

FCC RF Test Report

APPLICANT : Motorola Mobility, Inc.
EQUIPMENT : Mobile Phone
BRAND NAME : MOTOROLA
MODEL NAME : XT319
GPPD Number : 3014
FCC ID : IHDP56MC1
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)

The product was received on May 31, 2011 and completely tested on Jun. 24, 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:



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.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR153127B	Rev. 01	Initial issue of report	Jun. 30, 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	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 10.70 dB at 4.96 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 6.25 dB at 34.86 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Motorola Mobility, Inc.

8F., No. 9, Songgao Rd., Taipei 110, Taiwan, R.O.C.

1.2 Manufacturer

Chi Mei Communication Systems, Inc.

No. 4, Mingsheng Street, Tucheng District, New Taipei City, 23678, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Mobile Phone
Brand Name	MOTOROLA
Model Name	XT319
FCC ID	IHDP56MC1
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 : 16.30 dBm (0.04 W) 802.11g : 18.36 dBm (0.07 W) 802.11n (BW 20MHz) : 18.52 dBm (0.07 W)
Antenna Type	PIFA Antenna with gain -2.3 dBi
HW Version	V2.0
SW Version	V4.21
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 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.
	CO05-HY	03CH05-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.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	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	14.01	14.15	14.17	14.22
CH 06	2437 MHz	14.03	14.15	13.95	14.08
CH 11	2462 MHz	14.06	14.24	14.48	14.12

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	8.42	8.35	8.37	8.43	8.34	8.33	8.29	8.25
CH 06	2437 MHz	8.39	8.33	8.43	8.37	8.29	8.31	8.24	8.16
CH 11	2462 MHz	8.43	8.62	8.64	8.47	8.32	8.28	8.33	8.29

Channel	Frequency	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	8.36	8.29	8.25	8.19	8.21	8.29	8.05	8.15
CH 06	2437 MHz	8.32	8.17	8.26	8.18	8.10	7.95	7.97	8.02
CH 11	2462 MHz	8.35	8.32	8.34	8.31	8.27	8.15	8.11	8.21

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

2.2 Test Mode

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

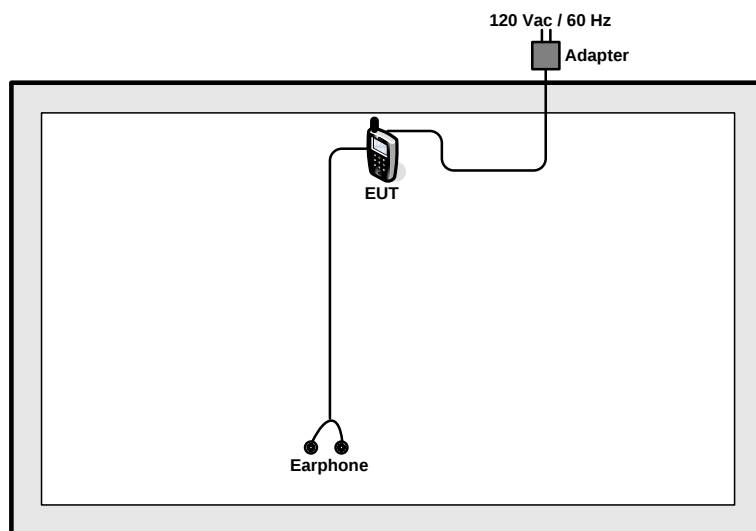
Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

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

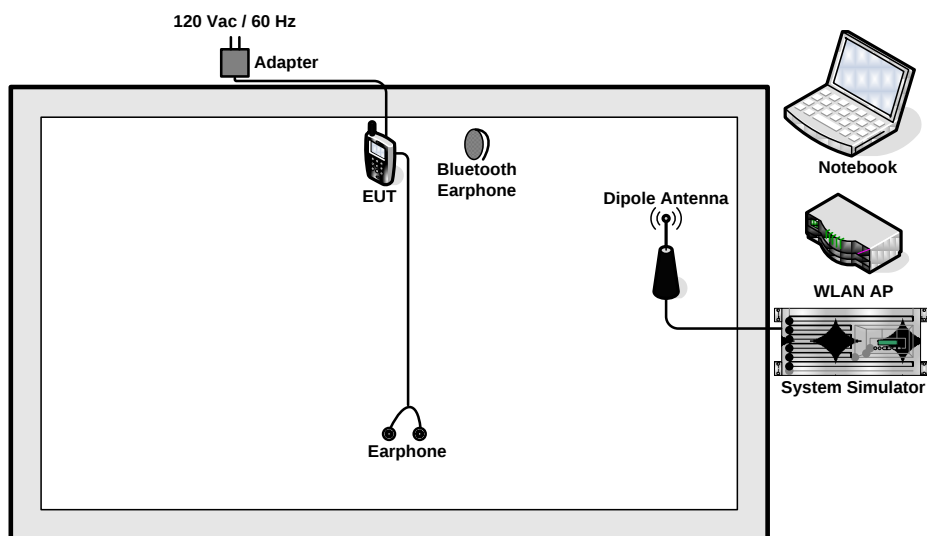
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz 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
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter)	
Remark: TC stands for Test Configuration, and consists of adapter, battery, USB cable, and earphone.		

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 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.

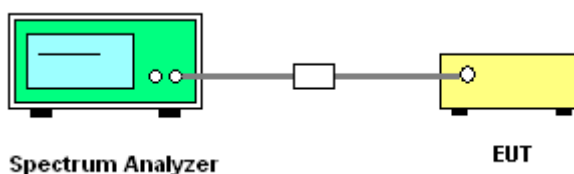
3.1.2 Measuring Instruments

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

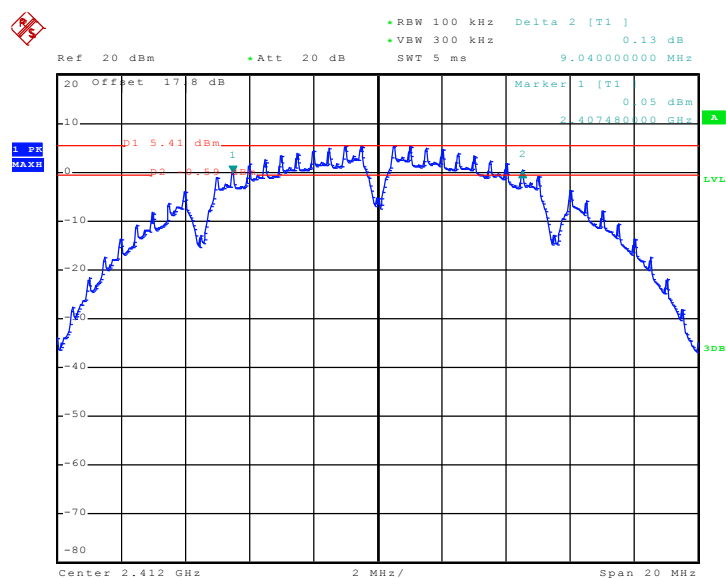


3.1.5 Test Result of 6dB Bandwidth

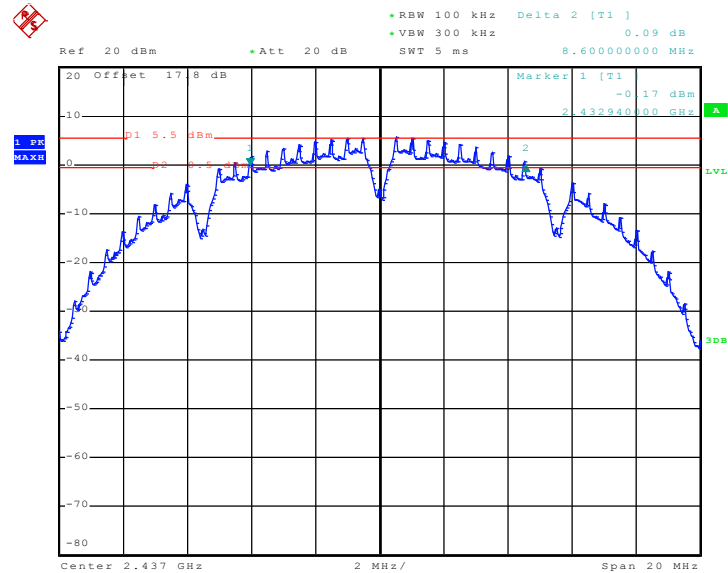
Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.04	0.5	Pass
06	2437	8.60	0.5	Pass
11	2462	9.52	0.5	Pass

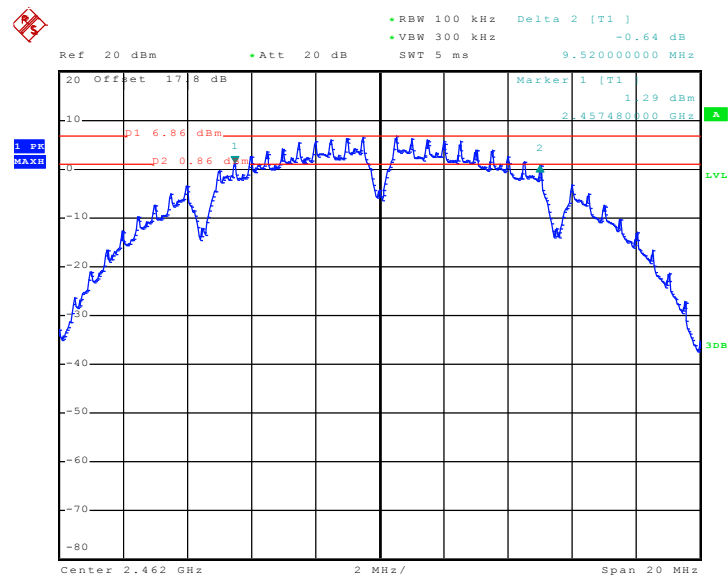
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 22.JUN.2011 08:46:40

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


Date: 22.JUN.2011 09:00:34

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


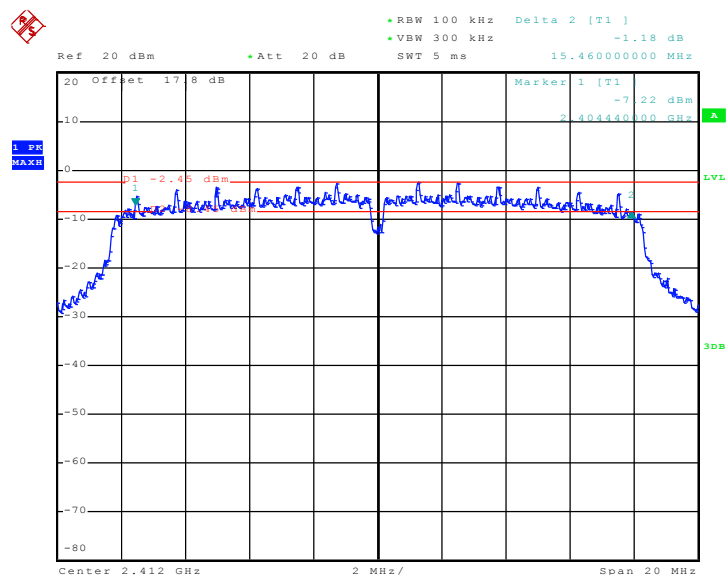
Date: 22.JUN.2011 09:15:12



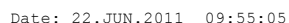
Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.46	0.5	Pass
06	2437	15.80	0.5	Pass
11	2462	15.64	0.5	Pass

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



Date: 22.JUN.2011 09:40:21



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

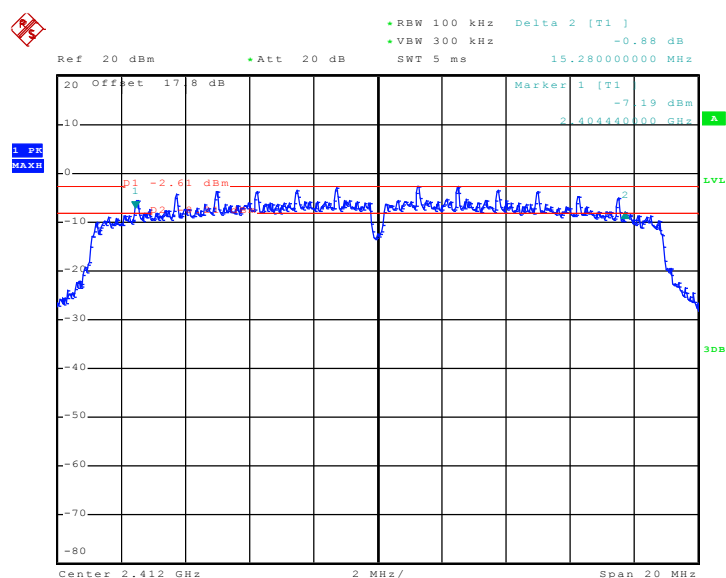




Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.28	0.5	Pass
06	2437	15.76	0.5	Pass
11	2462	15.80	0.5	Pass

