

# FCC RF Test Report

APPLICANT : HTC Corporation  
EQUIPMENT : PDA Phone  
MODEL NAME : PD15100  
FCC ID : NM8PD15100  
STANDARD : FCC Part 15 Subpart C §15.247  
CLASSIFICATION : Digital Transmission System (DTS)

The product was received on Jul. 16, 2010 and completely tested on Sep. 20, 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 : NM8PD15100

Page Number : 1 of 107

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**APPENDIX A. 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 Measurement	$\leq 30\text{dBm}$	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 9.1 dB at 0.254 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.24 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

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

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	PDA Phone
Model Name	PD15100
FCC ID	NM8PD15100
Sample 1	EUT with LCM-Main, Camera-Main and PA-Main
Sample 2	EUT with LCM-2 <sup>nd</sup> , Camera-2 <sup>nd</sup> and PA-Main
Sample 3	EUT with LCM-Main, Camera-Main and PA-2 <sup>nd</sup>
Tx/Rx Frequency Range	802.11b/g/n : 2400 MHz ~ 2483.5 MHz 802.11a/n : 5725 MHz ~ 5850 MHz
Channel Spacing	802.11b/g : 5 MHz 802.11a : 20 MHz
Maximum Output Power to Antenna	<b>&lt;2400 MHz ~ 2483.5 MHz&gt;</b> 802.11b : 20.71 dBm (0.118 W) 802.11g : 21.96 dBm (0.157 W) 802.11n (BW 20MHz) : 21.72 dBm (0.149 W) <b>&lt;5725 MHz ~ 5850 MHz&gt;</b> 802.11a : 21.33 dBm (0.136 W) 802.11n (BW 20MHz) : 20.76 dBm (0.119 W)
Antenna Type	802.11b/g/n : PIFA Antenna with gain 0.3 dBi 802.11a/n : PIFA Antenna with gain 2.5 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/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.
4. This product has two kinds of PAs, PA-Main and PA-2<sup>nd</sup>. The difference does not relate RF (WLAN) effect, so only Sample 1 and Sample 2 are used for tests.

## 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	03CH05HY	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	802.11b RF Power (dBm)			
		1M bps	2M bps	5.5M bps	11M bps
CH 01	2412 MHz	19.81	19.98	20.08	20.21
CH 06	2437 MHz	20.12	20.03	20.16	20.10
CH 11	2462 MHz	20.49	20.57	20.64	<b>20.71</b>

Channel	Frequency	802.11g RF Power (dBm)							
		6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
CH 01	2412 MHz	21.90	21.78	21.17	21.13	21.15	21.08	21.14	21.50
CH 06	2437 MHz	<b>21.96</b>	21.60	21.14	21.71	21.18	21.28	21.42	21.20
CH 11	2462 MHz	21.83	21.32	21.01	21.57	20.98	21.08	21.33	21.51

Channel	Frequency	802.11n (BW 20MHz) RF Power (dBm)							
		m0	m1	m2	m3	m4	m5	m6	m7
CH 01	2412 MHz	21.69	21.32	21.27	21.27	21.04	20.99	21.06	21.21
CH 06	2437 MHz	21.59	21.48	21.50	21.49	20.97	20.91	21.34	20.97
CH 11	2462 MHz	<b>21.72</b>	21.26	21.11	21.24	21.35	21.21	21.3	20.87



Channel	Frequency	802.11a RF Power (dBm)							
		6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
CH149	5745 MHz	<b>21.33</b>	21.09	20.99	21.21	21.18	20.61	21.23	20.96
CH157	5785 MHz	20.38	20.72	20.83	21.00	21.06	21.12	20.83	20.74
CH165	5825 MHz	20.92	20.68	20.45	20.28	20.76	21.05	20.86	20.48

Channel	Frequency	802.11n (BW 20MHz) RF Power (dBm)							
		m0	m1	m2	m3	m4	m5	m6	m7
CH149	5745 MHz	20.03	20.57	20.28	20.43	20.69	20.01	20.64	20.42
CH157	5785 MHz	20.42	20.20	19.28	20.11	20.45	20.60	20.27	20.45
CH165	5825 MHz	<b>20.76</b>	20.71	20.18	20.55	20.63	20.35	20.76	20.01

**Remark:**

1. The EUT is programmed to transmit signals continuously for all testing.
2. The data rates of WLAN 802.11a/b/g/n were set in 11Mbps for 802.11b, 6Mbps for 802.11g, m0 for 802.11n (2.4G), 6Mbps for 802.11a, and m0 for 802.11n (5G) for all the test cases due to the highest RF output power.
3. The EUT supports 802.11n (BW 20 MHz) function only, not supports 802.11n (BW 40 MHz) function.



## 2.2 Test Mode

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

Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

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

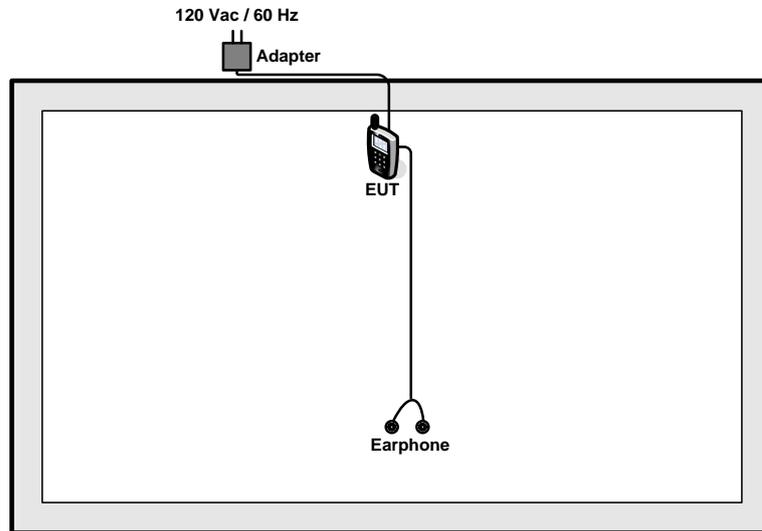
Test Cases	
Test Item	802.11b (Modulation : DSSS)
	802.11g/n (Modulation : OFDM)
	802.11a/n (Modulation : OFDM)
Conducted TCs	Mode 1: 802.11b_CH01_2412 MHz
	Mode 2: 802.11b_CH06_2437 MHz
	Mode 3: 802.11b_CH11_2462 MHz
	Mode 4: 802.11g_CH01_2412 MHz
	Mode 5: 802.11g_CH06_2437 MHz
	Mode 6: 802.11g_CH11_2462 MHz
	Mode 7: 802.11n_CH01_2412 MHz (BW 20M)
	Mode 8: 802.11n_CH06_2437 MHz (BW 20M)
	Mode 9: 802.11n_CH11_2462 MHz (BW 20M)
	Mode 10: 802.11a_CH149_5745 MHz
	Mode 11: 802.11a_CH157_5785 MHz
	Mode 12: 802.11a_CH165_5825 MHz
	Mode 13: 802.11n_CH149_5745 MHz (BW 20M)
	Mode 14: 802.11n_CH157_5785 MHz (BW 20M)
	Mode 15: 802.11n_CH165_5825 MHz (BW 20M)
Radiated TCs	Mode 1: 802.11b_CH01_2412 MHz + TC for Sample 1
	Mode 2: 802.11b_CH06_2437 MHz + TC for Sample 1
	Mode 3: 802.11b_CH11_2462 MHz + TC for Sample 1
	Mode 4: 802.11g_CH01_2412 MHz + TC for Sample 1
	Mode 5: 802.11g_CH06_2437 MHz + TC for Sample 1
	Mode 6: 802.11g_CH11_2462 MHz + TC for Sample 1
	Mode 7: 802.11n_CH01_2412 MHz (BW 20M) + TC for Sample 1
	Mode 8: 802.11n_CH06_2437 MHz (BW 20M) + TC for Sample 1
	Mode 9: 802.11n_CH11_2462 MHz (BW 20M) + TC for Sample 1
	Mode 10: 802.11a_CH149_5745 MHz + TC for Sample 1
	Mode 11: 802.11a_CH157_5785 MHz + TC for Sample 1
	Mode 12: 802.11a_CH165_5825 MHz + TC for Sample 1
	Mode 13: 802.11n_CH149_5745 MHz (BW 20M) + TC for Sample 1
	Mode 14: 802.11n_CH157_5785 MHz (BW 20M) + TC for Sample 1
	Mode 15: 802.11n_CH165_5825 MHz (BW 20M) + TC for Sample 1
	Mode 16: 802.11g_CH11_2462 MHz + TC for Sample 2



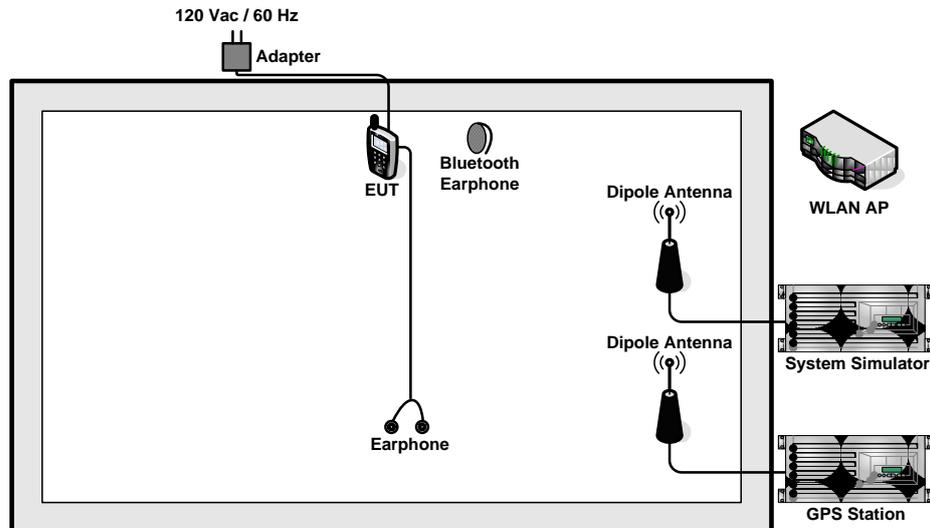
<b>AC Conducted Emission</b>	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + GPS Rx + Earphone + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1 Mode 2 : WCDMA Band IV Idle + Bluetooth Link + WLAN Link (5G) + GPS Rx + Earphone + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1 Mode 3 : GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + GPS Rx + Earphone + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 2
<b>Remark:</b> <ol style="list-style-type: none"><li>1. TC stands for Test Configuration, and consists of Battery 1, Earphone, USB Cable 1, and Adapter 3.</li><li>2. The worst case of conducted emission is mode 1; only the test data of it was reported.</li></ol>	

## 2.3 Connection Diagram of Test System

<WLAN Tx Mode>



< AC Conducted Emission >



## 2.4 RF Utility

The programmed RF utility "Remote 432X controller (P1.63)", is installed in notebook 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.

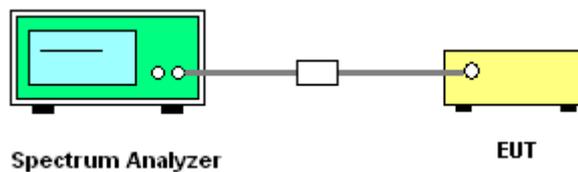
##### 3.1.2 Measuring Instruments

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 1~3	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.48	0.5	Pass
06	2437	7.52	0.5	Pass
11	2462	7.64	0.5	Pass

Test Mode :	Mode 4~6	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

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

Test Mode :	Mode 7~9	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

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	15.16	0.5	Pass
11	2462	15.16	0.5	Pass



Test Mode :	Mode 10~12	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	15.16	0.5	Pass
157	5785	15.12	0.5	Pass
165	5825	15.16	0.5	Pass

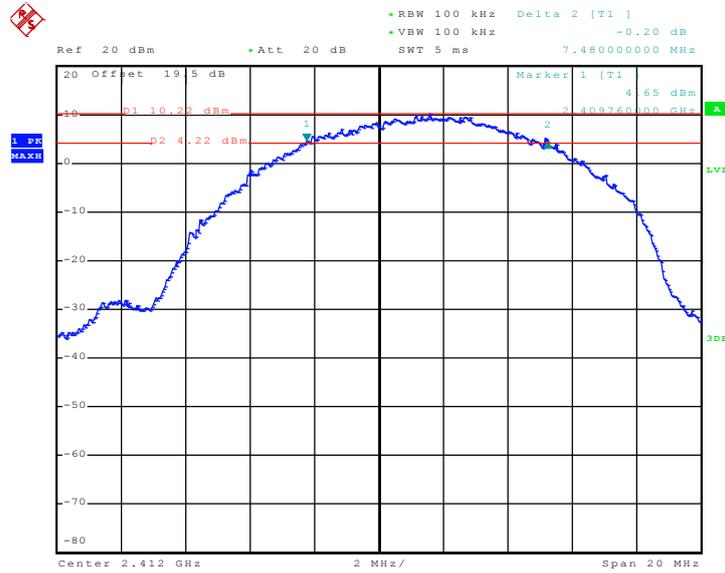
Test Mode :	Mode 13~15	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	15.12	0.5	Pass
157	5785	15.12	0.5	Pass
165	5825	15.16	0.5	Pass



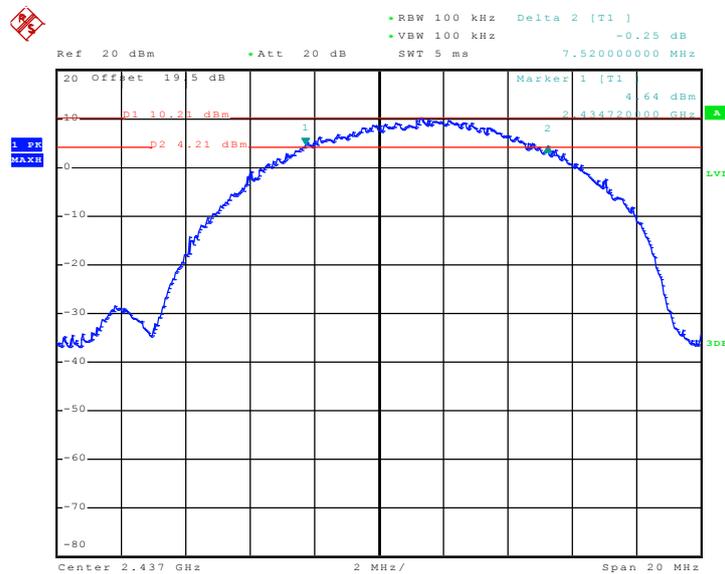
### 3.1.7 Test Result of 6dB Bandwidth Plots

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



Date: 13.AUG.2010 02:23:41

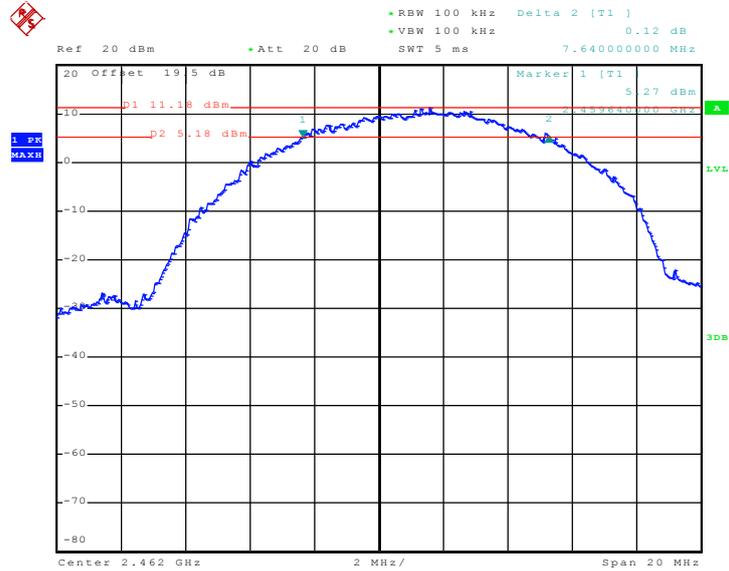
#### Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 13.AUG.2010 04:29:50

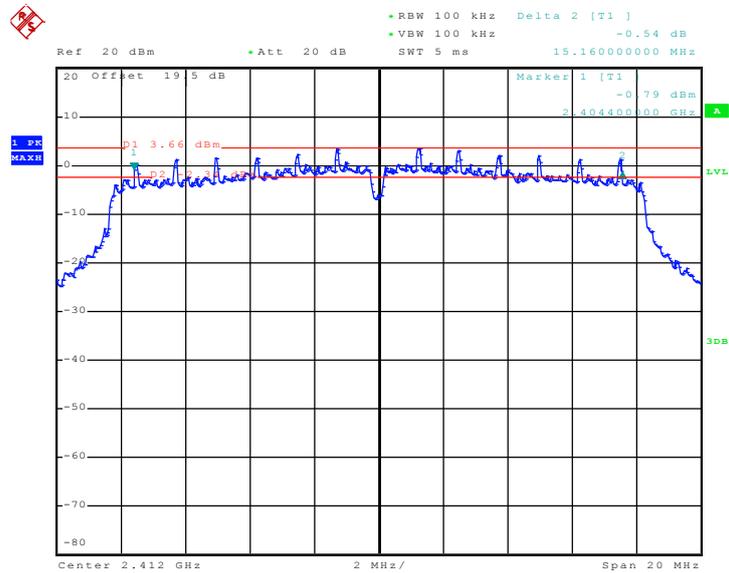


Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



Date: 13.AUG.2010 02:51:43

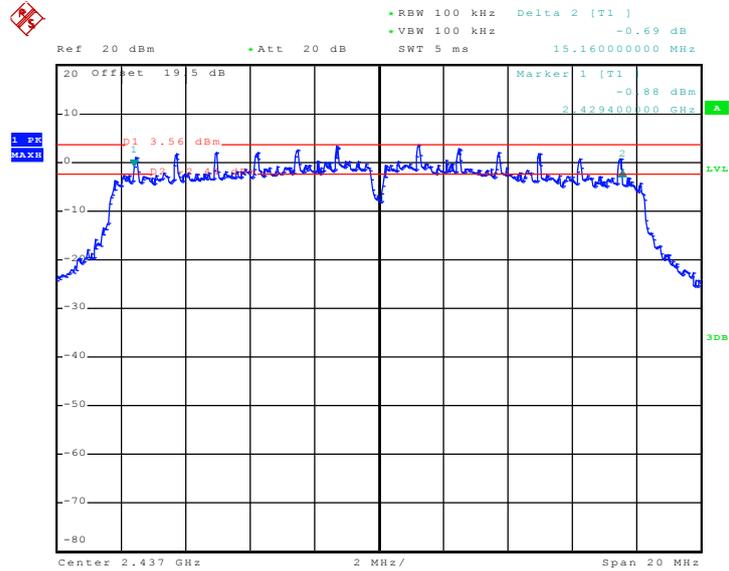
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 13.AUG.2010 04:41:16

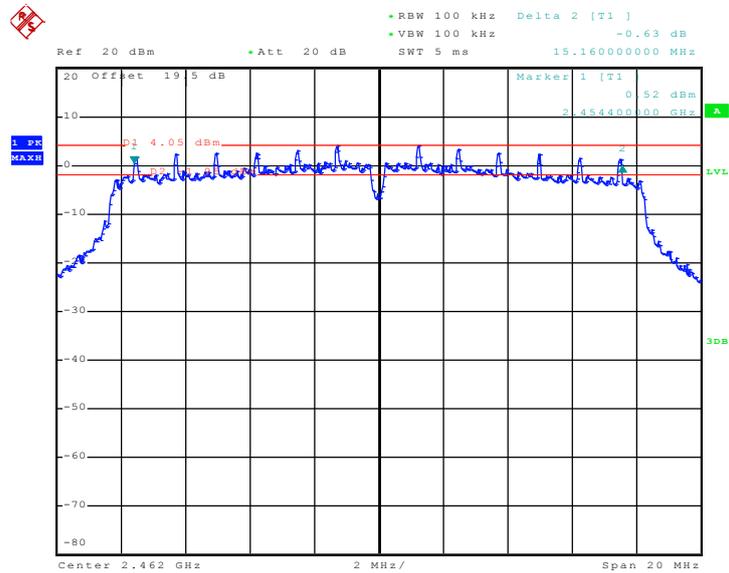


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 13.AUG.2010 04:01:51

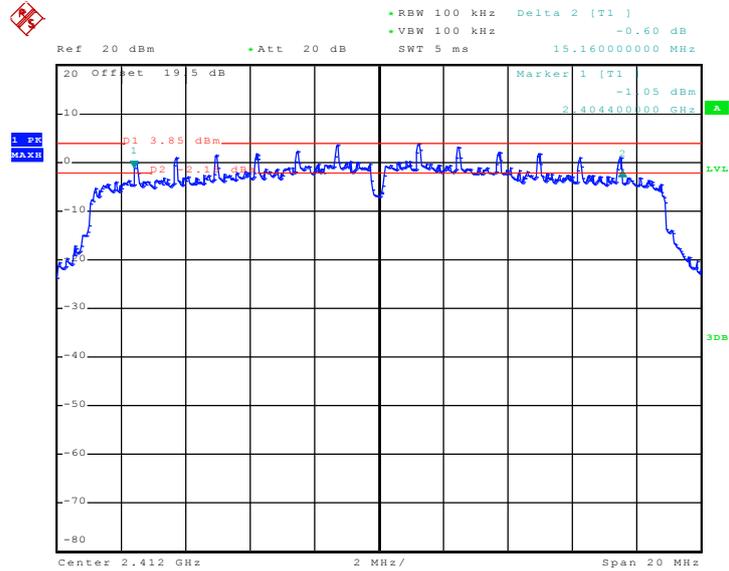
Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11



