FCC RF Test Report

APPLICANT	:	HTC Corporation
EQUIPMENT	:	Smartphone
MODEL NAME	:	PG58130
FCC ID	:	NM8PG58130
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	Digital Transmission System (DTS)

The product was received on Feb. 10, 2011 and completely tested on Apr. 01, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

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

Reviewed by:

Roy Wu / Manager

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

TABLE OF CONTENTS

REVISION HISTORY **3**

SUMMARY OF TEST RESULT **4**

1 GENERAL DESCRIPTION **5**

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Feature of Equipment Under Test 5
1.4 Testing Site 6
1.5 Applied Standards 6
1.6 Ancillary Equipment List 6

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

2.1 RF Power 7
2.2 Test Mode 8
2.3 Connection Diagram of Test System 9
2.4 RF Utility 9

3 TEST RESULT **10**

3.1 6dB Bandwidth Measurement 10
3.2 Output Power Measurement 17
3.3 Band Edges Measurement 19
3.4 Spurious Emission Measurement 28
3.5 Power Spectral Density Measurement 38
3.6 AC Conducted Emission Measurement 45
3.7 Radiated Emission Measurement 49
3.8 Antenna Requirements 72

4 LIST OF MEASURING EQUIPMENT **73**

5 UNCERTAINTY OF EVALUATION **74**

APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR121010-02B	Rev. 01	Initial issue of report	Apr. 20, 2011

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 7.7 dB at 0.24 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 4.02 dB at 2483.66 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, Taoyuan County 330, Taiwan

1.2 Manufacturer

HTC Corporation
No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smartphone
Model Name	PG58130
FCC ID	NM8PG58130
Sample 1	EUT with LCM-Main, Camera-Main and Video Camera 1
Sample 2	EUT with LCM-2nd, Camera-2nd and Video Camera 2
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 20.63 dBm (0.12 W) 802.11g : 21.15 dBm (0.13 W) 802.11n (BW 20MHz) : 21.22 dBm (0.13 W)
Antenna Type	PIFA Antenna with gain 0.6 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH07-HY	722060/4086B-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 8

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 peak power output in the following table:

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	20.22	-	-	20.33
CH 06	2437 MHz	20.35	20.51	20.52	**20.63**
CH 11	2462 MHz	20.32	-	-	20.59

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	20.67	-	-	-	-	-	-	-
CH 06	2437 MHz	21.08	-	-	-	-	-	-	-
CH 11	2462 MHz	**21.15**	21.01	20.92	20.86	20.68	20.84	20.64	20.63

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Peak Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	20.73	-	-	-	-	-	-	-
CH 06	2437 MHz	20.84	-	-	-	-	-	-	-
CH 11	2462 MHz	**21.22**	20.64	20.61	20.59	20.71	20.7	20.86	20.94

Remark:

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

2.2 Test Mode

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

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

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

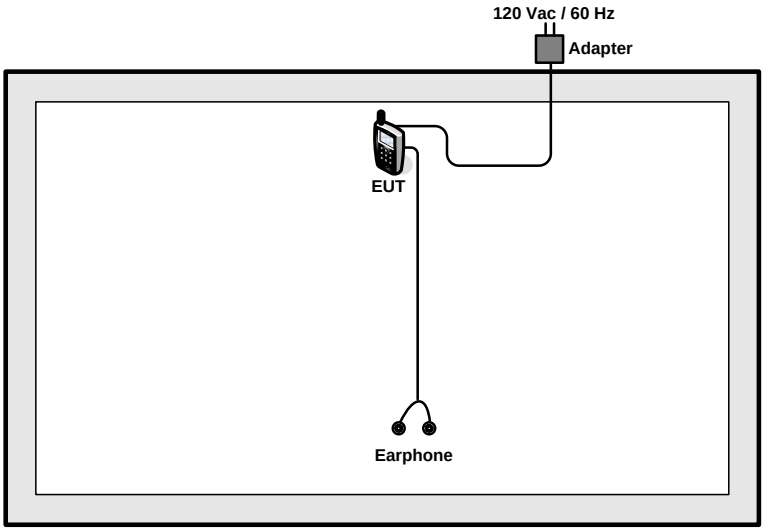
Test Cases	
Test Item	**802.11b (Modulation : DSSS)** **802.11g/n (Modulation : OFDM)**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
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 (BW 20M)_CH01_2412 MHz + TC for Sample 1 Mode 8: 802.11n (BW 20M)_CH06_2437 MHz + TC for Sample 1 Mode 9: 802.11n (BW 20M)_CH11_2462 MHz + TC for Sample 1 Mode 10: 802.11g_CH11_2462 MHz + TC for Sample 2
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) Mode 2 : GSM1900 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter 2) Mode 3 : WCDMA Band IV Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 3 + Battery 3 + USB Cable 3 (Charging from Adapter 3)

Remark:

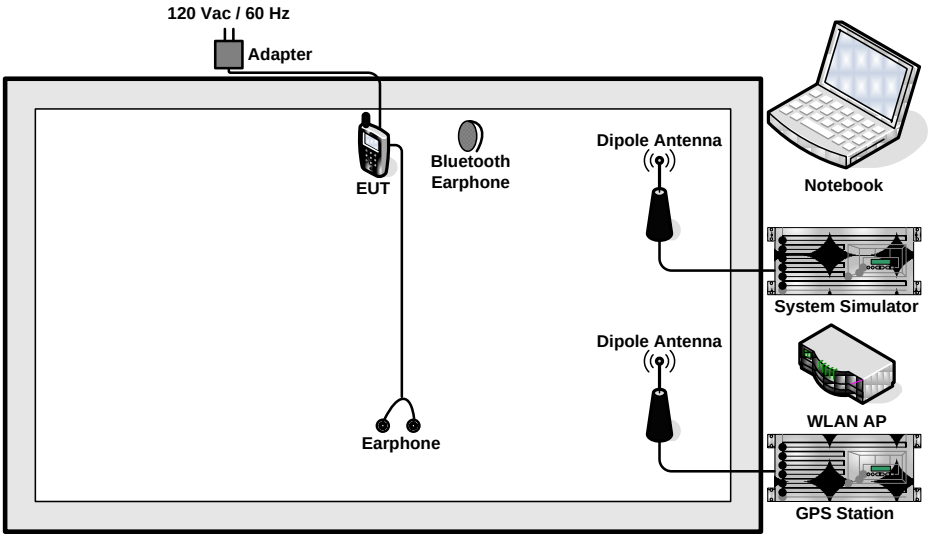
1. TC stands for Test Configuration, and consists of Battery 1, Earphone 1, USB Cable 1, and Adapter 1.
2. The worst case of conducted emission is mode 2; only the test data of it was reported.

2.3 Connection Diagram of Test System

<WIFI Tx Mode>



<AC Conducted Emission Mode>



2.4 RF Utility

The programmed RF utility “WiFi Router” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

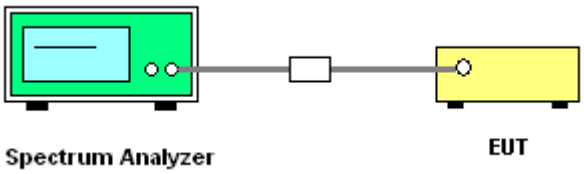
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

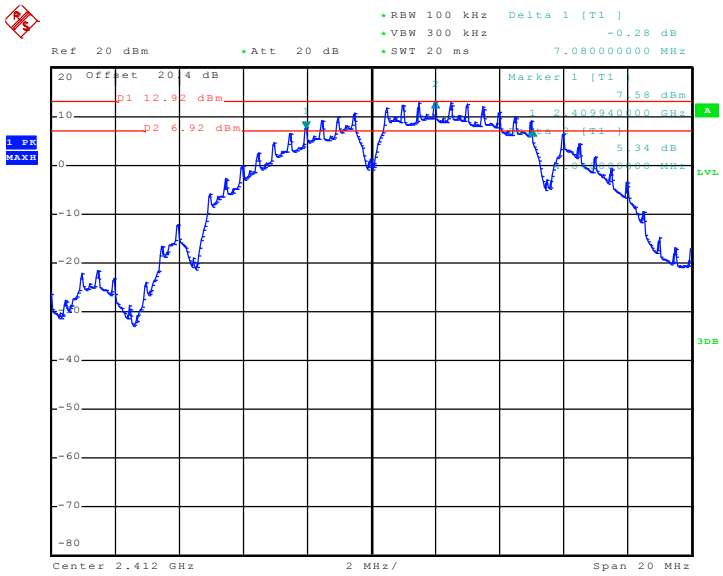


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

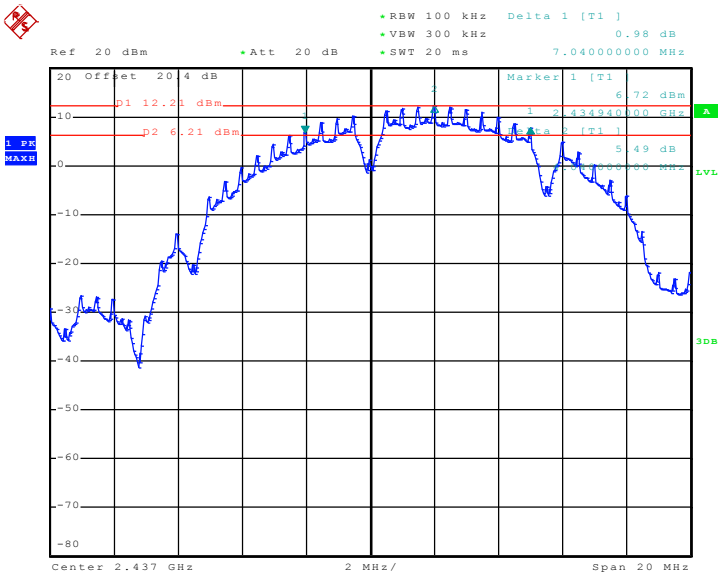
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.08	0.5	Pass
06	2437	7.04	0.5	Pass
11	2462	7.08	0.5	Pass

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



Date: 28.FEB.2011 14:40:38

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



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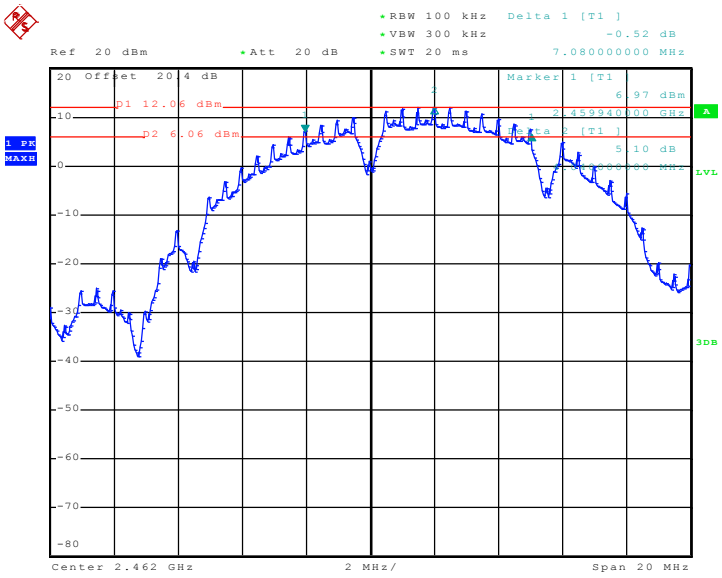
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11

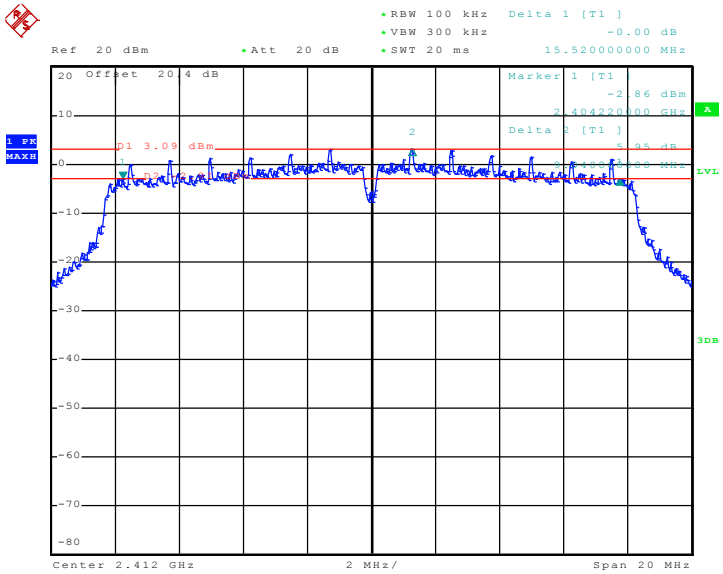


Date: 28.FEB.2011 15:07:05

Test Mode :	Mode 4, 5, 6	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

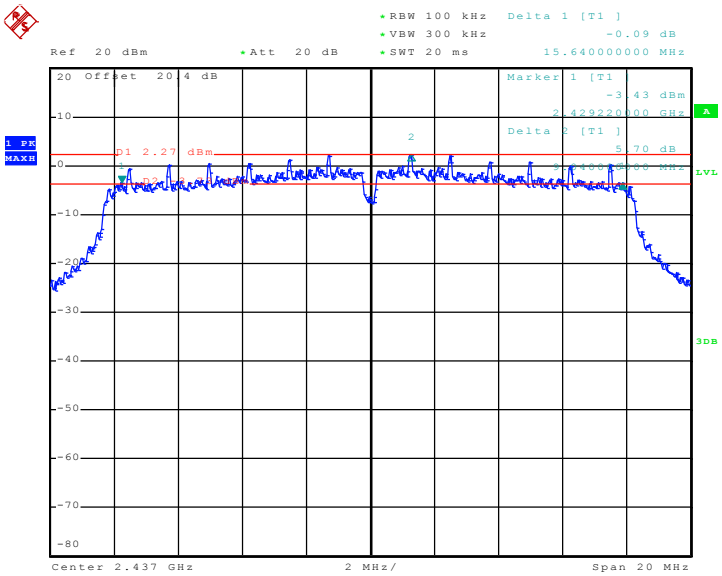
Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.52	0.5	Pass
06	2437	15.64	0.5	Pass
11	2462	15.48	0.5	Pass

