

# FCC RF Test Report

**APPLICANT** : HTC Corporation  
**EQUIPMENT** : Smart Phone  
**MODEL NAME** : PG06100  
**FCC ID** : NM8PG06100  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : Digital Transmission System (DTS)

The product was received on Jul. 30, 2010 and completely tested on Aug. 30, 2010. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Anderson Chiu / Deputy 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.**

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SPORTON INTERNATIONAL INC.

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FCC ID : NM8PG06100

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### 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	$< 20\text{ dBc}$	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 9.0 dB at 0.384 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 4.94 dB at 31.35 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  
No. 23, Xinghua Rd., Taoyuan City, Taiwan

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smart Phone
Model Name	PG06100
FCC ID	NM8PG06100
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 : 19.93 dBm (0.098 W) 802.11g : 21.51 dBm (0.142 W) 802.11n (BW 20MHz) : 21.95 dBm (0.157 W)
Antenna Type	PIFA Antenna with gain -3 dBi
Type of Antenna Connector	N/A
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

**Remark:**

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 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	03CH05-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	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A

## 2 Test Configuration of Equipment Under Test

### 2.1 RF Power

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

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	19.44	19.69	19.81	<b>19.93</b>
CH 06	2437 MHz	19.44	19.79	19.61	19.79
CH 11	2462 MHz	19.51	19.63	19.60	19.90

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	<b>21.51</b>	21.29	20.95	20.69	20.45	20.52	20.65	20.64
CH 06	2437 MHz	21.03	20.84	20.29	20.04	20.00	20.07	20.02	20.12
CH 11	2462 MHz	21.11	20.76	20.21	20.30	20.12	20.33	20.42	20.53

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		At OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	<b>21.95</b>	20.8	20.02	20.20	20.29	20.32	20.78	20.43
CH 06	2437 MHz	20.77	20.31	20.27	20.39	20.15	19.99	20.02	19.88
CH 11	2462 MHz	21.76	20.76	20.07	20.29	20.45	20.37	20.18	20.41

**Remark:**

1. The data rates of WLAN were set in 11Mbps for 802.11b, 6Mbps for 802.11g, and MCS0 for 802.11n (BW 20MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.

## 2.2 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

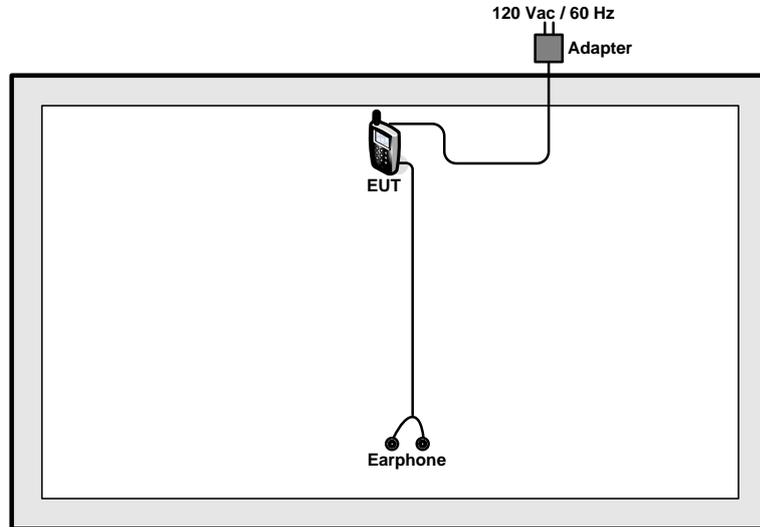
The following tables are showing the test modes as the worst cases and recorded in this report.

Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
<b>Conducted TCs</b>	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
<b>Radiated TCs</b>	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
<b>AC Conducted Emission</b>	Mode 1 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone + USB Cable 2 (Charging from Adapter 2)	

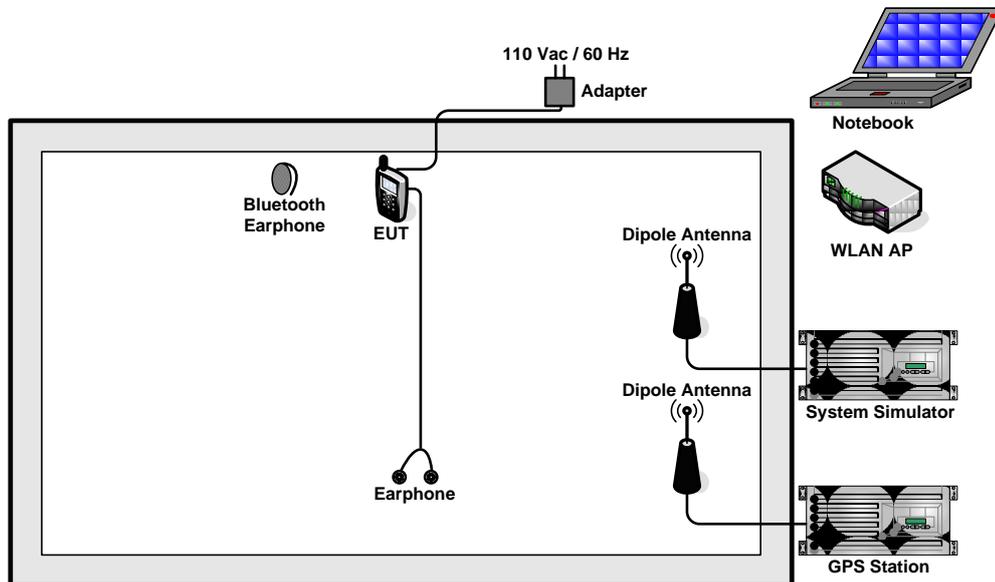
**Remark:** The test configuration of Radiated TCs and AC conducted emission is based on the worst case of AC conducted emission of part 15B report.

## 2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<EUT with Adapter Mode>





## **2.4 RF Utility**

The programmed RF utility "Remote 432X controller(P1.5)" 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.

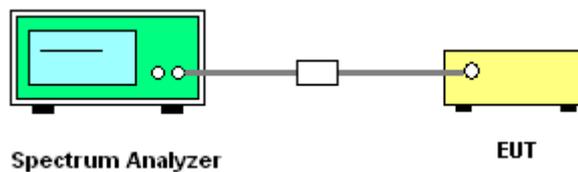
##### 3.1.2 Measuring Instruments

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



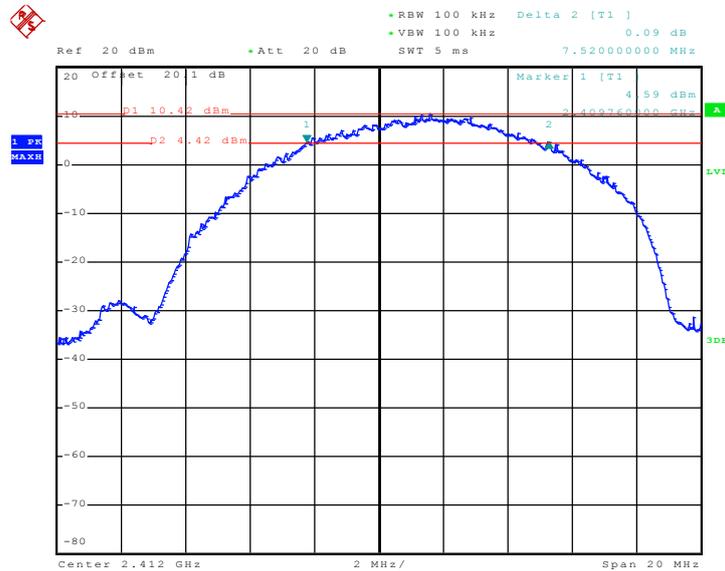


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.52	0.5	Pass
06	2437	7.76	0.5	Pass
11	2462	7.80	0.5	Pass

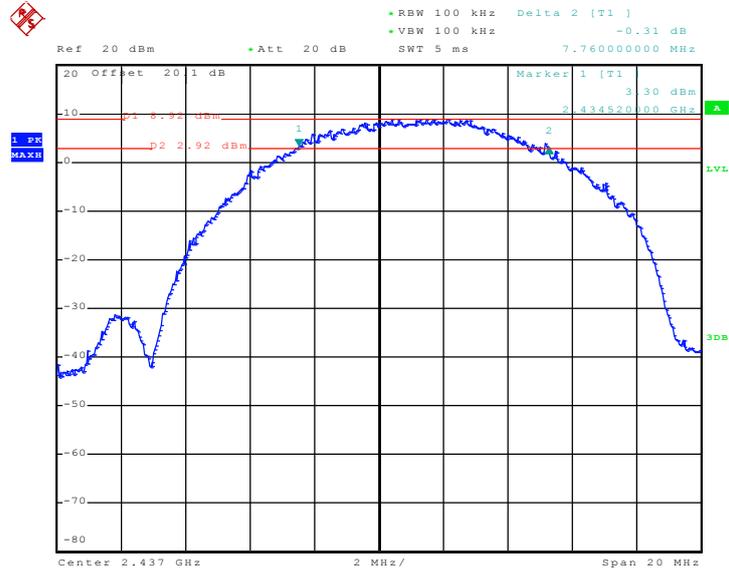
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 10.AUG.2010 06:46:15

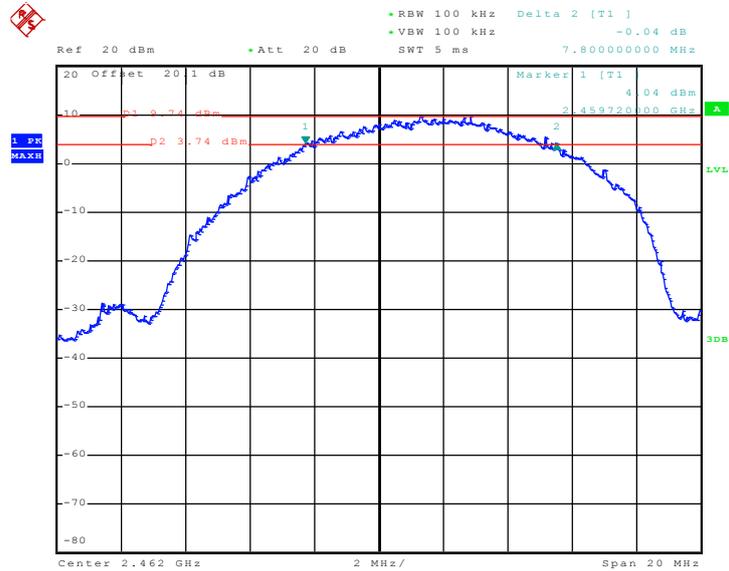


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



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



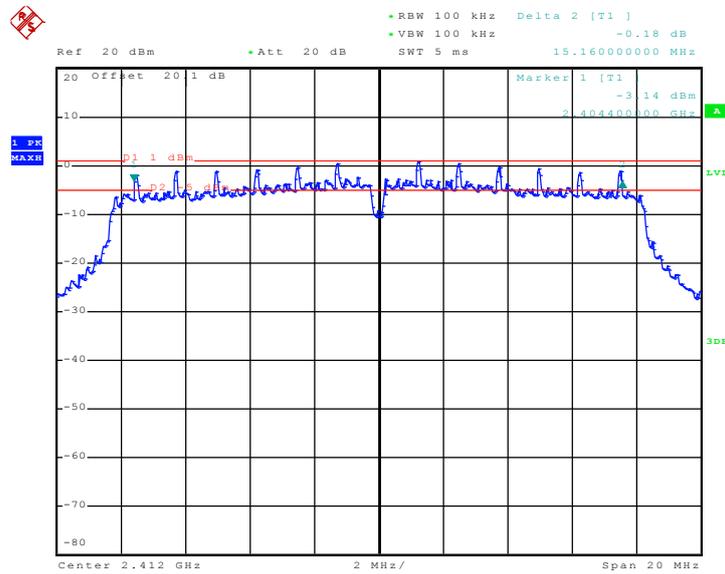
Date: 10.AUG.2010 06:53:08



Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.16	0.5	Pass
06	2437	15.12	0.5	Pass
11	2462	15.48	0.5	Pass

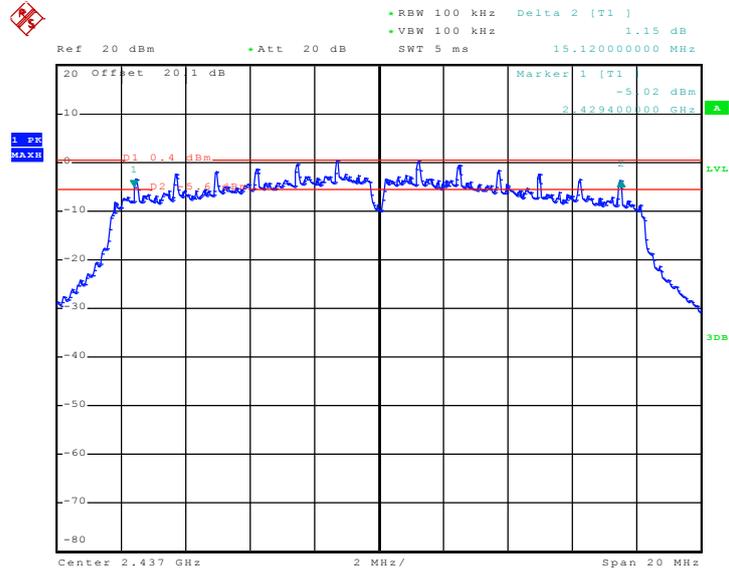
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