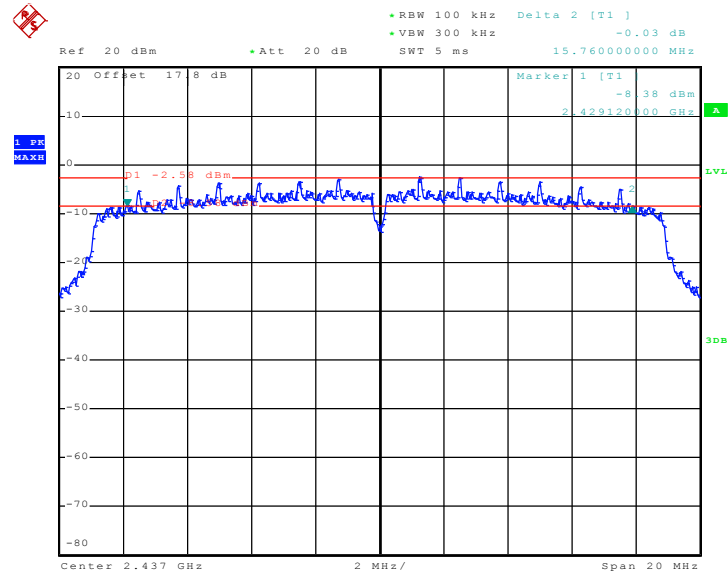
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 22.JUN.2011 10:32:47

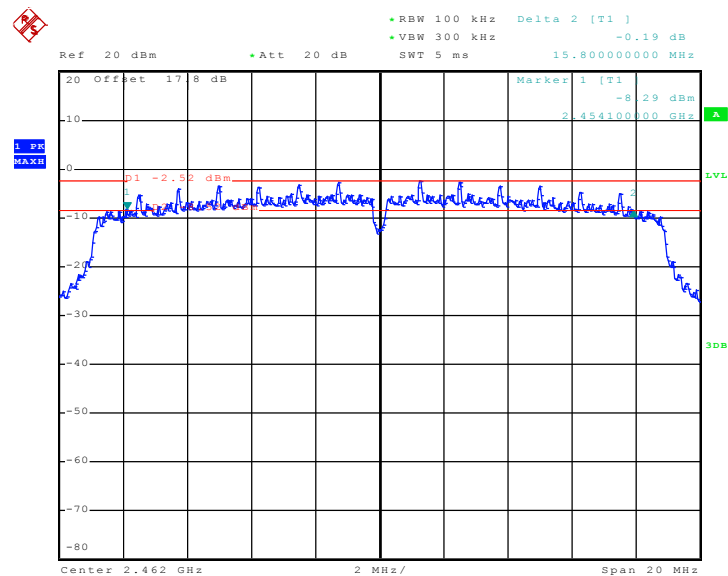


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 22.JUN.2011 11:05:42

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



Date: 22.JUN.2011 10:49:46

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.

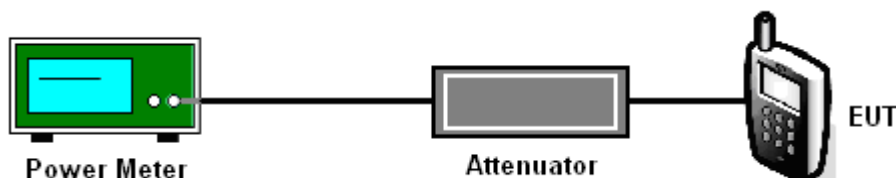
3.2.2 Measuring Instruments

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 :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	16.13	30	Pass
06	2437	16.07	30	Pass
11	2462	16.30	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.05	30	Pass
06	2437	18.03	30	Pass
11	2462	18.36	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.07	30	Pass
06	2437	18.26	30	Pass
11	2462	18.52	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

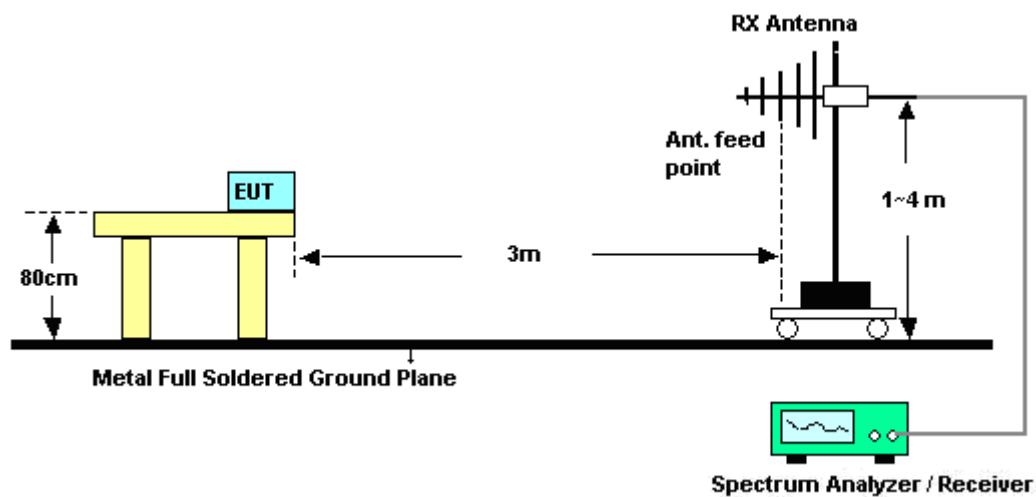
See list of measuring instruments of this test report.

3.3.3 Test Procedures

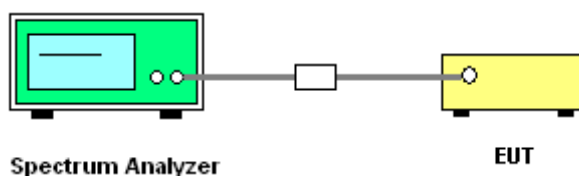
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) $\geq$ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized 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 :	23~24℃
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
2385.24	50.36	-23.64	74	48.18	31.68	4.58	34.08	165	35	Peak
2385.24	38.92	-15.08	54	36.74	31.68	4.58	34.08	165	35	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
2373.46	49.96	-24.04	74	47.76	31.7	4.58	34.08	100	19	Peak
2373.46	36.85	-17.15	54	34.68	31.68	4.57	34.08	100	19	Average

Test Mode :	Mode 3	Temperature :	23~24℃
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
2499.62	54.43	-19.57	74	52.07	31.8	4.64	34.08	102	331	Peak
2499.62	41.38	-12.62	54	39.02	31.8	4.64	34.08	102	331	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	52.28	-21.72	74	49.94	31.78	4.64	34.08	182	17	Peak
2483.5	38.8	-15.2	54	36.46	31.78	4.64	34.08	182	17	Average

Test Mode :	Mode 4	Temperature :	23~24℃
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
2389.61	59.59	-14.41	74	57.39	31.7	4.58	34.08	144	48	Peak
2389.61	43.35	-10.65	54	41.15	31.7	4.58	34.08	144	48	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	56.65	-17.35	74	54.45	31.7	4.58	34.08	123	11	Peak
2389.99	38.1	-15.9	54	35.9	31.7	4.58	34.08	123	11	Average

Test Mode :	Mode 6	Temperature :	23~24℃
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	63.13	-10.87	74	60.79	31.78	4.64	34.08	132	26	Peak
2483.5	44.12	-9.88	54	41.78	31.78	4.64	34.08	132	26	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
2484.04	53.75	-20.25	74	51.41	31.78	4.64	34.08	123	17	Peak
2484.04	37.1	-16.9	54	34.76	31.78	4.64	34.08	123	17	Average



Test Mode :	Mode 7	Temperature :	23~24℃
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	60.92	-13.08	74	58.72	31.7	4.58	34.08	111	39	Peak
2389.99	42.78	-11.22	54	40.58	31.7	4.58	34.08	111	39	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	58.63	-15.37	74	56.43	31.7	4.58	34.08	100	18	Peak
2389.99	39.77	-14.23	54	37.57	31.7	4.58	34.08	100	18	Average

Test Mode :	Mode 9	Temperature :	23~24℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	46~47%
Test Channel :	11	Test Engineer :	Kai Wang

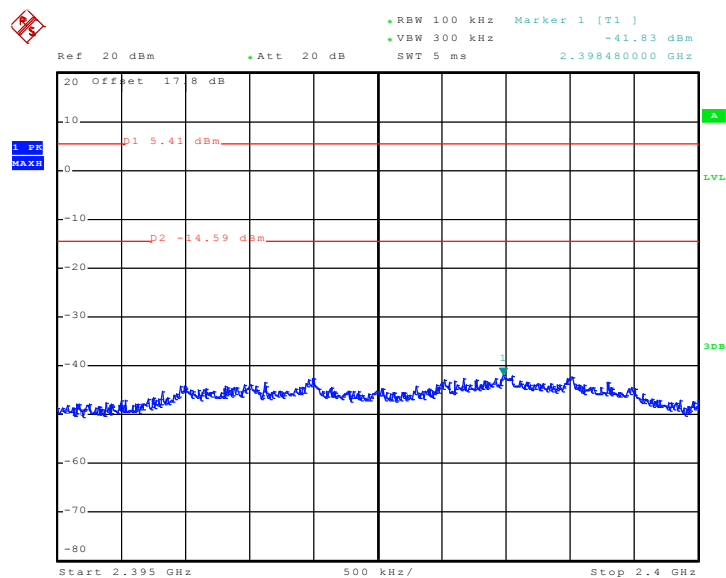
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	61.98	-12.02	74	59.64	31.78	4.64	34.08	133	37	Peak
2483.85	44	-10	54	41.66	31.78	4.64	34.08	133	37	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
2486.32	55.84	-18.16	74	53.5	31.78	4.64	34.08	101	40	Peak
2486.32	40.13	-13.87	54	37.79	31.78	4.64	34.08	101	40	Average

3.3.6 Test Plots of Conducted Band Edges

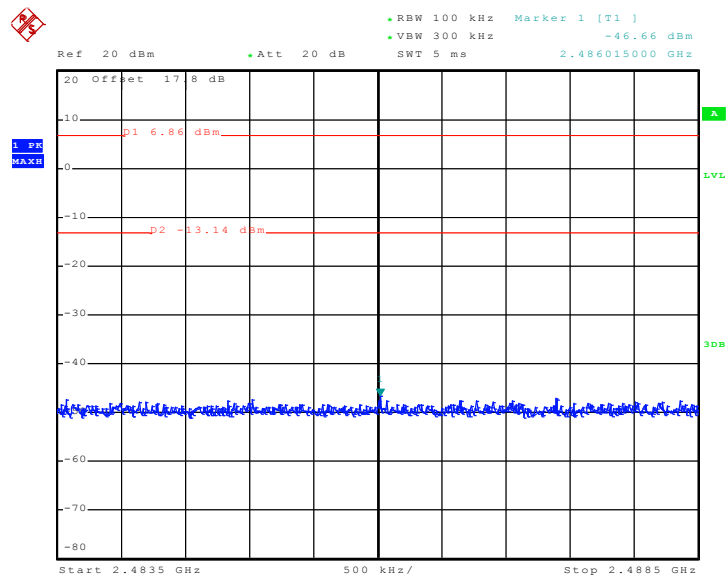
Test Mode :	Mode 1 and 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

Low Band Edge Plot on 802.11b Channel 01



Date: 22.JUN.2011 08:47:53

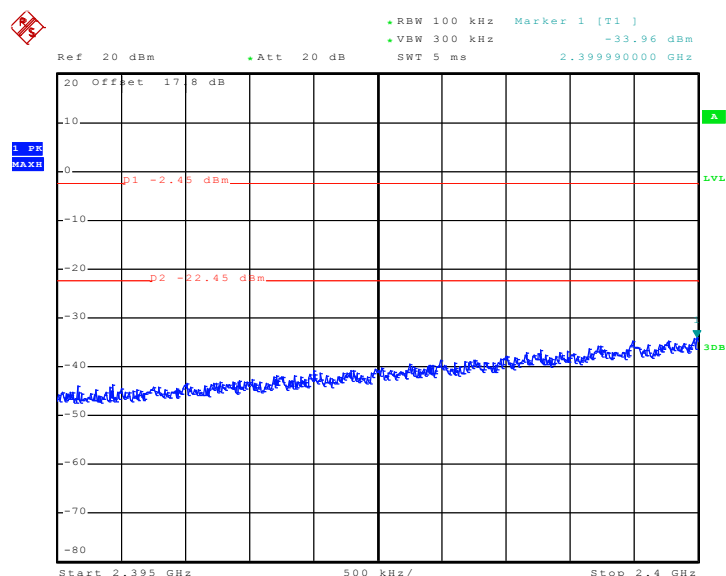
High Band Edge Plot on 802.11b Channel 11



