FCC RF Test Report

APPLICANT	**:**	**HTC Corporation**
EQUIPMENT	**:**	**Smartphone**
MODEL NAME	**:**	**PG88100**
FCC ID	**:**	**NM8PG88100**
STANDARD	**:**	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	**:**	**Digital Transmission System (DTS)**

The product was received on Dec. 31, 2010 and completely tested on Jan. 18, 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:

Anderson Chiu

Anderson Chiu / Deputy Manager

Testing Laboratory
1190

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR0D3101-02B	Rev. 01	Initial issue of report	Feb. 09, 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 11.60 dB at 0.42 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.83 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 330, Taiwan

1.2 Manufacturer

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

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smartphone
Model Name	PG88100
FCC ID	NM8PG88100
Sample 1	EUT with LCD 1 and Camera 1
Sample 2	EUT with LCD 2 and 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 : 20.84 dBm (0.12 W) 802.11g : 22.88 dBm (0.19 W) 802.11n (BW 20MHz) : 22.90 dBm (0.20 W)
Antenna Type	PIFA Antenna with gain 0.40 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH06-HY	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 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	19.77	-	-	20.09
CH 06	2437 MHz	19.79	-	-	20.12
CH 11	2462 MHz	20.44	20.63	20.66	**20.84**

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	22.01	-	-	-	-	-	-	-
CH 06	2437 MHz	22.35	-	-	-	-	-	-	-
CH 11	2462 MHz	**22.88**	22.79	22.65	22.62	22.63	22.67	22.66	22.70

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		M0	M1	M2	M3	M4	M5	M6	M7
CH 01	2412 MHz	21.97	-	-	-	-	-	-	-
CH 06	2437 MHz	22.49	-	-	-	-	-	-	-
CH 11	2462 MHz	**22.90**	22.52	22.67	22.76	22.64	22.60	22.64	22.57

Remark:

1. The data rates of WLAN 802.11b/g/n were set in 11Mbps for 802.11b, 6Mbps for 802.11g, and M0 for 802.11n (BW 20MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.

2.2 Test Mode

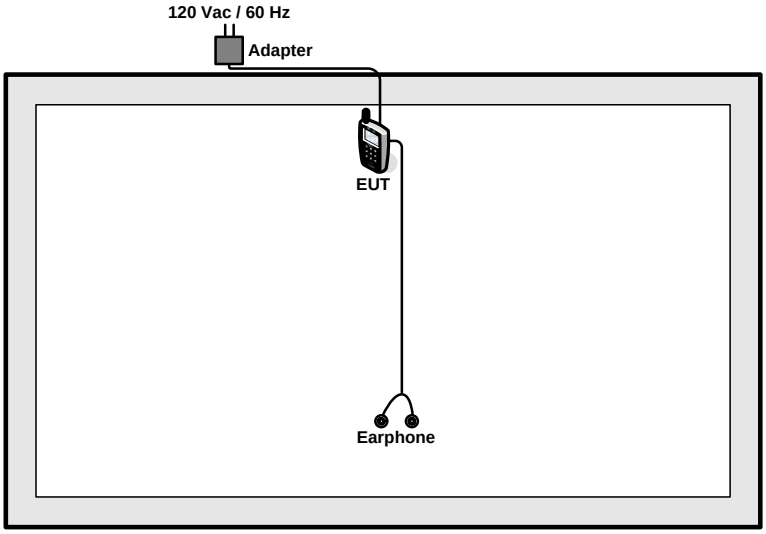
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic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

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

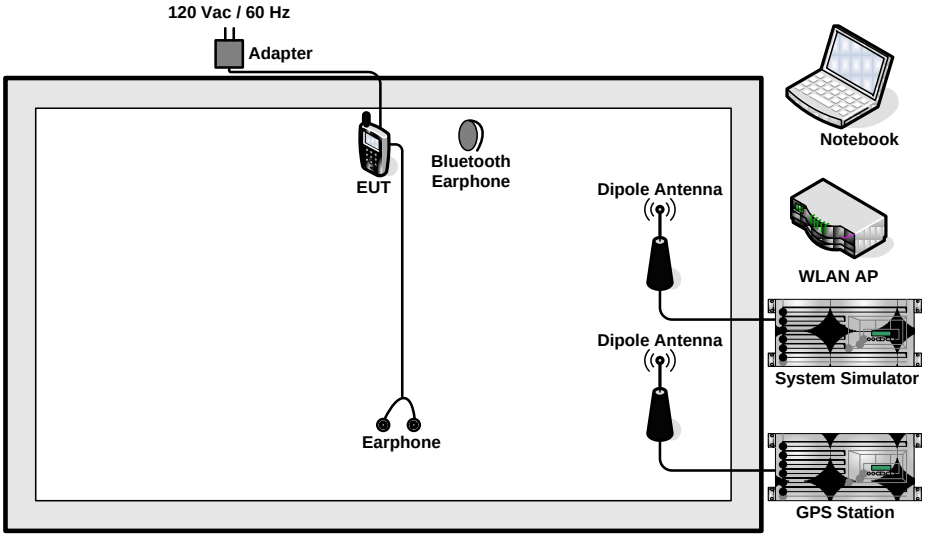
Test Cases	
Test Item	**802.11b (Modulation : DSSS)** **802.11g/n (Modulation : OFDM)**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz Mode 4 : 802.11g_CH01_2412 MHz Mode 5 : 802.11g_CH06_2437 MHz Mode 6 : 802.11g_CH11_2462 MHz Mode 7 : 802.11n (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) for Sample 1 Mode 2 : GSM1900 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 2 + Battery 2 + USB Cable 2 (Charging from Adapter 2) for Sample 2
Remark: **1.** TC stands for Test Configuration, and consists of battery 2, earphone 3, adapter 2, and USB cable 2. **2.** The worst case of conducted emission is mode 1; only the test data of it was reported.	

2.3 Connection Diagram of Test System

<WLAN 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.

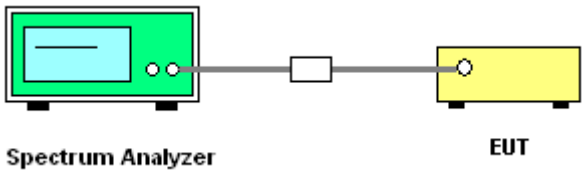
3.1.2 Measuring Instruments

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

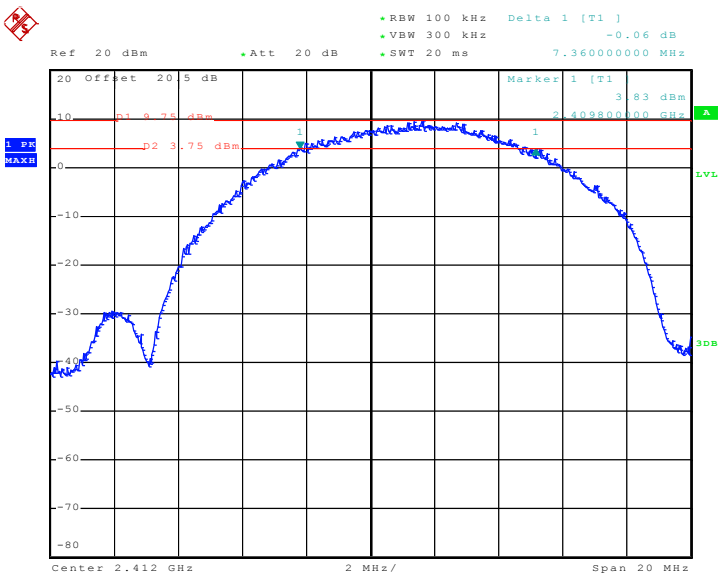


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

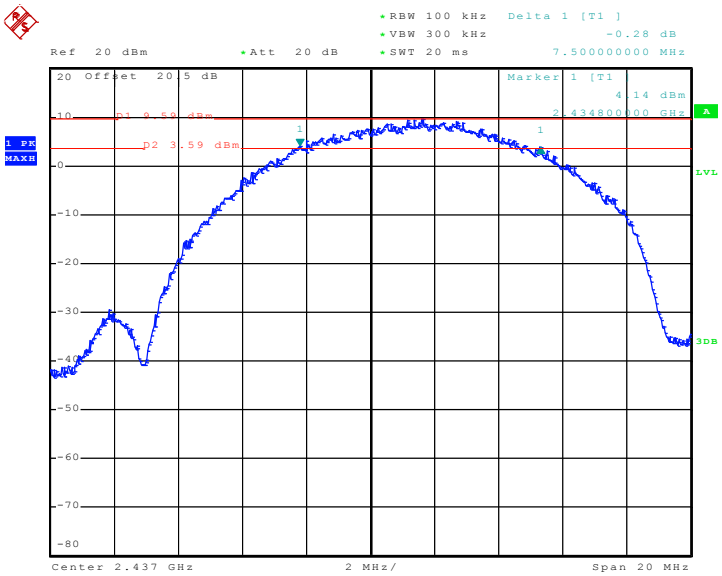
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.36	0.5	Pass
06	2437	7.50	0.5	Pass
11	2462	7.44	0.5	Pass

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



Date: 8.JAN.2011 20:33:00

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



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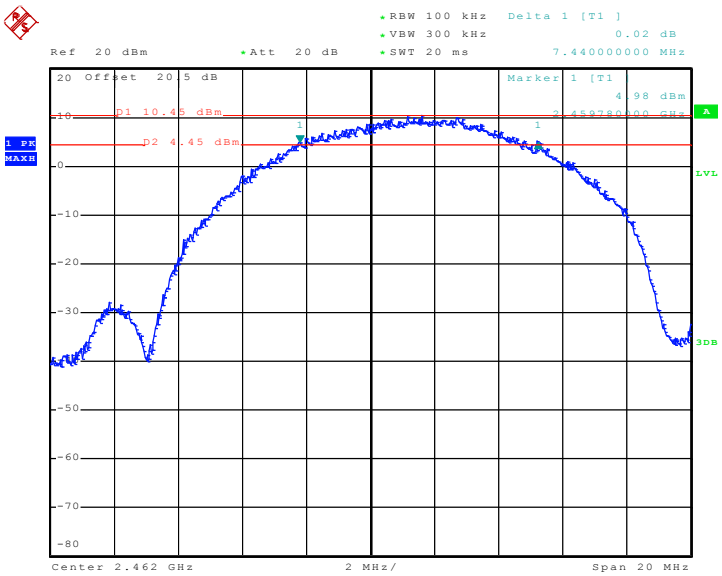
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



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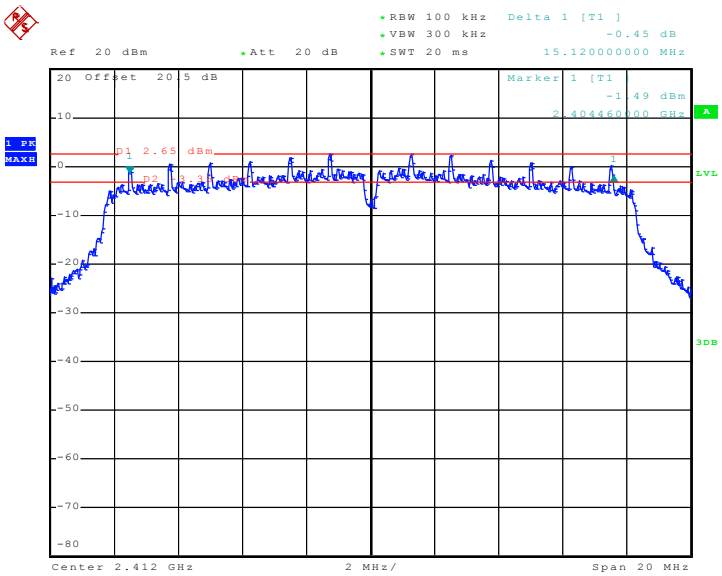
Test Mode :	Mode 4, 5, 6	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11g 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 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



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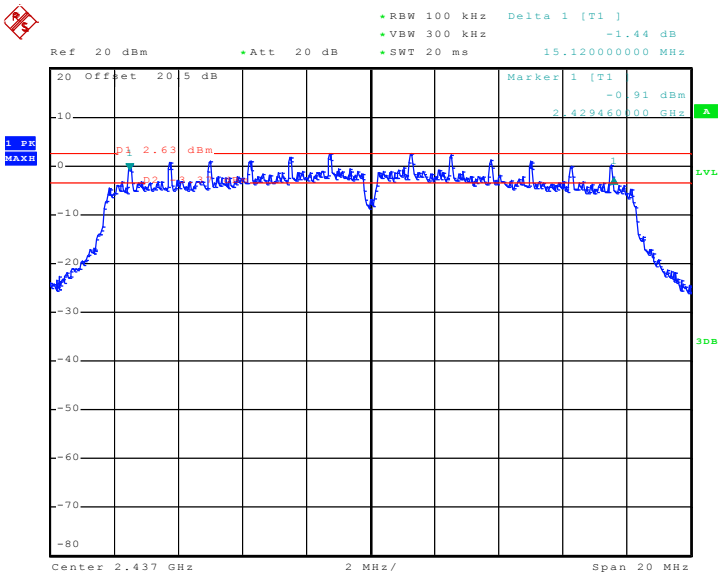
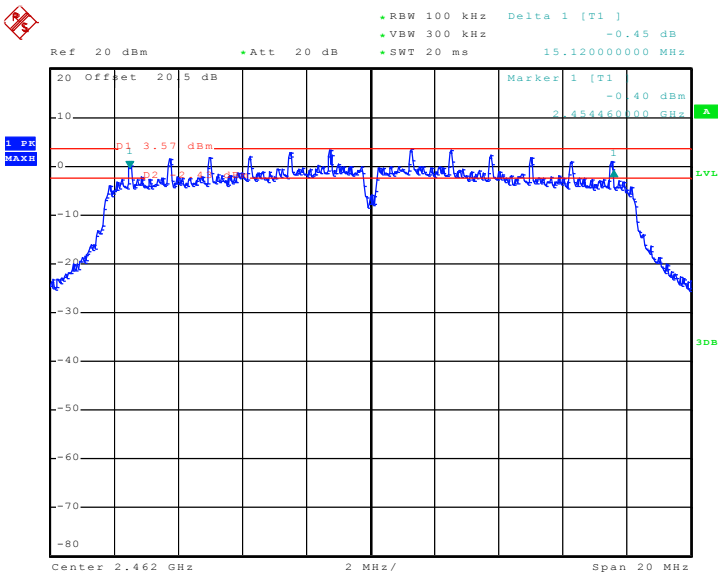
Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 8.JAN.2011 20:25:49