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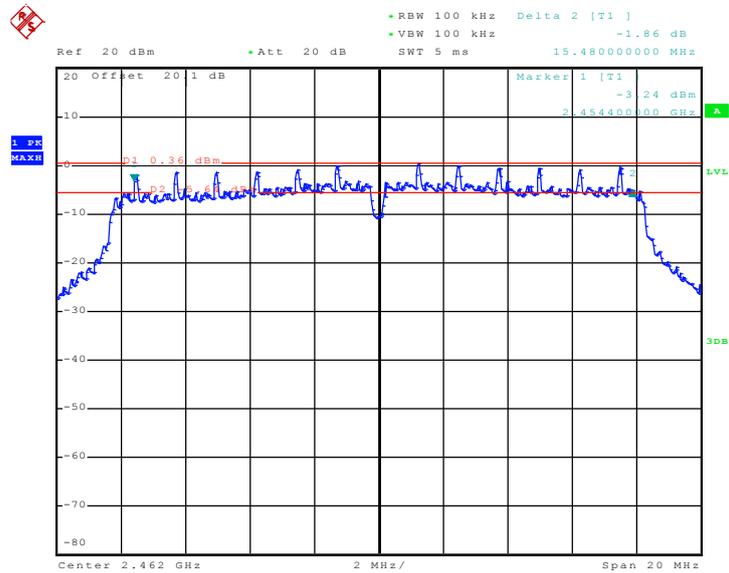


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 10.AUG.2010 11:04:08

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



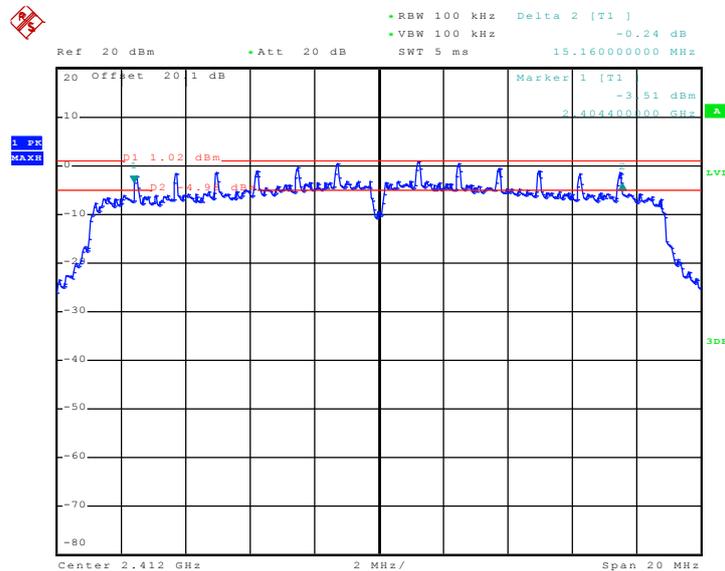
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Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.16	0.5	Pass
06	2437	15.08	0.5	Pass
11	2462	15.48	0.5	Pass

Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 10.AUG.2010 08:53:33



## 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.

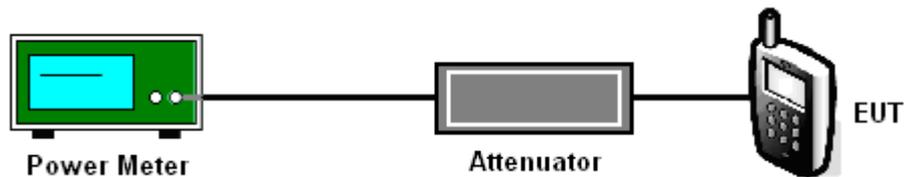
### 3.2.2 Measuring Instruments

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 power meter by a low loss cable.
3. Measure the power by power meter.

### 3.2.4 Test Setup





3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.93	30	Pass
06	2437	19.79	30	Pass
11	2462	19.90	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.51	30	Pass
06	2437	21.03	30	Pass
11	2462	21.11	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.95	30	Pass
06	2437	20.77	30	Pass
11	2462	21.76	30	Pass



### **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**

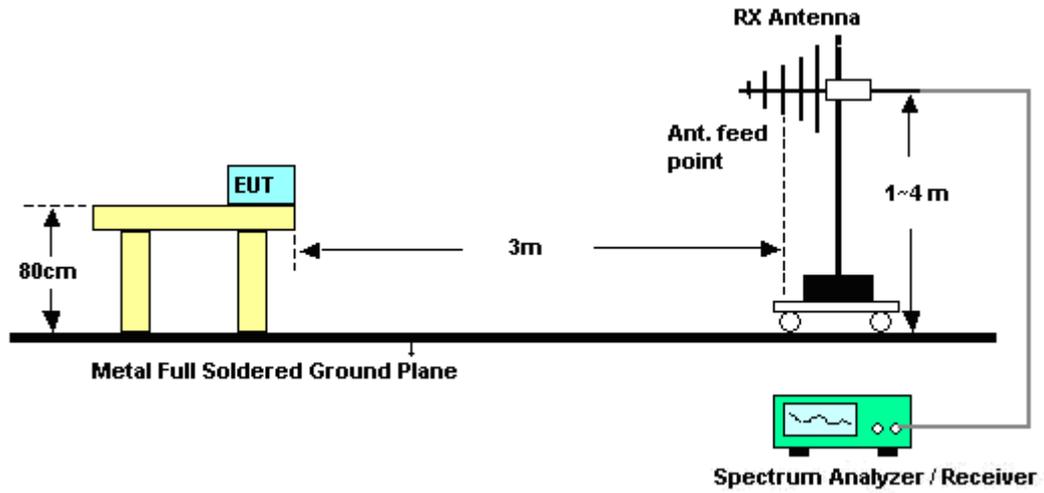
See list of measuring instruments of this test report.

#### **3.3.3 Test Procedures**

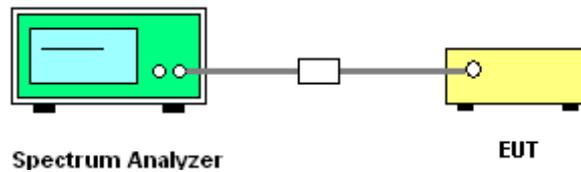
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW)  $\geq$  RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized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

### 3.3.4 Test Setup

#### <Radiated Band Edges>



#### <Conducted Band Edges>





3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	25~26°C
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.04	58.40	-15.60	74	56.57	31.9	4.47	34.54	165	314	Peak
2389.04	45.41	-8.59	54	43.58	31.9	4.47	34.54	165	314	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.99	55.48	-18.52	74	53.62	31.9	4.50	34.54	100	182	Peak
2389.99	42.86	-11.14	54	41	31.9	4.50	34.54	100	182	Average

Test Mode :	Mode 3	Temperature :	25~26°C
Test Band :	802.11b	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.5	54.90	-19.10	74	52.86	31.98	4.59	34.53	167	308	Peak
2483.5	42.20	-11.80	54	40.16	31.98	4.59	34.53	167	308	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.85	53.13	-20.87	74	51.09	31.98	4.59	34.53	100	241	Peak
2483.85	40.33	-13.67	54	38.29	31.98	4.59	34.53	100	241	Average



Test Mode :	Mode 4	Temperature :	25~26°C
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.61	63.67	-10.33	74	61.84	31.90	4.47	34.54	165	315	Peak
2389.61	44.67	-9.33	54	42.84	31.90	4.47	34.54	165	315	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.99	66.82	-7.18	74	64.96	31.90	4.50	34.54	100	176	Peak
2389.99	46.08	-7.92	54	44.22	31.90	4.50	34.54	100	176	Average

Test Mode :	Mode 6	Temperature :	25~26°C
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.66	62.40	-11.60	74	60.36	31.98	4.59	34.53	167	307	Peak
2483.66	43.91	-10.09	54	41.87	31.98	4.59	34.53	167	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.85	60.61	-13.39	74	58.57	31.98	4.59	34.53	100	200	Peak
2483.85	41.62	-12.38	54	39.58	31.98	4.59	34.53	100	200	Average



Test Mode :	Mode 7	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.42	68.31	-5.69	74	66.48	31.90	4.47	34.54	100	309	Peak
2389.42	47.08	-6.92	54	45.25	31.90	4.47	34.54	100	309	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	64.56	-9.44	74	62.73	31.90	4.47	34.54	100	179	Peak
2389.61	45.58	-8.42	54	43.75	31.90	4.47	34.54	100	179	Average

Test Mode :	Mode 9	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.5	58.50	-15.50	74	56.46	31.98	4.59	34.53	167	304	Peak
2483.5	41.30	-12.70	54	39.26	31.98	4.59	34.53	167	304	Average

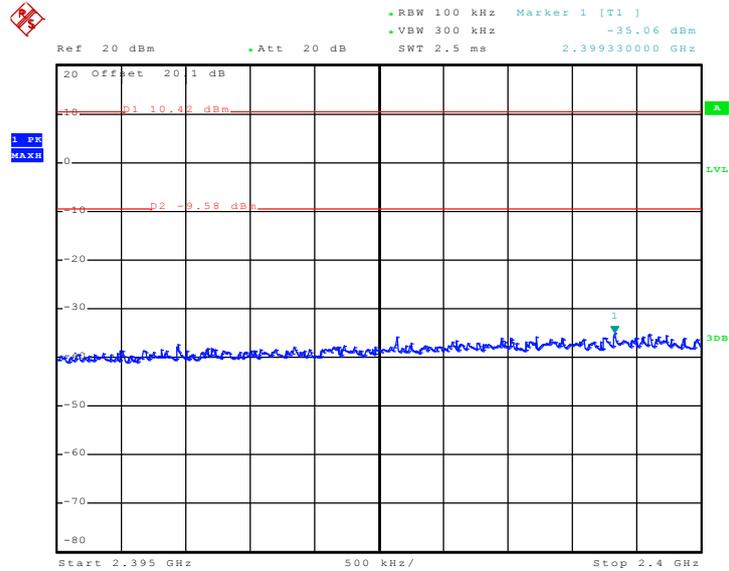
ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.85	55.42	-18.58	74	53.38	31.98	4.59	34.53	100	236	Peak
2483.85	39.16	-14.84	54	37.12	31.98	4.59	34.53	100	236	Average



### 3.3.6 Test Plots of Conducted Band Edges

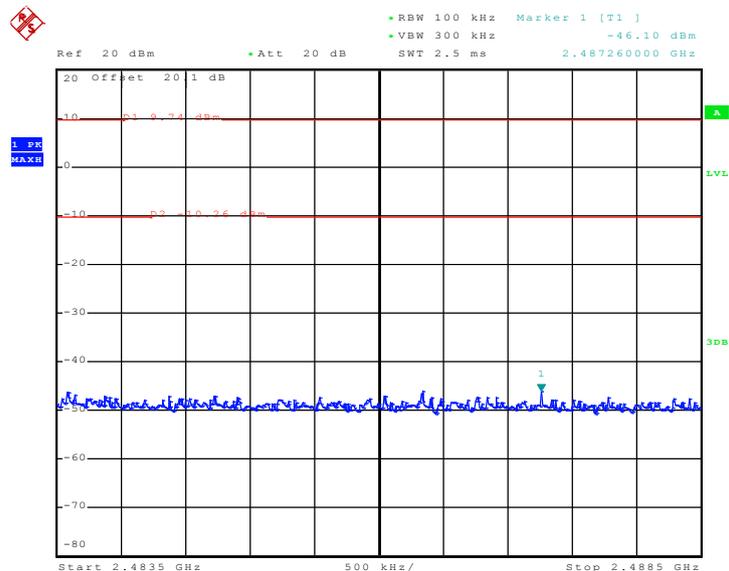
Test Mode :	Mode 1 and 3	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	41~44%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen

Low Band Edge Plot on 802.11b Channel 01



Date: 10.AUG.2010 06:46:51

High Band Edge Plot on 802.11b Channel 11

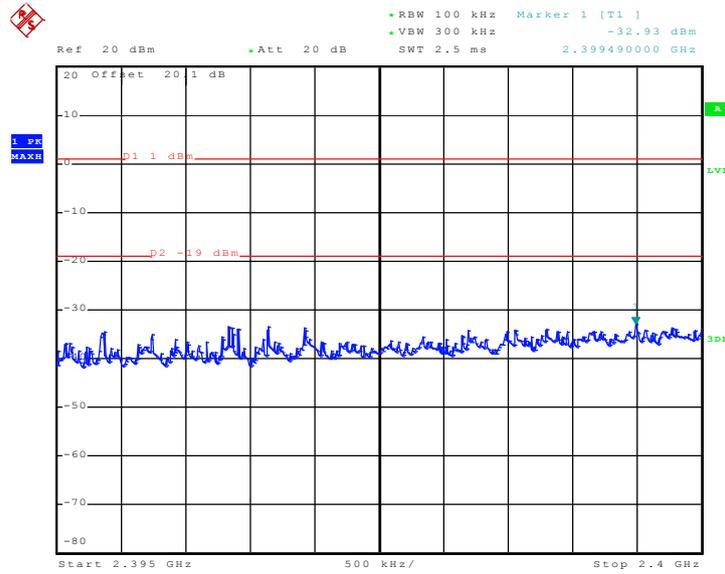


Date: 10.AUG.2010 06:53:50



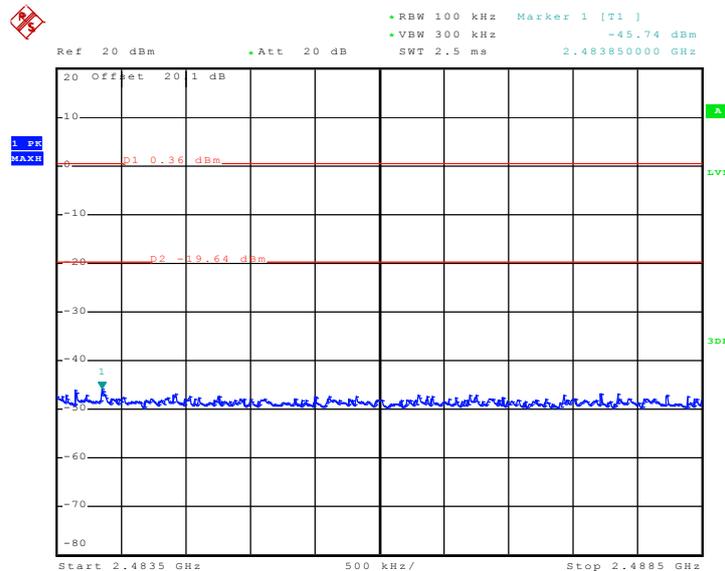
Test Mode :	Mode 4 and 6	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	41~44%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen

