



# FCC RF Test Report

**APPLICANT** : Motorola Mobility, Inc.  
**EQUIPMENT** : Quad-Band GSM/GPRS/EDGE & Dual-Band WCDMA Mobile Phone with BT/Wi-Fi  
**BRAND NAME** : Motorola  
**MODEL NAME** : XT326  
**MARKETING NAME** : DEFY MINI XT  
**TYPE NAME** : M0D72  
**GPPD NUMBER** : 3453  
**FCC ID** : IHDP56MK4  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DTS) Digital Transmission System

The product was received on May 04, 2012 and completely tested on May 16, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

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

Reviewed by:

Jones Tsai / Manager



## SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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## SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 6.08 dB at 1.950 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.50 dB at 2484.230 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



# 1 General Description

## 1.1 Applicant

Motorola Mobility, Inc.

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

## 1.2 Manufacturer

Gongqingcheng Cellon Communication Technology Co., LTD.

New industrial park, GongQingCheng, Jiujiang city, Jiangxi Provinc, China. Postal code: 332020

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Quad-Band GSM/GPRS/EDGE & Dual-Band WCDMA Mobile Phone with BT/Wi-Fi
Brand Name	Motorola
Model Name	XT326
Marketing Name	DEFY MINI XT
Type Name	M0D72
FCC ID	IHDP56MK4
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 : 19.81 dBm (0.10 W) 802.11g : 23.88 dBm (0.24 W) 802.11g/n (BW 20MHz) : 22.85 dBm (0.19 W)
Antenna Type	PIFA Antenna with gain 2.10 dBi
HW Version	P2
SW Version	TB800_4_07.26.0ARDS
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Testing Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	03CH01-KS	CO01-KS	149928/4086E-1

## 1.5 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

### Remark:

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

## 1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	Dell	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 1.84m DC O/P: Shielded, 0.9m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

## 2 Test Configuration of Equipment Under Test

### 2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	19.65	19.39	19.58	19.63
CH 06	2437 MHz	19.81	19.58	19.56	19.75
CH 11	2462 MHz	19.58	19.1	19.16	19.62

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	23.56	23.32	23.21	23.14	23.13	23.16	23.26	23.04
CH 06	2437 MHz	23.88	23.43	23.44	23.41	23.34	23.44	23.58	23.51
CH 11	2462 MHz	23.43	23.56	23.38	23.26	23.18	23.41	23.51	23.49

Channel	Frequency	2.4GHz 802.11g/n (BW 20MHz) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	22.85	22.34	22.34	22.27	22.34	22.31	22.31	22.26
CH 06	2437 MHz	22.65	22.65	22.31	22.53	22.41	22.65	22.56	22.56
CH 11	2462 MHz	22.64	22.61	22.56	22.31	22.75	22.51	22.43	22.26

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

## 2.2 Maximum Peak Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
	1	6	11	1	6	11
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	19.65	19.81	19.58	23.56	23.88	23.43

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	22.85	22.65	22.64

**Remark:**

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

## 2.3 Maximum Average Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
	1	6	11	1	6	11
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Average Power	16.57	16.82	16.17	14.78	14.99	14.49

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	12.96	12.89	12.50

**Remark:**

1. The average power, which is used by the test method, AVG2, in DTS Meas. Guidance DR01, is reporting only.
2. The EUT is programmed to transmit signals continuously.

## 2.4 Test Mode

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

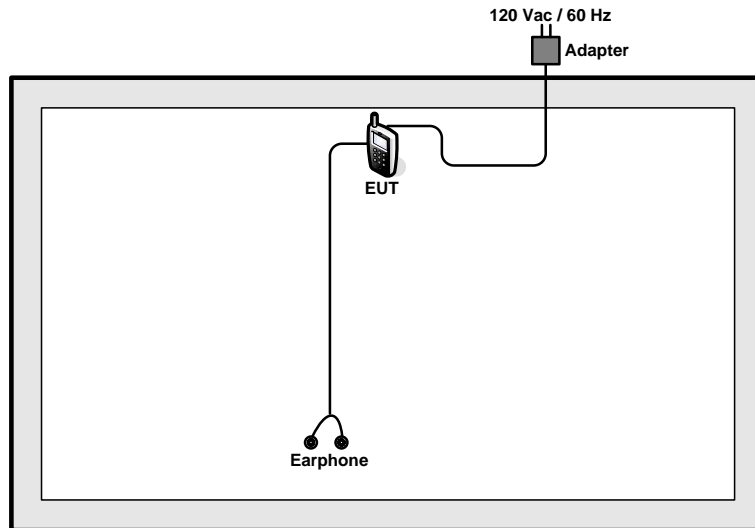
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

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

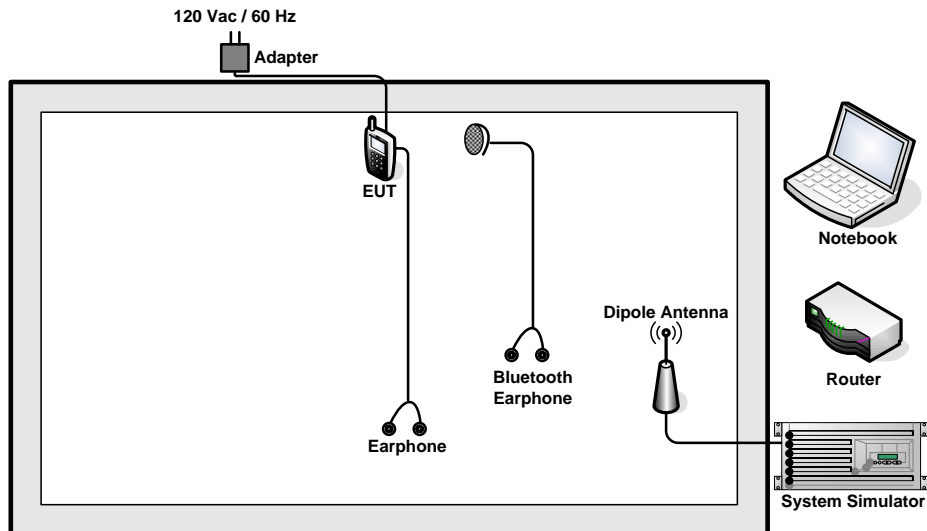
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
<b>Conducted TCs</b>	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
<b>Radiated TCs</b>	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
<b>AC Conducted Emission</b>	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link + Earphone + Camera + USB Cable (Charging from Adapter) Mode 2 : GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter)	
<b>Remark:</b>		
<ol style="list-style-type: none"> <li>For radiated TCs, the test was performance with Adapter and Earphone.</li> <li>The worst case of conducted emission is mode 2; only the test data of it was reported.</li> </ol>		

## 2.5 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



## 2.6 RF Utility

For WLAN function, execute "WIFI Test" to make the EUT contact with Router for transmitting and receiving signals continuously.