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



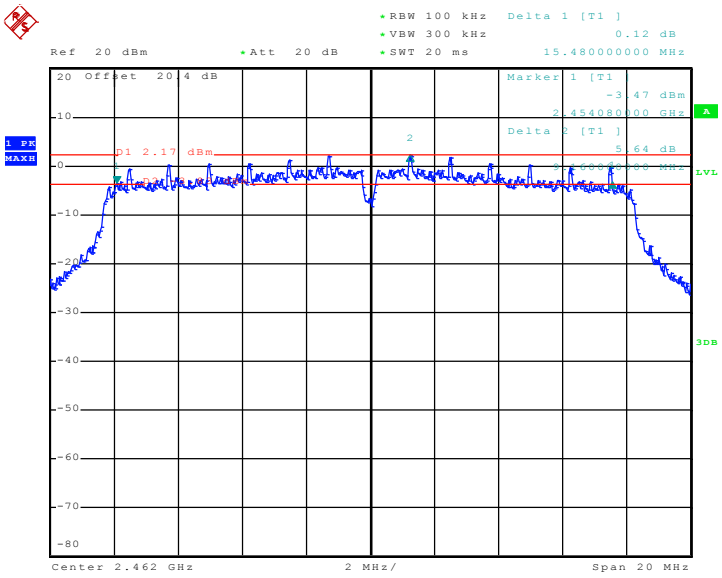
Date: 28.FEB.2011 16:24:55

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



Date: 28.FEB.2011 16:19:32

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

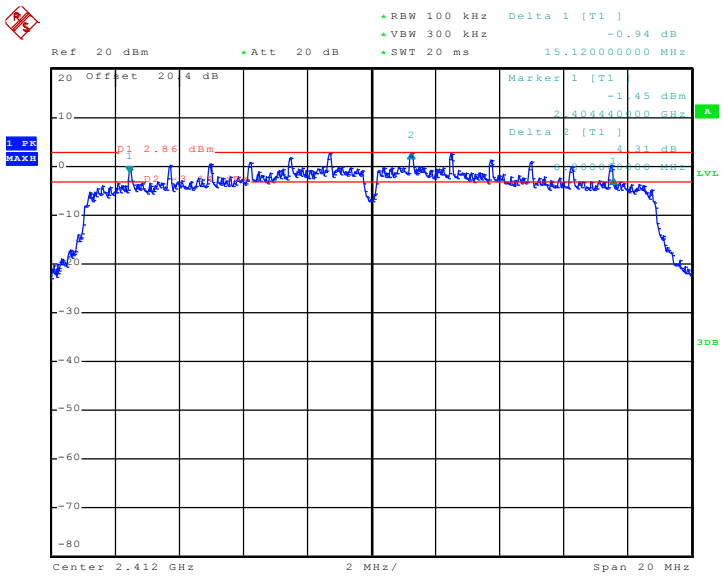


Date: 28.FEB.2011 16:14:24

Test Mode :	Mode 7, 8, 9	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.12	0.5	Pass
06	2437	15.12	0.5	Pass
11	2462	15.12	0.5	Pass

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



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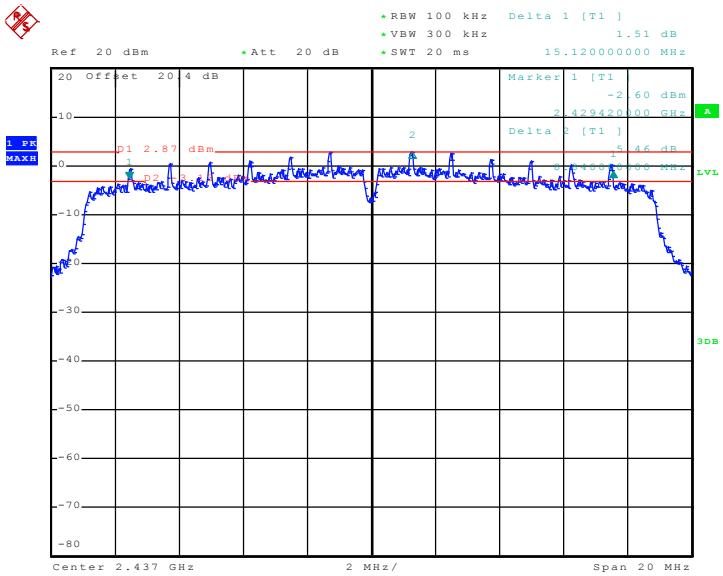
Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



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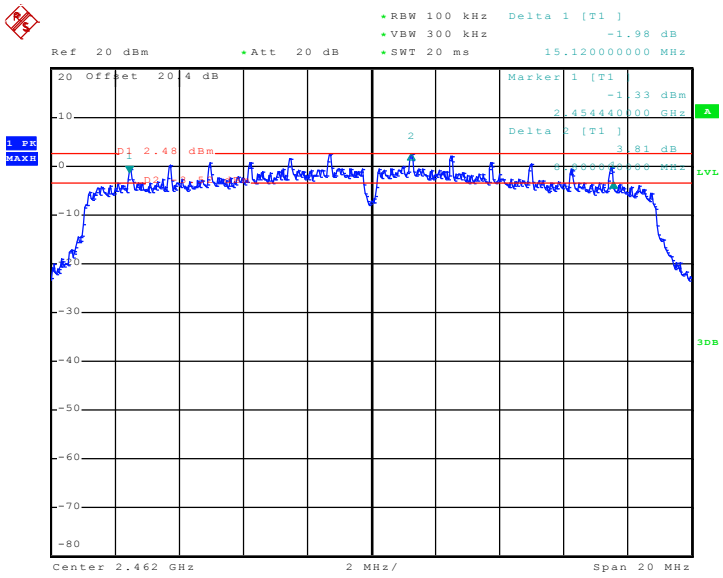
Mode 9 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11



Date: 28.FEB.2011 16:54:07

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

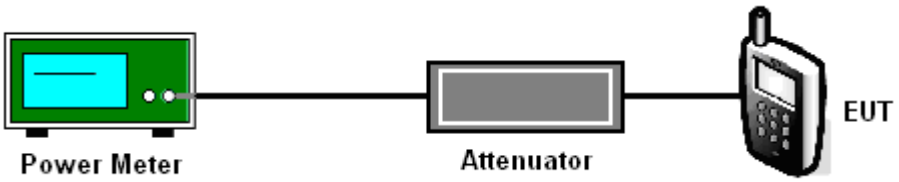
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.33	30	Pass
06	2437	20.63	30	Pass
11	2462	20.59	30	Pass

Test Mode :	Mode 4, 5, 6	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.67	30	Pass
06	2437	21.08	30	Pass
11	2462	21.15	30	Pass

Test Mode :	Mode 7, 8, 9	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.73	30	Pass
06	2437	20.84	30	Pass
11	2462	21.22	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

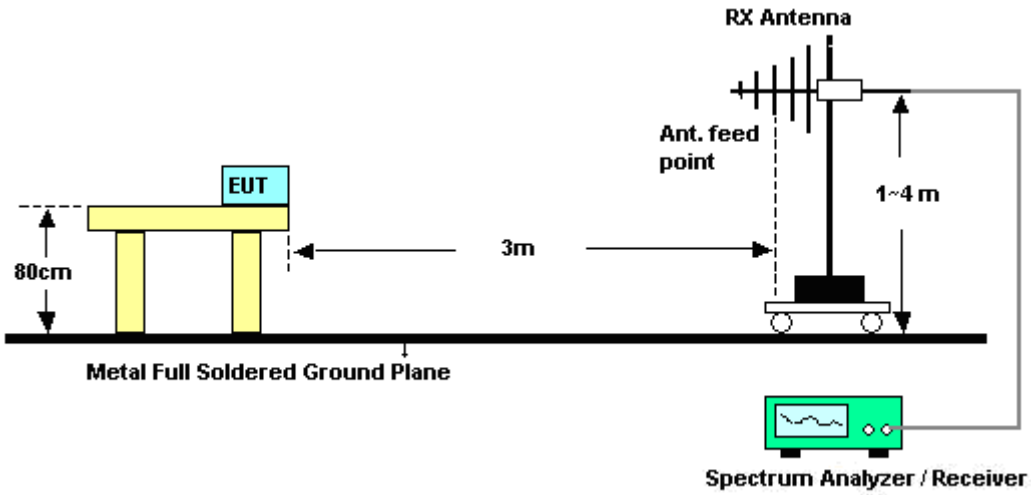
See list of measuring instruments of this test report.

3.3.3 Test Procedures

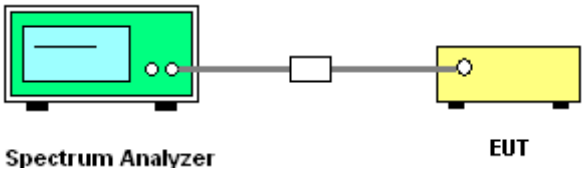
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized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

3.3.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>



3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	21~23℃
Test Band :	802.11b	**Relative Humidity :**	46~49%
Test Channel :	01	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	55.59	-18.41	74	51.23	32.18	6.03	33.85	101	347	Peak
2389.99	42.55	-11.45	54	38.19	32.18	6.03	33.85	101	347	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	50.57	-23.43	74	46.21	32.18	6.03	33.85	100	275	Peak
2389.61	38.75	-15.25	54	34.39	32.18	6.03	33.85	100	275	Average

Test Mode :	Mode 3	**Temperature :**	21~23℃
Test Band :	802.11b	**Relative Humidity :**	46~49%
Test Channel :	11	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	62.12	-11.88	74	57.56	32.28	6.18	33.9	100	338	Peak
2483.5	48.09	-5.91	54	43.53	32.28	6.18	33.9	100	338	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	56.45	-17.55	74	51.89	32.28	6.18	33.9	100	260	Peak
2483.66	43.77	-10.23	54	39.21	32.28	6.18	33.9	100	260	Average

Test Mode :	Mode 4	**Temperature :**	21~23℃
Test Band :	802.11g	**Relative Humidity :**	46~49%
Test Channel :	01	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	59.29	-14.71	74	54.93	32.18	6.03	33.85	102	334	Peak
2389.99	40.8	-13.2	54	36.44	32.18	6.03	33.85	102	334	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	55.13	-18.87	74	50.77	32.18	6.03	33.85	100	262	Peak
2389.61	37.71	-16.29	54	33.35	32.18	6.03	33.85	100	262	Average

Test Mode :	Mode 6	**Temperature :**	21~23℃
Test Band :	802.11g	**Relative Humidity :**	46~49%
Test Channel :	11	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	69.98	-4.02	74	65.42	32.28	6.18	33.9	102	321	Peak
2483.66	49.31	-4.69	54	44.75	32.28	6.18	33.9	102	321	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	65.43	-8.57	74	60.87	32.28	6.18	33.9	100	261	Peak
2483.5	45.62	-8.38	54	41.06	32.28	6.18	33.9	100	261	Average

Test Mode :	Mode 7	**Temperature :**	21~23℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	46~49%
Test Channel :	01	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	58.78	-15.22	74	54.42	32.18	6.03	33.85	101	333	Peak
2389.99	39.99	-14.01	54	35.63	32.18	6.03	33.85	101	333	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.61	53.9	-20.1	74	49.54	32.18	6.03	33.85	100	263	Peak
2389.61	37.55	-16.45	54	33.19	32.18	6.03	33.85	100	263	Average

Test Mode :	Mode 9	**Temperature :**	21~23℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	46~49%
Test Channel :	11	**Test Engineer :**	Jason Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	67.95	-6.05	74	63.39	32.28	6.18	33.9	100	335	Peak
2483.66	48.32	-5.68	54	43.76	32.28	6.18	33.9	100	335	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	62.74	-11.26	74	58.18	32.28	6.18	33.9	100	260	Peak
2483.66	44.9	-9.1	54	40.34	32.28	6.18	33.9	100	260	Average

Test Mode :	Mode 10	**Temperature :**	21~23℃
Test Band :	802.11g	**Relative Humidity :**	46~49%
Test Channel :	11	**Test Engineer :**	Jason Wang

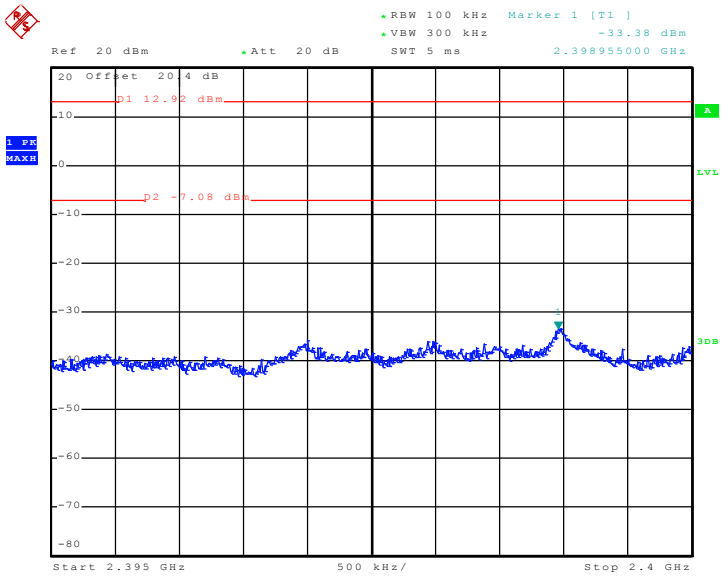
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	66.8	-7.2	74	62.24	32.28	6.18	33.9	125	335	Peak
2483.66	46.39	-7.61	54	41.83	32.28	6.18	33.9	125	335	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	64.39	-9.61	74	59.83	32.28	6.18	33.9	100	264	Peak
2483.5	44.29	-9.71	54	39.73	32.28	6.18	33.9	100	264	Average

3.3.6 Test Plots of Conducted Band Edges

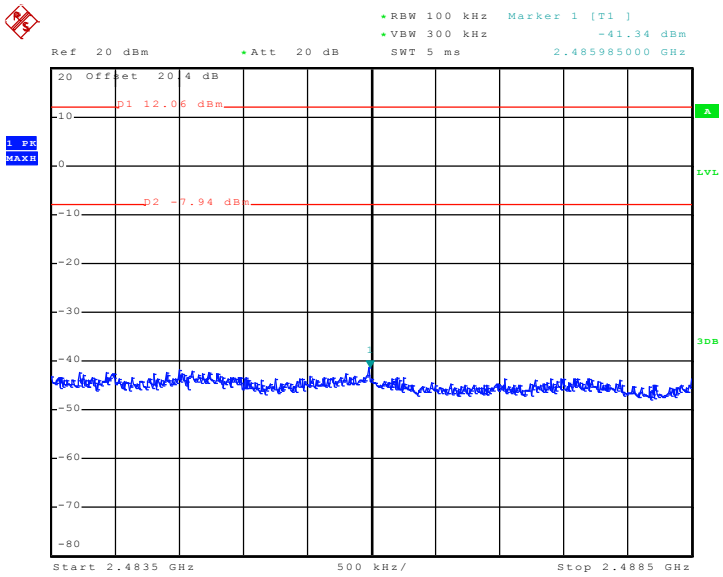
Test Mode :	Mode 1 and 3	**Temperature :**	23~25℃
Test Band :	802.11b	**Relative Humidity :**	45~49%
Test Channel :	01 and 11	**Test Engineer :**	Pinkston Tu