Low Band Edge Plot on 802.11g Channel 01



Date: 10.AUG.2010 11:09:07

High Band Edge Plot on 802.11g Channel 11

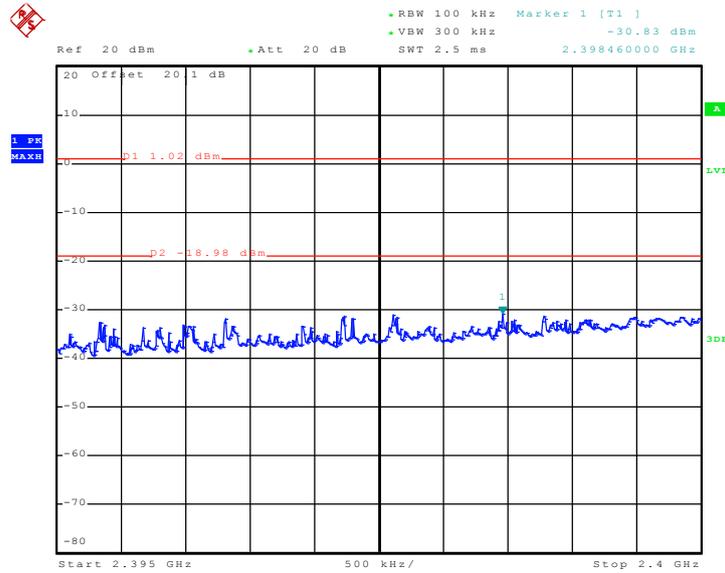


Date: 10.AUG.2010 10:54:23



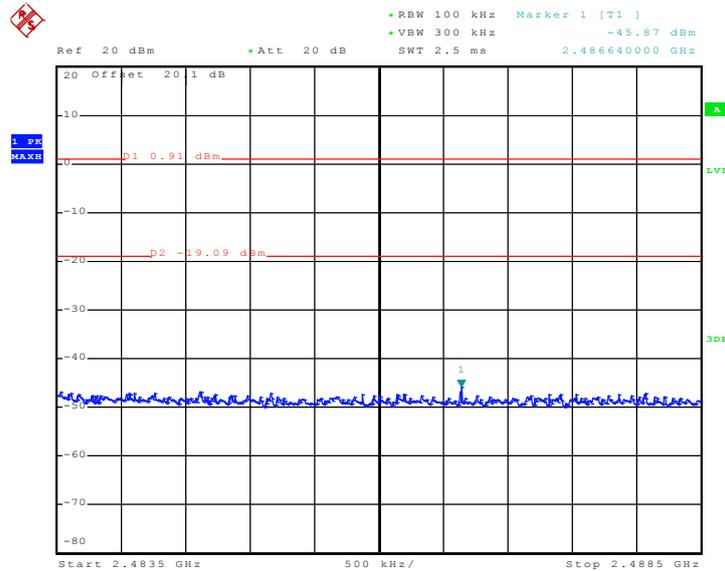
Test Mode :	Mode 7 and 9	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~44%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen

Low Band Edge Plot on 802.11n (BW 20MHz) Channel 01



Date: 10.AUG.2010 08:57:21

High Band Edge Plot on 802.11n (BW 20MHz) Channel 11



Date: 10.AUG.2010 10:29:48

## 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.

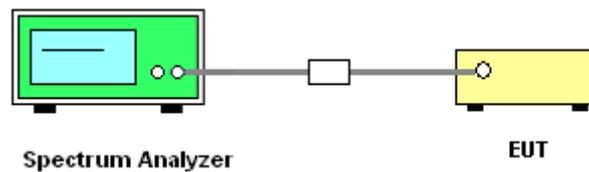
### 3.4.2 Measuring Instruments

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 RBW = 100 kHz, Video bandwidth (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

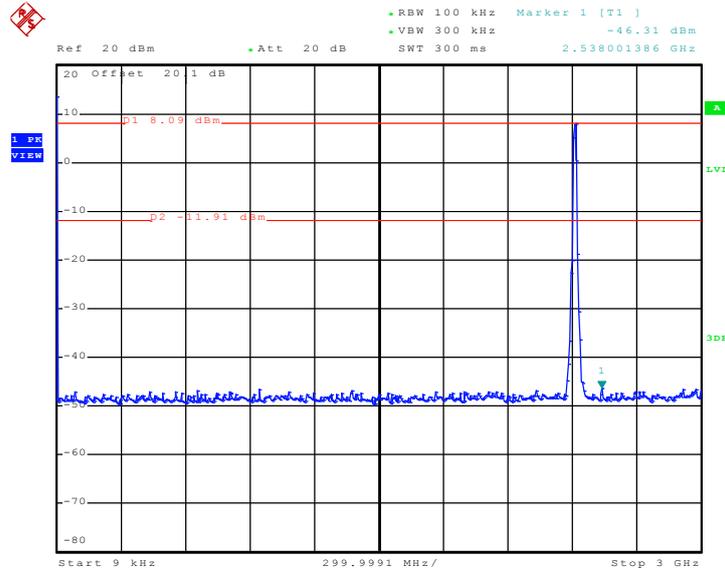




3.4.5 Test Plots of Spurious Emission

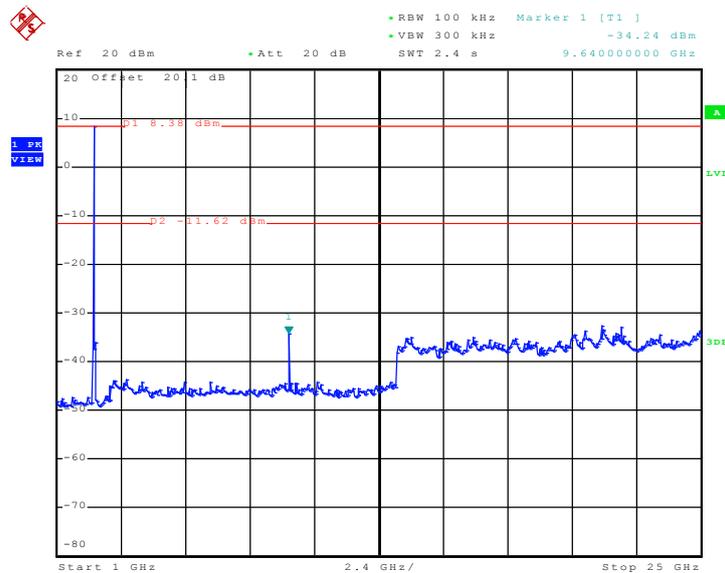
Test Mode :	Mode 1	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	41~44%
Test Channel :	01	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 17:50:46

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

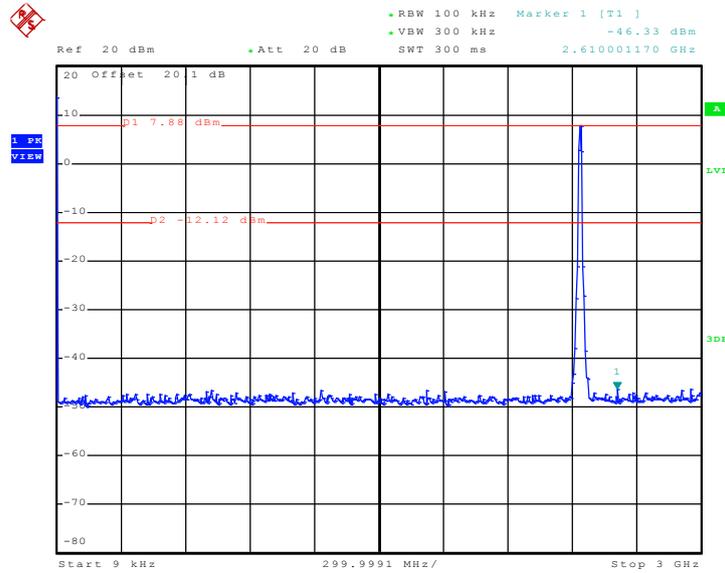


Date: 10.AUG.2010 17:52:43



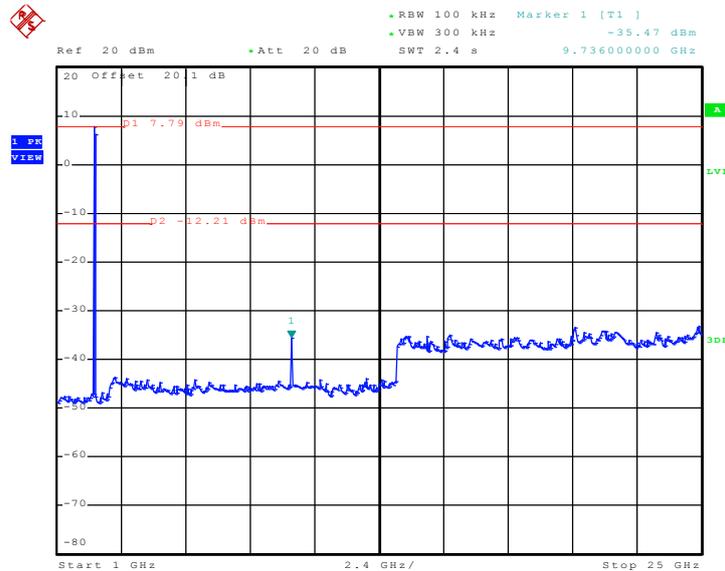
Test Mode :	Mode 2	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	41~44%
Test Channel :	06	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 17:55:42

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

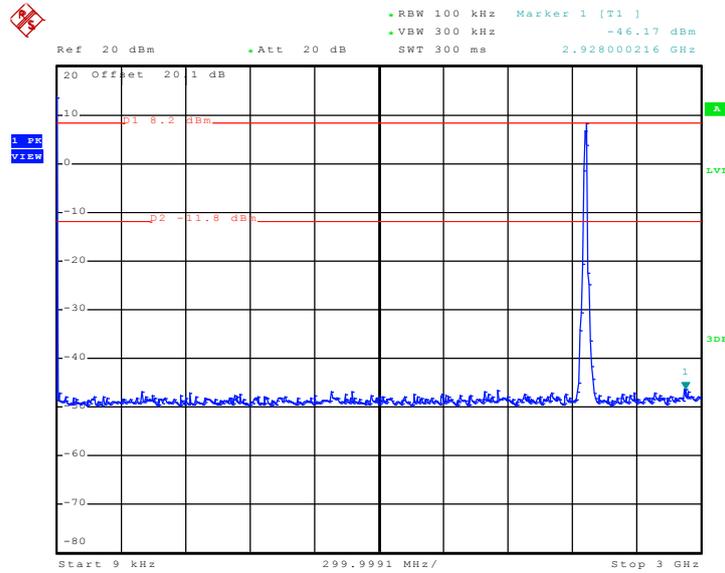


Date: 10.AUG.2010 17:54:13



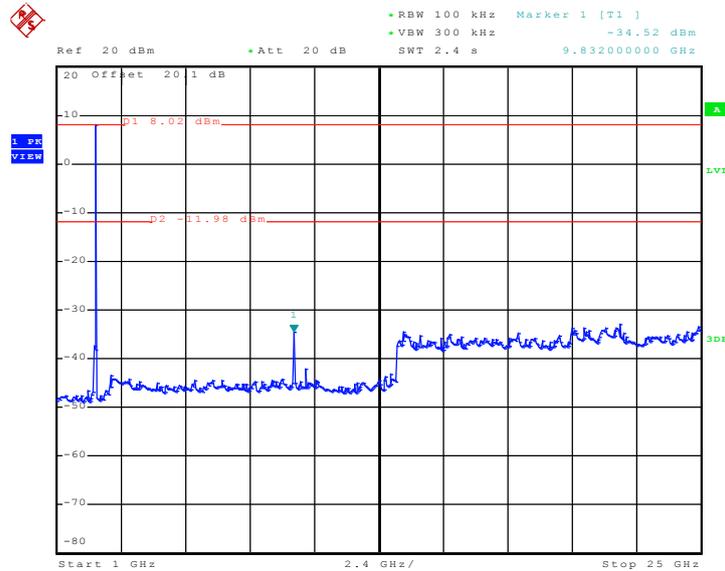
Test Mode :	Mode 3	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	41~44%
Test Channel :	11	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 17:57:11

