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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 :	42~43%
		Phase :	Line
Function Type :	GSM850 Idle + WLAN Link + BT Link + GPS Rx + Battery 3 + Multifunction audio cable + USB Cable 2 + Earphone + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



#### Final Result 1

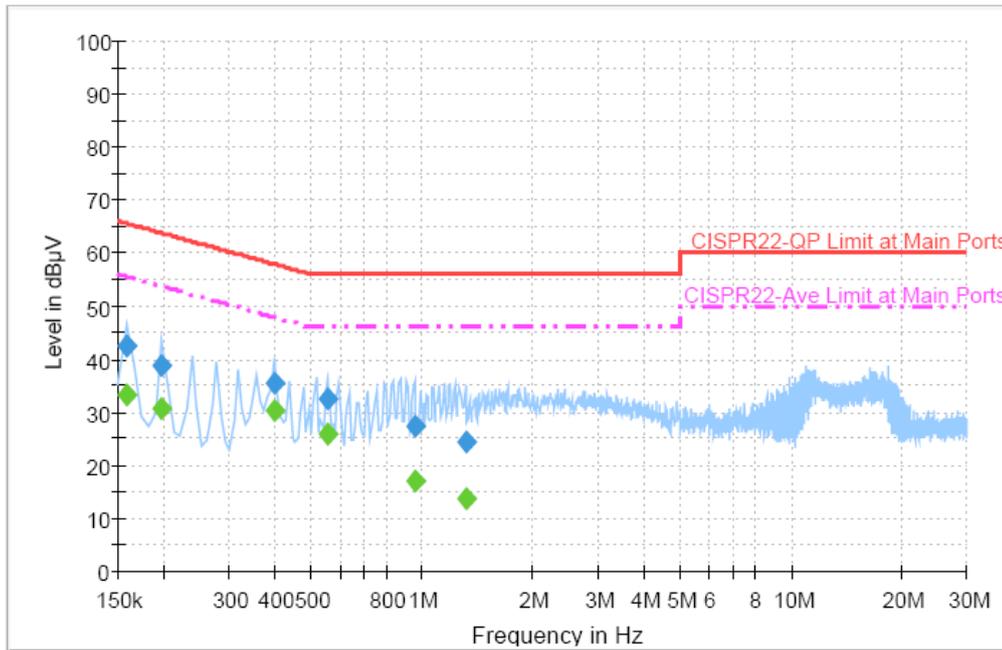
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	41.4	Off	L1	19.3	24.2	65.6
0.198000	39.9	Off	L1	19.3	23.8	63.7
0.358000	39.4	Off	L1	19.3	19.4	58.8
0.478000	36.4	Off	L1	19.4	20.0	56.4
0.870000	32.8	Off	L1	19.4	23.2	56.0
1.310000	31.8	Off	L1	19.4	24.2	56.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	34.5	Off	L1	19.3	21.1	55.6
0.198000	32.7	Off	L1	19.3	21.0	53.7
0.358000	32.8	Off	L1	19.3	16.0	48.8
0.478000	31.2	Off	L1	19.4	15.2	46.4
0.870000	24.9	Off	L1	19.4	21.1	46.0
1.310000	22.1	Off	L1	19.4	23.9	46.0



Test Mode :	Mode 1	Temperature :	23~24
Test Engineer :	Cona Huang	Relative Humidity :	42~43%
		Phase :	Neutral
Function Type :	GSM850 Idle + WLAN Link + BT Link + GPS Rx + Battery 3 + Multifunction audio cable + USB Cable 2 + Earphone + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	42.4	Off	N	19.4	23.2	65.6
0.198000	38.9	Off	N	19.3	24.8	63.7
0.398000	35.6	Off	N	19.4	22.3	57.9
0.558000	32.3	Off	N	19.3	23.7	56.0
0.958000	27.2	Off	N	19.4	28.8	56.0
1.318000	24.3	Off	N	19.5	31.7	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	33.1	Off	N	19.4	22.5	55.6
0.198000	30.5	Off	N	19.3	23.2	53.7
0.398000	30.2	Off	N	19.4	17.7	47.9
0.558000	25.8	Off	N	19.3	20.2	46.0
0.958000	16.9	Off	N	19.4	29.1	46.0
1.318000	13.5	Off	N	19.5	32.5	46.0

### 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

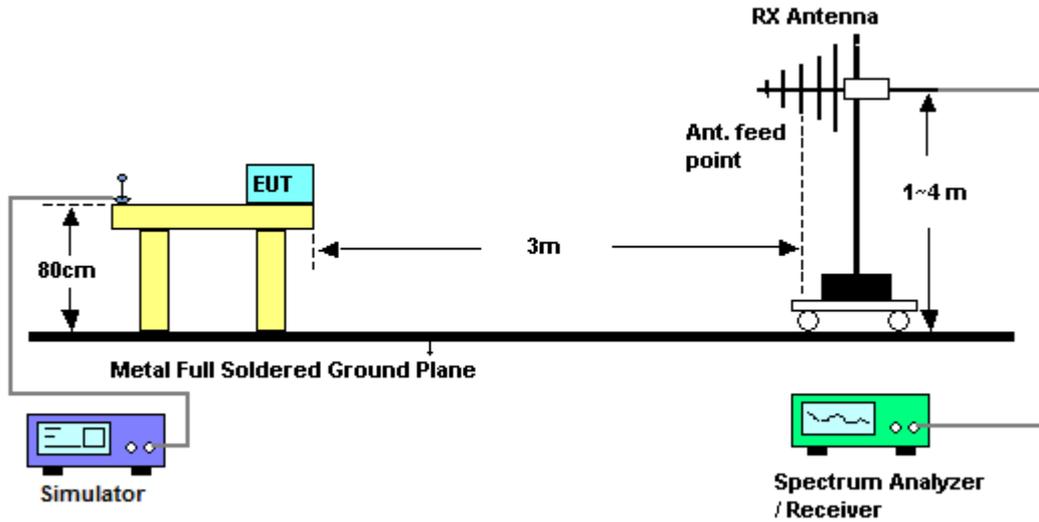
#### 3.7.2 Measuring Instruments

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  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz; VBW  $\geq$  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.