Low Band Edge Plot on 802.11b Channel 01



Date: 28.FEB.2011 14:41:46

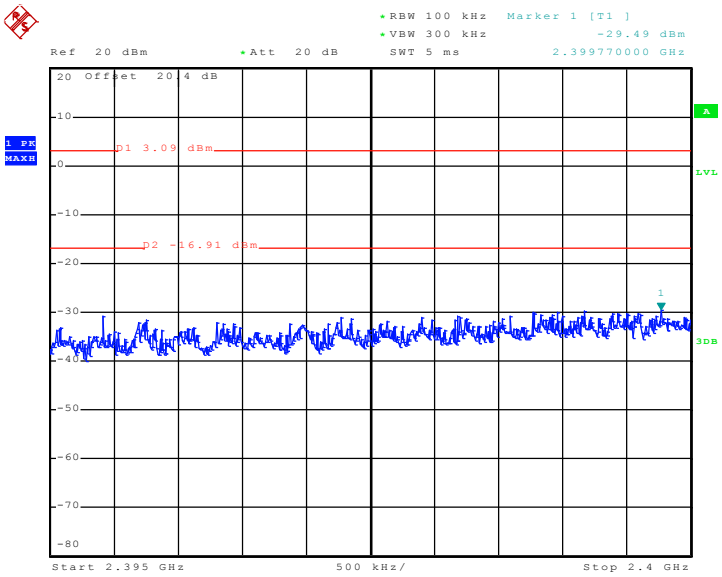
High Band Edge Plot on 802.11b Channel 11



Date: 28.FEB.2011 15:07:52

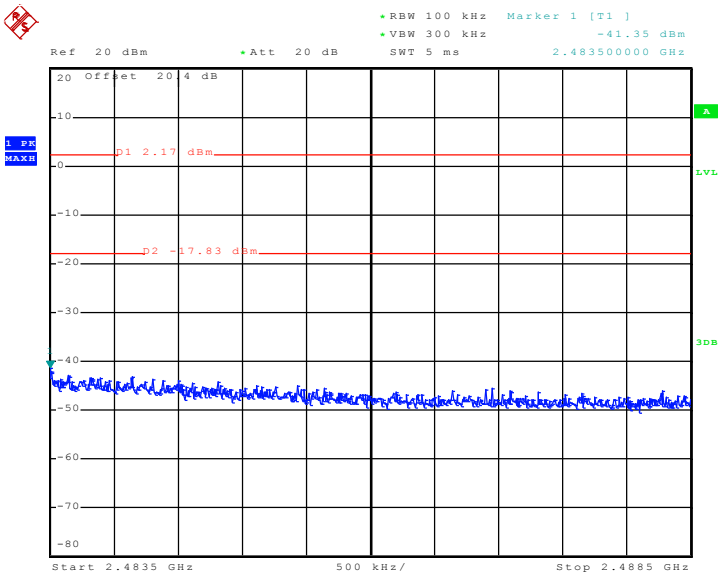
Test Mode :	Mode 4 and 6	**Temperature :**	23~25℃
Test Band :	802.11g	**Relative Humidity :**	45~49%
Test Channel :	01 and 11	**Test Engineer :**	Pinkston Tu

Low Band Edge Plot on 802.11g Channel 01



Date: 28.FEB.2011 16:26:04

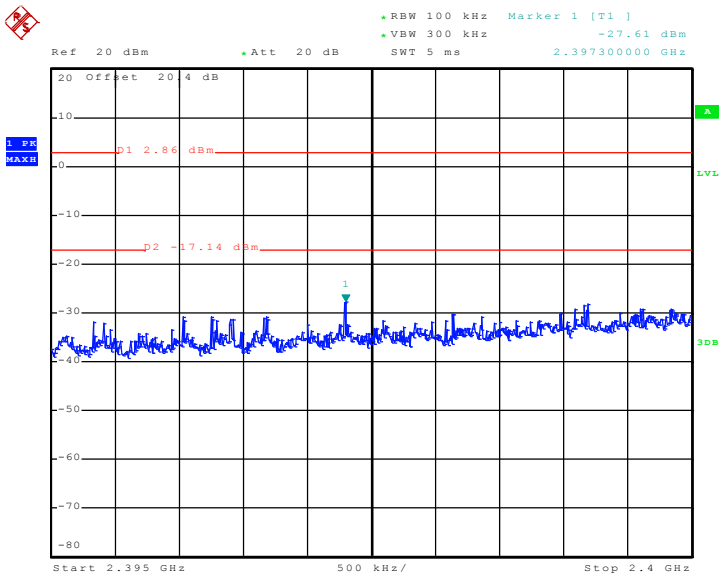
High Band Edge Plot on 802.11g Channel 11



Date: 28.FEB.2011 16:15:11

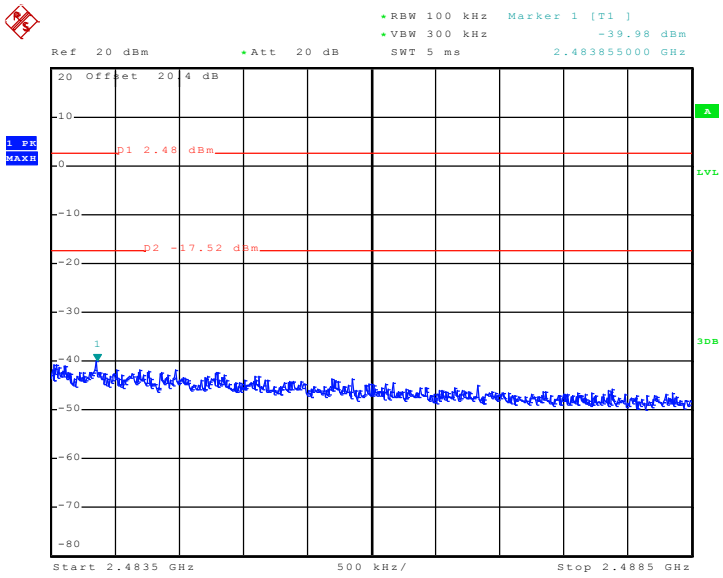
Test Mode :	Mode 7 and 9	**Temperature :**	23~25℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	45~49%
Test Channel :	01 and 11	**Test Engineer :**	Pinkston Tu

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



Date: 28.FEB.2011 16:30:40

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



Date: 28.FEB.2011 16:54:54

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurious 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

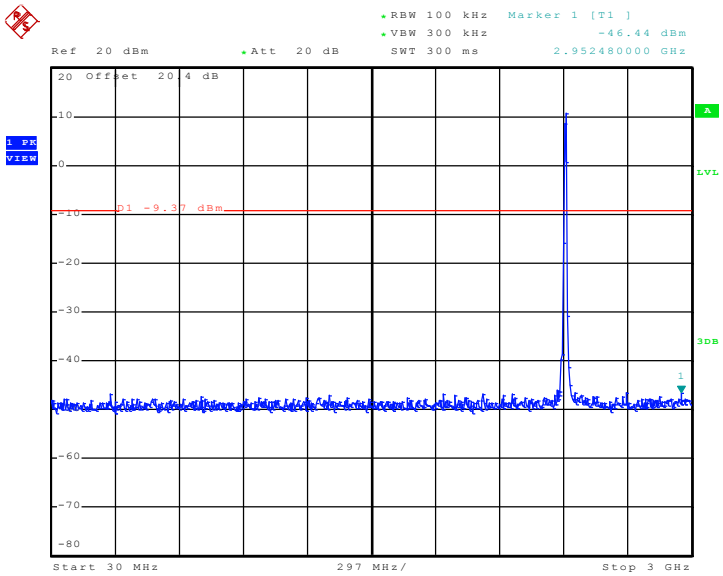
1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

3.4.4 Test Setup

3.4.5 Test Plots of Spurious Emission

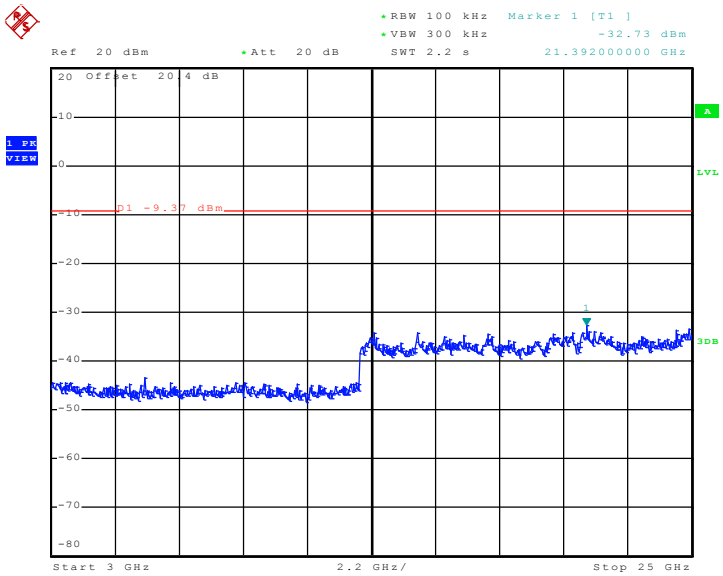
Test Mode :	Mode 1	**Temperature :**	23~25℃
Test Band :	802.11b	**Relative Humidity :**	45~49%
Test Channel :	01	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:26:38

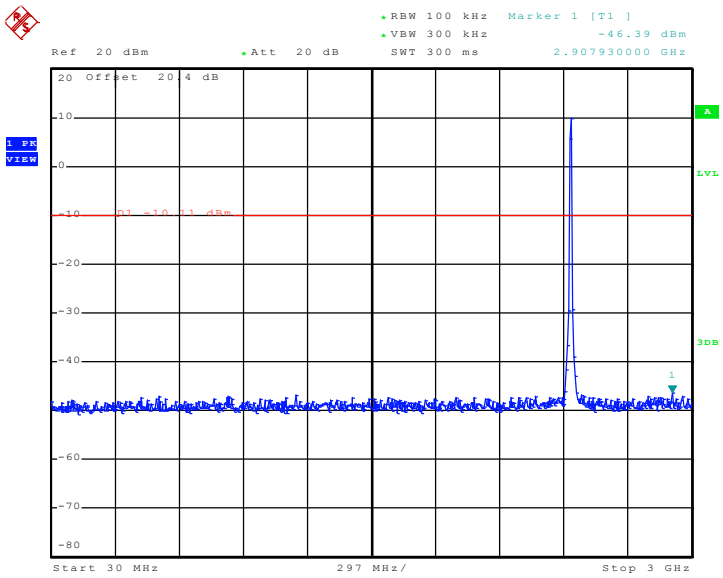
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:26:55

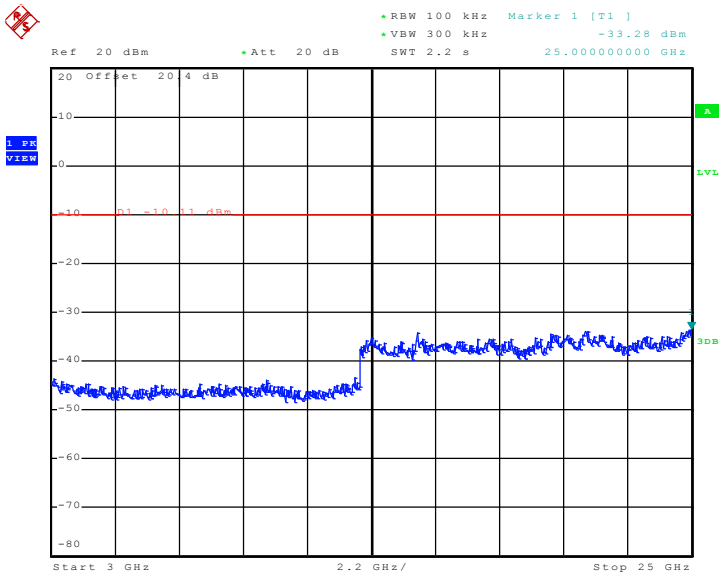
Test Mode :	Mode 2	**Temperature :**	23~25℃
Test Band :	802.11b	**Relative Humidity :**	45~49%
Test Channel :	06	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:25:54

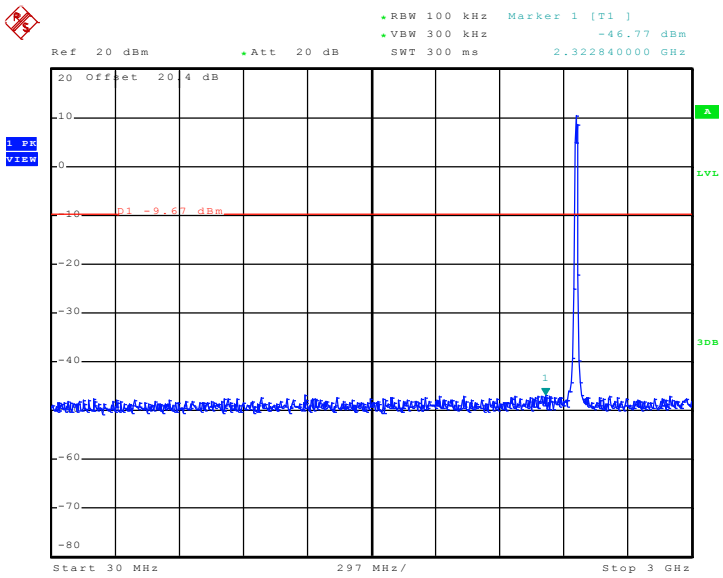
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:26:11