### 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.

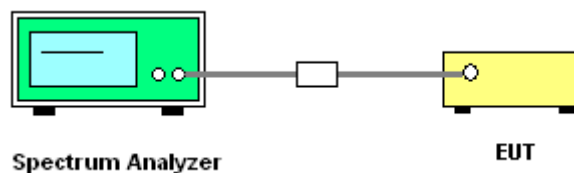
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1-5% of the emission bandwidth (EBW). Set the Video bandwidth (VBW)  $\geq 3 * RBW$ . In order to make an accurate measurement. 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



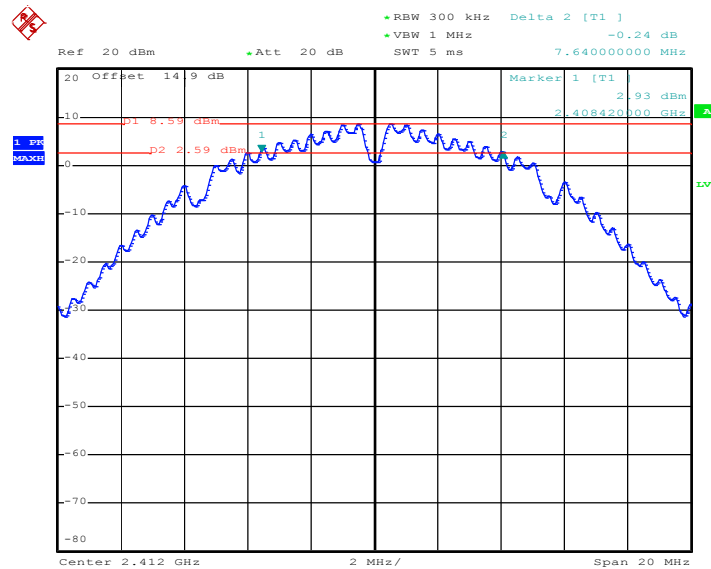


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Zhi Lu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.64	0.5	Pass
06	2437	8.08	0.5	Pass
11	2462	7.64	0.5	Pass

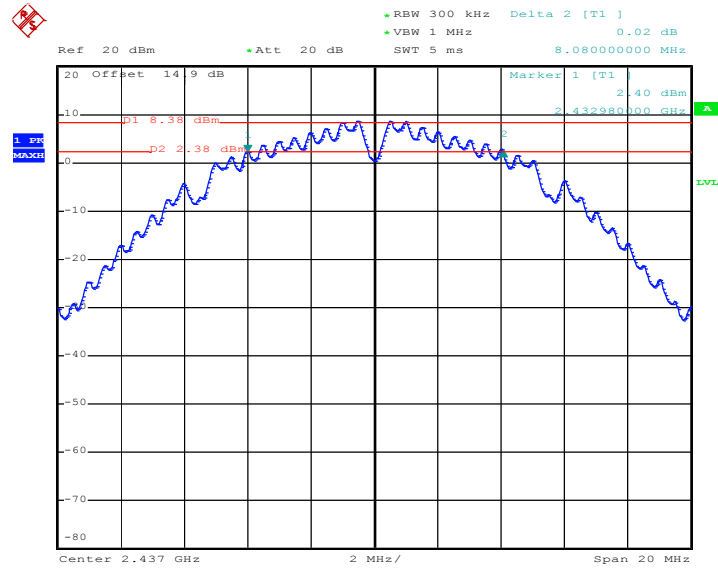
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



Date: 14.MAY.2012 23:05:49

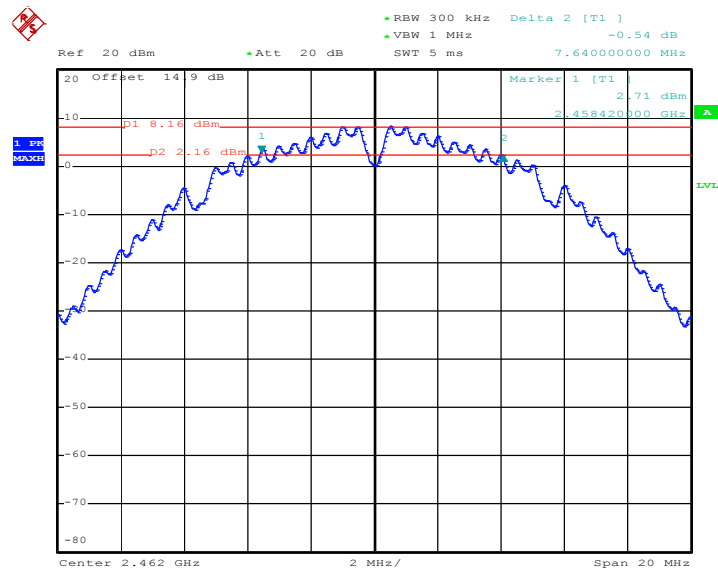


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 14.MAY.2012 23:10:48

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



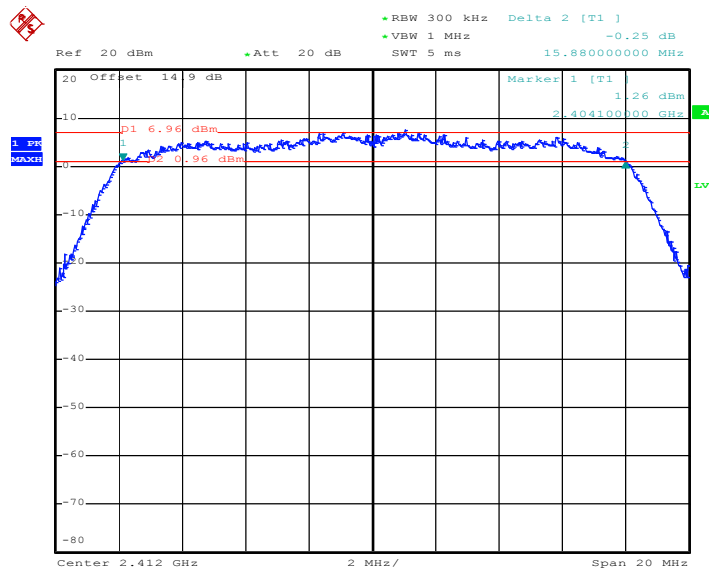
Date: 14.MAY.2012 23:13:27



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

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.88	0.5	Pass
06	2437	15.92	0.5	Pass
11	2462	15.60	0.5	Pass

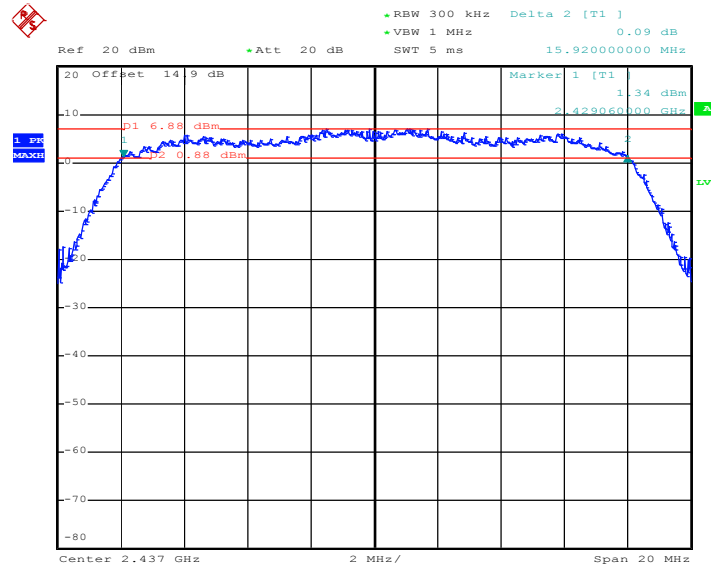
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 14.MAY.2012 23:17:14