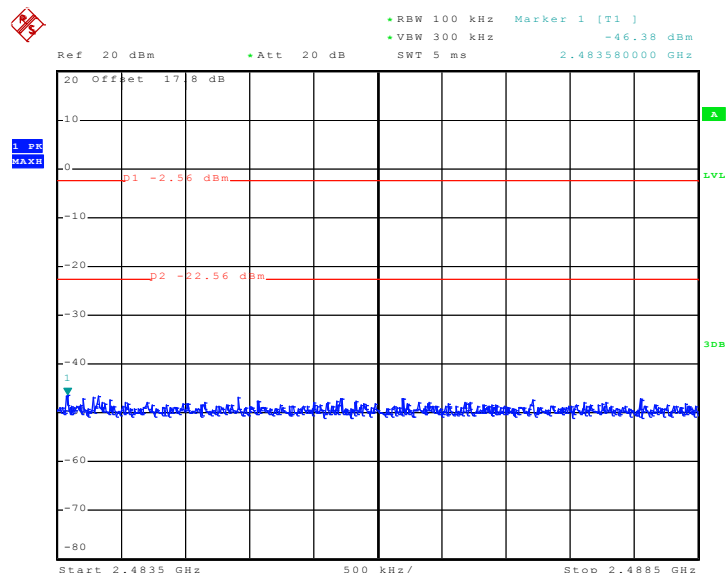
Date: 22.JUN.2011 09:16:00



Test Mode :	Mode 4 and 6	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

Low Band Edge Plot on 802.11g Channel 01

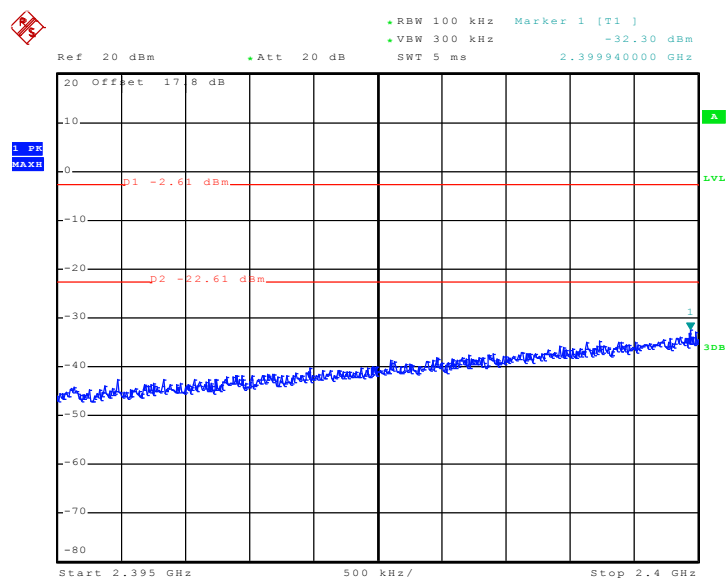
Date: 22.JUN.2011 09:41:33

High Band Edge Plot on 802.11g Channel 11

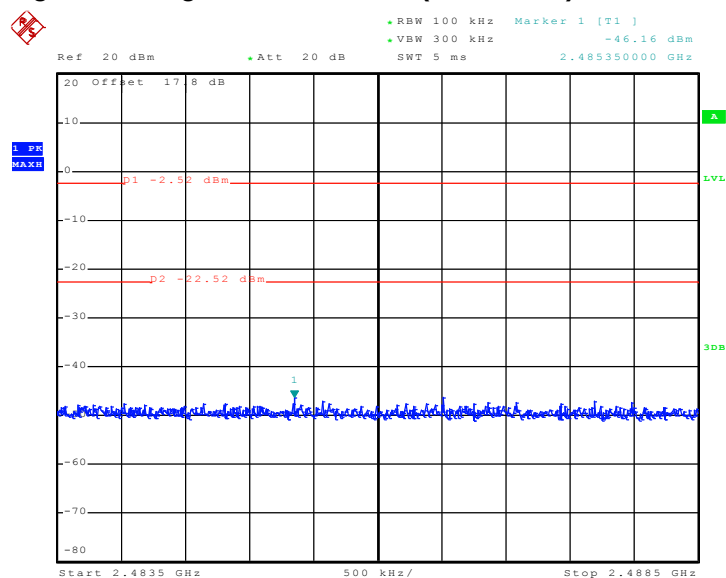
Date: 22.JUN.2011 10:09:53



Test Mode :	Mode 7 and 9	Temperature :	24~26℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

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

Date: 22.JUN.2011 10:33:59

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

Date: 22.JUN.2011 10:50:34

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.

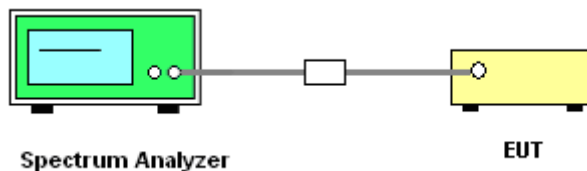
3.4.2 Measuring Instruments

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.

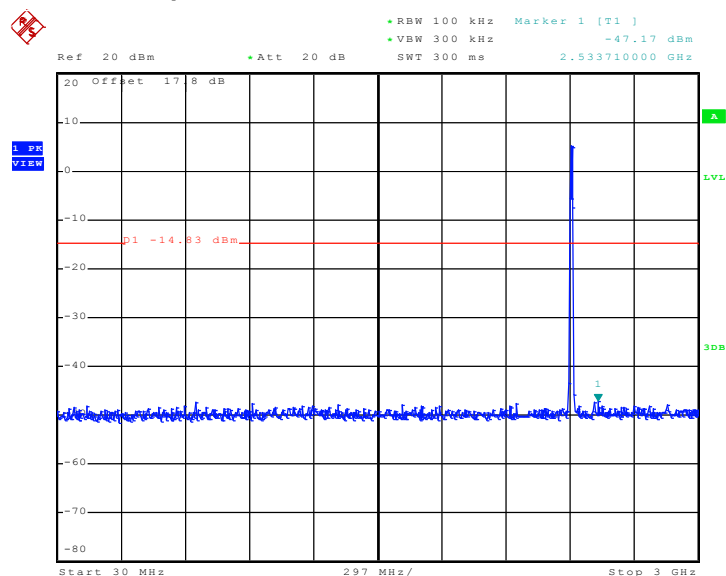
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

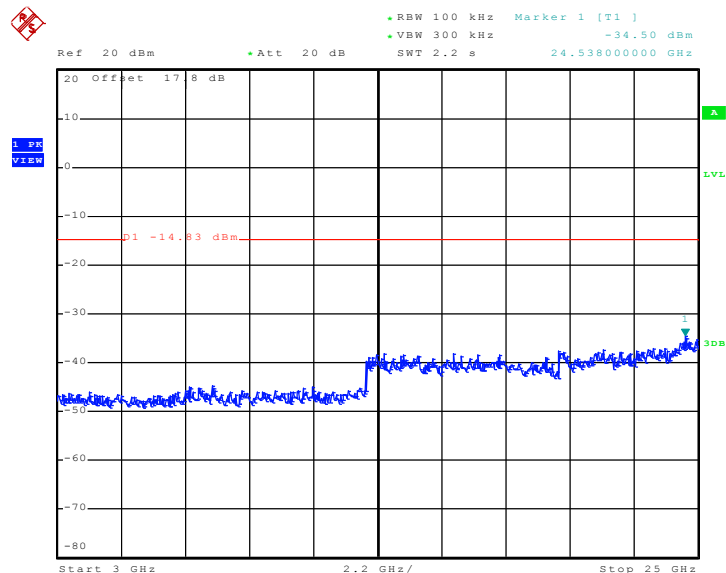
Test Mode :	Mode 1	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



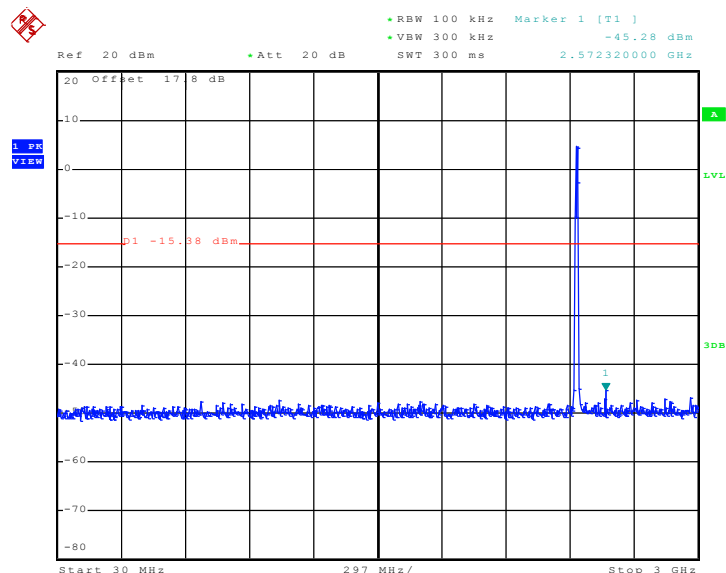
Date: 22.JUN.2011 08:58:16

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

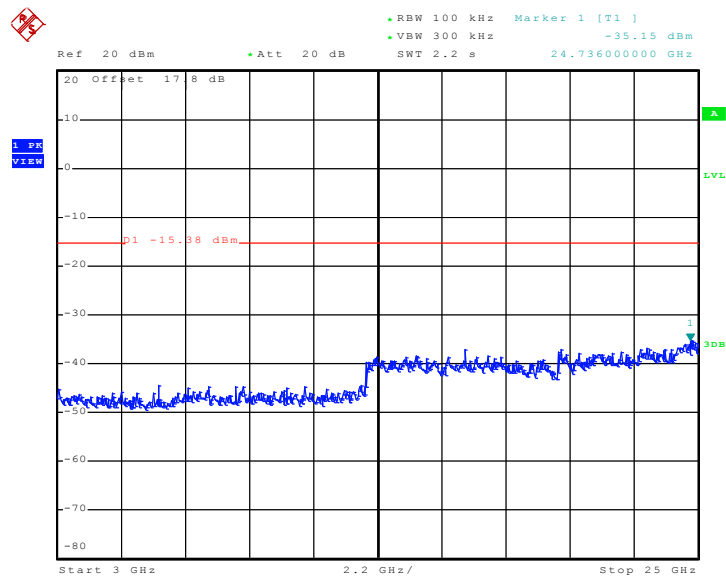


Date: 22.JUN.2011 08:58:34

Test Mode :	Mode 2	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


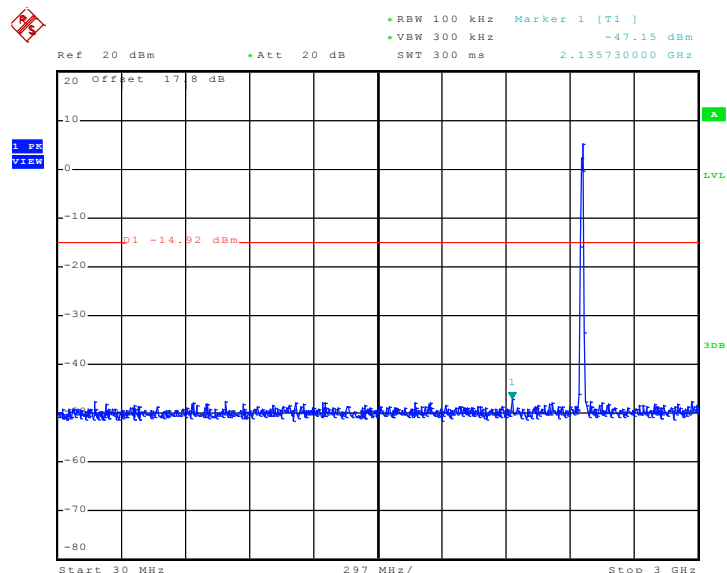
Date: 22.JUN.2011 09:10:27

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


Date: 22.JUN.2011 09:10:45

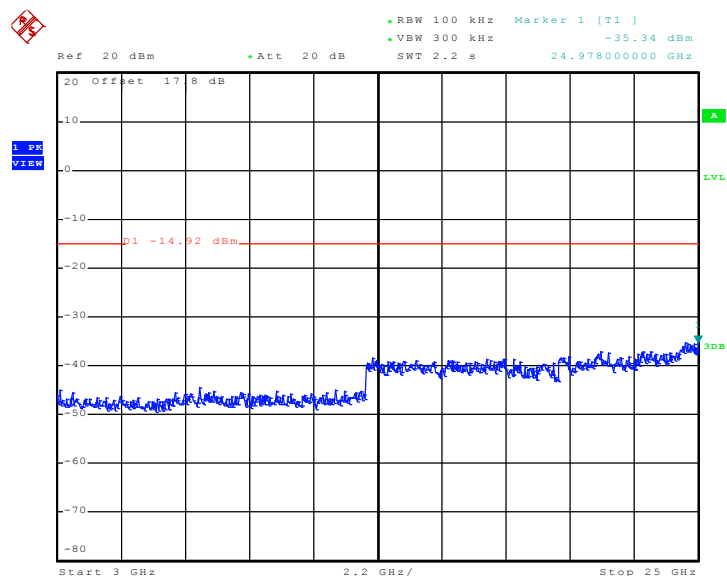
Test Mode :	Mode 3	Temperature :	24~26℃
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 22.JUN.2011 09:27:15