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



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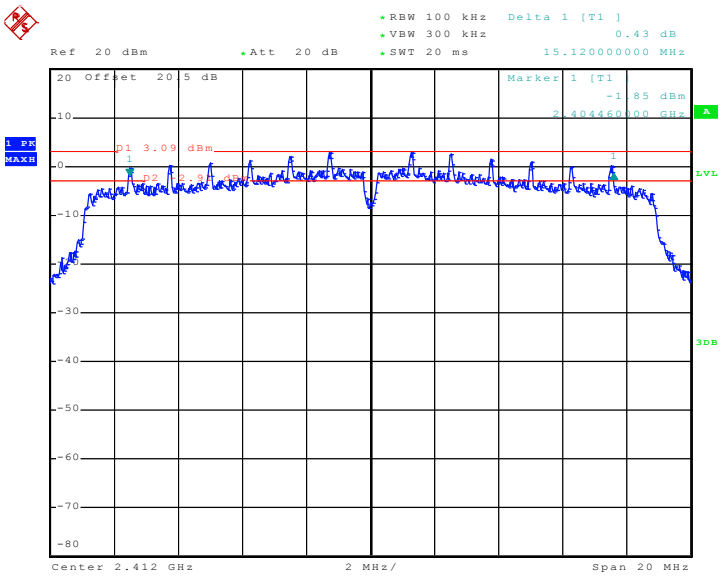
Test Mode :	Mode 7, 8, 9	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

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	15.14	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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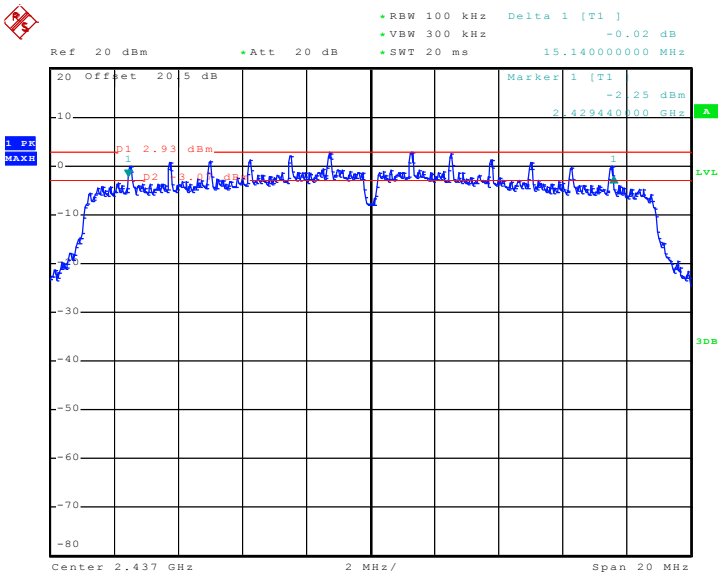
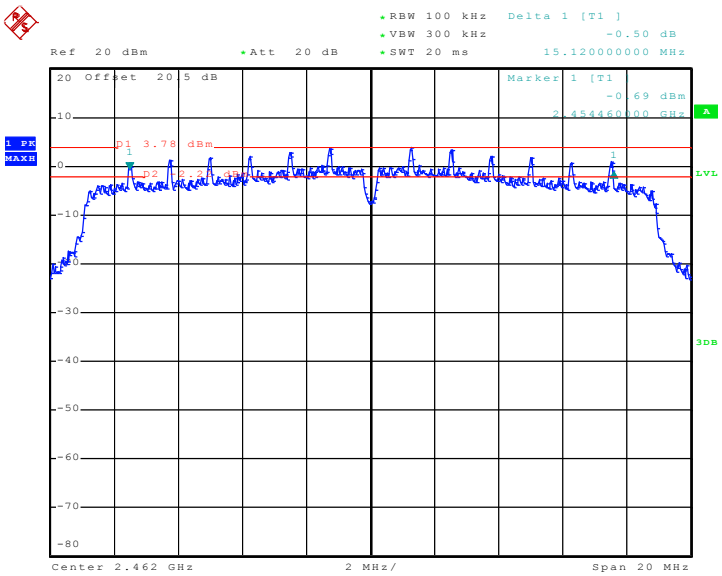
Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 8.JAN.2011 20:09:11

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



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3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

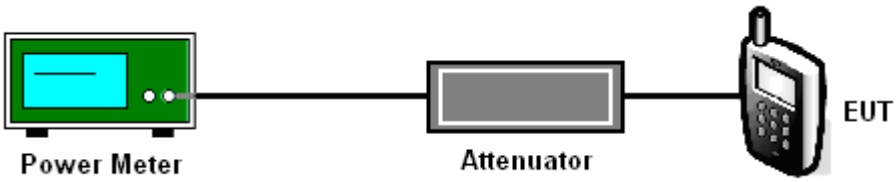
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the 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 :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.09	30	Pass
06	2437	20.12	30	Pass
11	2462	20.84	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.01	30	Pass
06	2437	22.35	30	Pass
11	2462	22.88	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.97	30	Pass
06	2437	22.49	30	Pass
11	2462	22.90	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

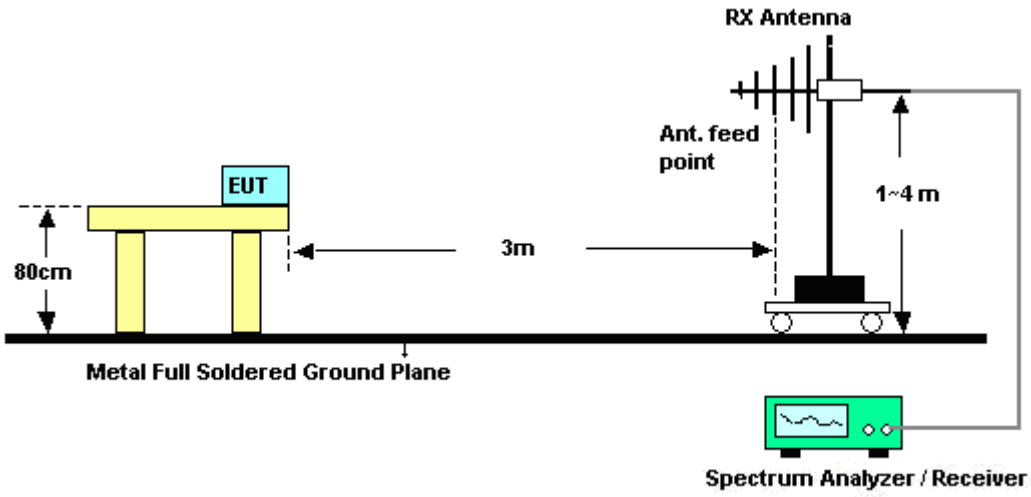
See list of measuring instruments of this test report.

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>



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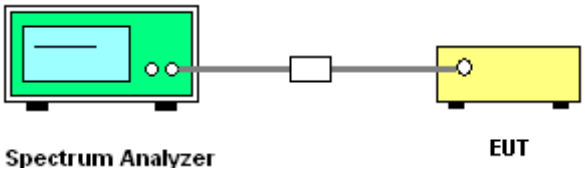


3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Band :	802.11b	**Relative Humidity :**	46~47%
Test Channel :	01	**Test Engineer :**	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	**Level (dBuV/m)**	**Over Limit (dB)**	**Limit Line (dBuV/m)**	**Read Level (dBuV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2389.61	58.78	-15.22	74	56.77	32.48	3.92	34.39	103	335	Peak
2389.61	44.8	-9.2	54	42.79	32.48	3.92	34.39	103	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**
2389.99	53.06	-20.94	74	51.05	32.48	3.92	34.39	125	296	Peak
2389.99	40.23	-13.77	54	38.22	32.48	3.92	34.39	125	296	Average

Test Mode :	Mode 3	**Temperature :**	21~22℃
Test Band :	802.11b	**Relative Humidity :**	46~47%
Test Channel :	11	**Test Engineer :**	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	**Level (dBuV/m)**	**Over Limit (dB)**	**Limit Line (dBuV/m)**	**Read Level (dBuV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2483.85	57.29	-16.71	74	55.03	32.58	4.05	34.37	122	359	Peak
2483.85	44.01	-9.99	54	41.75	32.58	4.05	34.37	122	359	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**
2486.13	51.95	-22.05	74	49.69	32.58	4.05	34.37	116	70	Peak
2486.13	38.07	-15.93	54	35.81	32.58	4.05	34.37	116	70	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	70.57	-3.43	74	68.56	32.48	3.92	34.39	102	3	Peak
2389.99	48.93	-5.07	54	46.92	32.48	3.92	34.39	102	3	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	66.88	-7.12	74	64.87	32.48	3.92	34.39	100	311	Peak
2389.99	43.85	-10.15	54	41.84	32.48	3.92	34.39	100	311	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	71.38	-2.62	74	69.12	32.58	4.05	34.37	100	333	Peak
2483.5	50.46	-3.54	54	48.2	32.58	4.05	34.37	100	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
2483.5	61.35	-12.65	74	59.09	32.58	4.05	34.37	100	130	Peak
2483.5	39.61	-14.39	54	37.35	32.58	4.05	34.37	100	130	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	01	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	71.08	-2.92	74	69.07	32.48	3.92	34.39	131	325	Peak
2389.99	50.16	-3.84	54	48.15	32.48	3.92	34.39	131	325	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	64.59	-9.41	74	62.58	32.48	3.92	34.39	129	296	Peak
2389.99	43.18	-10.82	54	41.17	32.48	3.92	34.39	129	296	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	71.22	-2.78	74	68.96	32.58	4.05	34.37	101	341	Peak
2483.66	49.42	-4.58	54	47.16	32.58	4.05	34.37	101	341	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.42	61.32	-12.68	74	59.06	32.58	4.05	34.37	154	321	Peak
2484.42	40.13	-13.87	54	37.87	32.58	4.05	34.37	154	321	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

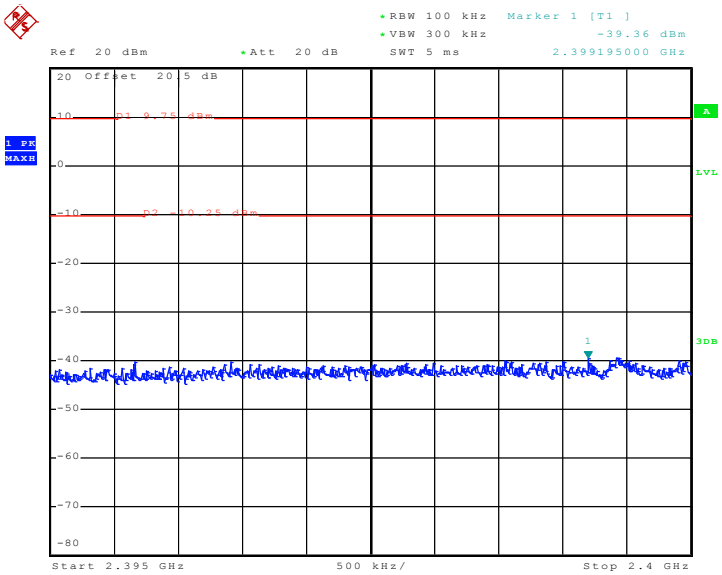
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	73.17	-0.83	74	70.91	32.58	4.05	34.37	103	311	Peak
2483.5	52.01	-1.99	54	49.75	32.58	4.05	34.37	103	311	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	65.77	-8.23	74	63.51	32.58	4.05	34.37	100	38	Peak
2483.5	44.95	-9.05	54	42.69	32.58	4.05	34.37	100	38	Average

3.3.6 Test Plots of Conducted Band Edges

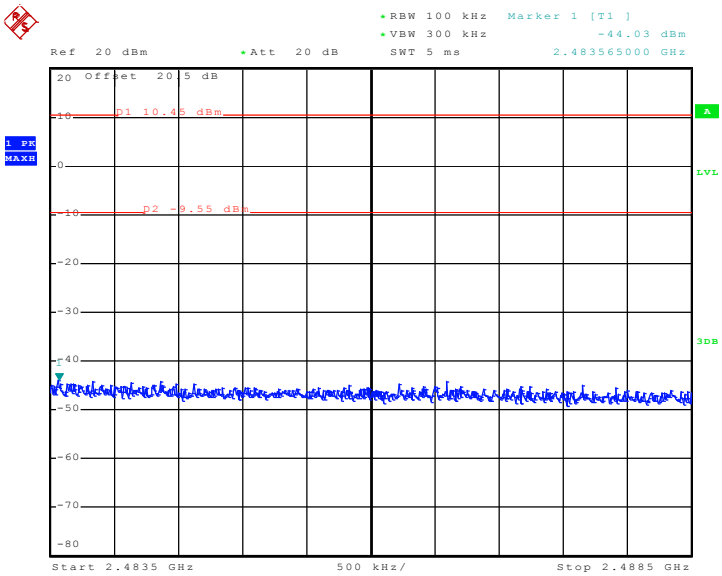
Test Mode :	Mode 1 and 3	Temperature :	23~25℃
Test Band :	802.11b	Relative Humidity :	45~49%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11b Channel 01