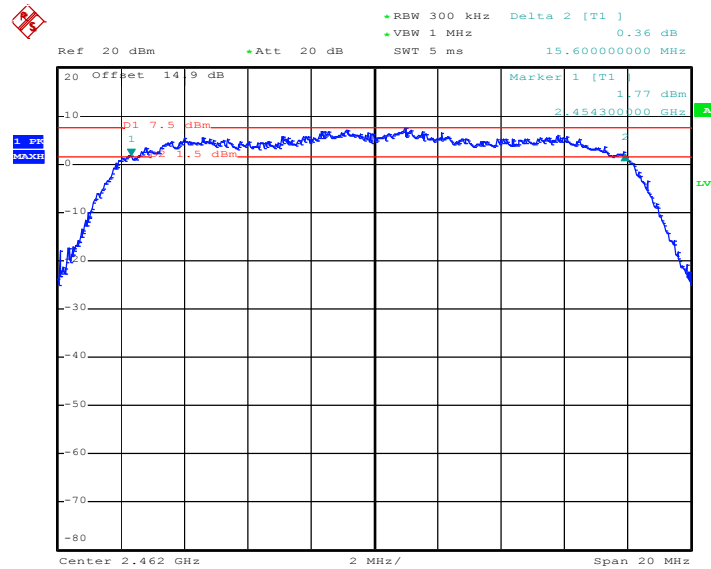


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



Date: 14.MAY.2012 23:21:27

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



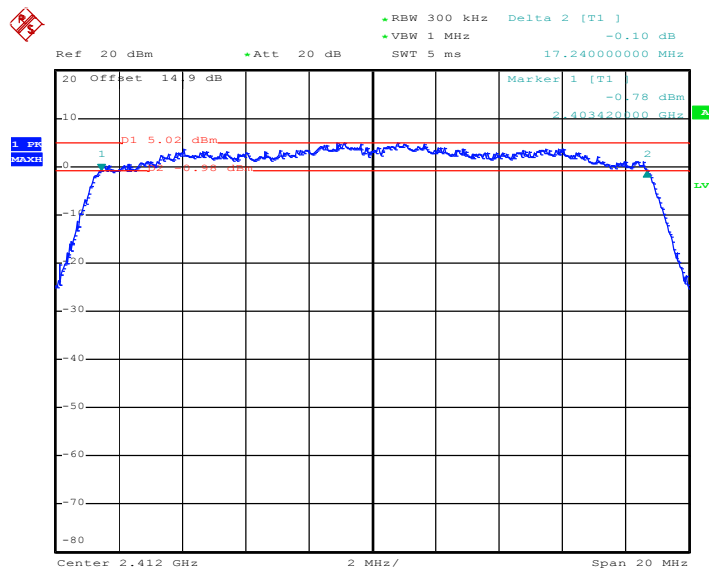
Date: 14.MAY.2012 23:24:17



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

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.24	0.5	Pass
06	2437	17.20	0.5	Pass
11	2462	17.28	0.5	Pass

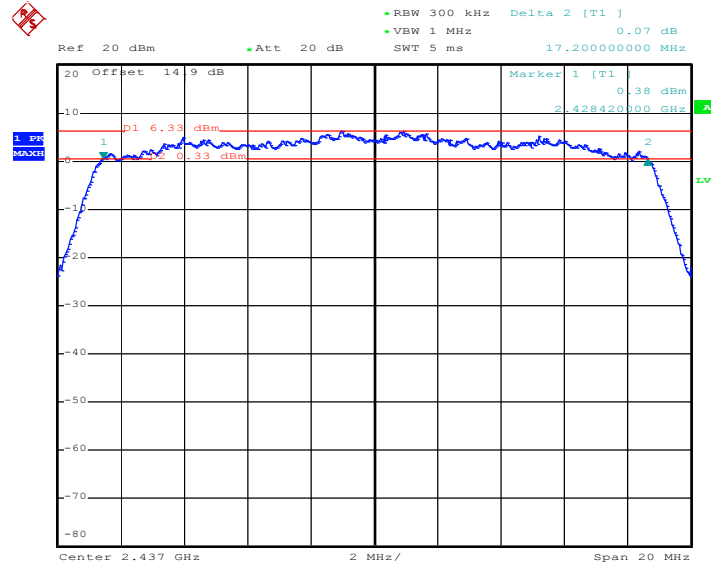
Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



Date: 14.MAY.2012 23:29:17

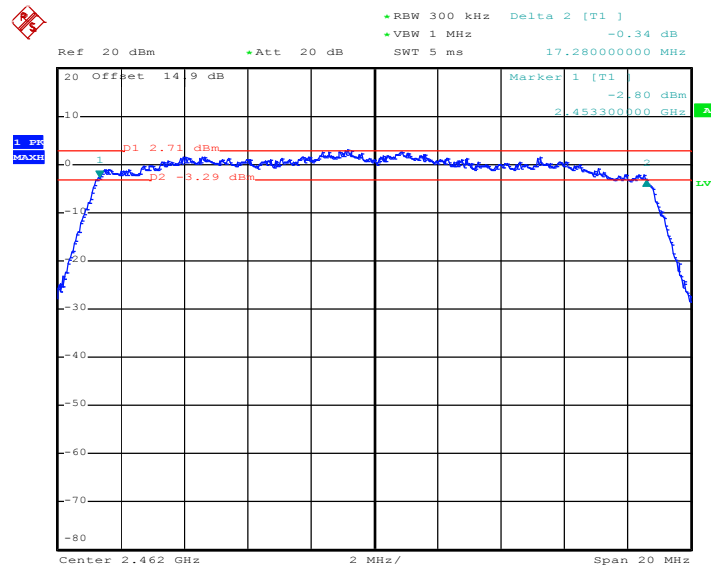


Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 14.MAY.2012 23:18:15

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



Date: 14.MAY.2012 23:22:55

## 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.

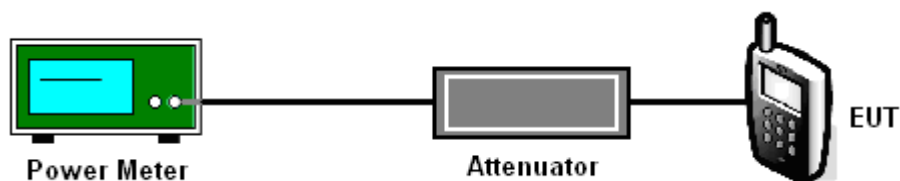
### 3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3 Test Procedures

1. The testing follows the Measurement Procedure PK2 of FCC KDB No. 558074 DTS Meas. Guidance DR01.
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°C
Test Engineer :	Zhi Lu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.65	30	Pass
06	2437	19.81	30	Pass
11	2462	19.58	30	Pass