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



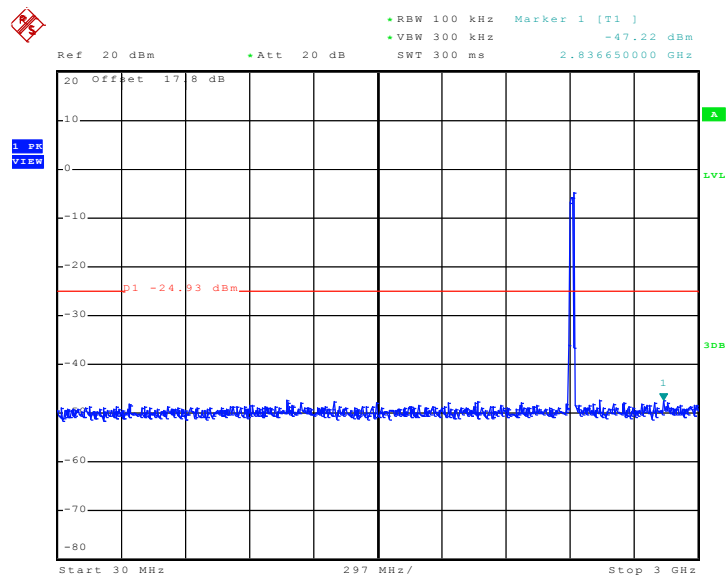
Date: 22.JUN.2011 09:27:33



Report No. : FR153127B

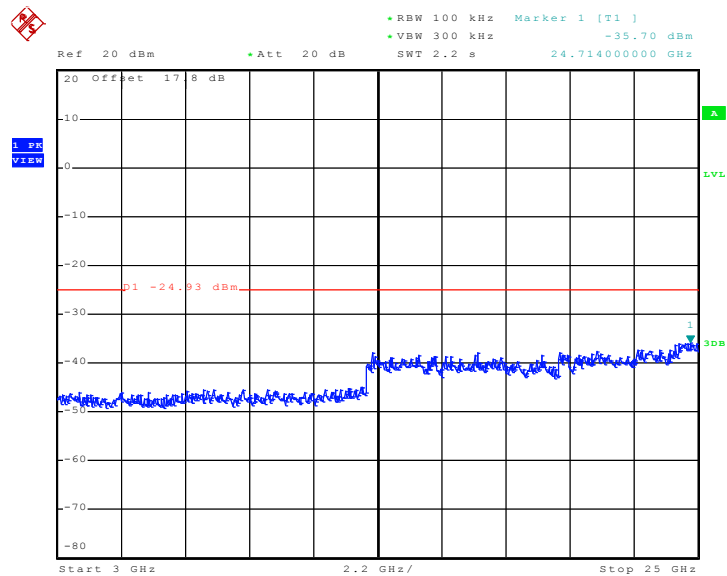
Test Mode :	Mode 4	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



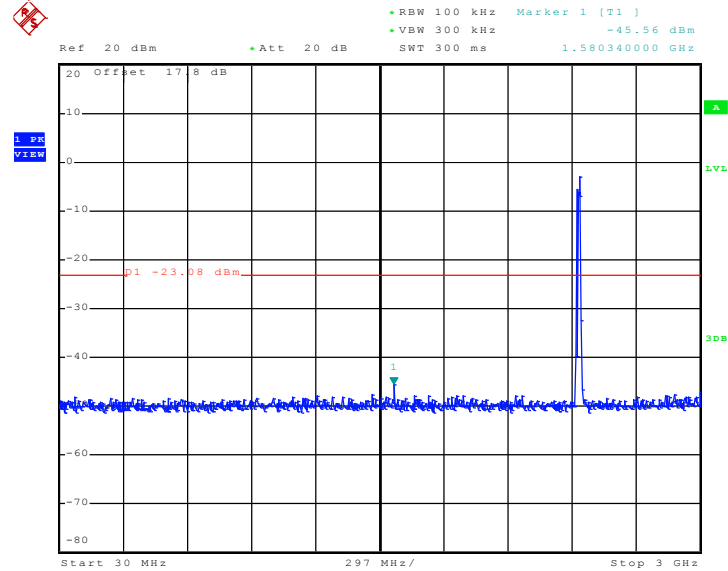
Date: 22.JUN.2011 09:51:39

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

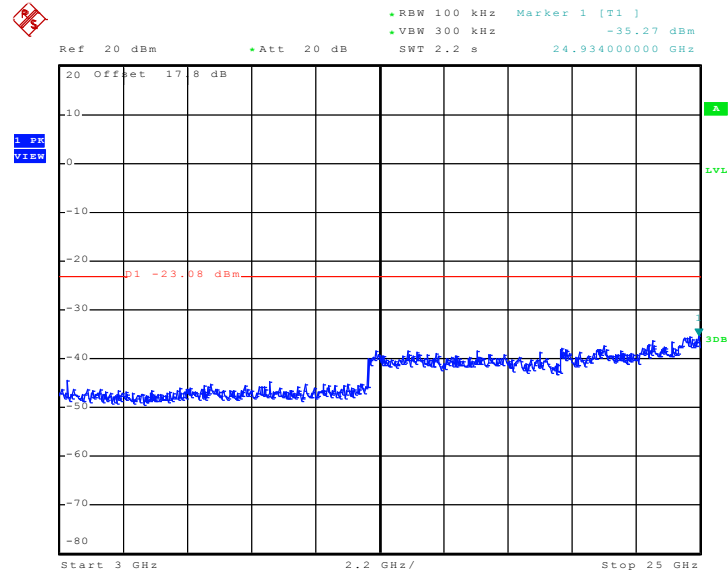


Date: 22.JUN.2011 09:51:57

Test Mode :	Mode 5	Temperature :	24~26
Test Band :	802.11g	Relative Humidity :	50~53
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz


Date: 22.JUN.2011 10:04:40

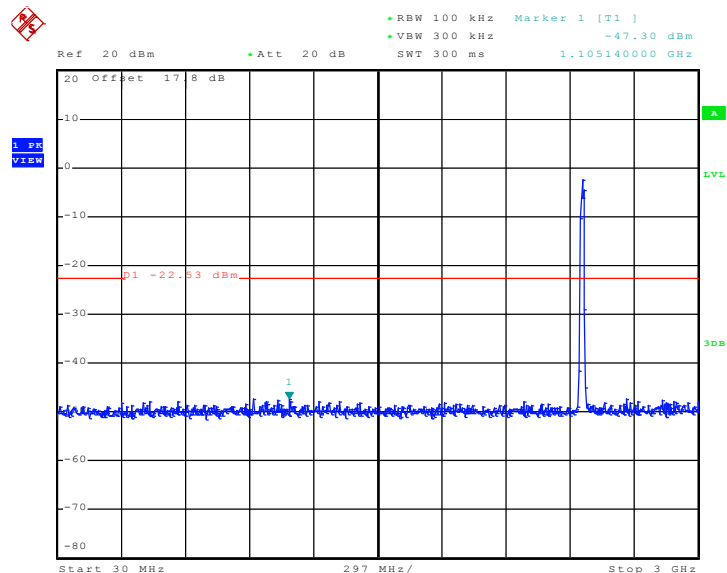
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz


Date: 22.JUN.2011 10:04:58



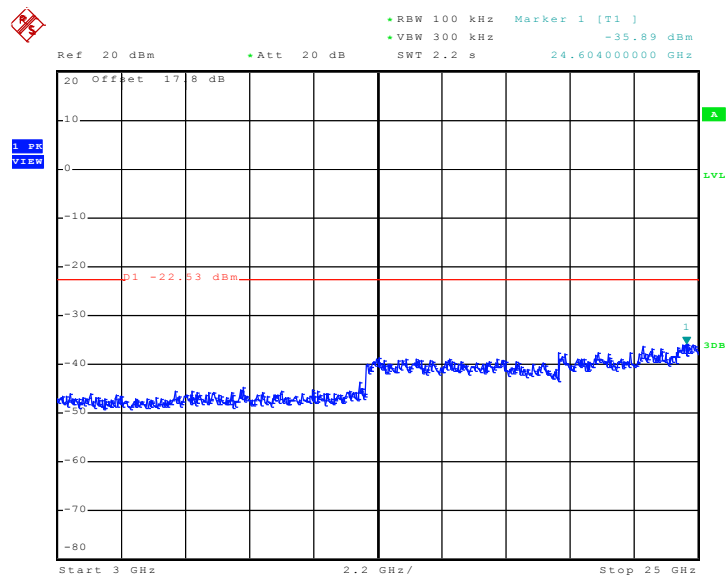
Test Mode :	Mode 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 22.JUN.2011 10:19:37

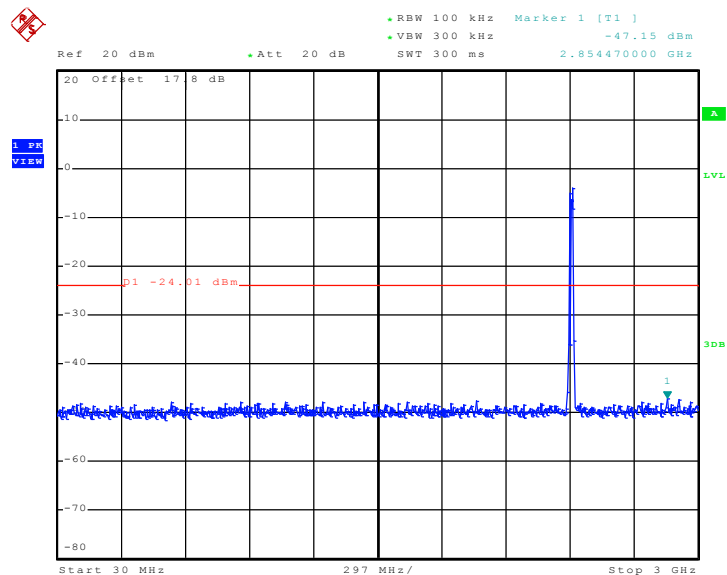
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



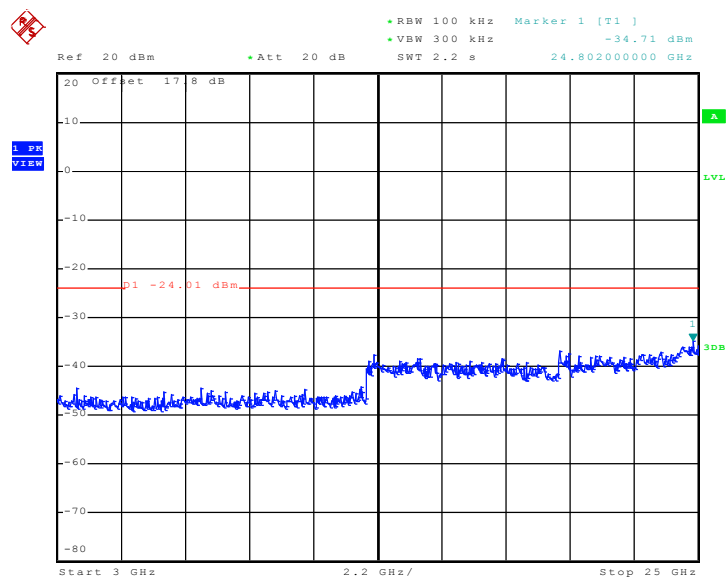
Date: 22.JUN.2011 10:19:55



Test Mode :	Mode 7	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

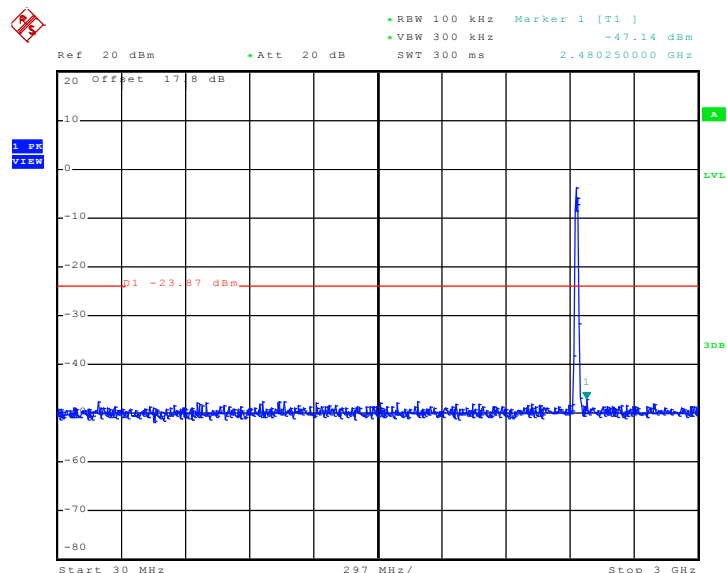
Date: 22.JUN.2011 10:43:59

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

Date: 22.JUN.2011 10:44:17

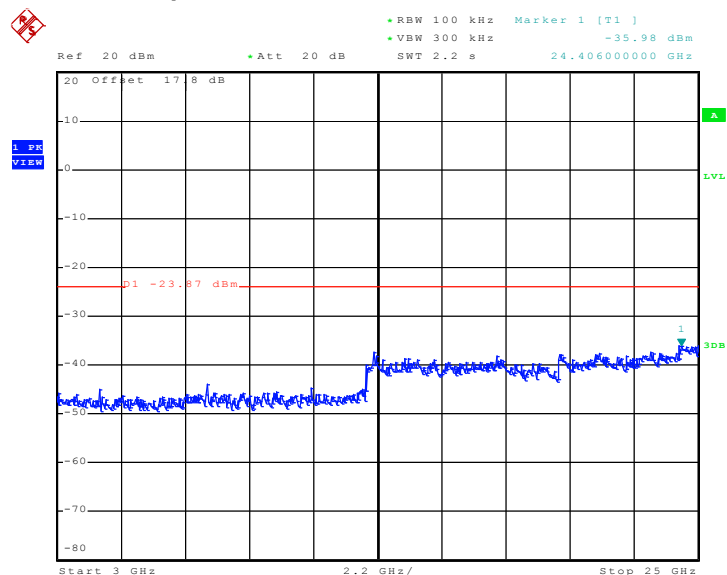
Test Mode :	Mode 8	Temperature :	24~26℃
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 22.JUN.2011 11:16:49