Date: 8.JAN.2011 20:34:10

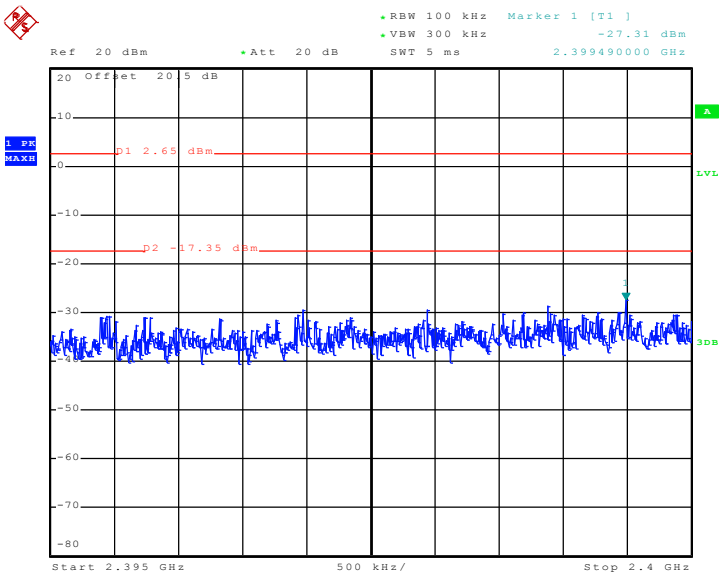
High Band Edge Plot on 802.11b Channel 11



Date: 8.JAN.2011 20:37:51

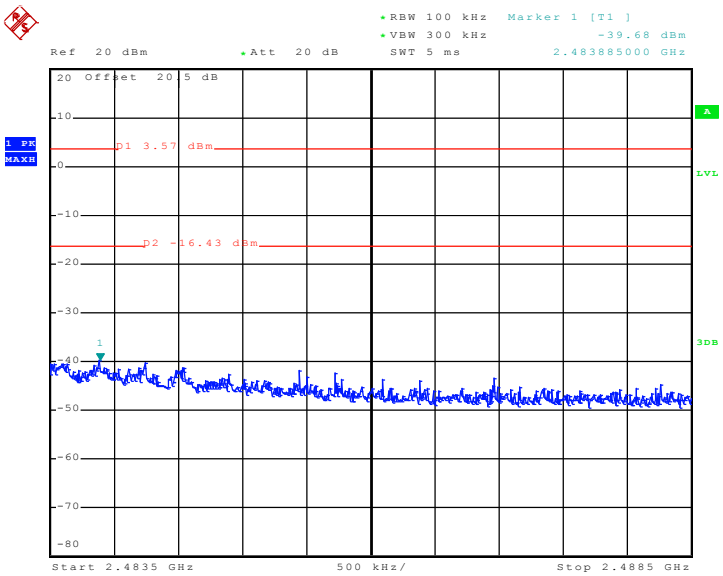
Test Mode :	Mode 4 and 6	Temperature :	23~25℃
Test Band :	802.11g	Relative Humidity :	45~49%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11g Channel 01



Date: 8.JAN.2011 20:22:58

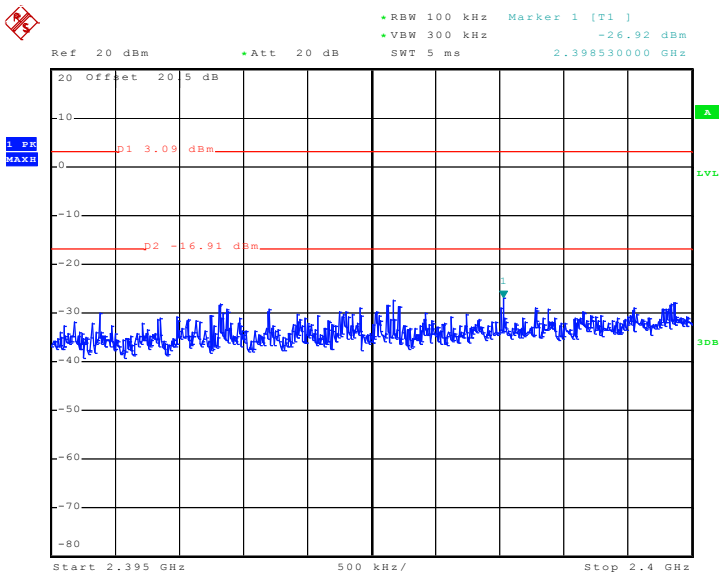
High Band Edge Plot on 802.11g Channel 11



Date: 8.JAN.2011 20:18:51

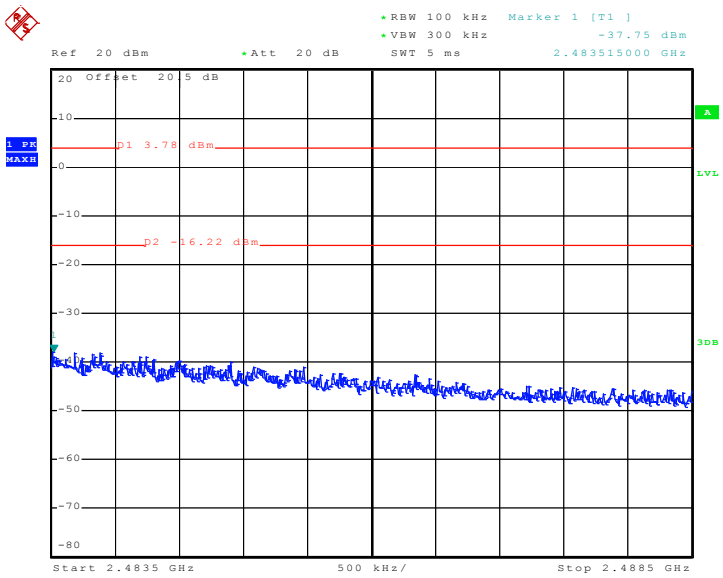
Test Mode :	Mode 7 and 9	Temperature :	23~25℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~49%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

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



Date: 8.JAN.2011 19:57:56

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



Date: 8.JAN.2011 20:15:01

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.

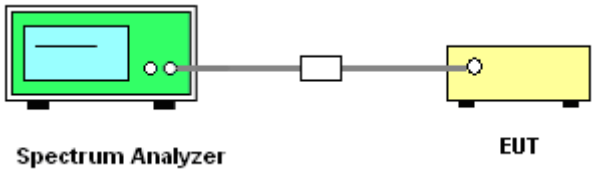
3.4.2 Measuring Instruments

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.

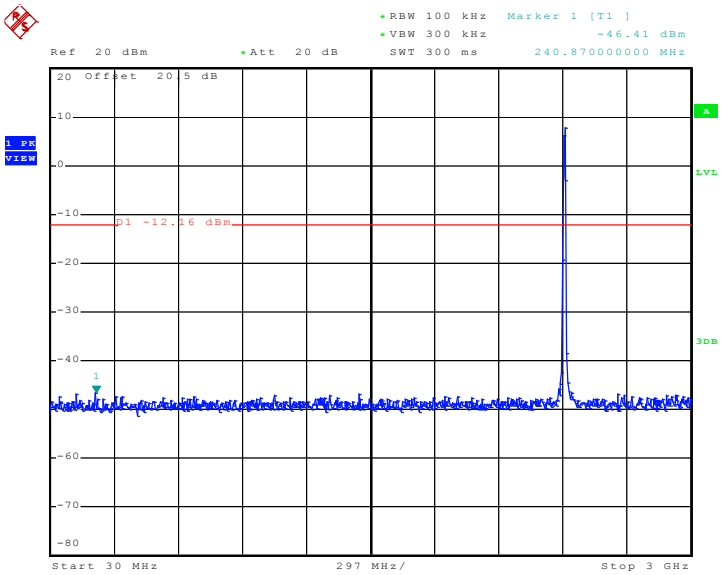
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

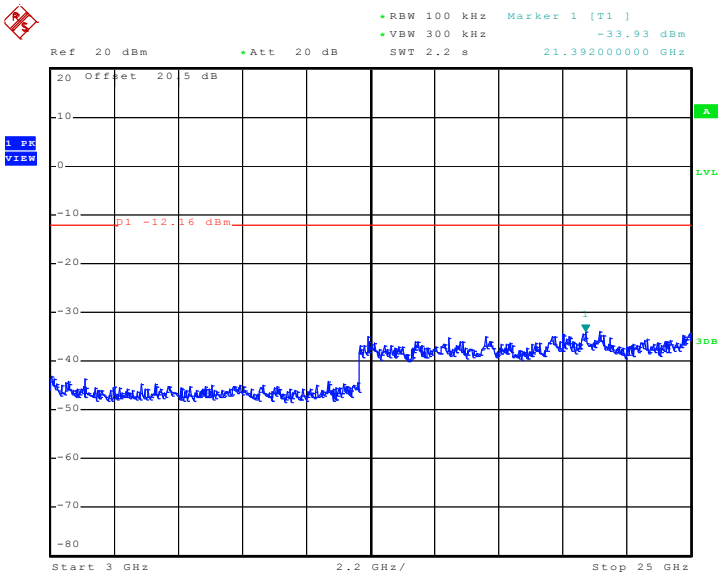
Test Mode :	Mode 1	Temperature :	23~25℃
Test Band :	802.11b	Relative Humidity :	45~49%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:34:58

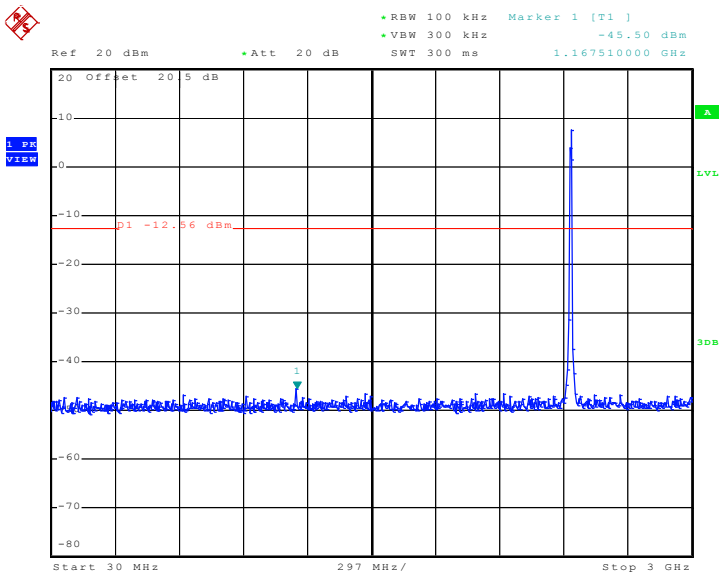
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:35:15

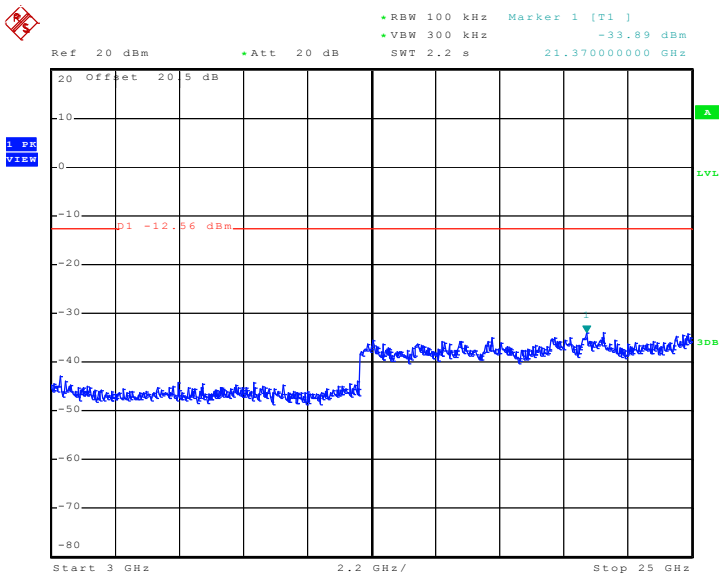
Test Mode :	Mode 2	Temperature :	23~25℃
Test Band :	802.11b	Relative Humidity :	45~49%
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:41:20

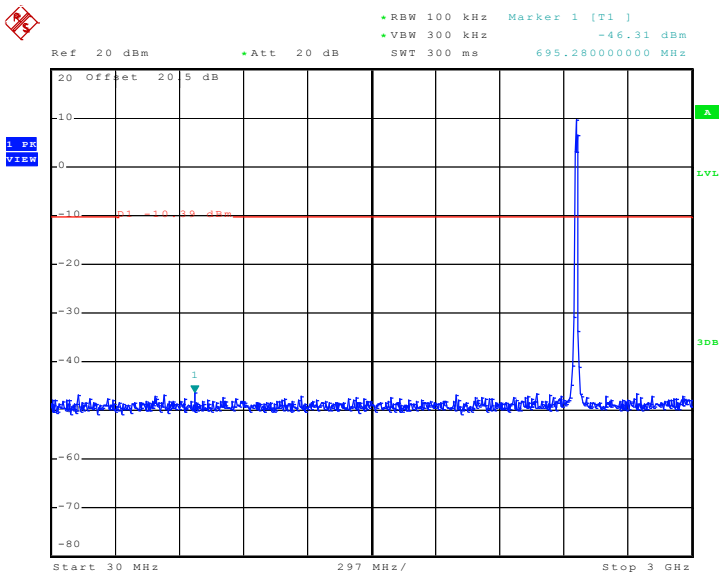
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:41:37

