FCC RF Test Report

APPLICANT	:	CT Asia
EQUIPMENT	:	mobile phone
BRAND NAME	:	BLU
MODEL NAME	:	SPEED
FCC ID	:	YHLBLUSPEED
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	Digital Transmission System (DTS)

The product was received on Oct. 29, 2010 and completely tested on Nov. 15, 2010. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

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

Reviewed by:

Anderson Chiu

Anderson Chiu / Deputy Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR0O2916B	Rev. 01	Initial issue of report	Nov. 24, 2010

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 11.76 dB at 0.59 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.63 dB at 2483.85 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

CT Asia

RMA2011, 20/F., GOLDEN CENTRAL TOWER, NO. 3037# JINTIAN ROAD, FUTIAN DISTRICT

1.2 Manufacturer

CT Asia

RMA2011, 20/F., GOLDEN CENTRAL TOWER, NO. 3037# JINTIAN ROAD, FUTIAN DISTRICT

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	mobile phone
Brand Name	BLU
Model Name	SPEED
FCC ID	YHLBLUSPEED
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 : 19.77 dBm (0.095 W) 802.11g : 20.58 dBm (0.114 W)
Antenna Type	PIFA Antenna with gain 1 dBi
HW Version	V3.0
SW Version	ZW91B_37A0_V_1_0_7
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark:

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL (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.	
	CO01-KS	03CH01-KS

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ANSI C63.4-2003
- IC RSS-210 Issue 7

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Base Station	Anritsu	8852B	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Nokia	HS-12W	PYAHS-12W	N/A	N/A
4.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m

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)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	19.63	19.66	19.76	**19.77**
CH 06	2437 MHz	19.3	19.38	19.41	19.42
CH 11	2462 MHz	19.1	19.05	19.06	19.12

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	**20.58**	20.5	20.53	20.55	20.53	20.52	20.47	20.57
CH 06	2437 MHz	20.11	20.09	20.1	20.12	20.08	20.1	20.14	20.1
CH 11	2462 MHz	19.26	19.21	19.3	19.33	19.24	19.28	19.32	19.35

Remark:

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

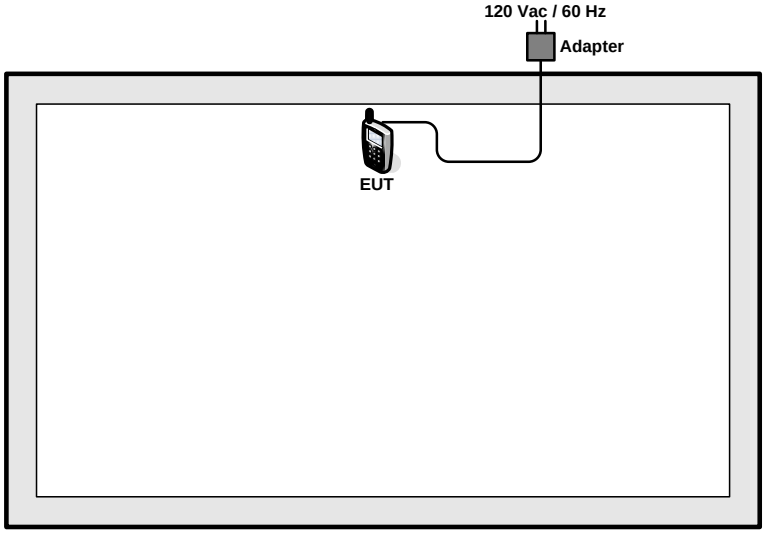
2.2 Test Mode

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

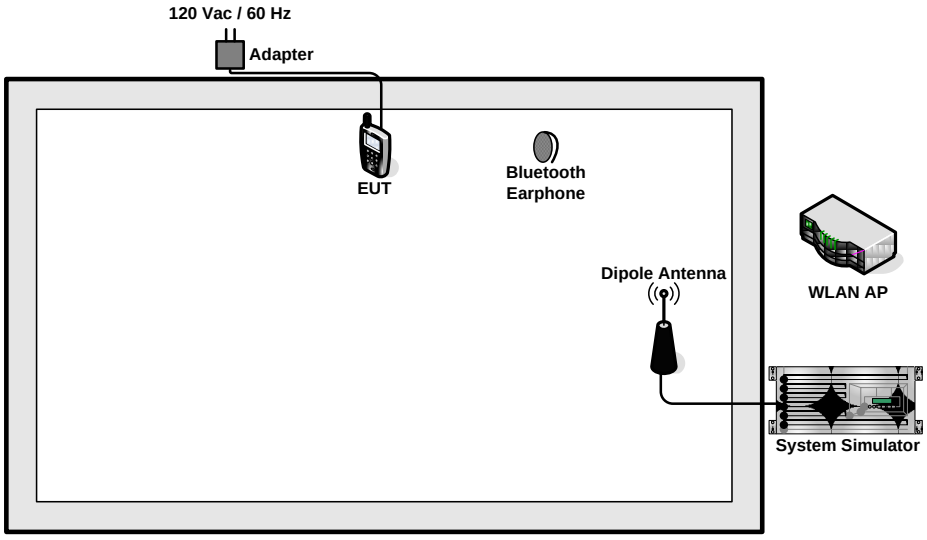
Test Cases		
Test Item	**802.11b**	**802.11g**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4 : 802.11g CH01_2412 MHz Mode 5 : 802.11g CH06_2437 MHz Mode 6 : 802.11g CH11_2462 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b 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
AC Conducted Emission	Mode 1 :GSM850 Idle + WLAN Link + Bluetooth Link + Adapter + Camera	

2.3 Connection Diagram of Test System

<Radiated Emission>



<Conducted Emission>



2.4 RF Utility

Enter keys "＊＃510818＃" to into engineering mode to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

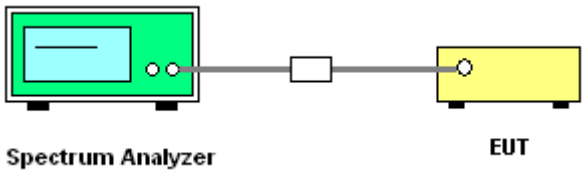
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

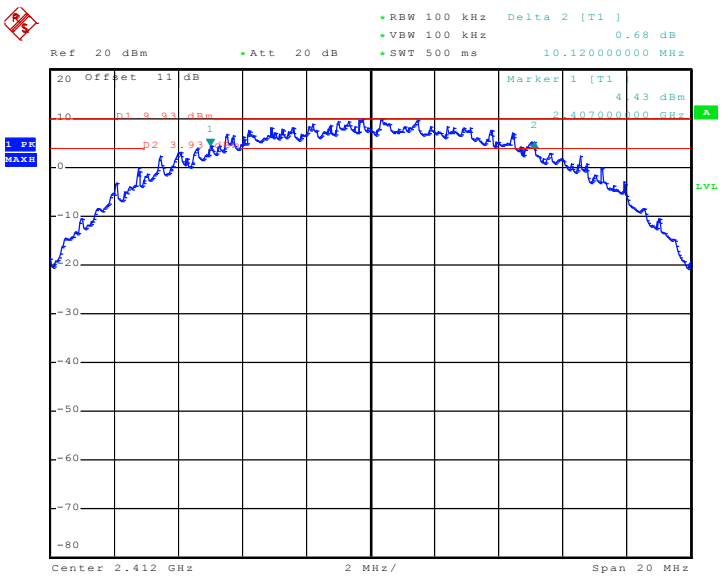


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

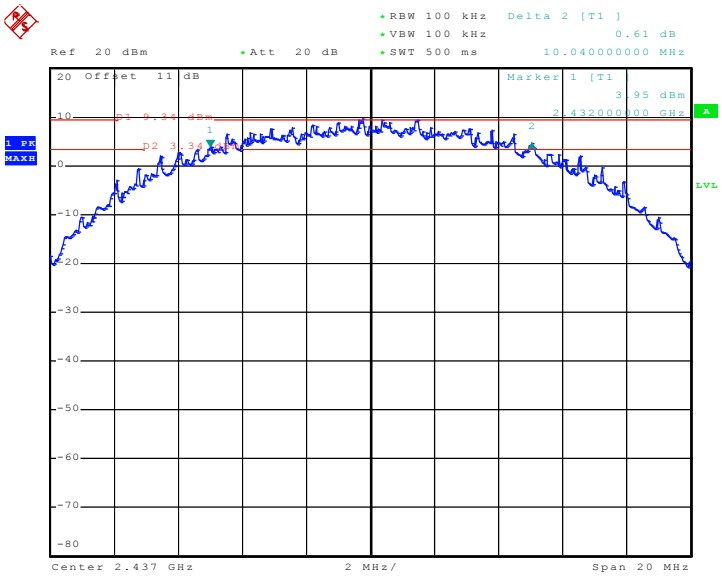
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	10.12 MHz	0.5	Pass
06	2437	10.04 MHz	0.5	Pass
11	2462	10.56 MHz	0.5	Pass