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

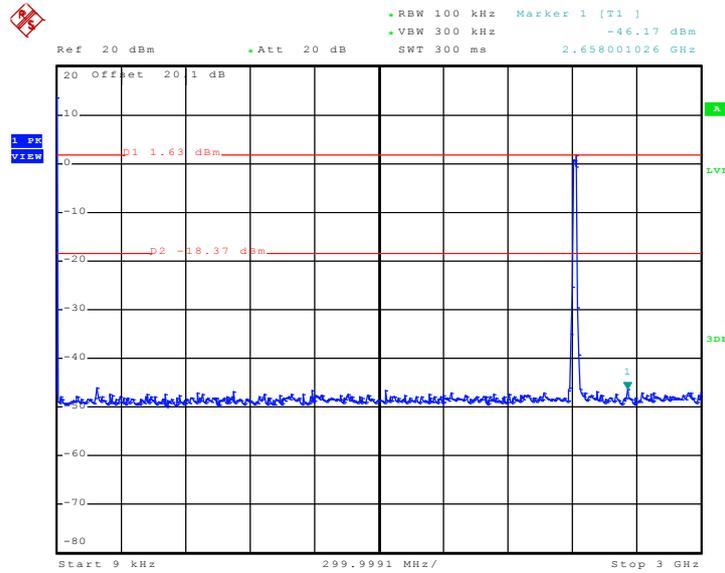


Date: 10.AUG.2010 17:59:00



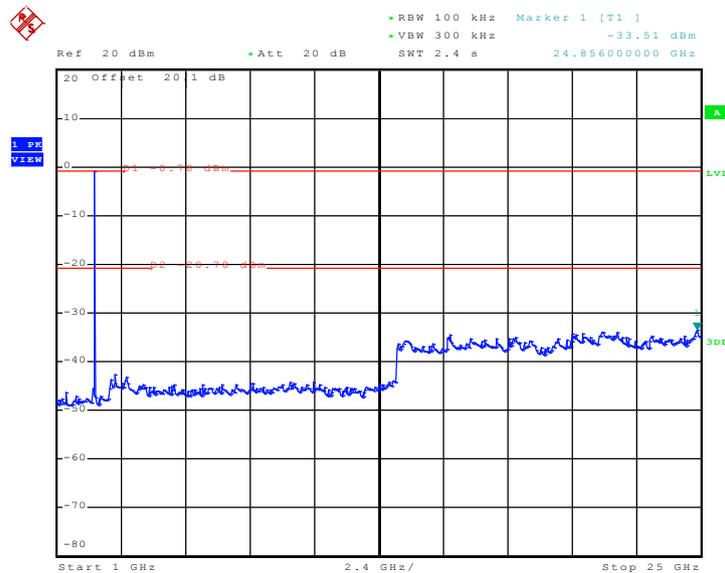
Test Mode :	Mode 4	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	41~44%
Test Channel :	01	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 18:14:11

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

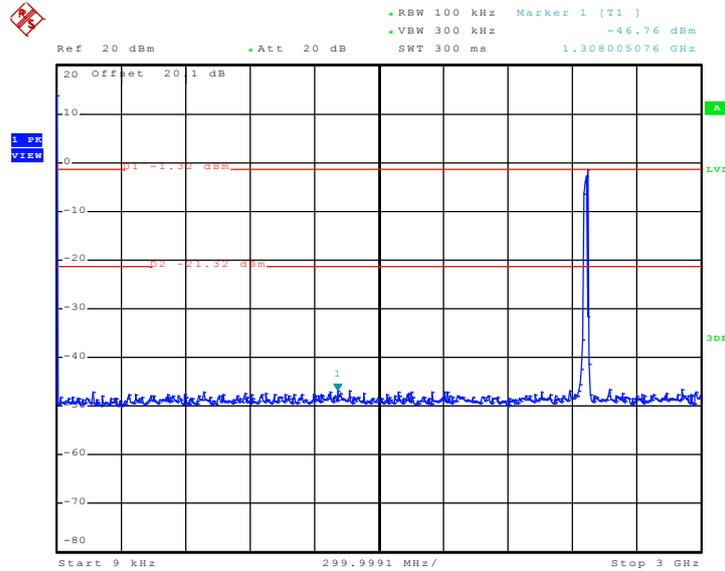


Date: 10.AUG.2010 18:15:37



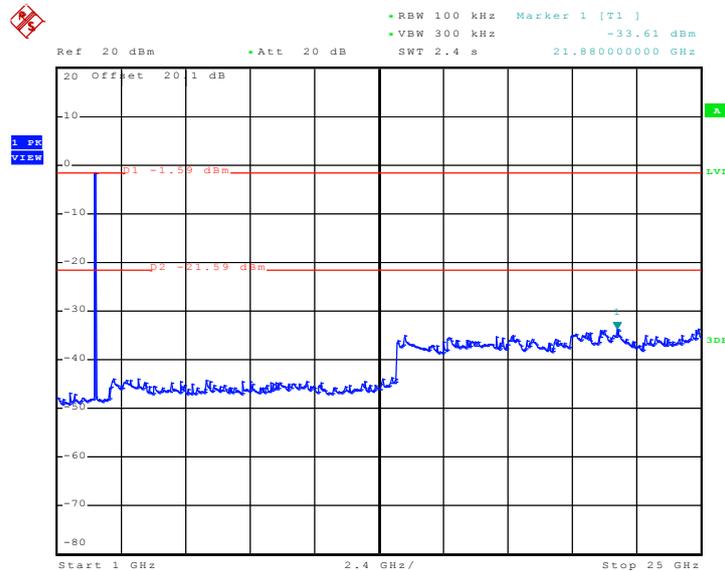
Test Mode :	Mode 5	Temperature :	25~27
Test Band :	802.11g	Relative Humidity :	41~44
Test Channel :	06	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 25.AUG.2010 17:27:16

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

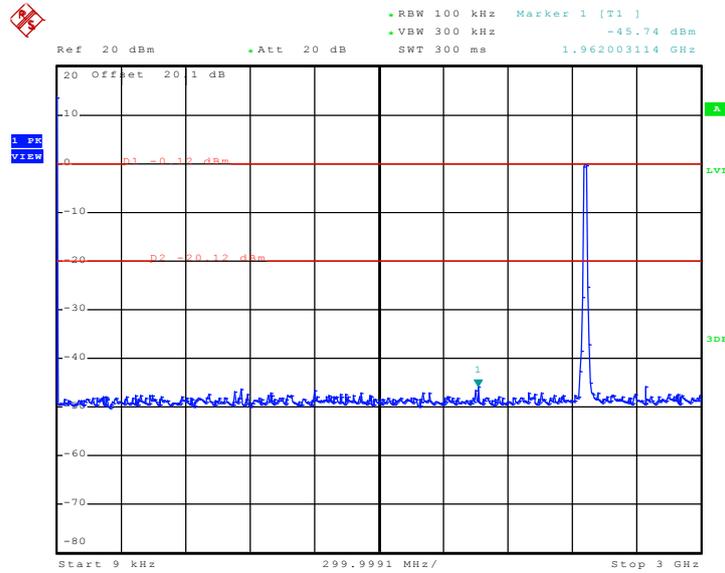


Date: 10.AUG.2010 18:11:16



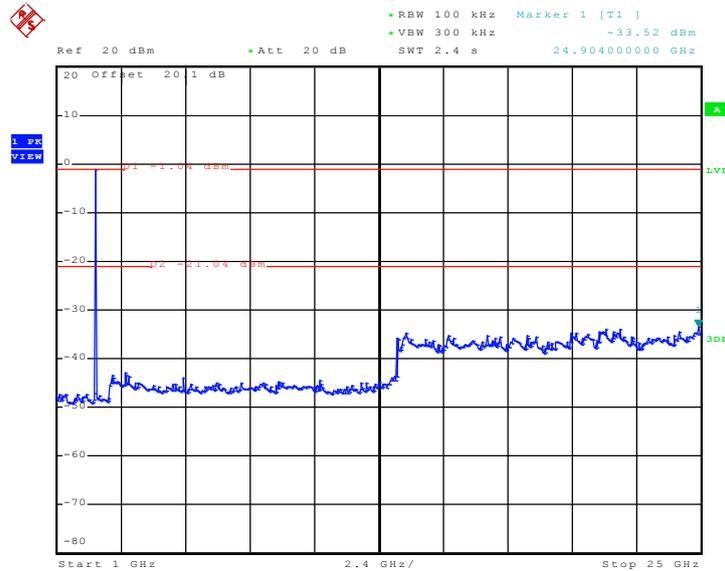
Test Mode :	Mode 6	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	41~44%
Test Channel :	11	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 18:02:26

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

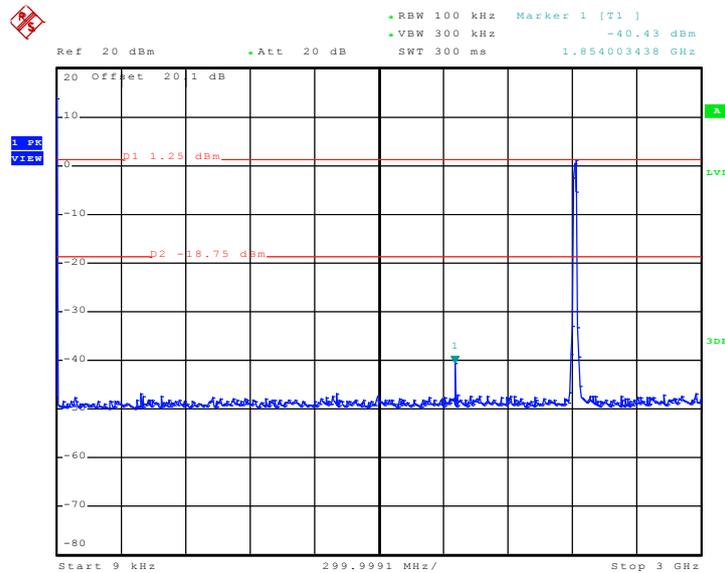


Date: 10.AUG.2010 18:08:44



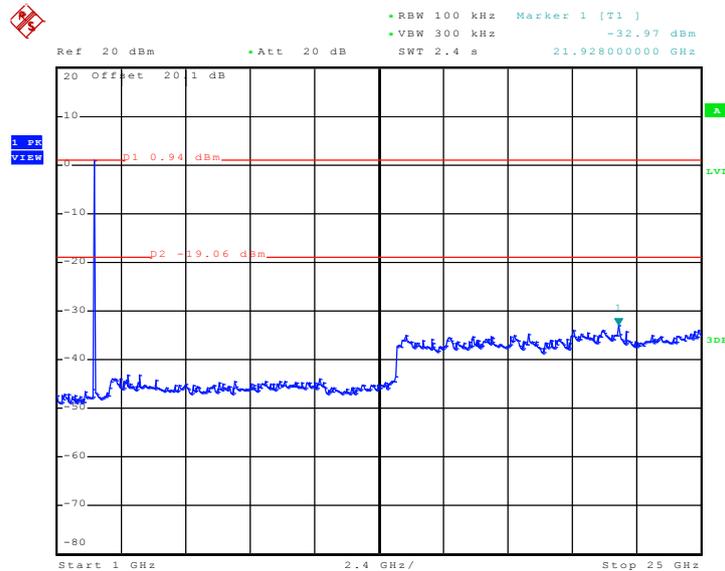
Test Mode :	Mode 7	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~44%
Test Channel :	01	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 25.AUG.2010 17:30:38

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

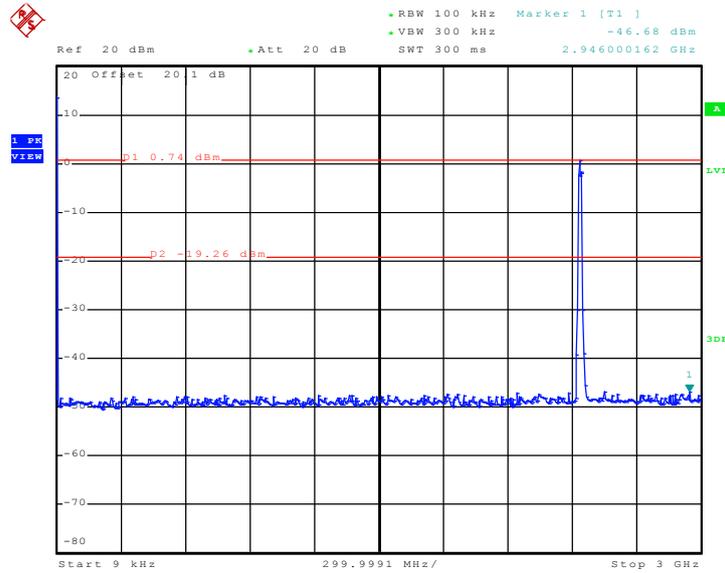


Date: 10.AUG.2010 18:17:20



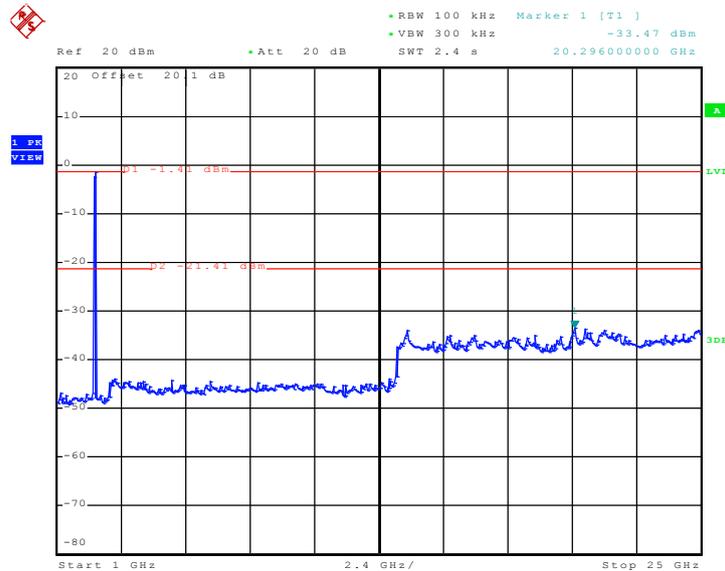
Test Mode :	Mode 8	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~44%
Test Channel :	06	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 18:22:05