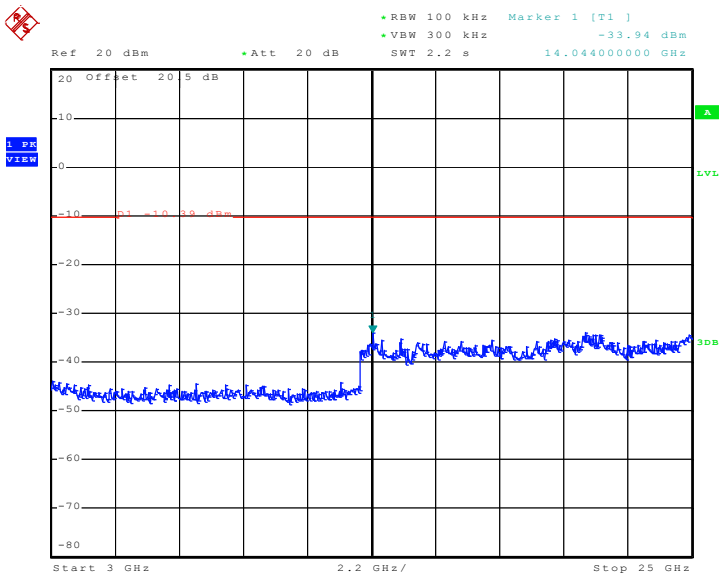
Test Mode :	Mode 3	Temperature :	23~25℃
Test Band :	802.11b	Relative Humidity :	45~49%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:38:39

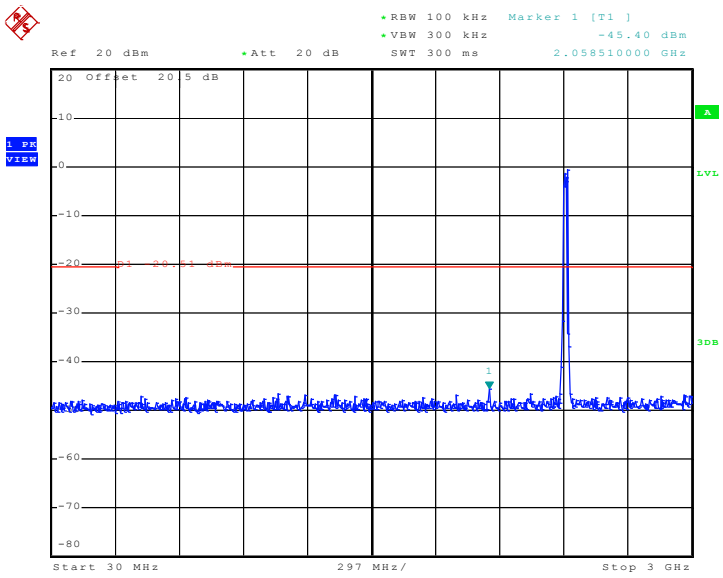
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:38:56

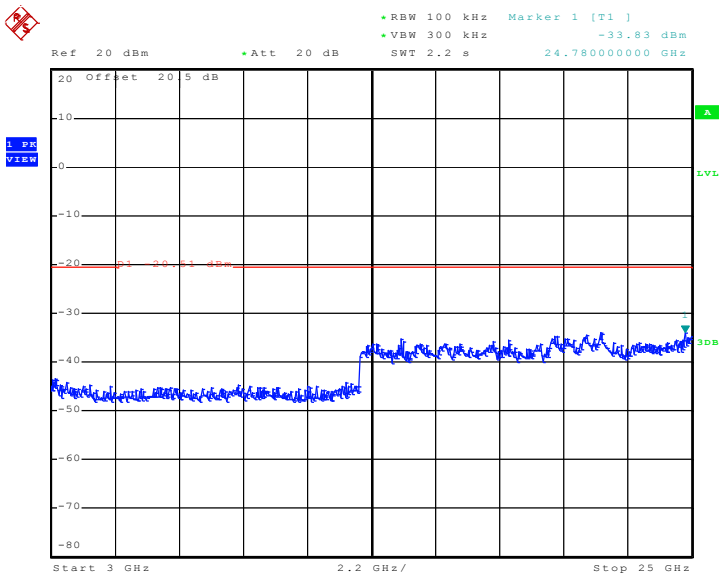
Test Mode :	Mode 4	Temperature :	23~25℃
Test Band :	802.11g	Relative Humidity :	45~49%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:23:46

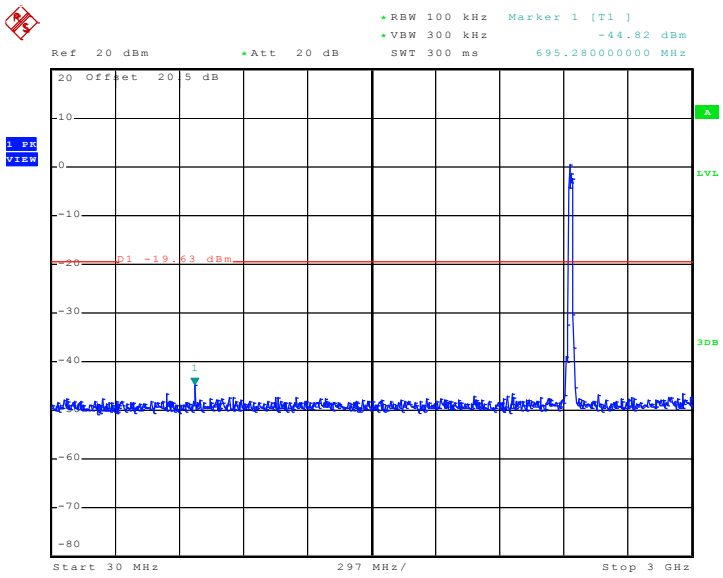
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:24:03

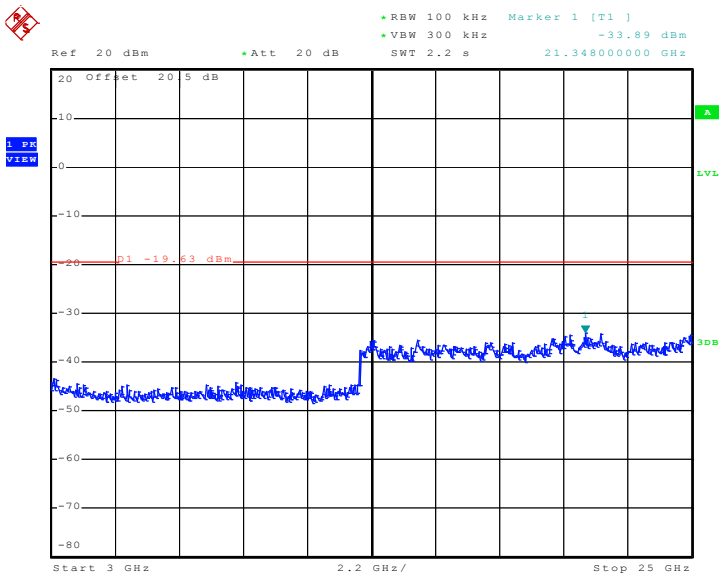
Test Mode :	Mode 5	Temperature :	23~25
Test Band :	802.11g	Relative Humidity :	45~49
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:26:42

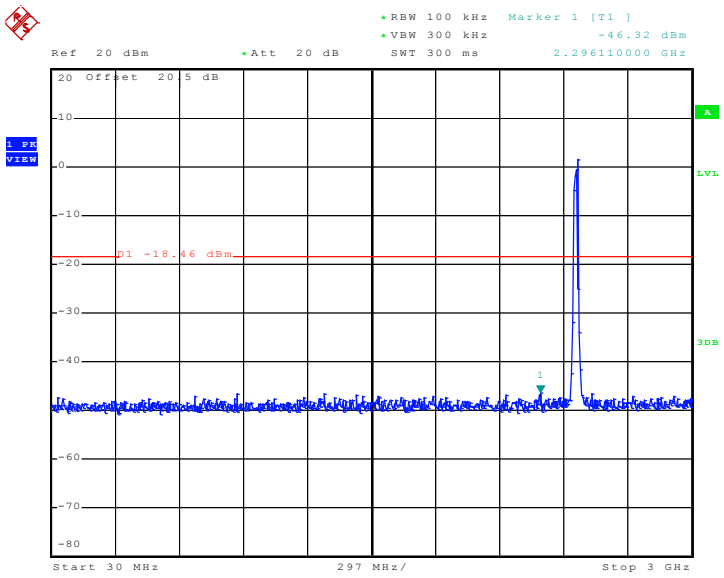
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:26:59

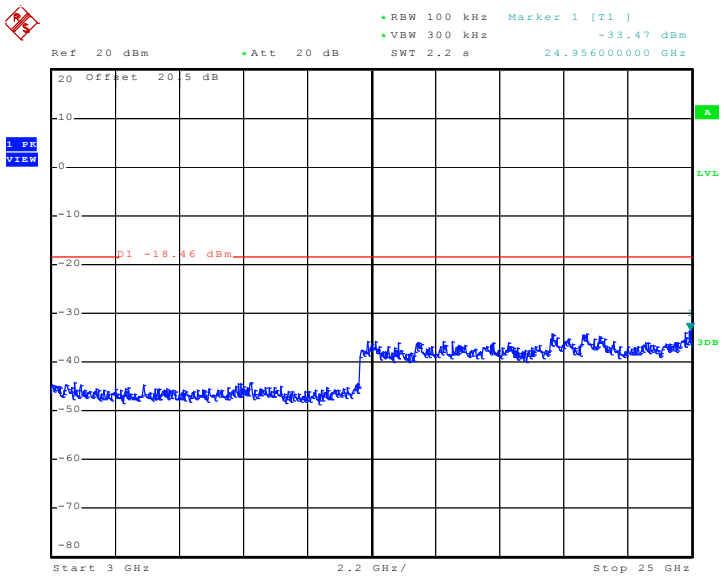
Test Mode :	Mode 6	Temperature :	23~25℃
Test Band :	802.11g	Relative Humidity :	45~49%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:19:40

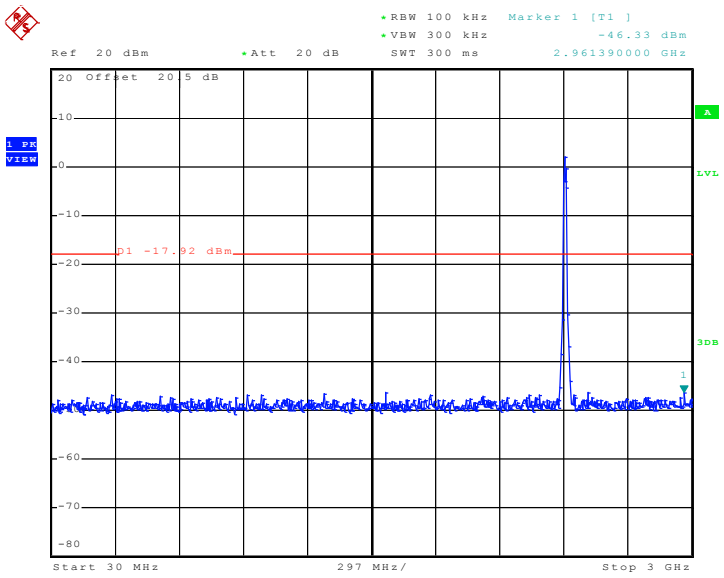
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:19:58

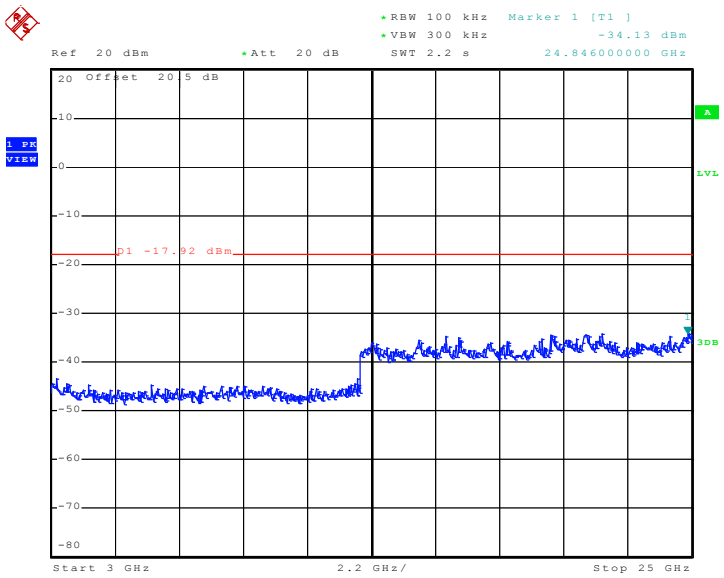
Test Mode :	Mode 7	Temperature :	23~25℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~49%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 19:58:45

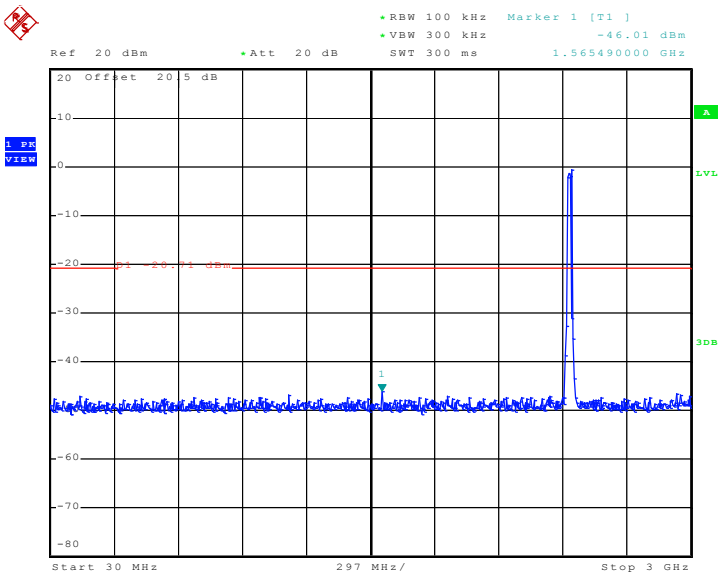
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 19:59:02

