



FCC RF Test Report

APPLICANT : Motorola Mobility, Inc.
EQUIPMENT : Quad-Band GSM/GPRS/EDGE and Dual-Band
WCDMA Mobile Phone with BT/Wifi
BRAND NAME : Motorola
MODEL NAME : XT560
MARKETING NAME : MOTOROLA DEFY PRO
TYPE NAME : M0CAD
GPPD NUMBER : 3245
FCC ID : IHDT56NB1
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Jan. 12, 2012 and completely tested on Mar. 31, 2012. 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:

Jones Tsai / 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 RESULT4

1 GENERAL DESCRIPTION.....5

 1.1 Applicant.....5

 1.2 Manufacturer.....5

 1.3 Feature of Equipment Under Test5

 1.4 Testing Site.....6

 1.5 Applied Standards6

 1.6 Ancillary Equipment List7

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....8

 2.1 RF Power.....8

 2.2 Maximum Peak Conducted Output Power:9

 2.3 Test Mode.....10

 2.4 Connection Diagram of Test System.....11

 2.5 RF Utility11

3 TEST RESULT.....12

 3.1 6dB Bandwidth Measurement12

 3.2 Output Power Measurement.....19

 3.3 Band Edges Measurement21

 3.4 Spurious Emission Measurement.....29

 3.5 Power Spectral Density Measurement39

 3.6 AC Conducted Emission Measurement.....46

 3.7 Radiated Emission Measurement.....50

 3.8 Antenna Requirements.....71

4 LIST OF MEASURING EQUIPMENT72

5 UNCERTAINTY OF EVALUATION.....73

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 8.57 dB at 2.180 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 8.63 dB at 30.000 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Motorola Mobility, Inc.

No. 1, Wang Jing East Road, Chao Yang District, 100102 Beijing, P. R. China

1.2 Manufacturer

Foxconn (TianJin) Precision Industry Co., Ltd.

No. 207, Nanhai Road, TEDA, Tianjin, P.R. China, 300457

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Quad-Band GSM/GPRS/EDGE and Dual-Band WCDMA Mobile Phone with BT/Wifi
Brand Name	Motorola
Model Name	XT560
Marketing Name	MOTOROLA DEFY PRO
Type Name	M0CAD
FCC ID	IHDT56NB1
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 17.95 dBm (0.0624 W) 802.11g : 20.58 dBm (0.1143 W) 802.11g/n (BW 20MHz) : 20.47 dBm (0.1114 W)
Antenna Type	PIFA Antenna with gain -4.00 dBi
HW Version	PR2.5
SW Version	1.510.9000
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark: 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 1 st 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.
	03CH07-HY	722060/4086B-1

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.	
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	Sporton Site No. :	FCC/IC Registration No.
	CO01-KS	149928/4086E-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
- ♦ IC RSS-Gen Issue 3

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, 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.	DC Power Supply	IPWARD	GPS-30300	N/A	N/A	Unshielded, 1.8 m
3.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	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	16.69	16.67	16.64	16.63
CH 06	2437 MHz	17.43	17.38	17.35	17.39
CH 11	2462 MHz	17.95	17.89	17.85	17.79

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	19.56	19.49	19.36	19.29	19.12	19.08	19.04	19.01
CH 06	2437 MHz	20.19	20.14	20.06	19.98	19.92	19.87	19.81	19.79
CH 11	2462 MHz	20.58	20.49	20.44	20.38	20.29	20.18	20.13	20.26

Channel	Frequency	2.4GHz 802.11g/n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	19.78	19.72	19.67	19.59	19.54	19.49	19.42	19.37
CH 06	2437 MHz	20.22	20.11	20.05	19.92	19.86	19.79	19.72	19.69
CH 11	2462 MHz	20.47	20.46	20.39	20.31	20.27	20.24	20.17	20.13

Remark: The EUT is programmed to transmit signals continuously for all testing.

2.2 Maximum Peak Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
	1	6	11	1	6	11
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	16.69	17.43	17.95	19.56	20.19	20.58

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
	1	6	11
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	19.78	20.22	20.47

Remark:

The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g, MCS0 for 802.11g/n (BW 20MHz), for all the test cases due to the highest RF output power.

2.3 Test Mode

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

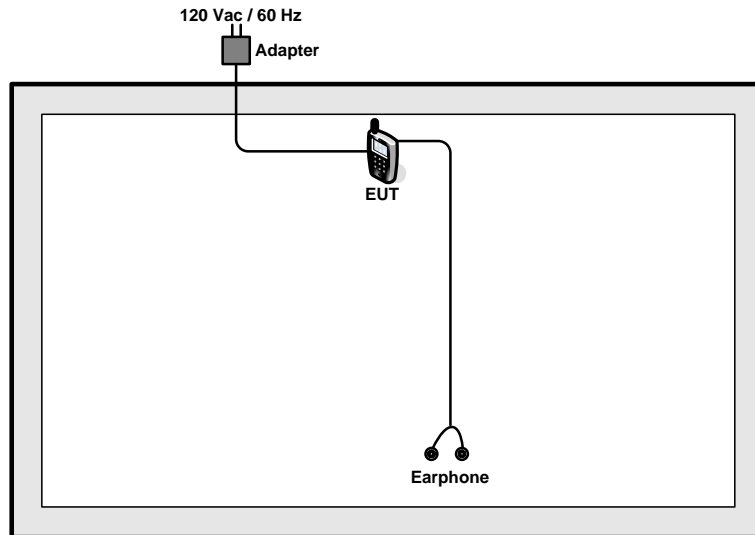
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

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

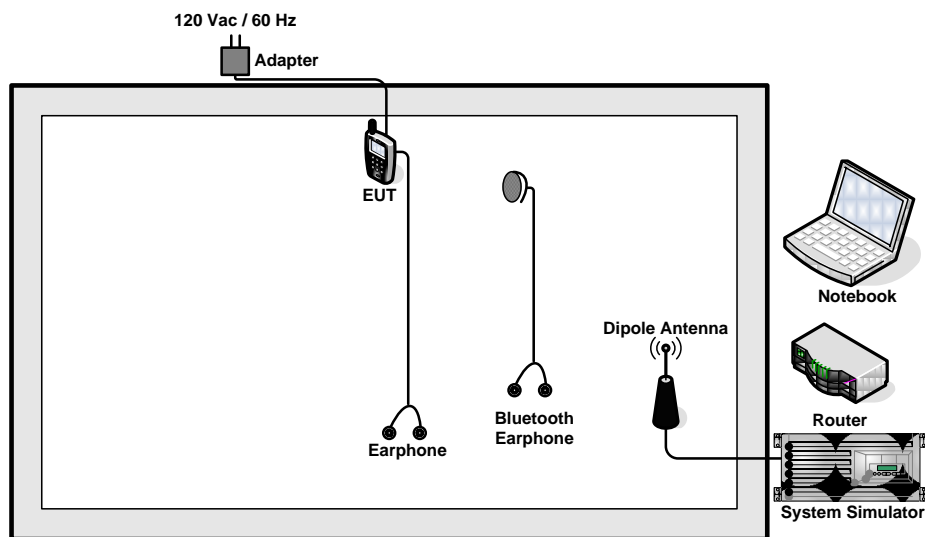
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11g/n (BW 20M)_CH01_2412 MHz Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz Mode 9: 802.11g/n (BW 20M)_CH11_2462 MHz
Radiated 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: 802.11g/n (BW 20M)_CH01_2412 MHz Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz Mode 9: 802.11g/n (BW 20M)_CH11_2462 MHz
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link + Earphone + Camera + USB Cable (Charging from Adapter) Mode 2 : GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter)	
Remark: The worst case of conducted emission is mode 2; only the test data of it was reported.		

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For WLAN function, key in “* # * # 373 # * # *” on the EUT directly. Then, the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

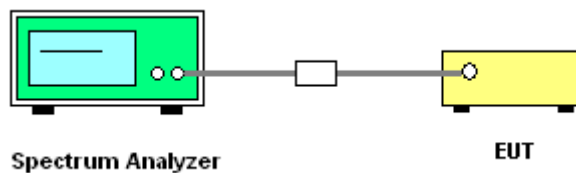
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup



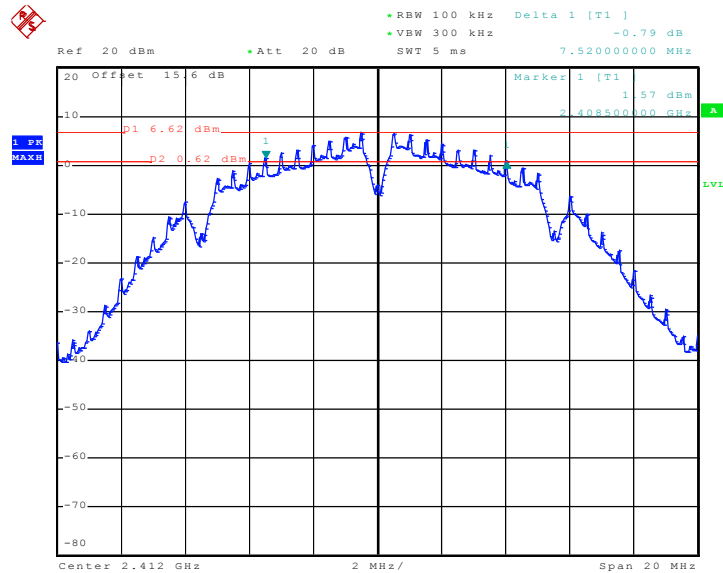


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

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

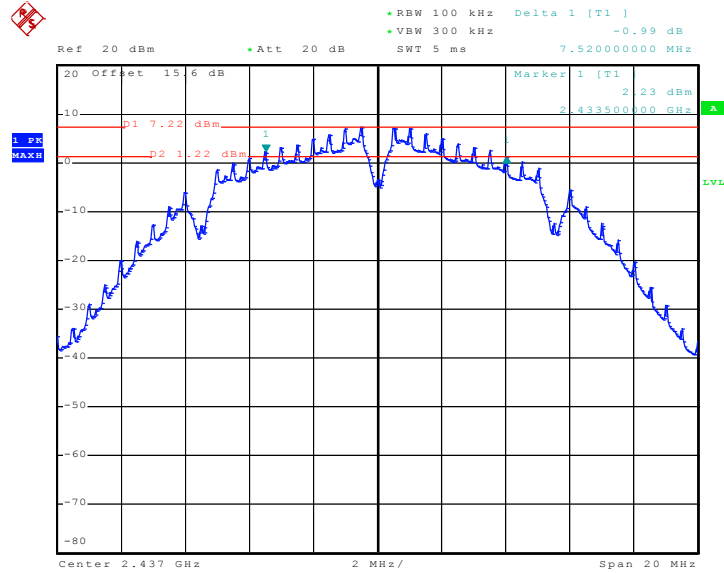
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 30.MAR.2012 23:11:41

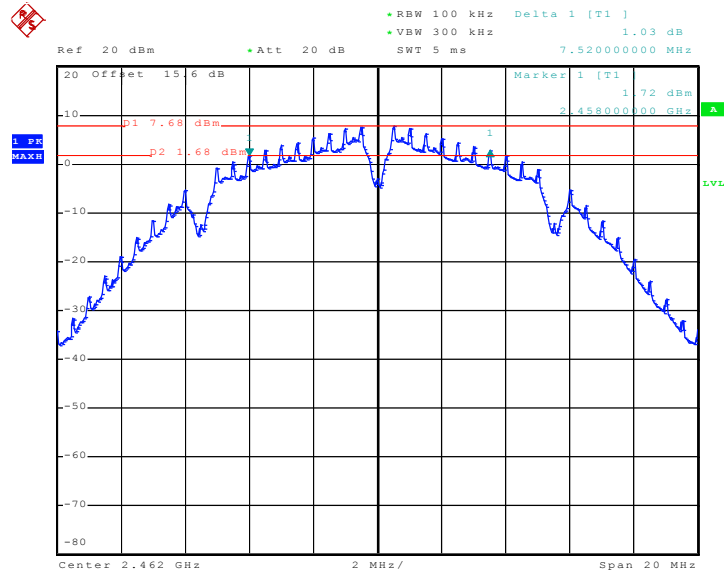


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 30.MAR.2012 23:28:08

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



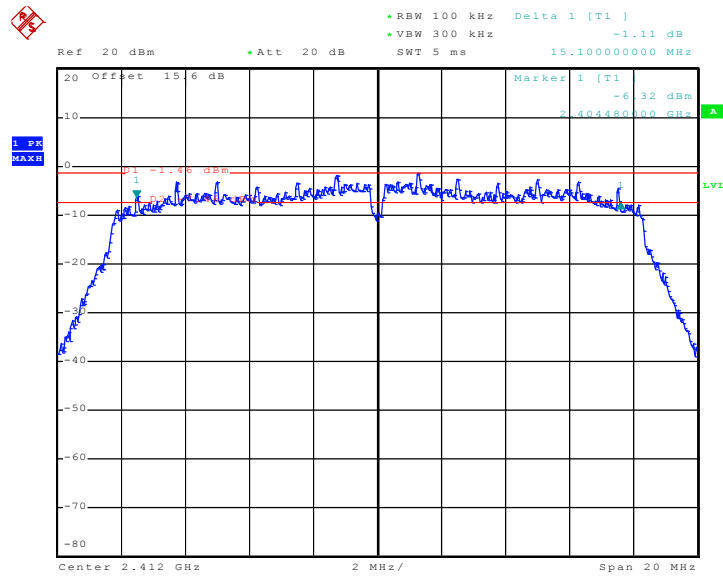
Date: 30.MAR.2012 23:45:49



Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.10	0.5	Pass
06	2437	15.12	0.5	Pass
11	2462	15.08	0.5	Pass