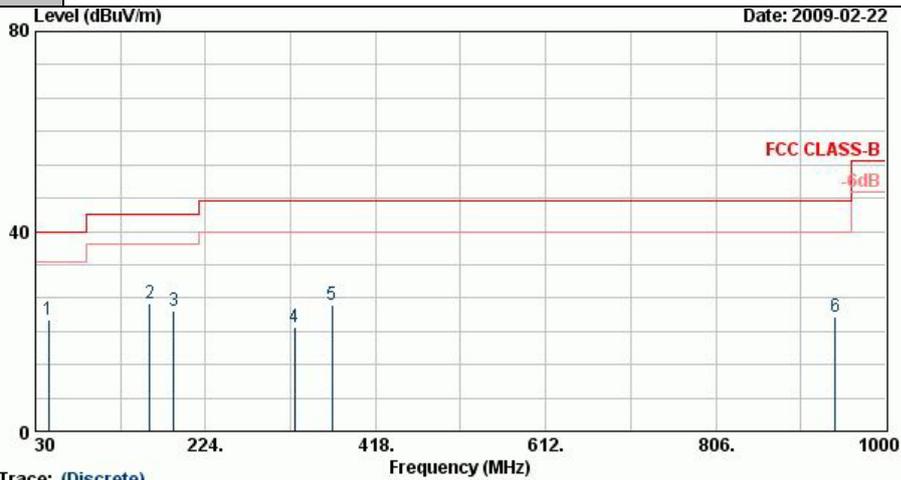
### 3.7.4 Test Setup





3.7.5 Test Result of Radiated Emission < 1GHz

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			

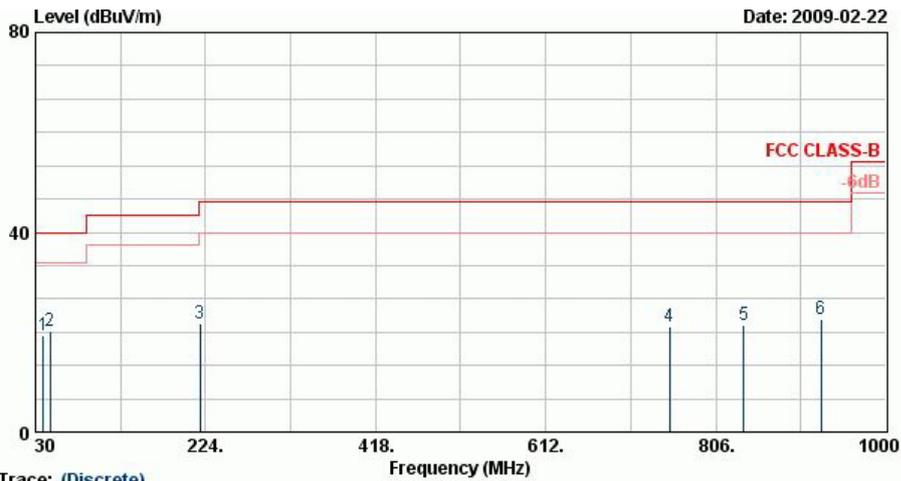


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOG\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	44.58	22.24	-17.76	40.00	42.66	11.00	0.30	31.72	100	56	Peak
2	160.14	25.52	-17.98	43.50	46.15	10.70	0.60	31.93	---	---	Peak
3	187.68	23.98	-19.52	43.50	45.77	9.64	0.60	32.03	---	---	Peak
4	325.90	20.73	-25.27	46.00	37.21	14.63	0.80	31.91	---	---	Peak
5	367.90	25.25	-20.75	46.00	40.51	15.72	0.77	31.76	---	---	Peak
6	941.90	22.80	-23.20	46.00	31.03	22.04	1.20	31.47	---	---	Peak



Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			

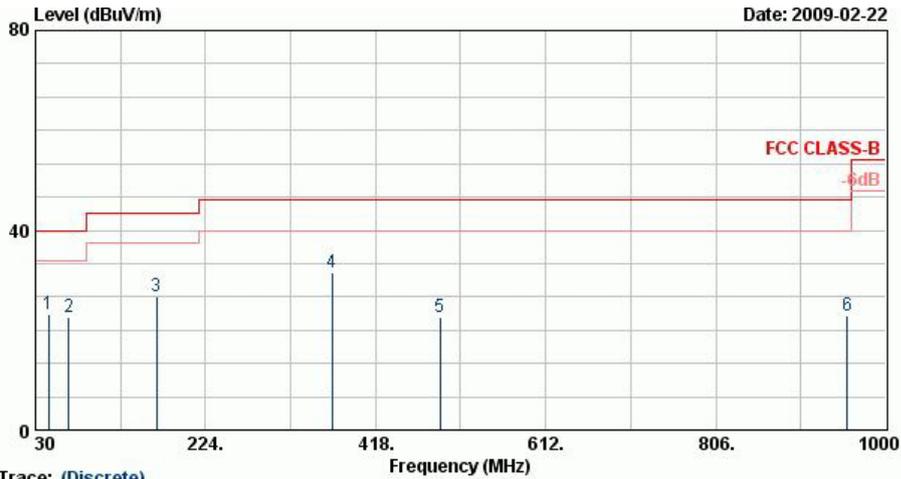


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOG\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	39.18	19.23	-20.77	40.00	36.15	14.50	0.30	31.72	---	---	Peak
2	46.74	20.31	-19.69	40.00	41.50	10.33	0.30	31.82	100	180	Peak
3	217.38	21.73	-24.27	46.00	42.49	10.56	0.67	31.99	---	---	Peak
4	752.90	21.09	-24.91	46.00	31.73	20.33	1.10	32.07	---	---	Peak
5	838.30	21.45	-24.55	46.00	31.34	21.26	1.20	32.35	---	---	Peak
6	925.80	22.74	-23.26	46.00	31.17	21.91	1.20	31.54	---	---	Peak



Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			

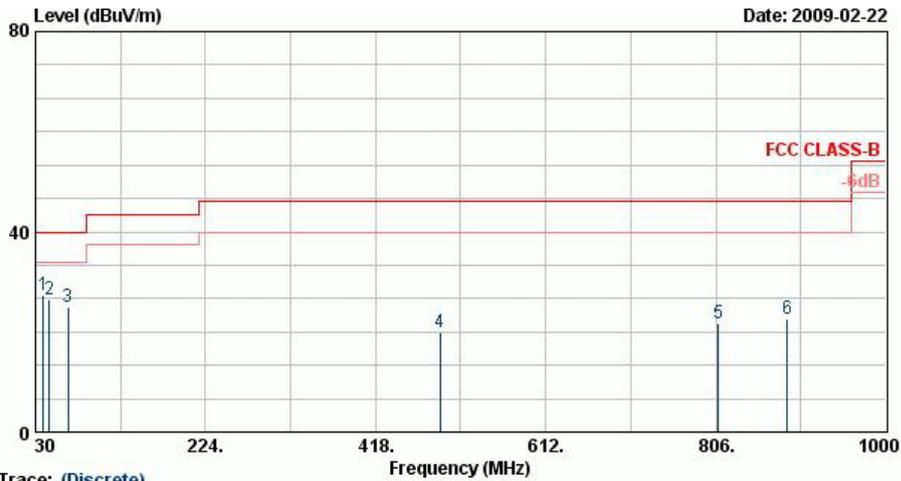


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over Limit	Limit Line	ReadAntenna 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	44.58	23.16	-16.84	40.00	43.58	11.00	0.30	31.72	---	---	Peak
2	68.34	22.55	-17.45	40.00	47.33	6.61	0.40	31.80	---	---	Peak
3	168.24	26.75	-16.75	43.50	47.70	10.34	0.60	31.89	---	---	Peak
4	367.90	31.38	-14.62	46.00	46.65	15.72	0.77	31.76	100	319	Peak
5	491.80	22.58	-23.42	46.00	35.95	17.78	0.92	32.06	---	---	Peak
6	955.90	22.79	-23.21	46.00	30.75	22.11	1.26	31.34	---	---	Peak



Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			



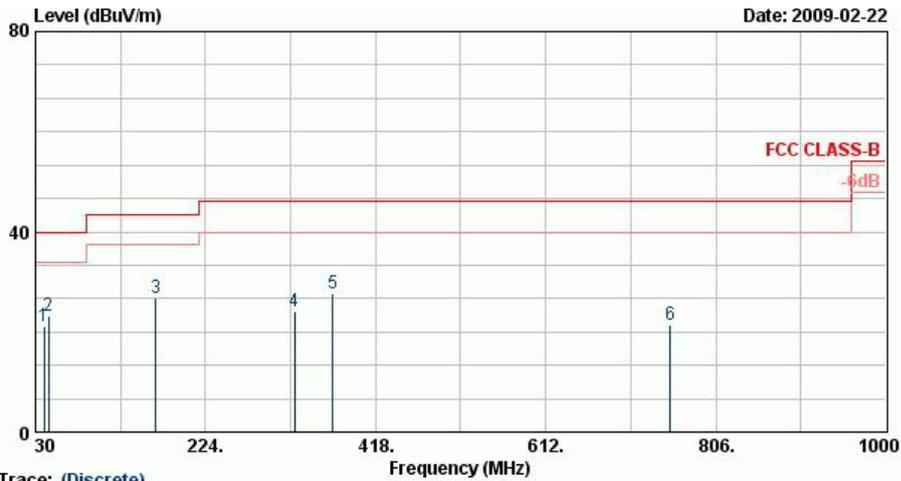
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m B1LOG\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	39.18	27.33	-12.67	40.00	44.25	14.50	0.30	31.72	100	87	Peak
2	46.20	26.44	-13.56	40.00	47.63	10.33	0.30	31.82	---	---	Peak
3	67.53	24.93	-15.07	40.00	49.74	6.62	0.40	31.83	---	---	Peak
4	491.80	19.84	-26.16	46.00	33.21	17.78	0.92	32.06	---	---	Peak
5	808.90	21.58	-24.42	46.00	31.70	20.91	1.20	32.22	---	---	Peak
6	887.30	22.56	-23.44	46.00	31.49	21.63	1.30	31.85	---	---	Peak



Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			



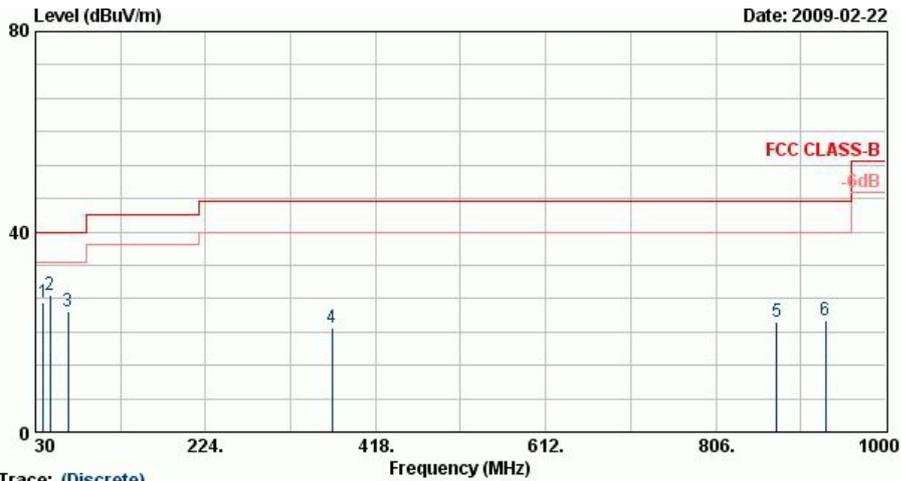
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	39.99	21.14	-18.86	40.00	38.63	13.90	0.30	31.69	---	---	Peak
2	44.58	23.30	-16.70	40.00	43.72	11.00	0.30	31.72	100	228	Peak
3	167.43	26.64	-16.86	43.50	47.56	10.38	0.60	31.90	---	---	Peak
4	325.90	24.02	-21.98	46.00	40.50	14.63	0.80	31.91	---	---	Peak
5	369.30	27.79	-18.21	46.00	43.00	15.77	0.79	31.77	---	---	Peak
6	754.30	21.35	-24.65	46.00	31.97	20.35	1.10	32.07	---	---	Peak



Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			

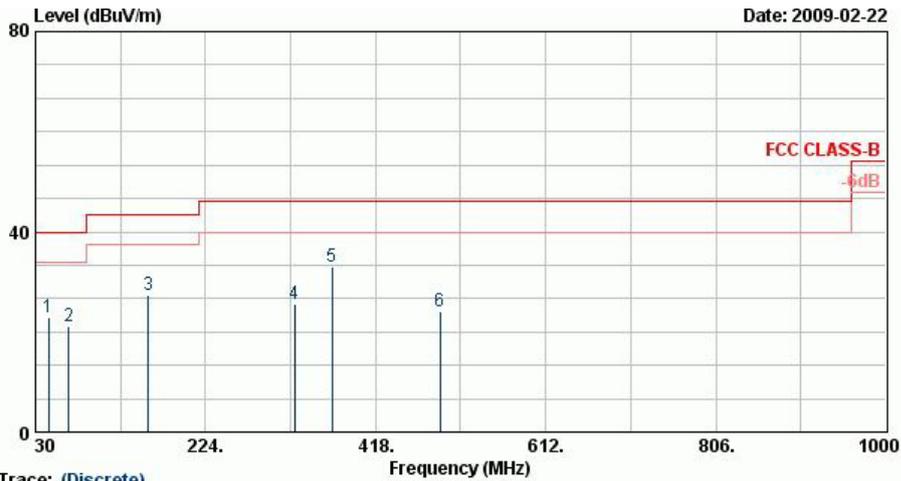


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m B1LOG\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	38.64	25.86	-14.14	40.00	42.78	14.50	0.30	31.72	---	---	Peak
2	46.74	27.32	-12.68	40.00	48.51	10.33	0.30	31.82	100	178	Peak
3	66.99	23.98	-16.02	40.00	48.81	6.63	0.40	31.87	---	---	Peak
4	367.90	20.83	-25.17	46.00	36.09	15.72	0.77	31.76	---	---	Peak
5	875.40	21.89	-24.11	46.00	31.06	21.56	1.30	32.02	---	---	Peak
6	931.40	22.22	-23.78	46.00	30.59	21.95	1.20	31.52	---	---	Peak



Test Mode :	Mode 4	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			

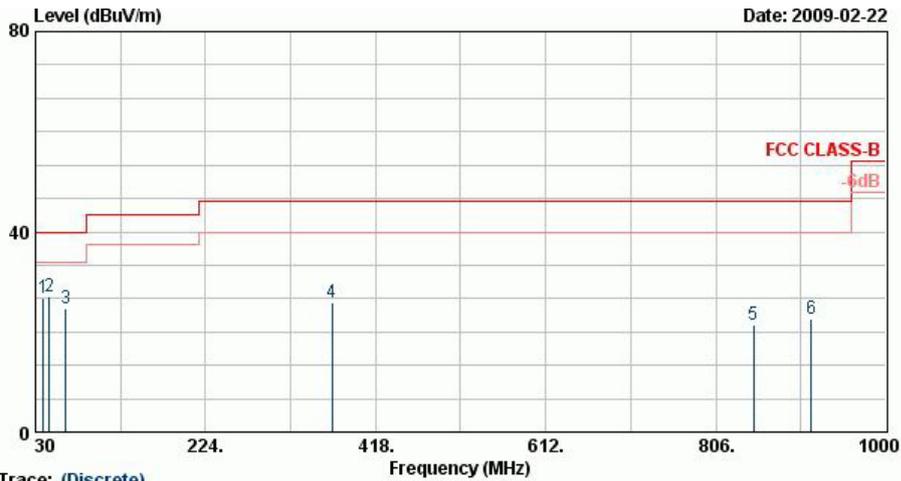


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	45.39	22.81	-17.19	40.00	43.61	10.67	0.30	31.77	---	---	Peak
2	68.34	21.22	-18.78	40.00	46.01	6.61	0.40	31.80	---	---	Peak
3	158.79	27.28	-16.22	43.50	47.84	10.75	0.60	31.91	---	---	Peak
4	325.90	25.49	-20.51	46.00	41.97	14.63	0.80	31.91	---	---	Peak
5	367.90	33.14	-12.86	46.00	48.41	15.72	0.77	31.76	100	301	Peak
6	491.80	24.14	-21.86	46.00	37.51	17.78	0.92	32.06	---	---	Peak