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

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	23.56	30	Pass
06	2437	23.88	30	Pass
11	2462	23.43	30	Pass

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

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.85	30	Pass
06	2437	22.65	30	Pass
11	2462	22.64	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**

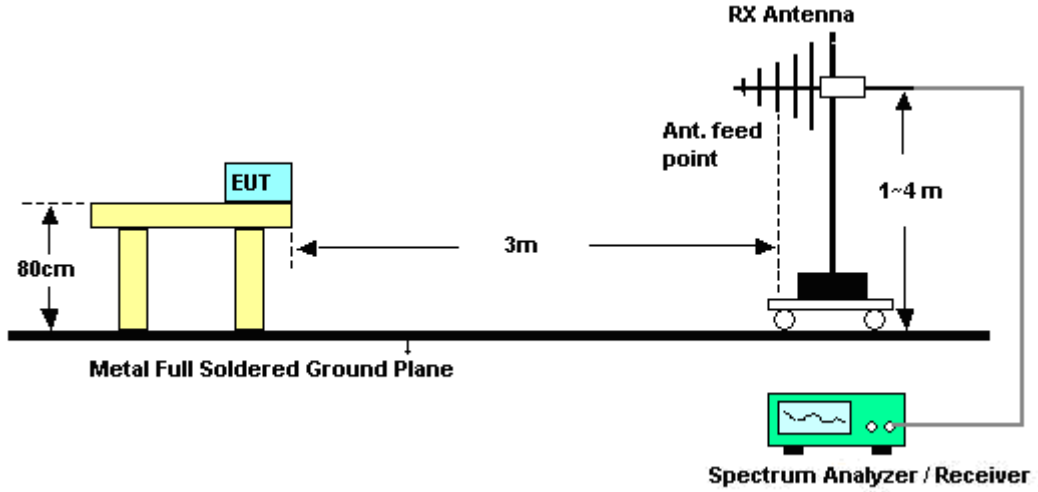
See list of measuring instruments of this test report.

#### **3.3.3 Test Procedures**

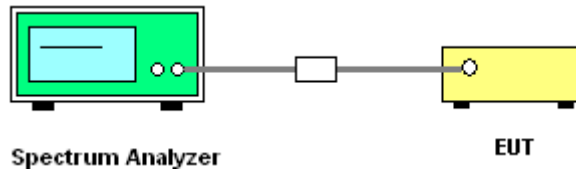
1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW)  $\geq$  RBW. Out of the authorized frequency band emissions must be at least 20 dB lower than the highest emission level within the authorized band as measured with a 100 KHz RBW. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
3. Radiated emission test: Apply to band edge emissions that falling on 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 measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, then modify the unit for continuous operation. Use the settings in this paragraph to correct the reading level by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation per 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 :	19~20°C
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2387.71	52.39	-21.61	74	50.11	32.86	3.47	34.05	200	338	Peak
2387.71	43.49	-10.51	54	41.21	32.86	3.47	34.05	200	338	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2384.67	54.07	-19.93	74	51.83	32.83	3.42	34.01	102	49	Peak
2384.67	43.83	-10.17	54	41.59	32.83	3.42	34.01	102	49	Average

Test Mode :	Mode 3	Temperature :	19~20°C
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2498.86	53.85	-20.15	74	51.31	33.05	3.72	34.23	200	30	Peak
2498.86	44.22	-9.78	54	41.68	33.05	3.72	34.23	200	30	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.42	53.9	-20.1	74	51.41	33.01	3.68	34.2	100	0	Peak
2484.42	42.82	-11.18	54	40.33	33.01	3.68	34.2	100	0	Average



Test Mode :	Mode 4	Temperature :	19~20°C
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2384.48	60.12	-13.88	74	57.88	32.83	3.42	34.01	198	315	Peak
2384.48	45.7	-8.3	54	43.46	32.83	3.42	34.01	198	315	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.99	65.38	-8.62	74	63.1	32.86	3.47	34.05	100	40	Peak
2389.99	50.48	-3.52	54	48.2	32.86	3.47	34.05	100	40	Average

Test Mode :	Mode 6	Temperature :	19~20°C
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.42	63.9	-10.1	74	61.41	33.01	3.68	34.2	100	340	Peak
2484.42	50.08	-3.92	54	47.59	33.01	3.68	34.2	100	340	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.23	63.99	-10.01	74	61.5	33.01	3.68	34.2	100	43	Peak
2484.23	50.5	-3.5	54	48.01	33.01	3.68	34.2	100	43	Average



Test Mode :	Mode 7	Temperature :	19~20°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2388.85	61.43	-12.57	74	59.15	32.86	3.47	34.05	160	0	Peak
2388.85	44.2	-9.8	54	41.92	32.86	3.47	34.05	160	0	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.8	61.42	-12.58	74	59.14	32.86	3.47	34.05	102	40	Peak
2389.8	47.09	-6.91	54	44.81	32.86	3.47	34.05	102	40	Average

Test Mode :	Mode 9	Temperature :	19~20°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

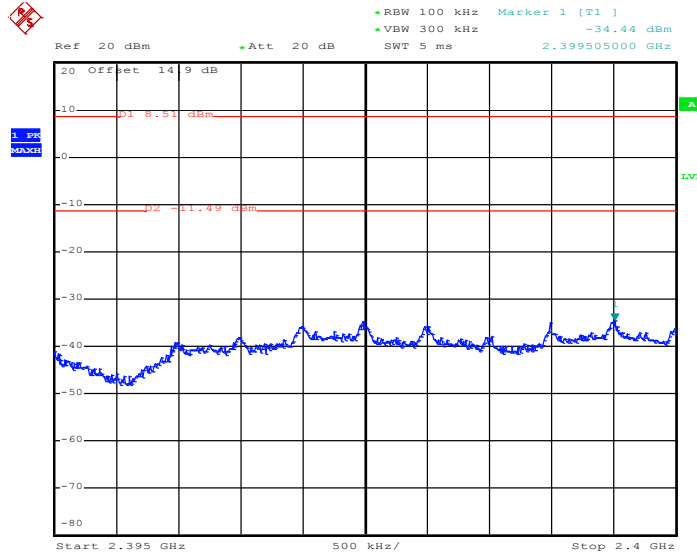
ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.42	63.38	-10.62	74	60.89	33.01	3.68	34.2	200	331	Peak
2484.42	47.87	-6.13	54	45.38	33.01	3.68	34.2	200	331	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.42	62.23	-11.77	74	59.74	33.01	3.68	34.2	100	45	Peak
2484.42	46.75	-7.25	54	44.26	33.01	3.68	34.2	100	45	Average