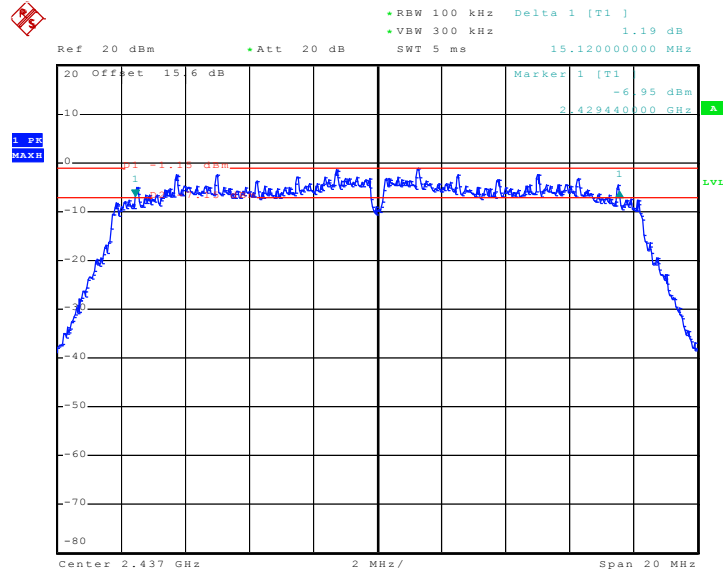
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 31.MAR.2012 00:02:35

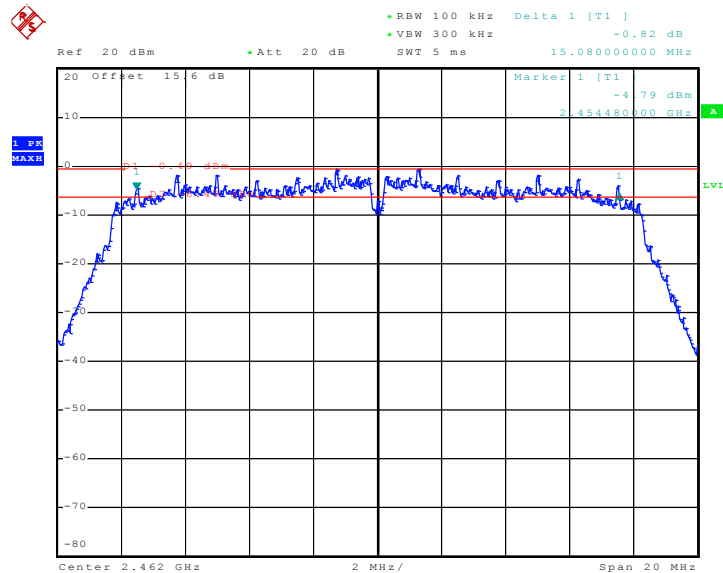


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 31.MAR.2012 00:16:09

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



Date: 31.MAR.2012 00:29:07

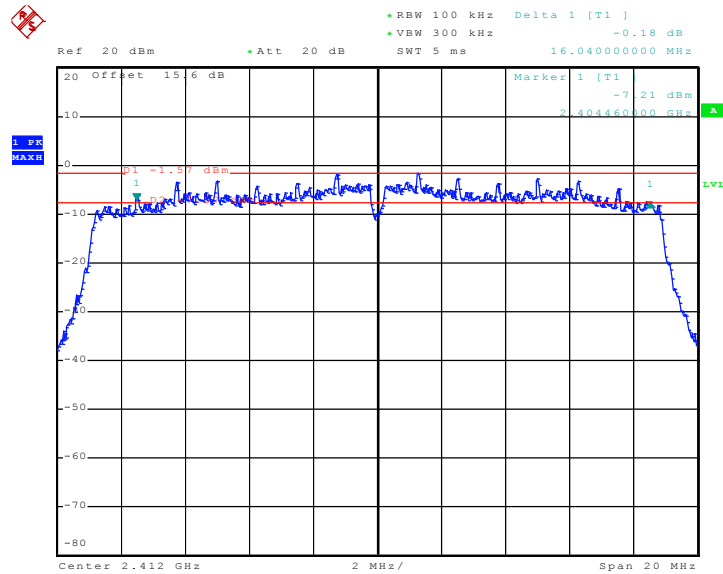


Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.04	0.5	Pass
06	2437	15.12	0.5	Pass
11	2462	16.04	0.5	Pass

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

01

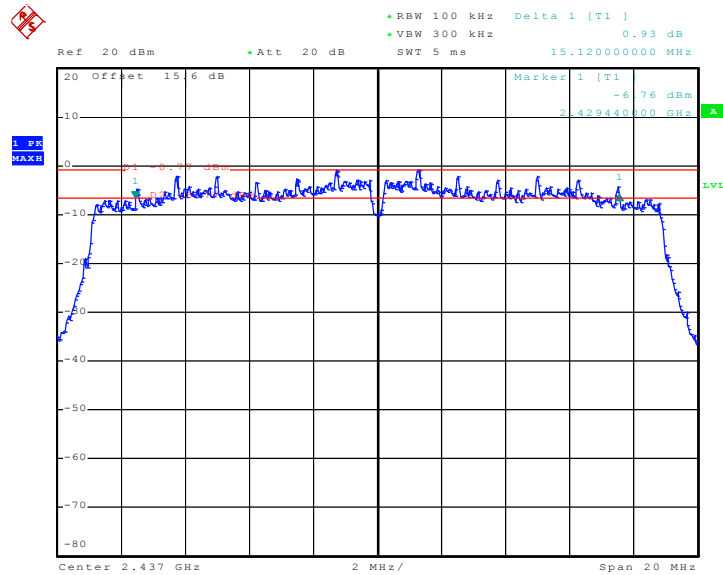


Date: 31.MAR.2012 00:43:46



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

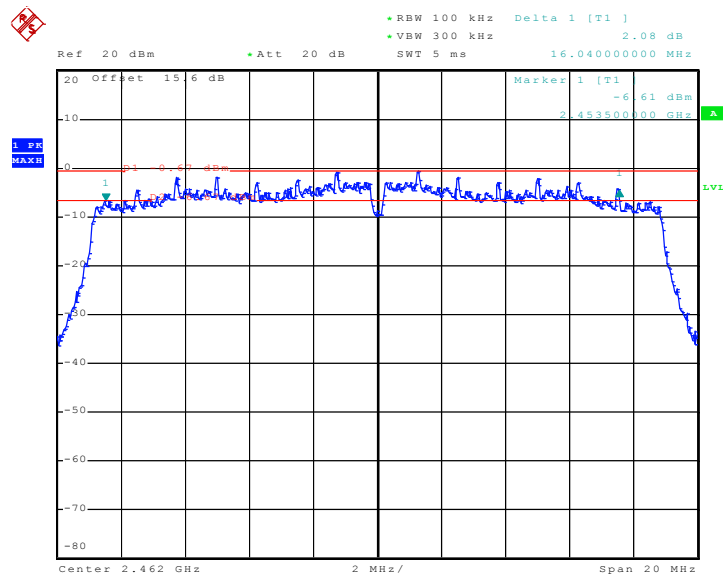
06



Date: 31.MAR.2012 00:59:16

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

11



Date: 31.MAR.2012 01:24:17

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.

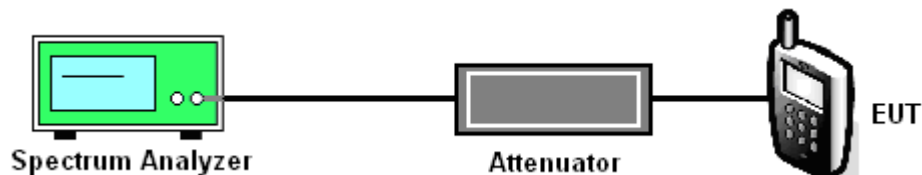
3.2.2 Measuring Instruments

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 :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	16.69	30	Pass
06	2437	17.43	30	Pass
11	2462	17.95	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.56	30	Pass
06	2437	20.19	30	Pass
11	2462	20.58	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.78	30	Pass
06	2437	20.22	30	Pass
11	2462	20.47	30	Pass



3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 KHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3.3.2 Measuring Instruments

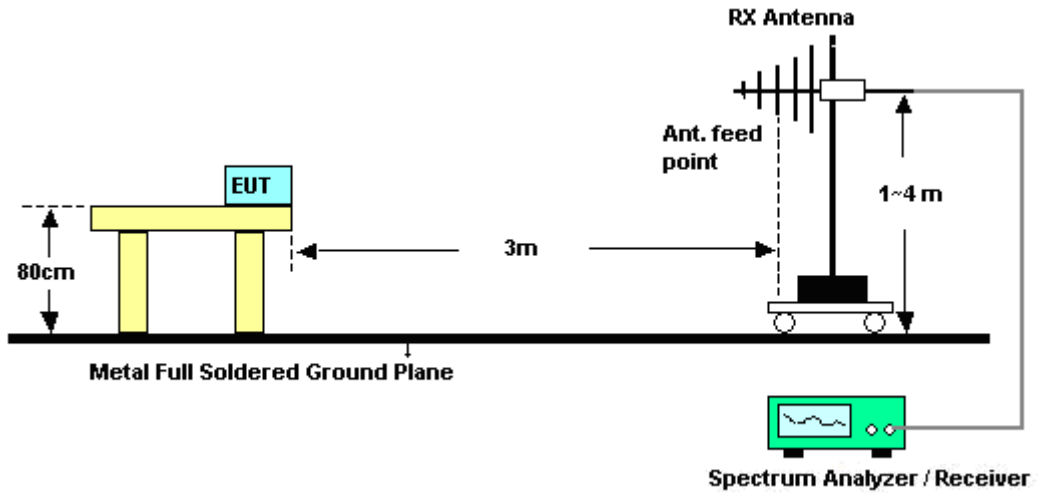
See list of measuring instruments of this test report.

3.3.3 Test Procedures

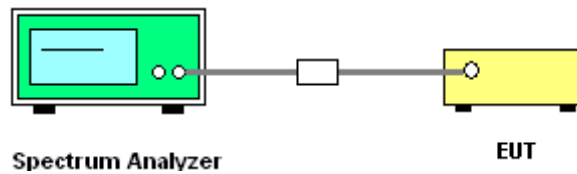
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized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

3.3.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>





3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.86	53.84	-20.16	74	49.74	32.03	6.03	33.96	100	99	Peak
2384.86	44.46	-9.54	54	40.36	32.03	6.03	33.96	100	99	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.61	50.44	-23.56	74	46.31	32.06	6.03	33.96	100	38	Peak
2389.61	38.52	-15.48	54	34.39	32.06	6.03	33.96	100	38	Average

Test Mode :	Mode 3	Temperature :	22~23°C
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2485.18	52.07	-21.93	74	47.71	32.18	6.18	34	100	96	Peak
2485.18	43.53	-10.47	54	39.17	32.18	6.18	34	100	96	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.61	49.39	-24.61	74	45.03	32.18	6.18	34	100	70	Peak
2484.61	39.46	-14.54	54	35.1	32.18	6.18	34	100	70	Average



Test Mode :	Mode 4	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.61	56.98	-17.02	74	52.85	32.06	6.03	33.96	100	88	Peak
2389.61	36.9	-17.1	54	32.77	32.06	6.03	33.96	100	88	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	52.92	-21.08	74	48.79	32.06	6.03	33.96	100	38	Peak
2389.99	36.12	-17.88	54	31.99	32.06	6.03	33.96	100	38	Average

Test Mode :	Mode 6	Temperature :	22~23°C
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	58.64	-15.36	74	54.28	32.18	6.18	34	100	95	Peak
2483.66	38.73	-15.27	54	34.37	32.18	6.18	34	100	95	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	52.06	-21.94	74	47.7	32.18	6.18	34	100	71	Peak
2483.85	36.14	-17.86	54	31.78	32.18	6.18	34	100	71	Average



Test Mode :	Mode 7	Temperature :	22~23°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.85	59.17	-14.83	74	55.04	32.06	6.03	33.96	100	87	Peak
2388.85	38.14	-15.86	54	34.01	32.06	6.03	33.96	100	87	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.42	55.79	-18.21	74	51.66	32.06	6.03	33.96	100	38	Peak
2389.42	36.87	-17.13	54	32.74	32.06	6.03	33.96	100	38	Average

Test Mode :	Mode 9	Temperature :	22~23°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.13	58.67	-15.33	74	54.31	32.18	6.18	34	100	96	Peak
2486.13	39.8	-14.2	54	35.44	32.18	6.18	34	100	96	Average

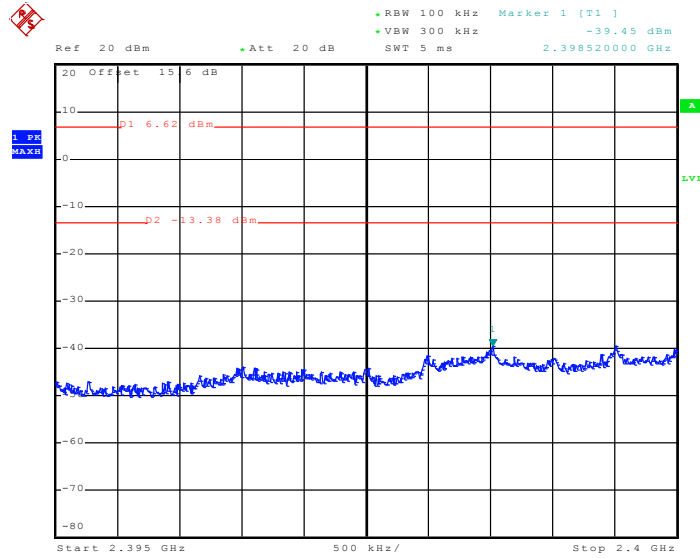
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	55.15	-18.85	74	50.79	32.18	6.18	34	100	70	Peak
2483.85	36.79	-17.21	54	32.43	32.18	6.18	34	100	70	Average