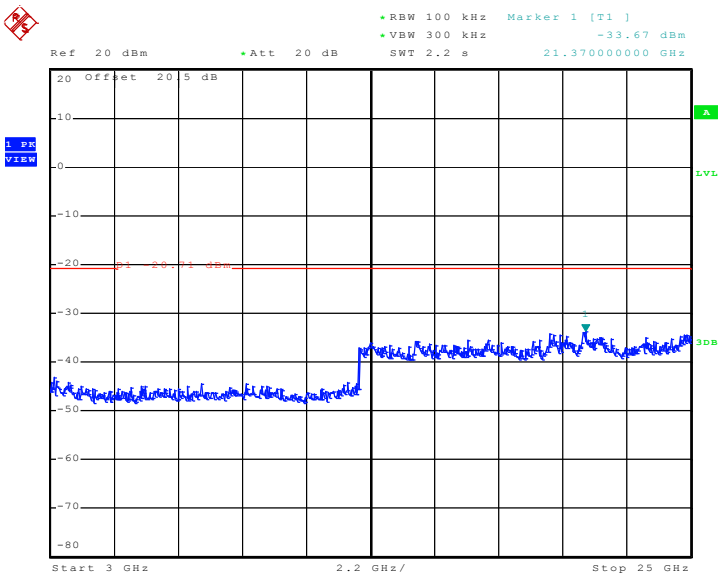
Test Mode :	Mode 8	Temperature :	23~25℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~49%
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:29:35

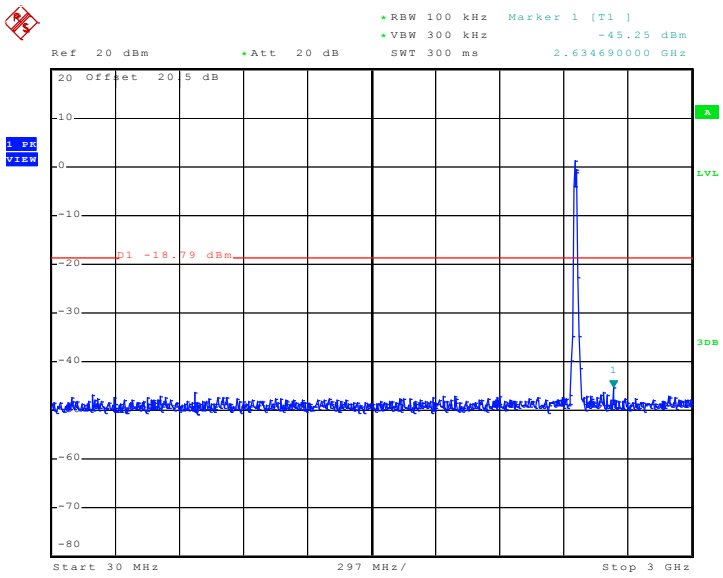
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:29:53

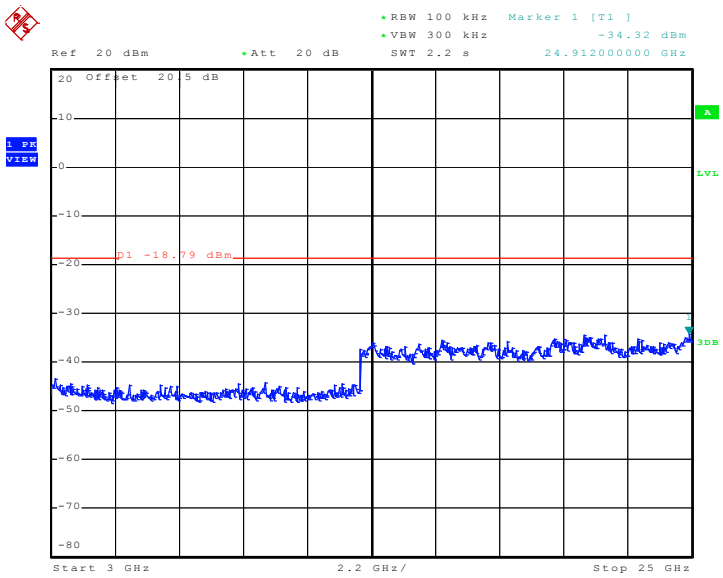
Test Mode :	Mode 9	Temperature :	23~25℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~49%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 8.JAN.2011 20:15:49

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 8.JAN.2011 20:16:06

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.

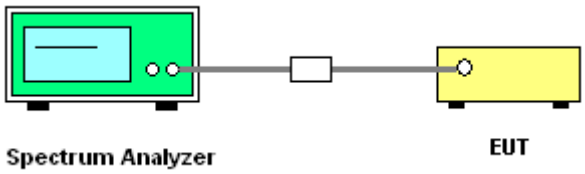
3.5.2 Measuring Instruments

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

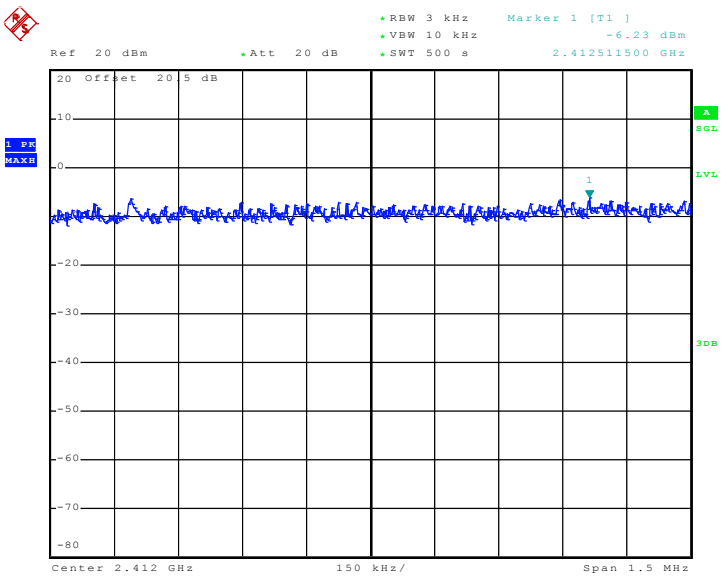


3.5.5 Test Result of Power Spectral Density

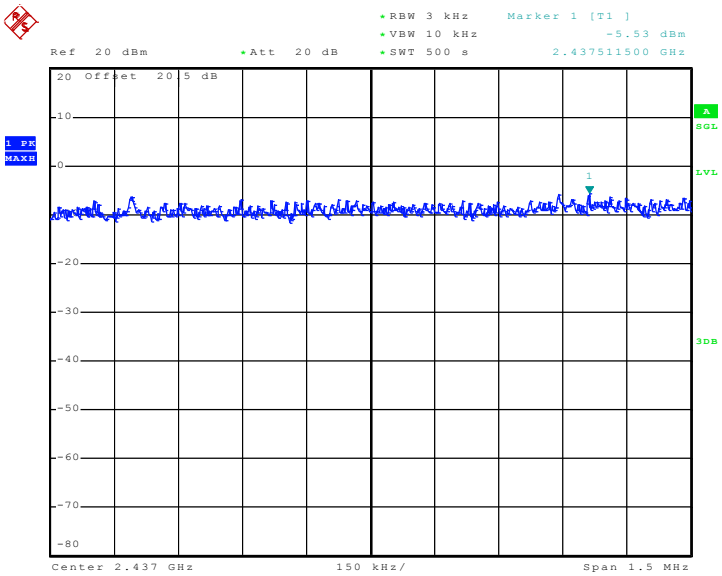
Test Mode :	Mode 1, 2, 3	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-6.23	8	Pass
06	2437	-5.53	8	Pass
11	2462	-5.26	8	Pass

Mode 1 : PSD Plot on 802.11b Channel 01

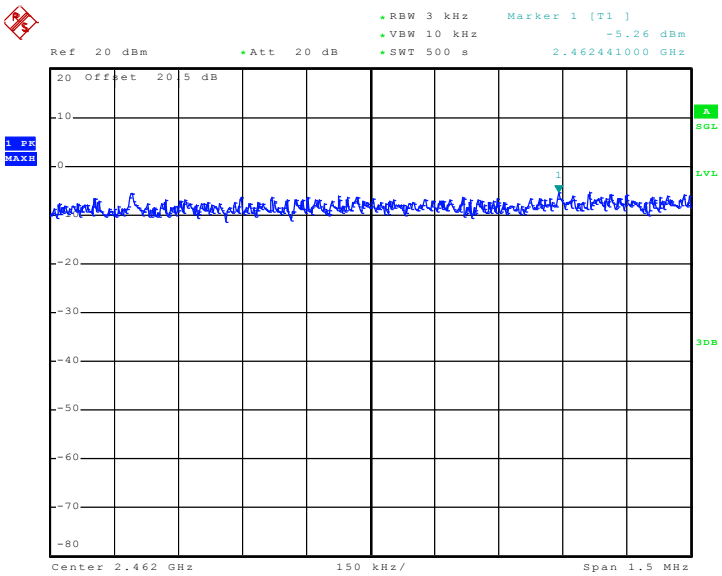


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 8.JAN.2011 20:50:20

Mode 3 : PSD Plot on 802.11b Channel 11

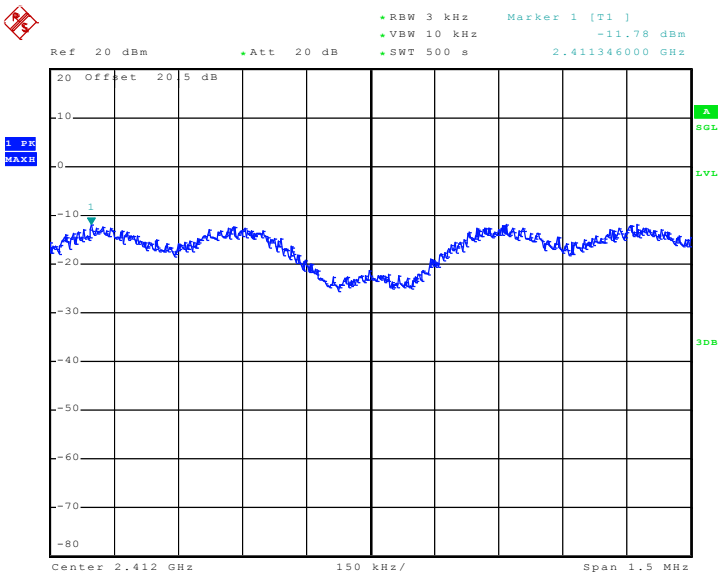


Date: 8.JAN.2011 21:09:18

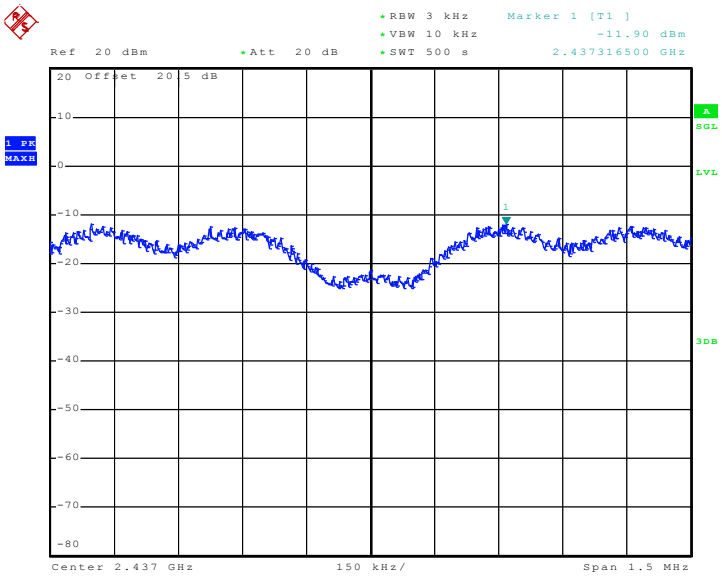
Test Mode :	Mode 4, 5, 6	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-11.78	8	Pass
06	2437	-11.90	8	Pass
11	2462	-11.25	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01