Test Mode :	Mode 4	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			

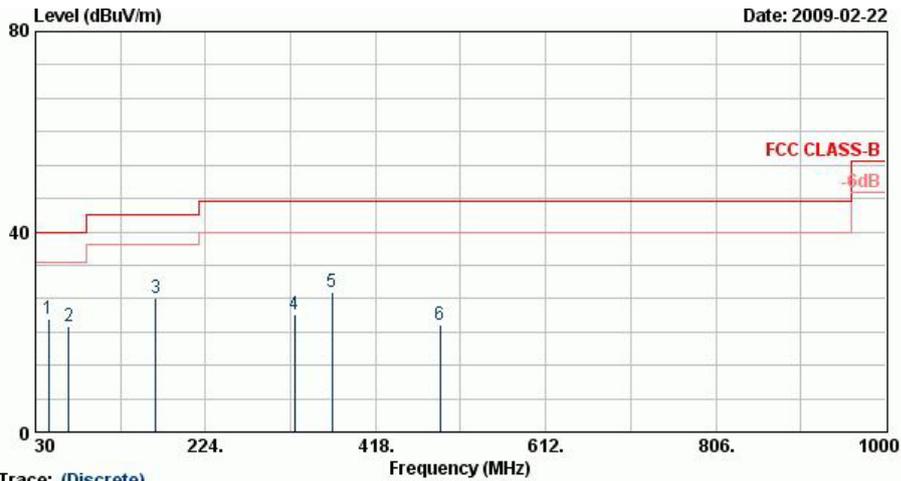


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	39.18	26.89	-13.11	40.00	43.81	14.50	0.30	31.72	---	---	Peak
2	45.93	27.05	-12.95	40.00	47.86	10.67	0.30	31.77	100	166	Peak
3	64.29	24.58	-15.42	40.00	49.49	6.66	0.40	31.96	---	---	Peak
4	367.90	25.74	-20.26	46.00	41.00	15.72	0.77	31.76	---	---	Peak
5	848.80	21.52	-24.48	46.00	31.33	21.39	1.20	32.40	---	---	Peak
6	915.30	22.69	-23.31	46.00	31.21	21.83	1.25	31.59	---	---	Peak



Test Mode :	Mode 5	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			

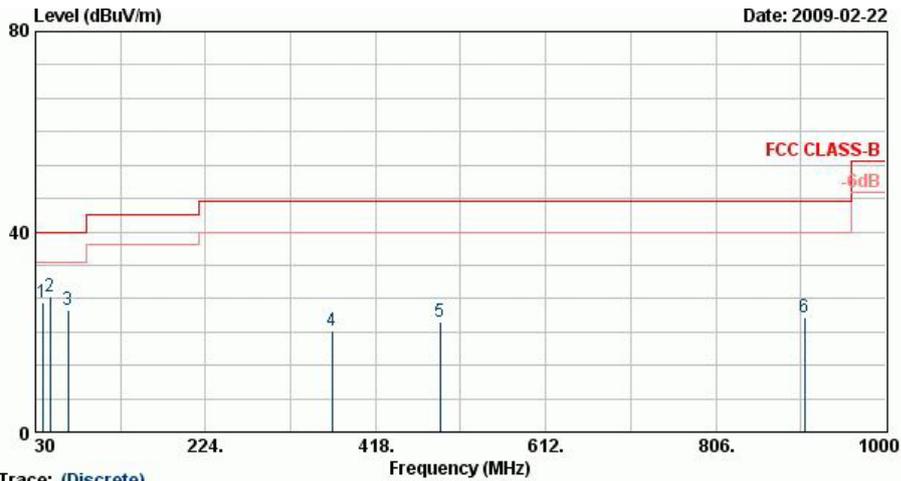


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	44.58	22.51	-17.49	40.00	42.93	11.00	0.30	31.72	---	---	Peak
2	68.34	21.25	-18.75	40.00	46.04	6.61	0.40	31.80	---	---	Peak
3	167.43	26.82	-16.68	43.50	47.73	10.38	0.60	31.90	100	133	Peak
4	325.90	23.60	-22.40	46.00	40.08	14.63	0.80	31.91	---	---	Peak
5	367.90	27.83	-18.17	46.00	43.09	15.72	0.77	31.76	---	---	Peak
6	491.80	21.56	-24.44	46.00	34.93	17.78	0.92	32.06	---	---	Peak



Test Mode :	Mode 5	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			



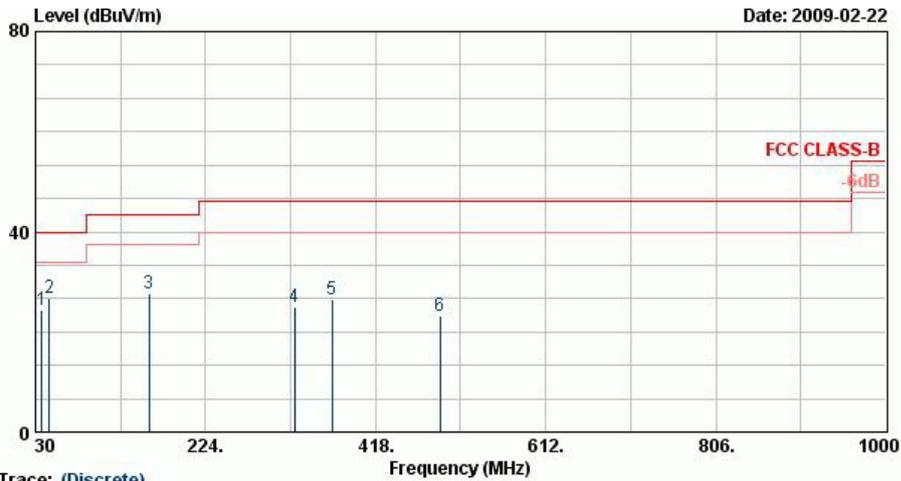
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	37.83	25.99	-14.01	40.00	42.33	15.10	0.30	31.75	---	---	Peak
2	46.74	27.21	-12.79	40.00	48.39	10.33	0.30	31.82	100	237	Peak
3	66.99	24.36	-15.64	40.00	49.19	6.63	0.40	31.87	---	---	Peak
4	367.90	20.20	-25.80	46.00	35.47	15.72	0.77	31.76	---	---	Peak
5	491.80	22.02	-23.98	46.00	35.39	17.78	0.92	32.06	---	---	Peak
6	906.90	22.96	-23.04	46.00	31.54	21.75	1.30	31.64	---	---	Peak



Test Mode :	Mode 6	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :			

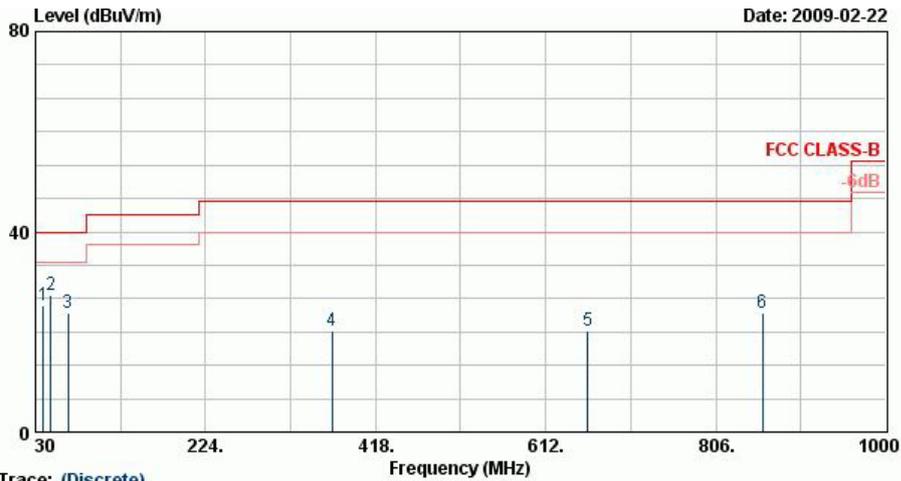


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BTLOC\_081124 HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	37.29	24.34	-15.66	40.00	40.69	15.10	0.30	31.75	---	---	Peak
2	45.93	26.86	-13.14	40.00	47.67	10.67	0.30	31.77	100	146	Peak
3	159.33	27.73	-15.77	43.50	48.28	10.75	0.60	31.91	---	---	Peak
4	325.90	25.03	-20.97	46.00	41.51	14.63	0.80	31.91	---	---	Peak
5	367.90	26.51	-19.49	46.00	41.77	15.72	0.77	31.76	---	---	Peak
6	491.80	23.12	-22.88	46.00	36.49	17.78	0.92	32.06	---	---	Peak



Test Mode :	Mode 6	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :			



Trace: (Discrete)