3.3.6 Test Plots of Conducted Band Edges

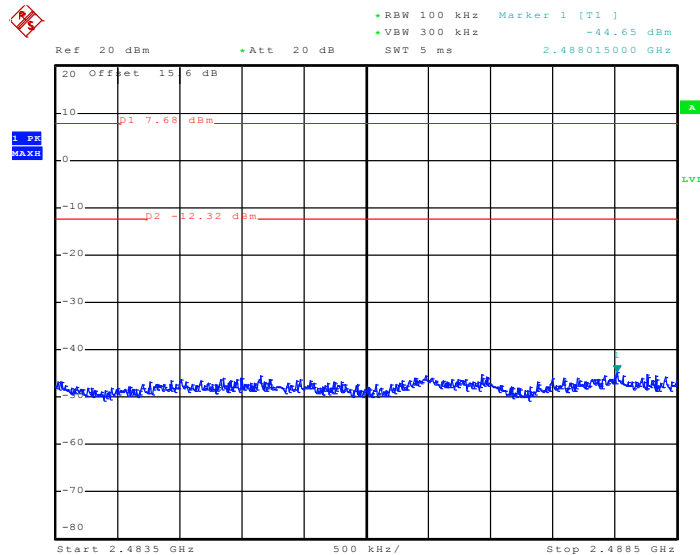
Test Mode :	Mode 1 and 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Jun Liu

Low Band Edge Plot on 802.11b Channel 01



Date: 30.MAR.2012 23:12:51

High Band Edge Plot on 802.11b Channel 11

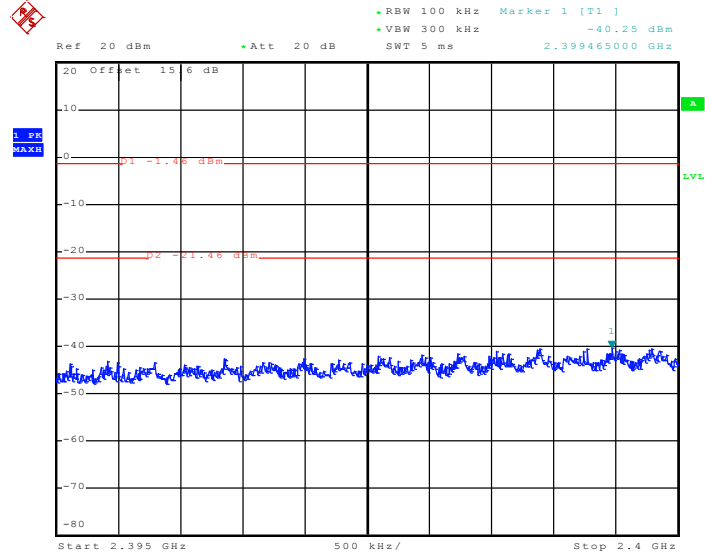


Date: 30.MAR.2012 23:46:36



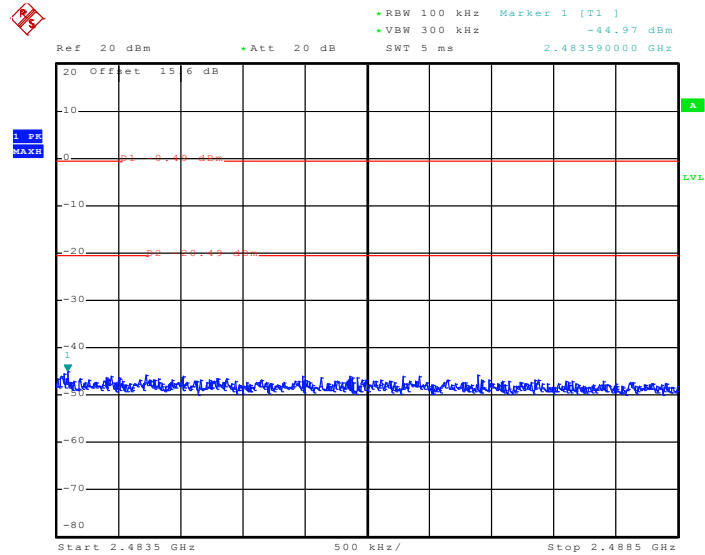
Test Mode :	Mode 4 and 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Jun Liu

Low Band Edge Plot on 802.11g Channel 01



Date: 31.MAR.2012 00:03:43

High Band Edge Plot on 802.11g Channel 11

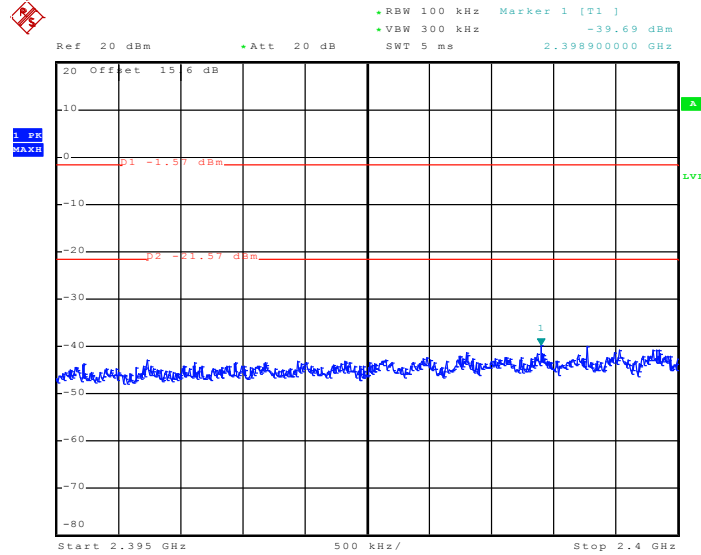


Date: 31.MAR.2012 00:29:52



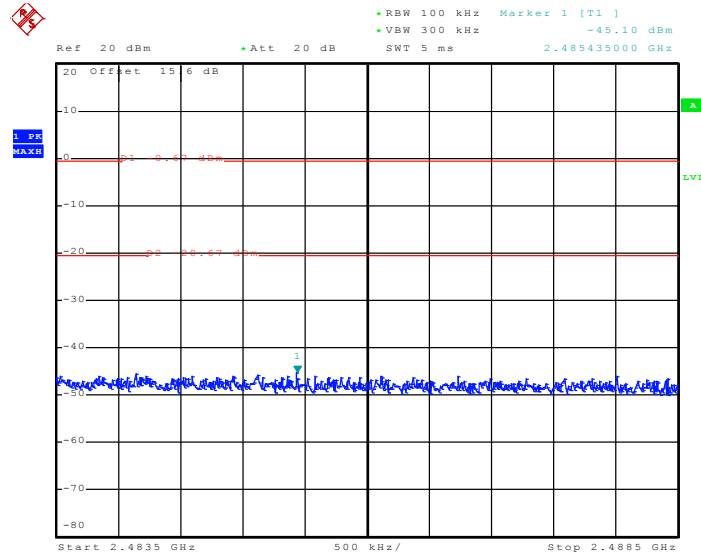
Test Mode :	Mode 7 and 9	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Jun Liu

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



Date: 31.MAR.2012 00:44:55

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



Date: 31.MAR.2012 01:25:18

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.

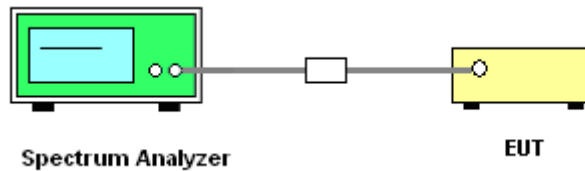
3.4.2 Measuring Instruments

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) \geq RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 KHz RBW.

3.4.4 Test Setup

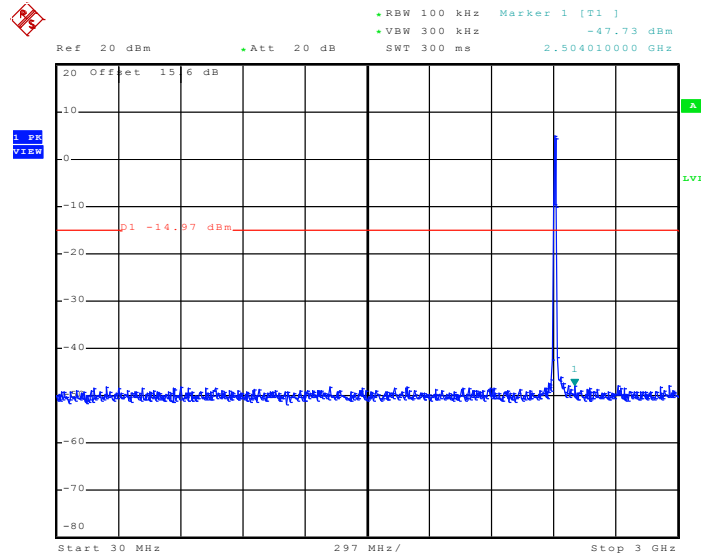




3.4.5 Test Plots of Spurious Emission

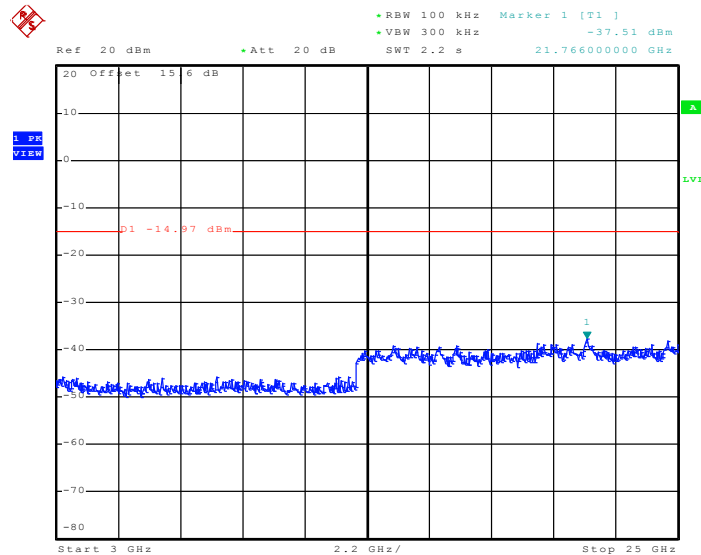
Test Mode :	Mode 1	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 30.MAR.2012 23:15:43

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

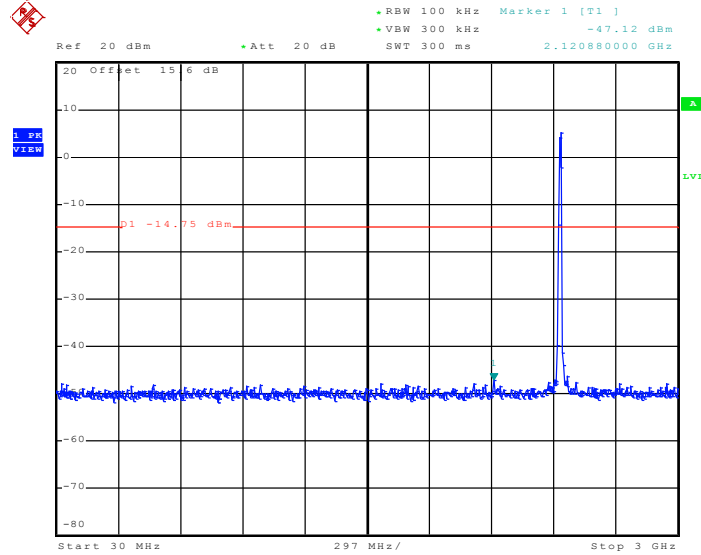


Date: 30.MAR.2012 23:16:00



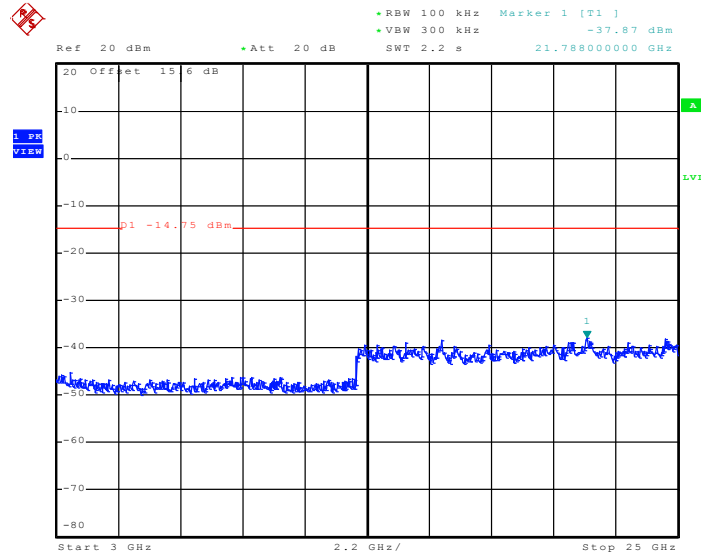
Test Mode :	Mode 2	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 30.MAR.2012 23:31:24