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

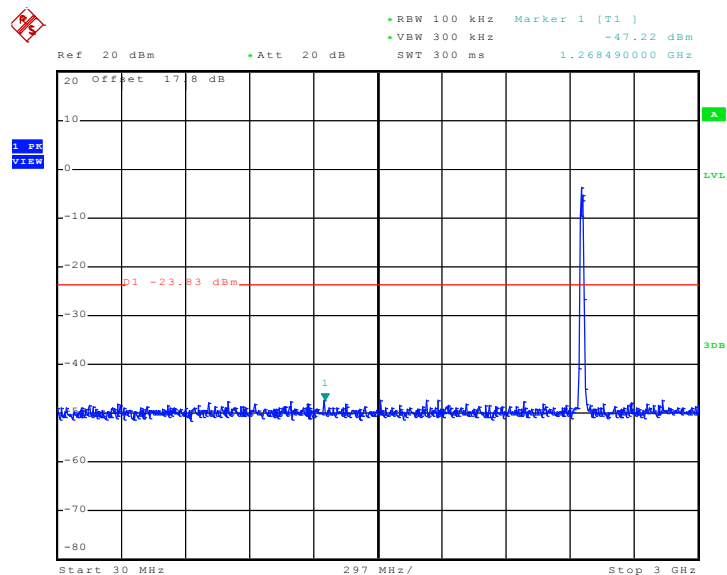


Date: 22.JUN.2011 11:17:07



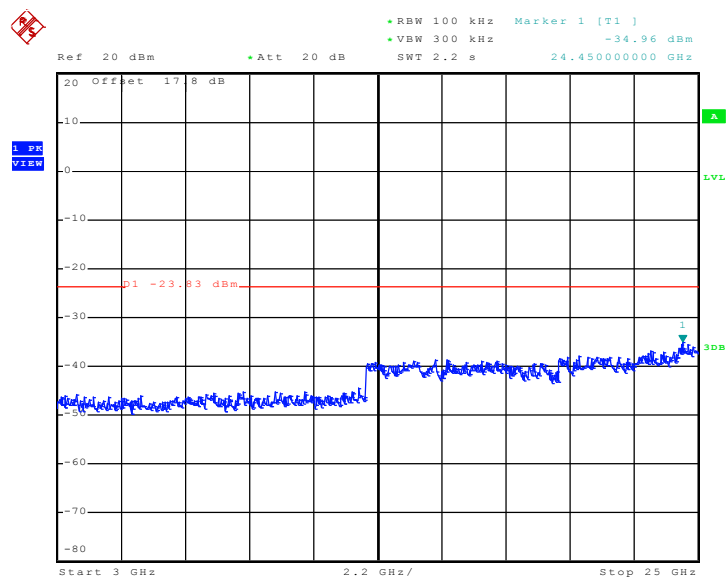
Test Mode :	Mode 9	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 22.JUN.2011 11:00:10

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 22.JUN.2011 11:00:28

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.

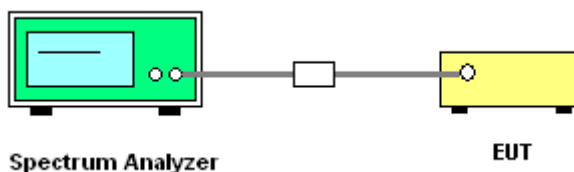
3.5.2 Measuring Instruments

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

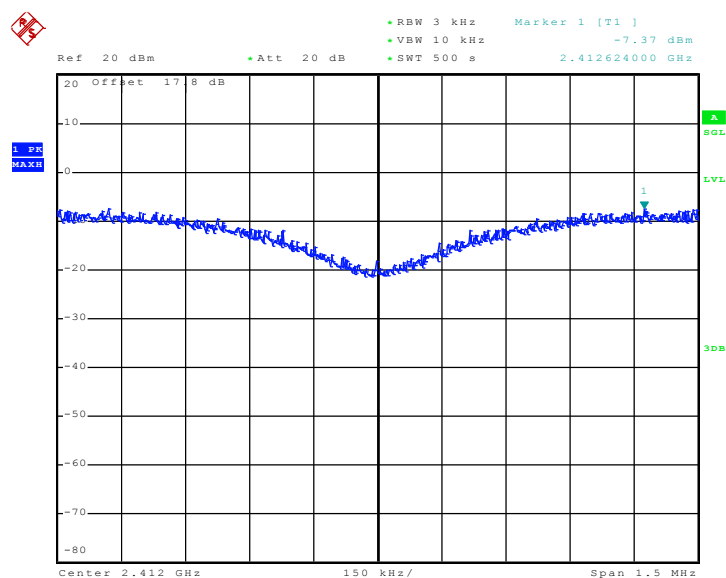


3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-7.37	8	Pass
06	2437	-7.33	8	Pass
11	2462	-6.80	8	Pass

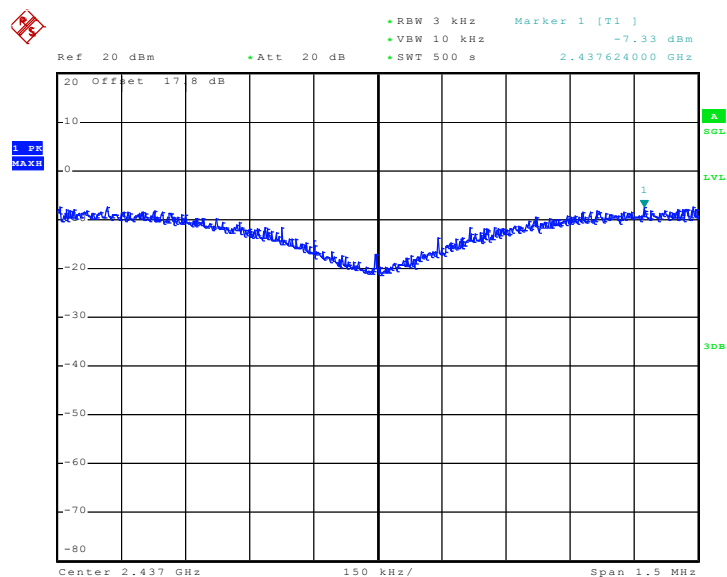
Mode 1 : PSD Plot on 802.11b Channel 01



Date: 22.JUN.2011 08:57:54

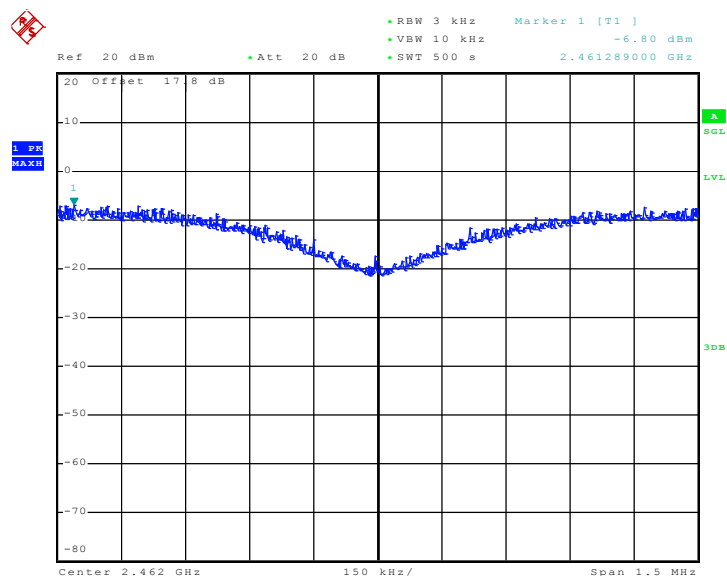


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 22.JUN.2011 09:10:04

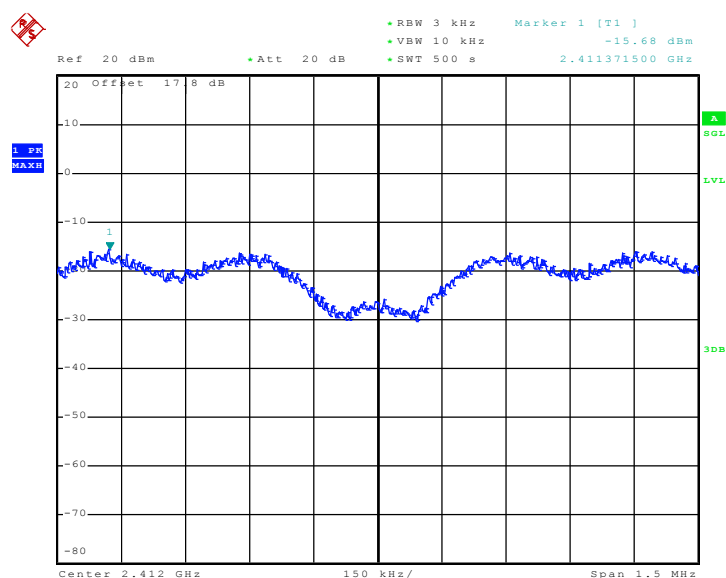
Mode 3 : PSD Plot on 802.11b Channel 11



Date: 22.JUN.2011 09:26:52

Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

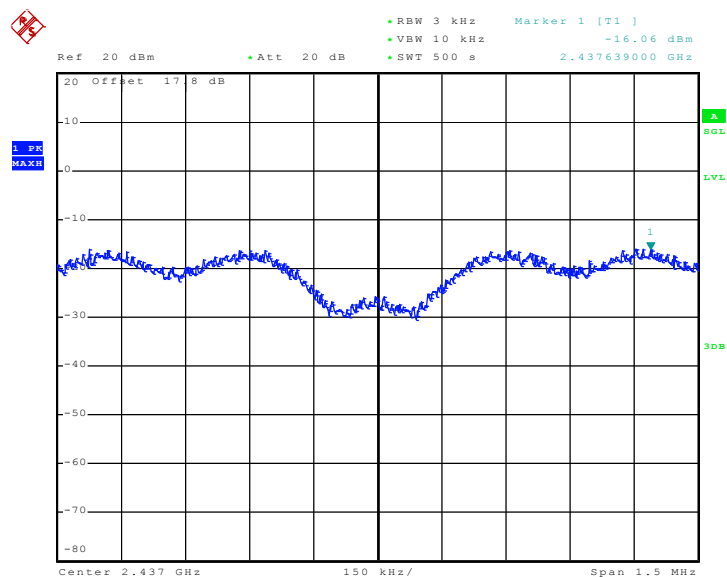
Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-15.68	8	Pass
06	2437	-16.06	8	Pass
11	2462	-15.20	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01