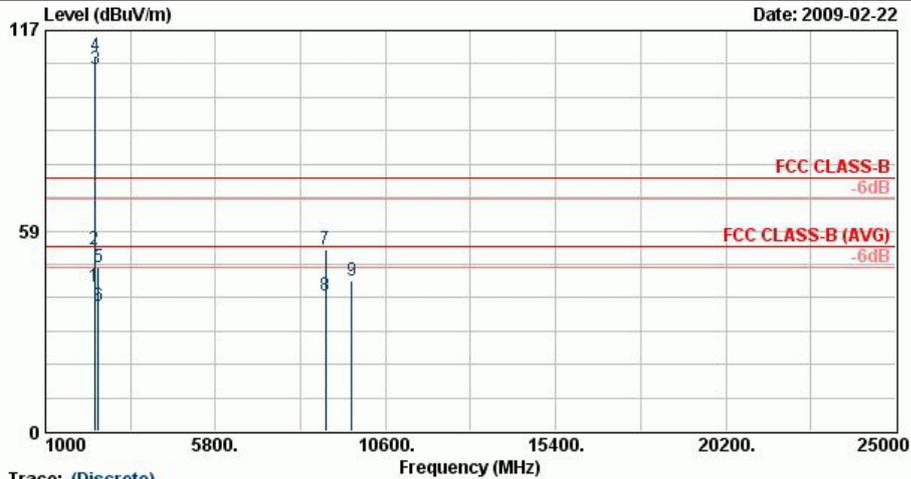
Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m B1LOG\_081124 VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	38.64	25.17	-14.83	40.00	42.09	14.50	0.30	31.72	---	---	Peak
2	47.28	27.40	-12.60	40.00	48.96	10.00	0.30	31.87	100	210	Peak
3	66.99	23.91	-16.09	40.00	48.74	6.63	0.40	31.87	---	---	Peak
4	367.90	20.28	-25.72	46.00	35.54	15.72	0.77	31.76	---	---	Peak
5	659.80	20.13	-25.87	46.00	31.48	19.54	1.10	32.00	---	---	Peak
6	859.30	23.66	-22.34	46.00	33.26	21.46	1.20	32.26	---	---	Peak



3.7.6 Test Result of Radiated Emission  $\geq 1$ GHz

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

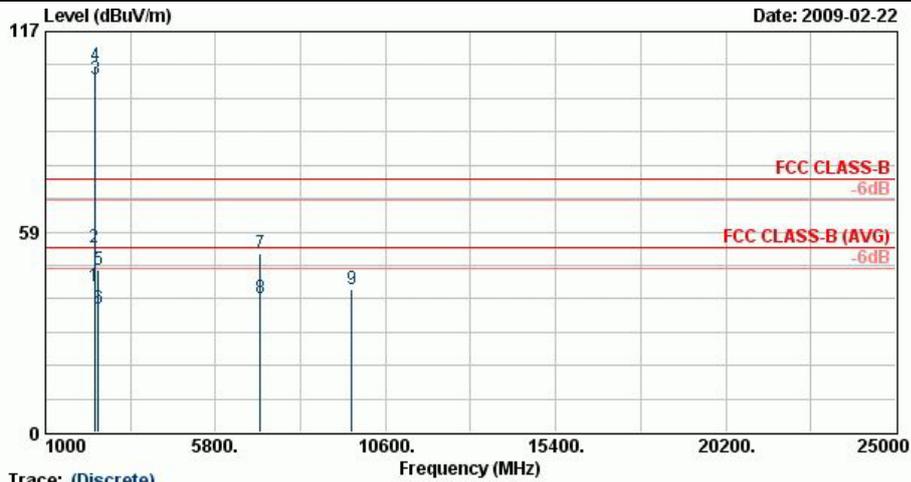


Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	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	2385.81	42.17	-11.83	54.00	42.55	31.98	3.92	36.28	107	333	Average
2	2385.81	52.85	-21.15	74.00	53.23	31.98	3.92	36.28	107	333	Peak
3 @	2412.00	105.70			106.03	32.00	3.95	36.28	107	333	Average
4 X	2412.00	109.55			109.88	32.00	3.95	36.28	107	333	Peak
5	2484.00	47.91	-26.09	74.00	48.07	32.08	4.05	36.30	107	333	Peak
6	2484.00	36.38	-17.62	54.00	36.55	32.08	4.05	36.30	107	333	Average
7	8907.00	52.94	-21.06	74.00	46.02	36.10	7.68	36.86	100	199	Peak
8	8907.00	39.72	-14.28	54.00	32.80	36.10	7.68	36.86	100	199	Average
9	9648.00	43.89	-30.11	74.00	83.29	-10.29	7.94	37.06	100	0	Peak



Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

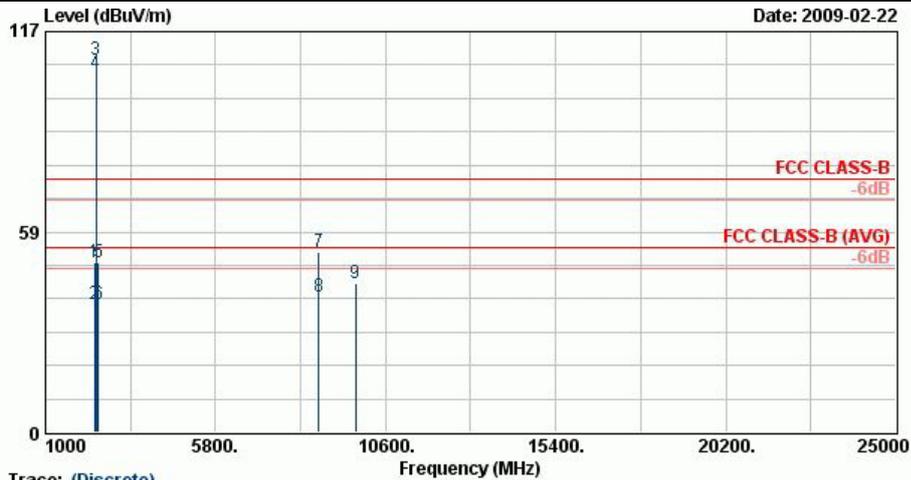


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.61	42.63	-11.37	54.00	43.01	31.98	3.92	36.28	100	51	Average
2	2389.61	53.96	-20.04	74.00	54.34	31.98	3.92	36.28	100	51	Peak
3 @	2412.00	103.29			103.62	32.00	3.95	36.28	100	51	Average
4 X	2412.00	107.08			107.41	32.00	3.95	36.28	100	51	Peak
5	2484.00	47.50	-26.50	74.00	47.67	32.08	4.05	36.30	100	51	Peak
6	2484.00	36.02	-17.98	54.00	36.19	32.08	4.05	36.30	100	51	Average
7	7071.00	52.28	-21.72	74.00	45.92	35.67	7.12	36.43	100	247	Peak
8	7071.00	39.22	-14.78	54.00	32.86	35.67	7.12	36.43	100	247	Average
9	9648.00	41.92	-32.08	74.00	81.32	-10.29	7.94	37.06	100	0	Peak



Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

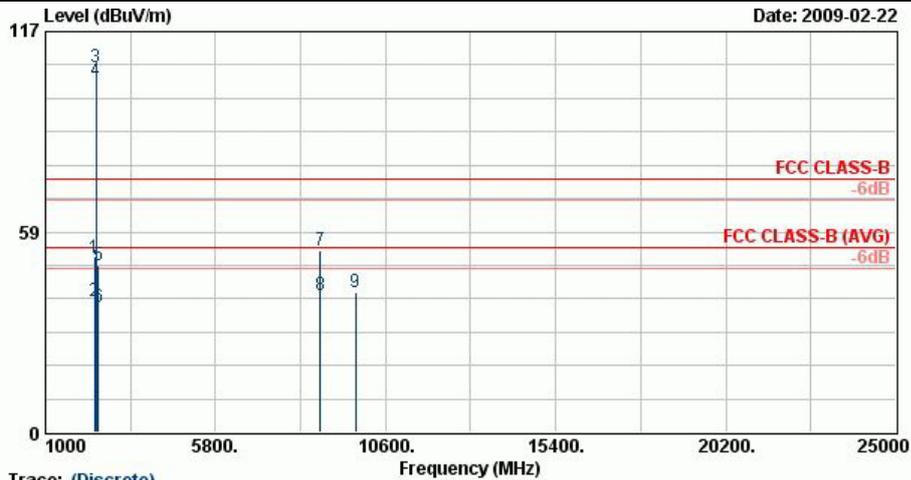


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2382.00	49.76	-24.24	74.00	50.16	31.96	3.92	36.28	105	332	Peak
2	2382.00	37.40	-16.60	54.00	37.80	31.96	3.92	36.28	105	332	Average
3 X	2437.00	108.76			109.03	32.04	3.99	36.29	105	332	Peak
4 @	2437.00	104.89			105.15	32.04	3.99	36.29	105	332	Average
5	2492.00	49.59	-24.41	74.00	49.74	32.10	4.05	36.30	105	332	Peak
6	2492.00	37.45	-16.55	54.00	37.60	32.10	4.05	36.30	105	332	Average
7	8712.00	52.80	-21.20	74.00	46.22	35.92	7.45	36.78	100	210	Peak
8	8712.00	39.57	-14.43	54.00	32.99	35.92	7.45	36.78	100	210	Average
9	9748.00	43.66	-30.34	74.00	82.79	-10.02	7.98	37.10	100	0	Peak



Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

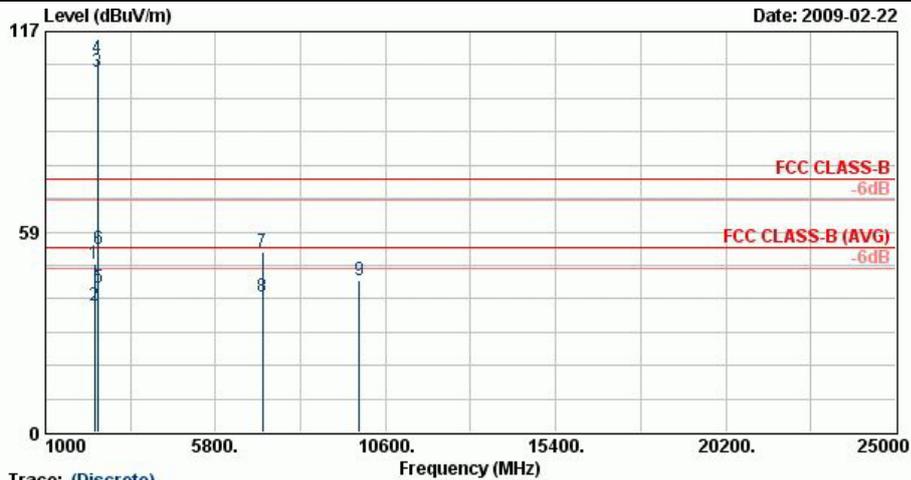


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over Limit	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos	
					dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	50.68	-23.32	74.00	51.07	31.98	3.92	36.28	100	56	Peak
2	2390.00	38.23	-15.77	54.00	38.61	31.98	3.92	36.28	100	56	Average
3 X	2437.00	106.67			106.93	32.04	3.99	36.29	100	56	Peak
4 @	2437.00	102.80			103.06	32.04	3.99	36.29	100	56	Average
5	2486.00	48.86	-25.14	74.00	49.03	32.08	4.05	36.30	100	56	Peak
6	2486.00	36.58	-17.42	54.00	36.75	32.08	4.05	36.30	100	56	Average
7	8751.00	53.22	-20.78	74.00	46.57	35.95	7.50	36.80	100	55	Peak
8	8751.00	40.14	-13.86	54.00	33.49	35.95	7.50	36.80	100	55	Average
9	9748.00	41.04	-32.96	74.00	80.17	-10.02	7.98	37.10	100	0	Peak



Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

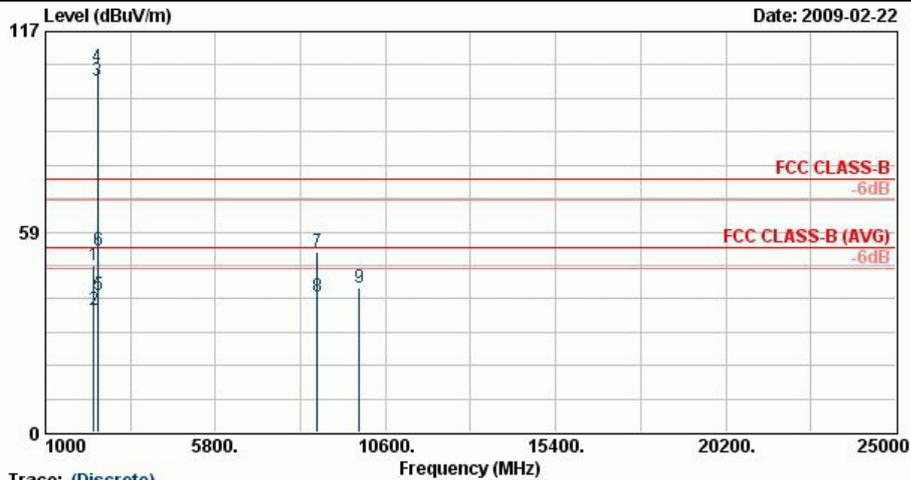


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2380.00	49.05	-24.95	74.00	49.45	31.96	3.92	36.28	104	329	Peak
2	2380.00	37.00	-17.00	54.00	37.40	31.96	3.92	36.28	104	329	Average
3 @	2462.00	105.09			105.30	32.06	4.02	36.29	104	329	Average
4 X	2462.00	109.09			109.31	32.06	4.02	36.29	104	329	Peak
5	2483.50	42.03	-11.97	54.00	42.20	32.08	4.05	36.30	104	329	Average
6	2483.50	53.35	-20.65	74.00	53.52	32.08	4.05	36.30	104	329	Peak
7	7122.00	52.71	-21.29	74.00	46.38	35.65	7.13	36.45	100	314	Peak
8	7122.00	39.38	-14.62	54.00	33.05	35.65	7.13	36.45	100	314	Average
9	9848.00	44.47	-29.53	74.00	83.34	-9.77	8.04	37.14	100	0	Peak



Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

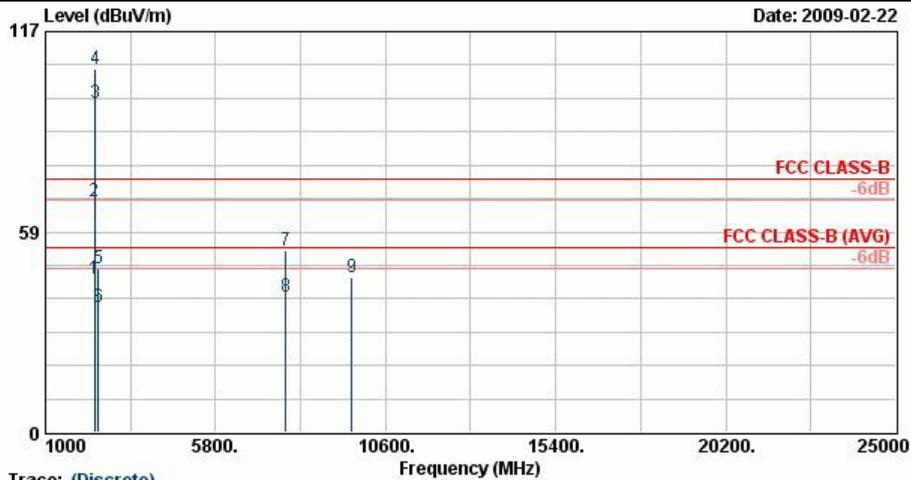


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2364.00	48.58	-25.42	74.00	49.02	31.93	3.89	36.27	100	56	Peak
2	2364.00	35.76	-18.24	54.00	36.21	31.93	3.89	36.27	100	56	Average
3 @	2462.00	102.72			102.93	32.06	4.02	36.29	100	56	Average
4 X	2462.00	106.59			106.80	32.06	4.02	36.29	100	56	Peak
5	2484.61	39.90	-14.10	54.00	40.07	32.08	4.05	36.30	100	56	Average
6	2484.61	52.86	-21.14	74.00	53.03	32.08	4.05	36.30	100	56	Peak
7	8676.00	52.70	-21.30	74.00	46.17	35.88	7.42	36.77	100	260	Peak
8	8676.00	39.49	-14.51	54.00	32.96	35.88	7.42	36.77	100	260	Average
9	9848.00	42.08	-31.92	74.00	80.95	-9.77	8.04	37.14	100	0	Peak