Date: 13.AUG.2010 03:57:11

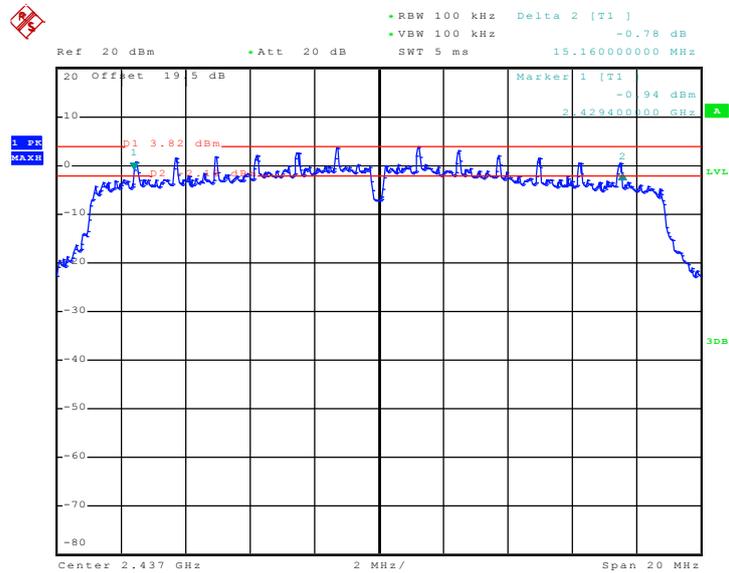


Mode 7 : 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 01



Date: 13.AUG.2010 04:07:58

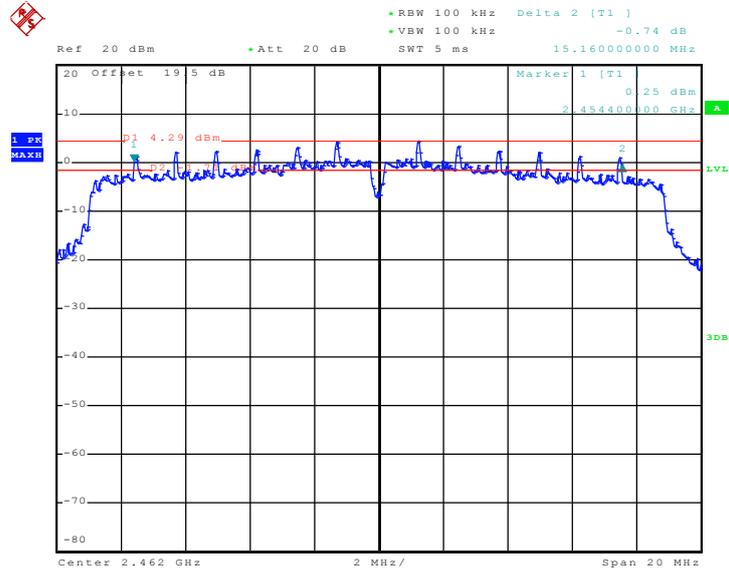
Mode 8 : 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 06



Date: 13.AUG.2010 04:13:04

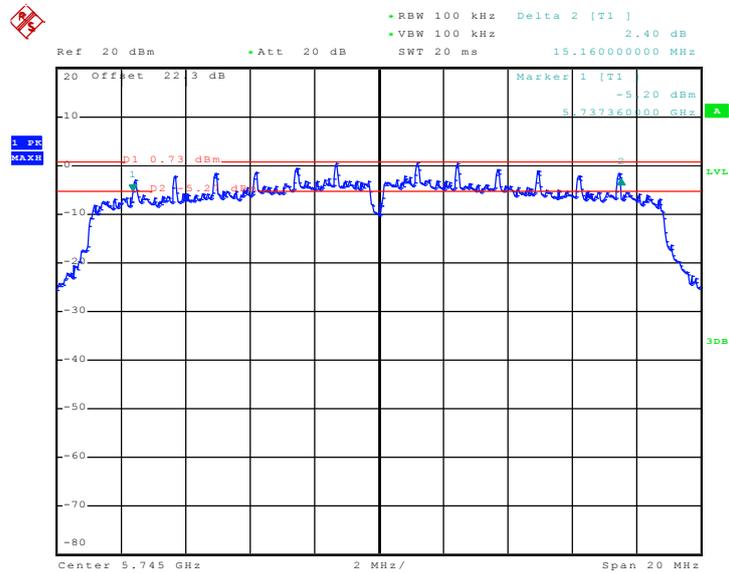


Mode 9 : 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 11



Date: 13.AUG.2010 04:14:55

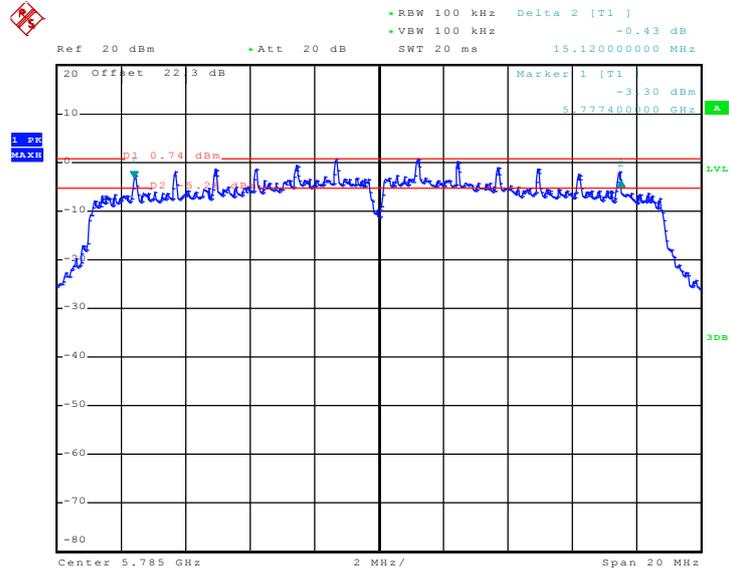
Mode 10: 6 dB Bandwidth Plot on 802.11a Channel 149



Date: 23.AUG.2010 21:31:21

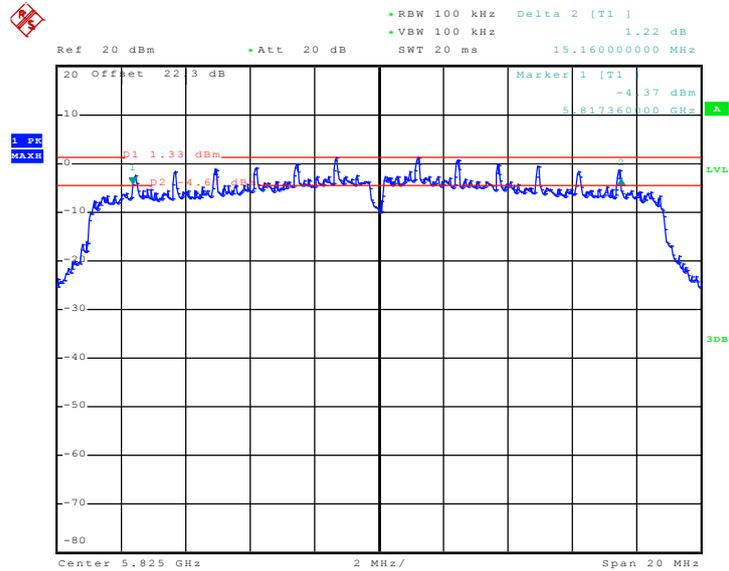


Mode 11: 6 dB Bandwidth Plot on 802.11a Channel 157



Date: 23.AUG.2010 21:32:49

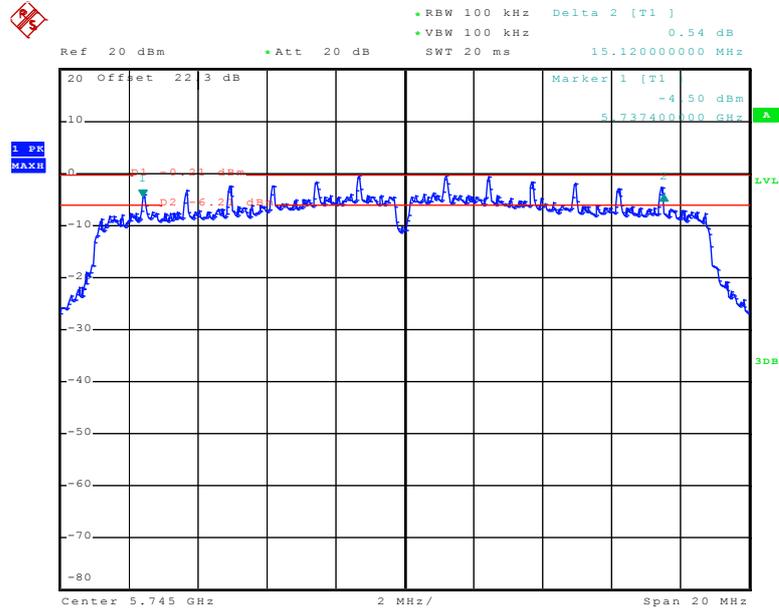
Mode 12: 6 dB Bandwidth Plot on 802.11a Channel 165



Date: 23.AUG.2010 21:34:09

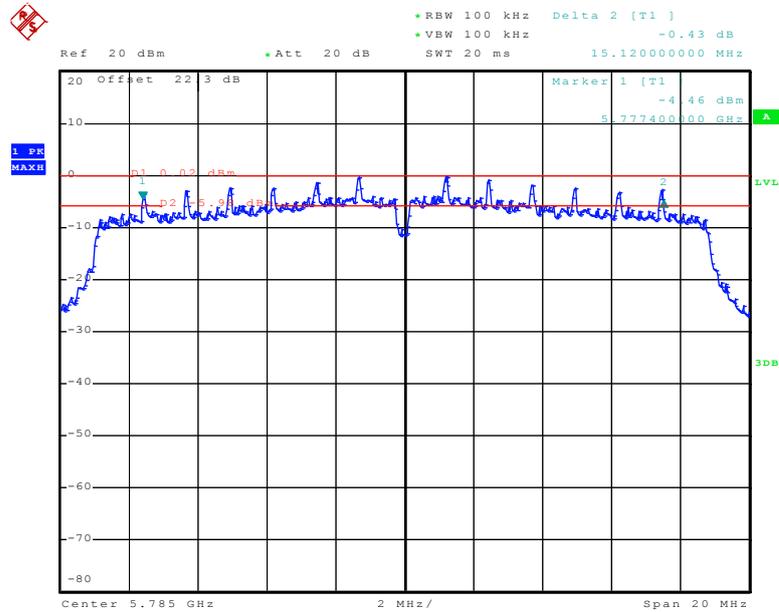


Mode 13: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 149



Date: 23.AUG.2010 21:38:38

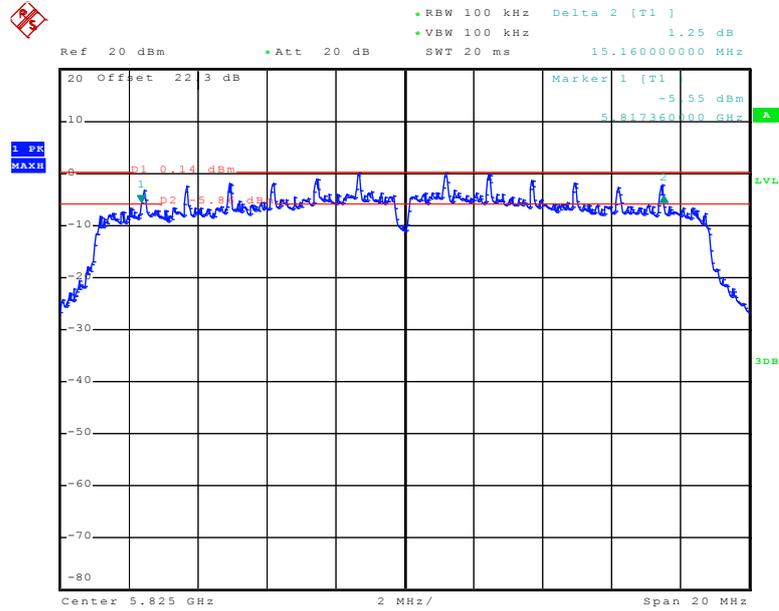
Mode 14: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 157



Date: 23.AUG.2010 21:37:20



Mode 15: 6 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 165



Date: 23.AUG.2010 21:35:35

## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, 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.

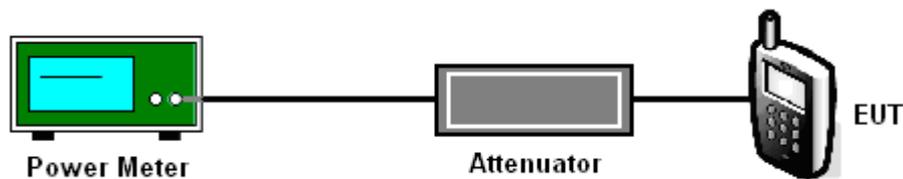
### 3.2.2 Measuring Instruments

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 1~3	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.21	30	Pass
06	2437	20.10	30	Pass
11	2462	20.71	30	Pass

Test Mode :	Mode 4~6	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.90	30	Pass
06	2437	21.96	30	Pass
11	2462	21.83	30	Pass

Test Mode :	Mode 7~9	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.69	30	Pass
06	2437	21.59	30	Pass
11	2462	21.72	30	Pass



<b>Test Mode :</b>	Mode 10~12	<b>Temperature :</b>	22~24°C
<b>Test Engineer :</b>	Lancelot Chen and Andy Yeh	<b>Relative Humidity :</b>	61~64%

Channel	Frequency (MHz)	802.11a Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	21.33	30	Pass
157	5785	20.38	30	Pass
165	5825	20.92	30	Pass

<b>Test Mode :</b>	Mode 13~15	<b>Temperature :</b>	22~24°C
<b>Test Engineer :</b>	Lancelot Chen and Andy Yeh	<b>Relative Humidity :</b>	61~64%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	20.03	30	Pass
157	5785	20.42	30	Pass
165	5825	20.76	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**

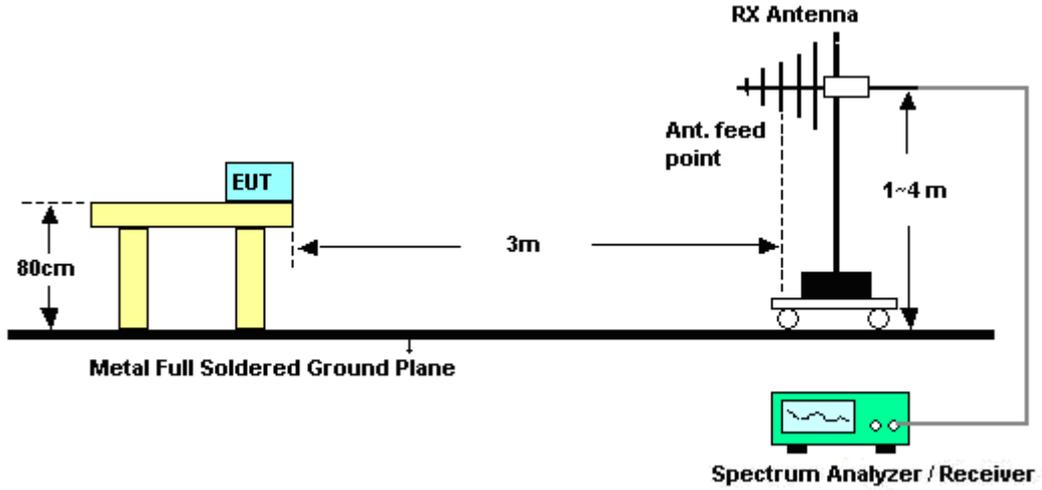
See list of measuring instruments of this test report.

#### **3.3.3 Test Procedures**

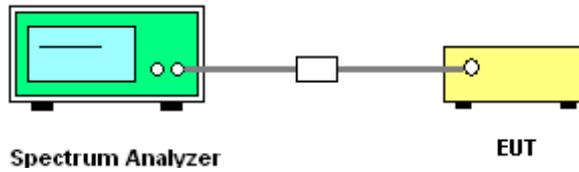
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) > RBW. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band 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

#### <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 :	43~44%
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
2389.80	62.48	-11.52	74.00	60.62	31.90	4.50	34.54	103	360	Peak
2389.80	48.34	-5.66	54.00	46.48	31.90	4.50	34.54	103	360	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	58.17	-15.83	74.00	56.34	31.90	4.47	34.54	122	301	Peak
2389.61	44.19	-9.81	54.00	42.36	31.90	4.47	34.54	122	301	Average

Test Mode :	Mode 3	Temperature :	25~26°C
Test Band :	802.11b	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	61.94	-12.06	74.00	59.90	31.98	4.59	34.53	100	16	Peak
2483.50	48.15	-5.85	54.00	46.11	31.98	4.59	34.53	100	16	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.66	54.04	-19.96	74.00	52.00	31.98	4.59	34.53	100	171	Peak
2483.66	41.21	-12.79	54.00	39.17	31.98	4.59	34.53	100	171	Average



Test Mode :	Mode 4	Temperature :	25~26°C
Test Band :	802.11g	Relative Humidity :	43~44%
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
2389.99	68.31	-5.69	74.00	66.45	31.90	4.50	34.54	100	360	Peak
2389.99	50.25	-3.75	54.00	48.39	31.90	4.50	34.54	100	360	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
2389.09	66.71	-7.29	74.00	64.88	31.90	4.47	34.54	133	146	Peak
2389.09	46.20	-7.80	54.00	44.37	31.90	4.47	34.54	133	146	Average

Test Mode :	Mode 6	Temperature :	25~26°C
Test Band :	802.11g	Relative Humidity :	43~44%
Test Channel :	11	Test Engineer :	Kay Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	68.64	-5.36	74.00	66.60	31.98	4.59	34.53	102	356	Peak
2483.50	48.44	-5.56	54.00	46.40	31.98	4.59	34.53	102	356	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	67.32	-6.68	74.00	65.28	31.98	4.59	34.53	133	216	Peak
2483.50	44.48	-9.52	54.00	42.44	31.98	4.59	34.53	133	216	Average



Test Mode :	Mode 7	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
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	68.68	-5.32	74.00	66.85	31.90	4.47	34.54	105	18	Peak
2389.61	48.96	-5.04	54.00	47.13	31.90	4.47	34.54	105	18	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.04	66.49	-7.51	74.00	64.66	31.90	4.47	34.54	100	321	Peak
2389.04	47.04	-6.96	54.00	45.21	31.90	4.47	34.54	100	321	Average

Test Mode :	Mode 9	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
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
2484.23	66.22	-7.78	74.00	64.18	31.98	4.59	34.53	102	358	Peak
2484.23	48.77	-5.23	54.00	46.73	31.98	4.59	34.53	102	358	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.66	65.52	-8.48	74.00	63.48	31.98	4.59	34.53	100	220	Peak
2483.66	43.99	-10.01	54.00	41.95	31.98	4.59	34.53	100	220	Average



Test Mode :	Mode 10	Temperature :	25~26°C
Test Band :	802.11a	Relative Humidity :	43~44%
Test Channel :	149	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
5725.00	61.83	-15.05	76.88	53.57	35.01	7.01	33.76	136	97	Peak

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
5725.00	65.07	-17.51	82.58	56.81	35.01	7.01	33.76	107	99	Peak

Test Mode :	Mode 12	Temperature :	25~26°C
Test Band :	802.11a	Relative Humidity :	43~44%
Test Channel :	165	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
5850.00	55.90	-21.72	77.62	47.39	35.18	7.09	33.76	191	215	Peak

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
5850.00	60.61	-21.66	82.27	52.10	35.18	7.09	33.76	145	16	Peak



Test Mode :	Mode 13	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	149	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
5725.00	61.56	-16.53	78.09	53.30	35.01	7.01	33.76	196	227	Peak

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
5725.00	57.01	-25.74	82.75	48.75	35.01	7.01	33.76	108	44	Peak

Test Mode :	Mode 15	Temperature :	25~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	43~44%
Test Channel :	165	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
5850.00	54.94	-21.89	76.83	46.43	35.18	7.09	33.76	192	208	Peak