### 3.3.6 Test Plots of Conducted Band Edges

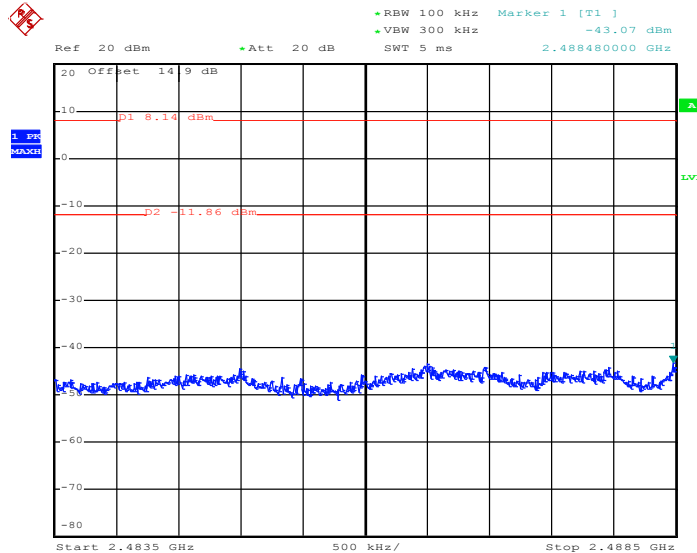
Test Mode :	Mode 1 and 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11b Channel 01



Date: 14.MAY.2012 23:07:08

High Band Edge Plot on 802.11b Channel 11

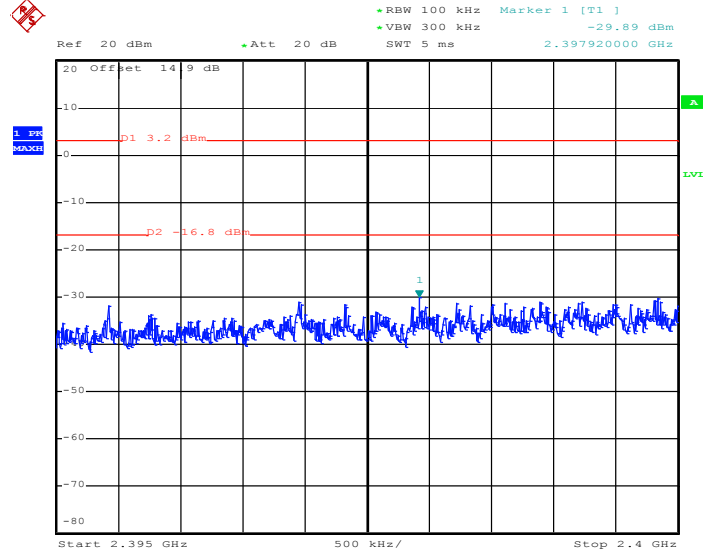


Date: 14.MAY.2012 23:14:24



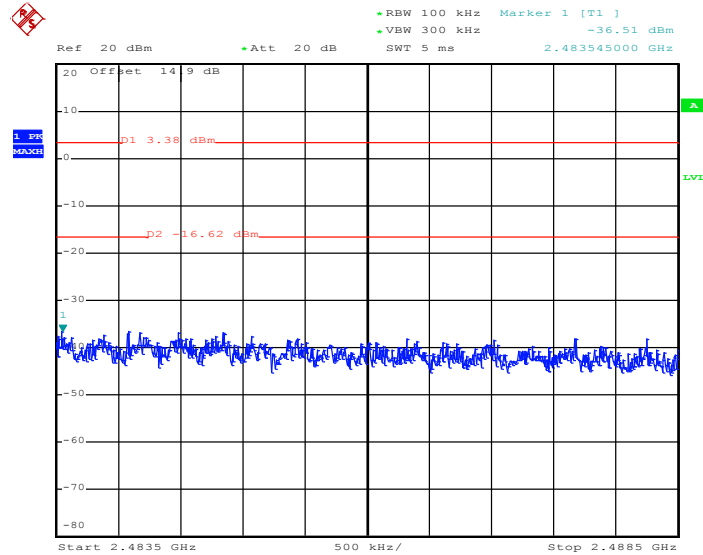
Test Mode :	Mode 4 and 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11g Channel 01



Date: 14.MAY.2012 23:18:34

High Band Edge Plot on 802.11g Channel 11

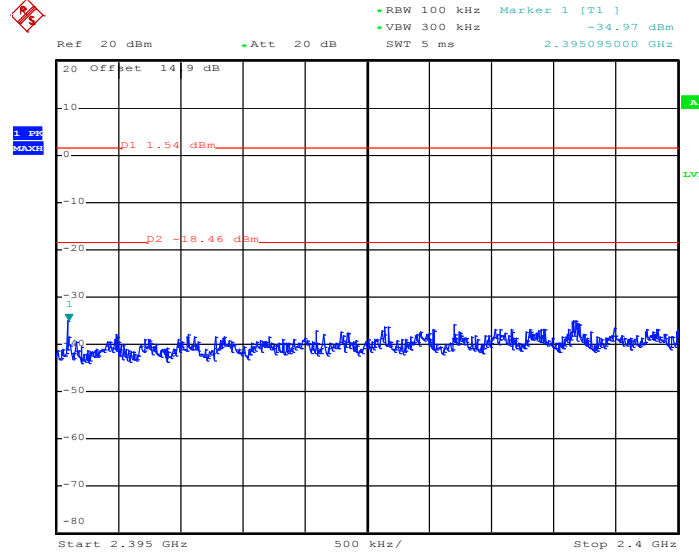


Date: 14.MAY.2012 23:25:11



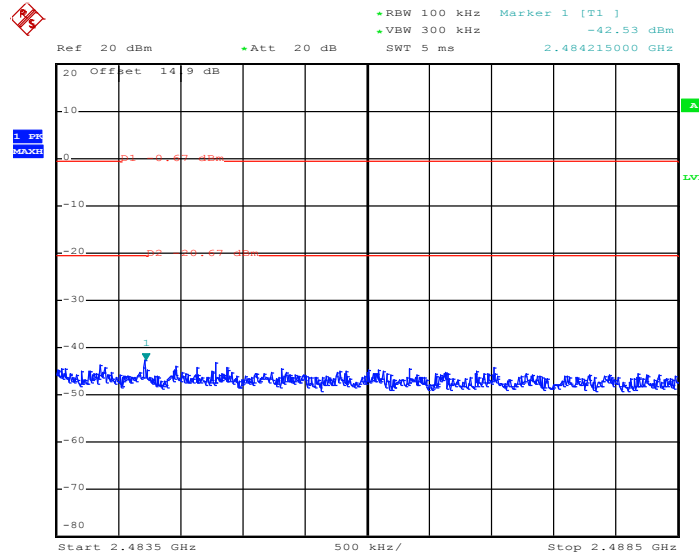
Test Mode :	Mode 7 and 9	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

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



Date: 14.MAY.2012 23:30:24

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



Date: 14.MAY.2012 23:23:52

## 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.

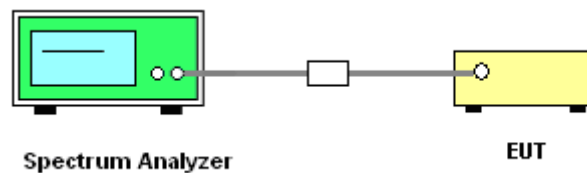
### 3.4.2 Measuring Instruments

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. The path loss was compensated to the results for each measurement.
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