Date: 22.JUN.2011 09:51:16

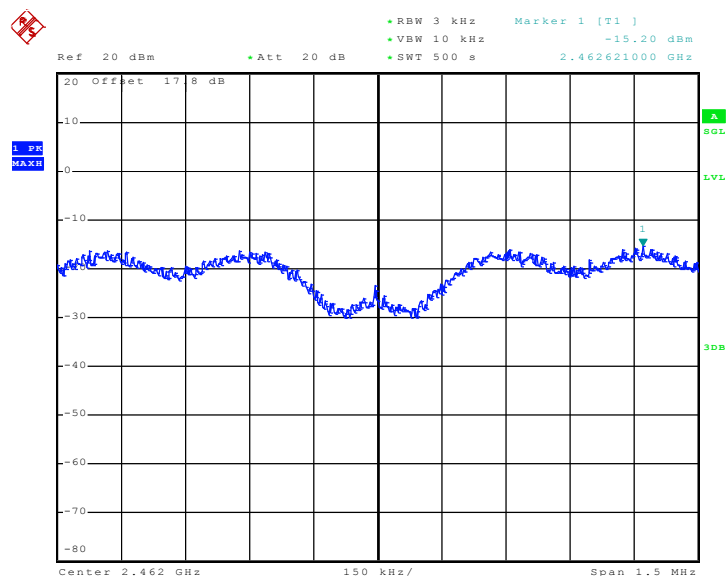


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 22.JUN.2011 10:04:17

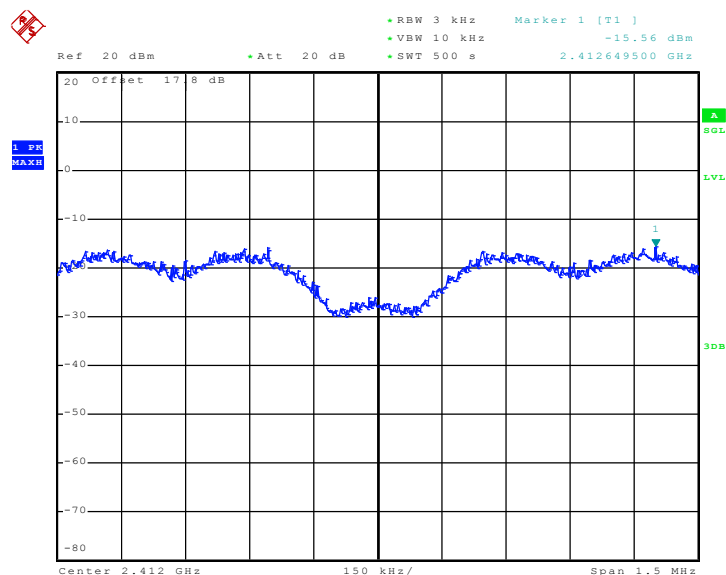
Mode 6 : PSD Plot on 802.11g Channel 11



Date: 22.JUN.2011 10:19:15

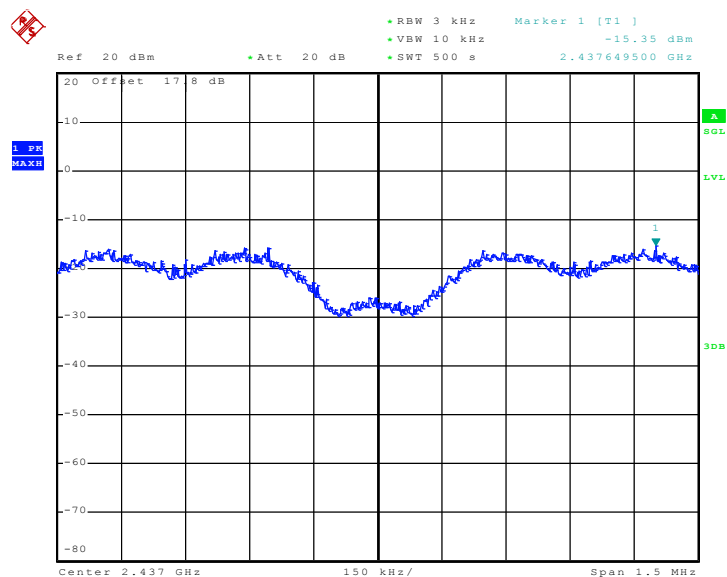
Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-15.56	8	Pass
06	2437	-15.35	8	Pass
11	2462	-15.67	8	Pass

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


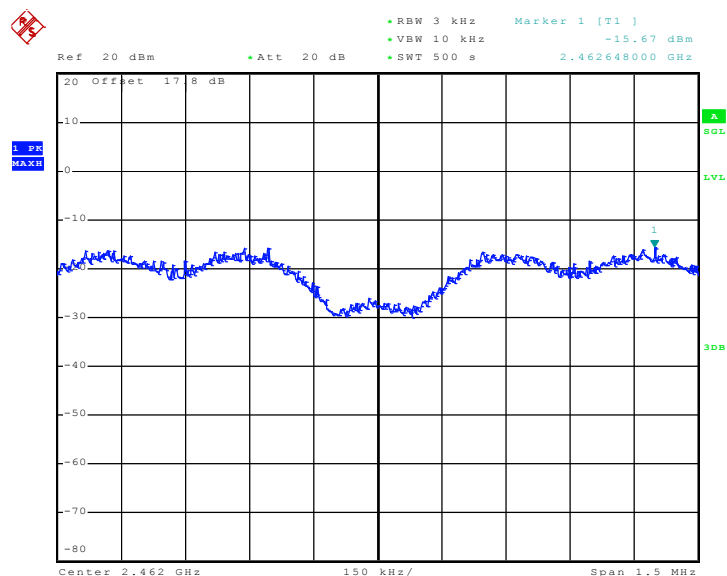
Date: 22.JUN.2011 10:43:36

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



Date: 22.JUN.2011 11:16:26

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



Date: 22.JUN.2011 10:59:46

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

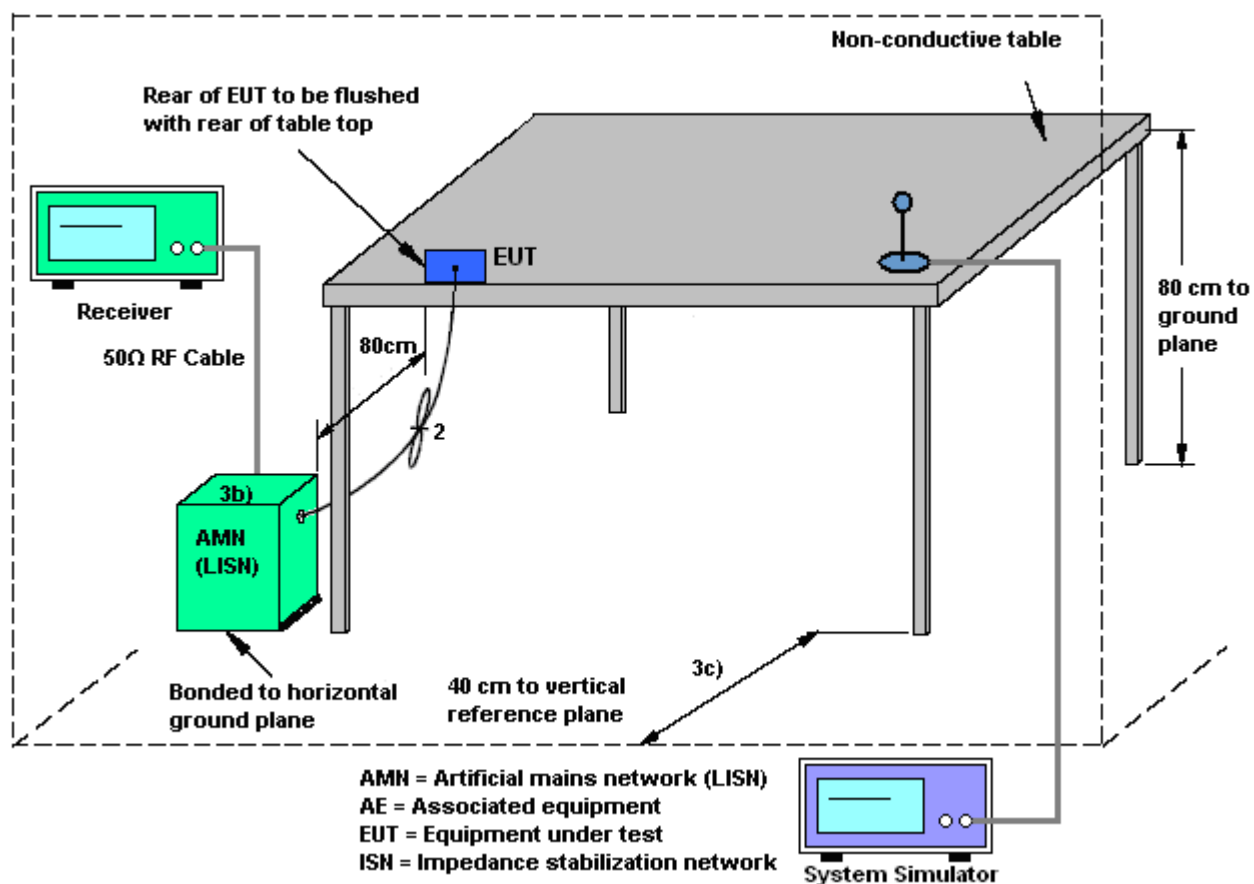
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

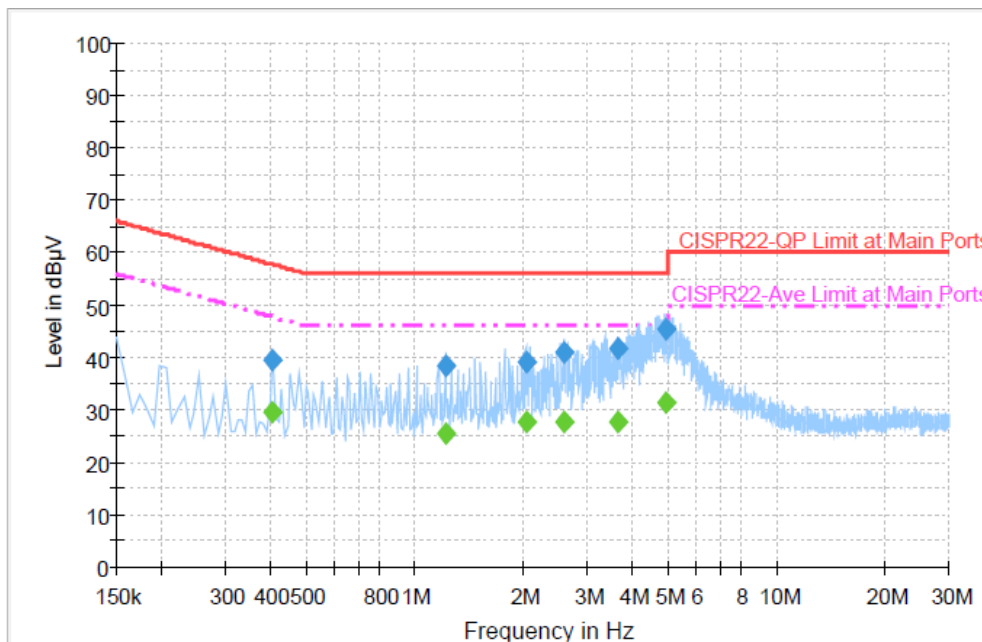
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 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.		



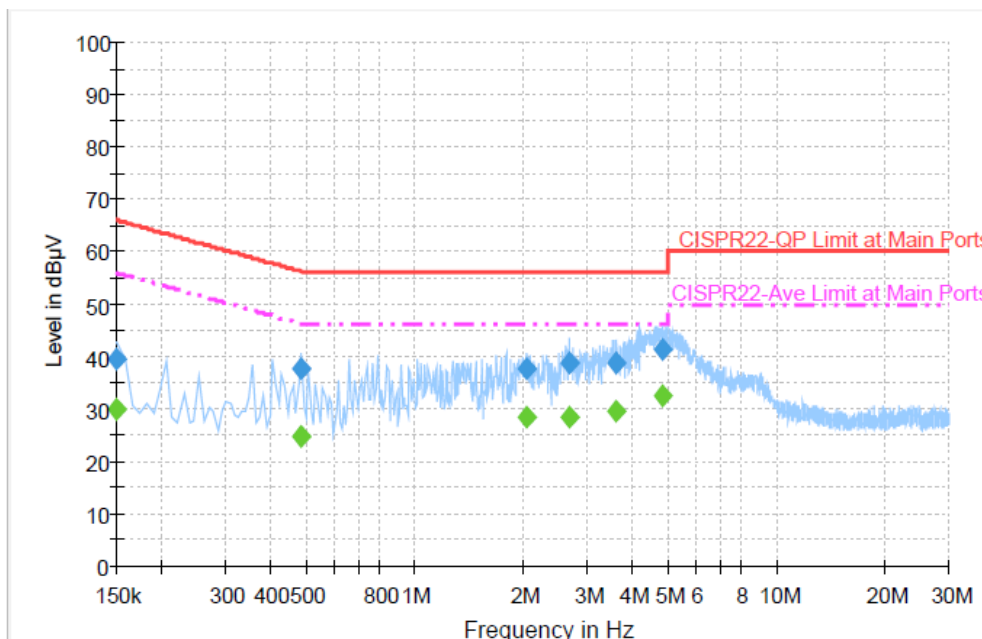
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.406000	39.6	Off	L1	19.4	18.1	57.7
1.214000	38.4	Off	L1	19.4	17.6	56.0
2.030000	39.1	Off	L1	19.4	16.9	56.0
2.582000	41.0	Off	L1	19.5	15.0	56.0
3.654000	41.6	Off	L1	19.5	14.4	56.0
4.966000	45.3	Off	L1	19.6	10.7	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.406000	29.6	Off	L1	19.4	18.1	47.7
1.214000	25.6	Off	L1	19.4	20.4	46.0
2.030000	27.7	Off	L1	19.4	18.3	46.0
2.582000	27.8	Off	L1	19.5	18.2	46.0
3.654000	27.7	Off	L1	19.5	18.3	46.0
4.966000	31.2	Off	L1	19.6	14.8	46.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 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.		


Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	39.5	Off	N	19.4	26.5	66.0
0.486000	37.7	Off	N	19.4	18.5	56.2
2.046000	37.8	Off	N	19.5	18.2	56.0
2.678000	38.8	Off	N	19.5	17.2	56.0
3.622000	38.8	Off	N	19.5	17.2	56.0
4.846000	41.2	Off	N	19.6	14.8	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	29.7	Off	N	19.4	26.3	56.0
0.486000	24.8	Off	N	19.4	21.4	46.2
2.046000	28.3	Off	N	19.5	17.7	46.0
2.678000	28.3	Off	N	19.5	17.7	46.0
3.622000	29.6	Off	N	19.5	16.4	46.0
4.846000	32.6	Off	N	19.6	13.4	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

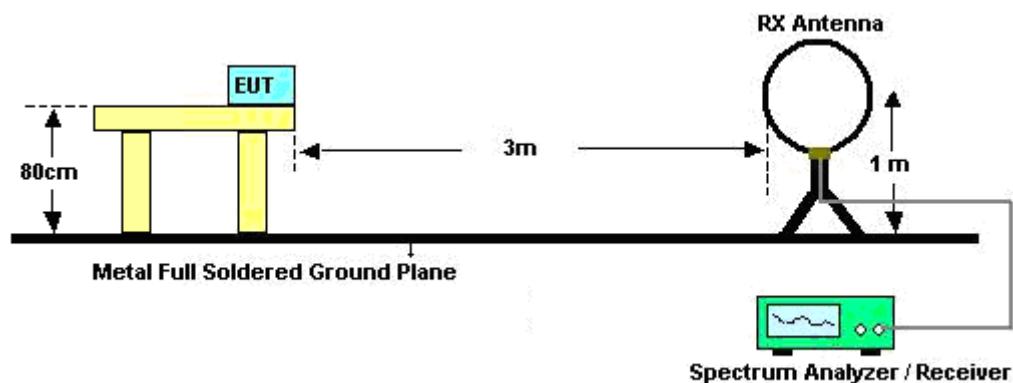
See list of measuring instruments of this test report.