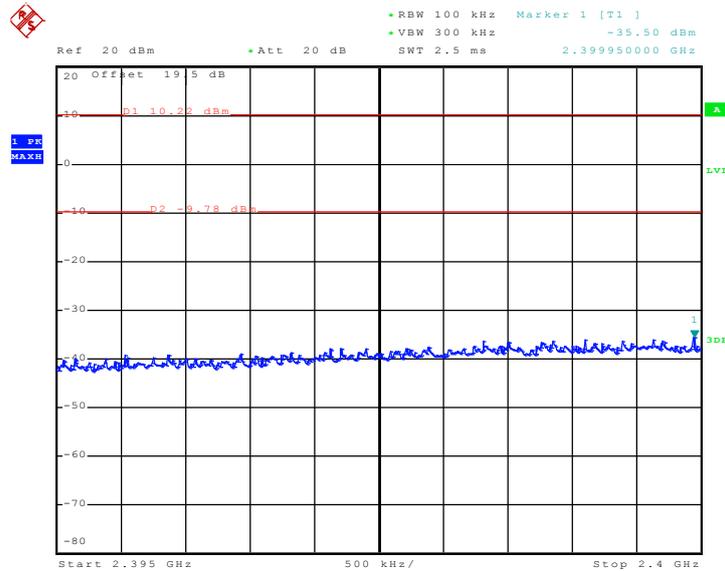
ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
5850.00	58.21	-21.92	80.13	49.70	35.18	7.09	33.76	157	7	Peak



### 3.3.6 Test Result of Conducted Band Edges

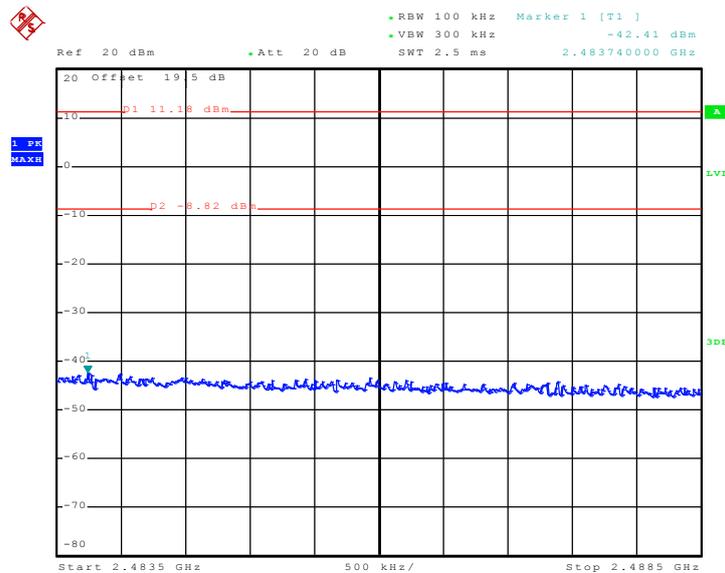
Test Mode :	Mode 1 and 3	Temperature :	22~24°C
Test Band :	802.11b	Relative Humidity :	61~64%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen and Andy Yeh

Low Band Edge Plot on 802.11b Channel 01



Date: 13.AUG.2010 04:28:35

High Band Edge Plot on 802.11b Channel 11

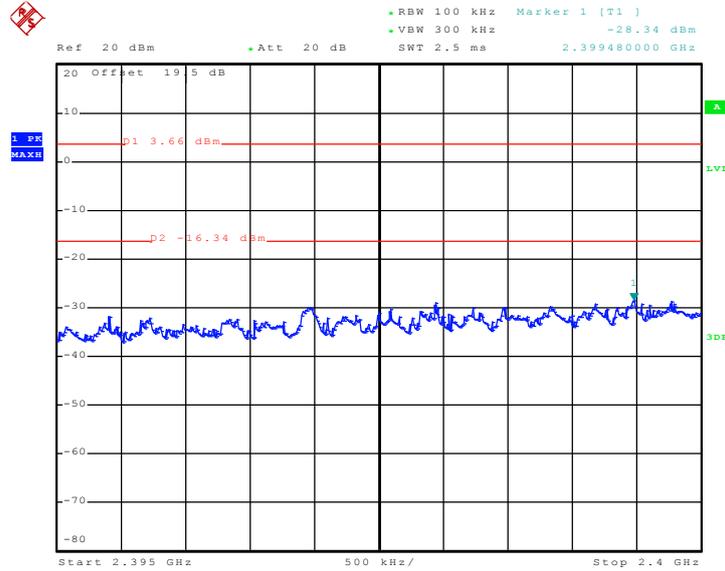


Date: 13.AUG.2010 02:52:33



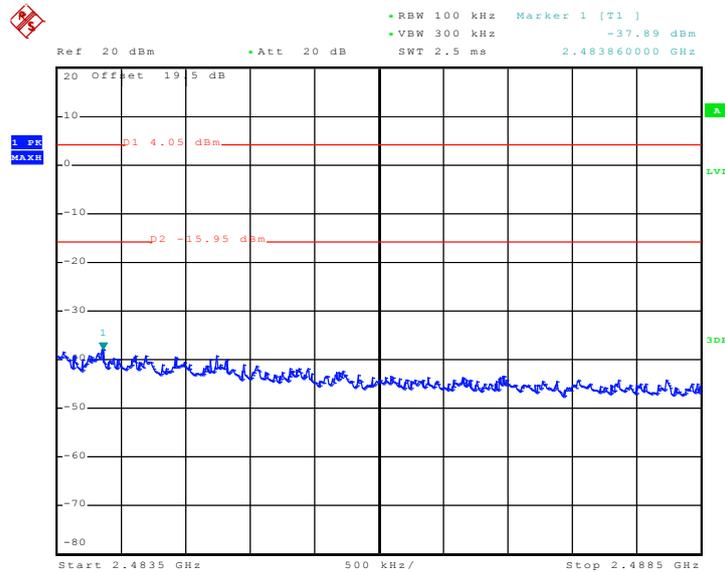
Test Mode :	Mode 4 and 6	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	61~64%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen and Andy Yeh

Low Band Edge Plot on 802.11g Channel 01



Date: 13.AUG.2010 04:41:58

High Band Edge Plot on 802.11g Channel 11

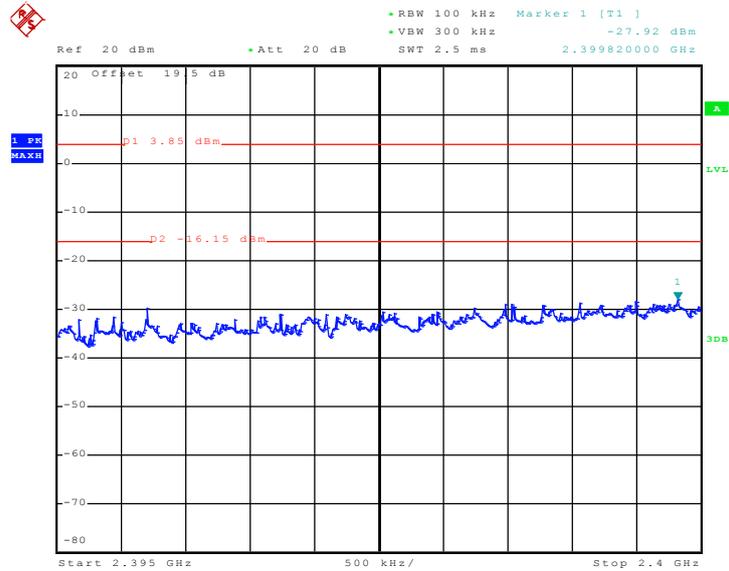


Date: 13.AUG.2010 03:57:52



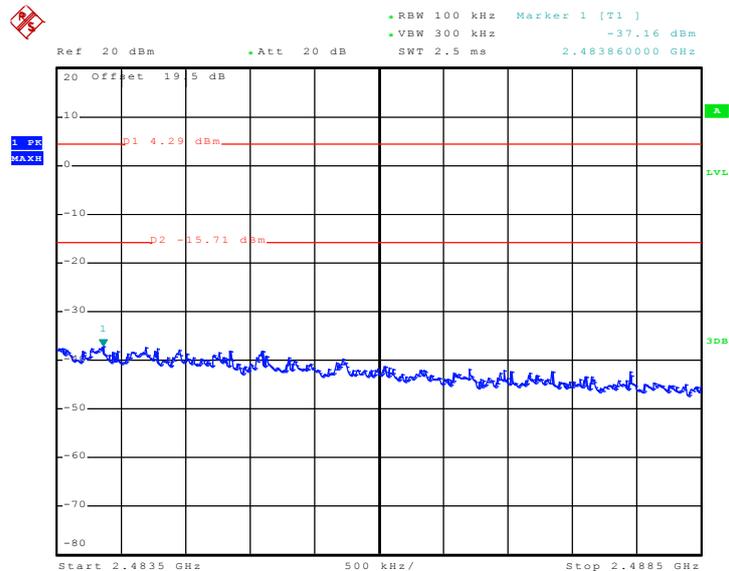
Test Mode :	Mode 7 and 9	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	01 and 11	Test Engineer :	Lancelot Chen and Andy Yeh

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



Date: 13.AUG.2010 04:08:42

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

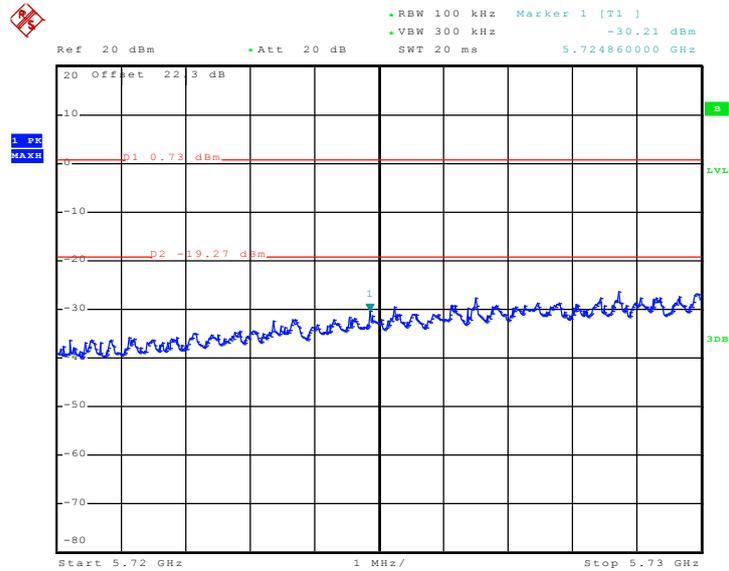


Date: 13.AUG.2010 04:16:03



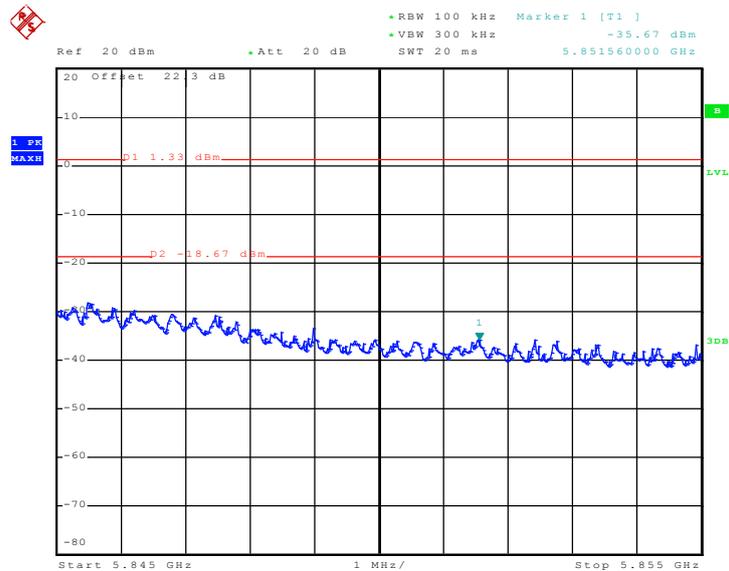
Test Mode :	Mode 10 and 12	Temperature :	22~24°C
Test Band :	802.11a	Relative Humidity :	61~64%
Test Channel :	149 and 165	Test Engineer :	Lancelot Chen and Andy Yeh

Low Band Edge Plot on 802.11a Channel 149



Date: 20.SEP.2010 17:43:31

High Band Edge Plot on 802.11a Channel 165

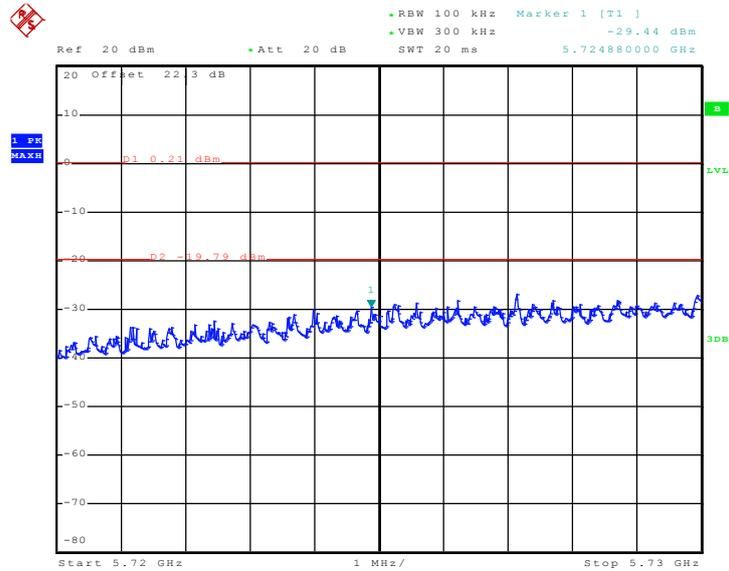


Date: 20.SEP.2010 17:45:30



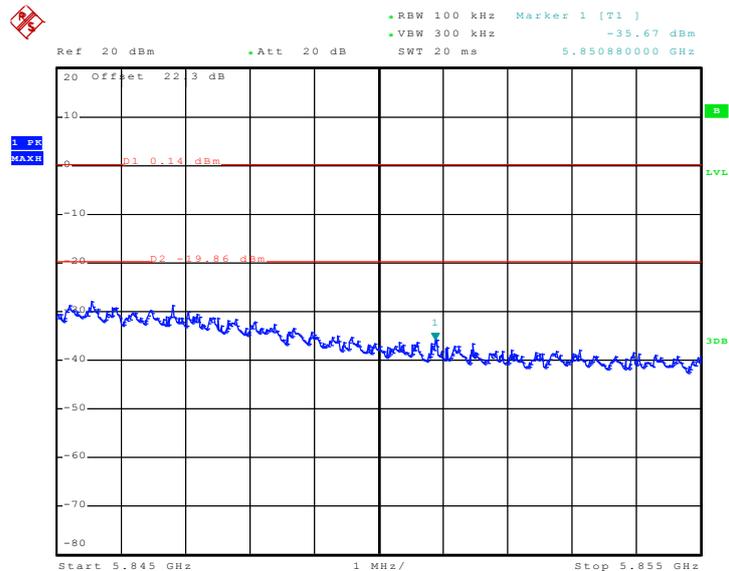
Test Mode :	Mode 13 and 15	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	149 and 165	Test Engineer :	Lancelot Chen and Andy Yeh

Low Band Edge Plot on 802.11n (BW 20MHz) Channel 149



Date: 20.SEP.2010 17:48:58

High Band Edge Plot on 802.11n (BW 20MHz) Channel 165



Date: 20.SEP.2010 17:47:45

## 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.

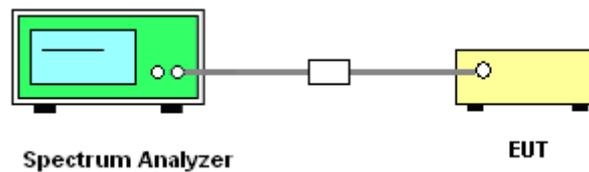
### 3.4.2 Measuring Instruments

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) > 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

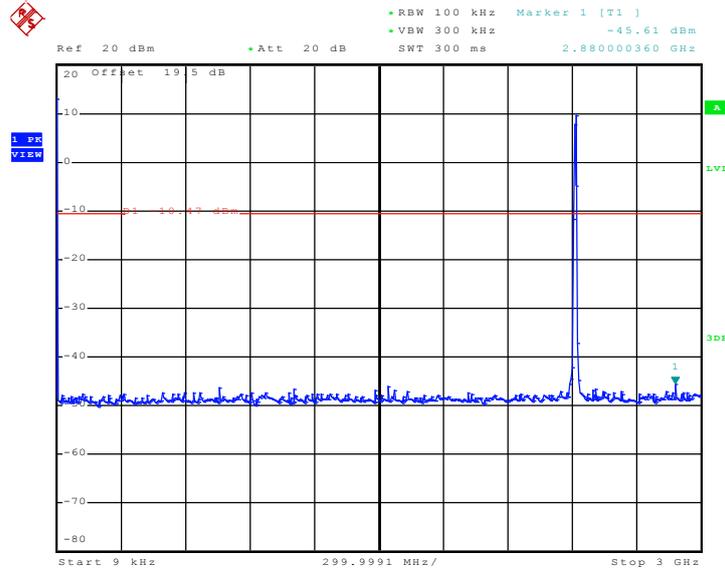




3.4.5 Test Result

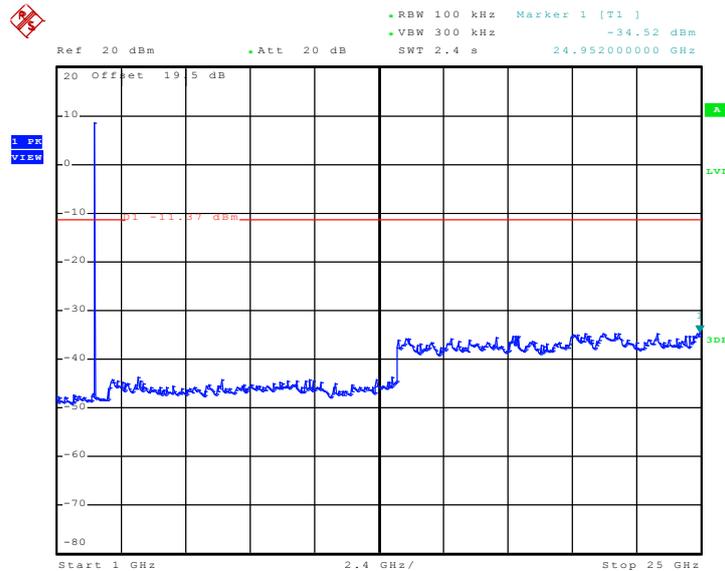
Test Mode :	Mode 1	Temperature :	22~24°C
Test Band :	802.11b	Relative Humidity :	61~64%
Test Channel :	01	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 16.AUG.2010 16:04:57

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

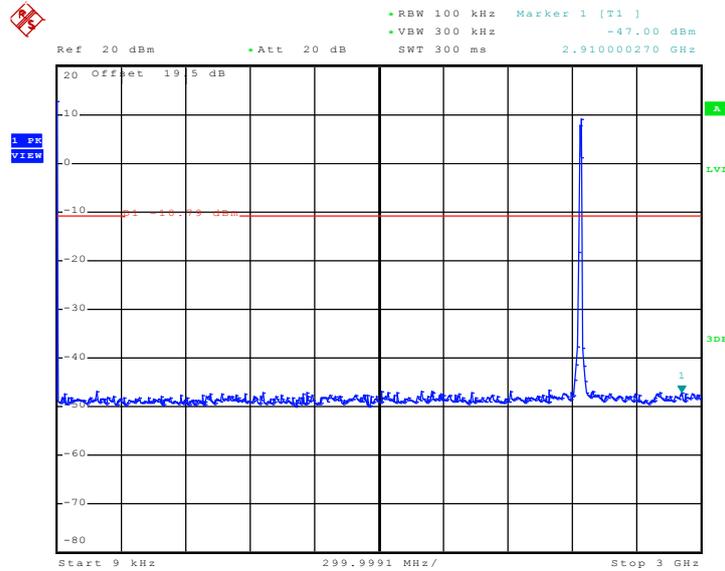


Date: 13.AUG.2010 05:10:17



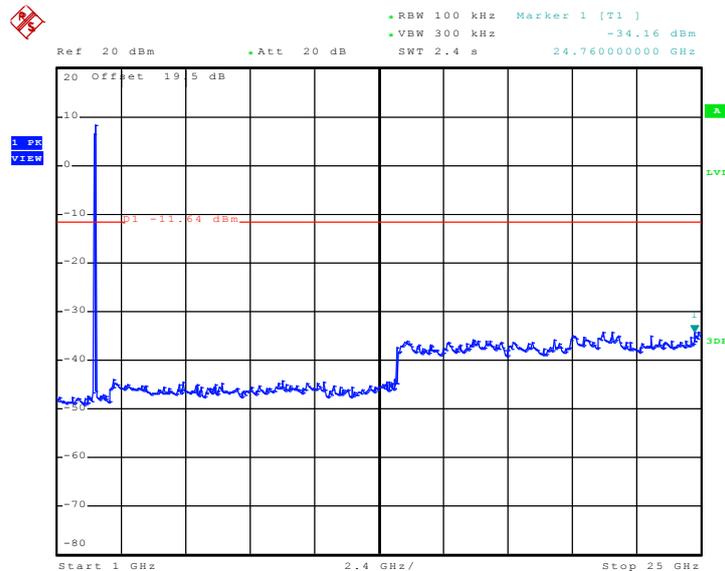
Test Mode :	Mode 2	Temperature :	22~24°C
Test Band :	802.11b	Relative Humidity :	61~64%
Test Channel :	06	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:10:54