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

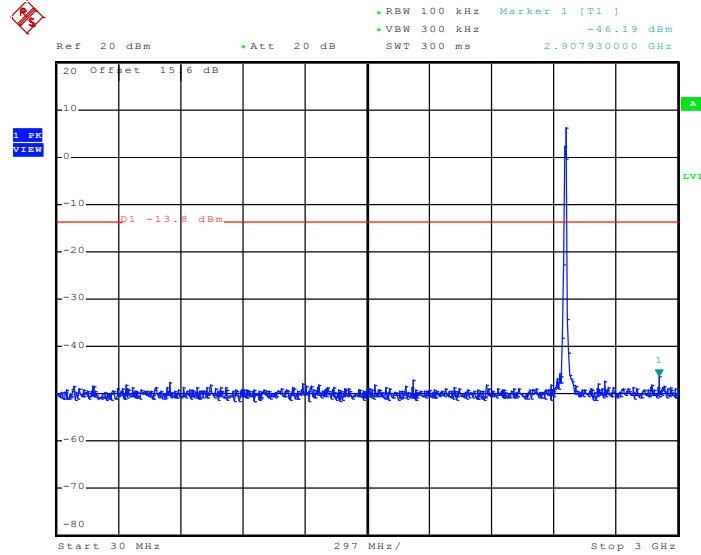


Date: 30.MAR.2012 23:31:41



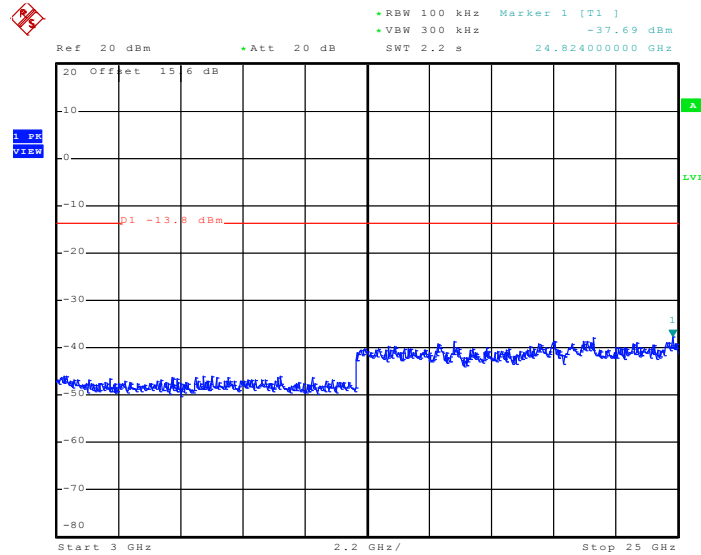
Test Mode :	Mode 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 30.MAR.2012 23:47:23

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

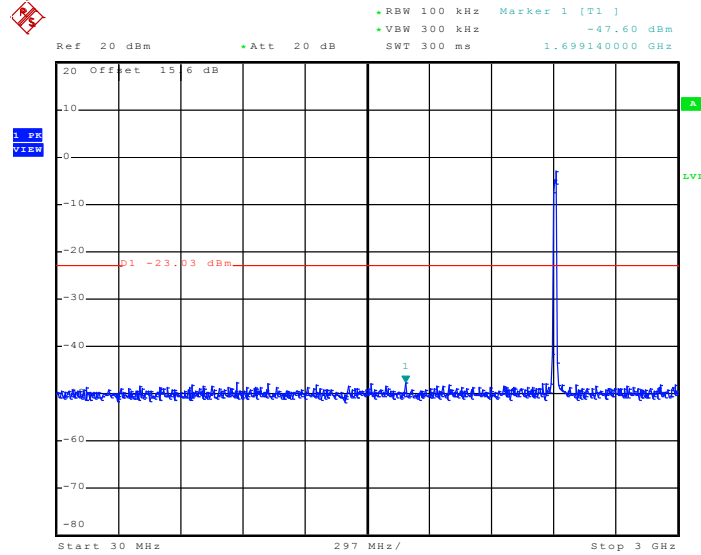


Date: 30.MAR.2012 23:47:40



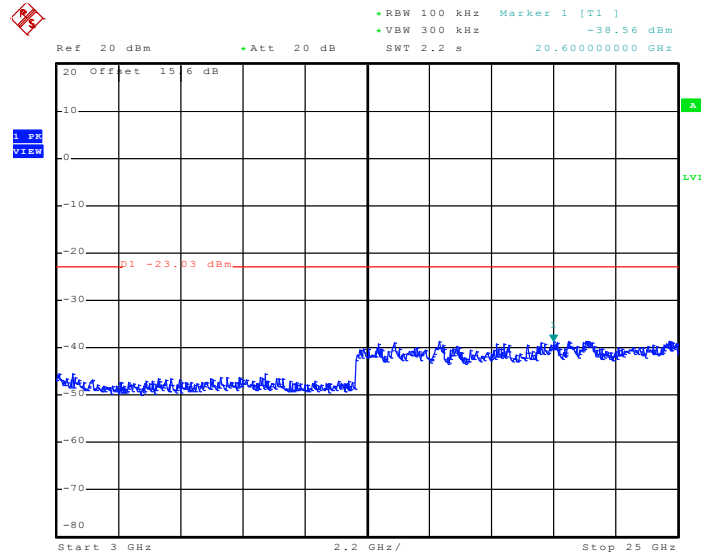
Test Mode :	Mode 4	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 00:13:51

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

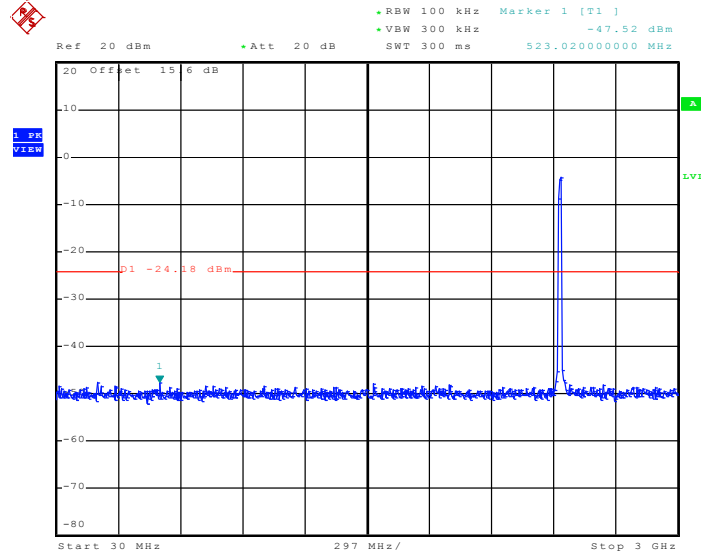


Date: 31.MAR.2012 00:14:07



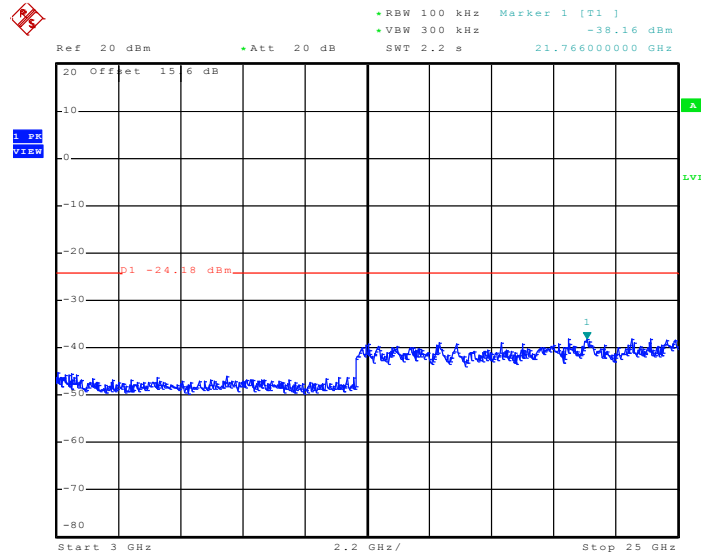
Test Mode :	Mode 5	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 00:17:34

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

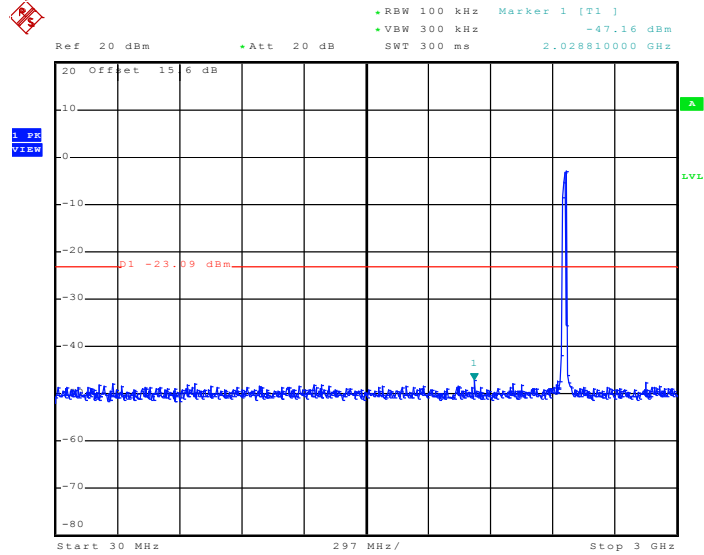


Date: 31.MAR.2012 00:17:51



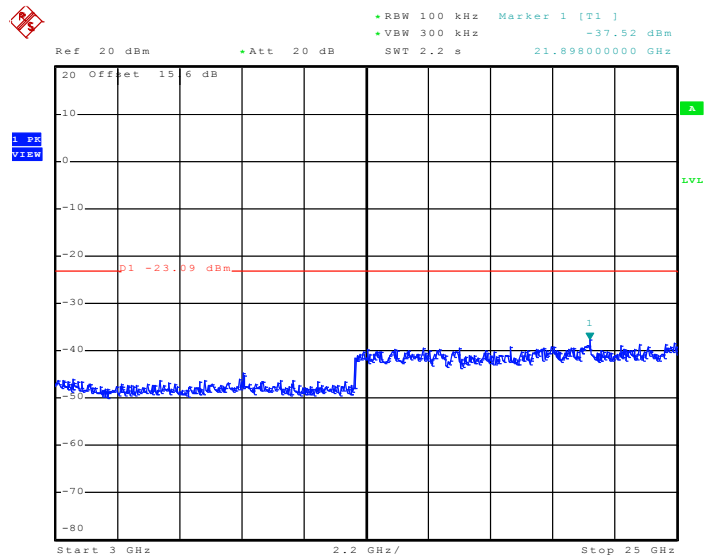
Test Mode :	Mode 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 00:30:42

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

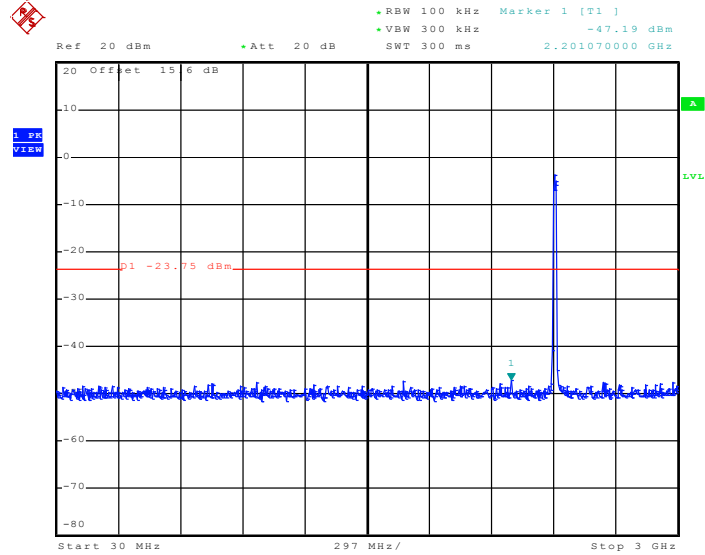


Date: 31.MAR.2012 00:30:59



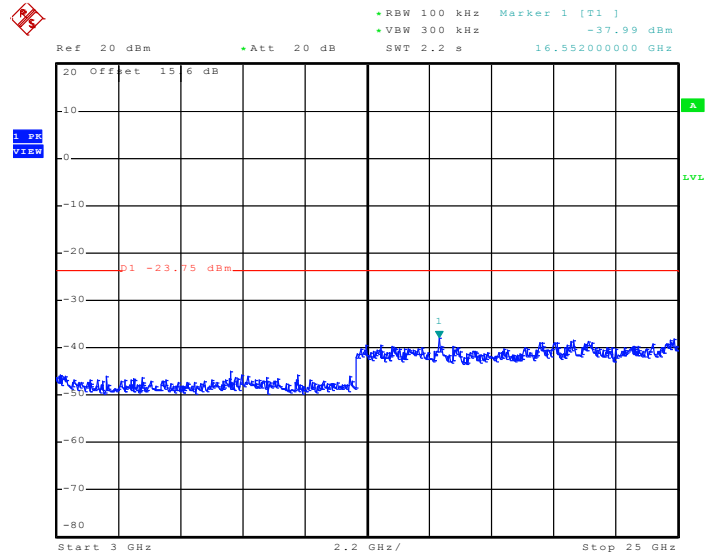
Test Mode :	Mode 7	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 00:45:55

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

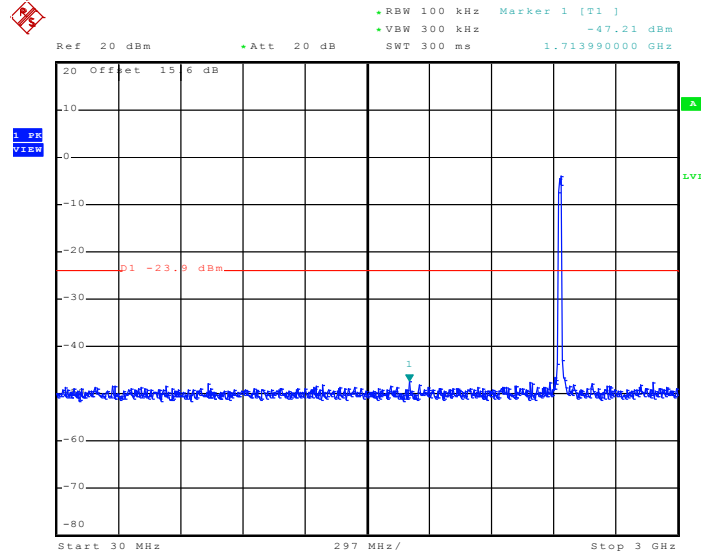


Date: 31.MAR.2012 00:46:12



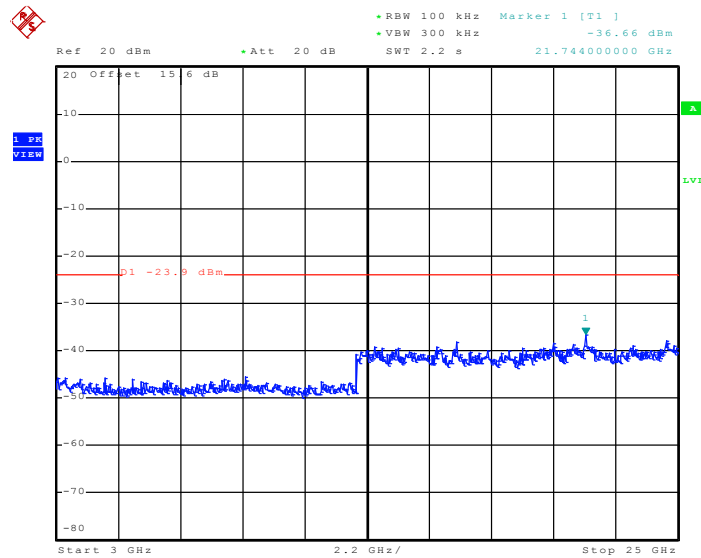
Test Mode :	Mode 8	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 01:00:05