3.7.3 Test Procedures

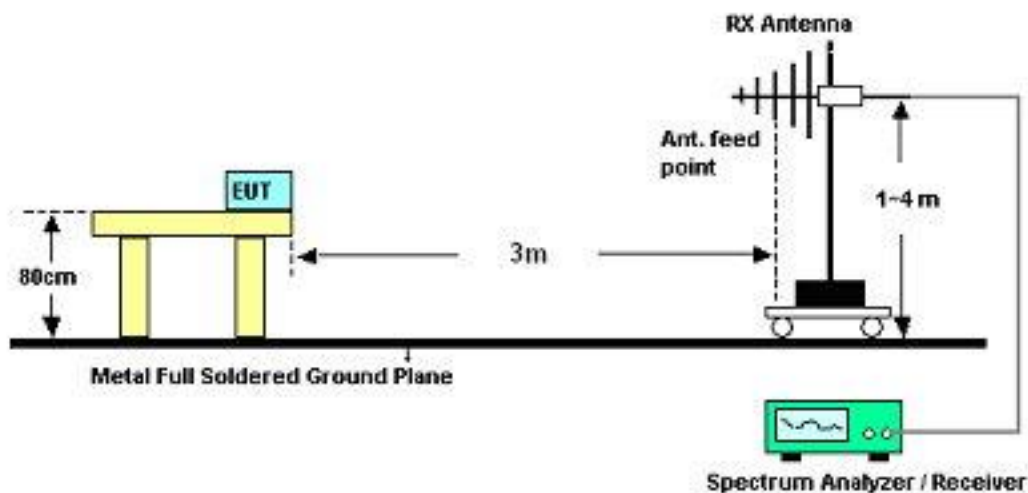
- The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
- Use the following spectrum analyzer settings:
 - Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep =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

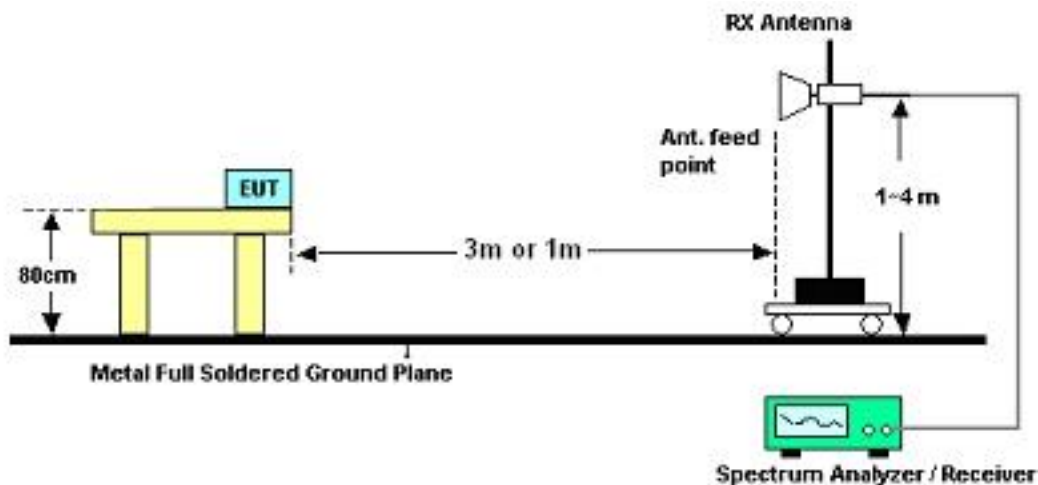
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

Test Engineer :	Kai Wang	Temperature :	23~24℃	
		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 = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

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

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

Test Mode :	Mode 1	Temperature :	23~24℃
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
192	18.71	-24.79	43.5	40.43	8.31	1.44	31.47	-	-	Peak
249.78	18.51	-27.49	46	36.71	11.67	1.66	31.53	-	-	Peak
288.12	20.85	-25.15	46	38.39	12.04	1.75	31.33	-	-	Peak
319.6	23.25	-22.75	46	40.02	12.69	1.83	31.29	-	-	Peak
384	28.41	-17.59	46	43.29	14.36	1.98	31.22	105	309	Peak
799.8	23.82	-22.18	46	30.51	21.02	2.83	30.54	-	-	Peak
2385.24	38.92	-15.08	54	36.74	31.68	4.58	34.08	165	35	Average
2385.24	50.36	-23.64	74	48.18	31.68	4.58	34.08	165	35	Peak
2412	106.32	-	-	104.1	31.71	4.59	34.08	165	35	Average
2412	109.93	-	-	107.71	31.71	4.59	34.08	165	35	Peak
2484	37.01	-16.99	54	34.67	31.78	4.64	34.08	165	35	Average
2484	49.41	-24.59	74	47.07	31.78	4.64	34.08	165	35	Peak

Test Mode :	Mode 1	Temperature :	23~24℃
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
34.86	31.75	-8.25	40	47.05	15.48	0.74	31.52	118	54	Peak
40.8	30.23	-9.77	40	48.32	12.68	0.75	31.52	-	-	Peak
92.1	20.36	-23.14	43.5	42.21	8.62	1.07	31.54	-	-	Peak
384	25.94	-20.06	46	40.82	14.36	1.98	31.22	-	-	Peak
575.8	22.73	-23.27	46	32.94	18.32	2.38	30.91	-	-	Peak
843.9	24.3	-21.7	46	30.54	21.35	2.91	30.5	-	-	Peak
2373.46	36.85	-17.15	54	34.68	31.68	4.57	34.08	100	19	Average
2373.46	49.96	-24.04	74	47.76	31.7	4.58	34.08	100	19	Peak
2412	103.09	-	-	100.87	31.71	4.59	34.08	100	19	Average
2412	106.95	-	-	104.73	31.71	4.59	34.08	100	19	Peak
2490	34.21	-19.79	54	31.85	31.8	4.64	34.08	100	19	Average
2490	46.72	-27.28	74	44.36	31.8	4.64	34.08	100	19	Peak



Test Mode :	Mode 2	Temperature :	23~24℃
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
34.86	19.32	-20.68	40	34.62	15.48	0.74	31.52	-	-	Peak
249.78	18.29	-27.71	46	36.49	11.67	1.66	31.53	-	-	Peak
288.12	19.92	-26.08	46	37.46	12.04	1.75	31.33	-	-	Peak
319.6	23.31	-22.69	46	40.08	12.69	1.83	31.29	-	-	Peak
384	28.41	-17.59	46	43.29	14.36	1.98	31.22	101	48	Peak
768.3	23.88	-22.12	46	31.22	20.42	2.78	30.54	-	-	Peak
2390	38.23	-15.77	54	36.03	31.7	4.58	34.08	159	327	Average
2390	50.18	-23.82	74	47.98	31.7	4.58	34.08	159	327	Peak
2437	106.93	-	-	104.65	31.75	4.61	34.08	159	327	Average
2437	110.49	-	-	108.23	31.73	4.61	34.08	159	327	Peak
2484	40.3	-13.7	54	37.96	31.78	4.64	34.08	159	327	Average
2484	52.58	-21.42	74	50.24	31.78	4.64	34.08	159	327	Peak

Test Mode :	Mode 2	Temperature :	23~24℃
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
34.86	31.37	-8.63	40	46.67	15.48	0.74	31.52	114	243	Peak
40.8	26.82	-13.18	40	44.91	12.68	0.75	31.52	-	-	Peak
92.1	19.93	-23.57	43.5	41.78	8.62	1.07	31.54	-	-	Peak
384	26.19	-19.81	46	41.07	14.36	1.98	31.22	-	-	Peak
575.8	24.43	-21.57	46	34.64	18.32	2.38	30.91	-	-	Peak
768.3	24.02	-21.98	46	31.36	20.42	2.78	30.54	-	-	Peak
2384	34.69	-19.31	54	32.51	31.68	4.58	34.08	128	18	Average
2384	46.65	-27.35	74	44.47	31.68	4.58	34.08	128	18	Peak
2437	103.93	-	-	101.65	31.75	4.61	34.08	128	18	Average
2437	107.67	-	-	105.39	31.75	4.61	34.08	128	18	Peak
2490	34.77	-19.23	54	32.41	31.8	4.64	34.08	128	18	Average
2490	47.16	-26.84	74	44.8	31.8	4.64	34.08	128	18	Peak

Test Mode :	Mode 3	Temperature :	23~24℃
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
246	23.52	-22.48	46	42	11.4	1.64	31.52	-	-	Peak
249.78	26.76	-19.24	46	44.96	11.67	1.66	31.53	-	-	Peak
288.12	18.04	-27.96	46	35.58	12.04	1.75	31.33	-	-	Peak
384	26.97	-19.03	46	41.85	14.36	1.98	31.22	128	13	Peak
768.3	23.34	-22.66	46	30.68	20.42	2.78	30.54	-	-	Peak
809.6	23.16	-22.84	46	29.75	21.09	2.85	30.53	-	-	Peak
2382	34.16	-19.84	54	31.98	31.68	4.58	34.08	102	331	Average
2382	49.75	-24.25	74	47.57	31.68	4.58	34.08	102	331	Peak
2462	106.7	-	-	104.39	31.77	4.62	34.08	102	331	Average
2462	110.37	-	-	108.06	31.77	4.62	34.08	102	331	Peak
2499.62	41.38	-12.62	54	39.02	31.8	4.64	34.08	102	331	Average
2499.62	54.43	-19.57	74	52.07	31.8	4.64	34.08	102	331	Peak

Test Mode :	Mode 3	Temperature :	23~24°C
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
34.86	33.75	-6.25	40	49.05	15.48	0.74	31.52	106	199	Peak
40.8	28.64	-11.36	40	46.73	12.68	0.75	31.52	-	-	Peak
249.78	20.01	-25.99	46	38.21	11.67	1.66	31.53	-	-	Peak
384	25.12	-20.88	46	40	14.36	1.98	31.22	-	-	Peak
575.8	24.33	-21.67	46	34.54	18.32	2.38	30.91	-	-	Peak
768.3	26.35	-19.65	46	33.69	20.42	2.78	30.54	-	-	Peak
2382	33.15	-20.85	54	30.97	31.68	4.58	34.08	182	17	Average
2382	45.95	-28.05	74	43.77	31.68	4.58	34.08	182	17	Peak
2462	103.71	-	-	101.4	31.77	4.62	34.08	182	17	Average
2462	107.37	-	-	105.06	31.77	4.62	34.08	182	17	Peak
2483.5	38.8	-15.2	54	36.46	31.78	4.64	34.08	182	17	Average
2483.5	52.28	-21.72	74	49.94	31.78	4.64	34.08	182	17	Peak

Test Mode :	Mode 4	Temperature :	23~24℃
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
33.24	19.66	-20.34	40	33.85	16.63	0.72	31.54	-	-	Peak
230.34	14.09	-31.91	46	33.69	10.32	1.58	31.5	-	-	Peak
249.78	26.9	-19.1	46	45.1	11.67	1.66	31.53	149	308	Peak
579.3	21.04	-24.96	46	31.19	18.37	2.38	30.9	-	-	Peak
722.8	21.68	-24.32	46	30.06	19.56	2.7	30.64	-	-	Peak
876.8	23.84	-22.16	46	29.76	21.6	2.97	30.49	-	-	Peak
2389.61	43.35	-10.65	54	41.15	31.7	4.58	34.08	144	48	Average
2389.61	59.59	-14.41	74	57.39	31.7	4.58	34.08	144	48	Peak
2412	98.74	-	-	96.52	31.71	4.59	34.08	144	48	Average
2412	109.48	-	-	107.26	31.71	4.59	34.08	144	48	Peak
2496	37.15	-16.85	54	34.79	31.8	4.64	34.08	144	48	Average
2496	54.37	-19.63	74	52.01	31.8	4.64	34.08	144	48	Peak