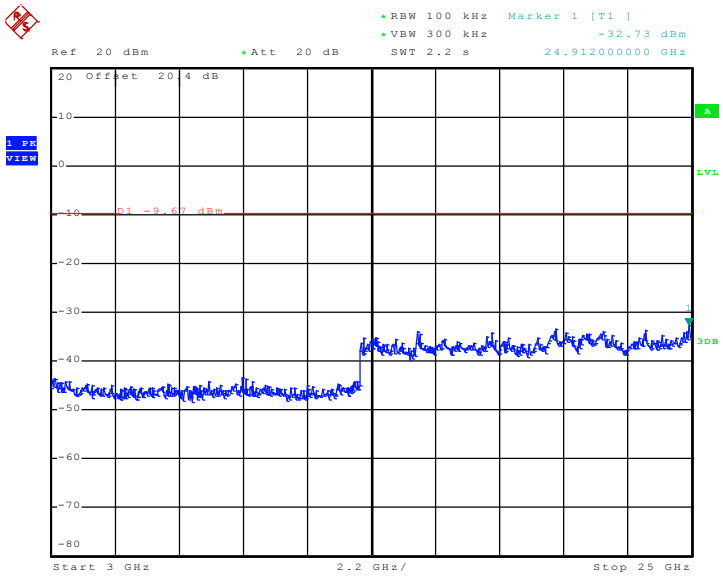
Test Mode :	Mode 3	**Temperature :**	23~25℃
Test Band :	802.11b	**Relative Humidity :**	45~49%
Test Channel :	11	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:23:07

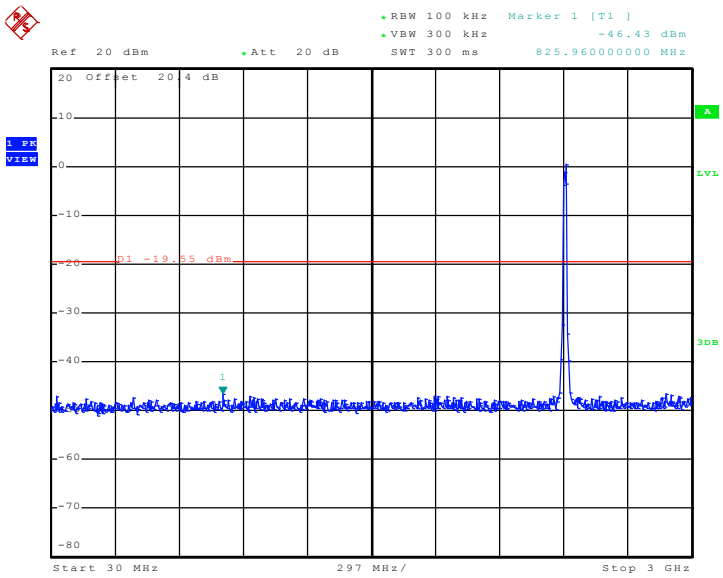
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:23:24

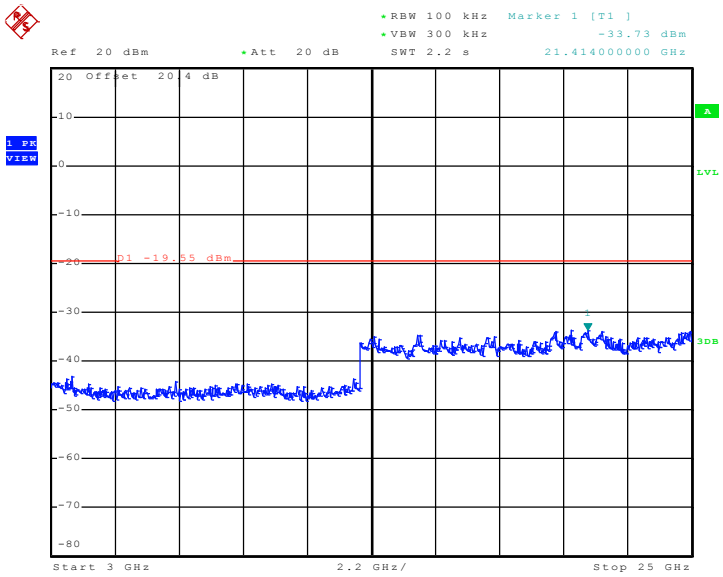
Test Mode :	Mode 4	**Temperature :**	23~25℃
Test Band :	802.11g	**Relative Humidity :**	45~49%
Test Channel :	01	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:14:40

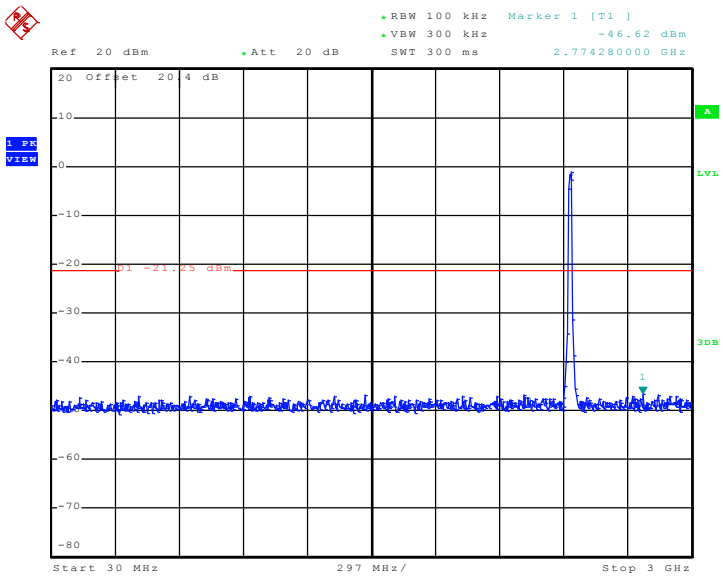
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:14:57

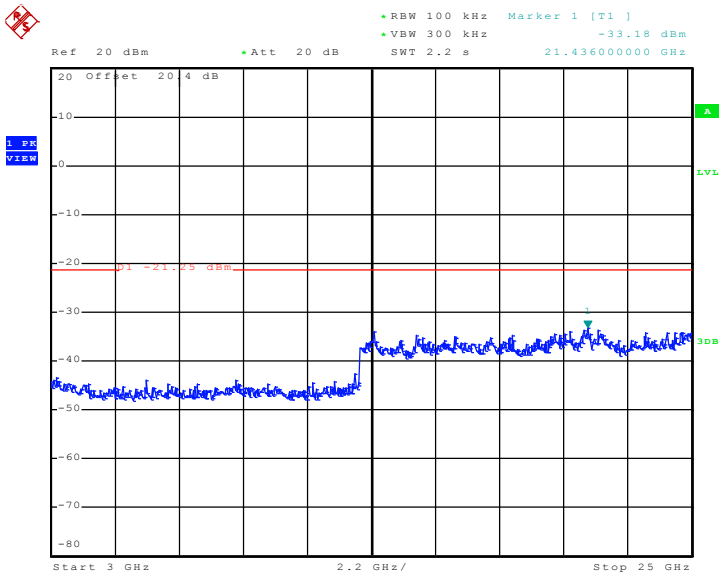
Test Mode :	Mode 5	**Temperature :**	23~25
Test Band :	802.11g	**Relative Humidity :**	45~49
Test Channel :	06	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:15:59

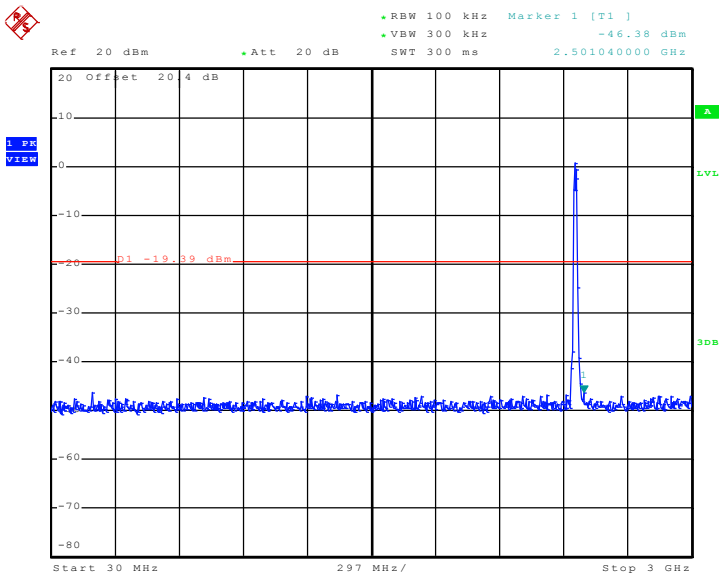
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:16:16

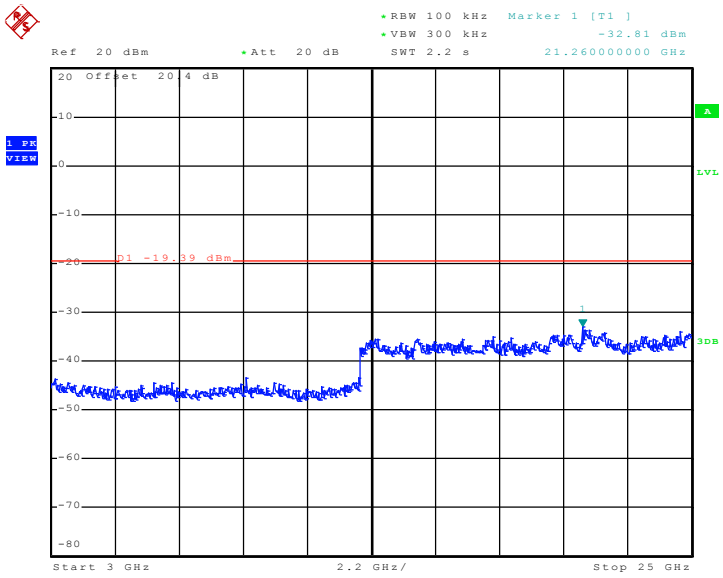
Test Mode :	Mode 6	**Temperature :**	23~25℃
Test Band :	802.11g	**Relative Humidity :**	45~49%
Test Channel :	11	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:16:50

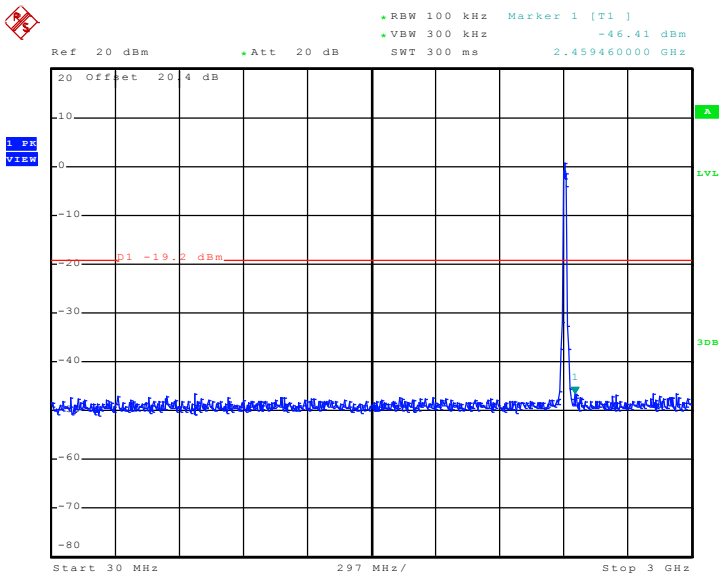
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:17:07

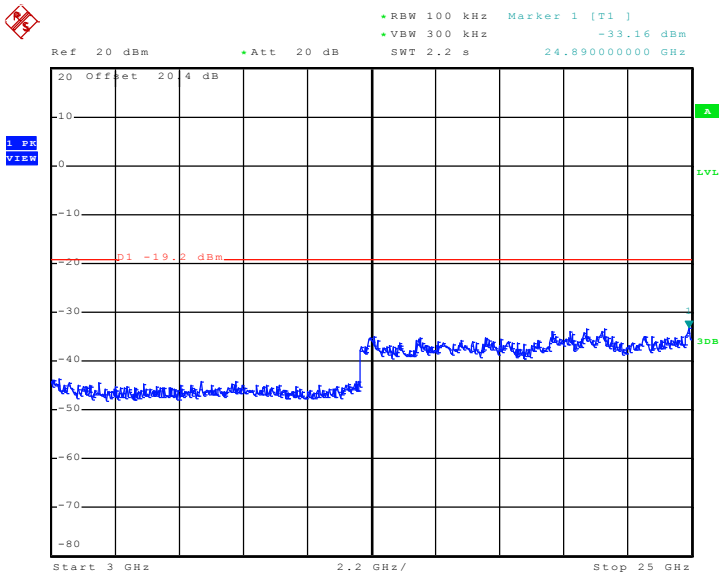
Test Mode :	Mode 7	**Temperature :**	23~25℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	45~49%
Test Channel :	01	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:13:22

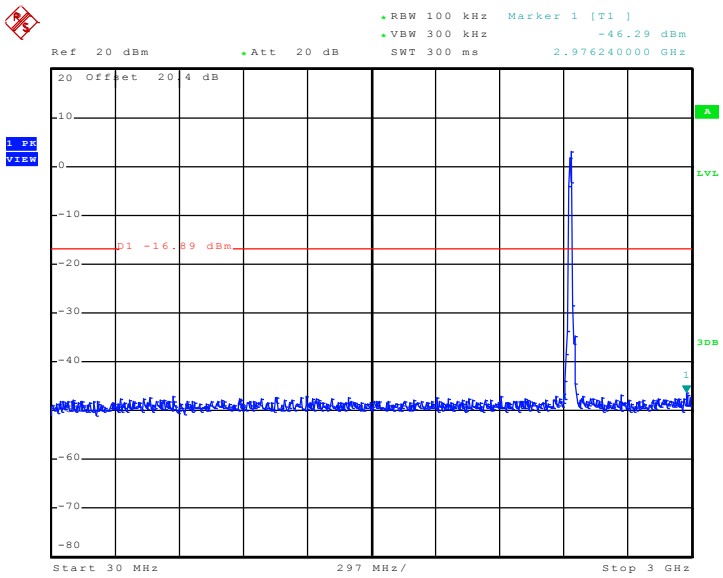
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:13:39