Test Mode :	Mode 4	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

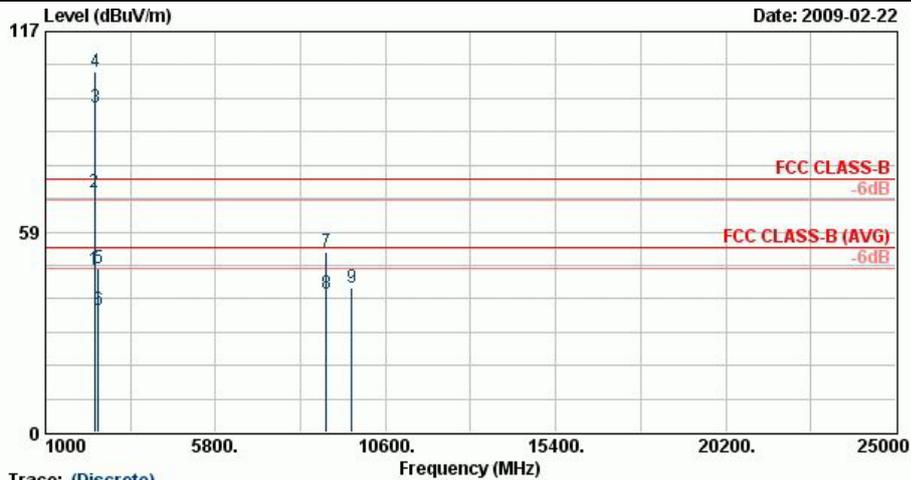


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.99	45.02	-8.98	54.00	45.40	31.98	3.92	36.28	105	332	Average
2	2389.99	67.54	-6.46	74.00	67.92	31.98	3.92	36.28	105	332	Peak
3 @	2412.00	95.93			96.26	32.00	3.95	36.28	105	332	Average
4 X	2412.00	106.30			106.63	32.00	3.95	36.28	105	332	Peak
5	2484.00	48.03	-25.97	74.00	48.20	32.08	4.05	36.30	105	332	Peak
6	2484.00	36.40	-17.60	54.00	36.57	32.08	4.05	36.30	105	332	Average
7	7776.00	52.93	-21.07	74.00	46.58	35.61	7.40	36.66	100	249	Peak
8	7776.00	39.59	-14.41	54.00	33.23	35.61	7.40	36.66	100	249	Average
9	9648.00	45.15	-28.85	74.00	84.56	-10.29	7.94	37.06	100	0	Peak



Test Mode :	Mode 4	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

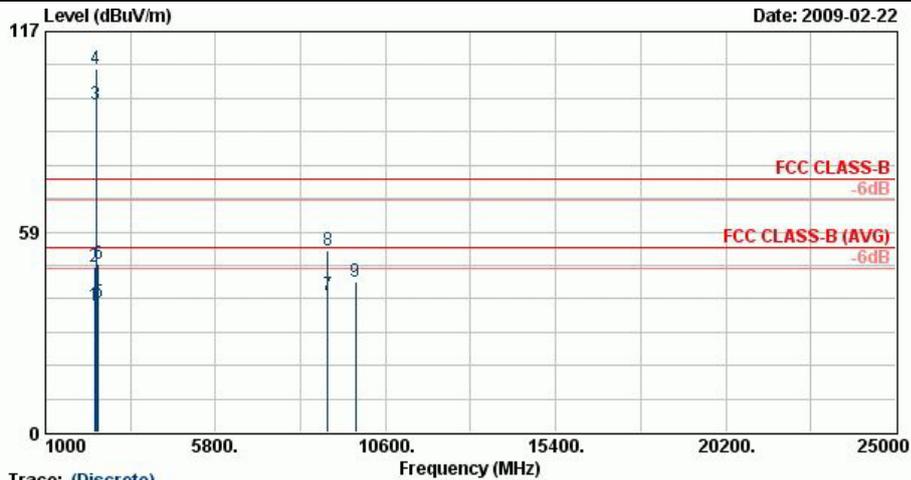


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.99	47.25	-6.75	54.00	47.63	31.98	3.92	36.28	100	56	Average
2 !	2389.99	70.23	-3.77	74.00	70.61	31.98	3.92	36.28	100	56	Peak
3 @	2412.00	94.73			95.06	32.00	3.95	36.28	100	56	Average
4 X	2412.00	105.17			105.50	32.00	3.95	36.28	100	56	Peak
5	2486.00	47.66	-26.34	74.00	47.82	32.08	4.05	36.30	100	56	Peak
6	2486.00	35.50	-18.50	54.00	35.67	32.08	4.05	36.30	100	56	Average
7	8922.00	52.52	-21.48	74.00	45.57	36.12	7.71	36.87	100	30	Peak
8	8922.00	40.57	-13.43	54.00	33.61	36.12	7.71	36.87	100	30	Average
9	9648.00	42.22	-31.78	74.00	81.63	-10.29	7.94	37.06	100	0	Peak



Test Mode :	Mode 5	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

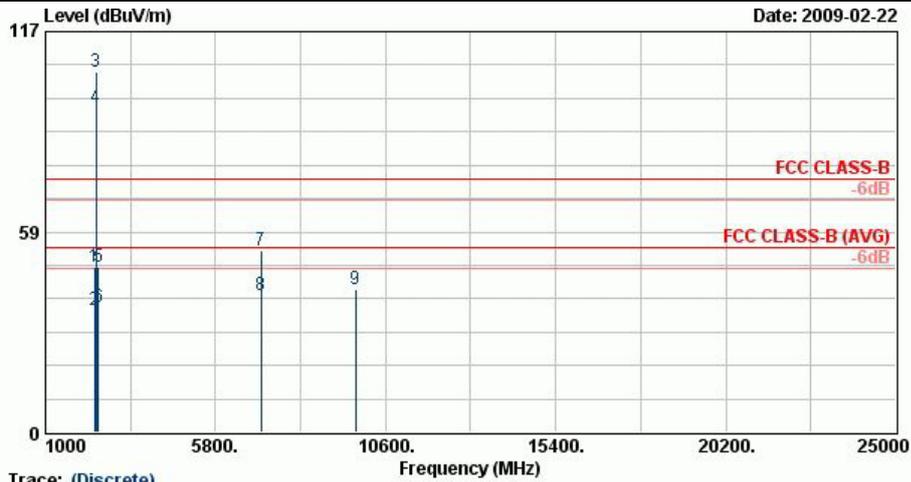


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	36.85	-17.15	54.00	37.23	31.98	3.92	36.28	102	334	Average
2	2390.00	48.44	-25.56	74.00	48.83	31.98	3.92	36.28	102	334	Peak
3 @	2437.00	95.70			95.96	32.04	3.99	36.29	102	334	Average
4 X	2437.00	105.94			106.22	32.02	3.99	36.29	102	334	Peak
5	2484.00	37.74	-16.26	54.00	37.91	32.08	4.05	36.30	102	334	Average
6	2484.00	49.18	-24.82	74.00	49.34	32.08	4.05	36.30	102	334	Peak
7	8967.00	39.93	-14.07	54.00	32.87	36.17	7.77	36.88	100	108	Average
8	8967.00	53.14	-20.86	74.00	46.08	36.17	7.77	36.88	100	108	Peak
9	9748.00	43.81	-30.19	74.00	572.93	500.00	7.98	37.10	100	0	Peak