Test Mode :	Mode 4	Temperature :	23~24°C
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
34.86	32.97	-7.03	40	48.27	15.48	0.74	31.52	100	36	Peak
40.8	29.24	-10.76	40	47.33	12.68	0.75	31.52	-	-	Peak
249.78	19.92	-26.08	46	38.12	11.67	1.66	31.53	-	-	Peak
731.2	22.13	-23.87	46	30.31	19.72	2.71	30.61	-	-	Peak
772.5	23.28	-22.72	46	30.54	20.49	2.79	30.54	-	-	Peak
892.2	23.82	-22.18	46	29.58	21.72	3	30.48	-	-	Peak
2389.99	38.1	-15.9	54	35.9	31.7	4.58	34.08	123	11	Average
2389.99	56.65	-17.35	74	54.45	31.7	4.58	34.08	123	11	Peak
2412	94.37	-	-	92.15	31.71	4.59	34.08	123	11	Average
2412	104.51	-	-	102.29	31.71	4.59	34.08	123	11	Peak
2494	34.64	-19.36	54	32.28	31.8	4.64	34.08	123	11	Average
2494	51.61	-22.39	74	49.25	31.8	4.64	34.08	123	11	Peak



Test Mode :	Mode 5	Temperature :	23~24℃
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
192	16.86	-26.64	43.5	38.58	8.31	1.44	31.47	-	-	Peak
249.78	23.07	-22.93	46	41.27	11.67	1.66	31.53	-	-	Peak
288.12	21.53	-24.47	46	39.07	12.04	1.75	31.33	-	-	Peak
319.6	25.04	-20.96	46	41.81	12.69	1.83	31.29	-	-	Peak
384	28.51	-17.49	46	43.39	14.36	1.98	31.22	108	95	Peak
768.3	23.43	-22.57	46	30.77	20.42	2.78	30.54	-	-	Peak
2388	38.33	-15.67	54	36.13	31.7	4.58	34.08	105	24	Average
2388	50.5	-23.5	74	48.3	31.7	4.58	34.08	105	24	Peak
2437	98.6	-	-	96.32	31.75	4.61	34.08	105	24	Average
2437	109.46	-	-	107.2	31.73	4.61	34.08	105	24	Peak
2484	39.2	-14.8	54	36.92	31.75	4.61	34.08	105	24	Average
2484	52.02	-21.98	74	49.68	31.78	4.64	34.08	105	24	Peak

Test Mode :	Mode 5	Temperature :	23~24℃
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
34.86	32.91	-7.09	40	48.21	15.48	0.74	31.52	123	227	Peak
40.8	29.84	-10.16	40	47.93	12.68	0.75	31.52	-	-	Peak
92.1	18.78	-24.72	43.5	40.63	8.62	1.07	31.54	-	-	Peak
384	26.11	-19.89	46	40.99	14.36	1.98	31.22	-	-	Peak
768.3	24.65	-21.35	46	31.99	20.42	2.78	30.54	-	-	Peak
833.4	23.31	-22.69	46	29.66	21.27	2.89	30.51	-	-	Peak
2388	34.05	-19.95	54	31.71	31.78	4.64	34.08	120	25	Average
2388	46.52	-27.48	74	44.32	31.7	4.58	34.08	120	25	Peak
2437	94.06	-	-	91.78	31.75	4.61	34.08	120	25	Average
2437	105.03	-	-	102.77	31.73	4.61	34.08	120	25	Peak
2486	35.29	-18.71	54	32.95	31.78	4.64	34.08	120	25	Average
2486	48.1	-25.9	74	45.76	31.78	4.64	34.08	120	25	Peak



Test Mode :	Mode 6	Temperature :	23~24℃
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
33.24	19.56	-20.44	40	33.75	16.63	0.72	31.54	-	-	Peak
192	19.23	-24.27	43.5	40.95	8.31	1.44	31.47	-	-	Peak
249.78	23.14	-22.86	46	41.34	11.67	1.66	31.53	-	-	Peak
319.6	24.57	-21.43	46	41.34	12.69	1.83	31.29	-	-	Peak
384	27.03	-18.97	46	41.91	14.36	1.98	31.22	112	178	Peak
867.7	24.01	-21.99	46	30.01	21.54	2.95	30.49	-	-	Peak
2388	35.58	-18.42	54	33.38	31.7	4.58	34.08	132	26	Average
2388	50.53	-23.47	74	48.33	31.7	4.58	34.08	132	26	Peak
2462	99.16	-	-	96.85	31.77	4.62	34.08	132	26	Average
2462	109.9	-	-	107.59	31.77	4.62	34.08	132	26	Peak
2483.5	44.12	-9.88	54	41.78	31.78	4.64	34.08	132	26	Average
2483.5	63.13	-10.87	74	60.79	31.78	4.64	34.08	132	26	Peak



Test Mode :	Mode 6	Temperature :	23~24℃
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
34.86	32.75	-7.25	40	48.05	15.48	0.74	31.52	115	286	Peak
40.8	29.77	-10.23	40	47.86	12.68	0.75	31.52	-	-	Peak
92.1	19.47	-24.03	43.5	41.32	8.62	1.07	31.54	-	-	Peak
384	25.43	-20.57	46	40.31	14.36	1.98	31.22	-	-	Peak
575.8	24.99	-21.01	46	35.2	18.32	2.38	30.91	-	-	Peak
768.3	25.58	-20.42	46	32.92	20.42	2.78	30.54	-	-	Peak
2382	31.02	-22.98	54	28.84	31.68	4.58	34.08	123	17	Average
2382	45.92	-28.08	74	43.74	31.68	4.58	34.08	123	17	Peak
2462	93.41	-	-	91.1	31.77	4.62	34.08	123	17	Average
2462	104.16	-	-	101.85	31.77	4.62	34.08	123	17	Peak
2484.04	37.1	-16.9	54	34.76	31.78	4.64	34.08	123	17	Average
2484.04	53.75	-20.25	74	51.41	31.78	4.64	34.08	123	17	Peak



Test Mode :	Mode 7	Temperature :	23~24℃
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
192	19.8	-23.7	43.5	41.52	8.31	1.44	31.47	-	-	Peak
249.78	23.44	-22.56	46	41.64	11.67	1.66	31.53	-	-	Peak
288.12	20.38	-25.62	46	37.92	12.04	1.75	31.33	-	-	Peak
319.6	23.82	-22.18	46	40.59	12.69	1.83	31.29	-	-	Peak
384	28.52	-17.48	46	43.4	14.36	1.98	31.22	111	58	Peak
768.3	24.32	-21.68	46	31.66	20.42	2.78	30.54	-	-	Peak
2389.99	42.78	-11.22	54	40.58	31.7	4.58	34.08	111	39	Average
2389.99	60.92	-13.08	74	58.72	31.7	4.58	34.08	111	39	Peak
2412	98.95	-	-	96.73	31.71	4.59	34.08	111	39	Average
2412	109.63	-	-	107.41	31.71	4.59	34.08	111	39	Peak
2488	38.32	-15.68	54	35.96	31.8	4.64	34.08	111	39	Average
2488	57.76	-16.24	74	55.4	31.8	4.64	34.08	111	39	Peak

Test Mode :	Mode 7	Temperature :	23~24°C
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
34.86	32.11	-7.89	40	47.41	15.48	0.74	31.52	133	329	Peak
40.8	29.8	-10.2	40	47.89	12.68	0.75	31.52	-	-	Peak
92.1	19.04	-24.46	43.5	40.89	8.62	1.07	31.54	-	-	Peak
674.5	20.26	-25.74	46	29.36	19.03	2.62	30.75	-	-	Peak
728.4	21.08	-24.92	46	29.32	19.67	2.71	30.62	-	-	Peak
881	22.62	-23.38	46	28.5	21.63	2.98	30.49	-	-	Peak
2389.99	39.77	-14.23	54	37.57	31.7	4.58	34.08	100	18	Average
2389.99	58.63	-15.37	74	56.43	31.7	4.58	34.08	100	18	Peak
2412	93.99	-	-	91.77	31.71	4.59	34.08	100	18	Average
2412	104.69	-	-	102.47	31.71	4.59	34.08	100	18	Peak
2496	32.99	-21.01	54	30.63	31.8	4.64	34.08	100	18	Average
2496	48.81	-25.19	74	46.45	31.8	4.64	34.08	100	18	Peak

Test Mode :	Mode 8	Temperature :	23~24°C
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
192	18.48	-25.02	43.5	40.2	8.31	1.44	31.47	-	-	Peak
249.78	23.18	-22.82	46	41.38	11.67	1.66	31.53	-	-	Peak
288.12	19	-27	46	36.54	12.04	1.75	31.33	-	-	Peak
319.6	20.55	-25.45	46	37.32	12.69	1.83	31.29	-	-	Peak
384	28.04	-17.96	46	42.92	14.36	1.98	31.22	100	307	Peak
845.3	23.4	-22.6	46	29.62	21.37	2.91	30.5	-	-	Peak
2390	36.81	-17.19	54	34.61	31.7	4.58	34.08	136	39	Average
2390	48.67	-25.33	74	46.47	31.7	4.58	34.08	136	39	Peak
2437	98.3	-	-	96.02	31.75	4.61	34.08	136	39	Average
2437	108.99	-	-	106.71	31.75	4.61	34.08	136	39	Peak
2484	37.6	-16.4	54	35.26	31.78	4.64	34.08	136	39	Average
2484	50.39	-23.61	74	48.05	31.78	4.64	34.08	136	39	Peak



Test Mode :	Mode 8	Temperature :	23~24℃
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
34.86	30.64	-9.36	40	45.94	15.48	0.74	31.52	145	82	Peak
42.42	25.72	-14.28	40	44.97	11.53	0.76	31.54	-	-	Peak
160.14	20.14	-23.36	43.5	40.66	9.63	1.35	31.5	-	-	Peak
319.6	21.74	-24.26	46	38.51	12.69	1.83	31.29	-	-	Peak
384	26.77	-19.23	46	41.65	14.36	1.98	31.22	-	-	Peak
768.3	25.18	-20.82	46	32.52	20.42	2.78	30.54	-	-	Peak
2390	33.48	-20.52	54	31.28	31.7	4.58	34.08	121	13	Average
2390	45.33	-28.67	74	43.13	31.7	4.58	34.08	121	13	Peak
2437	93.3	-	-	91.02	31.75	4.61	34.08	121	13	Average
2437	103.56	-	-	101.28	31.75	4.61	34.08	121	13	Peak
2484	35.66	-18.34	54	33.32	31.78	4.64	34.08	121	13	Average
2484	48.71	-25.29	74	46.37	31.78	4.64	34.08	121	13	Peak



Test Mode :	Mode 9	Temperature :	23~24℃
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
192	19.25	-24.25	43.5	40.97	8.31	1.44	31.47	-	-	Peak
249.78	23.4	-22.6	46	41.6	11.67	1.66	31.53	-	-	Peak
288.12	19.14	-26.86	46	36.68	12.04	1.75	31.33	-	-	Peak
319.6	26.03	-19.97	46	42.8	12.69	1.83	31.29	-	-	Peak
384	27.1	-18.9	46	41.98	14.36	1.98	31.22	104	285	Peak
960.1	29.14	-24.86	54	33.23	23.17	3.1	30.36	-	-	Peak
2380	34.84	-19.16	54	32.66	31.68	4.58	34.08	133	37	Average
2380	48.62	-25.38	74	46.44	31.68	4.58	34.08	133	37	Peak
2462	99.1	-	-	96.79	31.77	4.62	34.08	133	37	Average
2462	109.35	-	-	107.04	31.77	4.62	34.08	133	37	Peak
2483.85	44	-10	54	41.66	31.78	4.64	34.08	133	37	Average
2483.85	61.98	-12.02	74	59.64	31.78	4.64	34.08	133	37	Peak

Test Mode :	Mode 9	Temperature :	23~24°C
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
34.86	31.08	-8.92	40	46.38	15.48	0.74	31.52	142	317	Peak
42.42	24.93	-15.07	40	44.18	11.53	0.76	31.54	-	-	Peak
92.1	18.89	-24.61	43.5	40.74	8.62	1.07	31.54	-	-	Peak
330.1	22.96	-23.04	46	39.46	12.94	1.85	31.29	-	-	Peak
384	25.14	-20.86	46	40.02	14.36	1.98	31.22	-	-	Peak
768.3	24.21	-21.79	46	31.55	20.42	2.78	30.54	-	-	Peak
2378	32.63	-21.37	54	30.46	31.68	4.57	34.08	101	40	Average
2378	45.06	-28.94	74	42.89	31.68	4.57	34.08	101	40	Peak
2462	93.73	-	-	91.42	31.77	4.62	34.08	101	40	Average
2462	103.94	-	-	101.63	31.77	4.62	34.08	101	40	Peak
2486.32	40.13	-13.87	54	37.79	31.78	4.64	34.08	101	40	Average
2486.32	55.84	-18.16	74	53.5	31.78	4.64	34.08	101	40	Peak

3.8 Antenna Requirements

3.8.1 Standard Applicable

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

3.8.2 Antenna Connected Construction

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

3.8.3 Antenna Gain

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101329	9kHz~30GHz	May. 03, 2011	May. 02, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30, 2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	114256	N/A	Feb. 15, 2011	Feb. 14, 2012	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-40GHz	Nov. 03, 2010	Nov. 02, 2011	Radiation (03CH05-HY)
Amplifier	COM-POWER	PA-103	161075	1KHz - 1GHz	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 1GHz	Nov. 06, 2010	Nov. 05, 2011	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Apr. 13, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m - 4 m	N/A	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz ~ 18GHz	Aug. 05, 2010	Aug. 04, 2011	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

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

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