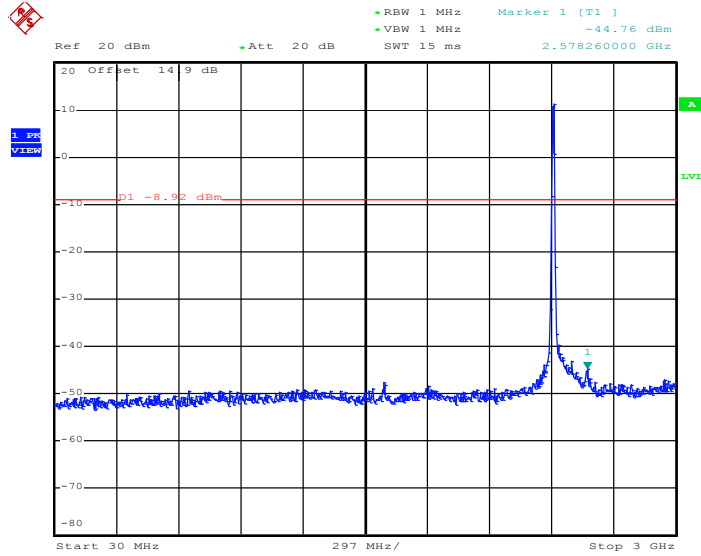




### 3.4.5 Test Plots of Spurious Emission

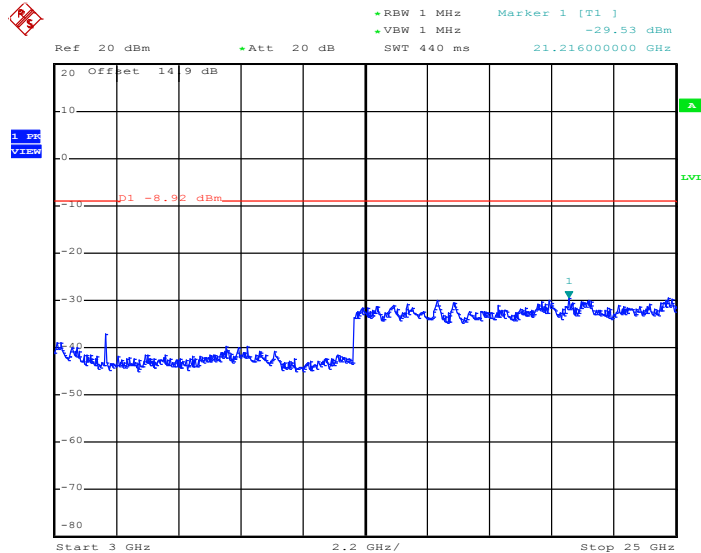
Test Mode :	Mode 1	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:07:38

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

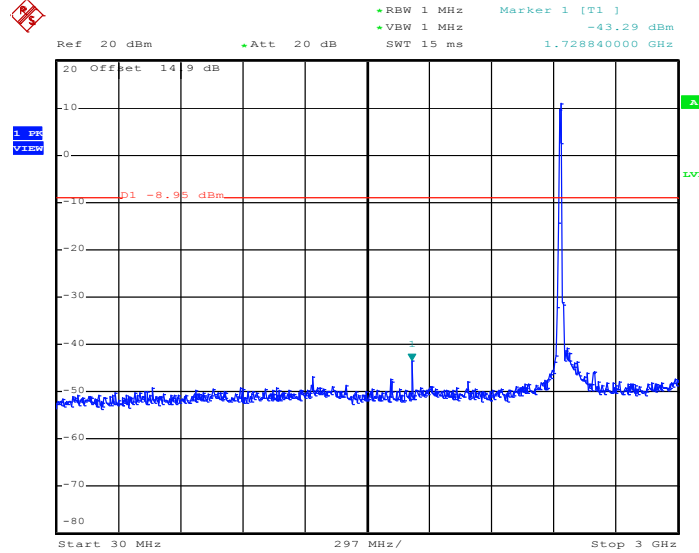


Date: 14.MAY.2012 23:07:56



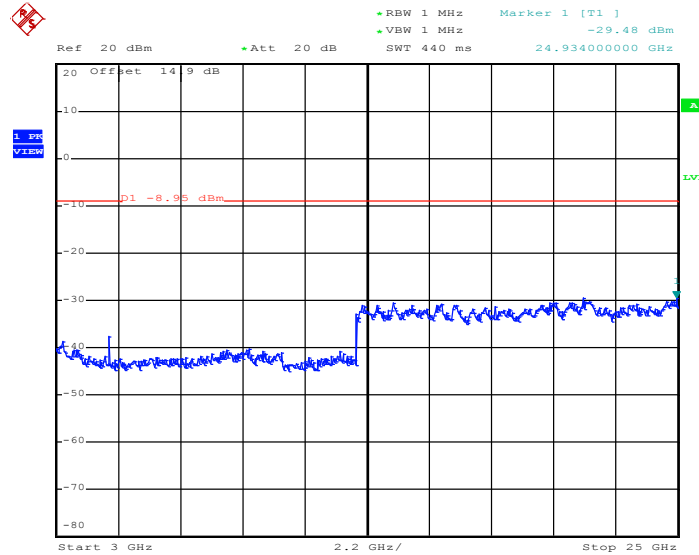
Test Mode :	Mode 2	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:11:37

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

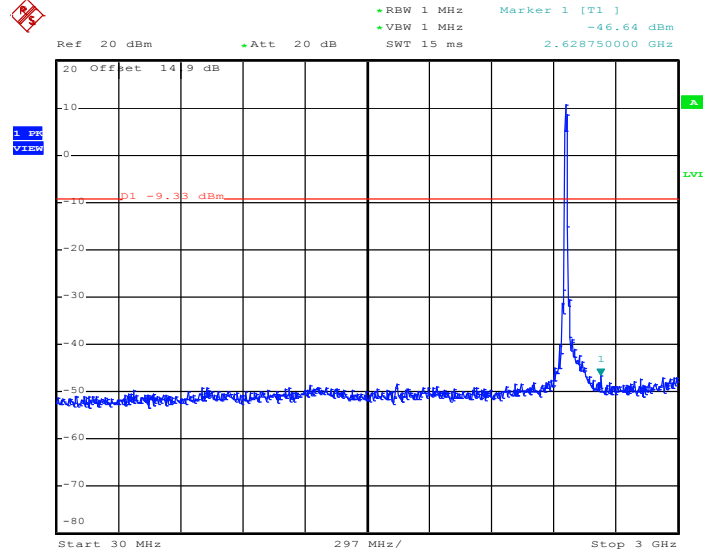


Date: 14.MAY.2012 23:11:55



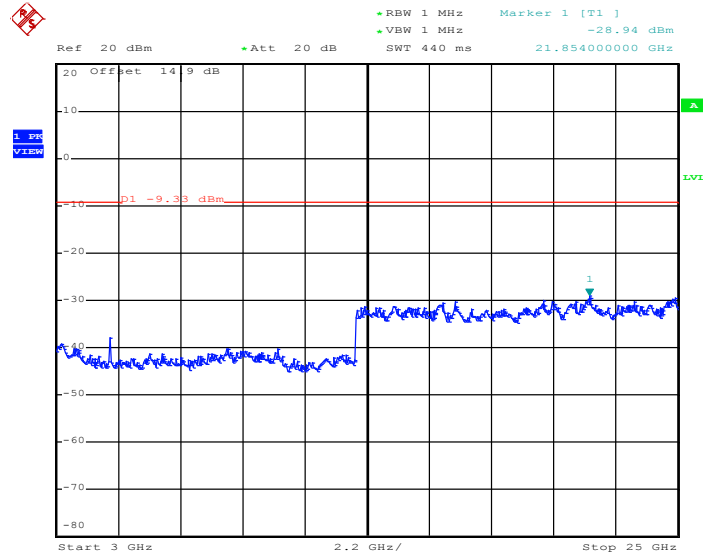
Test Mode :	Mode 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:14:46