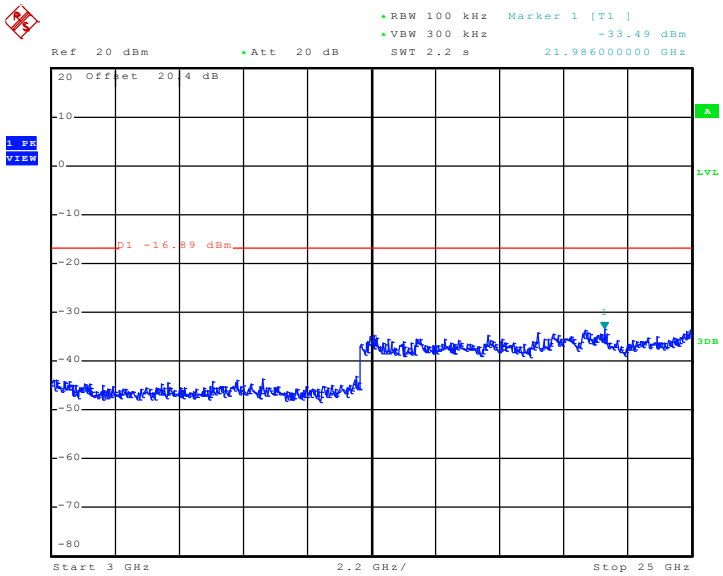
Test Mode :	Mode 8	**Temperature :**	23~25℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	45~49%
Test Channel :	06	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:12:23

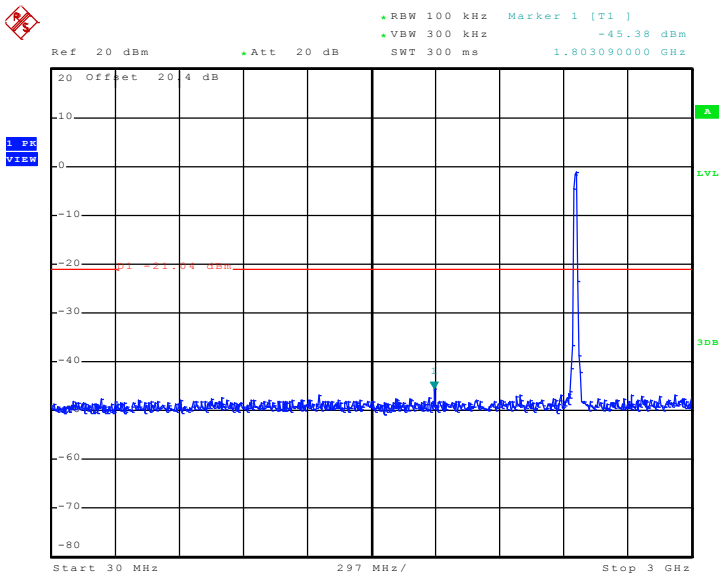
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:12:39

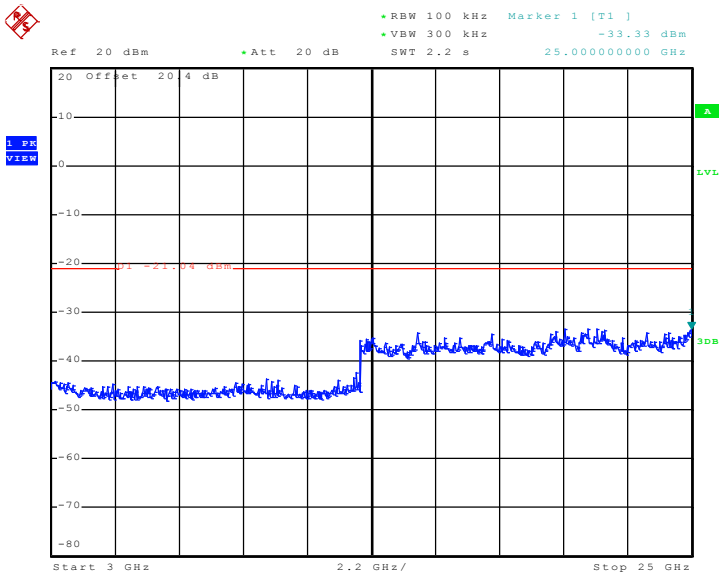
Test Mode :	Mode 9	**Temperature :**	23~25℃
Test Band :	802.11n (BW 20MHz)	**Relative Humidity :**	45~49%
Test Channel :	11	**Test Engineer :**	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.FEB.2011 19:11:16

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.FEB.2011 19:11:33

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

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

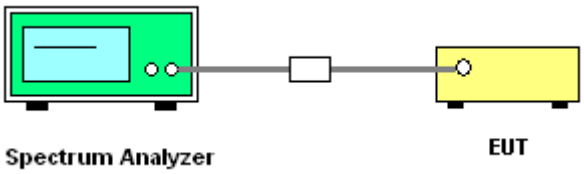
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup

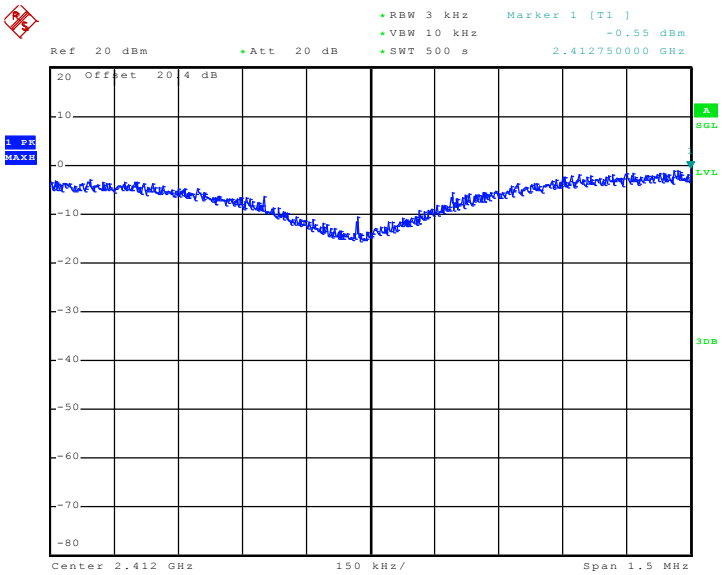


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

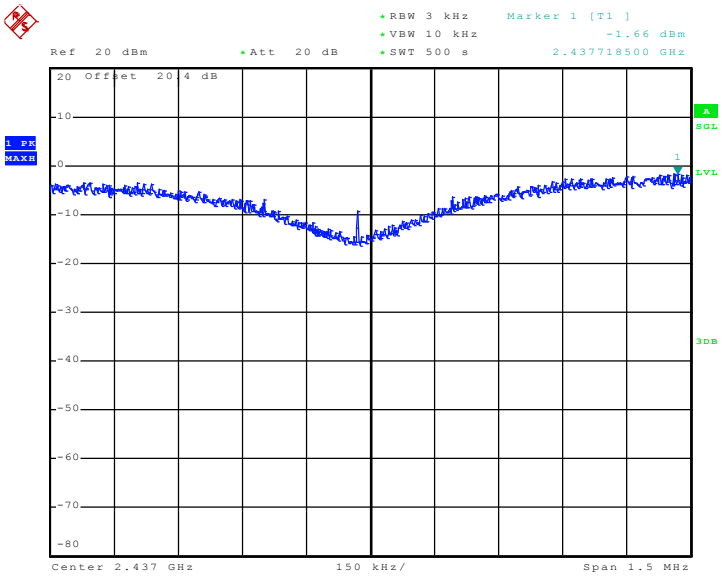
Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-0.55	8	Pass
06	2437	-1.66	8	Pass
11	2462	-1.77	8	Pass

Mode 1 : PSD Plot on 802.11b Channel 01



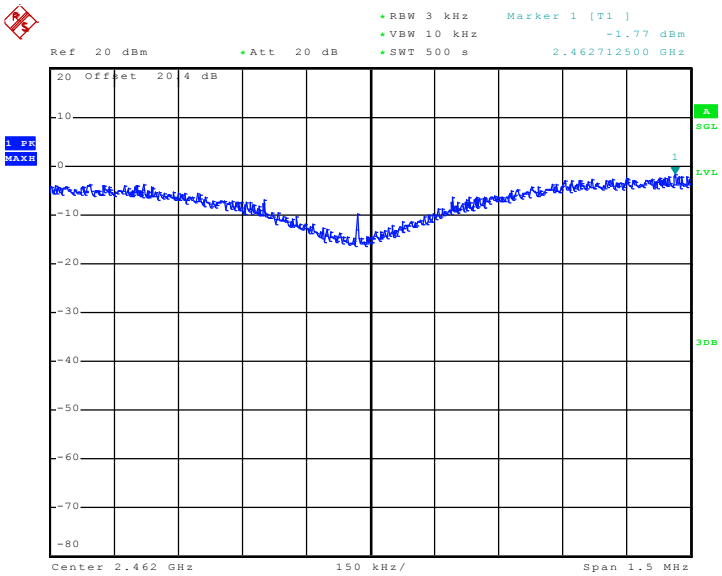
Date: 28.FEB.2011 14:51:06

Mode 2 : PSD Plot on 802.11b Channel 06



Date: 28.FEB.2011 15:02:55

Mode 3 : PSD Plot on 802.11b Channel 11

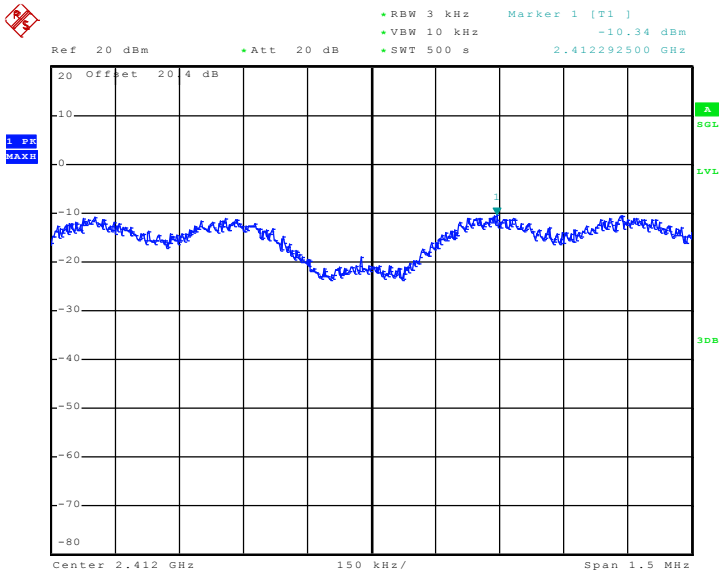


Date: 28.FEB.2011 15:18:11

Test Mode :	Mode 4, 5, 6	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

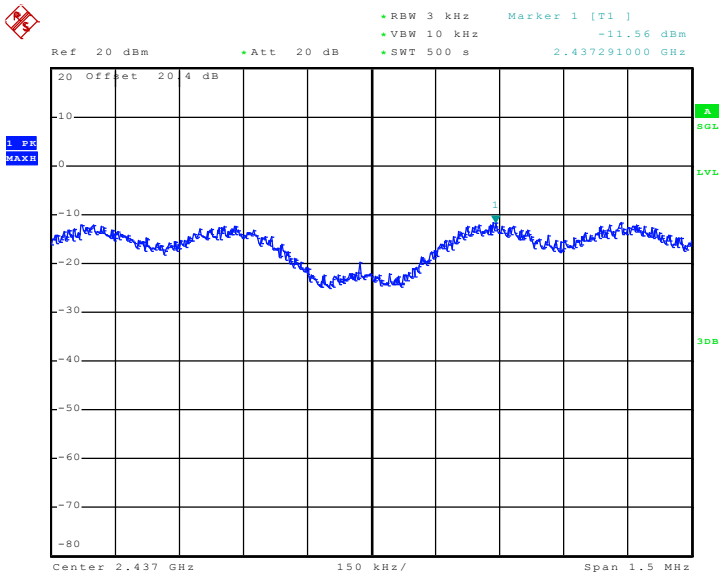
Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-10.34	8	Pass
06	2437	-11.56	8	Pass
11	2462	-11.55	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01



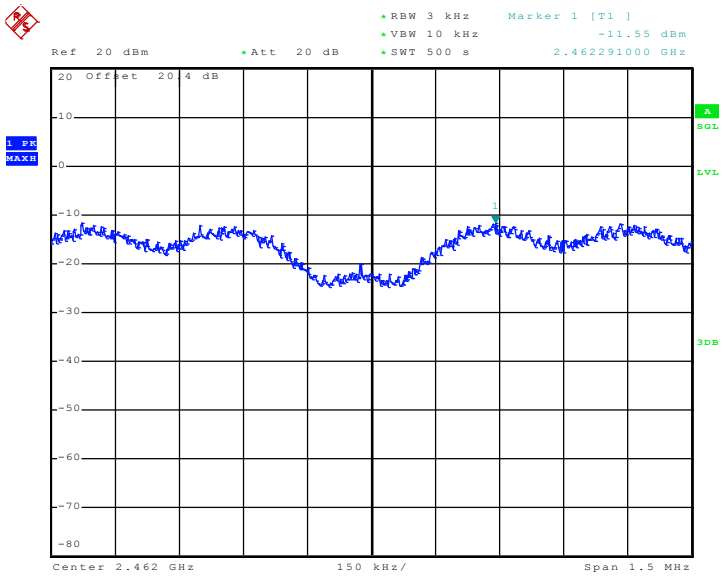
Date: 28.FEB.2011 15:50:52

Mode 5 : PSD Plot on 802.11g Channel 06



Date: 28.FEB.2011 16:00:34

Mode 6 : PSD Plot on 802.11g Channel 11

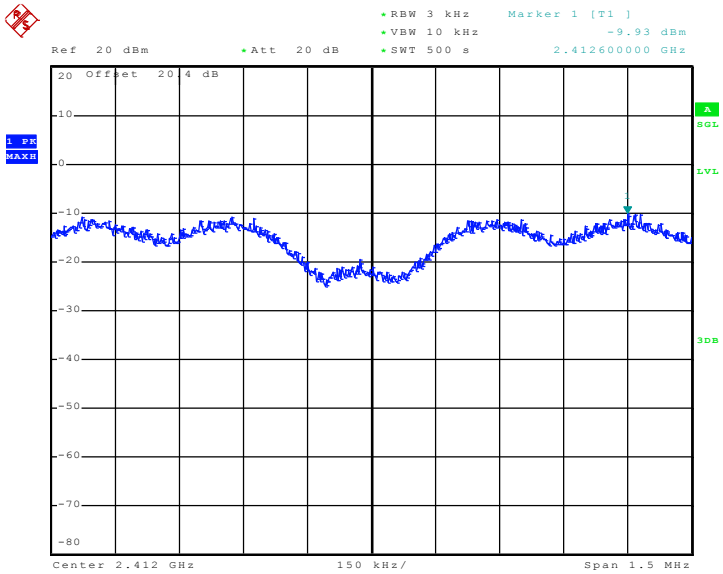


Date: 28.FEB.2011 16:10:03

Test Mode :	Mode 7, 8, 9	**Temperature :**	23~25℃
Test Engineer :	Pinkston Tu	**Relative Humidity :**	45~49%