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



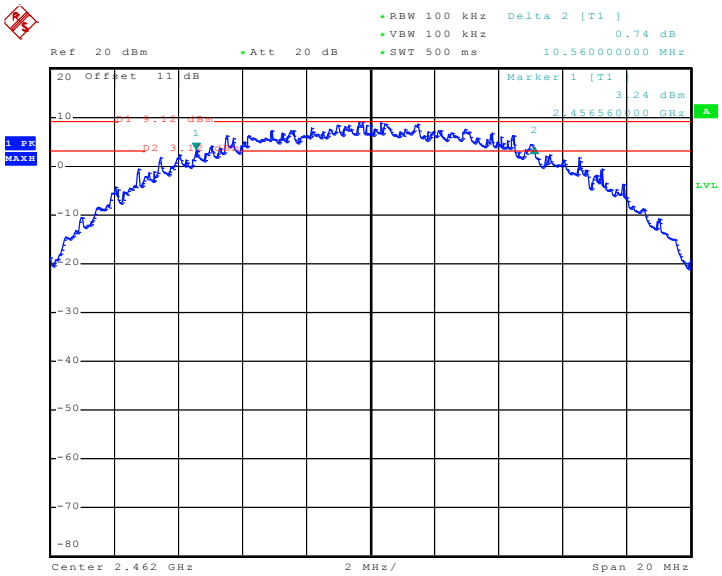
Date: 7.NOV.2010 04:29:30

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



Date: 7.NOV.2010 04:44:17

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

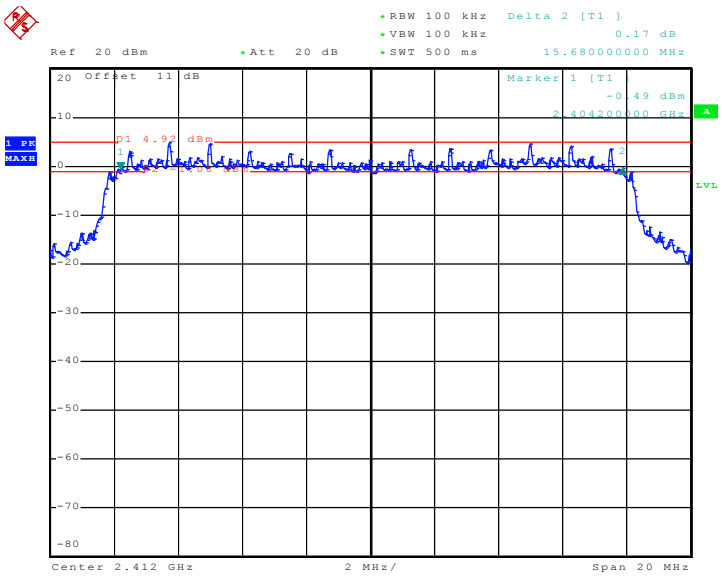


Date: 7.NOV.2010 04:36:40

Test Mode :	Mode 4, 5, 6	Temperature :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

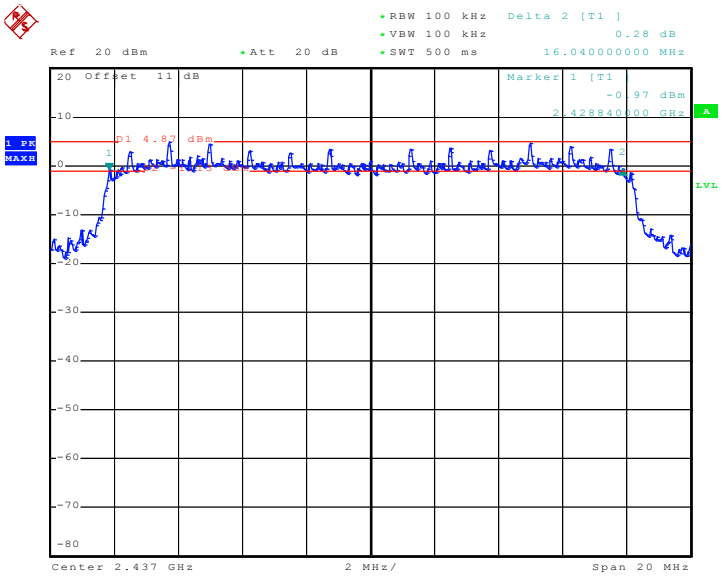
Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.68 MHz	0.5	Pass
06	2437	16.04 MHz	0.5	Pass
11	2462	15.12 MHz	0.5	Pass

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



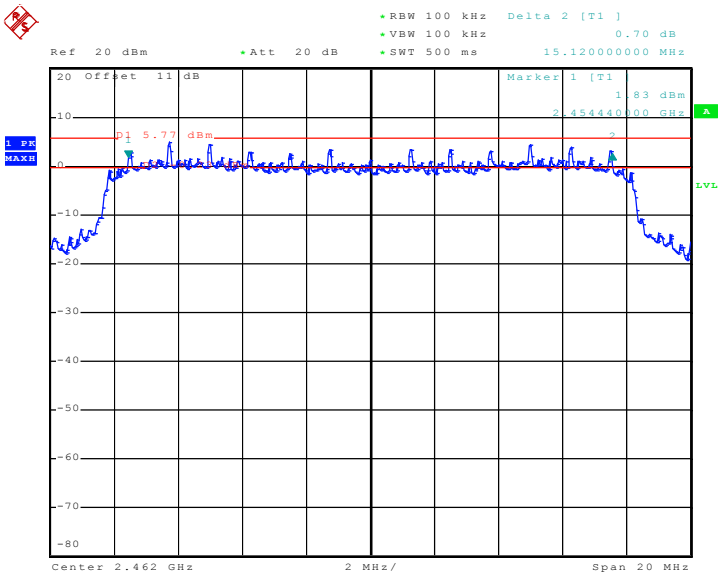
Date: 6.NOV.2010 11:35:40

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



Date: 7.NOV.2010 04:23:25

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



Date: 7.NOV.2010 04:09:40

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.

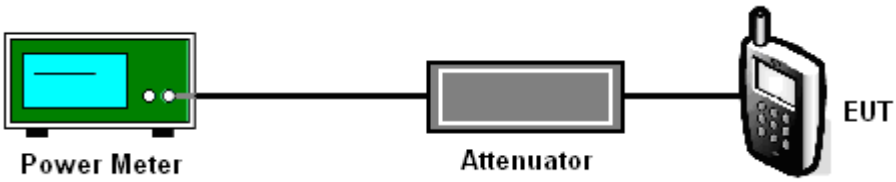
3.2.2 Measuring Instruments

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 :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.77 MHz	30	Pass
06	2437	19.42 MHz	30	Pass
11	2462	19.12 MHz	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.58	30	Pass
06	2437	20.11	30	Pass
11	2462	19.86	30	Pass

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

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

3.3.2 Measuring Instruments

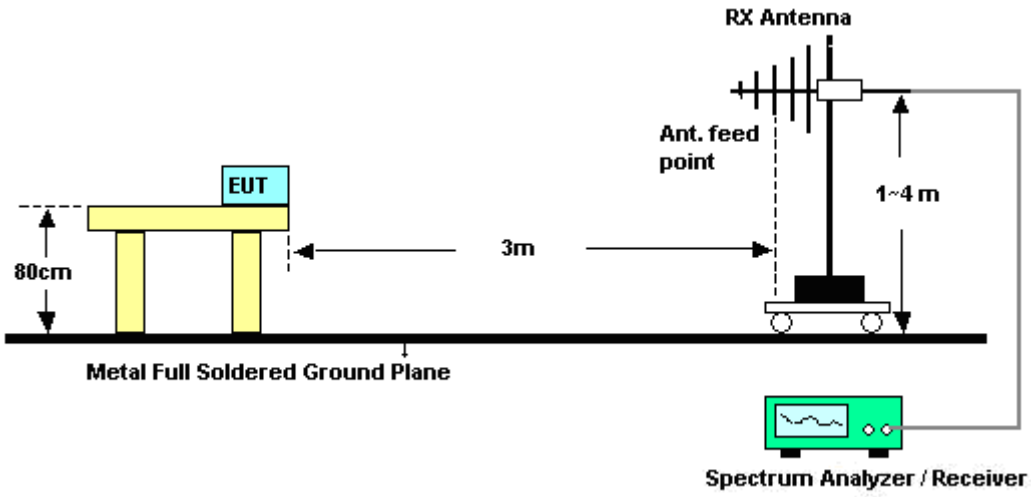
See list of measuring instruments of this test report.

3.3.3 Test Procedures

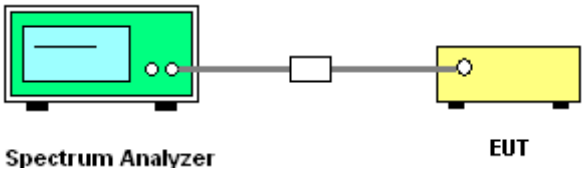
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized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

3.3.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>



3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Band :	802.11b	**Relative Humidity :**	42~43%
Test Channel :	01	**Test Engineer :**	Peng Xi

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**
2386.33	64.23	-9.77	74	63.21	32.86	3.13	34.97	114	0	Peak
2386.33	48.09	-5.91	54	47.07	32.86	3.13	34.97	114	0	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**
2384.67	61.41	-12.59	74	60.42	32.83	3.13	34.97	101	331	Peak
2384.67	46.4	-7.6	54	45.41	32.83	3.13	34.97	101	331	Average

Test Mode :	Mode 3	**Temperature :**	21~22℃
Test Band :	802.11b	**Relative Humidity :**	42~43%
Test Channel :	11	**Test Engineer :**	Peng Xi

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**
2487.84	68.61	-5.39	74	67.3	33.05	3.2	34.94	105	33	Peak
2487.84	53.23	-0.77	54	51.92	33.05	3.2	34.94	105	33	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**
2488.03	65.82	-8.18	74	64.51	33.05	3.2	34.94	100	64	Peak
2488.03	51.45	-2.55	54	50.14	33.05	3.2	34.94	100	64	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	01	Test Engineer :	Peng Xi

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
2389.8	70.74	-3.26	74	69.71	32.86	3.15	34.98	190	360	Peak
2389.8	41.43	-12.57	54	40.4	32.86	3.15	34.98	190	360	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.93	67.43	-6.57	74	66.4	32.86	3.15	34.98	183	19	Peak
2389.93	40.93	-13.07	54	39.9	32.86	3.15	34.98	183	19	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	42~43%
Test Channel :	11	Test Engineer :	Peng Xi