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

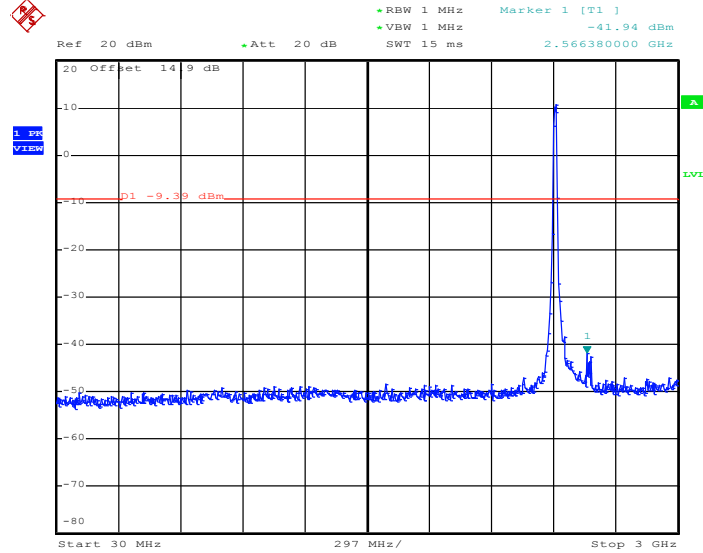


Date: 14.MAY.2012 23:15:05



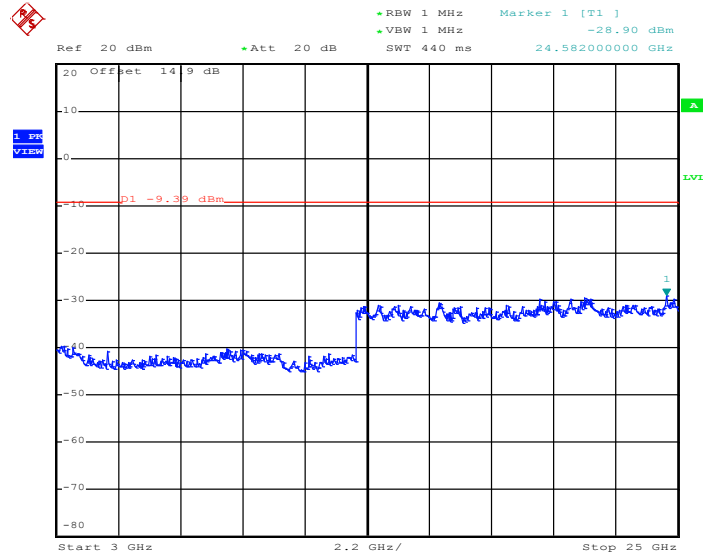
Test Mode :	Mode 4	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:19:10

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

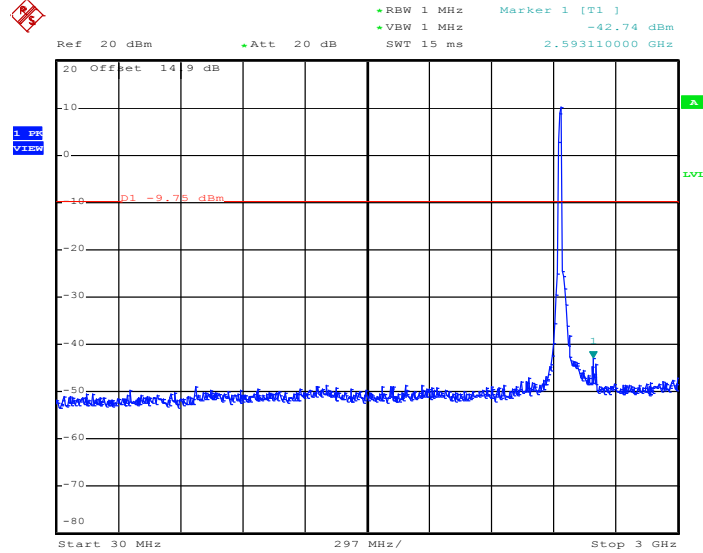


Date: 14.MAY.2012 23:19:29



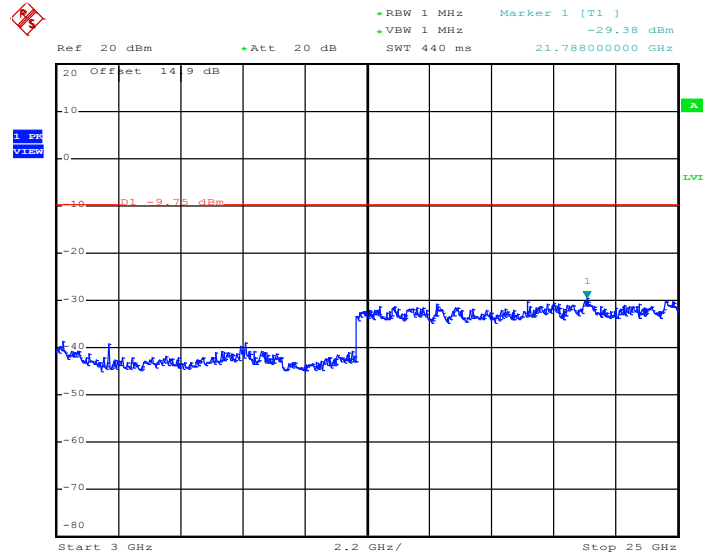
Test Mode :	Mode 5	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 16.MAY.2012 09:26:14