Test Mode :	Mode 5	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

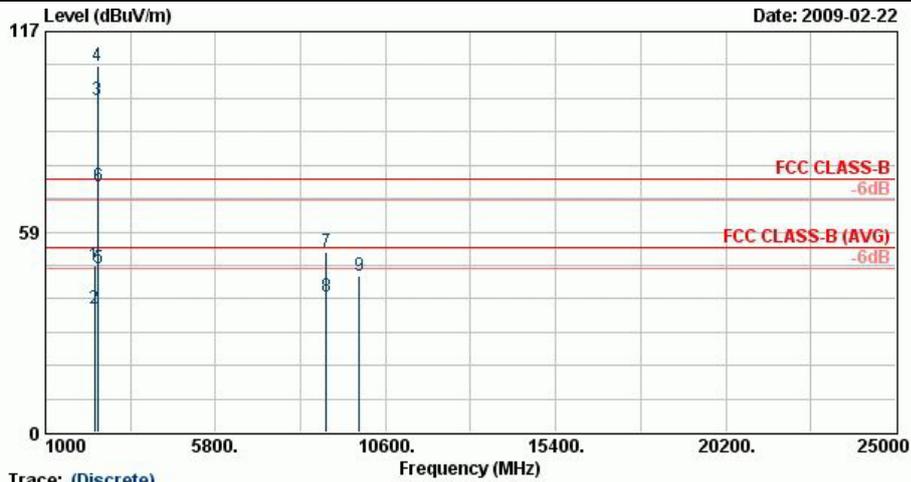


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	48.10	-25.90	74.00	48.49	31.98	3.92	36.28	100	52	Peak
2	2390.00	35.79	-18.21	54.00	36.17	31.98	3.92	36.28	100	52	Average
3 X	2437.00	105.14			105.42	32.02	3.99	36.29	100	52	Peak
4 X	2437.00	94.79			95.05	32.04	3.99	36.29	100	52	Average
5	2484.00	48.30	-25.70	74.00	48.47	32.08	4.05	36.30	100	52	Peak
6	2484.00	36.49	-17.51	54.00	36.66	32.08	4.05	36.30	100	52	Average
7	7077.00	52.86	-21.14	74.00	46.50	35.67	7.12	36.43	100	304	Peak
8	7077.00	39.80	-14.20	54.00	33.44	35.67	7.12	36.43	100	304	Average
9	9748.00	41.58	-32.42	74.00	80.71	-10.02	7.98	37.10	100	0	Peak



Test Mode :	Mode 6	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

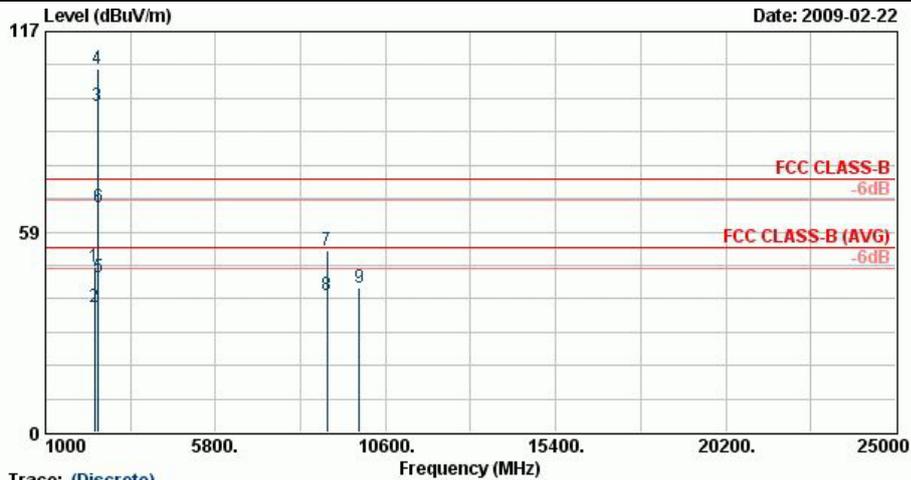


Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	48.57	-25.43	74.00	48.96	31.98	3.92	36.28	102	331	Peak
2	2390.00	36.26	-17.74	54.00	36.64	31.98	3.92	36.28	102	331	Average
3 @	2462.00	97.10			97.31	32.06	4.02	36.29	102	331	Average
4 X	2462.00	106.94			107.16	32.06	4.02	36.29	102	331	Peak
5	2483.50	47.94	-6.06	54.00	48.11	32.08	4.05	36.30	102	331	Average
6 !	2483.50	71.55	-2.45	74.00	71.72	32.08	4.05	36.30	102	331	Peak
7	8931.00	52.75	-21.25	74.00	45.78	36.13	7.71	36.87	100	206	Peak
8	8931.00	39.66	-14.34	54.00	32.69	36.13	7.71	36.87	100	206	Average
9	9847.00	45.87	-28.13	74.00	84.74	-9.77	8.04	37.14	100	0	Peak



Test Mode :	Mode 6	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	49~52%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		



Trace: (Discrete)  
 Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 920507-01

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	48.48	-25.52	74.00	48.87	31.98	3.92	36.28	100	56	Peak
2	2390.00	36.51	-17.49	54.00	36.89	31.98	3.92	36.28	100	56	Average
3 @	2462.00	95.05			95.26	32.06	4.02	36.29	100	56	Average
4 X	2462.00	105.99			106.21	32.06	4.02	36.30	100	56	Peak
5	2483.50	45.20	-8.80	54.00	45.37	32.08	4.05	36.30	100	56	Average
6	2483.50	65.69	-8.31	74.00	65.86	32.08	4.05	36.30	100	56	Peak
7	8946.00	53.09	-20.91	74.00	46.10	36.13	7.74	36.88	100	200	Peak
8	8946.00	39.85	-14.15	54.00	32.86	36.13	7.74	36.88	100	200	Average
9	9848.00	42.18	-31.82	74.00	81.05	-9.77	8.04	37.14	100	0	Peak



## **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 Shorting Monopole 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. 26, 2008	Jun. 25, 2009	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	116457	N/A	Jun. 04, 2008	Jun. 03, 2009	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~1000M Hz	Apr. 24, 2008	Apr. 23, 2009	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. 21, 2008	Apr. 20, 2009	Radiation (03CH06-HY)

## 5 Uncertainty of Evaluation

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

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
<b>Combined standard uncertainty Uc(y)</b>	<b>1.13</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.26</b>		

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

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
<b>Combined standard uncertainty Uc(y)</b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.54</b>		



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

Contribution	Uncertainty of $x_i$		$u(x_i)$	$C_i$	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2)$	+0.34/-0.35	U-shaped	0.244	1	0.244
<b>Combined standard uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of confidence of 95% <math>U = 2U_c(y)</math></b>	<b>4.72</b>				

## 6 Certification of TAF Accreditation



Certificate No. : I.1190-081212

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

<b>Accreditation Criteria</b>	: ISO/IEC 17025:2005
<b>Accreditation Number</b>	: 1190
<b>Originally Accredited</b>	: December 15, 2003
<b>Effective Period</b>	: January 10, 2007 to January 09, 2010
<b>Accredited Scope</b>	: Testing Field, see described in the Appendix
<b>Specific Accreditation Program</b>	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities

  
Jay-San Chen  
President, Taiwan Accreditation Foundation  
Date : December 12, 2008

PI, total 18 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 EP920507-01 as below.