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

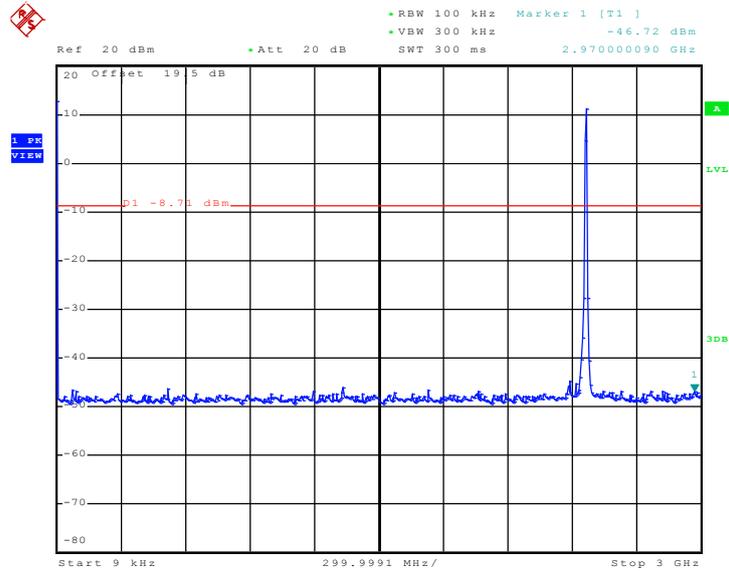


Date: 13.AUG.2010 05:11:35



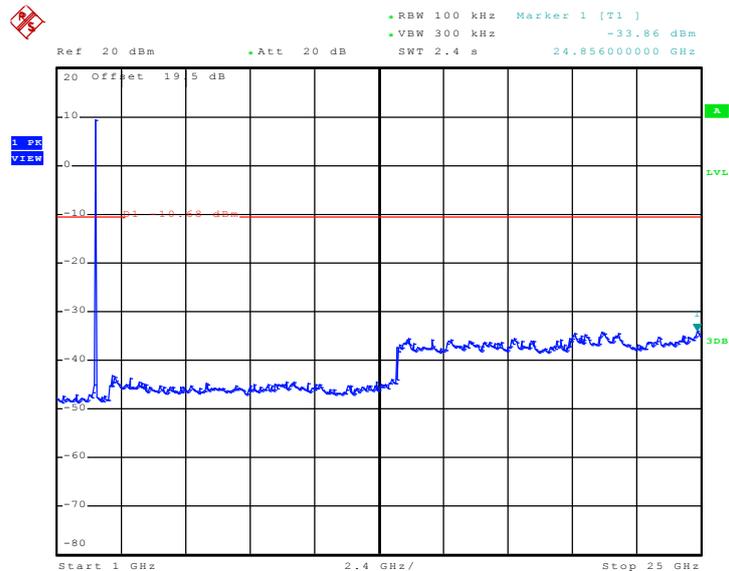
Test Mode :	Mode 3	Temperature :	22~24°C
Test Band :	802.11b	Relative Humidity :	61~64%
Test Channel :	11	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:12:29

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

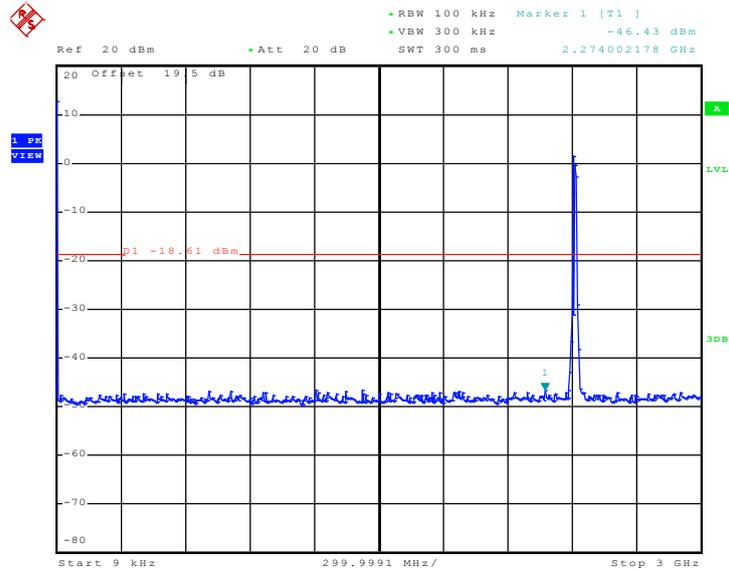


Date: 13.AUG.2010 05:13:42



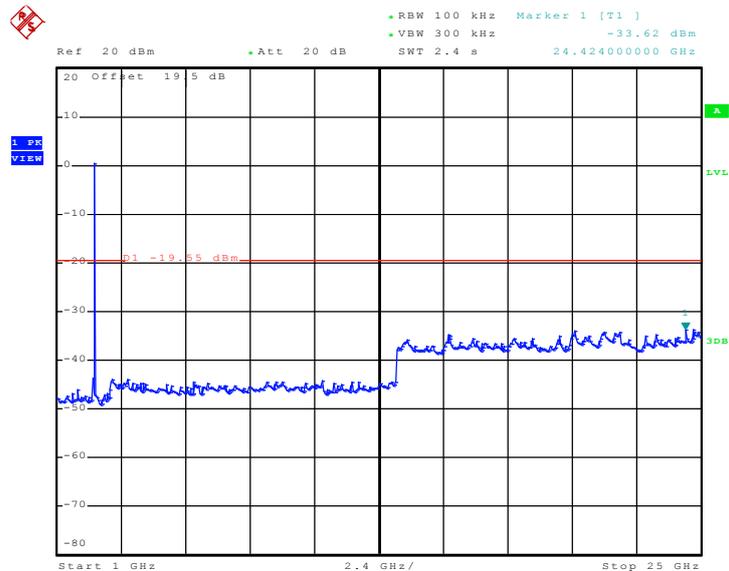
Test Mode :	Mode 4	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	61~64%
Test Channel :	01	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:14:50

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

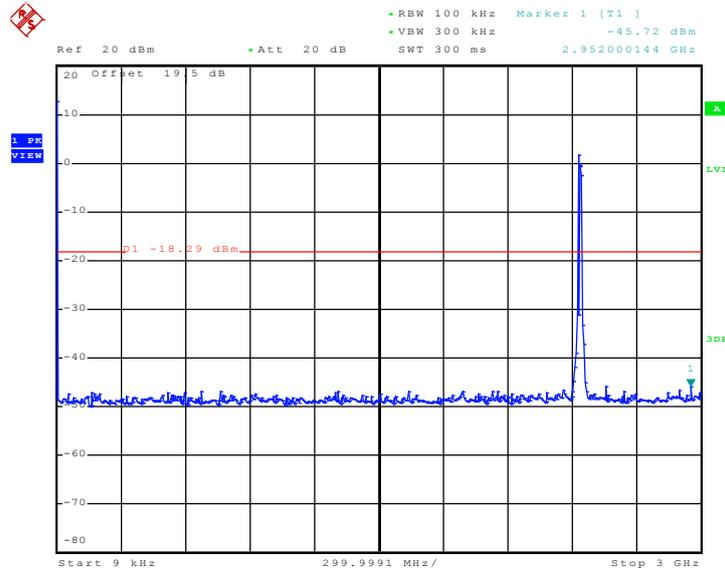


Date: 13.AUG.2010 05:16:02



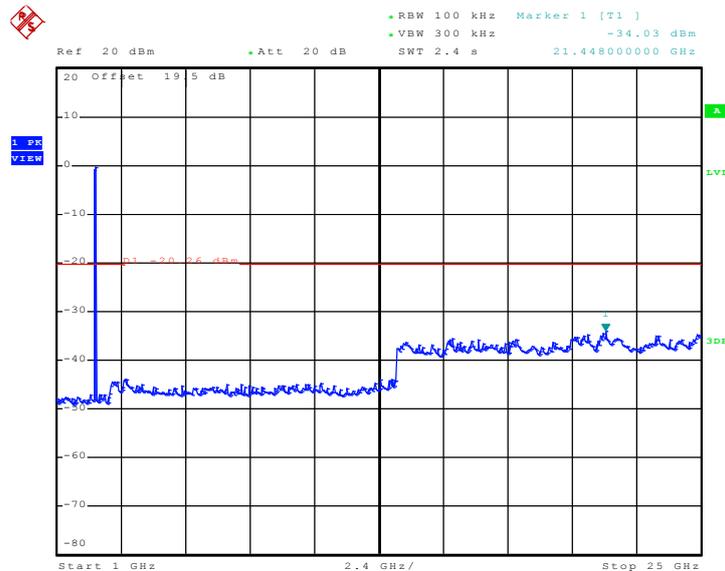
Test Mode :	Mode 5	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	61~64%
Test Channel :	06	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:16:41

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

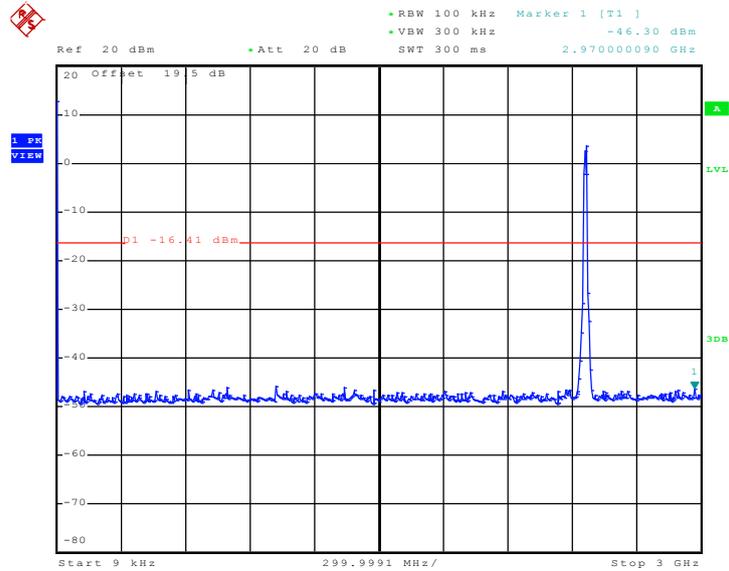


Date: 13.AUG.2010 05:17:17



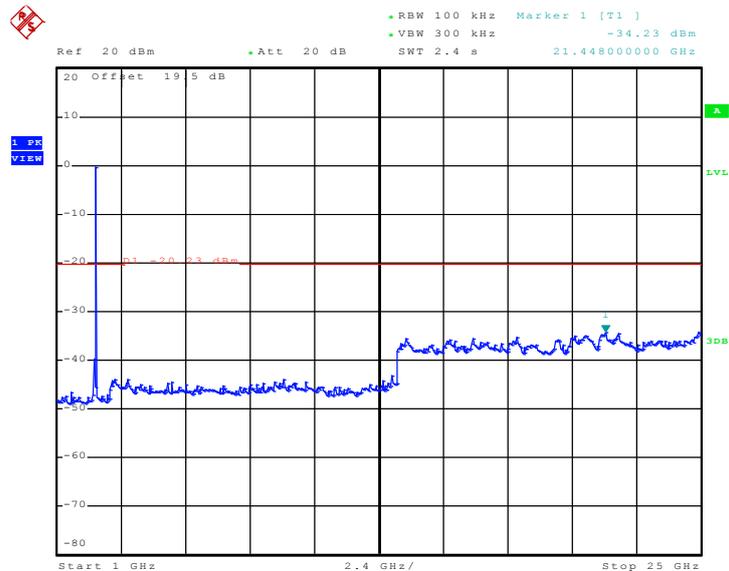
Test Mode :	Mode 6	Temperature :	22~24°C
Test Band :	802.11g	Relative Humidity :	61~64%
Test Channel :	11	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:18:34

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

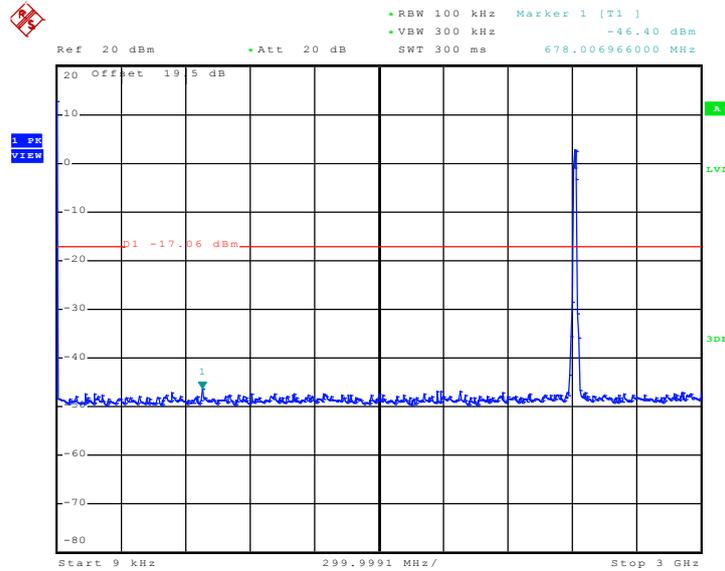


Date: 13.AUG.2010 05:19:35



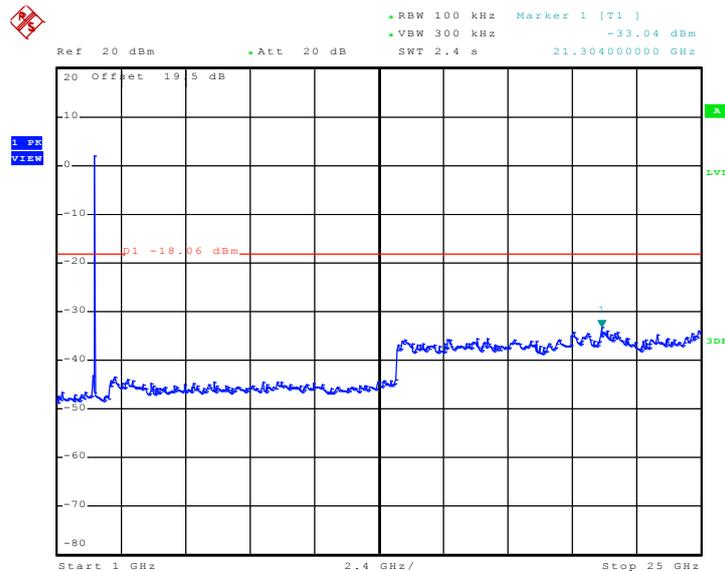
Test Mode :	Mode 7	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	01	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:26:32

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

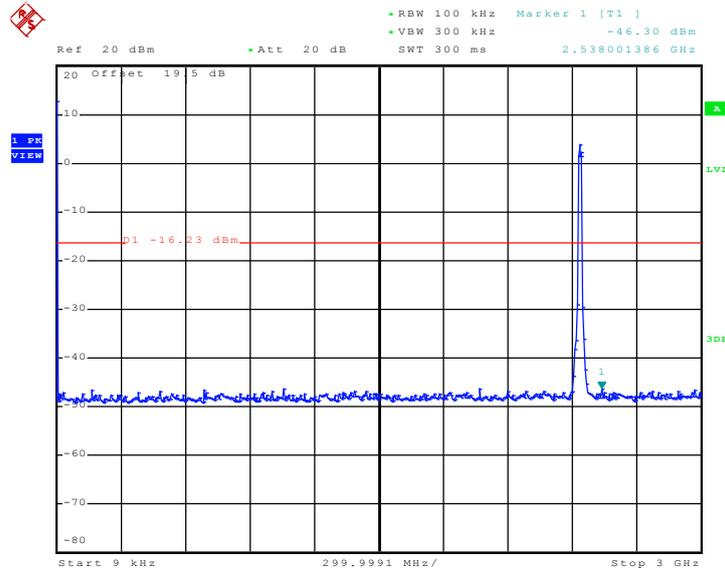


Date: 13.AUG.2010 05:27:58



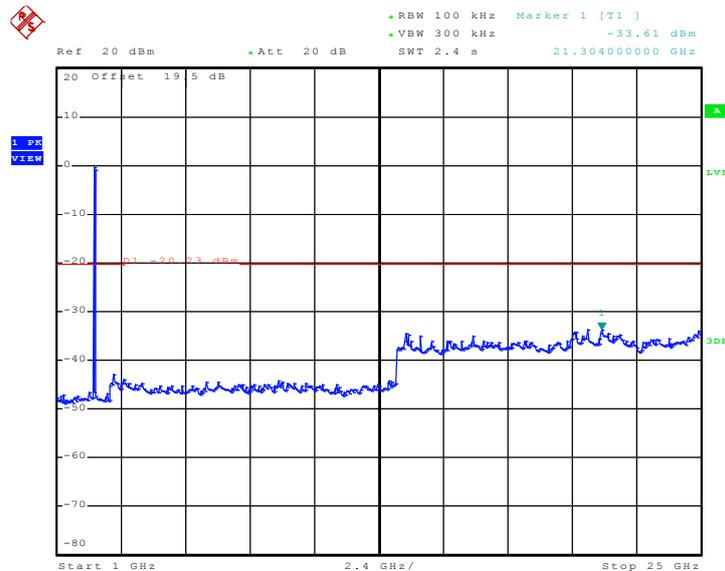
Test Mode :	Mode 8	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	06	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:29:25

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

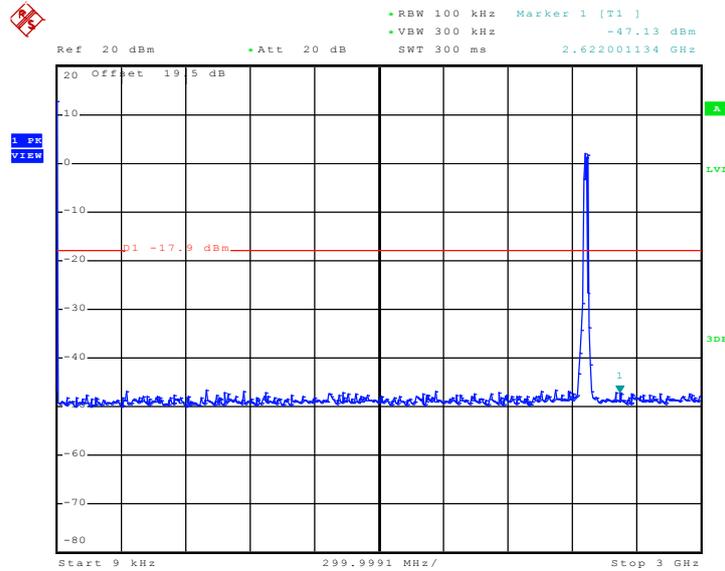


Date: 13.AUG.2010 05:30:29



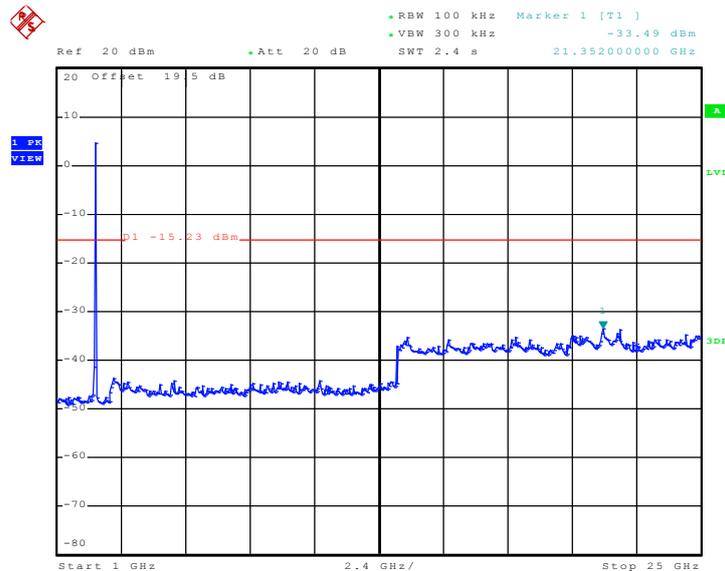
Test Mode :	Mode 9	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	11	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 13.AUG.2010 05:31:13