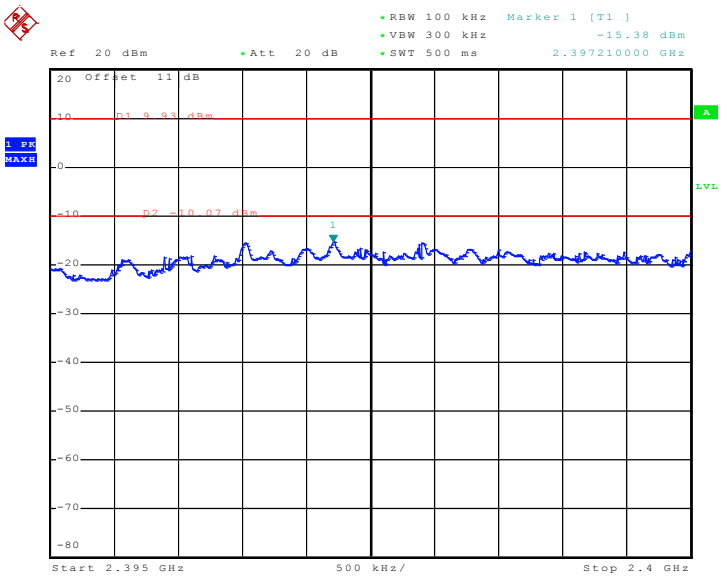
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	74.63	0.63	74	73.36	33.01	3.2	34.94	129	335	Peak
2483.85	43.79	-10.21	54	42.52	33.01	3.2	34.94	129	335	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.42	70.55	-3.45	74	69.28	33.01	3.2	34.94	200	5	Peak
2484.42	42.24	-11.76	54	40.97	33.01	3.2	34.94	200	5	Average

3.3.6 Test Plots of Conducted Band Edges

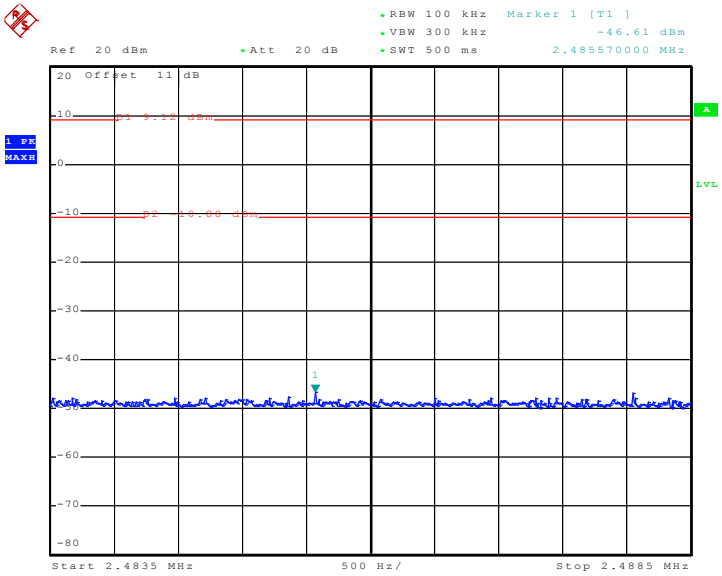
Test Mode :	Mode 1 and 3	Temperature :	22~25℃
Test Band :	802.11b	Relative Humidity :	45~46%
Test Channel :	01 and 11	Test Engineer :	Morris Li

Low Band Edge Plot on 802.11b Channel 01



Date: 7.NOV.2010 04:32:07

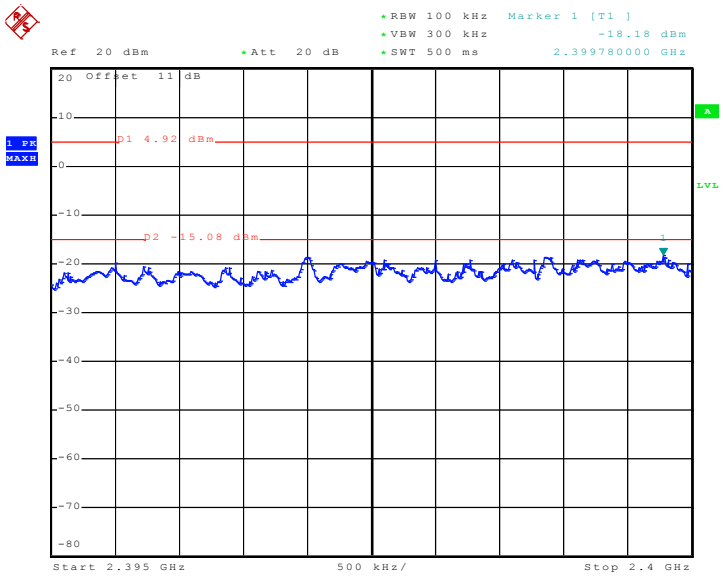
High Band Edge Plot on 802.11b Channel 11



Date: 7.NOV.2010 04:39:13

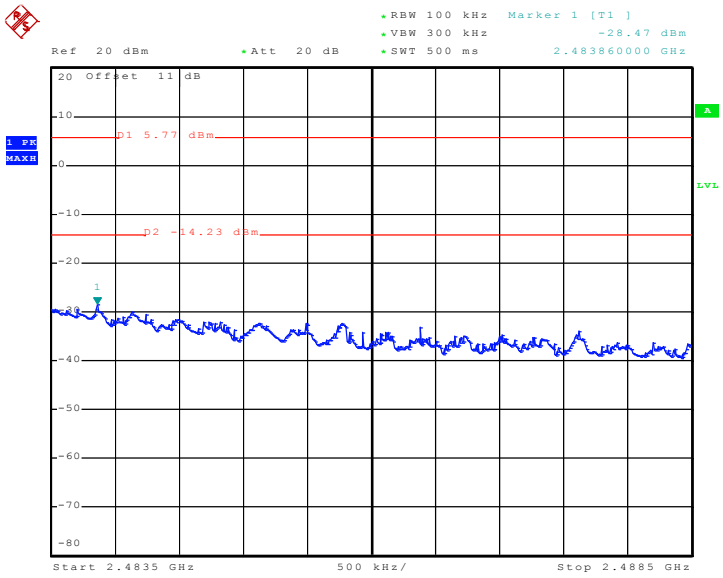
Test Mode :	Mode 4 and 6	**Temperature :**	22~25℃
Test Band :	802.11g	**Relative Humidity :**	45~46%
Test Channel :	01 and 11	**Test Engineer :**	Morris Li

Low Band Edge Plot on 802.11g Channel 01



Date: 7.NOV.2010 04:15:00

High Band Edge Plot on 802.11g Channel 11



Date: 7.NOV.2010 04:01:19

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

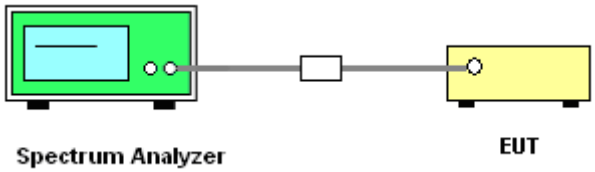
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

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

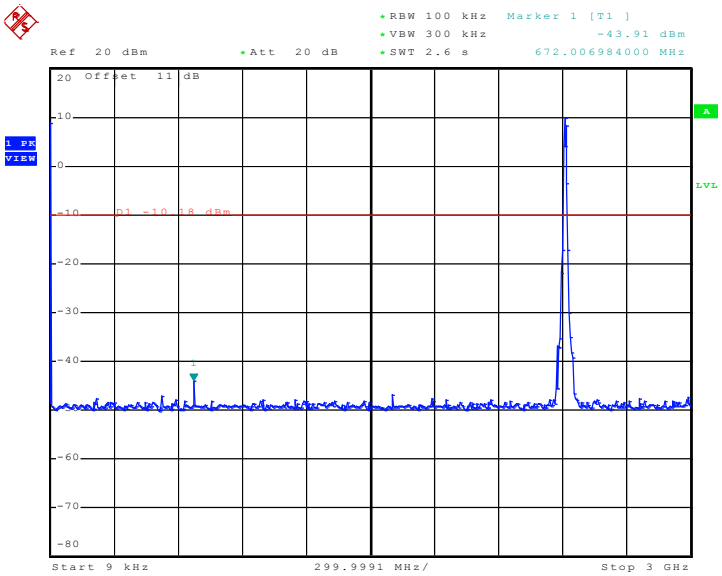
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

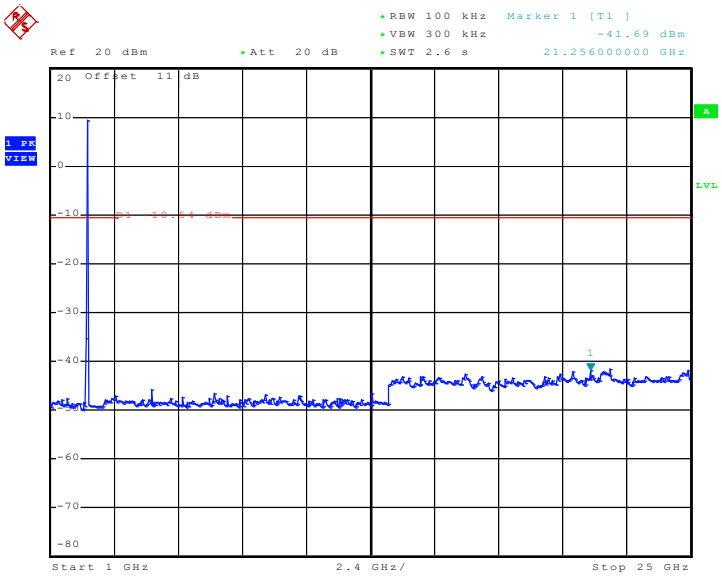
Test Mode :	Mode 1	Temperature :	22~25℃
Test Band :	802.11b	Relative Humidity :	45~46%
Test Channel :	01	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 05:41:14

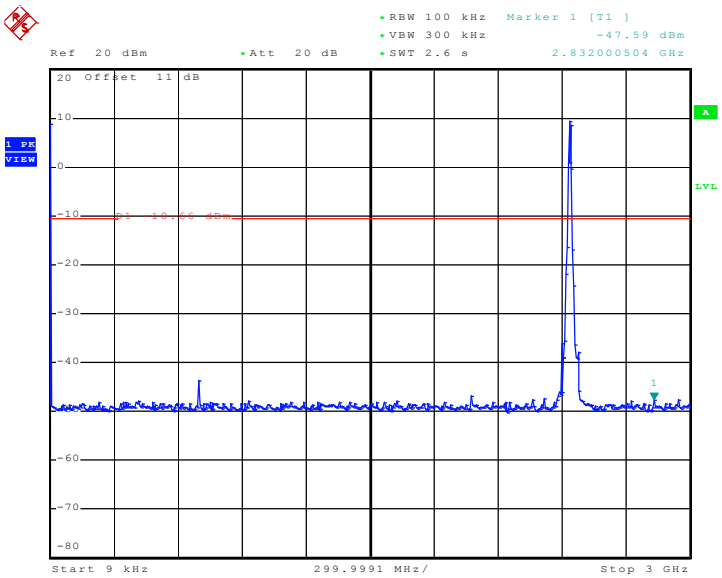
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 05:38:43