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

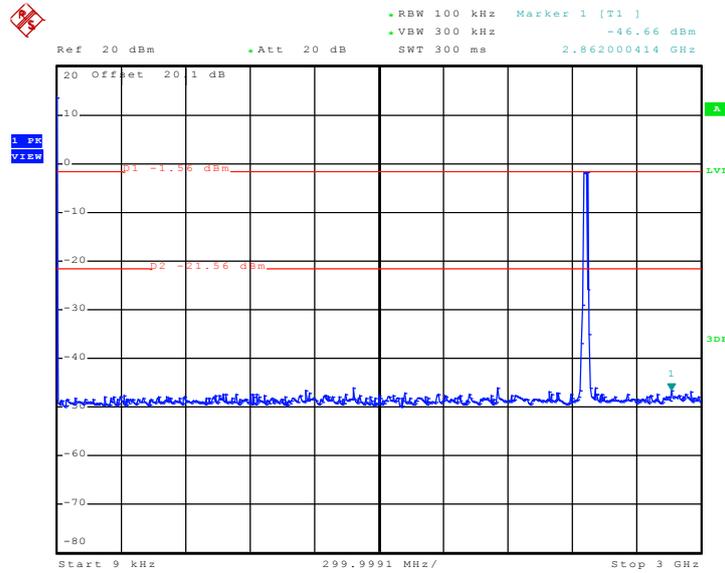


Date: 10.AUG.2010 18:20:54



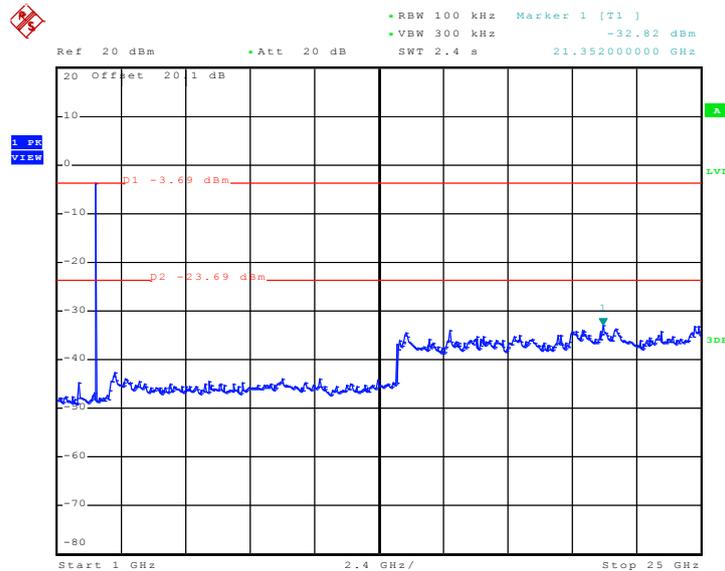
Test Mode :	Mode 9	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	41~44%
Test Channel :	11	Test Engineer :	Lancelot Chen

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 10.AUG.2010 18:23:14

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 25.AUG.2010 17:32:58

## 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.

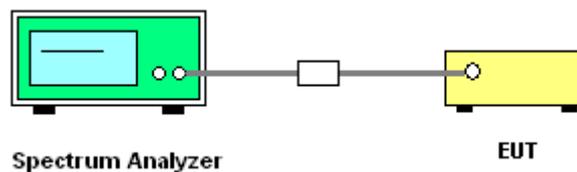
### 3.5.2 Measuring Instruments

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



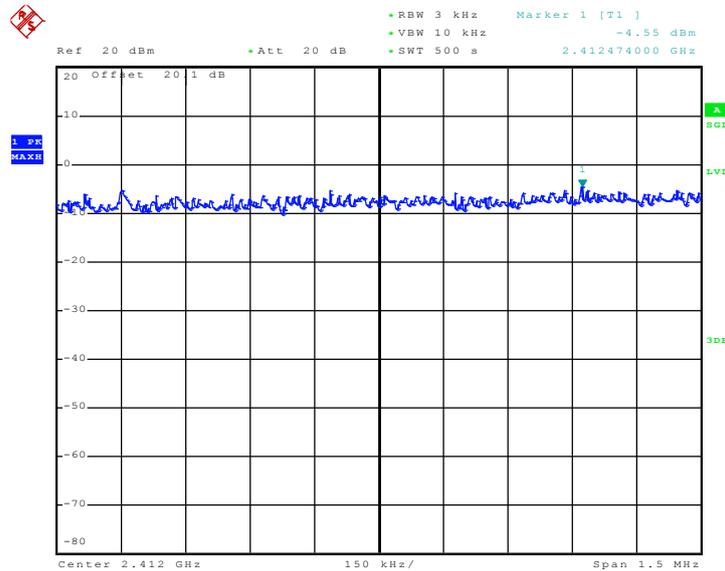


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-4.55	8	Pass
06	2437	-4.32	8	Pass
11	2462	-4.85	8	Pass

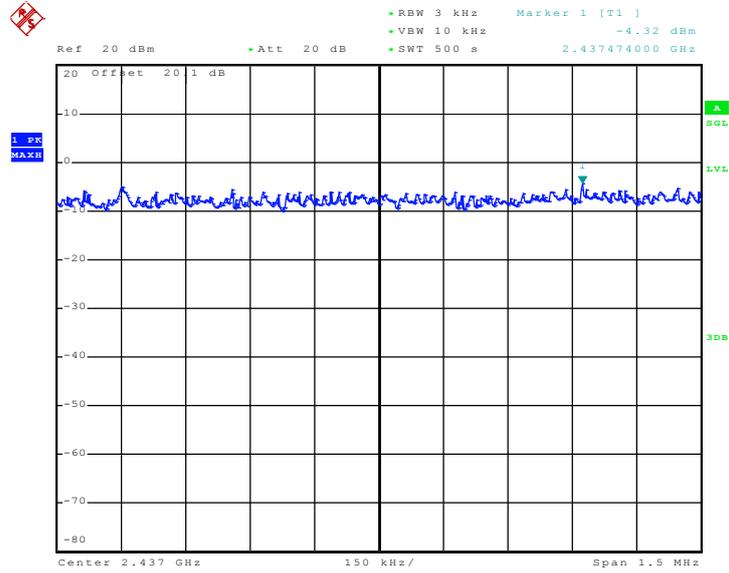
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 10.AUG.2010 07:24:55

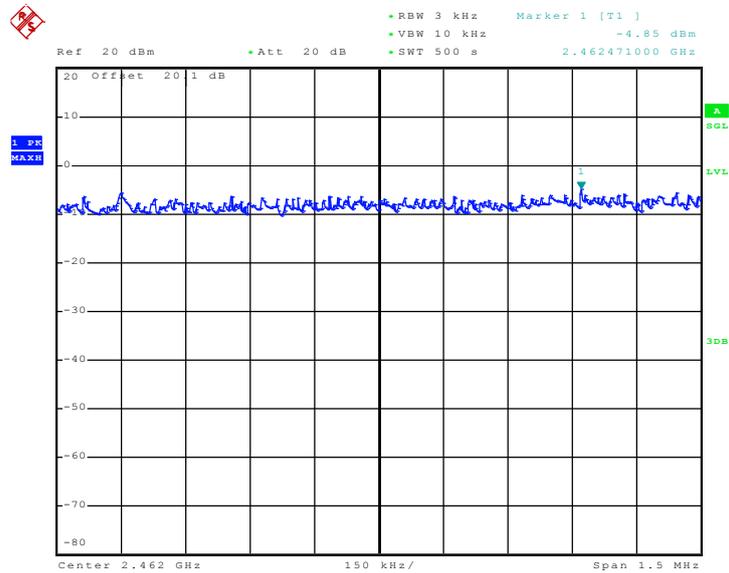


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 10.AUG.2010 07:15:47

Mode 3 : PSD Plot on 802.11b Channel 11



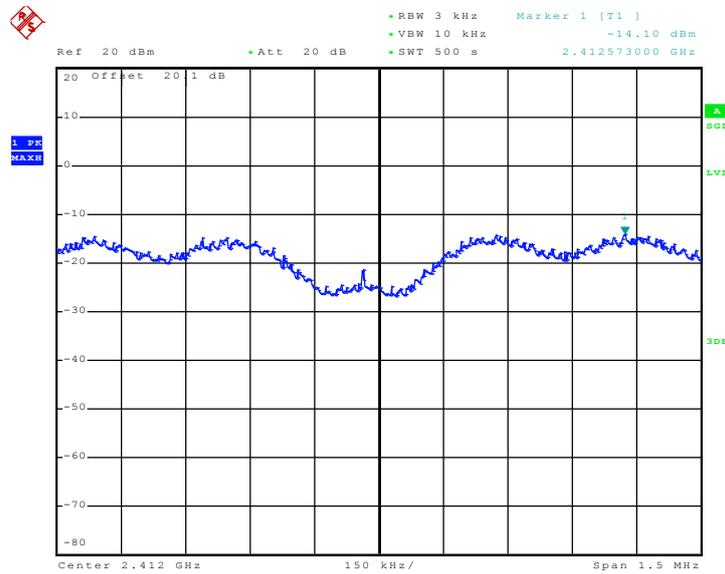
Date: 10.AUG.2010 07:04:54



Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-14.10	8	Pass
06	2437	-13.57	8	Pass
11	2462	-14.34	8	Pass

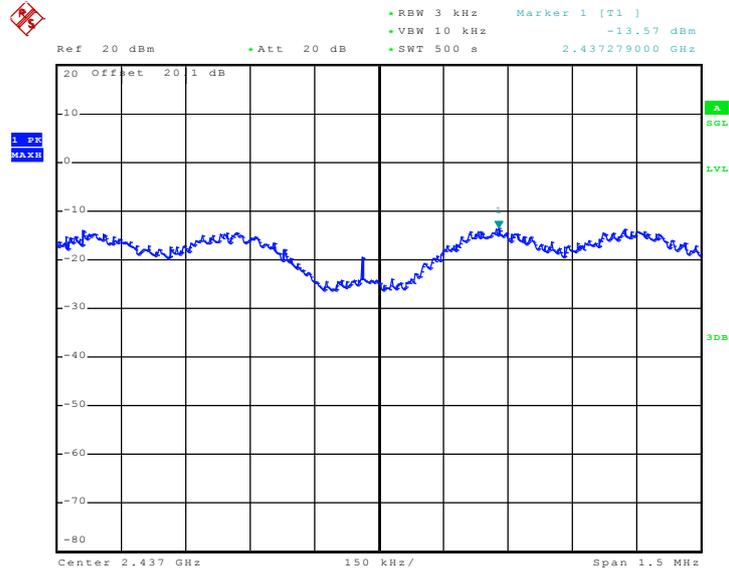
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 10.AUG.2010 07:39:17

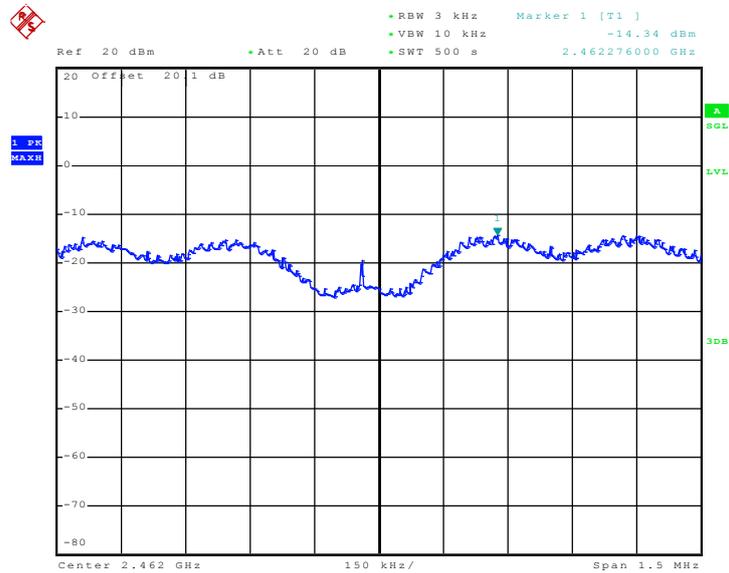


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 25.AUG.2010 17:00:52

Mode 6 : PSD Plot on 802.11g Channel 11



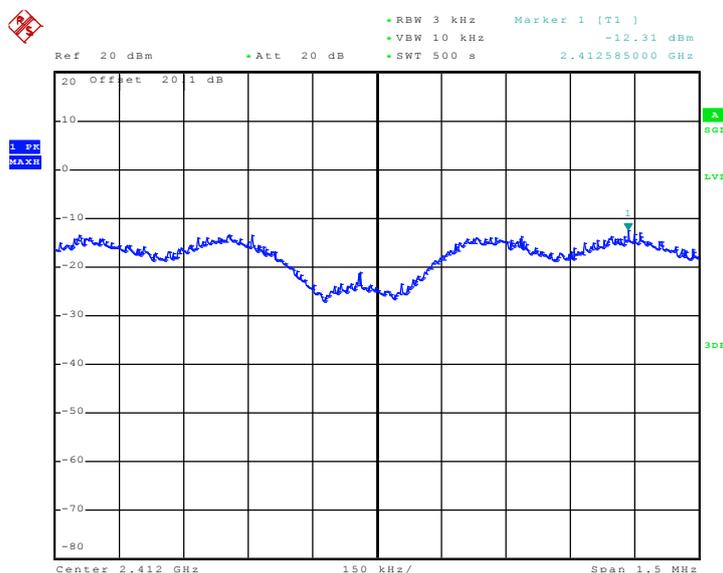
Date: 25.AUG.2010 17:23:35



Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Lancelot Chen	Relative Humidity :	41~44%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-12.31	8	Pass
06	2437	-13.04	8	Pass
11	2462	-13.14	8	Pass