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

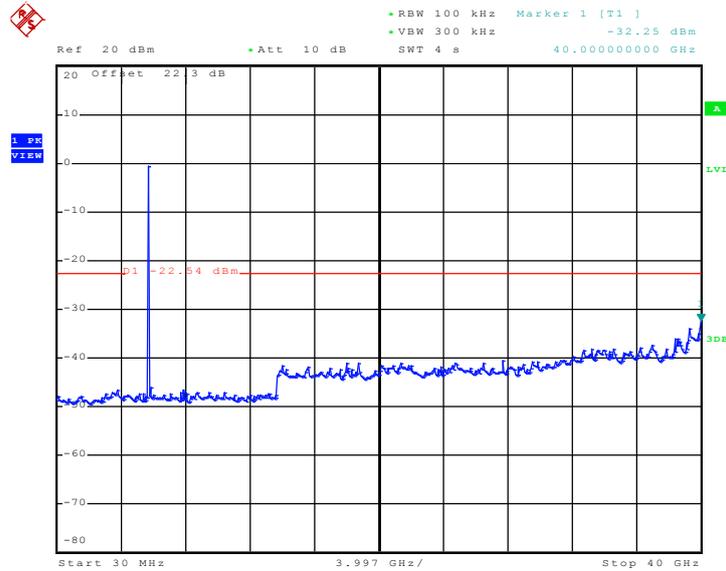


Date: 13.AUG.2010 05:31:51



Test Mode :	Mode 10	Temperature :	22~24°C
Test Band :	802.11a	Relative Humidity :	61~64%
Test Channel :	149	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz

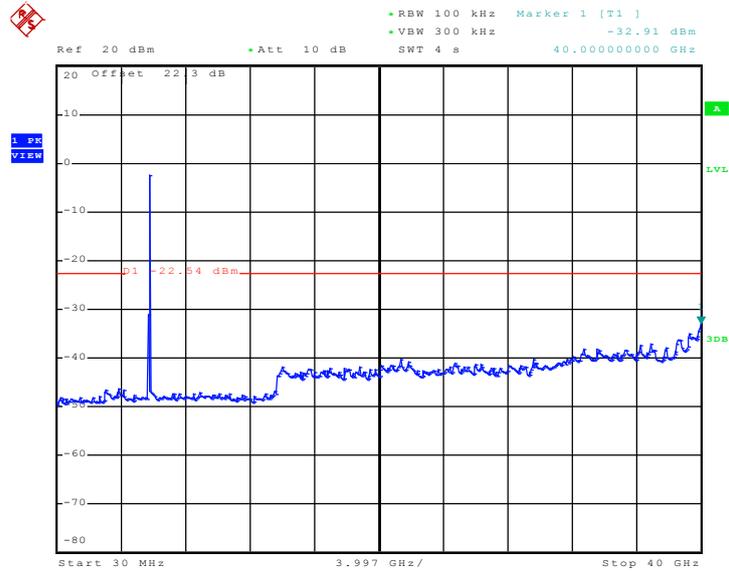


Date: 23.AUG.2010 22:04:54



Test Mode :	Mode 11	Temperature :	22~24°C
Test Band :	802.11a	Relative Humidity :	61~64%
Test Channel :	157	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz

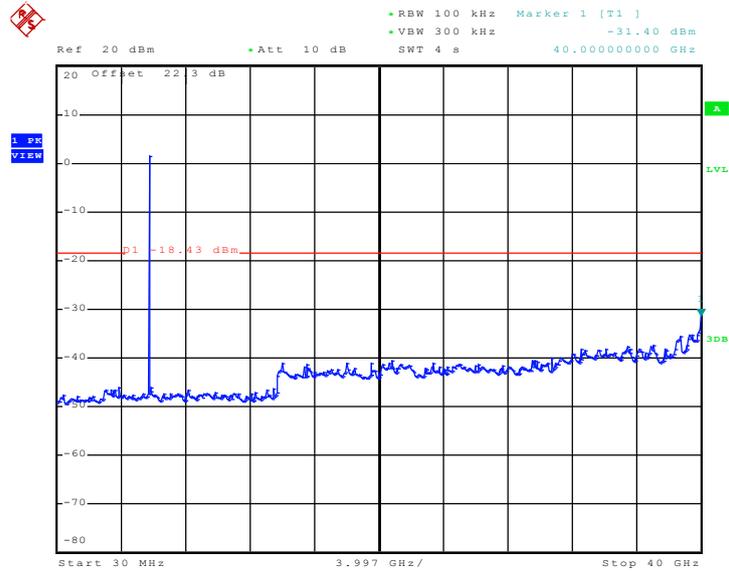


Date: 23.AUG.2010 22:02:31



Test Mode :	Mode 12	Temperature :	22~24°C
Test Band :	802.11a	Relative Humidity :	61~64%
Test Channel :	165	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz

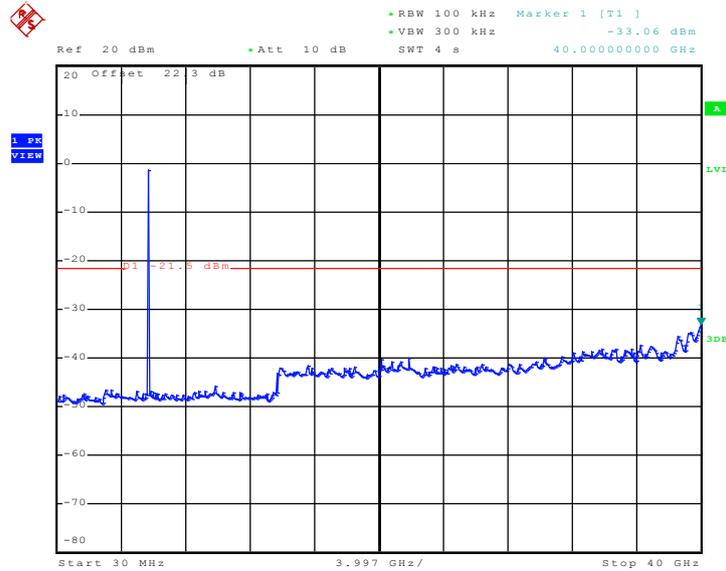


Date: 23.AUG.2010 22:00:00



Test Mode :	Mode 13	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	149	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz

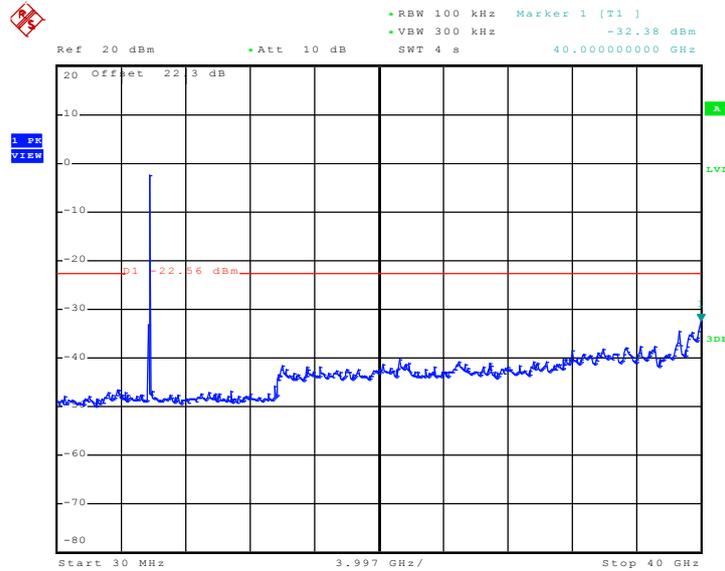


Date: 23.AUG.2010 22:08:29



Test Mode :	Mode 14	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	157	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz

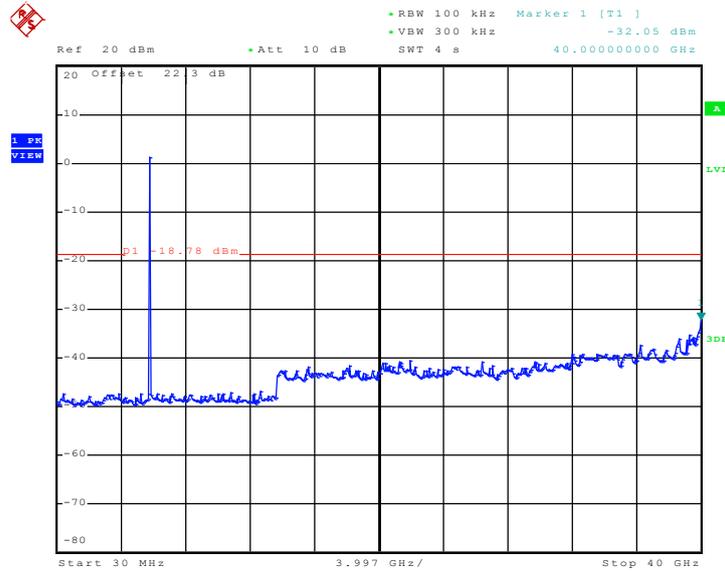


Date: 23.AUG.2010 22:10:10



Test Mode :	Mode 15	Temperature :	22~24°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	61~64%
Test Channel :	165	Test Engineer :	Lancelot Chen and Andy Yeh

Conducted Spurious Emission Plot between 30 MHz ~ 40 GHz



Date: 23.AUG.2010 22:11:49

## 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.

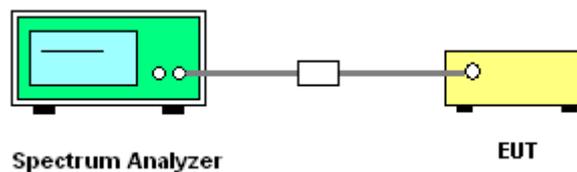
### 3.5.2 Measuring Instruments

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**

<b>Test Mode :</b>	Mode 1~3	<b>Temperature :</b>	22~24°C
<b>Test Engineer :</b>	Lancelot Chen and Andy Yeh	<b>Relative Humidity :</b>	61~64%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-4.28	8	Pass
06	2437	-4.24	8	Pass
11	2462	-4.14	8	Pass

<b>Test Mode :</b>	Mode 4~6	<b>Temperature :</b>	22~24°C
<b>Test Engineer :</b>	Lancelot Chen and Andy Yeh	<b>Relative Humidity :</b>	61~64%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-10.67	8	Pass
06	2437	-10.67	8	Pass
11	2462	-10.26	8	Pass

<b>Test Mode :</b>	Mode 7~9	<b>Temperature :</b>	22~24°C
<b>Test Engineer :</b>	Lancelot Chen and Andy Yeh	<b>Relative Humidity :</b>	61~64%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.42	8	Pass
06	2437	-9.52	8	Pass
11	2462	-8.93	8	Pass



Test Mode :	Mode 10~12	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	-11.25	8	Pass
157	5785	-11.29	8	Pass
165	5825	-10.74	8	Pass

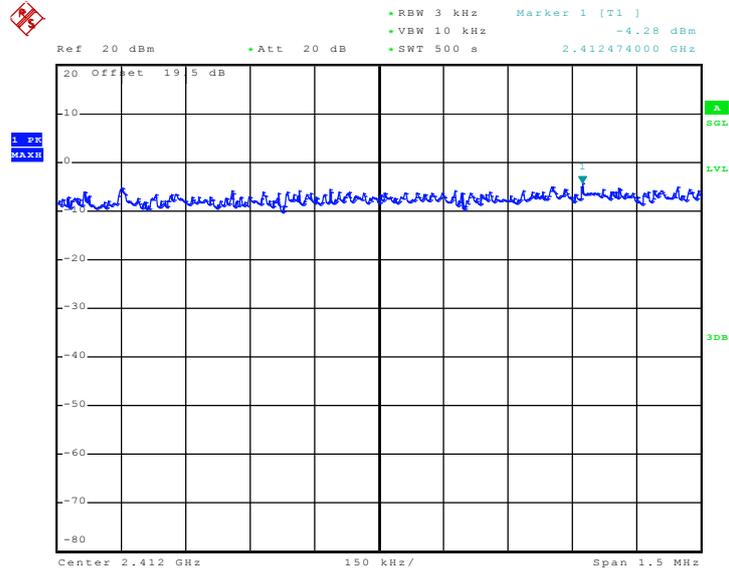
Test Mode :	Mode 13~15	Temperature :	22~24°C
Test Engineer :	Lancelot Chen and Andy Yeh	Relative Humidity :	61~64%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	-12.70	8	Pass
157	5785	-13.02	8	Pass
165	5825	-12.65	8	Pass



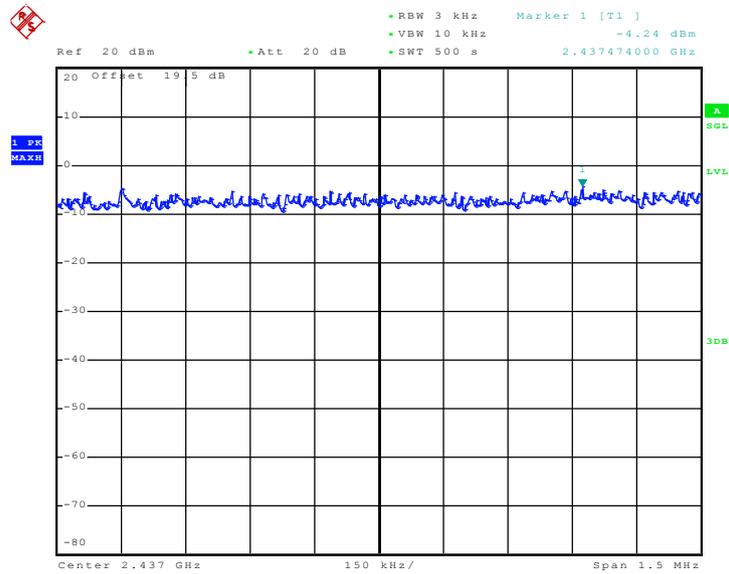
### 3.5.6 Test Result of Power Spectral Density Plots

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



Date: 13.AUG.2010 03:26:19

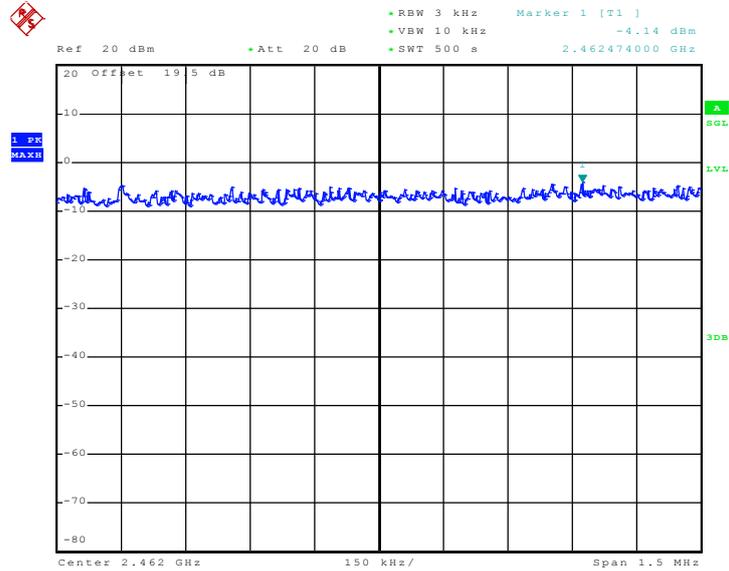
#### Mode 2 : PSD Plot on 802.11b Channel 06



Date: 13.AUG.2010 03:15:46

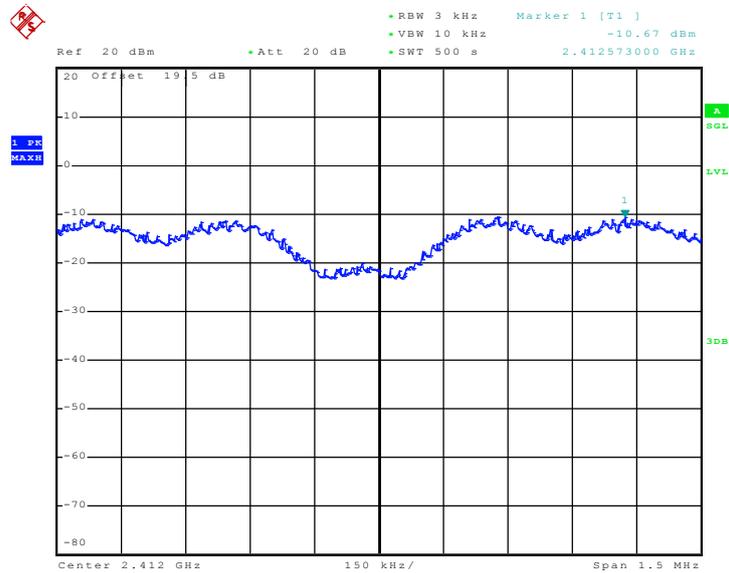


Mode 3 : PSD Plot on 802.11b Channel 11



Date: 13.AUG.2010 03:05:14

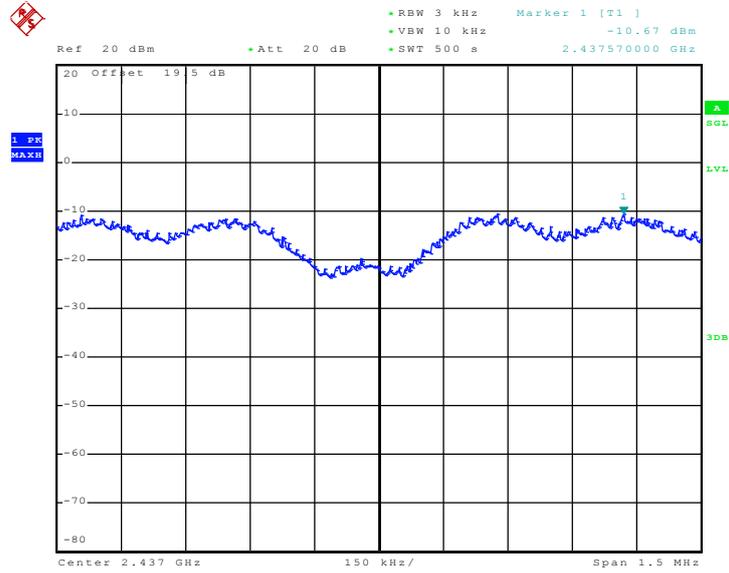
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 13.AUG.2010 03:37:02

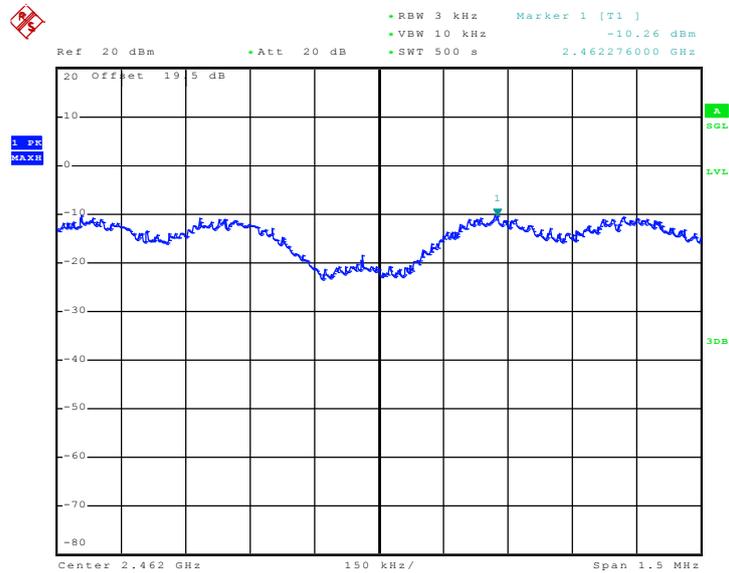


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 13.AUG.2010 03:46:28

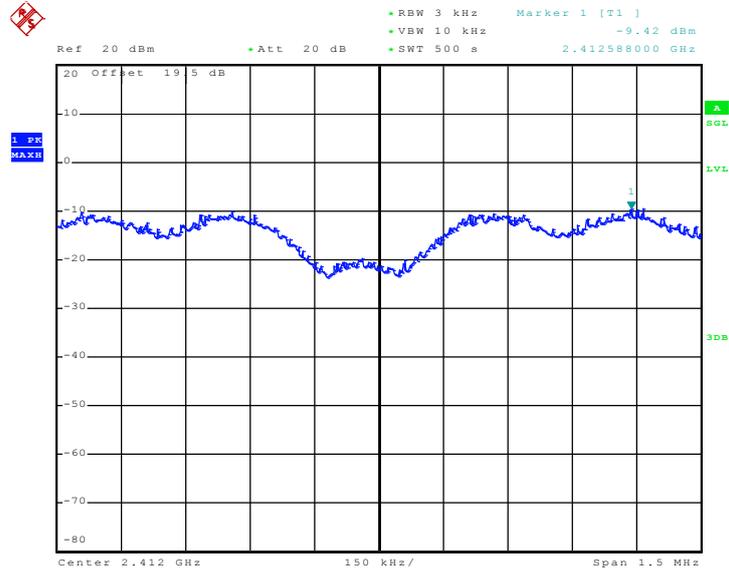
Mode 6 : PSD Plot on 802.11g Channel 11



Date: 13.AUG.2010 03:55:22

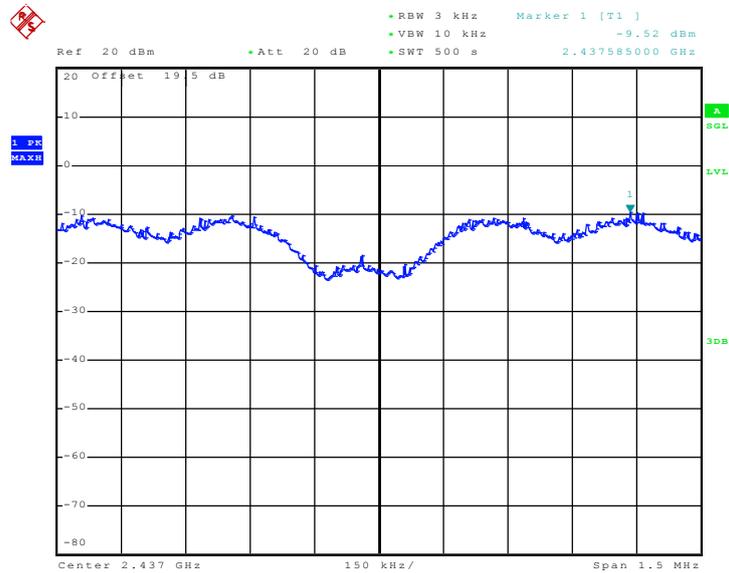


Mode 7 : PSD Plot on 802.11n (BW 20MHz) Channel 01



Date: 13.AUG.2010 05:03:41

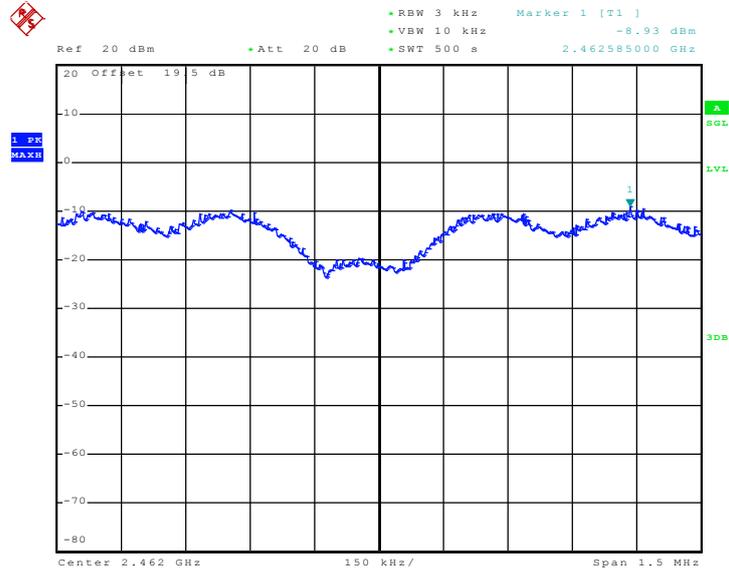
Mode 8 : PSD Plot on 802.11n (BW 20MHz) Channel 06