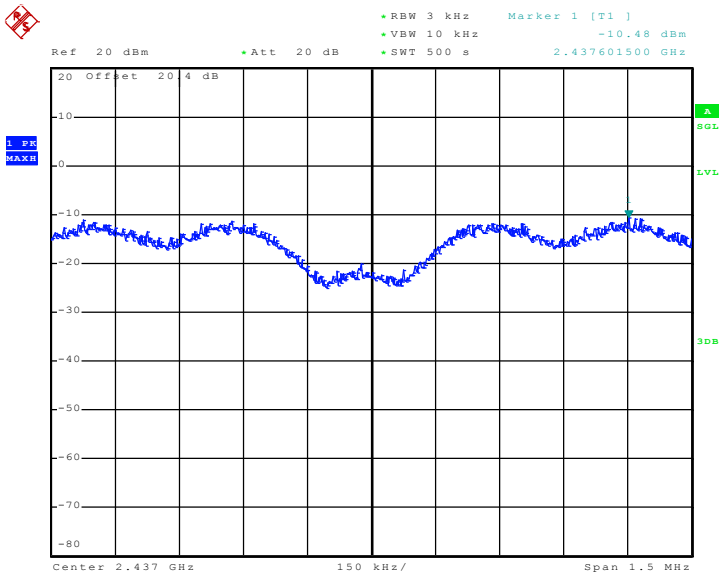
Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-9.93	8	Pass
06	2437	-10.48	8	Pass
11	2462	-10.64	8	Pass

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



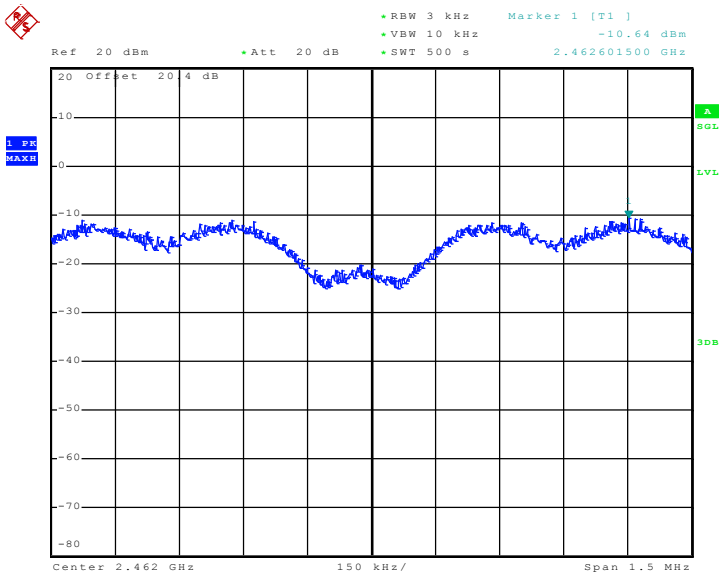
Date: 28.FEB.2011 16:39:44

Mode 8 : PSD Plot on802.11n (BW 20MHz) Channel 06



Date: 28.FEB.2011 16:51:47

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



Date: 28.FEB.2011 17:06:38

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

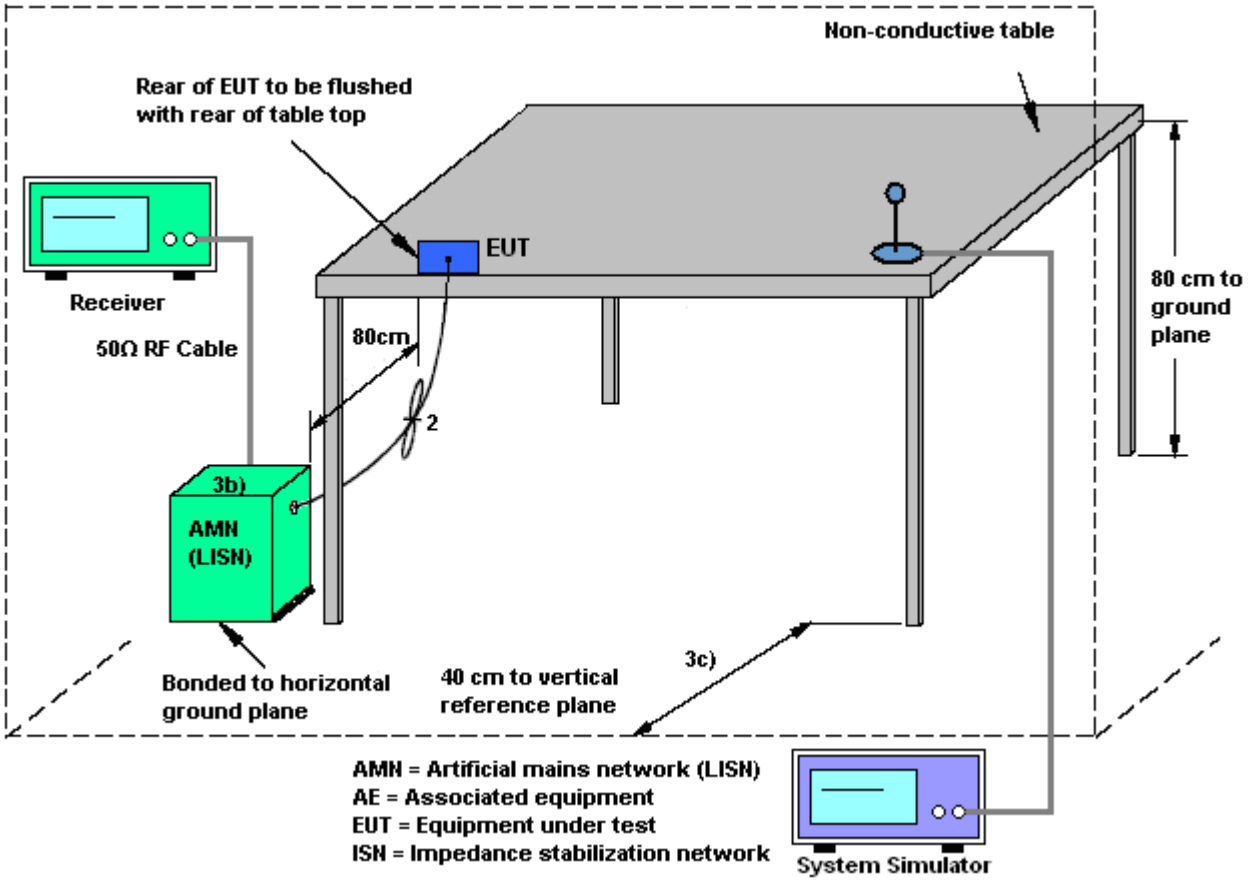
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

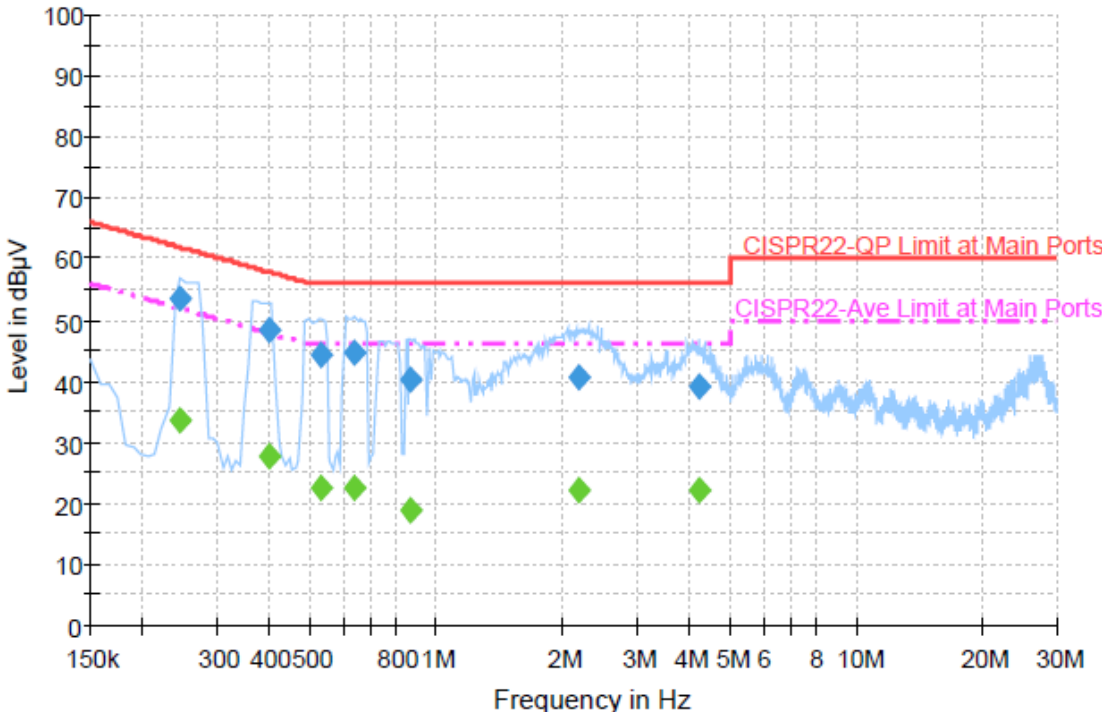
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Novic Chiang	**Relative Humidity :**	40~42%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter 2)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



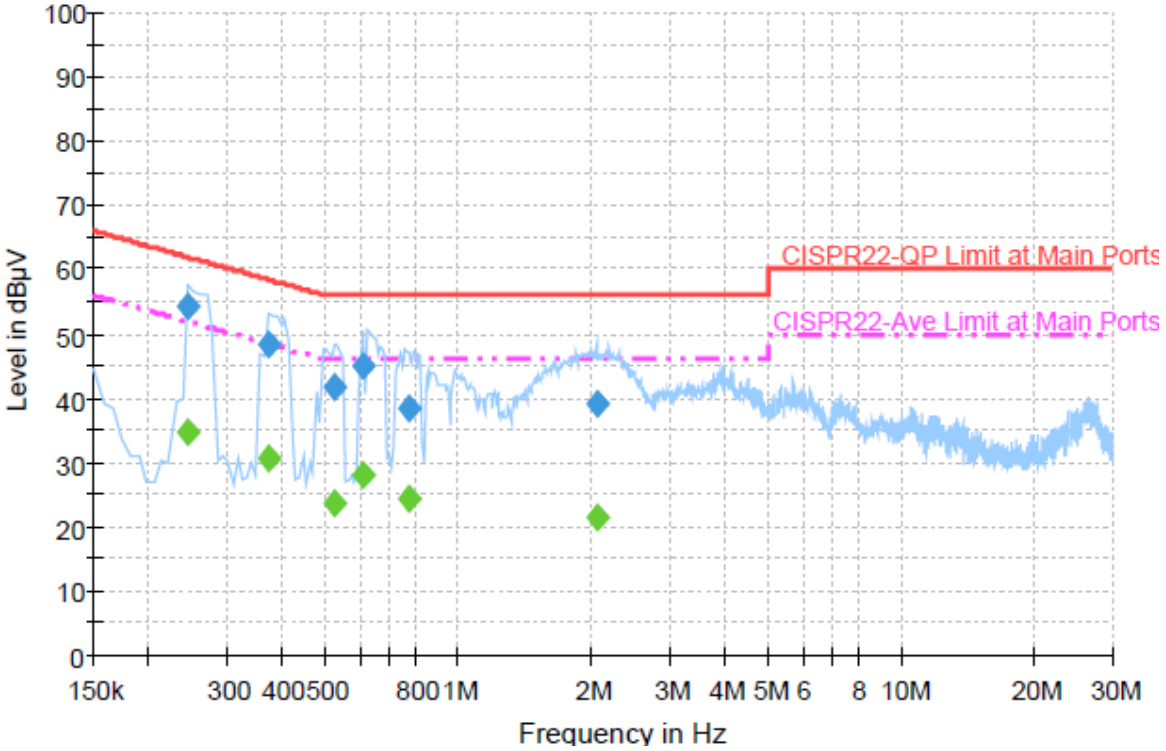
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	53.5	Off	L1	19.4	8.4	61.9
0.398000	48.4	Off	L1	19.4	9.5	57.9
0.534000	44.1	Off	L1	19.4	11.9	56.0
0.638000	44.8	Off	L1	19.4	11.2	56.0
0.870000	40.3	Off	L1	19.5	15.7	56.0
2.174000	40.5	Off	L1	19.4	15.5	56.0
4.238000	39.0	Off	L1	19.5	17.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	33.7	Off	L1	19.4	18.2	51.9
0.398000	27.5	Off	L1	19.4	20.4	47.9
0.534000	22.4	Off	L1	19.4	23.6	46.0
0.638000	22.5	Off	L1	19.4	23.5	46.0
0.870000	19.0	Off	L1	19.5	27.0	46.0
2.174000	22.1	Off	L1	19.4	23.9	46.0
4.238000	22.2	Off	L1	19.5	23.8	46.0

Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Novic Chiang	**Relative Humidity :**	40~42%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter 2)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	54.2	Off	N	19.4	7.7	61.9
0.374000	48.2	Off	N	19.4	10.2	58.4
0.526000	41.8	Off	N	19.4	14.2	56.0
0.606000	45.2	Off	N	19.4	10.8	56.0
0.774000	38.3	Off	N	19.4	17.7	56.0
2.054000	39.0	Off	N	19.5	17.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	34.7	Off	N	19.4	17.2	51.9
0.374000	30.7	Off	N	19.4	17.7	48.4
0.526000	23.6	Off	N	19.4	22.4	46.0
0.606000	28.1	Off	N	19.4	17.9	46.0
0.774000	24.2	Off	N	19.4	21.8	46.0
2.054000	21.3	Off	N	19.5	24.7	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

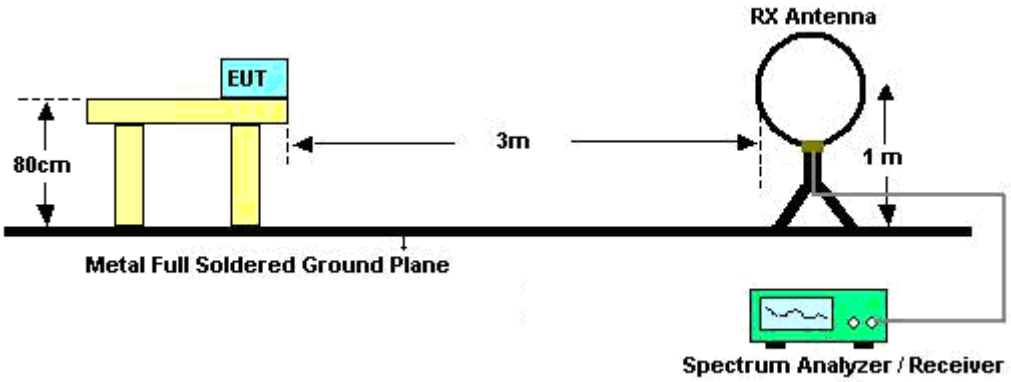
See list of measuring instruments of this test report.