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

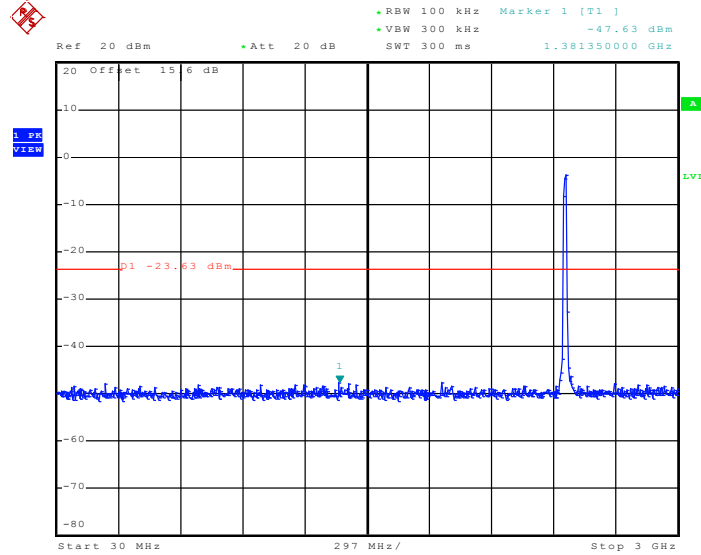


Date: 31.MAR.2012 01:00:22



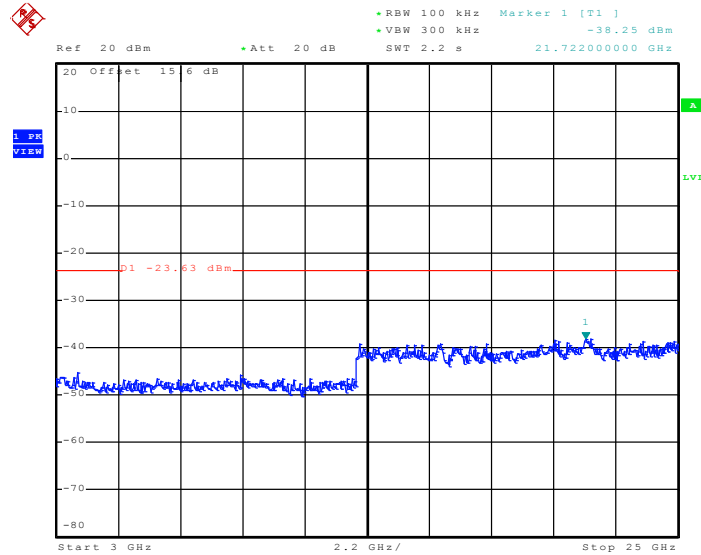
Test Mode :	Mode 9	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Jun Liu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 31.MAR.2012 01:26:09

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 31.MAR.2012 01:26:26

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

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

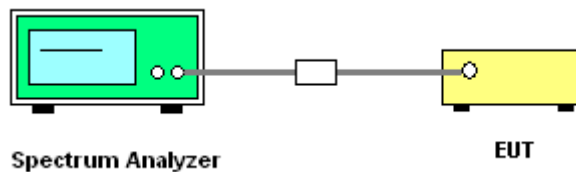
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup



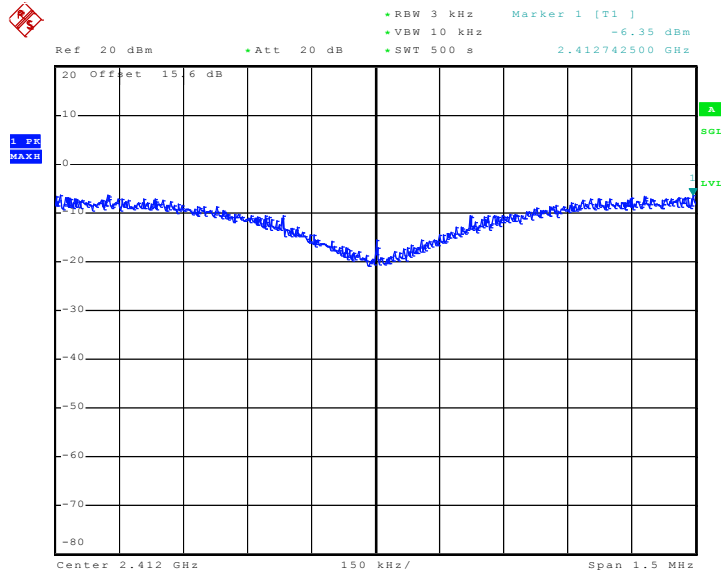


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-6.35	8	Pass
06	2437	-5.78	8	Pass
11	2462	-5.34	8	Pass

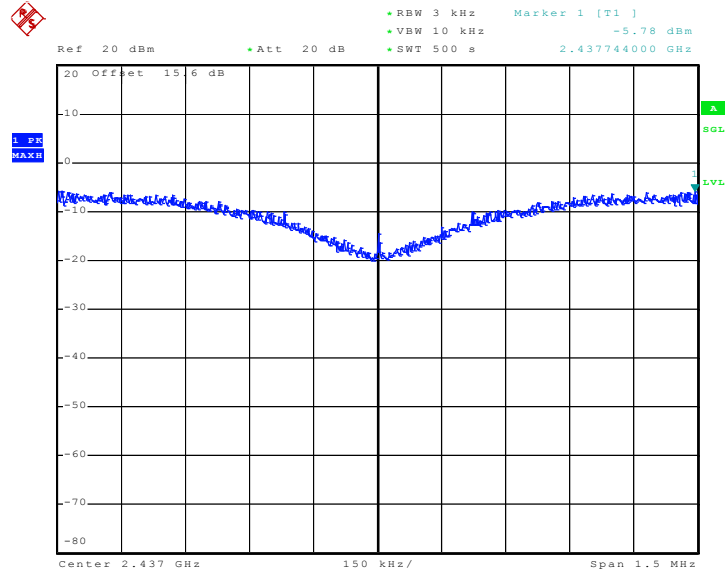
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 30.MAR.2012 23:26:00

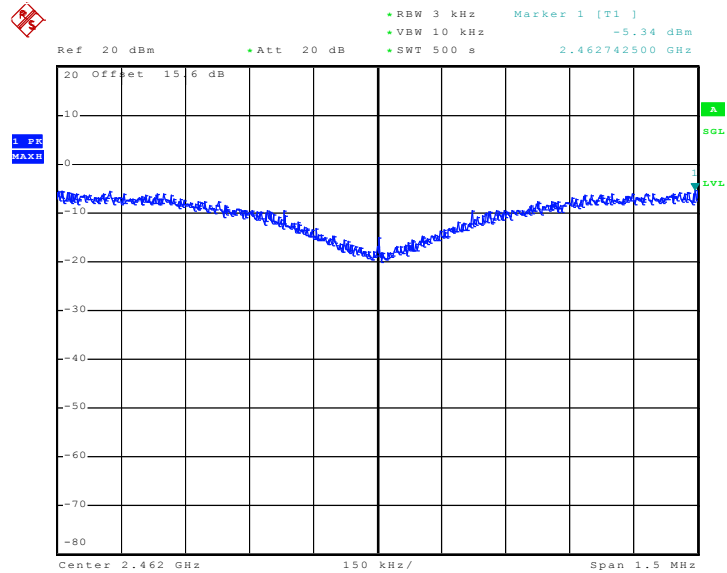


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 30.MAR.2012 23:41:13

Mode 3 : PSD Plot on 802.11b Channel 11



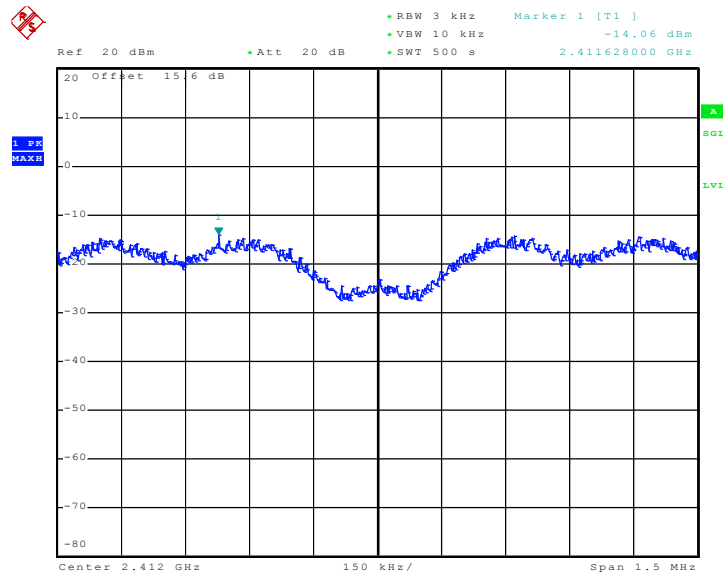
Date: 30.MAR.2012 23:57:15



Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-14.06	8	Pass
06	2437	-13.55	8	Pass
11	2462	-12.99	8	Pass

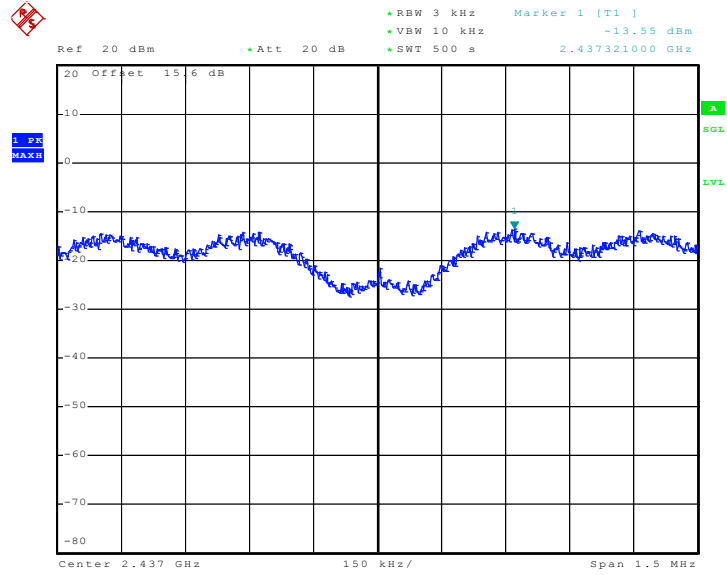
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 31.MAR.2012 00:13:25

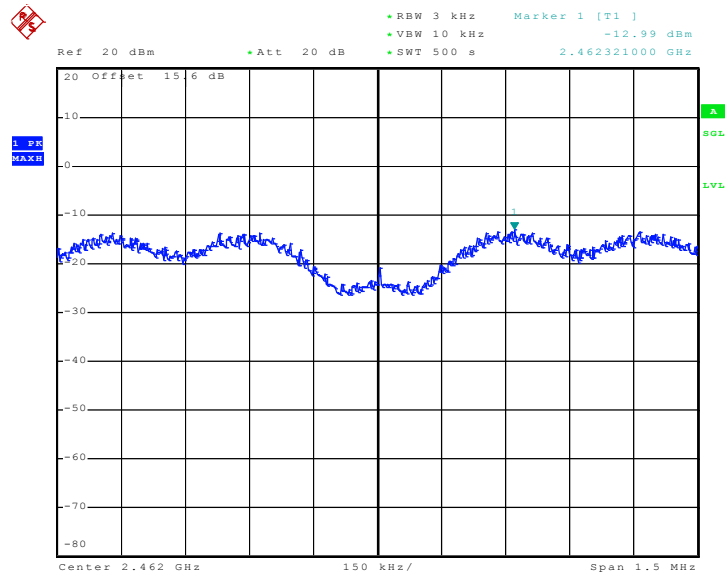


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 31.MAR.2012 00:26:24

Mode 6 : PSD Plot on 802.11g Channel 11



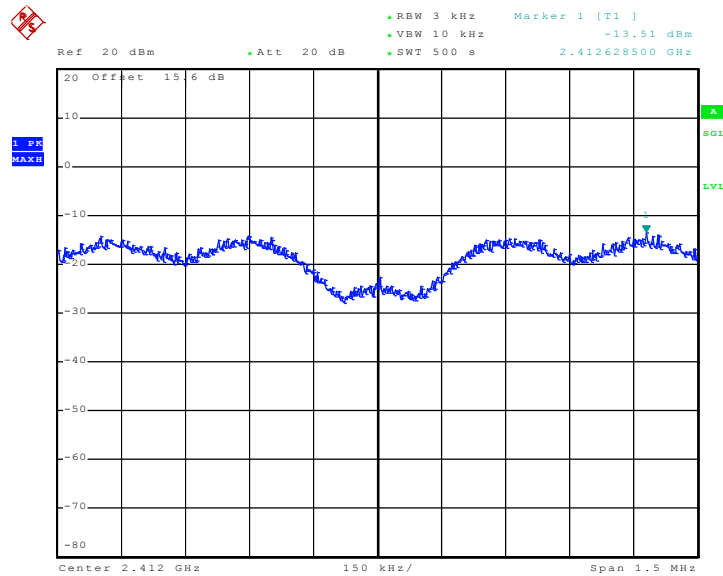
Date: 31.MAR.2012 00:39:45



Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Jun Liu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Power Density Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-13.51	8	Pass
06	2437	-12.50	8	Pass
11	2462	-12.35	8	Pass