Date: 13.AUG.2010 04:54:10

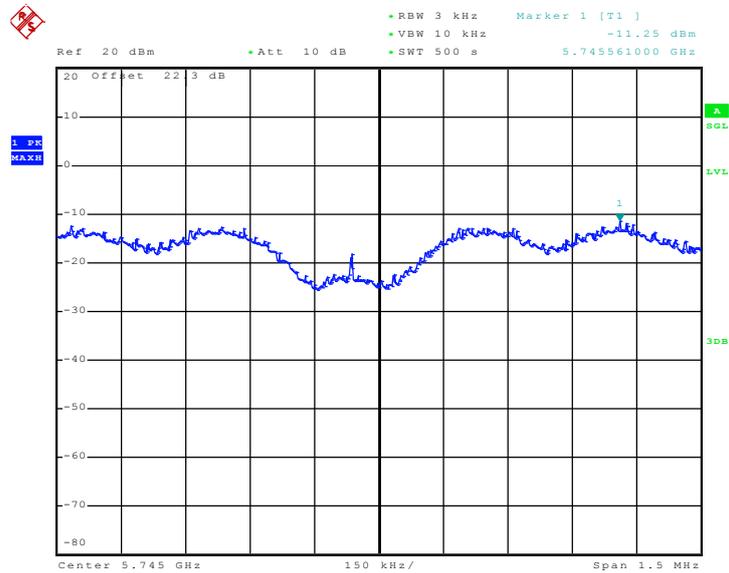


Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



Date: 13.AUG.2010 04:39:07

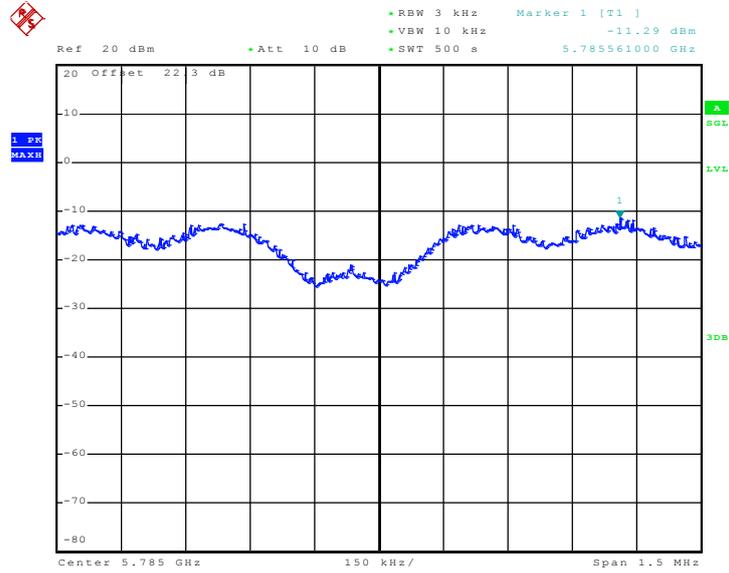
Mode 10: PSD Plot on 802.11a Channel 149



Date: 23.AUG.2010 23:10:44

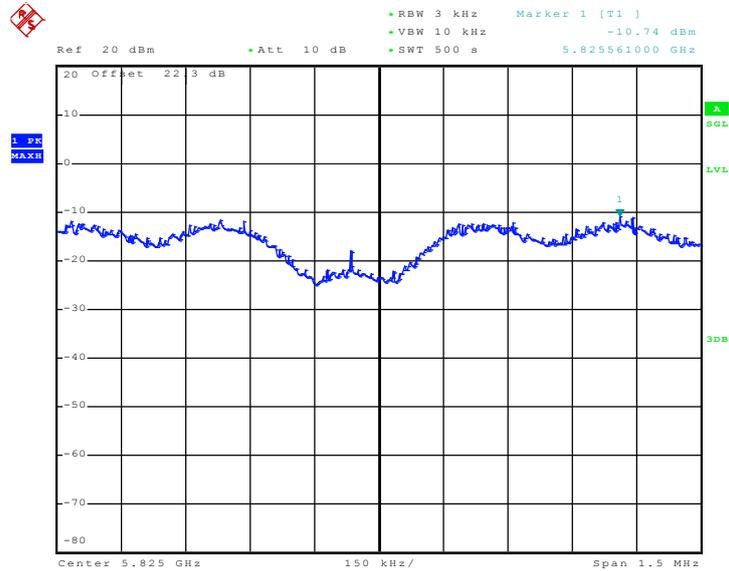


Mode 11: PSD Plot on 802.11a Channel 157



Date: 23.AUG.2010 23:20:38

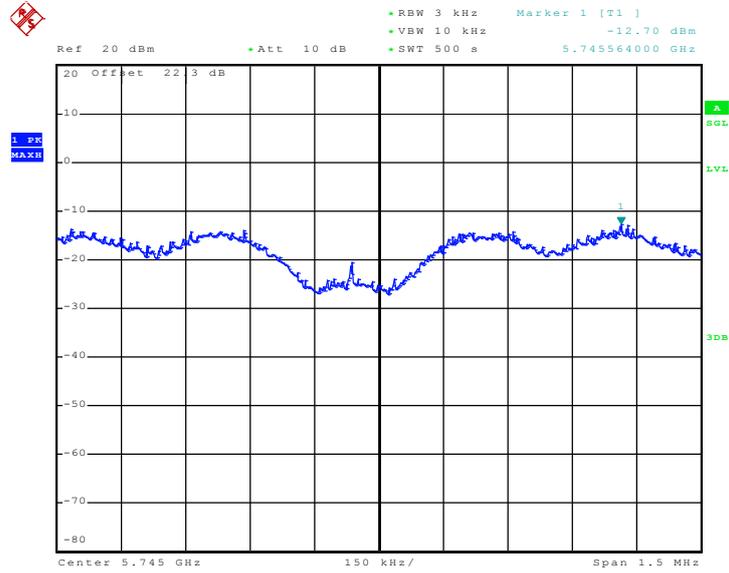
Mode 12: PSD Plot on 802.11a Channel 165



Date: 23.AUG.2010 23:31:39

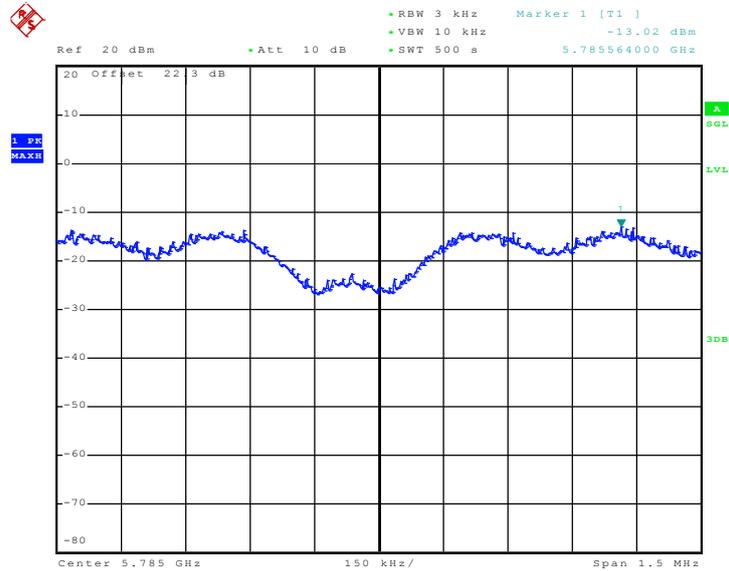


Mode 13: PSD Plot on 802.11n (BW 20MHz) Channel 149



Date: 23.AUG.2010 23:00:28

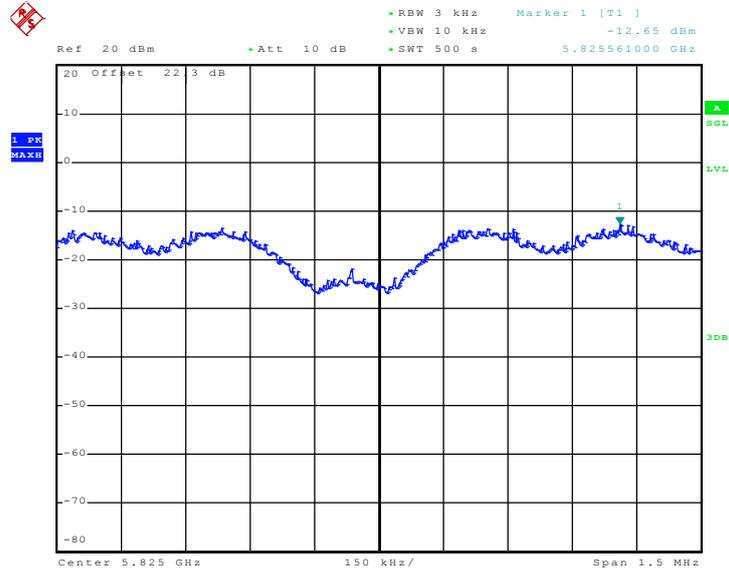
Mode 14: PSD Plot on 802.11n (BW 20MHz) Channel 157



Date: 23.AUG.2010 22:50:42



Mode 15: PSD Plot on 802.11n (BW 20MHz) Channel 165



Date: 23.AUG.2010 22:27:53

## 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.

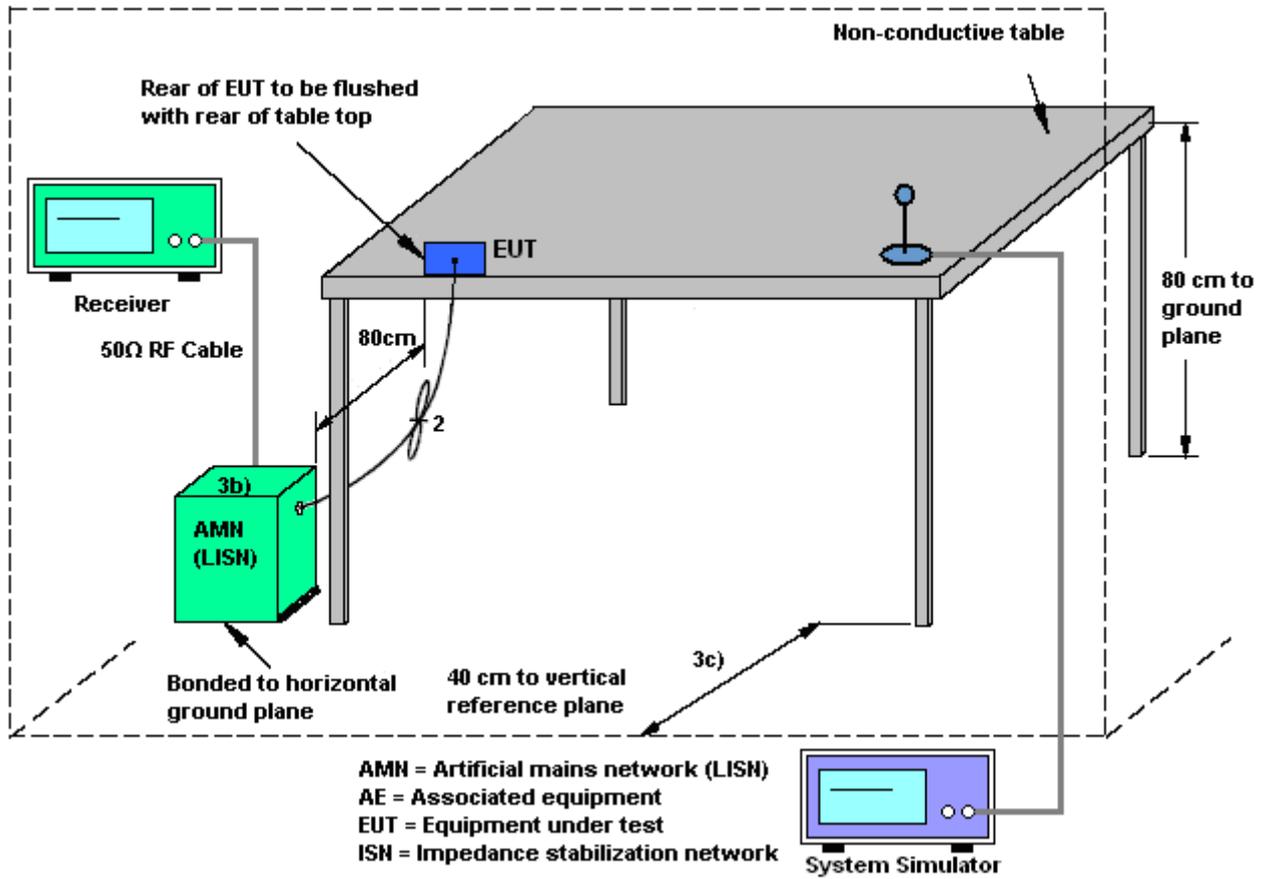
### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.6.3 Test Procedures

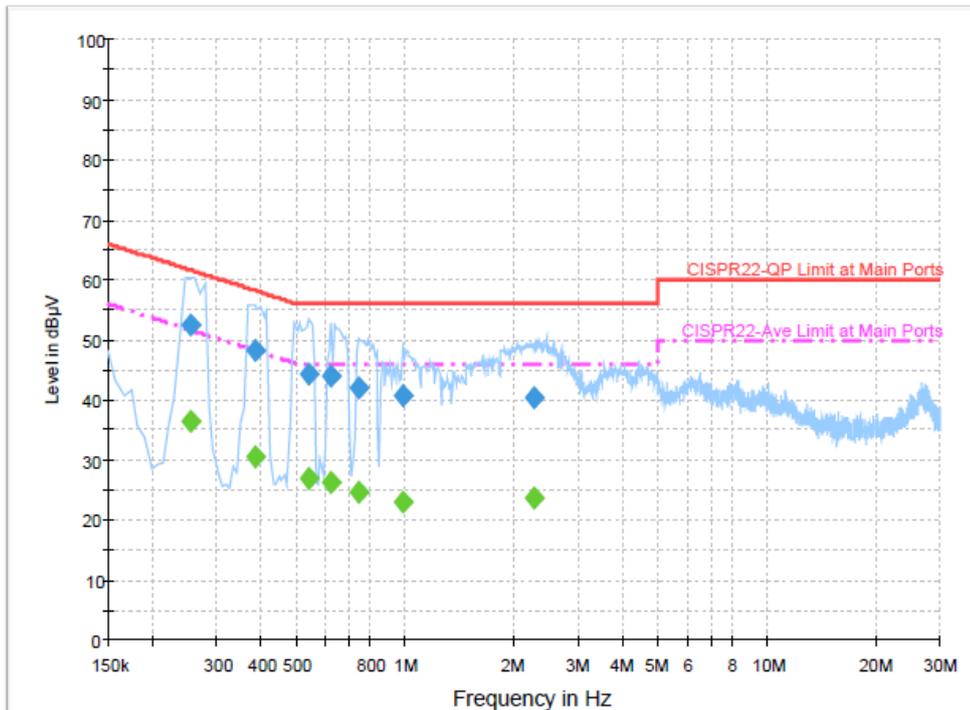
4. The testing follows the guidelines in ANSI C63.4-2003.
5. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
6. Connect EUT to the power mains through a line impedance stabilization network (LISN).
7. All the support units are connecting to the other LISN.
8. The LISN provides 50 ohm coupling impedance for the measuring instrument.
9. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
10. Both sides of AC line were checked for maximum conducted interference.
11. The frequency range from 150 kHz to 30 MHz was searched.
12. 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 Jiang	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + GPS Rx + Earphone + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

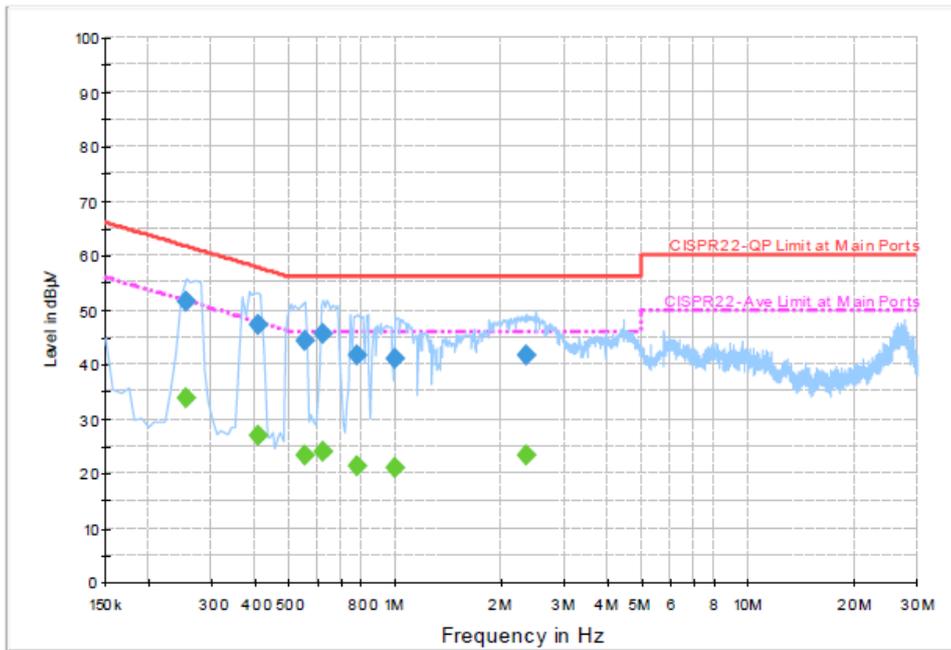
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.254000	52.5	Off	L1	19.3	9.1	61.6
0.382000	48.1	Off	L1	19.4	10.1	58.2
0.542000	44.1	Off	L1	19.3	11.9	56.0
0.622000	44.0	Off	L1	19.3	12.0	56.0
0.742000	41.9	Off	L1	19.4	14.1	56.0
0.982000	40.5	Off	L1	19.4	15.5	56.0
2.262000	40.3	Off	L1	19.5	15.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.254000	36.3	Off	L1	19.3	15.3	51.6
0.382000	30.5	Off	L1	19.4	17.7	48.2
0.542000	26.8	Off	L1	19.3	19.2	46.0
0.622000	26.1	Off	L1	19.3	19.9	46.0
0.742000	24.5	Off	L1	19.4	21.5	46.0
0.982000	22.8	Off	L1	19.4	23.2	46.0
2.262000	23.7	Off	L1	19.5	22.3	46.0



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Jiang	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (2.4G) + GPS Rx + Earphone + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
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)
0.254000	51.4	Off	N	19.4	10.2	61.6
0.406000	47.3	Off	N	19.4	10.4	57.7
0.550000	44.4	Off	N	19.3	11.6	56.0
0.622000	45.5	Off	N	19.3	10.5	56.0
0.774000	41.8	Off	N	19.4	14.2	56.0
0.990000	40.9	Off	N	19.4	15.1	56.0
2.334000	41.6	Off	N	19.5	14.4	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.254000	33.8	Off	N	19.4	17.8	51.6
0.406000	26.7	Off	N	19.4	21.0	47.7
0.550000	23.3	Off	N	19.3	22.7	46.0
0.622000	24.0	Off	N	19.3	22.0	46.0
0.774000	21.5	Off	N	19.4	24.5	46.0
0.990000	20.9	Off	N	19.4	25.1	46.0
2.334000	23.4	Off	N	19.5	22.6	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

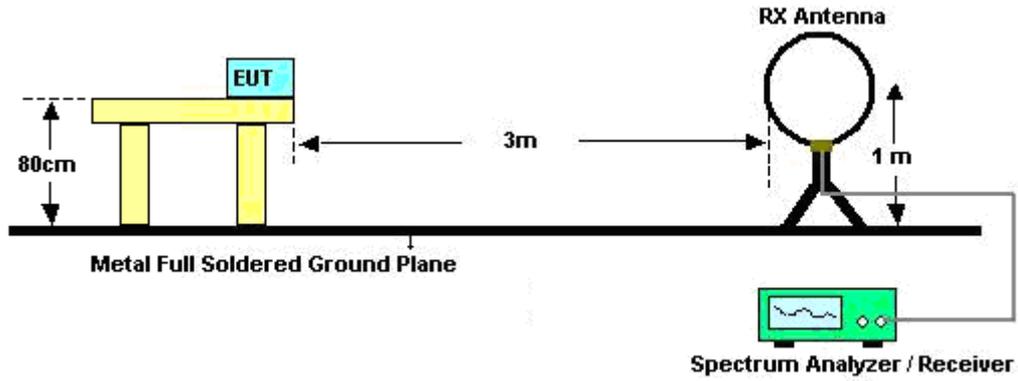
See list of measuring instruments of this test report.