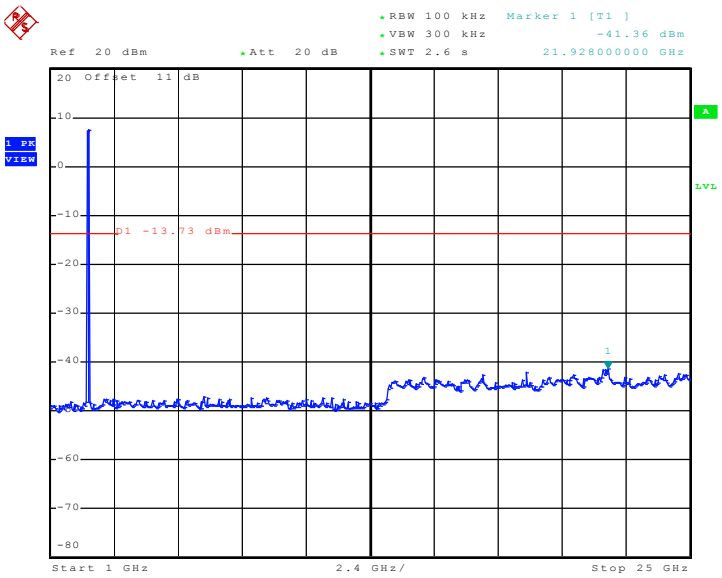
Test Mode :	Mode 2	Temperature :	22~25℃
Test Band :	802.11b	Relative Humidity :	45~46%
Test Channel :	06	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 05:48:35

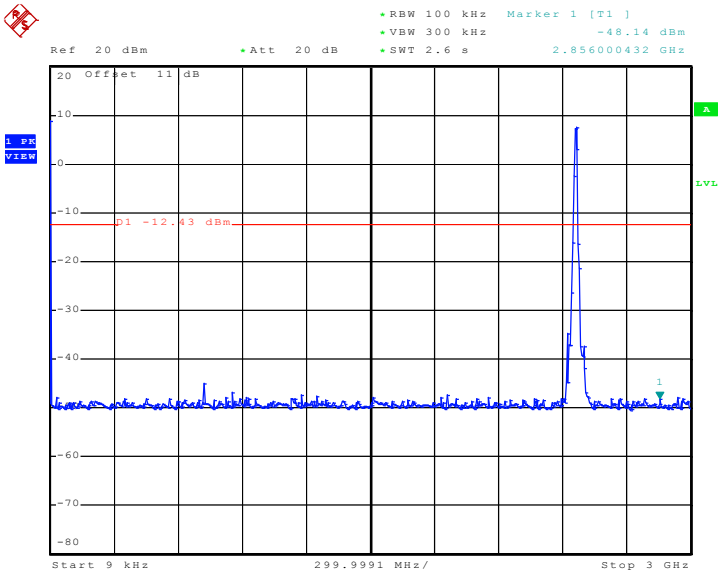
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 05:46:16

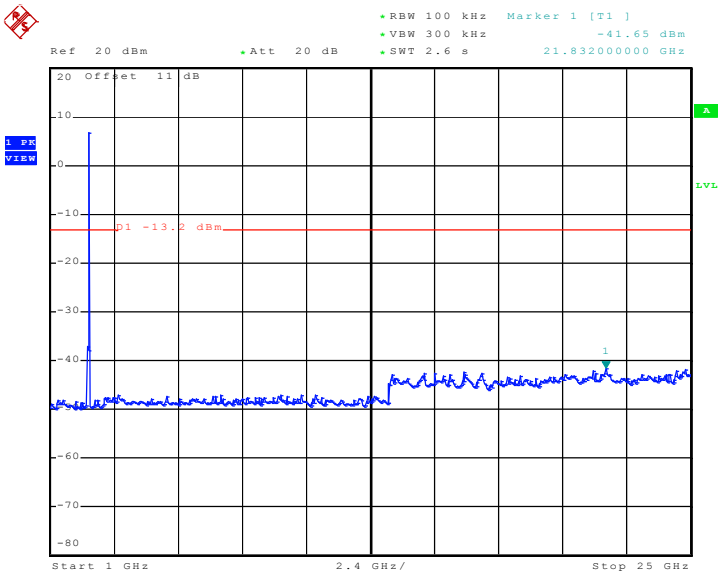
Test Mode :	Mode 3	Temperature :	22~25℃
Test Band :	802.11b	Relative Humidity :	45~46%
Test Channel :	11	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 06:18:04

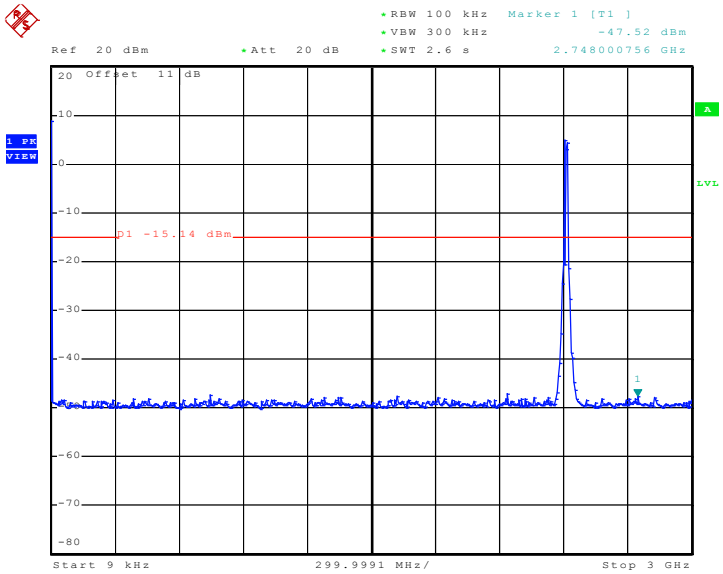
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 06:16:42

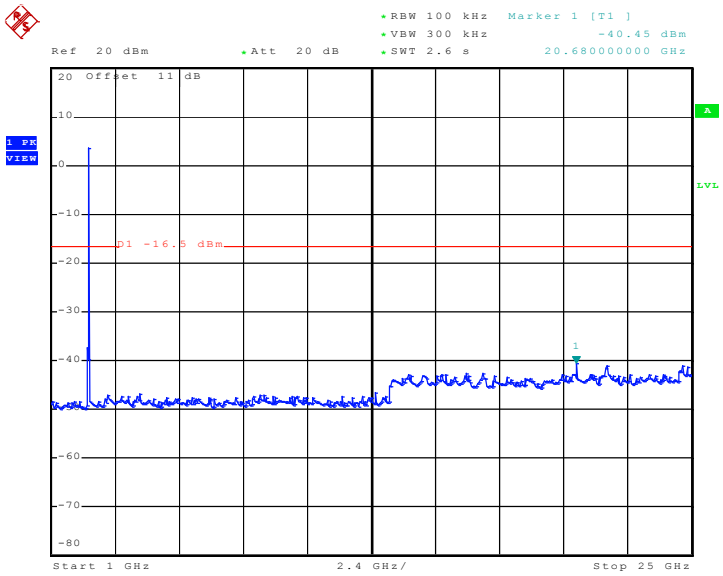
Test Mode :	Mode 4	Temperature :	22~25℃
Test Band :	802.11g	Relative Humidity :	45~46%
Test Channel :	01	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 06:22:35

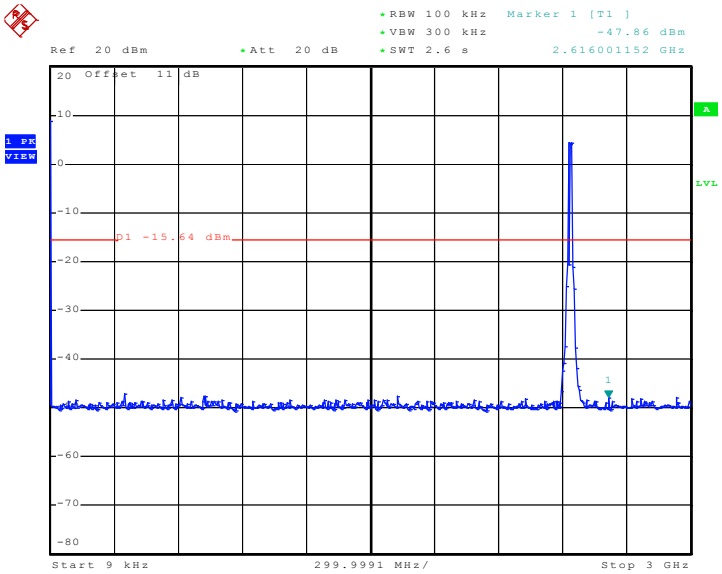
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 06:25:23

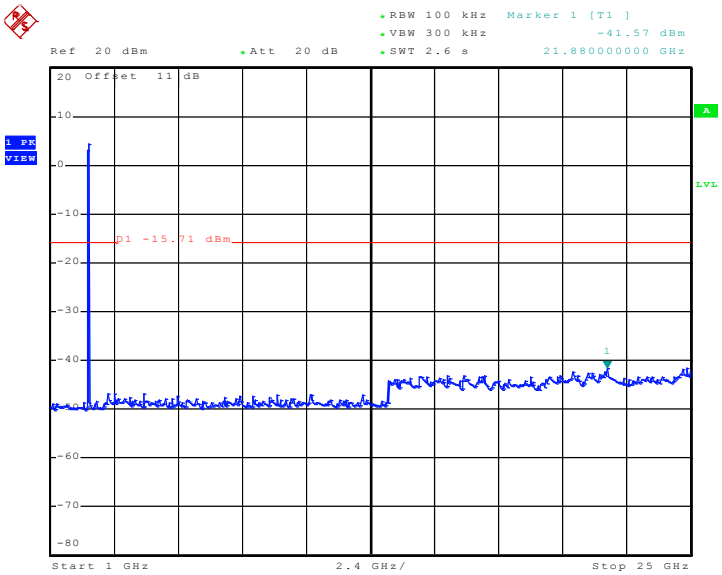
Test Mode :	Mode 5	Temperature :	22~25℃
Test Band :	802.11g	Relative Humidity :	45~46%
Test Channel :	06	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 06:42:28