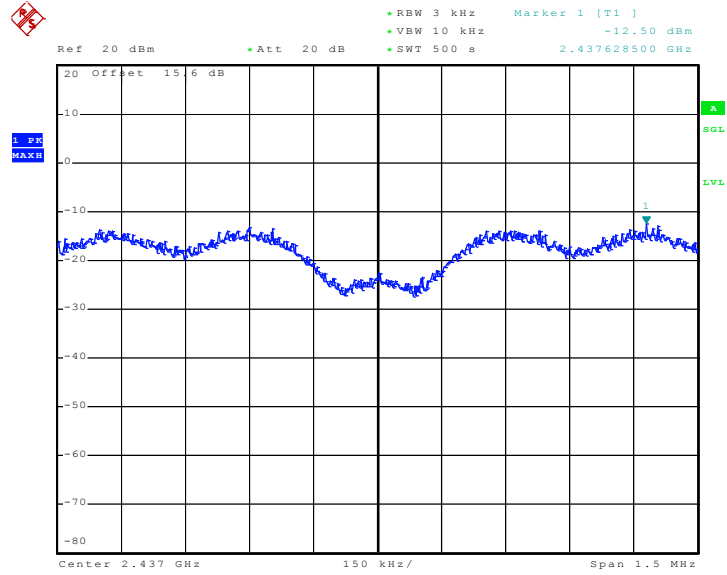
Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01



Date: 31.MAR.2012 00:56:47

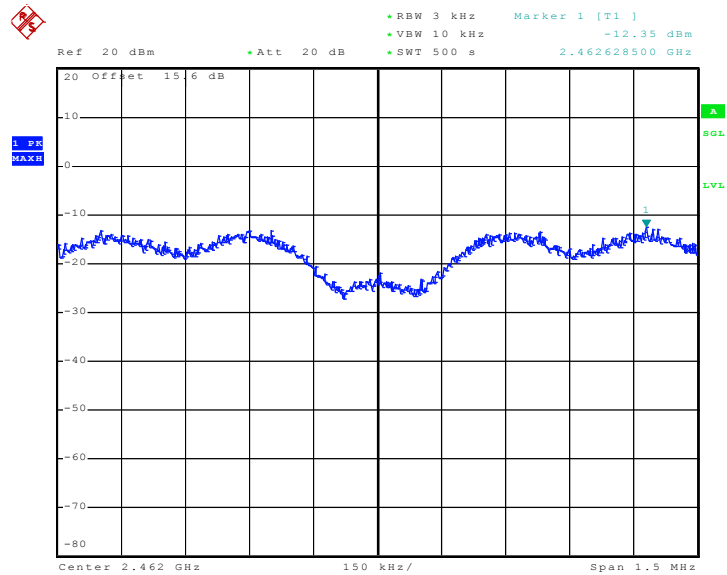


Mode 8 : PSD Plot on 802.11g/n (BW 20MHz) Channel 06



Date: 31.MAR.2012 01:13:01

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



Date: 31.MAR.2012 01:43:17

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

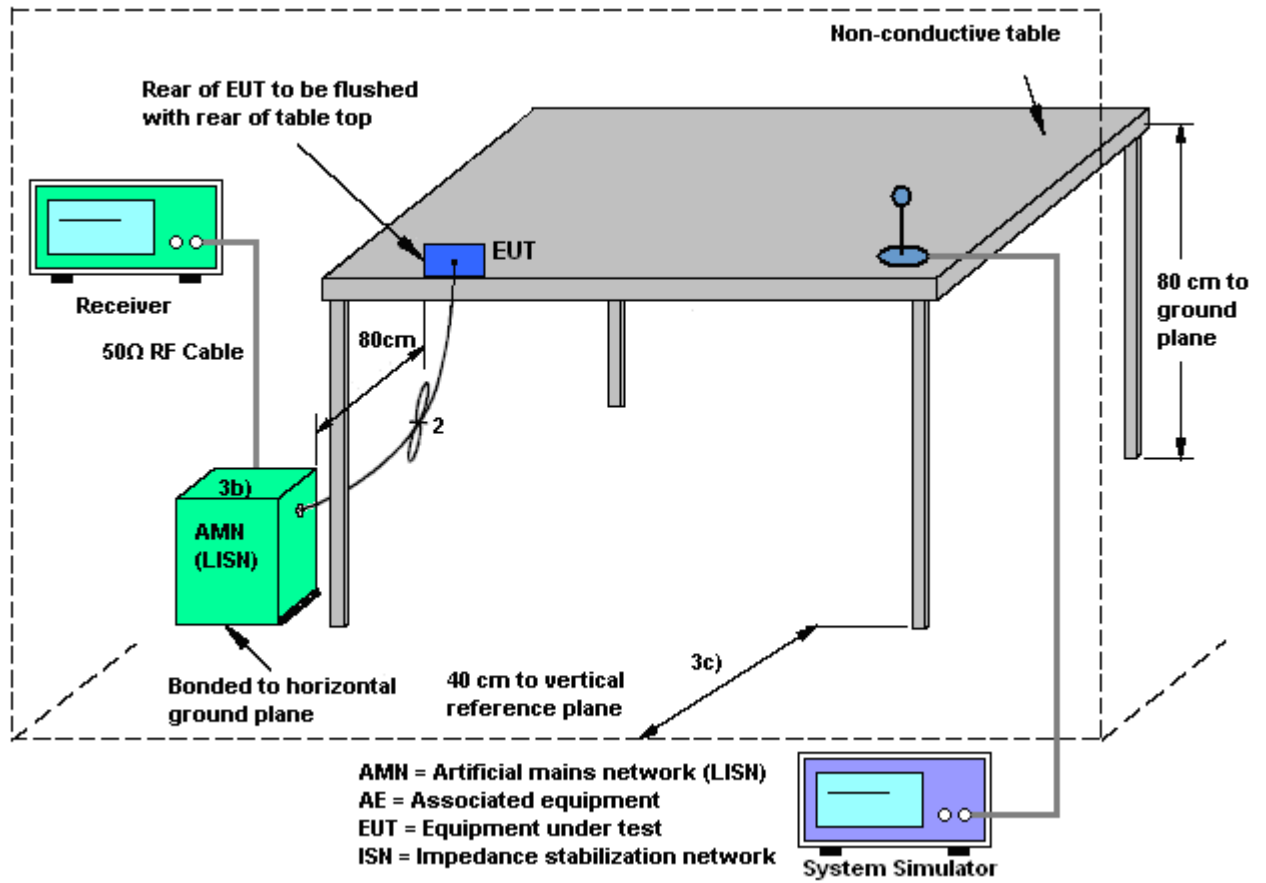
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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

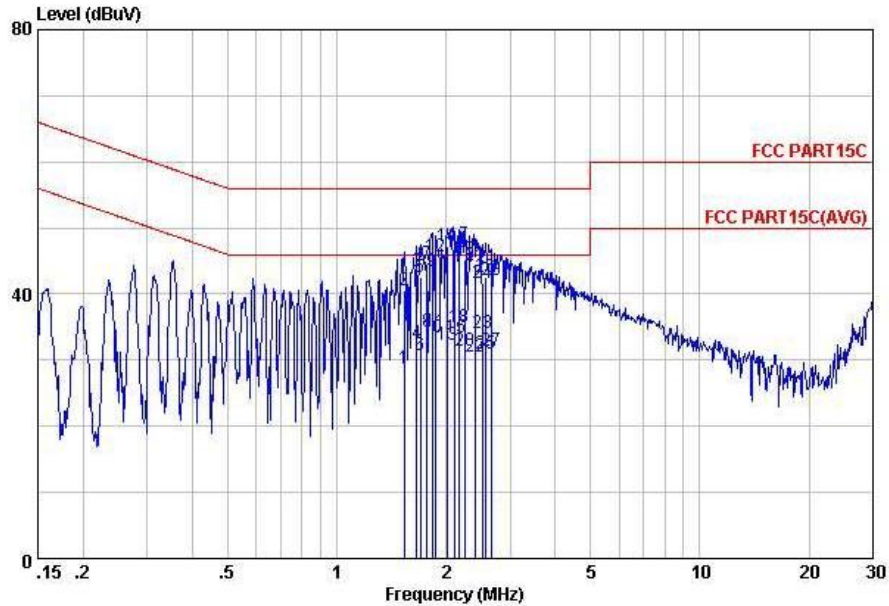
3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

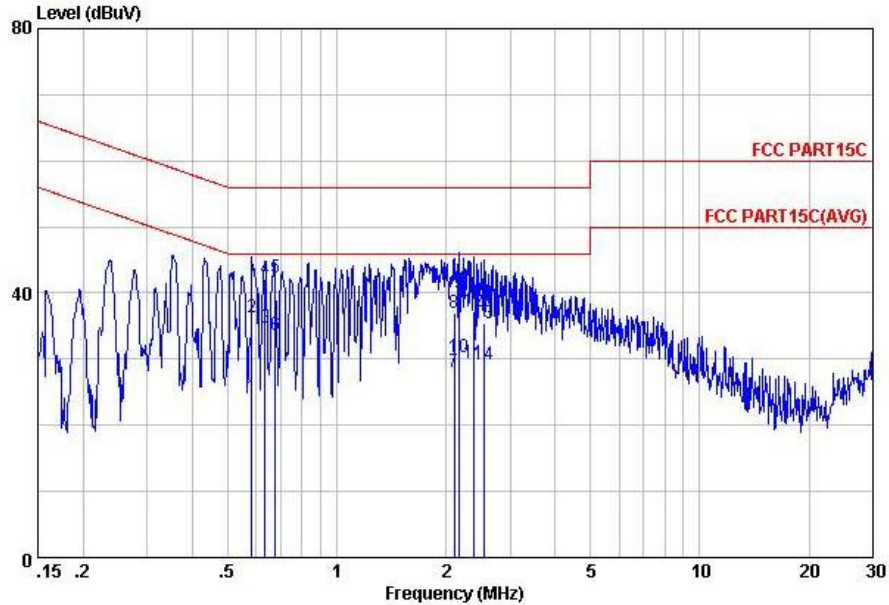


Site : C001-KS
 Condition: FCC PART15C LISN-100807 LINE
 mode : Mode 2

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.54	28.80	-17.20	46.00	18.61	-0.11	10.30	Average
2	1.54	40.50	-15.50	56.00	30.31	-0.11	10.30	QP
3	1.66	43.40	-12.60	56.00	33.20	-0.11	10.31	QP
4	1.66	32.50	-13.50	46.00	22.30	-0.11	10.31	Average
5	1.70	42.60	-13.40	56.00	32.40	-0.11	10.31	QP
6	1.70	30.80	-15.20	46.00	20.60	-0.11	10.31	Average
7	1.77	44.51	-11.49	56.00	34.30	-0.11	10.32	QP
8	1.77	34.21	-11.79	46.00	24.00	-0.11	10.32	Average
9	1.83	43.41	-12.59	56.00	33.20	-0.11	10.32	QP
10	1.83	33.51	-12.49	46.00	23.30	-0.11	10.32	Average
11	1.88	34.21	-11.79	46.00	24.00	-0.11	10.32	Average
12	1.88	45.71	-10.29	56.00	35.50	-0.11	10.32	QP
13	2.02	32.22	-13.78	46.00	22.00	-0.11	10.33	Average
14	2.02	47.22	-8.78	56.00	37.00	-0.11	10.33	QP
15	2.12	33.43	-12.57	46.00	23.20	-0.11	10.34	Average
16	2.12	46.33	-9.67	56.00	36.10	-0.11	10.34	QP
17	2.18	47.43	-8.57	56.00	37.20	-0.11	10.34	QP
18	2.18	35.03	-10.97	46.00	24.80	-0.11	10.34	Average
19	2.26	45.13	-10.87	56.00	34.90	-0.11	10.34	QP
20	2.26	31.33	-14.67	46.00	21.10	-0.11	10.34	Average
21	2.41	44.34	-11.66	56.00	34.10	-0.11	10.35	QP
22	2.41	30.54	-15.46	46.00	20.30	-0.11	10.35	Average
23	2.51	34.04	-11.96	46.00	23.80	-0.11	10.35	Average
24	2.51	41.64	-14.36	56.00	31.40	-0.11	10.35	QP
25	2.58	30.94	-15.06	46.00	20.69	-0.11	10.36	Average
26	2.58	42.64	-13.36	56.00	32.39	-0.11	10.36	QP
27	2.66	31.44	-14.56	46.00	21.19	-0.11	10.36	Average
28	2.66	42.04	-13.96	56.00	31.79	-0.11	10.36	QP



Test Mode :	Mode 2	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
 Condition: FCC PART15C LISN-100807 NEUTRAL
 mode : Mode 2