#### 3.7.3 Test Procedures

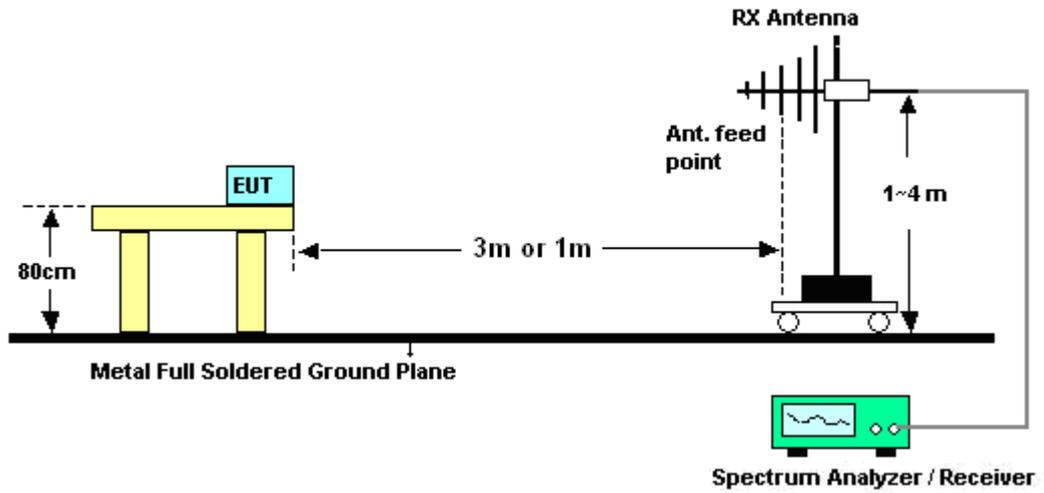
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
  - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz; VBW  $\geq$ 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

Test Engineer :	Kay Wu	Temperature :	25~26°C
		Relative Humidity :	43~44%

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 (30MHz ~ 10<sup>th</sup> Harmonic)

Test Mode :	Mode 1	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	43~44%
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
57.54	29.41	-10.59	40.00	53.37	6.85	0.73	31.54	100	17	Peak
140.16	29.92	-13.58	43.50	48.91	11.45	1.07	31.51	-	-	Peak
170.94	28.67	-14.83	43.50	49.33	9.66	1.23	31.55	-	-	Peak
365.80	20.72	-25.28	46.00	34.87	15.41	1.71	31.27	-	-	Peak
605.20	21.63	-24.37	46.00	30.96	19.33	2.20	30.86	-	-	Peak
930.70	23.22	-22.78	46.00	29.66	21.21	2.78	30.43	-	-	Peak
2389.80	48.34	-5.66	54.00	46.48	31.90	4.50	34.54	103	360	Average
2389.80	62.48	-11.52	74.00	60.62	31.90	4.50	34.54	103	360	Peak
2412.00	100.05	-	-	98.18	31.91	4.50	34.54	103	360	Average
2412.00	113.63	-	-	111.76	31.91	4.50	34.54	103	360	Peak
2498.00	41.08	-12.92	54.00	38.99	32.00	4.62	34.53	103	360	Average
2498.00	52.20	-21.80	74.00	50.11	32.00	4.62	34.53	103	360	Peak



<b>Test Mode :</b>	Mode 1	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	43~44%
<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
53.49	33.33	-6.67	40.00	56.61	7.53	0.73	31.54	100	285	Peak
91.02	32.01	-11.49	43.50	53.04	9.67	0.84	31.54	-	-	Peak
139.89	24.48	-19.02	43.50	43.47	11.45	1.07	31.51	-	-	Peak
474.30	19.34	-26.66	46.00	30.74	17.74	1.98	31.12	-	-	Peak
664.70	21.58	-24.42	46.00	30.31	19.73	2.30	30.76	-	-	Peak
812.40	23.31	-22.69	46.00	30.50	20.77	2.57	30.53	-	-	Peak
2389.61	44.19	-9.81	54.00	42.36	31.90	4.47	34.54	122	301	Average
2389.61	58.17	-15.83	74.00	56.34	31.90	4.47	34.54	122	301	Peak
2412.00	95.34	-	-	93.47	31.91	4.50	34.54	122	301	Average
2412.00	108.10	-	-	106.23	31.91	4.50	34.54	122	301	Peak
2488.00	36.48	-17.52	54.00	34.42	32.00	4.59	34.53	122	301	Average
2488.00	48.69	-25.31	74.00	46.63	32.00	4.59	34.53	122	301	Peak



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
57.27	28.16	-11.84	40.00	52.12	6.85	0.73	31.54	-	-	Peak
85.35	31.89	-8.11	40.00	54.17	8.43	0.84	31.55	100	111	Peak
143.40	30.13	-13.37	43.50	49.34	11.16	1.14	31.51	-	-	Peak
371.40	20.87	-25.13	46.00	34.81	15.54	1.77	31.25	-	-	Peak
556.90	20.36	-25.64	46.00	29.85	19.30	2.15	30.94	-	-	Peak
913.20	23.22	-22.78	46.00	29.87	21.11	2.70	30.46	-	-	Peak
2360.00	40.10	-13.90	54.00	38.34	31.86	4.44	34.54	103	17	Average
2360.00	50.78	-23.22	74.00	49.02	31.86	4.44	34.54	103	17	Peak
2437.00	100.41	-	-	98.47	31.95	4.53	34.54	103	17	Average
2437.00	113.33	-	-	111.36	31.95	4.56	34.54	103	17	Peak
2484.00	38.31	-15.69	54.00	36.27	31.98	4.59	34.53	103	17	Average
2484.00	50.11	-23.89	74.00	48.07	31.98	4.59	34.53	103	17	Peak
4874.00	44.48	-29.52	74.00	59.21	34.37	6.49	55.59	100	0	Peak
7311.00	48.39	-25.61	74.00	61.48	35.61	8.10	56.80	100	0	Peak



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
53.49	34.36	-5.64	40.00	57.64	7.53	0.73	31.54	100	271	Peak
91.56	33.03	-10.47	43.50	54.06	9.67	0.84	31.54	-	-	Peak
140.43	24.49	-19.01	43.50	43.48	11.45	1.07	31.51	-	-	Peak
544.30	21.21	-24.79	46.00	30.85	19.18	2.15	30.97	-	-	Peak
715.80	23.13	-22.87	46.00	31.18	20.21	2.40	30.66	-	-	Peak
940.50	23.47	-22.53	46.00	29.83	21.27	2.78	30.41	-	-	Peak
2358.00	35.96	-18.04	54.00	34.20	31.86	4.44	34.54	100	181	Average
2358.00	46.55	-27.45	74.00	44.79	31.86	4.44	34.54	100	181	Peak
2437.00	95.38	-	-	93.44	31.95	4.53	34.54	100	181	Average
2437.00	108.20	-	-	106.26	31.95	4.53	34.54	100	181	Peak
2492.00	35.85	-18.15	54.00	33.76	32.00	4.62	34.53	100	181	Average
2492.00	47.80	-26.20	74.00	45.71	32.00	4.62	34.53	100	181	Peak
4874.00	48.63	-25.37	74.00	63.36	34.37	6.49	55.59	100	0	Peak
7311.00	46.12	-27.88	74.00	59.21	35.61	8.10	56.80	100	0	Peak



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
91.56	29.22	-14.28	43.50	50.25	9.67	0.84	31.54	-	-	Peak
143.67	29.37	-14.13	43.50	48.67	11.07	1.14	31.51	100	127	Peak
171.75	27.94	-15.56	43.50	48.66	9.59	1.23	31.54	-	-	Peak
362.30	21.12	-24.88	46.00	35.39	15.30	1.71	31.28	-	-	Peak
685.00	21.66	-24.34	46.00	30.19	19.86	2.35	30.74	-	-	Peak
818.00	23.39	-22.61	46.00	30.53	20.78	2.61	30.53	-	-	Peak
2384.00	42.25	-11.75	54.00	40.44	31.88	4.47	34.54	100	16	Average
2384.00	52.73	-21.27	74.00	50.92	31.88	4.47	34.54	100	16	Peak
2462.00	99.70	-	-	97.70	31.97	4.56	34.53	100	16	Average
2462.00	112.57	-	-	110.57	31.97	4.56	34.53	100	16	Peak
2483.50	48.15	-5.85	54.00	46.11	31.98	4.59	34.53	100	16	Average
2483.50	61.94	-12.06	74.00	59.90	31.98	4.59	34.53	100	16	Peak
4924.00	44.62	-29.38	74.00	59.35	34.34	6.54	55.61	100	0	Peak
7386.00	47.83	-26.17	74.00	60.96	35.56	8.15	56.84	100	0	Peak



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
53.49	34.39	-5.61	40.00	57.67	7.53	0.73	31.54	100	37	Peak
91.02	32.68	-10.82	43.50	53.71	9.67	0.84	31.54	-	-	Peak
143.67	24.85	-18.65	43.50	44.15	11.07	1.14	31.51	-	-	Peak
478.50	20.09	-25.91	46.00	31.35	17.87	1.98	31.11	-	-	Peak
661.20	22.71	-23.29	46.00	31.46	19.71	2.30	30.76	-	-	Peak
813.80	23.47	-22.53	46.00	30.66	20.77	2.57	30.53	-	-	Peak
2384.00	37.37	-16.63	54.00	35.56	31.88	4.47	34.54	100	171	Average
2384.00	47.42	-26.58	74.00	45.61	31.88	4.47	34.54	100	171	Peak
2462.00	95.11	-	-	93.11	31.97	4.56	34.53	100	171	Average
2462.00	107.22	-	-	105.22	31.97	4.56	34.53	100	171	Peak
2483.66	41.21	-12.79	54.00	39.17	31.98	4.59	34.53	100	171	Average
2483.66	54.04	-19.96	74.00	52.00	31.98	4.59	34.53	100	171	Peak
4924.00	47.44	-26.56	74.00	62.17	34.34	6.54	55.61	100	0	Peak
7386.00	46.81	-27.19	74.00	59.94	35.56	8.15	56.84	100	0	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	43~44%
<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
91.29	29.69	-13.81	43.50	50.72	9.67	0.84	31.54	-	-	Peak
143.13	29.80	-13.70	43.50	49.01	11.16	1.14	31.51	100	210	Peak
170.67	28.56	-14.94	43.50	49.15	9.73	1.23	31.55	-	-	Peak
362.30	20.06	-25.94	46.00	34.33	15.30	1.71	31.28	-	-	Peak
714.40	22.30	-23.70	46.00	30.39	20.18	2.40	30.67	-	-	Peak
930.00	23.56	-22.44	46.00	30.00	21.21	2.78	30.43	-	-	Peak
2389.99	50.25	-3.75	54.00	48.39	31.90	4.50	34.54	100	360	Average
2389.99	68.31	-5.69	74.00	66.45	31.90	4.50	34.54	100	360	Peak
2412.00	92.56	-	-	90.69	31.91	4.50	34.54	100	360	Average
2412.00	104.86	-	-	102.99	31.91	4.50	34.54	100	360	Peak
2494.00	36.56	-17.44	54.00	34.47	32.00	4.62	34.53	100	360	Average
2494.00	49.47	-24.53	74.00	47.38	32.00	4.62	34.53	100	360	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	43~44%
<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	31.45	-8.55	40.00	45.11	17.30	0.58	31.54	-	-	Peak
56.73	33.51	-6.49	40.00	57.47	6.85	0.73	31.54	100	301	Peak
91.02	33.00	-10.50	43.50	54.03	9.67	0.84	31.54	-	-	Peak
360.20	17.56	-28.44	46.00	31.88	15.25	1.71	31.28	-	-	Peak
663.30	22.19	-23.81	46.00	30.93	19.72	2.30	30.76	-	-	Peak
928.60	23.84	-22.16	46.00	30.29	21.20	2.78	30.43	-	-	Peak
2389.09	46.20	-7.80	54.00	44.37	31.90	4.47	34.54	133	146	Average
2389.09	66.71	-7.29	74.00	64.88	31.90	4.47	34.54	133	146	Peak
2412.00	88.75	-	-	86.88	31.91	4.50	34.54	133	146	Average
2412.00	99.24	-	-	97.37	31.91	4.50	34.54	133	146	Peak
2490.00	32.69	-21.31	54.00	30.60	32.00	4.62	34.53	133	146	Average
2490.00	45.28	-28.72	74.00	43.19	32.00	4.62	34.53	133	146	Peak



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
92.10	29.32	-14.18	43.50	50.18	9.84	0.84	31.54	-	-	Peak
142.86	29.82	-13.68	43.50	49.03	11.16	1.14	31.51	100	174	Peak
174.72	28.32	-15.18	43.50	49.24	9.38	1.23	31.53	-	-	Peak
399.40	18.58	-27.42	46.00	31.49	16.45	1.82	31.18	-	-	Peak
531.00	20.59	-25.41	46.00	30.64	18.85	2.10	31.00	-	-	Peak
899.20	22.97	-23.03	46.00	29.72	21.03	2.70	30.48	-	-	Peak
2390.00	39.36	-14.64	54.00	37.50	31.90	4.50	34.54	102	349	Average
2390.00	55.37	-18.63	74.00	53.51	31.90	4.50	34.54	102	349	Peak
2437.00	94.70	-	-	92.76	31.95	4.53	34.54	102	349	Average
2437.00	107.05	-	-	105.13	31.93	4.53	34.54	102	349	Peak
2484.00	36.70	-17.30	54.00	34.66	31.98	4.59	34.53	102	349	Average
2484.00	49.93	-24.07	74.00	47.89	31.98	4.59	34.53	102	349	Peak



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
58.08	27.73	-12.27	40.00	51.85	6.69	0.73	31.54	100	287	Peak
91.83	29.10	-14.40	43.50	49.96	9.84	0.84	31.54	-	-	Peak
143.40	29.62	-13.88	43.50	48.83	11.16	1.14	31.51	-	-	Peak
572.30	21.84	-24.16	46.00	31.27	19.30	2.18	30.91	-	-	Peak
748.00	22.81	-23.19	46.00	30.16	20.69	2.51	30.55	-	-	Peak
919.50	23.57	-22.43	46.00	30.09	21.15	2.78	30.45	-	-	Peak
2390.00	36.02	-17.98	54.00	34.16	31.90	4.50	34.54	100	291	Average
2390.00	48.03	-25.97	74.00	46.17	31.90	4.50	34.54	100	291	Peak
2437.00	89.31	-	-	87.37	31.95	4.53	34.54	100	291	Average
2437.00	101.45	-	-	99.53	31.93	4.53	34.54	100	291	Peak
2484.00	32.67	-21.33	54.00	30.63	31.98	4.59	34.53	100	291	Average
2484.00	44.64	-29.36	74.00	42.60	31.98	4.59	34.53	100	291	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
57.00	26.57	-13.43	40.00	50.53	6.85	0.73	31.54	-	-	Peak
143.40	27.86	-15.64	43.50	47.07	11.16	1.14	31.51	-	-	Peak
173.91	31.58	-11.92	43.50	52.44	9.45	1.23	31.54	100	174	Peak
362.30	18.72	-27.28	46.00	32.99	15.30	1.71	31.28	-	-	Peak
717.90	22.30	-23.70	46.00	30.27	20.24	2.45	30.66	-	-	Peak
871.90	23.86	-22.14	46.00	30.74	20.93	2.68	30.49	-	-	Peak
2380.00	39.12	-14.88	54.00	37.31	31.88	4.47	34.54	102	356	Average
2380.00	50.67	-23.33	74.00	48.86	31.88	4.47	34.54	102	356	Peak
2462.00	92.90	-	-	90.90	31.97	4.56	34.53	102	356	Average
2462.00	105.39	-	-	103.39	31.97	4.56	34.53	102	356	Peak
2483.50	48.44	-5.56	54.00	46.40	31.98	4.59	34.53	102	356	Average
2483.50	68.64	-5.36	74.00	66.60	31.98	4.59	34.53	102	356	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
32.43	34.54	-5.46	40.00	48.79	16.71	0.58	31.54	100	247	Peak
57.27	33.34	-6.66	40.00	57.30	6.85	0.73	31.54	-	-	Peak
83.19	26.68	-13.32	40.00	49.39	8.00	0.84	31.55	-	-	Peak
492.50	18.82	-27.18	46.00	29.84	18.03	2.04	31.09	-	-	Peak
673.10	21.78	-24.22	46.00	30.39	19.79	2.35	30.75	-	-	Peak
931.40	23.04	-22.96	46.00	29.47	21.22	2.78	30.43	-	-	Peak
2384.00	35.65	-18.35	54.00	33.84	31.88	4.47	34.54	133	216	Average
2384.00	46.66	-27.34	74.00	44.85	31.88	4.47	34.54	133	216	Peak
2462.00	88.06	-	-	86.06	31.97	4.56	34.53	133	216	Average
2462.00	100.30	-	-	98.30	31.97	4.56	34.53	133	216	Peak
2483.50	44.48	-9.52	54.00	42.44	31.98	4.59	34.53	133	216	Average
2483.50	67.32	-6.68	74.00	65.28	31.98	4.59	34.53	133	216	Peak



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	43~44%
<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
56.73	25.67	-14.33	40.00	49.63	6.85	0.73	31.54	100	37	Peak
143.13	28.27	-15.23	43.50	47.48	11.16	1.14	31.51	-	-	Peak
174.72	25.86	-17.64	43.50	46.78	9.38	1.23	31.53	-	-	Peak
557.60	20.83	-25.17	46.00	30.32	19.30	2.15	30.94	-	-	Peak
765.50	23.37	-22.63	46.00	30.67	20.73	2.51	30.54	-	-	Peak
921.60	23.19	-22.81	46.00	29.70	21.16	2.78	30.45	-	-	Peak
2389.61	48.96	-5.04	54.00	47.13	31.90	4.47	34.54	105	18	Average
2389.61	68.68	-5.32	74.00	66.85	31.90	4.47	34.54	105	18	Peak
2412.00	92.07	-	-	90.20	31.91	4.50	34.54	105	18	Average
2412.00	105.29	-	-	103.42	31.91	4.50	34.54	105	18	Peak
2492.00	34.10	-19.90	54.00	32.01	32.00	4.62	34.53	105	18	Average
2492.00	45.63	-28.37	74.00	43.54	32.00	4.62	34.53	105	18	Peak