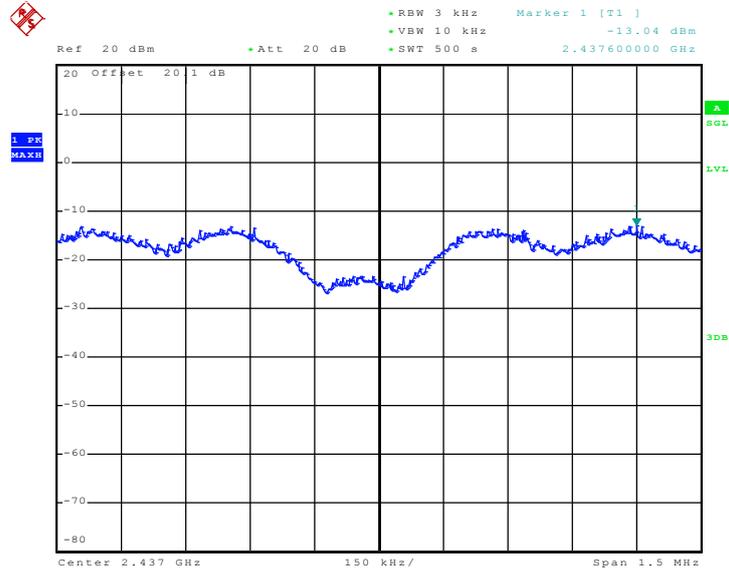
Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 25.AUG.2010 18:03:47

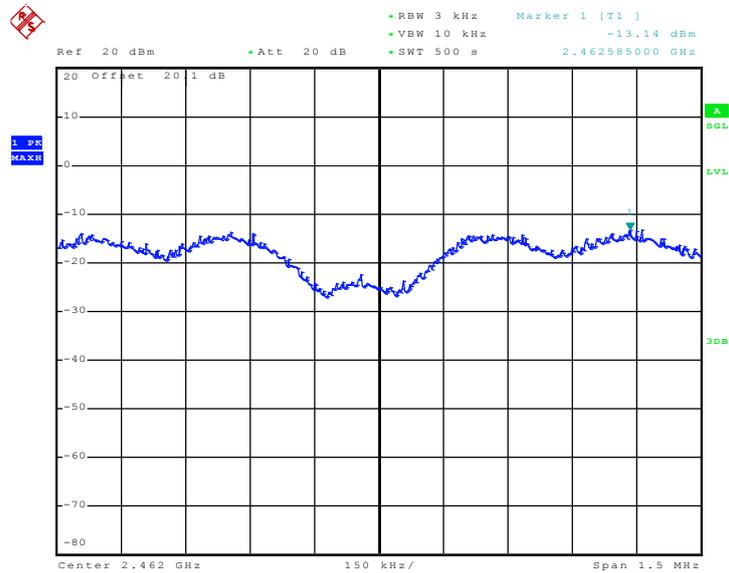


Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 25.AUG.2010 17:51:51

Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



Date: 25.AUG.2010 17:42:22

### 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.

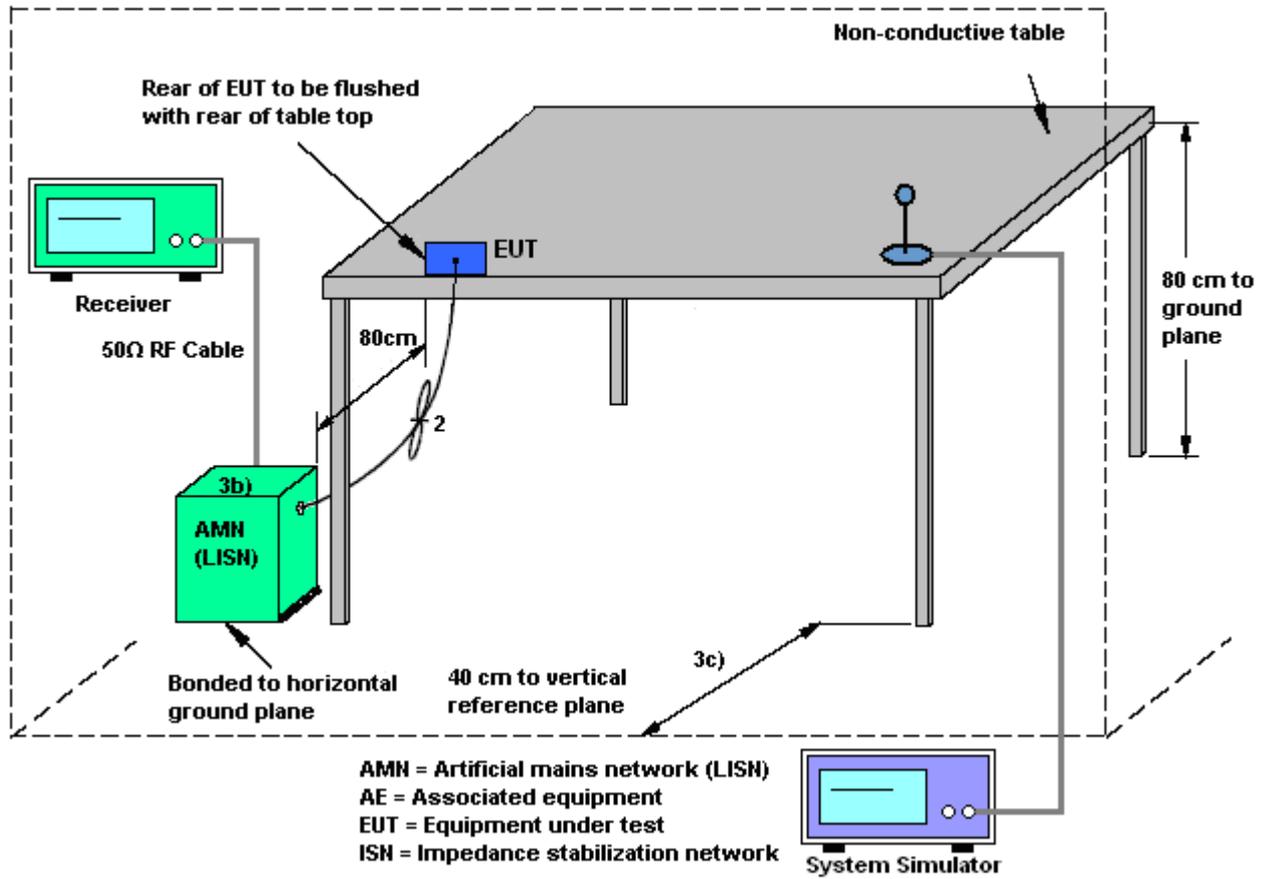
#### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.6.3 Test Procedures

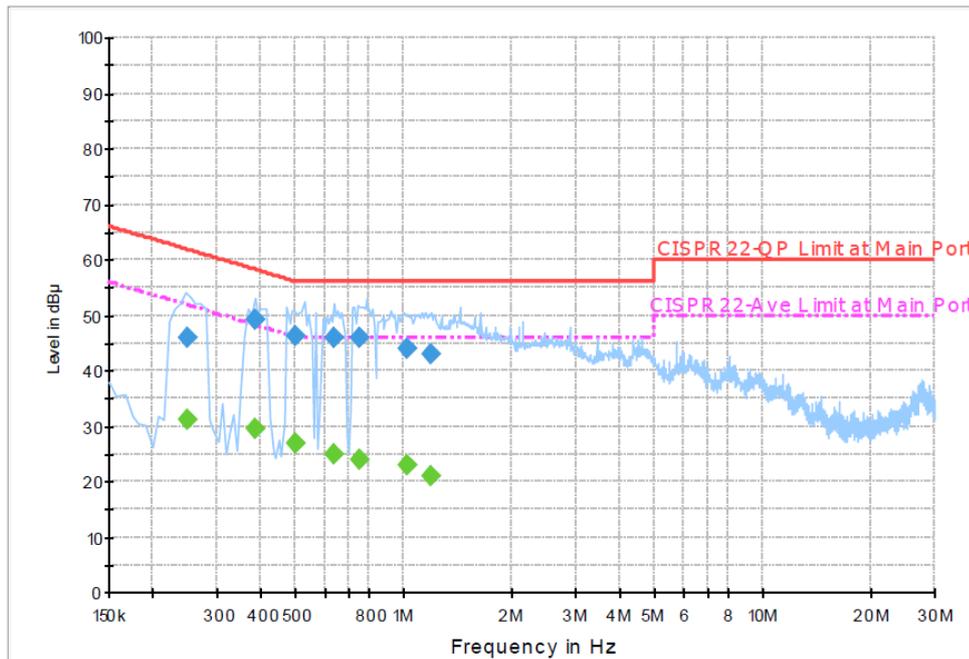
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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 :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone + USB Cable 2 (Charging from Adapter 2)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



#### Final Result 1

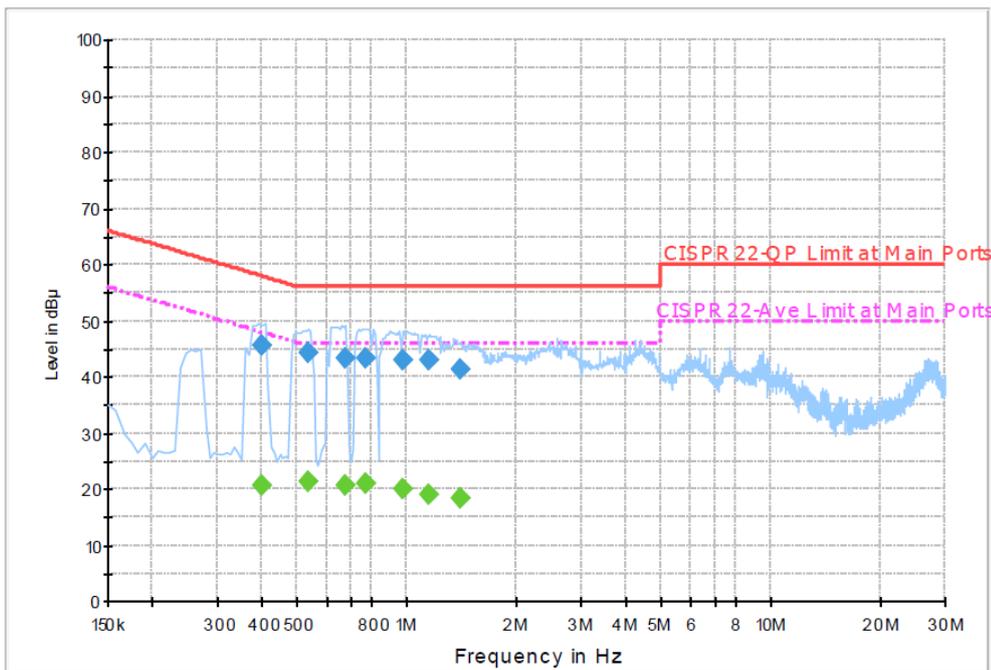
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.248000	46.0	Off	L1	19.5	15.9	61.9
0.384000	49.2	Off	L1	19.5	9.0	58.2
0.498000	46.1	Off	L1	19.4	10.0	56.1
0.638000	45.9	Off	L1	19.5	10.1	56.0
0.746000	45.8	Off	L1	19.5	10.2	56.0
1.014000	44.0	Off	L1	19.4	12.0	56.0
1.190000	43.0	Off	L1	19.5	13.0	56.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.248000	31.0	Off	L1	19.5	20.9	51.9
0.384000	29.6	Off	L1	19.5	18.6	48.2
0.498000	26.8	Off	L1	19.4	19.3	46.1
0.638000	24.9	Off	L1	19.5	21.1	46.0
0.746000	24.0	Off	L1	19.5	22.0	46.0
1.014000	22.9	Off	L1	19.4	23.1	46.0
1.190000	21.1	Off	L1	19.5	24.9	46.0