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.58	24.34	-21.66	46.00	14.20	-0.08	10.22	Average
2	0.58	36.34	-19.66	56.00	26.20	-0.08	10.22	QP
3	0.63	34.75	-11.25	46.00	24.60	-0.08	10.23	Average
4	0.63	42.15	-13.85	56.00	32.00	-0.08	10.23	QP
5	0.68	42.35	-13.65	56.00	32.20	-0.08	10.23	QP
6	0.68	33.65	-12.35	46.00	23.50	-0.08	10.23	Average
7	2.11	28.02	-17.98	46.00	17.79	-0.11	10.34	Average
8	2.11	36.92	-19.08	56.00	26.69	-0.11	10.34	QP
9	2.18	39.83	-16.17	56.00	29.60	-0.11	10.34	QP
10	2.18	30.23	-15.77	46.00	20.00	-0.11	10.34	Average
11	2.38	29.44	-16.56	46.00	19.20	-0.11	10.35	Average
12	2.38	37.14	-18.86	56.00	26.90	-0.11	10.35	QP
13	2.54	35.34	-20.66	56.00	25.10	-0.11	10.35	QP
14	2.54	29.14	-16.86	46.00	18.90	-0.11	10.35	Average

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

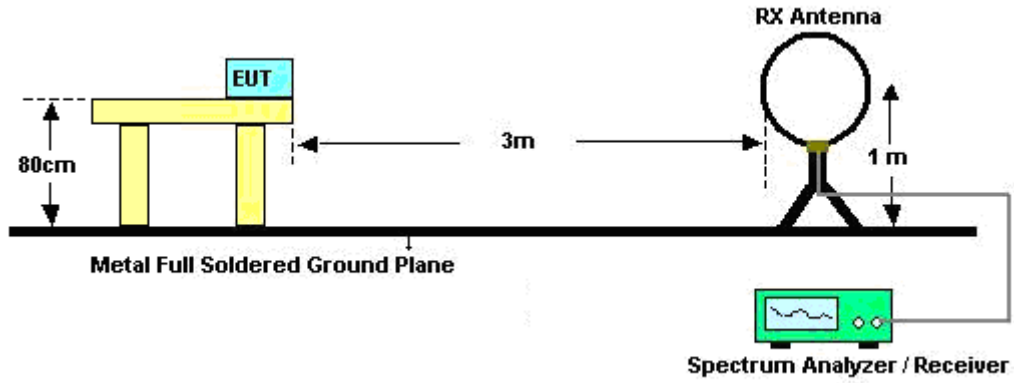
See list of measuring instruments of this test report.

3.7.3 Test Procedures

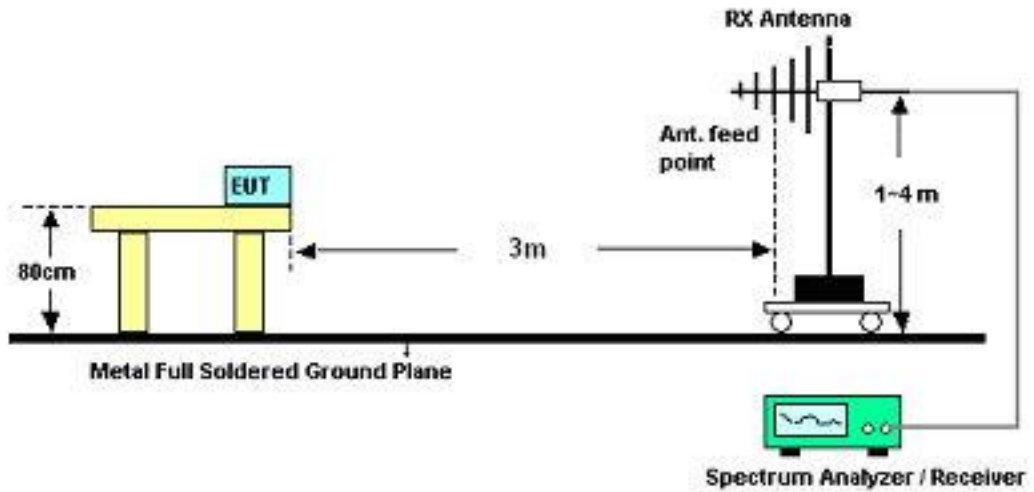
- The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
- Use the following spectrum analyzer settings:
 - Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 KHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold.
 - Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
Distance extrapolation factor = $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
- 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

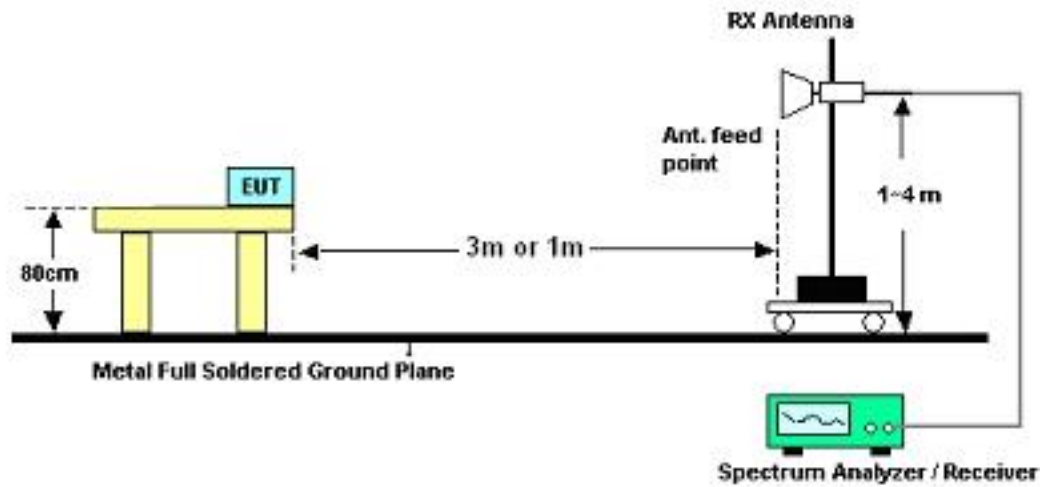
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



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

Test Mode :	Mode 1	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	24.72	-15.28	40	35.65	20	0.53	31.46	-	-	Peak
48.9	28.04	-11.96	40	49.99	8.9	0.68	31.53	103	154	Peak
64.29	20.43	-19.57	40	45	6.18	0.79	31.54	-	-	Peak
747.3	22.45	-23.55	46	28.81	21.3	3.05	30.71	-	-	Peak
805.4	23.68	-22.32	46	29.06	22.15	3.15	30.68	-	-	Peak
884.5	23.76	-22.24	46	28.21	22.94	3.32	30.71	-	-	Peak
2384.86	53.84	-20.16	74	49.74	32.03	6.03	33.96	100	99	Peak
2384.86	44.46	-9.54	54	40.36	32.03	6.03	33.96	100	99	Average
2412	105.17	-	-	100.99	32.08	6.07	33.97	100	99	Peak
2412	99.82	-	-	95.64	32.08	6.07	33.97	100	99	Average
2494	35.58	-18.42	54	31.2	32.2	6.18	34	100	99	Average
2494	47.06	-26.94	74	42.68	32.2	6.18	34	100	99	Peak
4824	45.66	-28.34	74	61.55	34.1	9.12	59.11	100	0	Peak



Test Mode :	Mode 1	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	29.93	-10.07	40	40.86	20	0.53	31.46	101	194	Peak
48.9	28.22	-11.78	40	50.17	8.9	0.68	31.53	-	-	Peak
74.82	25.6	-14.4	40	49.35	6.94	0.85	31.54	-	-	Peak
749.4	22.25	-23.75	46	28.55	21.34	3.06	30.7	-	-	Peak
817.3	23.78	-22.22	46	29.02	22.27	3.19	30.7	-	-	Peak
911.8	25.48	-20.52	46	29.51	23.27	3.37	30.67	-	-	Peak
2389.61	50.44	-23.56	74	46.31	32.06	6.03	33.96	100	38	Peak
2389.61	38.52	-15.48	54	34.39	32.06	6.03	33.96	100	38	Average
2412	100.89	-	-	96.71	32.08	6.07	33.97	100	38	Peak
2412	95.56	-	-	91.38	32.08	6.07	33.97	100	38	Average
2494	33.79	-20.21	54	29.41	32.2	6.18	34	100	38	Average
2494	45.11	-28.89	74	40.73	32.2	6.18	34	100	38	Peak
4824	44.4	-29.6	74	60.29	34.1	9.12	59.11	100	0	Peak



Test Mode :	Mode 2	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	24.83	-15.17	40	35.76	20	0.53	31.46	-	-	Peak
48.9	27.88	-12.12	40	49.83	8.9	0.68	31.53	105	147	Peak
64.02	20.29	-19.71	40	44.86	6.18	0.79	31.54	-	-	Peak
831.3	23.61	-22.39	46	28.69	22.41	3.22	30.71	-	-	Peak
878.9	24.2	-21.8	46	28.71	22.89	3.31	30.71	-	-	Peak
906.2	24.98	-21.02	46	29.12	23.19	3.35	30.68	-	-	Peak
2390	48.81	-25.19	74	44.68	32.06	6.03	33.96	100	107	Peak
2390	37.36	-16.64	54	33.23	32.06	6.03	33.96	100	107	Average
2437	106.32	-	-	102.09	32.1	6.11	33.98	100	107	Peak
2437	100.24	-	-	95.98	32.13	6.11	33.98	100	107	Average
2484	48.71	-25.29	74	44.35	32.18	6.18	34	100	107	Peak
2484	36.23	-17.77	54	31.87	32.18	6.18	34	100	107	Average
4874	47.29	-26.71	74	63.1	34.1	9.13	59.04	100	0	Peak



Test Mode :	Mode 2	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.82	-9.18	40	41.75	20	0.53	31.46	102	199	Peak
48.9	27.87	-12.13	40	49.82	8.9	0.68	31.53	-	-	Peak
74.01	26.48	-13.52	40	50.36	6.81	0.85	31.54	-	-	Peak
811.7	23.55	-22.45	46	28.85	22.22	3.17	30.69	-	-	Peak
844.6	24.61	-21.39	46	29.53	22.55	3.26	30.73	-	-	Peak
906.2	24.71	-21.29	46	28.85	23.19	3.35	30.68	-	-	Peak
2390	46.53	-27.47	74	42.4	32.06	6.03	33.96	100	42	Peak
2390	34.53	-19.47	54	30.4	32.06	6.03	33.96	100	42	Average
2437	101.24	-	-	96.98	32.13	6.11	33.98	100	42	Peak
2437	95.94	-	-	91.68	32.13	6.11	33.98	100	42	Average
2484	45.64	-28.36	74	41.28	32.18	6.18	34	100	42	Peak
2484	33.61	-20.39	54	29.25	32.18	6.18	34	100	42	Average
4874	43.86	-30.14	74	59.67	34.1	9.13	59.04	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	22.9	-17.1	40	33.83	20	0.53	31.46	-	-	Peak
48.09	27.07	-12.93	40	49.01	8.9	0.68	31.52	105	178	Peak
65.37	20.01	-19.99	40	44.55	6.2	0.8	31.54	-	-	Peak
771.8	22.48	-23.52	46	28.39	21.68	3.1	30.69	-	-	Peak
800.5	23.79	-22.21	46	29.23	22.1	3.14	30.68	-	-	Peak
859.3	24.17	-21.83	46	28.92	22.69	3.28	30.72	-	-	Peak
2388	47.79	-26.21	74	43.66	32.06	6.03	33.96	100	96	Peak
2388	37.29	-16.71	54	33.16	32.06	6.03	33.96	100	96	Average
2462	106.08	-	-	101.78	32.15	6.14	33.99	100	96	Peak
2462	100.87	-	-	96.57	32.15	6.14	33.99	100	96	Average
2485.18	52.07	-21.93	74	47.71	32.18	6.18	34	100	96	Peak
2485.18	43.53	-10.47	54	39.17	32.18	6.18	34	100	96	Average
4924	50.29	-23.71	74	66	34.1	9.15	58.96	100	0	Peak



Test Mode :	Mode 3	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.84	-9.16	40	41.77	20	0.53	31.46	101	204	Peak
48.9	28.52	-11.48	40	50.47	8.9	0.68	31.53	-	-	Peak
75.09	25.25	-14.75	40	49	6.94	0.85	31.54	-	-	Peak
799.8	23.62	-22.38	46	29.06	22.1	3.14	30.68	-	-	Peak
864.9	24.25	-21.75	46	28.93	22.75	3.29	30.72	-	-	Peak
906.9	24.6	-21.4	46	28.72	23.2	3.36	30.68	-	-	Peak
2390	45.56	-28.44	74	41.43	32.06	6.03	33.96	100	70	Peak
2390	33.44	-20.56	54	29.31	32.06	6.03	33.96	100	70	Average
2462	100.58	-	-	96.28	32.15	6.14	33.99	100	70	Peak
2462	95.24	-	-	90.94	32.15	6.14	33.99	100	70	Average
2484.61	49.39	-24.61	74	45.03	32.18	6.18	34	100	70	Peak
2484.61	39.46	-14.54	54	35.1	32.18	6.18	34	100	70	Average
4924	47.02	-26.98	74	62.73	34.1	9.15	58.96	100	0	Peak



Test Mode :	Mode 4	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	25.2	-14.8	40	36.13	20	0.53	31.46	-	-	Peak
48.9	27.1	-12.9	40	49.05	8.9	0.68	31.53	102	153	Peak
64.02	20.53	-19.47	40	45.1	6.18	0.79	31.54	-	-	Peak
741.7	22.71	-23.29	46	29.16	21.23	3.04	30.72	-	-	Peak
811	23.39	-22.61	46	28.7	22.21	3.17	30.69	-	-	Peak
855.8	23.82	-22.18	46	28.62	22.65	3.28	30.73	-	-	Peak
2389.61	56.98	-17.02	74	52.85	32.06	6.03	33.96	100	88	Peak
2389.61	36.9	-17.1	54	32.77	32.06	6.03	33.96	100	88	Average
2412	103.51	-	-	99.33	32.08	6.07	33.97	100	88	Peak
2412	82.6	-	-	78.42	32.08	6.07	33.97	100	88	Average
2484	32.11	-21.89	54	27.75	32.18	6.18	34	100	88	Average
2484	44.35	-29.65	74	39.99	32.18	6.18	34	100	88	Peak