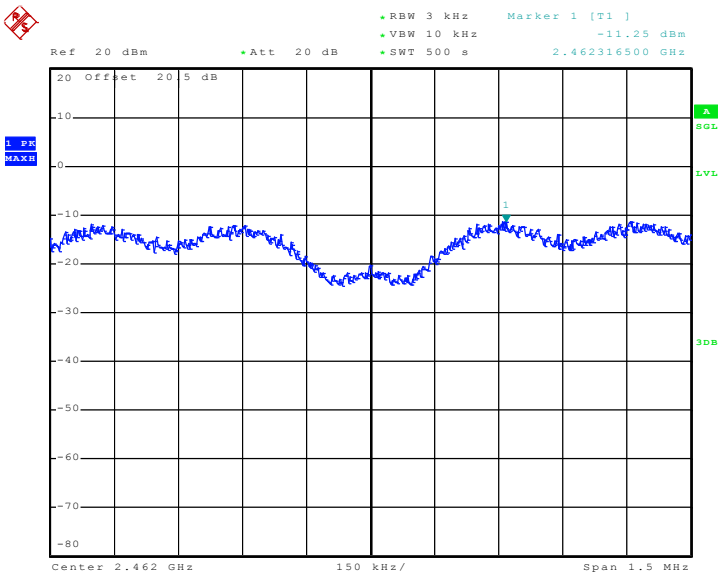


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 8.JAN.2011 21:37:03

Mode 6 : PSD Plot on 802.11g Channel 11

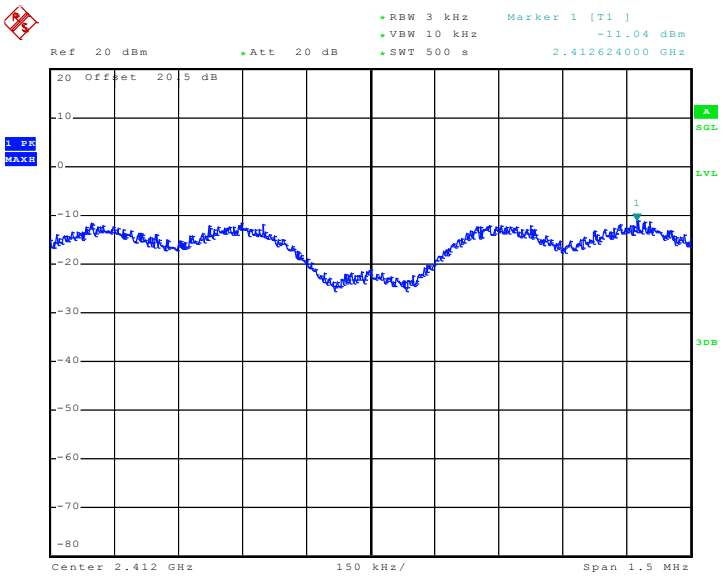


Date: 8.JAN.2011 21:18:48

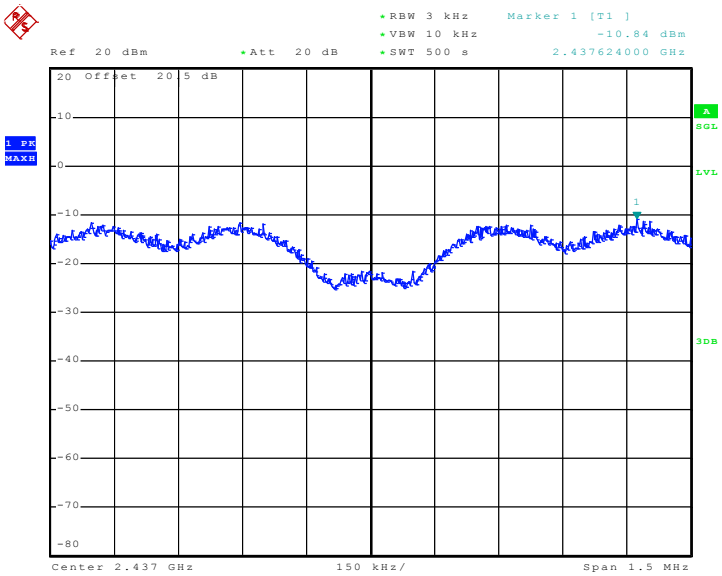
Test Mode :	Mode 7, 8, 9	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-11.04	8	Pass
06	2437	-10.84	8	Pass
11	2462	-10.07	8	Pass

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



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



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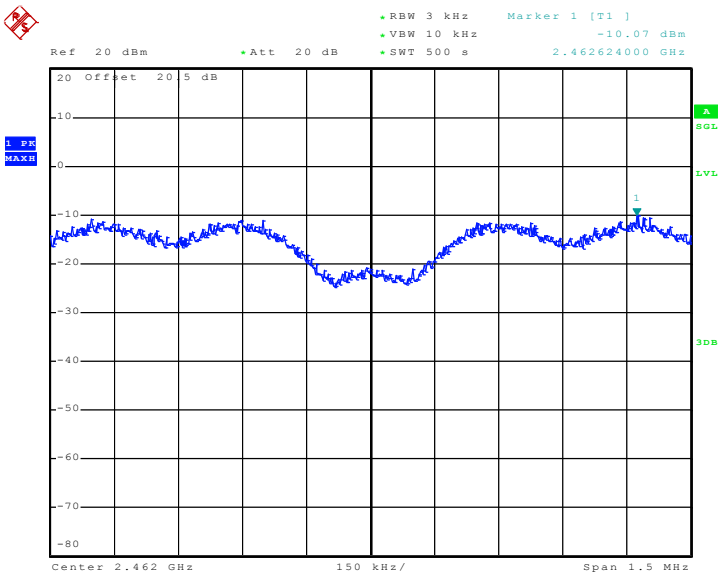
Mode 9 : PSD Plot on 802.11n (BW 20MHz) Channel 11



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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.

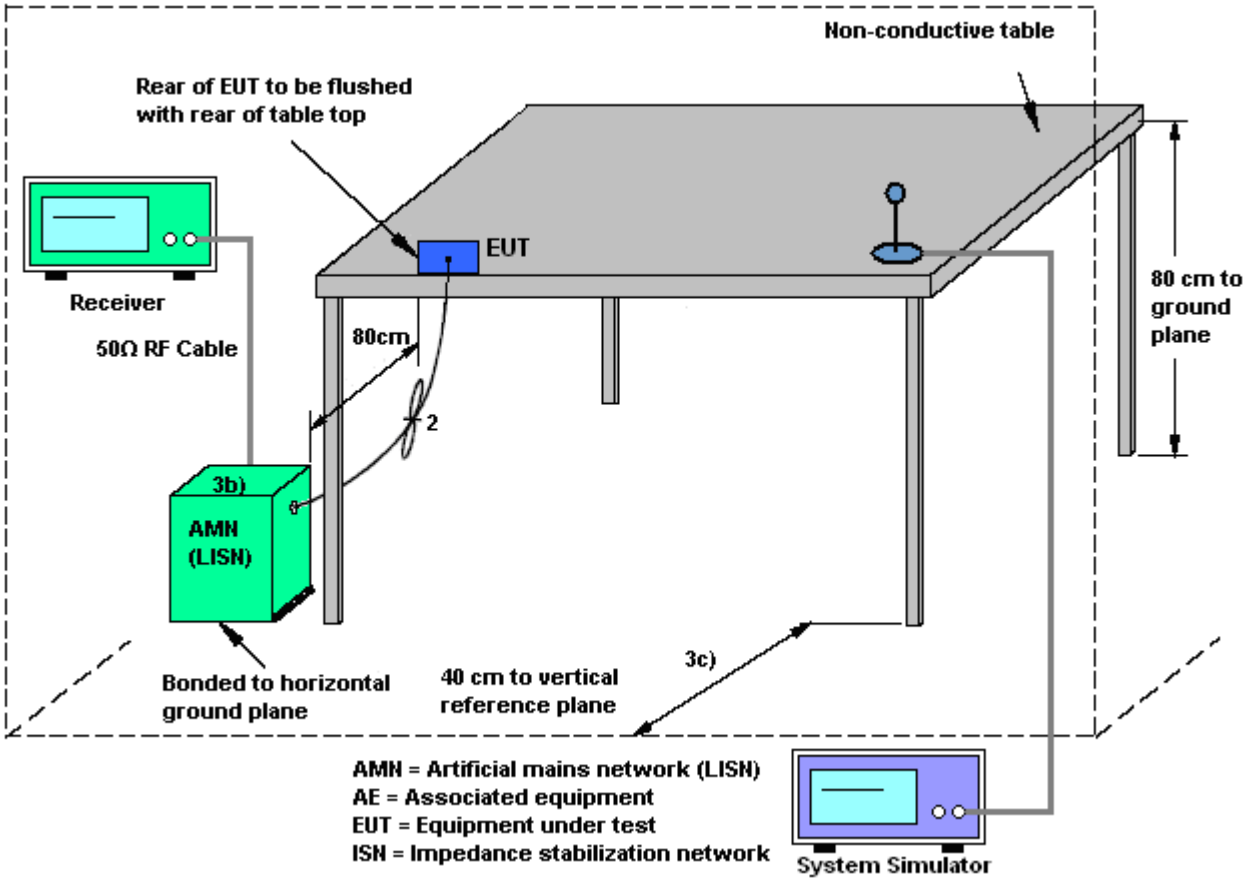
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

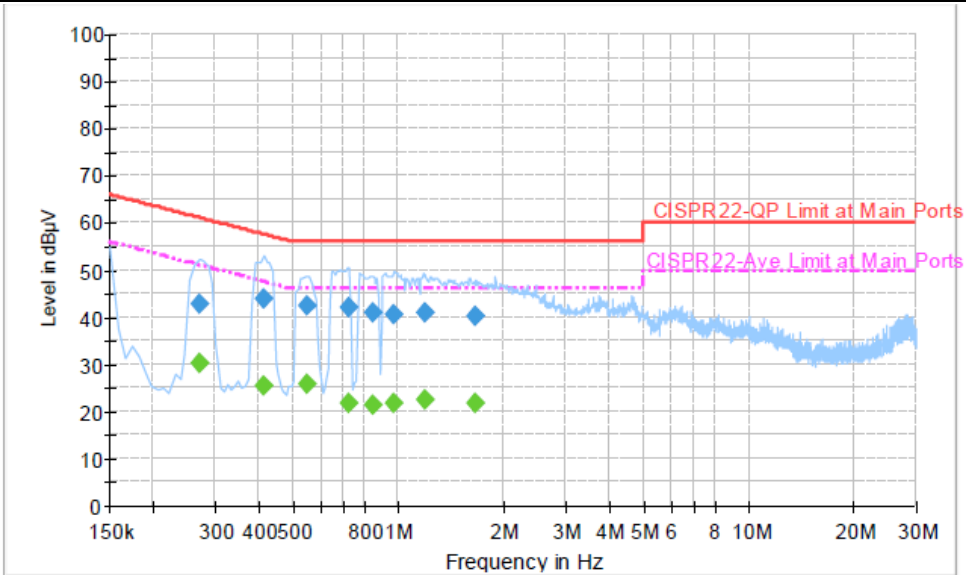
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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 :**	42~44%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



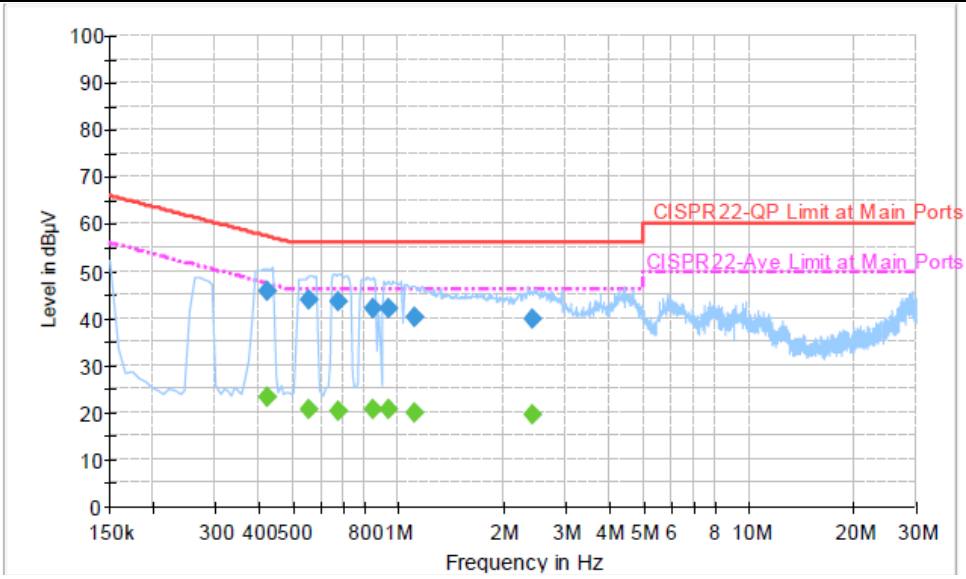
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.270000	42.8	Off	L1	19.3	18.3	61.1
0.414000	44.0	Off	L1	19.4	13.6	57.6
0.550000	42.4	Off	L1	19.3	13.6	56.0
0.726000	42.1	Off	L1	19.4	13.9	56.0
0.846000	40.8	Off	L1	19.5	15.2	56.0
0.974000	40.6	Off	L1	19.4	15.4	56.0
1.190000	41.0	Off	L1	19.4	15.0	56.0
1.662000	40.1	Off	L1	19.4	15.9	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.270000	30.1	Off	L1	19.3	21.0	51.1
0.414000	25.4	Off	L1	19.4	22.2	47.6
0.550000	25.8	Off	L1	19.3	20.2	46.0
0.726000	21.6	Off	L1	19.4	24.4	46.0
0.846000	21.5	Off	L1	19.5	24.5	46.0
0.974000	21.9	Off	L1	19.4	24.1	46.0
1.190000	22.4	Off	L1	19.4	23.6	46.0
1.662000	21.8	Off	L1	19.4	24.2	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Novic Chiang	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Earphone 1 + Battery 1 + USB Cable 1 (Charging from Adapter 1) 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)
0.422000	45.8	Off	N	19.4	11.6	57.4
0.558000	44.0	Off	N	19.3	12.0	56.0
0.678000	43.6	Off	N	19.5	12.3	56.0
0.846000	42.1	Off	N	19.5	13.9	56.0
0.934000	42.0	Off	N	19.4	14.0	56.0
1.118000	40.4	Off	N	19.4	15.6	56.0
2.430000	39.9	Off	N	19.4	16.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.422000	23.3	Off	N	19.4	24.1	47.4
0.558000	20.6	Off	N	19.3	25.4	46.0
0.678000	20.4	Off	N	19.5	25.6	46.0
0.846000	20.7	Off	N	19.5	25.3	46.0
0.934000	20.6	Off	N	19.4	25.4	46.0
1.118000	19.9	Off	N	19.4	26.1	46.0
2.430000	19.7	Off	N	19.4	26.3	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

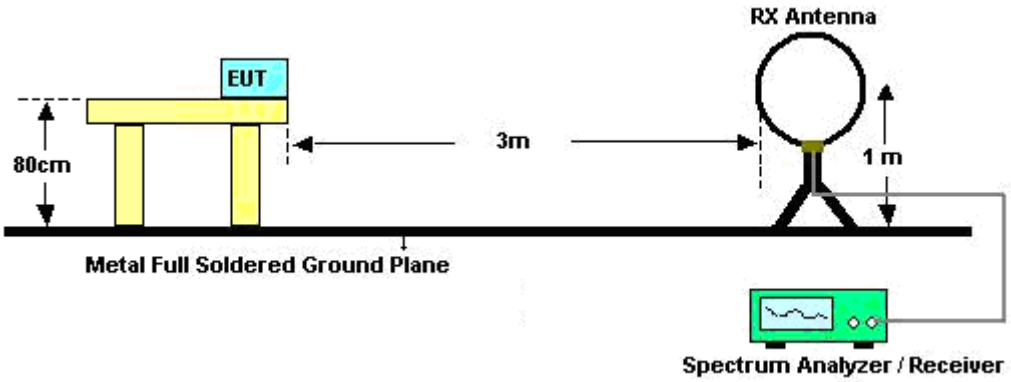
See list of measuring instruments of this test report.