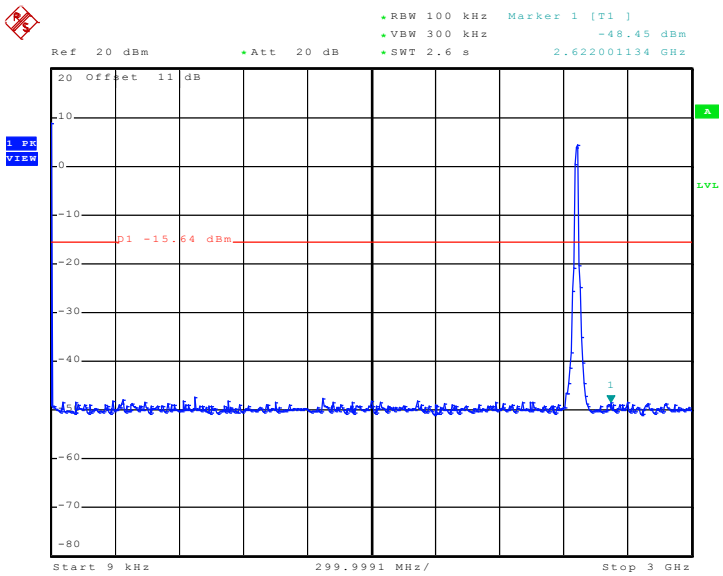
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 06:39:45

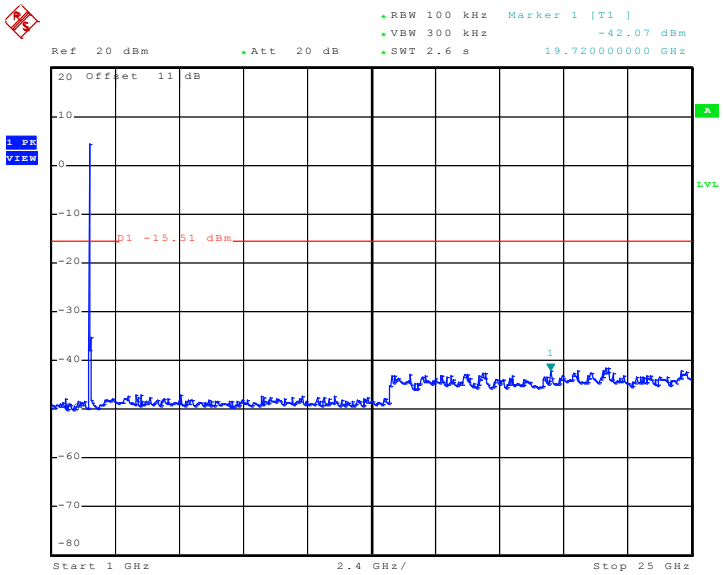
Test Mode :	Mode 6	Temperature :	22~25℃
Test Band :	802.11g	Relative Humidity :	45~46%
Test Channel :	11	Test Engineer :	Morris Li

Conducted Spurious Emission Plot between 9KHz ~ 3 GHz



Date: 7.NOV.2010 06:58:02

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 7.NOV.2010 06:56:33

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

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

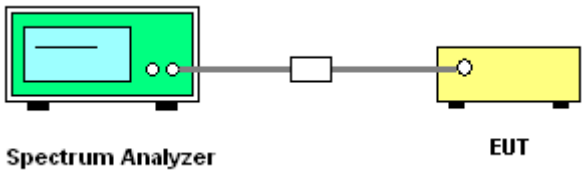
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup

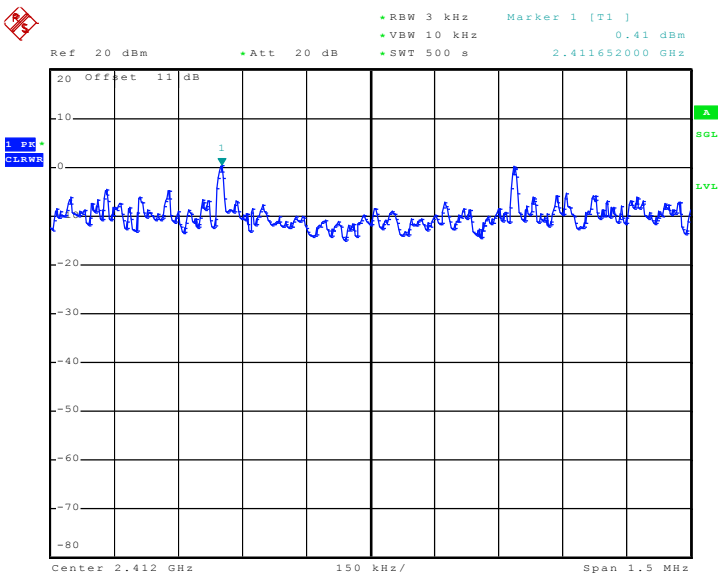


3.5.5 Test Result of Power Spectral Density

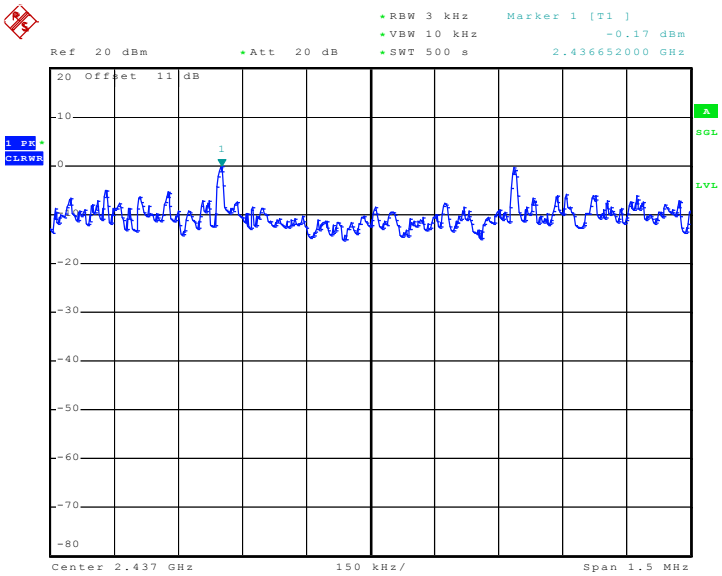
Test Mode :	Mode 1, 2, 3	Temperature :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	0.41	8	Pass
06	2437	-0.17	8	Pass
11	2462	-0.29	8	Pass

Mode 1 : PSD Plot on 802.11b Channel 01

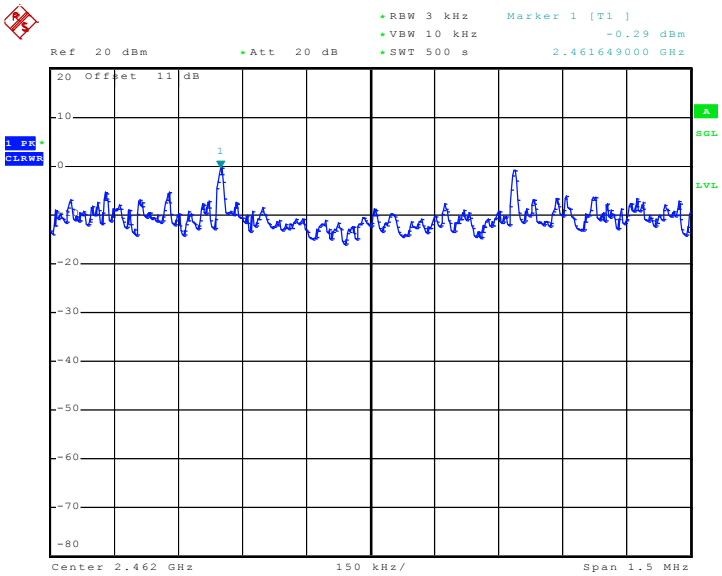


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 7.NOV.2010 06:01:24

Mode 3 : PSD Plot on 802.11b Channel 11

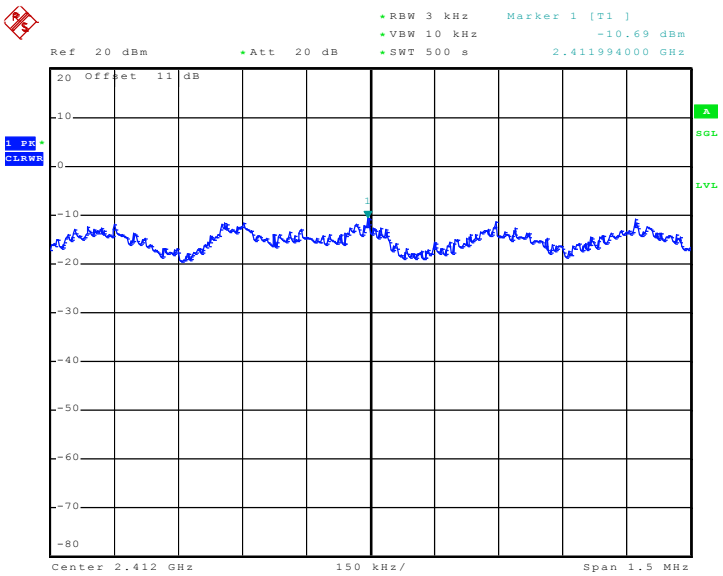


Date: 7.NOV.2010 06:13:43

Test Mode :	Mode 4, 5, 6	Temperature :	22~25℃
Test Engineer :	Morris Li	Relative Humidity :	45~46%