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone + USB Cable 2 (Charging from Adapter 2)		
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)
0.398000	45.7	Off	N	19.4	12.0	57.7
0.534000	44.2	Off	N	19.5	11.8	56.0
0.672000	43.3	Off	N	19.5	12.7	56.0
0.766000	43.2	Off	N	19.5	12.8	56.0
0.974000	43.0	Off	N	19.4	13.0	56.0
1.150000	42.9	Off	N	19.5	13.1	56.0
1.390000	41.3	Off	N	19.5	14.7	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.398000	20.7	Off	N	19.4	27.0	47.7
0.534000	21.2	Off	N	19.5	24.8	46.0
0.672000	20.5	Off	N	19.5	25.5	46.0
0.766000	21.0	Off	N	19.5	25.0	46.0
0.974000	19.9	Off	N	19.4	26.1	46.0
1.150000	18.9	Off	N	19.5	27.1	46.0
1.390000	18.5	Off	N	19.5	27.5	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

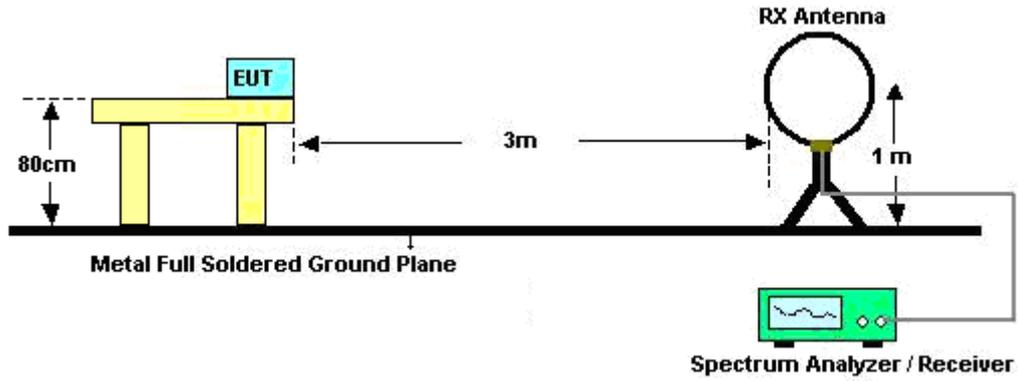
See list of measuring instruments of this test report.

#### 3.7.3 Test Procedures

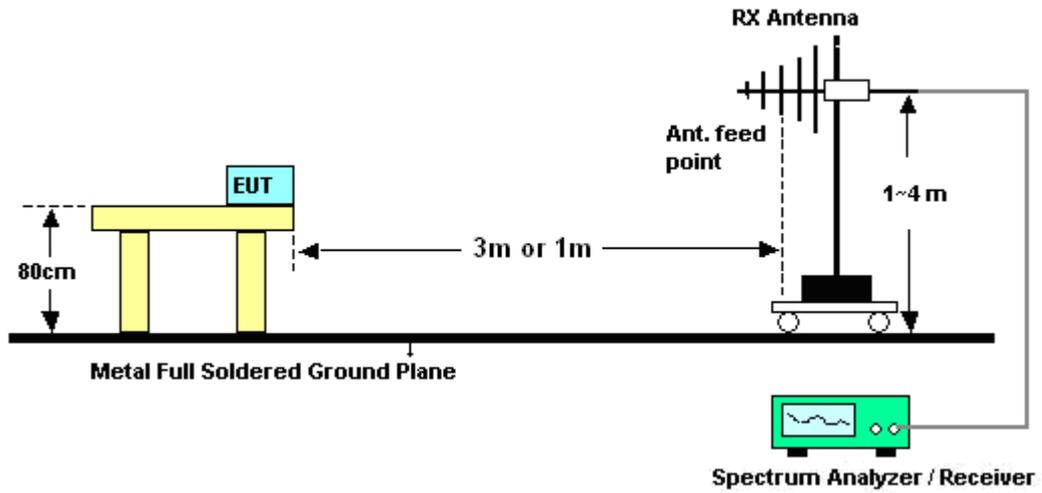
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
  - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz; VBW  $\geq$ 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

### 3.7.4 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 :	Kay Wu	Temperature :	25~26°C	
		Relative Humidity :	42~43%	
Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB);

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



3.7.6 Test Result of Radiated Emission (30 MHz ~ 10<sup>th</sup> Harmonic)

Test Mode :	Mode 1	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
58.89	29.30	-10.7	40	53.6	6.52	0.73	31.55	100	37	Peak
92.91	29.27	-14.23	43.5	49.85	10.01	0.95	31.54	-	-	Peak
186.87	30.81	-12.69	43.5	51.92	9.15	1.23	31.49	-	-	Peak
535.2	21.09	-24.91	46	31.03	18.95	2.1	30.99	-	-	Peak
710.2	22.65	-23.35	46	30.81	20.12	2.4	30.68	-	-	Peak
857.2	23.72	-22.28	46	30.7	20.87	2.65	30.5	-	-	Peak
2389.04	45.41	-8.59	54	43.58	31.9	4.47	34.54	165	314	Average
2389.04	58.40	-15.6	74	56.57	31.9	4.47	34.54	165	314	Peak
2412	97.90	-	-	96.03	31.91	4.5	34.54	165	314	Average
2412	111.10	-	-	109.23	31.91	4.5	34.54	165	314	Peak
2484	33.34	-20.66	54	31.3	31.98	4.59	34.53	165	314	Average
2484	44.91	-29.09	74	42.87	31.98	4.59	34.53	165	314	Peak



<b>Test Mode :</b>	Mode 1	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
32.16	34.11	-5.89	40	47.77	17.3	0.58	31.54	100	69	Peak
57	32.36	-7.64	40	56.32	6.85	0.73	31.54	-	-	Peak
89.94	31.72	-11.78	43.5	52.92	9.5	0.84	31.54	-	-	Peak
555.5	21.47	-24.53	46	30.96	19.3	2.15	30.94	-	-	Peak
664.7	22.48	-23.52	46	31.21	19.73	2.3	30.76	-	-	Peak
906.9	23.75	-22.25	46	30.44	21.08	2.7	30.47	-	-	Peak
2389.99	42.86	-11.14	54	41	31.9	4.5	34.54	100	182	Average
2389.99	55.48	-18.52	74	53.62	31.9	4.5	34.54	100	182	Peak
2412	95.45	-	-	93.58	31.91	4.5	34.54	100	182	Average
2412	108.27	-	-	106.4	31.91	4.5	34.54	100	182	Peak
2486	32.43	-21.57	54	30.39	31.98	4.59	34.53	100	182	Average
2486	43.37	-30.63	74	41.33	31.98	4.59	34.53	100	182	Peak



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
57.54	30.28	-9.72	40	54.24	6.85	0.73	31.54	-	-	Peak
92.64	29.66	-13.84	43.5	50.41	9.84	0.95	31.54	-	-	Peak
171.21	34.39	-9.11	43.5	55.04	9.66	1.23	31.54	100	287	Peak
461.7	19.84	-26.16	46	31.71	17.34	1.92	31.13	-	-	Peak
681.5	23.32	-22.68	46	31.87	19.84	2.35	30.74	-	-	Peak
820.1	24.32	-21.68	46	31.44	20.79	2.61	30.52	-	-	Peak
2386	35.16	-18.84	54	33.33	31.9	4.47	34.54	103	306	Average
2386	46.40	-27.6	74	44.57	31.9	4.47	34.54	103	306	Peak
2437	96.73	-	-	94.79	31.95	4.53	34.54	103	306	Average
2437	109.21	-	-	107.24	31.95	4.56	34.54	103	306	Peak
2484	32.93	-21.07	54	30.89	31.98	4.59	34.53	103	306	Average
2484	44.05	-29.95	74	42.01	31.98	4.59	34.53	103	306	Peak
4874	40.87	-13.13	54	55.6	34.37	6.49	55.59	103	35	Average
4874	51.11	-22.89	74	65.84	34.37	6.49	55.59	103	35	Peak



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.89	33.91	-6.09	40	47.57	17.3	0.58	31.54	100	10	Peak
56.73	32.30	-7.7	40	56.26	6.85	0.73	31.54	-	-	Peak
89.67	30.88	-12.62	43.5	52.29	9.29	0.84	31.54	-	-	Peak
517.7	20.81	-25.19	46	31.22	18.52	2.1	31.03	-	-	Peak
650.7	22.74	-23.26	46	31.57	19.64	2.3	30.77	-	-	Peak
954.5	24.43	-21.57	46	30.67	21.29	2.85	30.38	-	-	Peak
2390	34.31	-19.69	54	32.45	31.9	4.5	34.54	100	242	Average
2390	45.88	-28.12	74	44.02	31.9	4.5	34.54	100	242	Peak
2437	95.01	-	-	93.07	31.95	4.53	34.54	100	242	Average
2437	107.95	-	-	105.98	31.95	4.56	34.54	100	242	Peak
2484	32.83	-21.17	54	30.79	31.98	4.59	34.53	100	242	Average
2484	43.93	-30.07	74	41.89	31.98	4.59	34.53	100	242	Peak
4874	39.56	-14.44	54	54.29	34.37	6.49	55.59	100	304	Average
4874	47.78	-26.22	74	62.51	34.37	6.49	55.59	100	304	Peak



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
56.73	29.48	-10.52	40	53.44	6.85	0.73	31.54	-	-	Peak
92.64	29.73	-13.77	43.5	50.48	9.84	0.95	31.54	-	-	Peak
151.77	33.37	-10.13	43.5	53.32	10.41	1.14	31.5	100	74	Peak
472.2	19.40	-26.6	46	30.86	17.68	1.98	31.12	-	-	Peak
624.8	21.72	-24.28	46	30.83	19.46	2.25	30.82	-	-	Peak
810.3	23.57	-22.43	46	30.76	20.77	2.57	30.53	-	-	Peak
2386	43.72	-10.28	54	41.89	31.9	4.47	34.54	167	308	Average
2386	53.68	-20.32	74	51.85	31.9	4.47	34.54	167	308	Peak
2462	98.74	-	-	96.74	31.97	4.56	34.53	167	308	Average
2462	111.98	-	-	109.98	31.97	4.56	34.53	167	308	Peak
2483.5	42.20	-11.8	54	40.16	31.98	4.59	34.53	167	308	Average
2483.5	54.90	-19.1	74	52.86	31.98	4.59	34.53	167	308	Peak
4924	47.34	-6.66	54	62.07	34.34	6.54	55.61	104	37	Average
4924	58.64	-15.36	74	73.37	34.34	6.54	55.61	104	37	Peak



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.08	33.17	-6.83	40	46.25	17.89	0.58	31.55	100	85	Peak
57.54	31.98	-8.02	40	55.94	6.85	0.73	31.54	-	-	Peak
89.4	31.01	-12.49	43.5	52.42	9.29	0.84	31.54	-	-	Peak
554.1	21.24	-24.76	46	30.73	19.3	2.15	30.94	-	-	Peak
717.2	22.62	-23.38	46	30.61	20.22	2.45	30.66	-	-	Peak
927.2	23.82	-22.18	46	30.29	21.19	2.78	30.44	-	-	Peak
2386	41.95	-12.05	54	40.12	31.9	4.47	34.54	100	241	Average
2386	51.06	-22.94	74	49.23	31.9	4.47	34.54	100	241	Peak
2462	96.38	-	-	94.38	31.97	4.56	34.53	100	241	Average
2462	108.76	-	-	106.76	31.97	4.56	34.53	100	241	Peak
2483.85	40.33	-13.67	54	38.29	31.98	4.59	34.53	100	241	Average
2483.85	53.13	-20.87	74	51.09	31.98	4.59	34.53	100	241	Peak
4924	45.01	-8.99	54	59.74	34.34	6.54	55.61	100	304	Average
4924	56.96	-17.04	74	71.69	34.34	6.54	55.61	100	304	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
57.27	29.85	-10.15	40	53.81	6.85	0.73	31.54	100	97	Peak
92.64	31.97	-11.53	43.5	52.72	9.84	0.95	31.54	-	-	Peak
150.69	28.58	-14.92	43.5	48.49	10.45	1.14	31.5	-	-	Peak
401.5	20.00	-26	46	32.84	16.52	1.82	31.18	-	-	Peak
565.3	22.01	-23.99	46	31.49	19.3	2.15	30.93	-	-	Peak
885.2	24.00	-22	46	30.84	20.97	2.68	30.49	-	-	Peak
2389.61	44.67	-9.33	54	42.84	31.9	4.47	34.54	165	315	Average
2389.61	63.67	-10.33	74	61.84	31.9	4.47	34.54	165	315	Peak
2412	88.84	-	-	86.97	31.91	4.5	34.54	165	315	Average
2412	101.65	-	-	99.78	31.91	4.5	34.54	165	315	Peak
2486	32.60	-21.4	54	30.56	31.98	4.59	34.53	165	315	Average
2486	43.63	-30.37	74	41.59	31.98	4.59	34.53	165	315	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
40.8	31.90	-8.1	40	50.67	12.17	0.58	31.52	-	-	Peak
56.46	33.04	-6.96	40	56.82	7.02	0.73	31.53	100	222	Peak
89.13	35.98	-7.52	43.5	57.39	9.29	0.84	31.54	-	-	Peak
597.5	22.07	-23.93	46	31.44	19.3	2.2	30.87	-	-	Peak
767.6	23.73	-22.27	46	31	20.73	2.54	30.54	-	-	Peak
941.9	24.38	-21.62	46	30.66	21.28	2.85	30.41	-	-	Peak
2389.99	46.08	-7.92	54	44.22	31.9	4.5	34.54	100	176	Average
2389.99	66.82	-7.18	74	64.96	31.9	4.5	34.54	100	176	Peak
2412	88.10	-	-	86.23	31.91	4.5	34.54	100	176	Average
2412	100.70	-	-	98.83	31.91	4.5	34.54	100	176	Peak
2484	32.32	-21.68	54	30.28	31.98	4.59	34.53	100	176	Average
2484	43.48	-30.52	74	41.44	31.98	4.59	34.53	100	176	Peak