3.7.3 Test Procedures

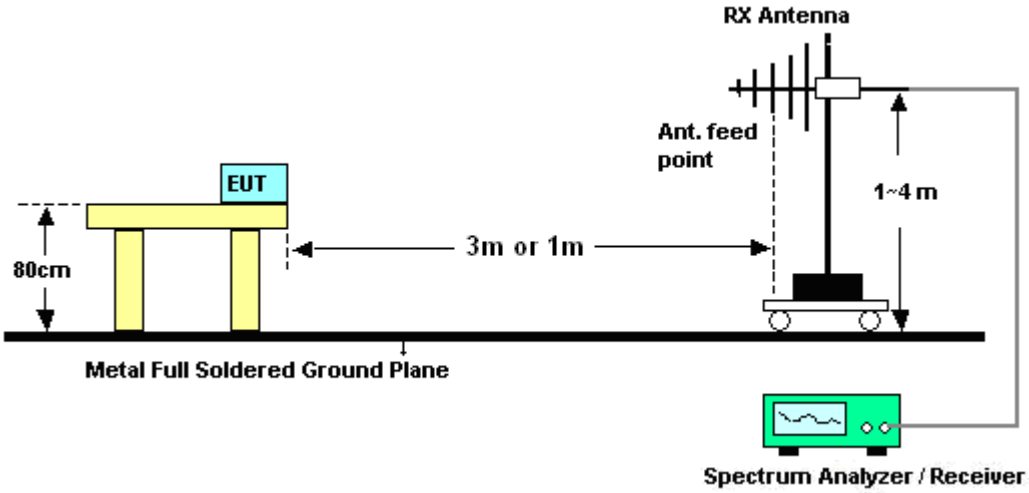
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto;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



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

Test Engineer :	Kai Wang	Temperature :	21~22℃
		Relative Humidity :	46~47%

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 :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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
76.98	24.3	-15.7	40	48.1	6.75	1.07	31.62	-	-	Peak
138.54	28.41	-15.09	43.5	47.06	11.44	1.44	31.53	-	-	Peak
233.04	32.65	-13.35	46	50.81	11.52	1.78	31.46	-	-	Peak
519.8	37.82	-8.18	46	48.52	18.09	2.74	31.53	-	-	Peak
593.3	40.25	-5.75	46	49.94	19.08	2.91	31.68	100	321	Peak
644.4	33.84	-12.16	46	43.17	19.27	3.03	31.63	-	-	Peak
2389.61	58.78	-15.22	74	56.77	32.48	3.92	34.39	103	335	Peak
2389.61	44.8	-9.2	54	42.79	32.48	3.92	34.39	103	335	Average
2412	99.72	-	-	97.66	32.5	3.95	34.39	103	335	Average
2412	112.42	-	-	110.36	32.5	3.95	34.39	103	335	Peak
2484	46.96	-27.04	74	44.7	32.58	4.05	34.37	103	335	Peak
2484	34.15	-19.85	54	31.89	32.58	4.05	34.37	103	335	Average

Test Mode :	Mode 1	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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
39.18	29.33	-10.67	40	46.88	13.27	0.8	31.62	-	-	Peak
76.44	29.58	-10.42	40	53.38	6.75	1.07	31.62	-	-	Peak
208.74	34.26	-9.24	43.5	54.12	9.92	1.69	31.47	-	-	Peak
526.8	38.37	-7.63	46	48.96	18.18	2.77	31.54	-	-	Peak
575.8	40.86	-5.14	46	50.77	18.84	2.89	31.64	100	92	Peak
605.9	39.77	-6.23	46	49.34	19.18	2.94	31.69	-	-	Peak
2389.99	53.06	-20.94	74	51.05	32.48	3.92	34.39	125	296	Peak
2389.99	40.23	-13.77	54	38.22	32.48	3.92	34.39	125	296	Average
2412	107.27	-	-	105.21	32.5	3.95	34.39	125	296	Peak
2412	94.75	-	-	92.69	32.5	3.95	34.39	125	296	Average
2500	48.99	-25.01	74	46.71	32.6	4.05	34.37	125	296	Peak
2500	32.43	-21.57	54	30.15	32.6	4.05	34.37	125	296	Average

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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
77.79	24.97	-15.03	40	48.69	6.82	1.08	31.62	-	-	Peak
144.48	27.93	-15.57	43.5	46.86	11.08	1.45	31.46	-	-	Peak
233.04	31.82	-14.18	46	49.98	11.52	1.78	31.46	-	-	Peak
456.8	33.36	-12.64	46	45.4	16.93	2.52	31.49	-	-	Peak
518.4	38.34	-7.66	46	49.04	18.08	2.74	31.52	-	-	Peak
609.4	39.71	-6.29	46	49.27	19.19	2.94	31.69	100	182	Peak
2364	51.15	-22.85	74	49.23	32.43	3.89	34.4	126	357	Peak
2364	40.2	-13.8	54	38.28	32.43	3.89	34.4	126	357	Average
2437	111.7	-	-	109.55	32.54	3.99	34.38	126	357	Peak
2437	99.72	-	-	97.57	32.54	3.99	34.38	126	357	Average
2486	51.57	-22.43	74	49.31	32.58	4.05	34.37	126	357	Peak
2486	38.51	-15.49	54	36.25	32.58	4.05	34.37	126	357	Average

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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
39.18	29.06	-10.94	40	46.61	13.27	0.8	31.62	-	-	Peak
78.33	29.1	-10.9	40	52.75	6.89	1.08	31.62	-	-	Peak
208.74	33.04	-10.46	43.5	52.9	9.92	1.69	31.47	-	-	Peak
523.3	38.73	-7.27	46	49.37	18.14	2.75	31.53	-	-	Peak
579.3	39.81	-6.19	46	49.69	18.88	2.89	31.65	100	21	Peak
659.8	36.84	-9.16	46	46.08	19.3	3.09	31.63	-	-	Peak
2390	50.5	-23.5	74	48.49	32.48	3.92	34.39	154	340	Peak
2390	38.99	-15.01	54	36.98	32.48	3.92	34.39	154	340	Average
2437	108.74	-	-	106.59	32.54	3.99	34.38	154	340	Peak
2437	96.39	-	-	94.24	32.54	3.99	34.38	154	340	Average
2492	49.94	-24.06	74	47.66	32.6	4.05	34.37	154	340	Peak
2492	37.35	-16.65	54	35.07	32.6	4.05	34.37	154	340	Average
4874	47.47	-26.53	74	63.24	34.9	5.82	56.49	131	359	Peak
4874	36.41	-17.59	54	52.2	34.9	5.8	56.49	131	359	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
78.33	24.3	-15.7	40	47.95	6.89	1.08	31.62	-	-	Peak
138.54	28.61	-14.89	43.5	47.26	11.44	1.44	31.53	-	-	Peak
233.58	32.83	-13.17	46	50.92	11.58	1.79	31.46	-	-	Peak
516.3	39.1	-6.9	46	49.85	18.04	2.73	31.52	-	-	Peak
603.8	40.28	-5.72	46	49.86	19.18	2.93	31.69	100	102	Peak
644.4	34.3	-11.7	46	43.63	19.27	3.03	31.63	-	-	Peak
2382	54.58	-19.42	74	52.59	32.46	3.92	34.39	122	359	Peak
2382	42.4	-11.6	54	40.41	32.46	3.92	34.39	122	359	Average
2462	113.21	-	-	111.01	32.56	4.02	34.38	122	359	Peak
2462	100.59	-	-	98.39	32.56	4.02	34.38	122	359	Average
2483.85	57.29	-16.71	74	55.03	32.58	4.05	34.37	122	359	Peak
2483.85	44.01	-9.99	54	41.75	32.58	4.05	34.37	122	359	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
38.64	29.63	-10.37	40	47.18	13.27	0.8	31.62	-	-	Peak
79.68	29.45	-10.55	40	53.03	6.95	1.08	31.61	-	-	Peak
233.58	38.58	-7.42	46	56.67	11.58	1.79	31.46	-	-	Peak
526.8	37.93	-8.07	46	48.52	18.18	2.77	31.54	-	-	Peak
598.9	40.62	-5.38	46	50.26	19.14	2.92	31.7	100	173	Peak
640.9	36.78	-9.22	46	46.12	19.26	3.03	31.63	-	-	Peak
2382	47.98	-26.02	74	45.99	32.46	3.92	34.39	116	70	Peak
2382	37.23	-16.77	54	35.24	32.46	3.92	34.39	116	70	Average
2462	106.86	-	-	104.66	32.56	4.02	34.38	116	70	Peak
2462	94.48	-	-	92.28	32.56	4.02	34.38	116	70	Average
2486.13	51.95	-22.05	74	49.69	32.58	4.05	34.37	116	70	Peak
2486.13	38.07	-15.93	54	35.81	32.58	4.05	34.37	116	70	Average
4924	47.95	-26.05	74	63.72	34.9	5.85	56.52	136	360	Peak
4924	36.66	-17.34	54	52.43	34.9	5.85	56.52	136	360	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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
76.44	22.89	-17.11	40	46.69	6.75	1.07	31.62	-	-	Peak
144.48	28.57	-14.93	43.5	47.5	11.08	1.45	31.46	100	116	Peak
247.89	25.68	-20.32	46	42.77	12.54	1.84	31.47	-	-	Peak
504.4	26.42	-19.58	46	37.36	17.88	2.68	31.5	-	-	Peak
663.3	30.31	-15.69	46	39.53	19.31	3.11	31.64	-	-	Peak
756.4	27.27	-18.73	46	35.35	20.17	3.35	31.6	-	-	Peak
2389.99	70.57	-3.43	74	68.56	32.48	3.92	34.39	102	3	Peak
2389.99	48.93	-5.07	54	46.92	32.48	3.92	34.39	102	3	Average
2412	107.79	-	-	105.73	32.5	3.95	34.39	102	3	Peak
2412	95.4	-	-	93.34	32.5	3.95	34.39	102	3	Average
2484	49.69	-24.31	74	47.43	32.58	4.05	34.37	102	3	Peak
2484	37.3	-16.7	54	35.04	32.58	4.05	34.37	102	3	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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
31.08	25.62	-14.38	40	39.25	17.31	0.72	31.66	-	-	Peak
39.18	23.1	-16.9	40	40.65	13.27	0.8	31.62	-	-	Peak
77.79	27.25	-12.75	40	50.97	6.82	1.08	31.62	100	281	Peak
504.4	25.71	-20.29	46	36.65	17.88	2.68	31.5	-	-	Peak
607.3	26.74	-19.26	46	36.31	19.18	2.94	31.69	-	-	Peak
651.4	28.78	-17.22	46	38.06	19.28	3.06	31.62	-	-	Peak
2389.99	66.88	-7.12	74	64.87	32.48	3.92	34.39	100	311	Peak
2389.99	43.85	-10.15	54	41.84	32.48	3.92	34.39	100	311	Average
2412	100.58	-	-	98.52	32.5	3.95	34.39	100	311	Peak
2412	87.71	-	-	85.65	32.5	3.95	34.39	100	311	Average
2486	48.81	-25.19	74	46.55	32.58	4.05	34.37	100	311	Peak
2486	32	-22	54	29.74	32.58	4.05	34.37	100	311	Average

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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
39.18	24.12	-15.88	40	41.67	13.27	0.8	31.62	-	-	Peak
76.98	22.53	-17.47	40	46.33	6.75	1.07	31.62	-	-	Peak
145.29	27.88	-15.62	43.5	46.86	11.02	1.45	31.45	-	-	Peak
504.4	27.44	-18.56	46	38.38	17.88	2.68	31.5	-	-	Peak
691.3	30.93	-15.07	46	40	19.37	3.23	31.67	100	106	Peak
834.8	26.32	-19.68	46	33.04	21.07	3.49	31.28	-	-	Peak
2390	47.39	-26.61	74	45.38	32.48	3.92	34.39	100	4	Peak
2390	35.64	-18.36	54	33.63	32.48	3.92	34.39	100	4	Average
2437	106.18	-	-	104.05	32.52	3.99	34.38	100	4	Peak
2437	92.74	-	-	90.61	32.52	3.99	34.38	100	4	Average
2500	45.71	-28.29	74	43.43	32.6	4.05	34.37	100	4	Peak
2500	33.88	-20.12	54	31.6	32.6	4.05	34.37	100	4	Average