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	43~44%
<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
32.70	34.31	-5.69	40.00	48.56	16.71	0.58	31.54	100	27	Peak
56.73	33.68	-6.32	40.00	57.64	6.85	0.73	31.54	-	-	Peak
84.81	27.80	-12.20	40.00	50.29	8.22	0.84	31.55	-	-	Peak
576.50	20.66	-25.34	46.00	30.09	19.30	2.18	30.91	-	-	Peak
740.30	22.12	-23.88	46.00	29.68	20.57	2.45	30.58	-	-	Peak
894.30	23.27	-22.73	46.00	30.04	21.01	2.70	30.48	-	-	Peak
2389.04	47.04	-6.96	54.00	45.21	31.90	4.47	34.54	100	321	Average
2389.04	66.49	-7.51	74.00	64.66	31.90	4.47	34.54	100	321	Peak
2412.00	87.51	-	-	85.64	31.91	4.50	34.54	100	321	Average
2412.00	100.28	-	-	98.41	31.91	4.50	34.54	100	321	Peak
2484.00	31.58	-22.42	54.00	29.54	31.98	4.59	34.53	100	321	Average
2484.00	44.90	-29.10	74.00	42.86	31.98	4.59	34.53	100	321	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
58.35	26.99	-13.01	40.00	51.11	6.69	0.73	31.54	100	174	Peak
144.21	28.39	-15.11	43.50	47.69	11.07	1.14	31.51	-	-	Peak
172.56	26.62	-16.88	43.50	47.34	9.59	1.23	31.54	-	-	Peak
493.90	19.69	-26.31	46.00	30.69	18.05	2.04	31.09	-	-	Peak
696.20	21.93	-24.07	46.00	30.32	19.93	2.40	30.72	-	-	Peak
927.90	23.75	-22.25	46.00	30.20	21.20	2.78	30.43	-	-	Peak
2390.00	37.76	-16.24	54.00	35.90	31.90	4.50	34.54	103	359	Average
2390.00	52.21	-21.79	74.00	50.35	31.90	4.50	34.54	103	359	Peak
2437.00	92.70	-	-	90.76	31.95	4.53	34.54	103	359	Average
2437.00	105.61	-	-	103.64	31.95	4.56	34.54	103	359	Peak
2484.00	37.78	-16.22	54.00	35.74	31.98	4.59	34.53	103	359	Average
2484.00	51.38	-22.62	74.00	49.34	31.98	4.59	34.53	103	359	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	43~44%
<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
32.97	33.82	-6.18	40.00	48.07	16.71	0.58	31.54	-	-	Peak
55.92	33.85	-6.15	40.00	57.63	7.02	0.73	31.53	100	28	Peak
83.46	28.40	-11.60	40.00	51.11	8.00	0.84	31.55	-	-	Peak
481.30	20.02	-25.98	46.00	31.21	17.94	1.98	31.11	-	-	Peak
701.10	22.95	-23.05	46.00	31.30	19.97	2.40	30.72	-	-	Peak
952.40	23.72	-22.28	46.00	29.95	21.31	2.85	30.39	-	-	Peak
2388.00	34.23	-19.77	54.00	32.40	31.90	4.47	34.54	100	60	Average
2388.00	47.26	-26.74	74.00	45.43	31.90	4.47	34.54	100	60	Peak
2437.00	86.86	-	-	84.92	31.95	4.53	34.54	100	60	Average
2437.00	99.40	-	-	97.48	31.93	4.53	34.54	100	60	Peak
2490.00	31.48	-22.52	54.00	29.39	32.00	4.62	34.53	100	60	Average
2490.00	43.02	-30.98	74.00	40.93	32.00	4.62	34.53	100	60	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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	27.20	-12.80	40.00	51.16	6.85	0.73	31.54	100	285	Peak
93.99	25.52	-17.98	43.50	45.93	10.18	0.95	31.54	-	-	Peak
145.29	28.67	-14.83	43.50	48.05	10.98	1.14	31.50	-	-	Peak
488.30	20.95	-25.05	46.00	32.07	18.00	1.98	31.10	-	-	Peak
690.60	22.27	-23.73	46.00	30.75	19.90	2.35	30.73	-	-	Peak
885.20	24.46	-21.54	46.00	31.30	20.97	2.68	30.49	-	-	Peak
2378.00	39.28	-14.72	54.00	37.47	31.88	4.47	34.54	102	358	Average
2378.00	50.74	-23.26	74.00	48.93	31.88	4.47	34.54	102	358	Peak
2462.00	92.64	-	-	90.64	31.97	4.56	34.53	102	358	Average
2462.00	105.17	-	-	103.17	31.97	4.56	34.53	102	358	Peak
2484.23	48.77	-5.23	54.00	46.73	31.98	4.59	34.53	102	358	Average
2484.23	66.22	-7.78	74.00	64.18	31.98	4.59	34.53	102	358	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
32.16	33.98	-6.02	40.00	47.64	17.30	0.58	31.54	100	174	Peak
55.38	33.56	-6.44	40.00	57.16	7.19	0.73	31.52	-	-	Peak
83.73	28.36	-11.64	40.00	51.07	8.00	0.84	31.55	-	-	Peak
477.10	20.38	-25.62	46.00	31.67	17.84	1.98	31.11	-	-	Peak
705.30	22.57	-23.43	46.00	30.82	20.05	2.40	30.70	-	-	Peak
895.00	24.05	-21.95	46.00	30.82	21.01	2.70	30.48	-	-	Peak
2384.00	34.54	-19.46	54.00	32.73	31.88	4.47	34.54	100	220	Average
2384.00	45.96	-28.04	74.00	44.15	31.88	4.47	34.54	100	220	Peak
2462.00	87.06	-	-	85.06	31.97	4.56	34.53	100	220	Average
2462.00	100.15	-	-	98.15	31.97	4.56	34.53	100	220	Peak
2483.66	43.99	-10.01	54.00	41.95	31.98	4.59	34.53	100	220	Average
2483.66	65.52	-8.48	74.00	63.48	31.98	4.59	34.53	100	220	Peak



<b>Test Mode :</b>	Mode 10	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	149	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	5745 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
93.99	33.88	-9.62	43.50	54.29	10.18	0.95	31.54	100	76	Peak
142.05	32.02	-11.48	43.50	51.20	11.26	1.07	31.51	-	-	Peak
173.91	31.98	-11.52	43.50	52.84	9.45	1.23	31.54	-	-	Peak
365.80	21.73	-24.27	46.00	35.88	15.41	1.71	31.27	-	-	Peak
669.60	22.03	-23.97	46.00	30.67	19.76	2.35	30.75	-	-	Peak
866.30	24.16	-21.84	46.00	31.10	20.90	2.65	30.49	-	-	Peak
5725.00	61.83	-15.05	76.88	53.57	35.01	7.01	33.76	136	97	Peak
5745.00	85.14	-	-	76.83	35.04	7.03	33.76	136	97	Average
5745.00	96.88	-	-	88.57	35.04	7.03	33.76	136	97	Peak
5850.00	50.00	-26.88	76.88	41.49	35.18	7.09	33.76	136	97	Peak



<b>Test Mode :</b>	Mode 10	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	149	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	5745 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
32.43	34.75	-5.25	40.00	49.00	16.71	0.58	31.54	-	-	Peak
54.57	35.64	-4.36	40.00	59.08	7.36	0.73	31.53	100	67	Peak
88.05	36.46	-7.04	43.50	58.09	9.07	0.84	31.54	-	-	Peak
538.00	21.80	-24.20	46.00	31.66	19.02	2.10	30.98	-	-	Peak
763.40	23.17	-22.83	46.00	30.47	20.73	2.51	30.54	-	-	Peak
931.40	24.27	-21.73	46.00	30.70	21.22	2.78	30.43	-	-	Peak
5725.00	65.07	-17.51	82.58	56.81	35.01	7.01	33.76	107	99	Peak
5745.00	89.64	-	-	81.33	35.04	7.03	33.76	107	99	Average
5745.00	102.58	-	-	94.27	35.04	7.03	33.76	107	99	Peak
5850.00	49.42	-33.16	82.58	40.91	35.18	7.09	33.76	107	99	Peak



<b>Test Mode :</b>	Mode 11	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	157	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	5785 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
91.83	32.89	-10.61	43.50	53.75	9.84	0.84	31.54	100	132	Peak
142.86	29.84	-13.66	43.50	49.05	11.16	1.14	31.51	-	-	Peak
172.56	30.05	-13.45	43.50	50.77	9.59	1.23	31.54	-	-	Peak
356.00	21.14	-24.86	46.00	35.59	15.13	1.71	31.29	-	-	Peak
603.80	22.41	-23.59	46.00	31.74	19.33	2.20	30.86	-	-	Peak
953.10	23.97	-22.03	46.00	30.20	21.30	2.85	30.38	-	-	Peak
5725.00	49.48	-26.43	75.91	41.22	35.01	7.01	33.76	171	349	Peak
5785.00	83.76	-	-	75.38	35.09	7.05	33.76	171	349	Average
5785.00	95.91	-	-	87.50	35.11	7.06	33.76	171	349	Peak
5850.00	49.64	-26.27	75.91	41.13	35.18	7.09	33.76	171	349	Peak



<b>Test Mode :</b>	Mode 11	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	157	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	5785 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	33.69	-6.31	40.00	47.35	17.30	0.58	31.54	-	-	Peak
54.57	36.20	-3.80	40.00	59.64	7.36	0.73	31.53	100	27	Peak
83.73	35.70	-4.30	40.00	58.41	8.00	0.84	31.55	-	-	Peak
485.50	19.77	-26.23	46.00	30.92	17.97	1.98	31.10	-	-	Peak
693.40	23.40	-22.60	46.00	31.81	19.92	2.40	30.73	-	-	Peak
811.00	24.05	-21.95	46.00	31.24	20.77	2.57	30.53	-	-	Peak
5725.00	51.37	-31.41	82.78	43.11	35.01	7.01	33.76	147	19	Peak
5785.00	90.29	-	-	81.91	35.09	7.05	33.76	147	19	Average
5785.00	102.78	-	-	94.40	35.09	7.05	33.76	147	19	Peak
5850.00	50.96	-31.82	82.78	42.45	35.18	7.09	33.76	147	19	Peak



<b>Test Mode :</b>	Mode 12	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	165	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	5825 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
91.83	33.42	-10.08	43.50	54.28	9.84	0.84	31.54	100	74	Peak
172.29	31.45	-12.05	43.50	52.17	9.59	1.23	31.54	-	-	Peak
254.37	23.10	-22.90	46.00	40.11	13.08	1.42	31.51	-	-	Peak
356.00	22.29	-23.71	46.00	36.74	15.13	1.71	31.29	-	-	Peak
652.80	21.99	-24.01	46.00	30.81	19.65	2.30	30.77	-	-	Peak
913.20	25.47	-20.53	46.00	32.12	21.11	2.70	30.46	-	-	Peak
5725.00	49.86	-27.76	77.62	41.60	35.01	7.01	33.76	191	215	Peak
5825.00	85.39	-	-	76.92	35.16	7.07	33.76	191	215	Average
5825.00	97.62	-	-	89.15	35.16	7.07	33.76	191	215	Peak
5850.00	55.90	-21.72	77.62	47.39	35.18	7.09	33.76	191	215	Peak



<b>Test Mode :</b>	Mode 12	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	165	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	5825 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
32.43	34.66	-5.34	40.00	48.91	16.71	0.58	31.54	-	-	Peak
54.84	36.20	-3.80	40.00	59.80	7.19	0.73	31.52	100	174	Peak
88.59	35.79	-7.71	43.50	57.42	9.07	0.84	31.54	-	-	Peak
484.10	19.88	-26.12	46.00	31.04	17.96	1.98	31.10	-	-	Peak
726.30	22.77	-23.23	46.00	30.59	20.35	2.45	30.62	-	-	Peak
927.20	23.84	-22.16	46.00	30.31	21.19	2.78	30.44	-	-	Peak
5725.00	50.13	-32.14	82.27	41.87	35.01	7.01	33.76	145	16	Peak
5825.00	89.97	-	-	81.50	35.16	7.07	33.76	145	16	Average
5825.00	102.27	-	-	93.80	35.16	7.07	33.76	145	16	Peak
5850.00	60.61	-21.66	82.27	52.10	35.18	7.09	33.76	145	16	Peak



Test Mode :	Mode 13	Temperature :	25~26°C
Test Channel :	149	Relative Humidity :	43~44%
Test Engineer :	Kay Wu	Polarization :	Horizontal
Remark :	5745 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
55.38	32.26	-7.74	40.00	55.86	7.19	0.73	31.52	-	-	Peak
80.22	33.47	-6.53	40.00	56.82	7.36	0.84	31.55	100	228	Peak
92.64	33.04	-10.46	43.50	53.79	9.84	0.95	31.54	-	-	Peak
539.40	21.48	-24.52	46.00	31.30	19.06	2.10	30.98	-	-	Peak
680.10	23.12	-22.88	46.00	31.68	19.83	2.35	30.74	-	-	Peak
939.10	25.18	-20.82	46.00	31.55	21.27	2.78	30.42	-	-	Peak
5725.00	61.56	-16.53	78.09	53.30	35.01	7.01	33.76	196	227	Peak
5745.00	86.34	-	-	77.83	35.18	7.09	33.76	196	227	Average
5745.00	98.09	-	-	89.78	35.04	7.03	33.76	196	227	Peak
5850.00	50.08	-28.01	78.09	41.57	35.18	7.09	33.76	196	227	Peak



Test Mode :	Mode 13	Temperature :	25~26°C
Test Channel :	149	Relative Humidity :	43~44%
Test Engineer :	Kay Wu	Polarization :	Vertical
Remark :	5745 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
56.19	32.72	-7.28	40.00	56.50	7.02	0.73	31.53	-	-	Peak
79.95	33.36	-6.64	40.00	56.92	7.15	0.84	31.55	100	67	Peak
92.37	32.92	-10.58	43.50	53.78	9.84	0.84	31.54	-	-	Peak
479.20	20.12	-25.88	46.00	31.35	17.90	1.98	31.11	-	-	Peak
642.30	22.24	-23.76	46.00	31.15	19.58	2.30	30.79	-	-	Peak
866.30	24.36	-21.64	46.00	31.30	20.90	2.65	30.49	-	-	Peak
5725.00	57.01	-25.74	82.75	48.75	35.01	7.01	33.76	108	44	Peak
5745.00	90.19	-	-	81.88	35.04	7.03	33.76	108	44	Average
5745.00	102.75	-	-	94.44	35.04	7.03	33.76	108	44	Peak
5850.00	49.50	-33.25	82.75	40.99	35.18	7.09	33.76	108	44	Peak



<b>Test Mode :</b>	Mode 14	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	157	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	5785 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
57.00	26.77	-13.23	40.00	50.73	6.85	0.73	31.54	-	-	Peak
92.10	24.44	-19.06	43.50	45.30	9.84	0.84	31.54	-	-	Peak
155.82	32.78	-10.72	43.50	52.92	10.22	1.14	31.50	100	97	Peak
365.80	20.24	-25.76	46.00	34.39	15.41	1.71	31.27	-	-	Peak
741.70	23.46	-22.54	46.00	30.93	20.59	2.51	30.57	-	-	Peak
948.90	24.46	-21.54	46.00	30.69	21.32	2.85	30.40	-	-	Peak
5725.00	49.85	-25.67	75.52	41.59	35.01	7.01	33.76	175	345	Peak
5785.00	83.09	-	-	74.58	35.18	7.09	33.76	175	345	Average
5785.00	95.52	-	-	87.14	35.09	7.05	33.76	175	345	Peak
5850.00	49.57	-25.95	75.52	41.06	35.18	7.09	33.76	175	345	Peak



<b>Test Mode :</b>	Mode 14	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	157	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	5785 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
32.43	36.02	-3.98	40.00	50.27	16.71	0.58	31.54	100	77	Peak
56.46	34.33	-5.67	40.00	58.11	7.02	0.73	31.53	-	-	Peak
84.27	27.79	-12.21	40.00	50.28	8.22	0.84	31.55	-	-	Peak
508.60	21.90	-24.10	46.00	32.61	18.31	2.04	31.06	-	-	Peak
749.40	23.49	-22.51	46.00	30.81	20.71	2.51	30.54	-	-	Peak
929.30	24.26	-21.74	46.00	30.71	21.20	2.78	30.43	-	-	Peak
5725.00	50.24	-30.60	80.84	41.98	35.01	7.01	33.76	159	14	Peak
5785.00	88.37	-	-	79.99	35.09	7.05	33.76	159	14	Average
5785.00	100.84	-	-	92.43	35.11	7.06	33.76	159	14	Peak
5850.00	49.65	-31.19	80.84	41.14	35.18	7.09	33.76	159	14	Peak



<b>Test Mode :</b>	Mode 15	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	165	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	5825 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
79.95	32.15	-7.85	40.00	55.71	7.15	0.84	31.55	100	17	Peak
91.83	33.35	-10.15	43.50	54.21	9.84	0.84	31.54	-	-	Peak
172.56	32.47	-11.03	43.50	53.19	9.59	1.23	31.54	-	-	Peak
369.30	21.83	-24.17	46.00	35.83	15.49	1.77	31.26	-	-	Peak
782.30	24.00	-22.00	46.00	31.26	20.74	2.54	30.54	-	-	Peak
904.10	24.29	-21.71	46.00	31.00	21.06	2.70	30.47	-	-	Peak
5725.00	50.80	-26.03	76.83	42.54	35.01	7.01	33.76	192	208	Peak
5825.00	84.83	-	-	76.36	35.16	7.07	33.76	192	208	Average
5825.00	96.83	-	-	88.36	35.16	7.07	33.76	192	208	Peak
5850.00	54.94	-21.89	76.83	46.43	35.18	7.09	33.76	192	208	Peak



<b>Test Mode :</b>	Mode 15	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	165	<b>Relative Humidity :</b>	43~44%
<b>Test Engineer :</b>	Kay Wu	<b>Polarization :</b>	Vertical
<b>Remark :</b>	5825 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
54.30	35.53	-4.47	40.00	58.97	7.36	0.73	31.53	100	74	Peak
75.90	34.79	-5.21	40.00	58.82	6.68	0.84	31.55	-	-	Peak
91.56	36.50	-7.00	43.50	57.53	9.67	0.84	31.54	-	-	Peak
550.60	20.99	-25.01	46.00	30.49	19.30	2.15	30.95	-	-	Peak
765.50	23.63	-22.37	46.00	30.93	20.73	2.51	30.54	-	-	Peak
837.60	24.20	-21.80	46.00	31.28	20.82	2.61	30.51	-	-	Peak
5725.00	49.14	-30.99	80.13	40.88	35.01	7.01	33.76	157	7	Peak
5825.00	89.05	-	-	80.58	35.16	7.07	33.76	157	7	Average
5825.00	100.13	-	-	91.66	35.16	7.07	33.76	157	7	Peak
5850.00	58.21	-21.92	80.13	49.70	35.18	7.09	33.76	157	7	Peak



<b>Test Mode :</b>	Mode 16	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
92.10	32.40	-11.10	43.50	53.26	9.84	0.84	31.54	-	-	Peak
136.38	32.93	-10.57	43.50	51.55	11.82	1.07	31.51	100	285	Peak
171.48	30.25	-13.25	43.50	50.90	9.66	1.23	31.54	-	-	Peak
358.80	22.07	-23.93	46.00	36.45	15.20	1.71	31.29	-	-	Peak
762.00	24.14	-21.86	46.00	31.44	20.73	2.51	30.54	-	-	Peak
951.70	24.10	-21.90	46.00	30.32	21.32	2.85	30.39	-	-	Peak
2380.00	40.97	-13.03	54.00	39.16	31.88	4.47	34.54	100	345	Average
2380.00	51.62	-22.38	74.00	49.81	31.88	4.47	34.54	100	345	Peak
2462.00	93.47	-	-	91.47	31.97	4.56	34.53	100	345	Average
2462.00	106.15	-	-	104.15	31.97	4.56	34.53	100	345	Peak
2483.50	50.59	-3.41	54.00	48.55	31.98	4.59	34.53	100	345	Average
2483.50	70.76	-3.24	74.00	68.72	31.98	4.59	34.53	100	345	Peak



<b>Test Mode :</b>	Mode 16	<b>Temperature :</b>	25~26°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	43~44%
<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
47.28	35.16	-4.84	40.00	56.72	9.27	0.73	31.56	100	67	Peak
76.17	33.52	-6.48	40.00	57.55	6.68	0.84	31.55	-	-	Peak
88.86	35.98	-7.52	43.50	57.61	9.07	0.84	31.54	-	-	Peak
524.00	20.96	-25.04	46.00	31.19	18.69	2.10	31.02	-	-	Peak
683.60	22.58	-23.42	46.00	31.12	19.85	2.35	30.74	-	-	Peak
850.90	24.54	-21.46	46.00	31.55	20.84	2.65	30.50	-	-	Peak
2384.00	36.99	-17.01	54.00	35.18	31.88	4.47	34.54	131	228	Average
2384.00	48.11	-25.89	74.00	46.30	31.88	4.47	34.54	131	228	Peak
2462.00	91.10	-	-	89.10	31.97	4.56	34.53	131	228	Average
2462.00	103.58	-	-	101.58	31.97	4.56	34.53	131	228	Peak
2483.50	48.44	-5.56	54.00	46.40	31.98	4.59	34.53	131	228	Average
2483.50	67.87	-6.13	74.00	65.83	31.98	4.59	34.53	131	228	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 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)
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-1000W	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 (150kHz ~ 30MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
<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 (30MHz ~ 1000MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
<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 (1GHz ~ 40GHz)**

Contribution	Uncertainty of $X_i$		$u(X_i)$	$C_i$	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ 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>				