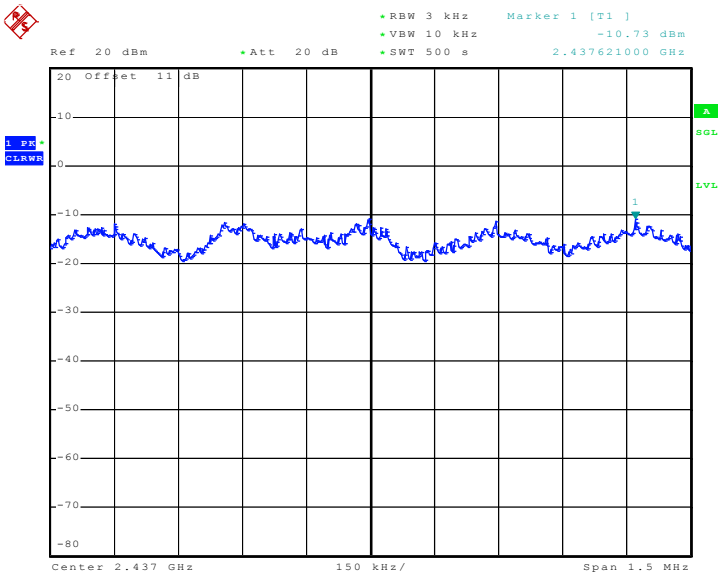
Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-10.69	8	Pass
06	2437	-10.73	8	Pass
11	2462	-11.08	8	Pass

Mode 4 : PSD Plot on 802.11g Channel 01



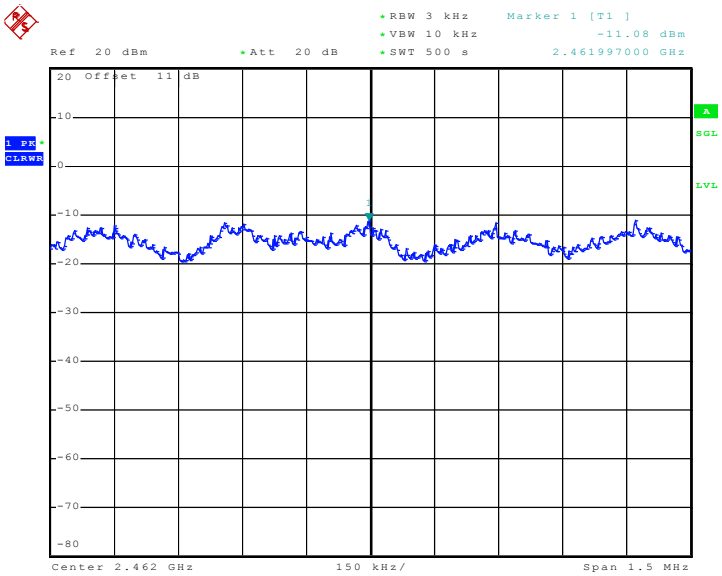
Date: 7.NOV.2010 06:35:43

Mode 5 : PSD Plot on 802.11g Channel 06



Date: 7.NOV.2010 06:53:27

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 7.NOV.2010 07:08:42

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.

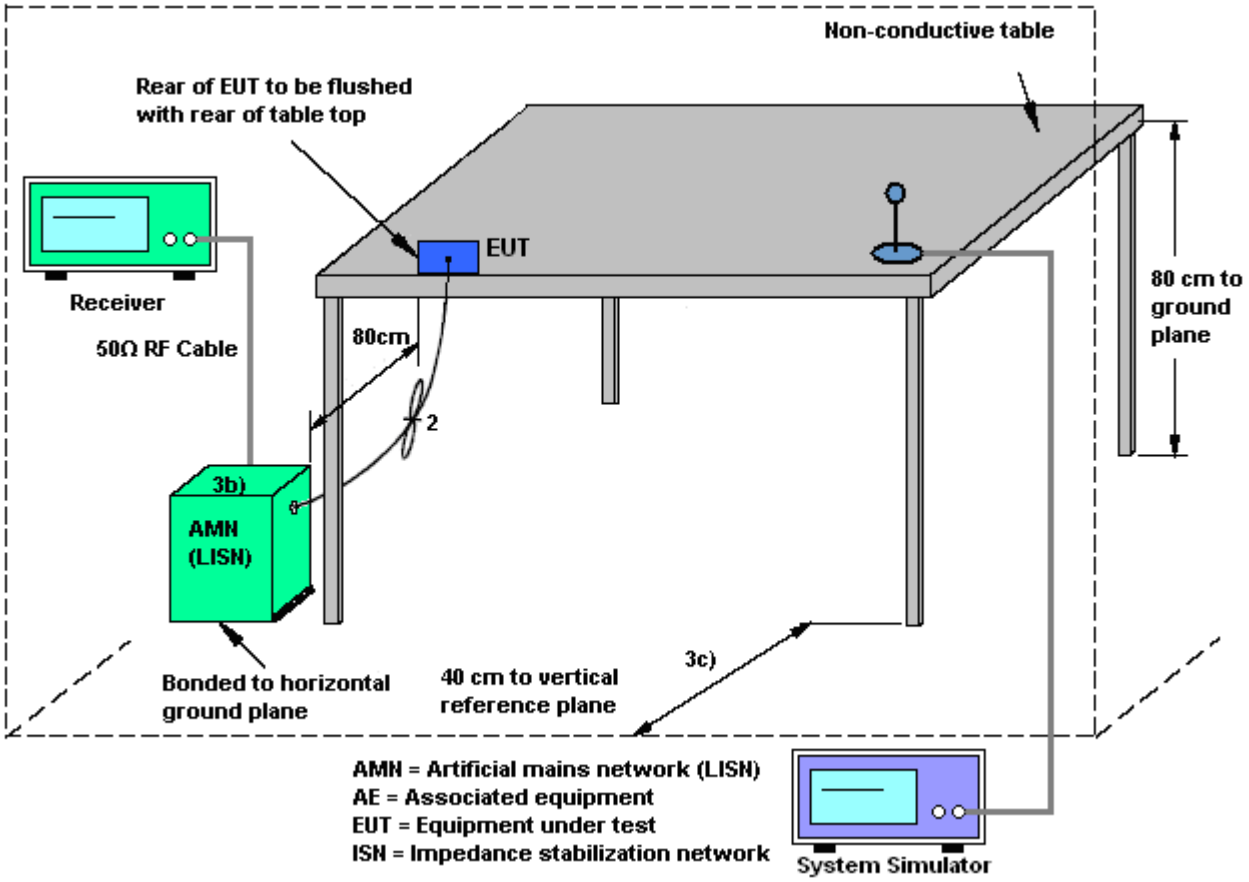
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

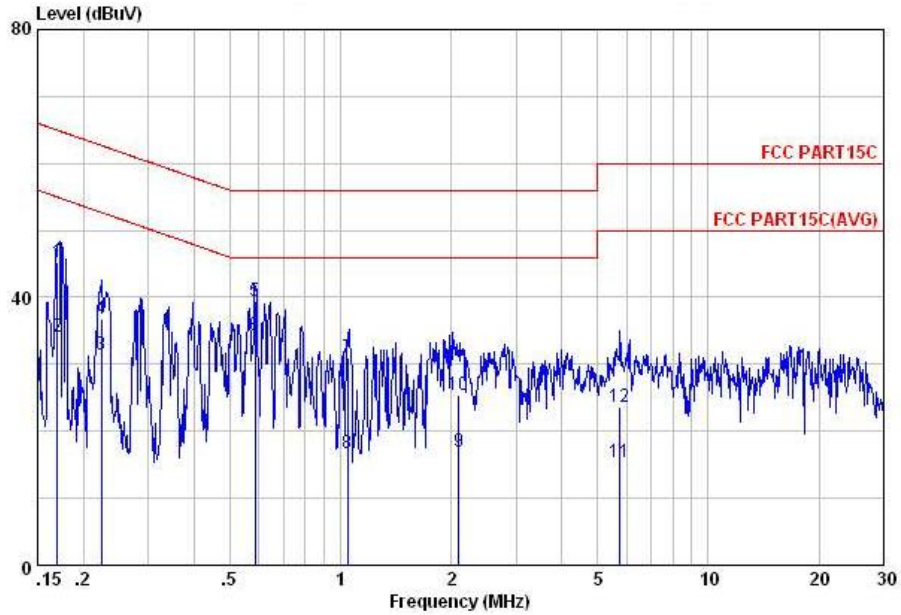
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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 :	21~22℃
Test Engineer :	Lewis Lu	Relative Humidity :	42~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + WLAN Link + Bluetooth Link + Adapter + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

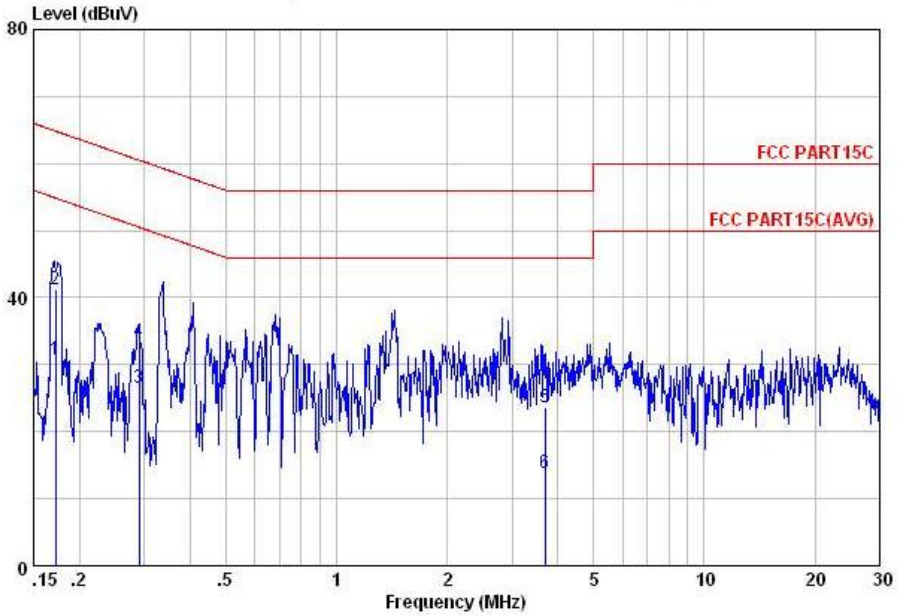


Site : C001-KS
Condition: FCC PART15C LISN-100807 LINE

mode : MODE1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	45.17	-19.79	64.96	35.10	-0.07	10.14	QP
2	0.17	34.07	-20.89	54.96	24.00	-0.07	10.14	Average
3	0.22	31.48	-21.19	52.67	21.40	-0.07	10.15	Average
4	0.22	36.68	-25.99	62.67	26.60	-0.07	10.15	QP
5	0.59	39.54	-16.46	56.00	29.40	-0.08	10.22	QP
6	0.59	34.24	-11.76	46.00	24.10	-0.08	10.22	Average
7	1.05	31.07	-24.93	56.00	20.90	-0.10	10.27	QP
8	1.05	16.67	-29.33	46.00	6.50	-0.10	10.27	Average
9	2.10	17.02	-28.98	46.00	6.80	-0.11	10.33	Average
10	2.10	25.42	-30.58	56.00	15.20	-0.11	10.33	QP
11	5.75	15.38	-34.62	50.00	5.10	-0.13	10.41	Average
12	5.75	23.68	-36.32	60.00	13.40	-0.13	10.41	QP

Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Lewis Lu	Relative Humidity :	42~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + WLAN Link + Bluetooth Link + Adapter + Camera		
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 : MODE1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	30.66	-24.18	54.84	20.60	-0.08	10.14	Average
2	0.17	41.16	-23.68	64.84	31.10	-0.08	10.14	QP
3	0.29	26.60	-23.93	50.53	16.50	-0.07	10.17	Average
4	0.29	33.50	-27.03	60.53	23.40	-0.07	10.17	QP
5	3.70	23.56	-32.44	56.00	13.31	-0.13	10.38	QP
6	3.70	13.76	-32.24	46.00	3.51	-0.13	10.38	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

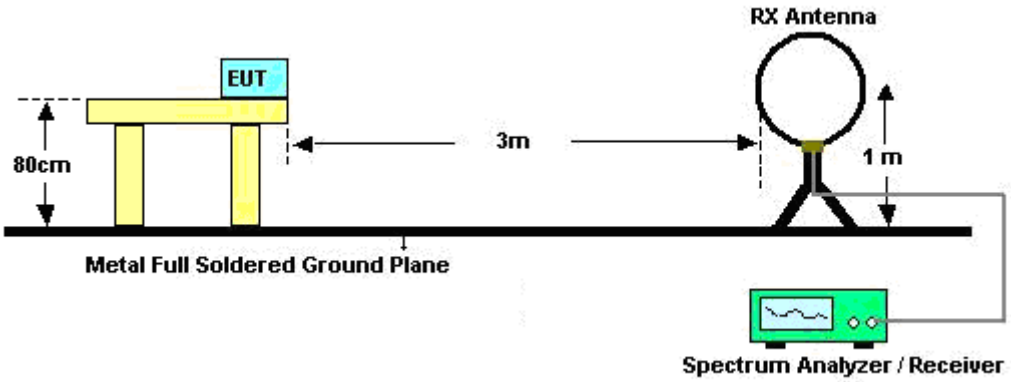
See list of measuring instruments of this test report.

3.7.3 Test Procedures

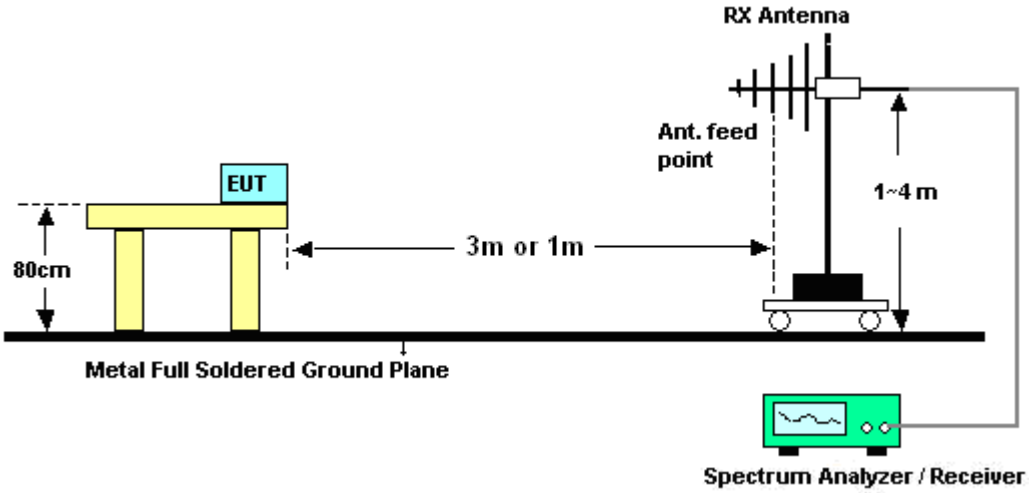
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
   (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
   Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

3.7.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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

Test Engineer :	Peng Xi	Temperature :	21~22℃
		Relative Humidity :	42~43%

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

Note:

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

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

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

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

Test Mode :	Mode 1	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
41.88	14.06	-25.94	40	33.63	10.95	0.3	30.82	-	-	Peak
112.89	13.95	-29.55	43.5	32.22	11.8	0.45	30.52	-	-	Peak
257.88	15.08	-30.92	46	31.87	12.12	0.75	29.66	-	-	Peak
566.7	20.44	-25.56	46	32.37	18.53	1.04	31.5	-	-	Peak
771.8	21.98	-24.02	46	31.66	19.88	1.21	30.77	-	-	Peak
937.7	29.77	-16.23	46	36.63	20.68	1.31	28.85	105	231	Peak
2386.33	64.23	-9.77	74	63.21	32.86	3.13	34.97	114	0	Peak
2386.33	48.09	-5.91	54	47.07	32.86	3.13	34.97	114	0	Average
2412	75.36	-	-	74.3	32.89	3.15	34.98	111	0	Average
2412	107.39	-	-	106.33	32.89	3.15	34.98	111	0	Peak
2495	48.27	-25.73	74	46.94	33.05	3.21	34.93	108	354	Peak
2495	34.54	-19.46	54	33.21	33.05	3.21	34.93	108	354	Average

Test Mode :	Mode 1	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
35.67	34.84	-5.16	40	50.79	14.65	0.28	30.88	100	124	Peak
67.8	28.65	-11.35	40	53.72	5.27	0.36	30.7	-	-	Peak
134.76	18.98	-24.52	43.5	37.47	11.3	0.55	30.34	-	-	Peak
575.8	20.63	-25.37	46	32.55	18.55	1.05	31.52	-	-	Peak
868.4	22.65	-23.35	46	30.64	20.49	1.28	29.76	-	-	Peak
937.7	29.19	-16.81	46	36.05	20.68	1.31	28.85	-	-	Peak
2384.67	61.41	-12.59	74	60.42	32.83	3.13	34.97	101	331	Peak
2384.67	46.4	-7.6	54	45.41	32.83	3.13	34.97	101	331	Average
2412	73.02	-	-	71.96	32.89	3.15	34.98	182	40	Average
2412	105.04	-	-	103.98	32.89	3.15	34.98	182	40	Peak
2496	48.27	-25.73	74	46.94	33.05	3.21	34.93	126	52	Peak
2496	33.44	-20.56	54	32.11	33.05	3.21	34.93	126	52	Average

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
42.42	14.47	-25.53	40	34.5	10.48	0.3	30.81	-	-	Peak
67.8	12.71	-27.29	40	37.78	5.27	0.36	30.7	-	-	Peak
280.02	13.89	-32.11	46	30.13	12.66	0.76	29.66	-	-	Peak
558.3	20.46	-25.54	46	32.4	18.51	1.03	31.48	-	-	Peak
821.5	22.02	-23.98	46	30.94	20.11	1.24	30.27	100	54	Peak
948.2	28.45	-25.55	54	35.16	20.73	1.32	28.76	-	-	Peak
2389.42	33.38	-20.62	54	32.36	32.86	3.13	34.97	111	35	Average
2389.42	49.09	-24.91	74	48.07	32.86	3.13	34.97	111	35	Peak
2437	107.43	-	-	106.28	32.95	3.17	34.97	108	11	Peak
2437	79.54	-	-	78.39	32.95	3.17	34.97	108	11	Average
2483.85	35.08	-18.92	54	33.81	33.01	3.2	34.94	124	204	Average
2483.85	50.3	-23.7	74	49.03	33.01	3.2	34.94	124	204	Peak

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
35.13	35.66	-4.34	40	51.16	15.1	0.28	30.88	125	94	Peak
42.42	33.6	-6.4	40	53.63	10.48	0.3	30.81	-	-	Peak
134.76	20.29	-23.21	43.5	38.78	11.3	0.55	30.34	-	-	Peak
683.6	20	-26	46	31.15	19.19	1.13	31.47	-	-	Peak
895.7	32.58	-13.42	46	40.19	20.45	1.29	29.35	-	-	Peak
937.7	28.23	-17.77	46	35.09	20.68	1.31	28.85	-	-	Peak
2383.15	48.71	-25.29	74	47.72	32.83	3.13	34.97	102	267	Peak
2383.15	32.8	-21.2	54	31.81	32.83	3.13	34.97	102	267	Average
2437	77.1	-	-	75.95	32.95	3.17	34.97	146	58	Average
2437	105.19	-	-	104.04	32.95	3.17	34.97	146	58	Peak
2495.06	48.2	-25.8	74	46.87	33.05	3.21	34.93	125	104	Peak
2495.06	34.74	-19.26	54	33.41	33.05	3.21	34.93	125	104	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
42.42	16.65	-23.35	40	36.68	10.48	0.3	30.81	-	-	Peak
67.26	13.04	-26.96	40	38.14	5.25	0.36	30.71	-	-	Peak
260.04	14.11	-31.89	46	30.86	12.15	0.75	29.65	-	-	Peak
368.6	23.68	-22.32	46	38.03	14.98	0.86	30.19	-	-	Peak
839.7	22.62	-23.38	46	31.01	20.41	1.25	30.05	-	-	Peak
937.7	29.01	-16.99	46	35.87	20.68	1.31	28.85	125	23	Peak
2348.95	48.86	-25.14	74	47.92	32.78	3.12	34.96	104	234	Peak
2348.95	32.04	-21.96	54	31.1	32.78	3.12	34.96	104	234	Average
2462	78.81	-	-	77.6	32.98	3.18	34.95	100	325	Average
2462	109.35	-	-	108.14	32.98	3.18	34.95	100	325	Peak
2487.84	53.23	-0.77	54	51.92	33.05	3.2	34.94	105	33	Average
2487.84	68.61	-5.39	74	67.3	33.05	3.2	34.94	105	33	Peak