3.7.3 Test Procedures

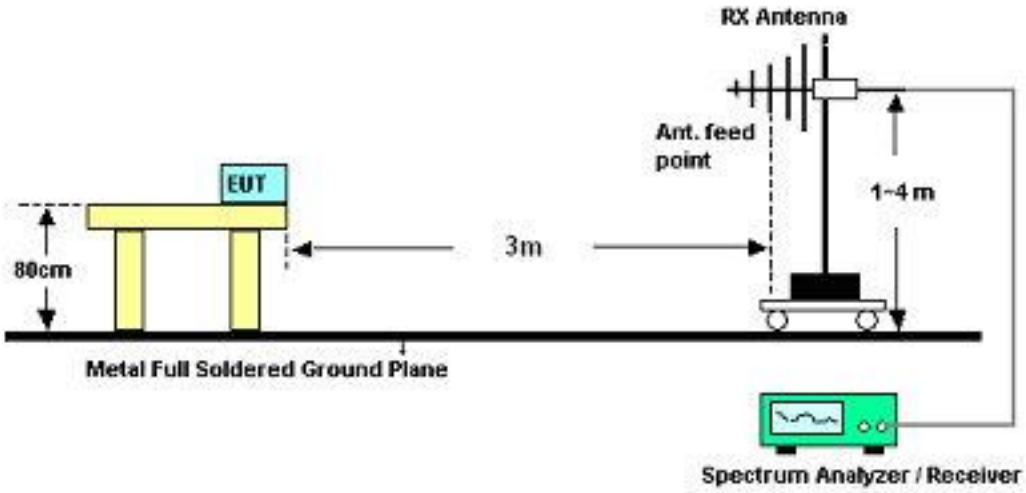
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; 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 (specific distance [3m] / 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

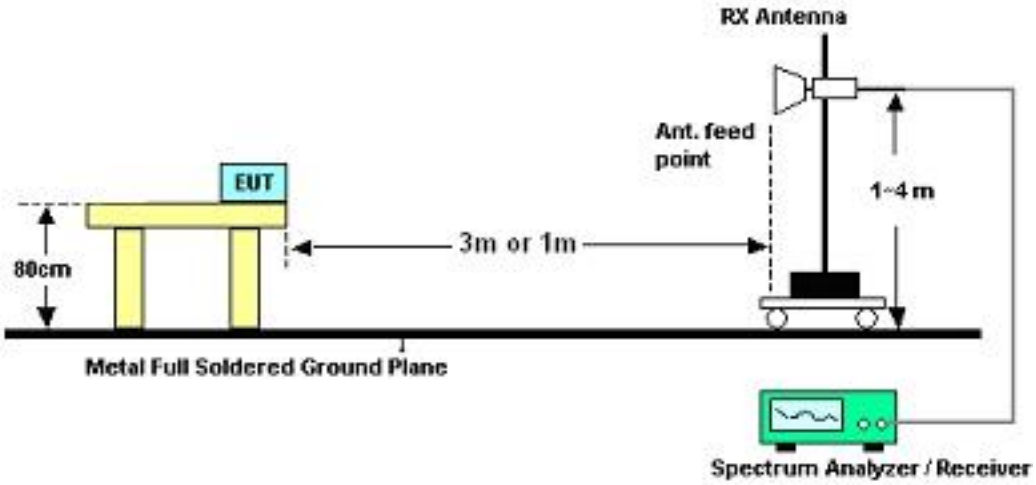
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

Test Engineer :	Jason Wang	**Temperature :**	21~23℃
		Relative Humidity :	46~49%

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

Note:

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

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

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

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

Test Mode :	Mode 1	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**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
31.62	29.77	-10.23	40	44.64	16.04	0.55	31.46	100	233	Peak
89.94	19.22	-24.28	43.5	41.12	8.68	0.94	31.52	-	-	Peak
277.86	18.62	-27.38	46	35.21	13.12	1.64	31.35	-	-	Peak
469.4	19.93	-26.07	46	30.93	17.72	2.35	31.07	-	-	Peak
705.3	24.62	-21.38	46	31.51	20.97	2.95	30.81	-	-	Peak
937	26.52	-19.48	46	29.6	24.09	3.43	30.6	-	-	Peak
2389.99	42.55	-11.45	54	38.19	32.18	6.03	33.85	101	347	Average
2389.99	55.59	-18.41	74	51.23	32.18	6.03	33.85	101	347	Peak
2412	110.4	-	-	106	32.2	6.07	33.87	101	347	Peak
2412	97.6	-	-	93.2	32.2	6.07	33.87	101	347	Average
2486	36.14	-17.86	54	31.58	32.28	6.18	33.9	101	347	Average
2486	48.25	-25.75	74	43.69	32.28	6.18	33.9	101	347	Peak
4824	50.24	-23.76	74	66.16	34.07	9.12	59.11	100	0	Peak

Test Mode :	Mode 1	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
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
30	32.18	-7.82	40	46.6	16.51	0.53	31.46	100	269	Peak
59.97	18.65	-21.35	40	43.76	5.67	0.76	31.54	-	-	Peak
212.25	21.13	-22.37	43.5	41.24	9.99	1.37	31.47	-	-	Peak
537.3	20.63	-25.37	46	30.31	18.8	2.52	31	-	-	Peak
727.7	24.22	-21.78	46	30.64	21.32	3.01	30.75	-	-	Peak
912.5	26.22	-19.78	46	29.73	23.79	3.37	30.67	-	-	Peak
2389.61	38.75	-15.25	54	34.39	32.18	6.03	33.85	100	275	Average
2389.61	50.57	-23.43	74	46.21	32.18	6.03	33.85	100	275	Peak
2412	106.1	-	-	101.7	32.2	6.07	33.87	100	275	Peak
2412	93.58	-	-	89.18	32.2	6.07	33.87	100	275	Average
2484	33.32	-20.68	54	28.76	32.28	6.18	33.9	100	275	Average
2484	45.44	-28.56	74	40.88	32.28	6.18	33.9	100	275	Peak
4824	45.32	-28.68	74	61.24	34.07	9.12	59.11	100	0	Peak

Test Mode :	Mode 2	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	28.9	-11.1	40	43.77	16.04	0.55	31.46	100	26	Peak
51.33	16.87	-23.13	40	39.68	8.02	0.71	31.54	-	-	Peak
206.85	17.46	-26.04	43.5	38	9.58	1.35	31.47	-	-	Peak
542.9	21.12	-24.88	46	30.68	18.89	2.54	30.99	-	-	Peak
794.2	25.56	-20.44	46	30.73	22.38	3.13	30.68	-	-	Peak
937.7	25.39	-20.61	46	28.45	24.11	3.43	30.6	-	-	Peak
2388	48.13	-25.87	74	43.77	32.18	6.03	33.85	100	354	Peak
2388	36.16	-17.84	54	31.8	32.18	6.03	33.85	100	354	Average
2437	109.61	-	-	105.14	32.24	6.11	33.88	100	354	Peak
2437	96.97	-	-	92.5	32.24	6.11	33.88	100	354	Average
2500	50.51	-23.49	74	45.93	32.3	6.18	33.9	100	354	Peak
2500	37.75	-16.25	54	33.17	32.3	6.18	33.9	100	354	Average
4874	47.49	-26.51	74	63.32	34.08	9.13	59.04	100	0	Peak
7311	46.53	-27.47	74	59.15	35.45	10.06	58.13	100	0	Peak

Test Mode :	Mode 2	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	31.89	-8.11	40	46.54	16.27	0.54	31.46	100	139	Peak
139.89	22.5	-21	43.5	41.25	11.6	1.2	31.55	-	-	Peak
216.57	25.57	-20.43	46	45.36	10.27	1.4	31.46	-	-	Peak
573.7	20.88	-25.12	46	29.84	19.37	2.62	30.95	-	-	Peak
710.9	23.27	-22.73	46	30.03	21.06	2.97	30.79	-	-	Peak
867	25.62	-20.38	46	29.8	23.25	3.29	30.72	-	-	Peak
2390	46.75	-27.25	74	42.39	32.18	6.03	33.85	100	261	Peak
2390	34.48	-19.52	54	30.12	32.18	6.03	33.85	100	261	Average
2437	106.81	-	-	102.34	32.24	6.11	33.88	100	261	Peak
2437	94.98	-	-	90.51	32.24	6.11	33.88	100	261	Average
2492	46.9	-27.1	74	42.32	32.3	6.18	33.9	100	261	Peak
2492	35.11	-18.89	54	30.53	32.3	6.18	33.9	100	261	Average
4874	45.43	-28.57	74	61.26	34.08	9.13	59.04	100	0	Peak
7311	45.35	-28.65	74	57.97	35.45	10.06	58.13	100	0	Peak

Test Mode :	Mode 3	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	2462 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	29.81	-10.19	40	44.68	16.04	0.55	31.46	100	281	Peak
89.94	17.52	-25.98	43.5	39.42	8.68	0.94	31.52	-	-	Peak
277.86	18.58	-27.42	46	35.17	13.12	1.64	31.35	-	-	Peak
385.4	20.95	-25.05	46	33.96	16.11	2.11	31.23	-	-	Peak
615.7	21.34	-24.66	46	29.56	19.94	2.74	30.9	-	-	Peak
788.6	25.64	-20.36	46	30.91	22.29	3.12	30.68	-	-	Peak
2388	37.64	-16.36	54	33.28	32.18	6.03	33.85	100	338	Average
2388	49.74	-24.26	74	45.38	32.18	6.03	33.85	100	338	Peak
2462	101.59	-	-	97.08	32.26	6.14	33.89	100	338	Average
2462	114.74	-	-	110.23	32.26	6.14	33.89	100	338	Peak
2483.5	48.09	-5.91	54	43.53	32.28	6.18	33.9	100	338	Average
2483.5	62.12	-11.88	74	57.56	32.28	6.18	33.9	100	338	Peak
4924	47.45	-26.55	74	63.17	34.09	9.15	58.96	100	0	Peak
7386	47.69	-26.31	74	60.38	35.38	10.1	58.17	100	0	Peak

Test Mode :	Mode 3	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	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
30	30.5	-9.5	40	44.92	16.51	0.53	31.46	100	109	Peak
58.89	21.29	-18.71	40	46.15	5.93	0.75	31.54	-	-	Peak
237.09	28.6	-17.4	46	46.81	11.71	1.51	31.43	-	-	Peak
542.9	19.79	-26.21	46	29.35	18.89	2.54	30.99	-	-	Peak
794.2	24.54	-21.46	46	29.71	22.38	3.13	30.68	-	-	Peak
912.5	26.53	-19.47	46	30.04	23.79	3.37	30.67	-	-	Peak
2382	34.97	-19.03	54	30.63	32.16	6.03	33.85	100	260	Average
2382	46.57	-27.43	74	42.23	32.16	6.03	33.85	100	260	Peak
2462	98.64	-	-	94.13	32.26	6.14	33.89	100	260	Average
2462	111.77	-	-	107.26	32.26	6.14	33.89	100	260	Peak
2483.66	43.77	-10.23	54	39.21	32.28	6.18	33.9	100	260	Average
2483.66	56.45	-17.55	74	51.89	32.28	6.18	33.9	100	260	Peak
4924	45.36	-28.64	74	61.08	34.09	9.15	58.96	100	0	Peak
7386	46.78	-27.22	74	59.47	35.38	10.1	58.17	100	0	Peak

Test Mode :	Mode 4	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**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
34.86	29.32	-10.68	40	44.88	15.33	0.58	31.47	100	132	Peak
206.85	15.92	-27.58	43.5	36.46	9.58	1.35	31.47	-	-	Peak
266.25	23.87	-22.13	46	40.71	12.93	1.62	31.39	-	-	Peak
463.8	20	-26	46	31.13	17.62	2.33	31.08	-	-	Peak
785.8	25.43	-20.57	46	30.76	22.24	3.12	30.69	-	-	Peak
934.2	25.73	-20.27	46	28.86	24.06	3.42	30.61	-	-	Peak
2389.99	40.8	-13.2	54	36.44	32.18	6.03	33.85	102	334	Average
2389.99	59.29	-14.71	74	54.93	32.18	6.03	33.85	102	334	Peak
2412	103.17	-	-	98.77	32.2	6.07	33.87	102	334	Peak
2412	90.24	-	-	85.84	32.2	6.07	33.87	102	334	Average
2486	33.9	-20.1	54	29.34	32.28	6.18	33.9	102	334	Average
2486	45.06	-28.94	74	40.5	32.28	6.18	33.9	102	334	Peak

Test Mode :	Mode 4	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
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
30	31.2	-8.8	40	45.62	16.51	0.53	31.46	100	292	Peak
137.46	20.97	-22.53	43.5	39.74	11.59	1.19	31.55	-	-	Peak
238.17	23.1	-22.9	46	41.15	11.85	1.52	31.42	-	-	Peak
542.9	20.12	-25.88	46	29.68	18.89	2.54	30.99	-	-	Peak
727.7	23.03	-22.97	46	29.45	21.32	3.01	30.75	-	-	Peak
906.9	26.46	-19.54	46	30.06	23.72	3.36	30.68	-	-	Peak
2389.61	37.71	-16.29	54	33.35	32.18	6.03	33.85	100	262	Average
2389.61	55.13	-18.87	74	50.77	32.18	6.03	33.85	100	262	Peak
2412	99.2	-	-	94.8	32.2	6.07	33.87	100	262	Peak
2412	87.28	-	-	82.88	32.2	6.07	33.87	100	262	Average
2494	32.96	-21.04	54	28.38	32.3	6.18	33.9	100	262	Average
2494	45.38	-28.62	74	40.8	32.3	6.18	33.9	100	262	Peak