Test Mode :	Mode 5	Temperature :	25~26°C
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
57.27	26.73	-13.27	40	50.69	6.85	0.73	31.54	100	37	Peak
92.64	28.83	-14.67	43.5	49.58	9.84	0.95	31.54	-	-	Peak
160.68	26.49	-17.01	43.5	46.85	10	1.14	31.5	-	-	Peak
584.9	21.53	-24.47	46	30.94	19.3	2.18	30.89	-	-	Peak
728.4	22.73	-23.27	46	30.52	20.38	2.45	30.62	-	-	Peak
930	23.64	-22.36	46	30.08	21.21	2.78	30.43	-	-	Peak
2368	31.81	-22.19	54	30.02	31.86	4.47	34.54	110	348	Average
2368	43.54	-30.46	74	41.75	31.86	4.47	34.54	110	348	Peak
2437	88.75	-	-	86.81	31.95	4.53	34.54	110	348	Average
2437	101.38	-	-	99.44	31.95	4.53	34.54	110	348	Peak
2484	31.51	-22.49	54	29.47	31.98	4.59	34.53	110	348	Average
2484	43.34	-30.66	74	41.3	31.98	4.59	34.53	110	348	Peak



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
59.7	25.60	-14.4	40	50.08	6.35	0.73	31.56	100	74	Peak
92.64	26.96	-16.54	43.5	47.71	9.84	0.95	31.54	-	-	Peak
158.79	26.21	-17.29	43.5	46.49	10.08	1.14	31.5	-	-	Peak
527.5	20.21	-25.79	46	30.36	18.76	2.1	31.01	-	-	Peak
583.5	21.71	-24.29	46	31.13	19.3	2.18	30.9	-	-	Peak
867.7	24.01	-21.99	46	30.91	20.91	2.68	30.49	-	-	Peak
2388	32.22	-21.78	54	30.39	31.9	4.47	34.54	100	188	Average
2388	44.36	-29.64	74	42.53	31.9	4.47	34.54	100	188	Peak
2437	87.01	-	-	85.07	31.95	4.53	34.54	100	188	Average
2437	99.12	-	-	97.2	31.93	4.53	34.54	100	188	Peak
2484	31.75	-22.25	54	29.71	31.98	4.59	34.53	100	188	Average
2484	43.58	-30.42	74	41.54	31.98	4.59	34.53	100	188	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
57.54	30.84	-9.16	40	54.8	6.85	0.73	31.54	100	137	Peak
93.18	29.41	-14.09	43.5	49.99	10.01	0.95	31.54	-	-	Peak
119.91	31.58	-11.92	43.5	49.4	12.63	1.07	31.52	-	-	Peak
535.9	21.32	-24.68	46	31.24	18.97	2.1	30.99	-	-	Peak
716.5	22.94	-23.06	46	30.99	20.21	2.4	30.66	-	-	Peak
925.8	23.61	-22.39	46	30.08	21.19	2.78	30.44	-	-	Peak
2386	37.93	-16.07	54	36.1	31.9	4.47	34.54	167	307	Average
2386	49.16	-24.84	74	47.33	31.9	4.47	34.54	167	307	Peak
2462	91.10	-	-	89.1	31.97	4.56	34.53	167	307	Average
2462	103.66	-	-	101.66	31.97	4.56	34.53	167	307	Peak
2483.66	43.91	-10.09	54	41.87	31.98	4.59	34.53	167	307	Average
2483.66	62.40	-11.6	74	60.36	31.98	4.59	34.53	167	307	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.62	34.68	-5.32	40	48.34	17.3	0.58	31.54	100	285	Peak
57.54	32.54	-7.46	40	56.5	6.85	0.73	31.54	-	-	Peak
89.4	31.16	-12.34	43.5	52.57	9.29	0.84	31.54	-	-	Peak
546.4	21.24	-24.76	46	30.82	19.23	2.15	30.96	-	-	Peak
682.9	22.33	-23.67	46	30.87	19.85	2.35	30.74	-	-	Peak
880.3	24.27	-21.73	46	31.12	20.96	2.68	30.49	-	-	Peak
2388	37.45	-16.55	54	35.62	31.9	4.47	34.54	100	200	Average
2388	48.55	-25.45	74	46.72	31.9	4.47	34.54	100	200	Peak
2462	87.79	-	-	85.79	31.97	4.56	34.53	100	200	Average
2462	100.56	-	-	98.56	31.97	4.56	34.53	100	200	Peak
2483.85	41.62	-12.38	54	39.58	31.98	4.59	34.53	100	200	Average
2483.85	60.61	-13.39	74	58.57	31.98	4.59	34.53	100	200	Peak



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
57	24.44	-15.56	40	48.4	6.85	0.73	31.54	100	37	Peak
92.64	25.03	-18.47	43.5	45.78	9.84	0.95	31.54	-	-	Peak
160.95	23.98	-19.52	43.5	44.34	10	1.14	31.5	-	-	Peak
426	18.47	-27.53	46	30.57	17.19	1.87	31.16	-	-	Peak
660.5	21.44	-24.56	46	30.2	19.7	2.3	30.76	-	-	Peak
871.9	23.27	-22.73	46	30.15	20.93	2.68	30.49	-	-	Peak
2389.42	47.08	-6.92	54	45.25	31.9	4.47	34.54	100	309	Average
2389.42	68.31	-5.69	74	66.48	31.9	4.47	34.54	100	309	Peak
2412	88.76	-	-	86.89	31.91	4.5	34.54	100	309	Average
2412	101.28	-	-	99.41	31.91	4.5	34.54	100	309	Peak
2484	33.20	-20.8	54	31.16	31.98	4.59	34.53	100	309	Average
2484	44.30	-29.7	74	42.26	31.98	4.59	34.53	100	309	Peak



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.89	34.71	-5.29	40	48.37	17.3	0.58	31.54	100	17	Peak
55.65	33.51	-6.49	40	57.11	7.19	0.73	31.52	-	-	Peak
89.4	31.30	-12.2	43.5	52.71	9.29	0.84	31.54	-	-	Peak
501.6	19.00	-27	46	29.89	18.15	2.04	31.08	-	-	Peak
729.8	21.84	-24.16	46	29.59	20.41	2.45	30.61	-	-	Peak
918.1	23.04	-22.96	46	29.57	21.14	2.78	30.45	-	-	Peak
2389.61	45.58	-8.42	54	43.75	31.9	4.47	34.54	100	179	Average
2389.61	64.56	-9.44	74	62.73	31.9	4.47	34.54	100	179	Peak
2412	87.41	-	-	85.54	31.91	4.5	34.54	100	179	Average
2412	100.16	-	-	98.29	31.91	4.5	34.54	100	179	Peak
2484	32.51	-21.49	54	30.47	31.98	4.59	34.53	100	179	Average
2484	43.78	-30.22	74	41.74	31.98	4.59	34.53	100	179	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
58.08	24.14	-15.86	40	48.26	6.69	0.73	31.54	100	197	Peak
92.64	25.70	-17.8	43.5	46.45	9.84	0.95	31.54	-	-	Peak
160.95	23.79	-19.71	43.5	44.15	10	1.14	31.5	-	-	Peak
557.6	20.40	-25.6	46	29.89	19.3	2.15	30.94	-	-	Peak
791.4	23.81	-22.19	46	31.07	20.74	2.54	30.54	-	-	Peak
911.1	23.67	-22.33	46	30.33	21.1	2.7	30.46	-	-	Peak
2344	32.80	-21.2	54	31.07	31.84	4.44	34.55	169	303	Average
2344	44.27	-29.73	74	42.54	31.84	4.44	34.55	169	303	Peak
2437	89.28	-	-	87.34	31.95	4.53	34.54	169	303	Average
2437	101.83	-	-	99.89	31.95	4.53	34.54	169	303	Peak
2498	32.21	-21.79	54	30.12	32	4.62	34.53	169	303	Average
2498	43.67	-30.33	74	41.58	32	4.62	34.53	169	303	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.62	34.66	-5.34	40	48.32	17.3	0.58	31.54	100	274	Peak
56.46	33.73	-6.27	40	57.51	7.02	0.73	31.53	-	-	Peak
89.67	31.59	-11.91	43.5	53	9.29	0.84	31.54	-	-	Peak
526.8	20.79	-25.21	46	30.94	18.76	2.1	31.01	-	-	Peak
710.2	22.91	-23.09	46	31.07	20.12	2.4	30.68	-	-	Peak
934.2	23.41	-22.59	46	29.82	21.24	2.78	30.43	-	-	Peak
2374	32.53	-21.47	54	30.72	31.88	4.47	34.54	100	238	Average
2374	44.82	-29.18	74	43.01	31.88	4.47	34.54	100	238	Peak
2437	86.98	-	-	85.04	31.95	4.53	34.54	100	238	Average
2437	99.12	-	-	97.2	31.93	4.53	34.54	100	238	Peak
2484	31.99	-22.01	54	29.95	31.98	4.59	34.53	100	238	Average
2484	44.59	-29.41	74	42.55	31.98	4.59	34.53	100	238	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
56.73	25.44	-14.56	40	49.4	6.85	0.73	31.54	100	274	Peak
92.37	26.67	-16.83	43.5	47.53	9.84	0.84	31.54	-	-	Peak
157.98	23.97	-19.53	43.5	44.21	10.12	1.14	31.5	-	-	Peak
477.8	18.86	-27.14	46	30.15	17.84	1.98	31.11	-	-	Peak
622.7	22.15	-23.85	46	31.27	19.45	2.25	30.82	-	-	Peak
953.1	24.36	-21.64	46	30.59	21.3	2.85	30.38	-	-	Peak
2386	36.98	-17.02	54	35.15	31.9	4.47	34.54	167	304	Average
2386	47.63	-26.37	74	45.8	31.9	4.47	34.54	167	304	Peak
2462	88.29	-	-	86.29	31.97	4.56	34.53	167	304	Average
2462	101.16	-	-	99.16	31.97	4.56	34.53	167	304	Peak
2483.5	41.30	-12.7	54	39.26	31.98	4.59	34.53	167	304	Average
2483.5	58.50	-15.5	74	56.46	31.98	4.59	34.53	167	304	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	42~43%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.35	35.06	-4.94	40	48.73	17.3	0.58	31.55	100	331	Peak
56.73	34.01	-5.99	40	57.97	6.85	0.73	31.54	-	-	Peak
88.86	31.88	-11.62	43.5	53.51	9.07	0.84	31.54	-	-	Peak
449.1	19.34	-26.66	46	31.47	17.1	1.92	31.15	-	-	Peak
678.7	21.88	-24.12	46	30.45	19.82	2.35	30.74	-	-	Peak
868.4	23.11	-22.89	46	30.01	20.91	2.68	30.49	-	-	Peak
2384	35.59	-18.41	54	33.78	31.88	4.47	34.54	100	236	Average
2384	46.62	-27.38	74	44.81	31.88	4.47	34.54	100	236	Peak
2462	85.61	-	-	83.61	31.97	4.56	34.53	100	236	Average
2462	98.31	-	-	96.31	31.97	4.56	34.53	100	236	Peak
2483.85	39.16	-14.84	54	37.12	31.98	4.59	34.53	100	236	Average
2483.85	55.42	-18.58	74	53.38	31.98	4.59	34.53	100	236	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 PIFA 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	FSP30	101329	9kHz~30GHz	Apr. 26, 2010	Apr. 25, 2011	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 17, 2009	Sep. 16, 2010	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 10, 2009	Sep. 09, 2010	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30,2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESU	100211	9KHz – 2.75GHz	May 28, 2010	May 27, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9kHz~30MHz	Nov. 30, 2009	Nov. 29, 2010	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz~30MHz	Nov. 23, 2009	Nov. 22, 2010	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	105934	N/A	Nov. 11, 2008	Nov. 10, 2010	Conduction (CO05-HY)
GPS Station	T&E	GS-50	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 20, 2009	Oct. 19, 2010	Radiation (03CH05-HY)
Amplifier	COM-POWER	PA-103	161069	1KHz - 1GHz	Mar. 29, 2010	Mar. 28, 2011	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2009	Oct. 30, 2010	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 14, 2009	Oct. 13, 2010	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Nov. 11, 2009	Nov. 10, 2010	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m - 4 m	N/A	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz ~ 18GHz	Aug. 05, 2010	Aug. 04, 2011	Radiation (03CH05-HY)
Horn Antenna	Training Research	AH-0801	95119	8GHz~18GHz	Nov. 02, 2009	Nov. 01, 2010	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH05-HY)

## 5 Uncertainty of Evaluation

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

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.13</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.26</b>		

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

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.54</b>		



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

Contribution	Uncertainty of $X_i$		$u(X_i)$	$C_i$	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
<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>				