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
35.4	34.55	-5.45	40	50.5	14.65	0.28	30.88	135	118	Peak
42.42	33.47	-6.53	40	53.5	10.48	0.3	30.81	-	-	Peak
134.76	19.97	-23.53	43.5	38.46	11.3	0.55	30.34	-	-	Peak
368.6	19.62	-26.38	46	33.97	14.98	0.86	30.19	-	-	Peak
542.9	20.3	-25.7	46	32.38	18.37	1.01	31.46	-	-	Peak
948.2	28.31	-25.69	54	35.02	20.73	1.32	28.76	-	-	Peak
2388.09	49.51	-24.49	74	48.49	32.86	3.13	34.97	105	230	Peak
2388.09	35.24	-18.76	54	34.22	32.86	3.13	34.97	105	230	Average
2462	76.21	-	-	75	32.98	3.18	34.95	142	351	Average
2462	109.7	-	-	108.49	32.98	3.18	34.95	142	351	Peak
2488.03	51.45	-2.55	54	50.14	33.05	3.2	34.94	100	64	Average
2488.03	65.82	-8.18	74	64.51	33.05	3.2	34.94	100	64	Peak

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	19.48	-20.52	40	33.6	16.55	0.26	30.93	-	-	Peak
112.08	13.36	-30.14	43.5	31.63	11.8	0.45	30.52	-	-	Peak
239.52	13.71	-32.29	46	31.21	11.51	0.71	29.72	-	-	Peak
368.6	27.73	-18.27	46	42.08	14.98	0.86	30.19	-	-	Peak
725.6	21.16	-24.84	46	31.58	19.62	1.16	31.2	-	-	Peak
937.7	29.13	-16.87	46	35.99	20.68	1.31	28.85	215	136	Peak
2389.8	70.74	-3.26	74	69.71	32.86	3.15	34.98	190	360	Peak
2389.8	41.43	-12.57	54	40.4	32.86	3.15	34.98	190	360	Average
2412	61.56	-	-	60.5	32.89	3.15	34.98	106	360	Average
2412	103.55	-	-	102.49	32.89	3.15	34.98	106	360	Peak
2498.48	49.94	-24.06	74	48.61	33.05	3.21	34.93	100	212	Peak
2498.48	48.35	-5.65	54	47.02	33.05	3.21	34.93	100	212	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
42.15	32.61	-7.39	40	52.64	10.48	0.3	30.81	100	316	Peak
67.8	27.05	-12.95	40	52.12	5.27	0.36	30.7	-	-	Peak
135.57	18.6	-24.9	43.5	37.17	11.21	0.55	30.33	-	-	Peak
368.6	27.24	-18.76	46	41.59	14.98	0.86	30.19	-	-	Peak
895	30.35	-15.65	46	37.96	20.45	1.29	29.35	-	-	Peak
937.7	29.02	-16.98	46	35.88	20.68	1.31	28.85	-	-	Peak
2389.93	67.43	-6.57	74	66.4	32.86	3.15	34.98	183	19	Peak
2389.93	40.93	-13.07	54	39.9	32.86	3.15	34.98	183	19	Average
2412	60.56	-	-	59.5	32.89	3.15	34.98	100	313	Average
2412	101.4	-	-	100.34	32.89	3.15	34.98	100	313	Peak
2497.72	49.47	-24.53	74	48.14	33.05	3.21	34.93	142	54	Peak
2497.72	33.89	-20.11	54	32.56	33.05	3.21	34.93	142	54	Average

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	16.37	-23.63	40	30.97	16.04	0.27	30.91	100	28	Peak
42.69	15.46	-24.54	40	35.49	10.48	0.3	30.81	-	-	Peak
108.03	14.19	-29.31	43.5	32.73	11.56	0.45	30.55	-	-	Peak
484.8	18.37	-27.63	46	31.71	16.97	0.97	31.28	-	-	Peak
731.9	21.16	-24.84	46	31.4	19.72	1.16	31.12	-	-	Peak
948.2	28.76	-25.24	54	35.47	20.73	1.32	28.76	-	-	Peak
2389.8	54.68	-19.32	74	53.65	32.86	3.15	34.98	158	0	Peak
2389.8	37.24	-16.76	54	36.21	32.86	3.15	34.98	158	0	Average
2437	106.04	-	-	104.89	32.95	3.17	34.97	194	28	Peak
2437	63.38	-	-	62.23	32.95	3.17	34.97	194	28	Average
2484.99	37.32	-16.68	54	36.05	33.01	3.2	34.94	101	0	Average
2484.99	55.79	-18.21	74	54.52	33.01	3.2	34.94	101	0	Peak

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
42.69	34.46	-5.54	40	54.49	10.48	0.3	30.81	136	225	Peak
65.37	23.34	-16.66	40	48.52	5.2	0.35	30.73	-	-	Peak
132.87	17.79	-25.71	43.5	36.15	11.47	0.53	30.36	-	-	Peak
559.7	19.36	-26.64	46	31.3	18.51	1.03	31.48	-	-	Peak
860	21.94	-24.06	46	30.03	20.5	1.27	29.86	-	-	Peak
948.2	28.58	-25.42	54	35.29	20.73	1.32	28.76	-	-	Peak
2388.66	36.47	-17.53	54	35.45	32.86	3.13	34.97	100	89	Average
2388.66	52.34	-21.66	74	51.32	32.86	3.13	34.97	100	89	Peak
2437	103.37	-	-	102.22	32.95	3.17	34.97	100	91	Peak
2437	61.54	-	-	60.39	32.95	3.17	34.97	100	91	Average
2485.94	53.54	-20.46	74	52.27	33.01	3.2	34.94	100	314	Peak
2485.94	36.83	-17.17	54	35.56	33.01	3.2	34.94	100	314	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
43.23	15.23	-24.77	40	35.7	10.03	0.3	30.8	-	-	Peak
108.03	13.37	-30.13	43.5	31.91	11.56	0.45	30.55	-	-	Peak
240.06	12.82	-33.18	46	30.27	11.56	0.71	29.72	-	-	Peak
517.7	18.75	-27.25	46	31.57	17.61	0.99	31.42	-	-	Peak
735.4	20.85	-25.15	46	31.01	19.76	1.17	31.09	-	-	Peak
937.7	29.19	-16.81	46	36.05	20.68	1.31	28.85	102	214	Peak
2380.49	49.7	-24.3	74	48.71	32.83	3.13	34.97	108	235	Peak
2380.49	34.59	-19.41	54	33.6	32.83	3.13	34.97	108	235	Average
2462	63.11	-	-	61.9	32.98	3.18	34.95	155	0	Average
2462	105.58	-	-	104.37	32.98	3.18	34.95	155	0	Peak
2483.85	74.63	0.63	74	73.36	33.01	3.2	34.94	129	335	Peak
2483.85	43.79	-10.21	54	42.52	33.01	3.2	34.94	129	335	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	42~43%
Test Engineer :	Peng Xi	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
42.69	34.37	-5.63	40	54.4	10.48	0.3	30.81	100	18	Peak
42.69	34.37	-5.63	40	54.4	10.48	0.3	30.81	100	18	Peak
66.72	25.8	-14.2	40	50.9	5.25	0.36	30.71	-	-	Peak
66.72	25.8	-14.2	40	50.9	5.25	0.36	30.71	-	-	Peak
133.95	18.17	-25.33	43.5	36.59	11.39	0.54	30.35	-	-	Peak
133.95	18.17	-25.33	43.5	36.59	11.39	0.54	30.35	-	-	Peak
503	18.51	-27.49	46	31.66	17.26	0.98	31.39	-	-	Peak
725.6	20.58	-25.42	46	31	19.62	1.16	31.2	-	-	Peak
948.2	28.68	-25.32	54	35.39	20.73	1.32	28.76	-	-	Peak
2380.3	49.33	-24.67	74	48.34	32.83	3.13	34.97	185	18	Peak
2380.3	32.9	-21.1	54	31.91	32.83	3.13	34.97	185	18	Average
2462	60.01	-	-	58.8	32.98	3.18	34.95	150	353	Average
2462	101.24	-	-	100.03	32.98	3.18	34.95	150	353	Peak
2484.42	42.24	-11.76	54	40.97	33.01	3.2	34.94	200	5	Average
2484.42	70.55	-3.45	74	69.28	33.01	3.2	34.94	200	5	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	FSP40	100319	9kHz~40GHz	Jan. 18, 2010	Jan. 17, 2011	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 24, 2010	Aug. 23, 2011	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 24, 2010	Aug. 23, 2011	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 28, 2009	Dec. 27, 2010	Conducted (TH01-KS)
DC Power Supply	TOPWARD	3306D	N/A	N/A	N/A	N/A	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 17, 2009	Nov. 16, 2010	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Jan. 18, 2010	Jan. 17, 2011	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Jan. 18, 2010	Jan. 17, 2011	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 26, 2009	Nov. 25, 2010	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100724	9kHz – 2.75GHz	Mar. 09, 2010	Mar. 08, 2011	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Feb. 02, 2010	Feb. 01, 2011	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
Actice hore antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 09, 2010	Nov. 08, 2011	Radiation (03CH01-KS)
Signal Generator	R&S	SMR40	100455	10MHz~40GHz	Jan. 18, 2010	Jan. 17, 2011	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15-40GHz	Oct. 15, 2010	Oct.14, 2011	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH01-KS)
System Simulator	R&S	CMU200	837587/066	Full-Band	Jan. 08, 2009	Jan. 07, 2011	-

5 Uncertainty of Evaluation

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

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

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

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

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

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				

Appendix A. Photographs of EUT

Please refer to Sporton report number EP0O2916 as below.