Test Mode :	Mode 5	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	29.59	-10.41	40	44.24	16.27	0.54	31.46	100	138	Peak
90.21	19.16	-24.34	43.5	41.06	8.68	0.94	31.52	-	-	Peak
257.34	21.23	-24.77	46	38.3	12.78	1.57	31.42	-	-	Peak
635.3	22.55	-23.45	46	30.47	20.16	2.8	30.88	-	-	Peak
785.8	25.84	-20.16	46	31.17	22.24	3.12	30.69	-	-	Peak
884.5	26	-20	46	29.94	23.45	3.32	30.71	-	-	Peak
2390	47.24	-26.76	74	42.88	32.18	6.03	33.85	102	318	Peak
2390	35.76	-18.24	54	31.4	32.18	6.03	33.85	102	318	Average
2437	106.03	-	-	101.58	32.22	6.11	33.88	102	318	Peak
2437	94.03	-	-	89.56	32.24	6.11	33.88	102	318	Average
2492	49.96	-24.04	74	45.38	32.3	6.18	33.9	102	318	Peak
2492	35.81	-18.19	54	31.23	32.3	6.18	33.9	102	318	Average

Test Mode :	Mode 5	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.75	-9.25	40	45.86	15.8	0.56	31.47	100	105	Peak
62.13	18.92	-21.08	40	43.89	5.79	0.78	31.54	-	-	Peak
138.54	22.87	-20.63	43.5	41.62	11.6	1.2	31.55	-	-	Peak
621.3	21.05	-24.95	46	29.19	20.01	2.75	30.9	-	-	Peak
788.6	25.31	-20.69	46	30.58	22.29	3.12	30.68	-	-	Peak
911.8	25.48	-20.52	46	29	23.78	3.37	30.67	-	-	Peak
2382	46.4	-27.6	74	42.06	32.16	6.03	33.85	100	259	Peak
2382	33.73	-20.27	54	29.39	32.16	6.03	33.85	100	259	Average
2437	100.21	-	-	95.74	32.24	6.11	33.88	100	259	Peak
2437	88.32	-	-	83.85	32.24	6.11	33.88	100	259	Average
2484	45.78	-28.22	74	41.22	32.28	6.18	33.9	100	259	Peak
2484	33.48	-20.52	54	28.92	32.28	6.18	33.9	100	259	Average

Test Mode :	Mode 6	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	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
32.7	29.97	-10.03	40	45.08	15.8	0.56	31.47	100	85	Peak
206.85	19.02	-24.48	43.5	39.56	9.58	1.35	31.47	-	-	Peak
243.3	22.22	-23.78	46	39.92	12.19	1.53	31.42	-	-	Peak
564.6	20.54	-25.46	46	29.69	19.22	2.59	30.96	-	-	Peak
785.8	26.28	-19.72	46	31.61	22.24	3.12	30.69	-	-	Peak
943.3	26.07	-19.93	46	29.03	24.18	3.45	30.59	-	-	Peak
2374	34.63	-19.37	54	30.32	32.16	5.99	33.84	102	321	Average
2374	45.67	-28.33	74	41.36	32.16	5.99	33.84	102	321	Peak
2462	94.37	-	-	89.86	32.26	6.14	33.89	102	321	Average
2462	107.46	-	-	102.95	32.26	6.14	33.89	102	321	Peak
2483.66	49.31	-4.69	54	44.75	32.28	6.18	33.9	102	321	Average
2483.66	69.98	-4.02	74	65.42	32.28	6.18	33.9	102	321	Peak

Test Mode :	Mode 6	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	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
30	31.53	-8.47	40	45.95	16.51	0.53	31.46	100	102	Peak
64.29	21.23	-18.77	40	46.06	5.92	0.79	31.54	-	-	Peak
136.38	23.15	-20.35	43.5	41.93	11.59	1.19	31.56	-	-	Peak
466.6	18.83	-27.17	46	29.89	17.67	2.34	31.07	-	-	Peak
645.1	21.15	-24.85	46	28.92	20.27	2.83	30.87	-	-	Peak
867	26.02	-19.98	46	30.2	23.25	3.29	30.72	-	-	Peak
2382	33.9	-20.1	54	29.56	32.16	6.03	33.85	100	261	Average
2382	46.23	-27.77	74	41.89	32.16	6.03	33.85	100	261	Peak
2462	91.75	-	-	87.24	32.26	6.14	33.89	100	261	Average
2462	104.33	-	-	99.82	32.26	6.14	33.89	100	261	Peak
2483.5	45.62	-8.38	54	41.06	32.28	6.18	33.9	100	261	Average
2483.5	65.43	-8.57	74	60.87	32.28	6.18	33.9	100	261	Peak

Test Mode :	Mode 7	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**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
34.05	28.83	-11.17	40	44.16	15.57	0.57	31.47	100	216	Peak
206.85	18.89	-24.61	43.5	39.43	9.58	1.35	31.47	-	-	Peak
252.21	20.63	-25.37	46	37.8	12.7	1.54	31.41	-	-	Peak
550.6	19.57	-26.43	46	28.99	19.01	2.55	30.98	-	-	Peak
791.4	26.44	-19.56	46	31.66	22.33	3.13	30.68	-	-	Peak
932.1	26.38	-19.62	46	29.55	24.03	3.42	30.62	-	-	Peak
2389.99	39.99	-14.01	54	35.63	32.18	6.03	33.85	101	333	Average
2389.99	58.78	-15.22	74	54.42	32.18	6.03	33.85	101	333	Peak
2412	101.11	-	-	96.71	32.2	6.07	33.87	101	333	Peak
2412	88.38	-	-	83.98	32.2	6.07	33.87	101	333	Average
2484	33.28	-20.72	54	28.72	32.28	6.18	33.9	101	333	Average
2484	46.1	-27.9	74	41.54	32.28	6.18	33.9	101	333	Peak

Test Mode :	Mode 7	**Temperature :**	21~23℃
Test Channel :	01	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
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
30.54	31.48	-8.52	40	46.13	16.27	0.54	31.46	100	132	Peak
50.25	21.38	-18.62	40	43.94	8.28	0.7	31.54	-	-	Peak
141.78	24.01	-19.49	43.5	42.85	11.51	1.2	31.55	-	-	Peak
540.1	19.57	-26.43	46	29.2	18.84	2.53	31	-	-	Peak
699	23.78	-22.22	46	30.78	20.88	2.94	30.82	-	-	Peak
876.1	25.5	-20.5	46	29.55	23.35	3.31	30.71	-	-	Peak
2389.61	37.55	-16.45	54	33.19	32.18	6.03	33.85	100	263	Average
2389.61	53.9	-20.1	74	49.54	32.18	6.03	33.85	100	263	Peak
2412	97.43	-	-	93.03	32.2	6.07	33.87	100	263	Peak
2412	85.41	-	-	81.01	32.2	6.07	33.87	100	263	Average
2486	32.65	-21.35	54	28.09	32.28	6.18	33.9	100	263	Average
2486	44.46	-29.54	74	39.9	32.28	6.18	33.9	100	263	Peak

Test Mode :	Mode 8	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	29.65	-10.35	40	44.52	16.04	0.55	31.46	100	117	Peak
209.01	21.17	-22.33	43.5	41.49	9.79	1.36	31.47	-	-	Peak
273.54	20.22	-25.78	46	36.9	13.04	1.64	31.36	-	-	Peak
382.6	19.48	-26.52	46	32.55	16.05	2.11	31.23	-	-	Peak
780.9	26.48	-19.52	46	31.9	22.16	3.11	30.69	-	-	Peak
881.7	26.63	-19.37	46	30.61	23.42	3.31	30.71	-	-	Peak
2390	46.46	-27.54	74	42.1	32.18	6.03	33.85	100	319	Peak
2390	34.2	-19.8	54	29.84	32.18	6.03	33.85	100	319	Average
2437	102.56	-	-	98.11	32.22	6.11	33.88	100	319	Peak
2437	90.64	-	-	86.17	32.24	6.11	33.88	100	319	Average
2484	47.36	-26.64	74	42.8	32.28	6.18	33.9	100	319	Peak
2484	35.24	-18.76	54	30.68	32.28	6.18	33.9	100	319	Average

Test Mode :	Mode 8	**Temperature :**	21~23℃
Test Channel :	06	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	31.57	-8.43	40	46.68	15.8	0.56	31.47	100	251	Peak
118.02	21.25	-22.25	43.5	40.36	11.36	1.09	31.56	-	-	Peak
268.14	30.64	-15.36	46	47.43	12.96	1.63	31.38	-	-	Peak
469.4	19.86	-26.14	46	30.86	17.72	2.35	31.07	-	-	Peak
710.9	23.04	-22.96	46	29.8	21.06	2.97	30.79	-	-	Peak
876.1	26.01	-19.99	46	30.06	23.35	3.31	30.71	-	-	Peak
2390	46.19	-27.81	74	41.83	32.18	6.03	33.85	100	260	Peak
2390	33.85	-20.15	54	29.49	32.18	6.03	33.85	100	260	Average
2437	100.28	-	-	95.83	32.22	6.11	33.88	100	260	Peak
2437	87.97	-	-	83.5	32.24	6.11	33.88	100	260	Average
2486	44.79	-29.21	74	40.23	32.28	6.18	33.9	100	260	Peak
2486	33.3	-20.7	54	28.74	32.28	6.18	33.9	100	260	Average

Test Mode :	Mode 9	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	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
32.7	30.08	-9.92	40	45.19	15.8	0.56	31.47	100	139	Peak
155.82	16.28	-27.22	43.5	35.93	10.67	1.22	31.54	-	-	Peak
206.85	17.94	-25.56	43.5	38.48	9.58	1.35	31.47	-	-	Peak
556.9	20.26	-25.74	46	29.56	19.1	2.57	30.97	-	-	Peak
791.4	25.84	-20.16	46	31.06	22.33	3.13	30.68	-	-	Peak
915.3	25.17	-20.83	46	28.62	23.83	3.38	30.66	-	-	Peak
2372	45.45	-28.55	74	41.14	32.16	5.99	33.84	100	335	Peak
2372	34.54	-19.46	54	30.23	32.16	5.99	33.84	100	335	Average
2462	105.1	-	-	100.59	32.26	6.14	33.89	100	335	Peak
2462	91.54	-	-	87.03	32.26	6.14	33.89	100	335	Average
2483.66	48.32	-5.68	54	43.76	32.28	6.18	33.9	100	335	Average
2483.66	67.95	-6.05	74	63.39	32.28	6.18	33.9	100	335	Peak

Test Mode :	Mode 9	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	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
32.97	33.03	-6.97	40	48.14	15.8	0.56	31.47	100	281	Peak
64.02	20.76	-19.24	40	45.59	5.92	0.79	31.54	-	-	Peak
257.34	25.98	-20.02	46	43.05	12.78	1.57	31.42	-	-	Peak
508.6	19.01	-26.99	46	29.25	18.35	2.47	31.06	-	-	Peak
760.6	23.37	-22.63	46	29.15	21.84	3.08	30.7	-	-	Peak
937	26.39	-19.61	46	29.47	24.09	3.43	30.6	-	-	Peak
2366	45.4	-28.6	74	41.12	32.13	5.99	33.84	100	260	Peak
2366	33.44	-20.56	54	29.16	32.13	5.99	33.84	100	260	Average
2462	102.77	-	-	98.26	32.26	6.14	33.89	100	260	Peak
2462	89.32	-	-	84.81	32.26	6.14	33.89	100	260	Average
2483.66	44.9	-9.1	54	40.34	32.28	6.18	33.9	100	260	Average
2483.66	62.74	-11.26	74	58.18	32.28	6.18	33.9	100	260	Peak

Test Mode :	Mode 10	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Horizontal
Remark :	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
32.97	18.57	-21.43	40	33.68	15.8	0.56	31.47	-	-	Peak
148.53	26.7	-16.8	43.5	45.86	11.19	1.21	31.56	152	223	Peak
174.45	23.6	-19.9	43.5	44.41	9.47	1.24	31.52	-	-	Peak
391	22.03	-23.97	46	34.83	16.29	2.12	31.21	-	-	Peak
814.5	24.38	-21.62	46	29.25	22.64	3.18	30.69	-	-	Peak
979	26.2	-27.8	54	28.67	24.62	3.49	30.58	-	-	Peak
2390	45.1	-28.9	74	40.74	32.18	6.03	33.85	125	335	Peak
2390	33.62	-20.38	54	29.26	32.18	6.03	33.85	125	335	Average
2462	92.41	-	-	87.9	32.26	6.14	33.89	125	335	Average
2462	105.8	-	-	101.29	32.26	6.14	33.89	125	335	Peak
2483.66	46.39	-7.61	54	41.83	32.28	6.18	33.9	125	335	Average
2483.66	66.8	-7.2	74	62.24	32.28	6.18	33.9	125	335	Peak
4924	46.94	-27.06	74	62.66	34.09	9.15	58.96	100	0	Peak

Test Mode :	Mode 10	**Temperature :**	21~23℃
Test Channel :	11	**Relative Humidity :**	46~49%
Test Engineer :	Jason Wang	**Polarization :**	Vertical
Remark :	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
89.94	23.1	-20.4	43.5	45	8.68	0.94	31.52	-	-	Peak
125.85	23.79	-19.71	43.5	42.67	11.56	1.13	31.57	-	-	Peak
258.69	28.33	-17.67	46	45.36	12.81	1.58	31.42	142	112	Peak
545.7	24.71	-21.29	46	34.23	18.93	2.54	30.99	-	-	Peak
934.9	25.17	-20.83	46	28.29	24.07	3.42	30.61	-	-	Peak
990.2	26.5	-27.5	54	28.81	24.77	3.5	30.58	-	-	Peak
2380	46.09	-27.91	74	41.75	32.16	6.03	33.85	100	264	Peak
2380	33.59	-20.41	54	29.25	32.16	6.03	33.85	100	264	Average
2462	89.73	-	-	85.22	32.26	6.14	33.89	100	264	Average
2462	102.14	-	-	97.63	32.26	6.14	33.89	100	264	Peak
2483.5	64.39	-9.61	74	59.83	32.28	6.18	33.9	100	264	Peak
2483.5	44.29	-9.71	54	39.73	32.28	6.18	33.9	100	264	Average

3.8 Antenna Requirements

3.8.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.8.2 Antenna Connected Construction

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

3.8.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
System Simulator	R&S	CMU200	117995	N/A	Jun. 08, 2009	Jun. 07, 2011	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 11, 2010	Jun. 10, 2011	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30, 2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 18, 2010	Oct. 17, 2011	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2010	Oct. 30, 2011	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 03, 2010	Dec. 02, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Aug. 18, 2011	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

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

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

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

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

Contribution	Uncertainty of X_i		$u(X_i)$	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 Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				