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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	24.01	-15.99	40	37.06	17.91	0.72	31.68	-	-	Peak
32.43	29.91	-10.09	40	44.69	16.12	0.73	31.63	100	22	Peak
78.33	26.26	-13.74	40	49.91	6.89	1.08	31.62	-	-	Peak
479.9	26.73	-19.27	46	38.19	17.41	2.6	31.47	-	-	Peak
504.4	27.02	-18.98	46	37.96	17.88	2.68	31.5	-	-	Peak
659.8	27.9	-18.1	46	37.14	19.3	3.09	31.63	-	-	Peak
2350	45.34	-28.66	74	43.48	32.41	3.86	34.41	109	20	Peak
2350	33.62	-20.38	54	31.76	32.41	3.86	34.41	109	20	Average
2437	100.3	-	-	98.15	32.54	3.99	34.38	109	20	Peak
2437	87.63	-	-	85.48	32.54	3.99	34.38	109	20	Average
2486	44.72	-29.28	74	42.46	32.58	4.05	34.37	109	20	Peak
2486	32.76	-21.24	54	30.5	32.58	4.05	34.37	109	20	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
39.18	25.46	-14.54	40	43.01	13.27	0.8	31.62	-	-	Peak
77.79	23.21	-16.79	40	46.93	6.82	1.08	31.62	-	-	Peak
145.29	27.91	-15.59	43.5	46.89	11.02	1.45	31.45	-	-	Peak
414.8	32.61	-13.39	46	45.5	16.08	2.44	31.41	100	129	Peak
700.4	31.45	-14.55	46	40.47	19.39	3.27	31.68	-	-	Peak
880.3	26.47	-19.53	46	32.37	21.46	3.68	31.04	-	-	Peak
2388	54.09	-19.91	74	52.08	32.48	3.92	34.39	100	333	Peak
2388	40.76	-13.24	54	38.75	32.48	3.92	34.39	100	333	Average
2462	108.63	-	-	106.43	32.56	4.02	34.38	100	333	Peak
2462	95.32	-	-	93.12	32.56	4.02	34.38	100	333	Average
2483.5	71.38	-2.62	74	69.12	32.58	4.05	34.37	100	333	Peak
2483.5	50.46	-3.54	54	48.2	32.58	4.05	34.37	100	333	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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	26.88	-13.12	40	39.93	17.91	0.72	31.68	-	-	Peak
39.18	26.15	-13.85	40	43.7	13.27	0.8	31.62	-	-	Peak
79.14	27.27	-12.73	40	50.85	6.95	1.08	31.61	100	27	Peak
610.8	27.35	-18.65	46	36.89	19.19	2.95	31.68	-	-	Peak
651.4	26.75	-19.25	46	36.03	19.28	3.06	31.62	-	-	Peak
712.3	27.44	-18.56	46	36.27	19.55	3.29	31.67	-	-	Peak
2390	49.13	-24.87	74	47.12	32.48	3.92	34.39	100	130	Peak
2390	32.84	-21.16	54	30.83	32.48	3.92	34.39	100	130	Average
2462	98.83	-	-	96.63	32.56	4.02	34.38	100	130	Peak
2462	85.55	-	-	83.35	32.56	4.02	34.38	100	130	Average
2483.5	61.35	-12.65	74	59.09	32.58	4.05	34.37	100	130	Peak
2483.5	39.61	-14.39	54	37.35	32.58	4.05	34.37	100	130	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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
77.79	23.13	-16.87	40	46.85	6.82	1.08	31.62	-	-	Peak
145.29	27.06	-16.44	43.5	46.04	11.02	1.45	31.45	-	-	Peak
229.53	24.62	-21.38	46	42.98	11.33	1.77	31.46	-	-	Peak
479.9	25.55	-20.45	46	37.01	17.41	2.6	31.47	-	-	Peak
694.8	30.76	-15.24	46	39.81	19.38	3.24	31.67	100	135	Peak
806.8	26.13	-19.87	46	33.37	20.83	3.38	31.45	-	-	Peak
2389.99	71.08	-2.92	74	69.07	32.48	3.92	34.39	131	325	Peak
2389.99	50.16	-3.84	54	48.15	32.48	3.92	34.39	131	325	Average
2412	104.68	-	-	102.62	32.5	3.95	34.39	131	325	Peak
2412	92.21	-	-	90.15	32.5	3.95	34.39	131	325	Average
2492	45.76	-28.24	74	43.48	32.6	4.05	34.37	131	325	Peak
2492	33.66	-20.34	54	31.38	32.6	4.05	34.37	131	325	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	46~47%
Test Engineer :	Kai 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	25.44	-14.56	40	38.49	17.91	0.72	31.68	-	-	Peak
39.18	25.27	-14.73	40	42.82	13.27	0.8	31.62	-	-	Peak
78.33	27	-13	40	50.65	6.89	1.08	31.62	100	72	Peak
479.9	25.25	-20.75	46	36.71	17.41	2.6	31.47	-	-	Peak
537.3	25.86	-20.14	46	36.3	18.32	2.8	31.56	-	-	Peak
654.9	27.96	-18.04	46	37.23	19.29	3.07	31.63	-	-	Peak
2389.99	64.59	-9.41	74	62.58	32.48	3.92	34.39	129	296	Peak
2389.99	43.18	-10.82	54	41.17	32.48	3.92	34.39	129	296	Average
2412	101.47	-	-	99.41	32.5	3.95	34.39	129	296	Peak
2412	89.12	-	-	87.06	32.5	3.95	34.39	129	296	Average
2484	45.65	-28.35	74	43.39	32.58	4.05	34.37	129	296	Peak
2484	32.69	-21.31	54	30.43	32.58	4.05	34.37	129	296	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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
32.43	19.88	-20.12	40	34.66	16.12	0.73	31.63	-	-	Peak
77.79	23.12	-16.88	40	46.84	6.82	1.08	31.62	-	-	Peak
143.94	28.52	-14.98	43.5	47.4	11.15	1.45	31.48	100	118	Peak
504.4	27.67	-18.33	46	38.61	17.88	2.68	31.5	-	-	Peak
607.3	26.38	-19.62	46	35.95	19.18	2.94	31.69	-	-	Peak
694.8	29.57	-16.43	46	38.62	19.38	3.24	31.67	-	-	Peak
2390	48.77	-25.23	74	46.76	32.48	3.92	34.39	105	332	Peak
2390	36.58	-17.42	54	34.57	32.48	3.92	34.39	105	332	Average
2437	107.35	-	-	105.22	32.52	3.99	34.38	105	332	Peak
2437	94.09	-	-	91.94	32.54	3.99	34.38	105	332	Average
2484	47.35	-26.65	74	45.09	32.58	4.05	34.37	105	332	Peak
2484	34.58	-19.42	54	32.32	32.58	4.05	34.37	105	332	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	46~47%
Test Engineer :	Kai 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	26.65	-13.35	40	40.28	17.31	0.72	31.66	-	-	Peak
39.99	26.17	-13.83	40	44.12	12.86	0.81	31.62	-	-	Peak
78.33	27.57	-12.43	40	51.22	6.89	1.08	31.62	100	169	Peak
537.3	24.74	-21.26	46	35.18	18.32	2.8	31.56	-	-	Peak
610.8	27.9	-18.1	46	37.44	19.19	2.95	31.68	-	-	Peak
707.4	27.56	-18.44	46	36.47	19.48	3.28	31.67	-	-	Peak
2388	46	-28	74	43.99	32.48	3.92	34.39	128	267	Peak
2388	32.89	-21.11	54	30.88	32.48	3.92	34.39	128	267	Average
2437	100.72	-	-	98.57	32.54	3.99	34.38	128	267	Peak
2437	88.21	-	-	86.06	32.54	3.99	34.38	128	267	Average
2494	45.43	-28.57	74	43.15	32.6	4.05	34.37	128	267	Peak
2494	32.44	-21.56	54	30.16	32.6	4.05	34.37	128	267	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
30	33.39	-6.61	40	46.44	17.91	0.72	31.68	100	123	Peak
39.18	31.74	-8.26	40	49.29	13.27	0.8	31.62	-	-	Peak
135.84	31.32	-12.18	43.5	49.89	11.55	1.42	31.54	-	-	Peak
539.4	29.05	-16.95	46	39.45	18.35	2.81	31.56	-	-	Peak
607.3	36.7	-9.3	46	46.27	19.18	2.94	31.69	-	-	Peak
698.3	36.27	-9.73	46	45.3	19.39	3.26	31.68	-	-	Peak
2380	49.8	-24.2	74	47.81	32.46	3.92	34.39	101	341	Peak
2380	37.97	-16.03	54	35.98	32.46	3.92	34.39	101	341	Average
2462	106.6	-	-	104.4	32.56	4.02	34.38	101	341	Peak
2462	93.62	-	-	91.42	32.56	4.02	34.38	101	341	Average
2483.66	71.22	-2.78	74	68.96	32.58	4.05	34.37	101	341	Peak
2483.66	49.42	-4.58	54	47.16	32.58	4.05	34.37	101	341	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
38.64	28.35	-11.65	40	45.9	13.27	0.8	31.62	-	-	Peak
79.14	26.48	-13.52	40	50.06	6.95	1.08	31.61	-	-	Peak
135.84	29.17	-14.33	43.5	47.74	11.55	1.42	31.54	-	-	Peak
542.9	29.51	-16.49	46	39.85	18.4	2.83	31.57	-	-	Peak
614.3	34.89	-11.11	46	44.41	19.2	2.96	31.68	100	119	Peak
691.3	32.27	-13.73	46	41.34	19.37	3.23	31.67	-	-	Peak
2382	47.03	-26.97	74	45.04	32.46	3.92	34.39	154	321	Peak
2382	34.74	-19.26	54	32.75	32.46	3.92	34.39	154	321	Average
2462	99.42	-	-	97.22	32.56	4.02	34.38	154	321	Peak
2462	87.36	-	-	85.16	32.56	4.02	34.38	154	321	Average
2484.42	61.32	-12.68	74	59.06	32.58	4.05	34.37	154	321	Peak
2484.42	40.13	-13.87	54	37.87	32.58	4.05	34.37	154	321	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
86.43	24.77	-15.23	40	46.96	8.26	1.12	31.57	-	-	Peak
135.03	23.96	-19.54	43.5	42.5	11.59	1.41	31.54	-	-	Peak
202.53	28.21	-15.29	43.5	48.48	9.54	1.67	31.48	-	-	Peak
518.4	29.04	-16.96	46	39.74	18.08	2.74	31.52	-	-	Peak
589.8	34.91	-11.09	46	44.64	19.03	2.91	31.67	100	25	Peak
656.3	30.88	-15.12	46	40.14	19.29	3.08	31.63	-	-	Peak
2382	53.07	-20.93	74	51.08	32.46	3.92	34.39	103	311	Peak
2382	41.42	-12.58	54	39.43	32.46	3.92	34.39	103	311	Average
2462	109.32	-	-	107.12	32.56	4.02	34.38	103	311	Peak
2462	96.56	-	-	94.36	32.56	4.02	34.38	103	311	Average
2483.5	73.17	-0.83	74	70.91	32.58	4.05	34.37	103	311	Peak
2483.5	52.01	-1.99	54	49.75	32.58	4.05	34.37	103	311	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	46~47%
Test Engineer :	Kai 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
39.99	28.96	-11.04	40	46.91	12.86	0.81	31.62	-	-	Peak
136.38	31.82	-11.68	43.5	50.42	11.51	1.43	31.54	-	-	Peak
197.13	30.61	-12.89	43.5	51.1	9.36	1.64	31.49	-	-	Peak
525.4	26.46	-19.54	46	37.07	18.17	2.76	31.54	-	-	Peak
652.8	40.44	-5.56	46	49.71	19.29	3.06	31.62	100	281	Peak
754.3	34.62	-11.38	46	42.74	20.14	3.35	31.61	-	-	Peak
2388	48.85	-25.15	74	46.84	32.48	3.92	34.39	100	38	Peak
2388	37.27	-16.73	54	35.26	32.48	3.92	34.39	100	38	Average
2462	102.29	-	-	100.09	32.56	4.02	34.38	100	38	Peak
2462	89.43	-	-	87.23	32.56	4.02	34.38	100	38	Average
2483.5	65.77	-8.23	74	63.51	32.58	4.05	34.37	100	38	Peak
2483.5	44.95	-9.05	54	42.69	32.58	4.05	34.37	100	38	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	Mar. 19, 2009	Mar. 18, 2011	Conducted (TH02-HY)
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. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 25, 2010	Feb. 24, 2011	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 25, 2010	Feb. 24, 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)
ISN	Teseq GmbH	ISN T400A	25696	N/A	Jun. 19, 2010	Jun. 18, 2011	Conduction (CO05-HY)
ISN	Teseq GmbH	ISN T800	27134	N/A	Jun. 19, 2010	Jun. 18, 2011	Conduction (CO05-HY)
DC- LISN	R&S	ESH3-26	1000485	0.1MHz~200MHz	Jun. 17, 2010	Jun. 16, 2011	Conduction (CO05-HY)
DC- LISN	R&S	ESH3-26	1000484	0.1MHz~200MHz	Jun. 17, 2010	Jun. 16, 2011	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117995	N/A	Mar. 19, 2009	Mar. 18, 2011	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 25, 2010	Oct. 24, 2011	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz-1000MHz	Apr. 28, 2010	Apr. 27, 2011	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Oct. 31, 2010	Oct. 31, 2011	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 02, 2010	Aug. 01, 2011	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AH-0801	95119	8GHz~18GHz	Oct. 20, 2010	Oct. 19, 2011	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 15, 2010	Apr. 14, 2011	Radiation (03CH06-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Amplifier	Agilent	310N	186713	9KHz~1GHz	Apr. 15, 2010	Apr. 14, 2011	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver 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**				