Test Mode :	Mode 4	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	28.88	-11.12	40	41.23	18.56	0.55	31.46	105	194	Peak
48.9	28.47	-11.53	40	50.42	8.9	0.68	31.53	-	-	Peak
74.01	25.69	-14.31	40	49.57	6.81	0.85	31.54	-	-	Peak
707.4	22.07	-23.93	46	29.21	20.7	2.96	30.8	-	-	Peak
755	22.98	-23.02	46	29.19	21.42	3.07	30.7	-	-	Peak
814.5	23.41	-22.59	46	28.67	22.25	3.18	30.69	-	-	Peak
2389.99	52.92	-21.08	74	48.79	32.06	6.03	33.96	100	38	Peak
2389.99	36.12	-17.88	54	31.99	32.06	6.03	33.96	100	38	Average
2412	97.99	-	-	93.81	32.08	6.07	33.97	100	38	Peak
2412	78.67	-	-	74.49	32.08	6.07	33.97	100	38	Average
2492	32.24	-21.76	54	27.86	32.2	6.18	34	100	38	Average
2492	44.12	-29.88	74	39.74	32.2	6.18	34	100	38	Peak



Test Mode :	Mode 5	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	24.17	-15.83	40	35.1	20	0.53	31.46	-	-	Peak
48.9	27.75	-12.25	40	49.7	8.9	0.68	31.53	104	164	Peak
149.34	18.82	-24.68	43.5	37.95	11.22	1.21	31.56	-	-	Peak
713	21.56	-24.44	46	28.59	20.79	2.97	30.79	-	-	Peak
743.8	22.28	-23.72	46	28.68	21.26	3.05	30.71	-	-	Peak
808.2	23.17	-22.83	46	28.52	22.18	3.16	30.69	-	-	Peak
2390	47.02	-26.98	74	42.89	32.06	6.03	33.96	100	107	Peak
2390	34.92	-19.08	54	30.79	32.06	6.03	33.96	100	107	Average
2437	102.88	-	-	98.62	32.13	6.11	33.98	100	107	Peak
2437	83.63	-	-	79.37	32.13	6.11	33.98	100	107	Average
2484	46.68	-27.32	74	42.32	32.18	6.18	34	100	107	Peak
2484	33.26	-20.74	54	28.9	32.18	6.18	34	100	107	Average



Test Mode :	Mode 5	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.18	-9.82	40	41.11	20	0.53	31.46	101	192	Peak
48.9	28.53	-11.47	40	50.48	8.9	0.68	31.53	-	-	Peak
74.01	25.16	-14.84	40	49.04	6.81	0.85	31.54	-	-	Peak
699.7	22.05	-23.95	46	29.34	20.59	2.94	30.82	-	-	Peak
741	23.62	-22.38	46	30.09	21.21	3.04	30.72	-	-	Peak
789.3	23.94	-22.06	46	29.56	21.94	3.12	30.68	-	-	Peak
2390	45.9	-28.1	74	41.77	32.06	6.03	33.96	100	41	Peak
2390	33.39	-20.61	54	29.26	32.06	6.03	33.96	100	41	Average
2437	98.09	-	-	93.83	32.13	6.11	33.98	100	41	Peak
2437	78.88	-	-	74.62	32.13	6.11	33.98	100	41	Average
2486	44.86	-29.14	74	40.5	32.18	6.18	34	100	41	Peak
2486	32	-22	54	27.64	32.18	6.18	34	100	41	Average



Test Mode :	Mode 6	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.42	-13.58	40	37.35	20	0.53	31.46	-	-	Peak
48.9	27.71	-12.29	40	49.66	8.9	0.68	31.53	101	138	Peak
65.1	20.18	-19.82	40	44.72	6.2	0.8	31.54	-	-	Peak
749.4	22.39	-23.61	46	28.69	21.34	3.06	30.7	-	-	Peak
808.9	23	-23	46	28.34	22.19	3.16	30.69	-	-	Peak
825.7	24.4	-21.6	46	29.55	22.35	3.21	30.71	-	-	Peak
2390	45.84	-28.16	74	41.71	32.06	6.03	33.96	100	95	Peak
2390	33.73	-20.27	54	29.6	32.06	6.03	33.96	100	95	Average
2462	103.7	-	-	99.4	32.15	6.14	33.99	100	95	Peak
2462	83.19	-	-	78.89	32.15	6.14	33.99	100	95	Average
2483.66	58.64	-15.36	74	54.28	32.18	6.18	34	100	95	Peak
2483.66	38.73	-15.27	54	34.37	32.18	6.18	34	100	95	Average
4924	44.42	-29.58	74	60.13	34.1	9.15	58.96	100	0	Peak



Test Mode :	Mode 6	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	31.37	-8.63	40	42.3	20	0.53	31.46	102	193	Peak
49.17	28.43	-11.57	40	50.77	8.5	0.69	31.53	-	-	Peak
74.82	25.45	-14.55	40	49.2	6.94	0.85	31.54	-	-	Peak
752.9	23.25	-22.75	46	29.5	21.39	3.06	30.7	-	-	Peak
811.7	23.26	-22.74	46	28.56	22.22	3.17	30.69	-	-	Peak
903.4	24.38	-21.62	46	28.58	23.14	3.35	30.69	-	-	Peak
2390	44.75	-29.25	74	40.62	32.06	6.03	33.96	100	71	Peak
2390	32.62	-21.38	54	28.49	32.06	6.03	33.96	100	71	Average
2462	98.46	-	-	94.16	32.15	6.14	33.99	100	71	Peak
2462	78.05	-	-	73.75	32.15	6.14	33.99	100	71	Average
2483.85	52.06	-21.94	74	47.7	32.18	6.18	34	100	71	Peak
2483.85	36.14	-17.86	54	31.78	32.18	6.18	34	100	71	Average
4924	42.63	-31.37	74	58.34	34.1	9.15	58.96	100	0	Peak



Test Mode :	Mode 7	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	25.96	-14.04	40	36.89	20	0.53	31.46	-	-	Peak
48.9	27.85	-12.15	40	49.8	8.9	0.68	31.53	103	157	Peak
65.37	20.25	-19.75	40	44.79	6.2	0.8	31.54	-	-	Peak
794.2	23.47	-22.53	46	29.01	22.01	3.13	30.68	-	-	Peak
813.8	23.81	-22.19	46	29.08	22.24	3.18	30.69	-	-	Peak
842.5	24.57	-21.43	46	29.51	22.53	3.25	30.72	-	-	Peak
2388.85	59.17	-14.83	74	55.04	32.06	6.03	33.96	100	87	Peak
2388.85	38.14	-15.86	54	34.01	32.06	6.03	33.96	100	87	Average
2412	102.12	-	-	97.94	32.08	6.07	33.97	100	87	Peak
2412	85.26	-	-	81.08	32.08	6.07	33.97	100	87	Average
2484	32.8	-21.2	54	28.44	32.18	6.18	34	100	87	Average
2484	45.24	-28.76	74	40.88	32.18	6.18	34	100	87	Peak



Test Mode :	Mode 7	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.69	-9.31	40	41.62	20	0.53	31.46	102	194	Peak
49.17	28.06	-11.94	40	50.4	8.5	0.69	31.53	-	-	Peak
74.01	25.21	-14.79	40	49.09	6.81	0.85	31.54	-	-	Peak
729.8	21.97	-24.03	46	28.67	21.04	3.01	30.75	-	-	Peak
797	23.4	-22.6	46	28.88	22.06	3.14	30.68	-	-	Peak
850.2	24.25	-21.75	46	29.11	22.6	3.27	30.73	-	-	Peak
2389.42	55.79	-18.21	74	51.66	32.06	6.03	33.96	100	38	Peak
2389.42	36.87	-17.13	54	32.74	32.06	6.03	33.96	100	38	Average
2412	97.68	-	-	93.5	32.08	6.07	33.97	100	38	Peak
2412	80.52	-	-	76.34	32.08	6.07	33.97	100	38	Average
2486	32.38	-21.62	54	28.02	32.18	6.18	34	100	38	Average
2486	44.75	-29.25	74	40.39	32.18	6.18	34	100	38	Peak



Test Mode :	Mode 8	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	25.13	-14.87	40	36.77	19.28	0.54	31.46	-	-	Peak
48.9	27.87	-12.13	40	49.82	8.9	0.68	31.53	103	168	Peak
62.94	19.8	-20.2	40	44.4	6.16	0.78	31.54	-	-	Peak
738.9	22.17	-23.83	46	28.69	21.18	3.03	30.73	-	-	Peak
792.1	23.66	-22.34	46	29.23	21.98	3.13	30.68	-	-	Peak
836.9	24.69	-21.31	46	29.7	22.47	3.24	30.72	-	-	Peak
2388	46.79	-27.21	74	42.66	32.06	6.03	33.96	100	107	Peak
2388	35.12	-18.88	54	30.99	32.06	6.03	33.96	100	107	Average
2437	103.68	-	-	99.42	32.13	6.11	33.98	100	107	Peak
2437	85.78	-	-	81.52	32.13	6.11	33.98	100	107	Average
2492	46.2	-27.8	74	41.82	32.2	6.18	34	100	107	Peak
2492	33.61	-20.39	54	29.23	32.2	6.18	34	100	107	Average



Test Mode :	Mode 8	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.18	-9.82	40	41.11	20	0.53	31.46	102	198	Peak
49.17	28.21	-11.79	40	50.55	8.5	0.69	31.53	-	-	Peak
74.82	25.48	-14.52	40	49.23	6.94	0.85	31.54	-	-	Peak
792.1	23.14	-22.86	46	28.71	21.98	3.13	30.68	-	-	Peak
839	24.18	-21.82	46	29.17	22.49	3.24	30.72	-	-	Peak
889.4	24.57	-21.43	46	28.96	22.99	3.33	30.71	-	-	Peak
2380	45.91	-28.09	74	41.81	32.03	6.03	33.96	100	42	Peak
2380	33.45	-20.55	54	29.35	32.03	6.03	33.96	100	42	Average
2437	98.41	-	-	94.15	32.13	6.11	33.98	100	42	Peak
2437	80.55	-	-	76.29	32.13	6.11	33.98	100	42	Average
2500	44.71	-29.29	74	40.33	32.2	6.18	34	100	42	Peak
2500	32.32	-21.68	54	27.94	32.2	6.18	34	100	42	Average



Test Mode :	Mode 9	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	26.27	-13.73	40	37.2	20	0.53	31.46	-	-	Peak
48.09	26.37	-13.63	40	48.31	8.9	0.68	31.52	102	161	Peak
65.37	19.48	-20.52	40	44.02	6.2	0.8	31.54	-	-	Peak
727	22.02	-23.98	46	28.76	21.01	3.01	30.76	-	-	Peak
780.9	23.34	-22.66	46	29.11	21.81	3.11	30.69	-	-	Peak
850.9	24.48	-21.52	46	29.34	22.6	3.27	30.73	-	-	Peak
2390	46.86	-27.14	74	42.73	32.06	6.03	33.96	100	96	Peak
2390	34.31	-19.69	54	30.18	32.06	6.03	33.96	100	96	Average
2462	103.88	-	-	99.58	32.15	6.14	33.99	100	96	Peak
2462	86.07	-	-	81.77	32.15	6.14	33.99	100	96	Average
2486.13	58.67	-15.33	74	54.31	32.18	6.18	34	100	96	Peak
2486.13	39.8	-14.2	54	35.44	32.18	6.18	34	100	96	Average
4924	44.51	-29.49	74	60.22	34.1	9.15	58.96	100	0	Peak



Test Mode :	Mode 9	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	30.19	-9.81	40	41.12	20	0.53	31.46	102	204	Peak
40.53	26.47	-13.53	40	44.45	12.9	0.63	31.51	-	-	Peak
75.09	25.95	-14.05	40	49.7	6.94	0.85	31.54	-	-	Peak
802.6	23.47	-22.53	46	28.88	22.12	3.15	30.68	-	-	Peak
833.4	23.92	-22.08	46	28.97	22.43	3.23	30.71	-	-	Peak
881.7	24.78	-21.22	46	29.26	22.92	3.31	30.71	-	-	Peak
2388	44.68	-29.32	74	40.55	32.06	6.03	33.96	100	70	Peak
2388	33.02	-20.98	54	28.89	32.06	6.03	33.96	100	70	Average
2462	97.56	-	-	93.26	32.15	6.14	33.99	100	70	Peak
2462	80.39	-	-	76.09	32.15	6.14	33.99	100	70	Average
2483.85	55.15	-18.85	74	50.79	32.18	6.18	34	100	70	Peak
2483.85	36.79	-17.21	54	32.43	32.18	6.18	34	100	70	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	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Mar. 30, 2012 ~ Mar. 31, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 23, 2011	Mar. 30, 2012 ~ Mar. 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 23, 2011	Mar. 30, 2012 ~ Mar. 31, 2012	Aug. 22, 2012	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 02, 2011	Mar. 19, 2012	Jun. 01, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 30, 2011	Mar. 19, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	060105	9kHz~30MHz	Dec. 30, 2011	Mar. 19, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	Mar. 19, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	GSM/GPRS850/900/1800/1900,	Dec. 30, 2011	Mar. 19, 2012	Dec. 29, 2012	Conduction (CO01-KS)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Mar. 31, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Mar. 31, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Mar. 31, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Mar. 31, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103	161075	10Hz ~ 1000MHz Gain:32dB	Feb. 27, 2012	Mar. 31, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz ~ 7GHz	Aug. 22, 2011	Mar. 31, 2012	Aug. 21, 2012	Radiation (03CH07-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2011	Mar. 31, 2012	Jul. 17, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Mar. 31, 2012	Jul. 28, 2012	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 $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				