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

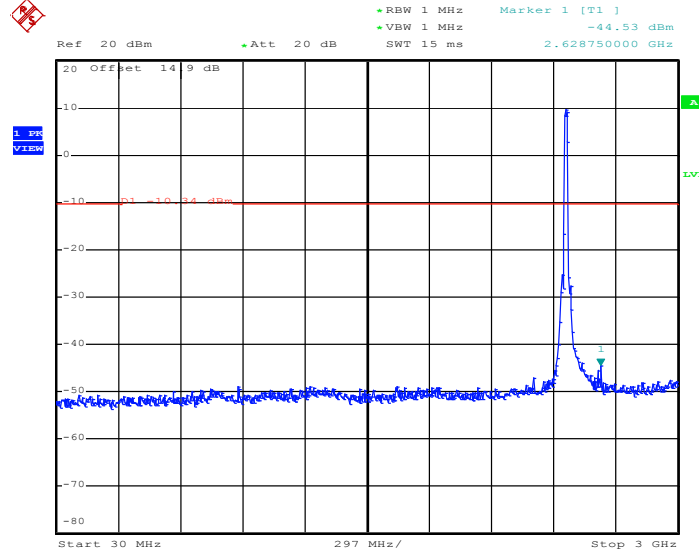


Date: 16.MAY.2012 09:26:32



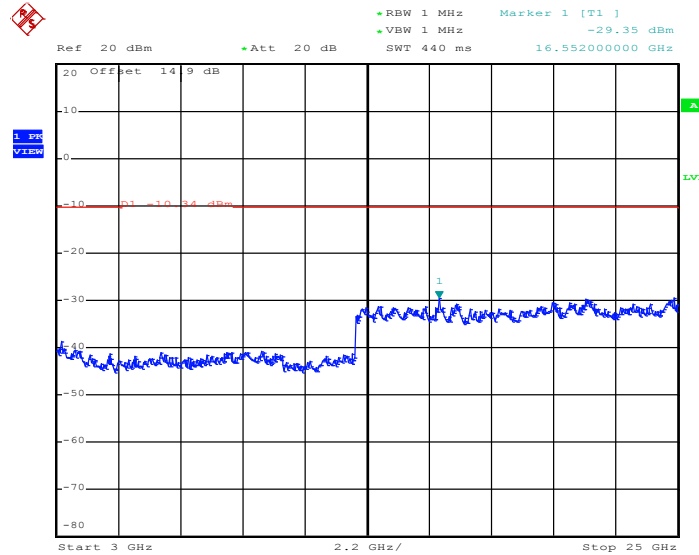
Test Mode :	Mode 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 16.MAY.2012 09:27:14

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

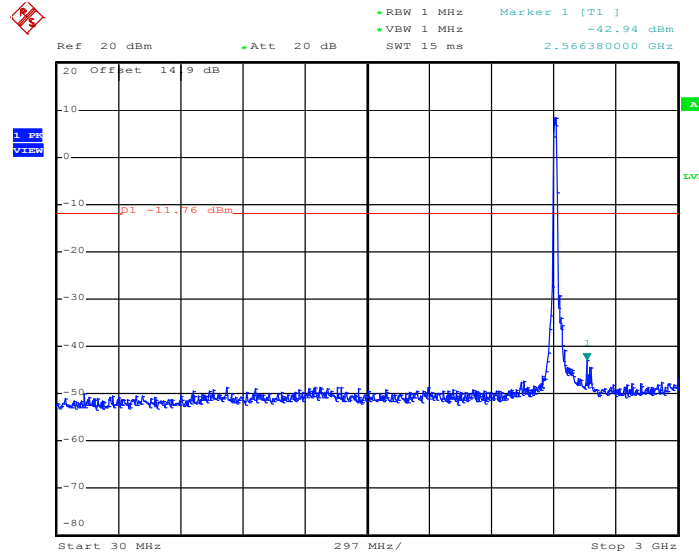


Date: 16.MAY.2012 09:27:32



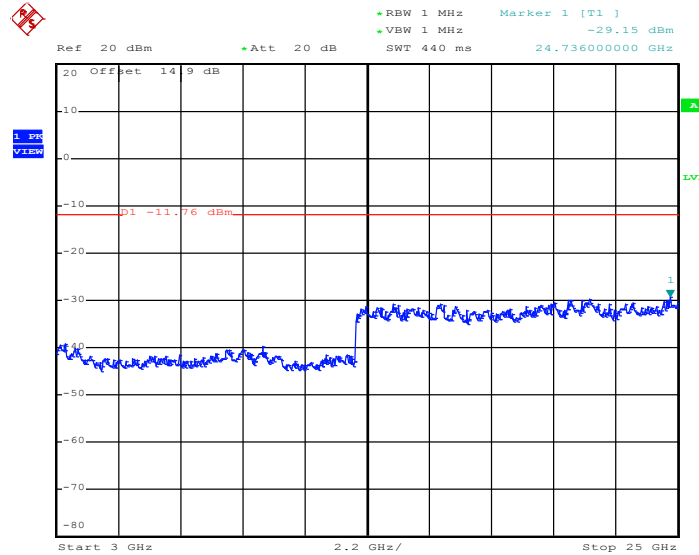
Test Mode :	Mode 7	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:30:50

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

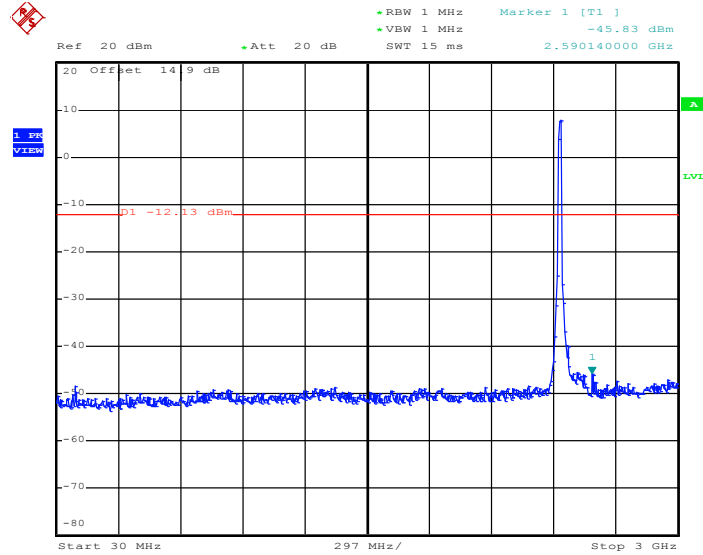


Date: 14.MAY.2012 23:31:08



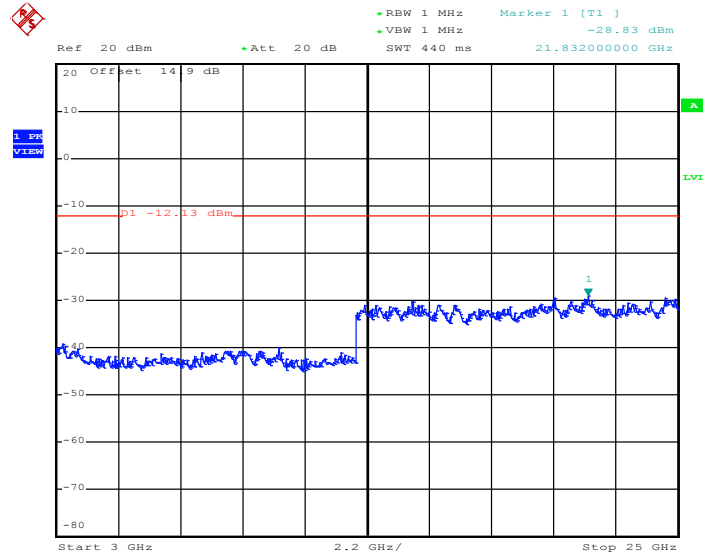
Test Mode :	Mode 8	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:19:31

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

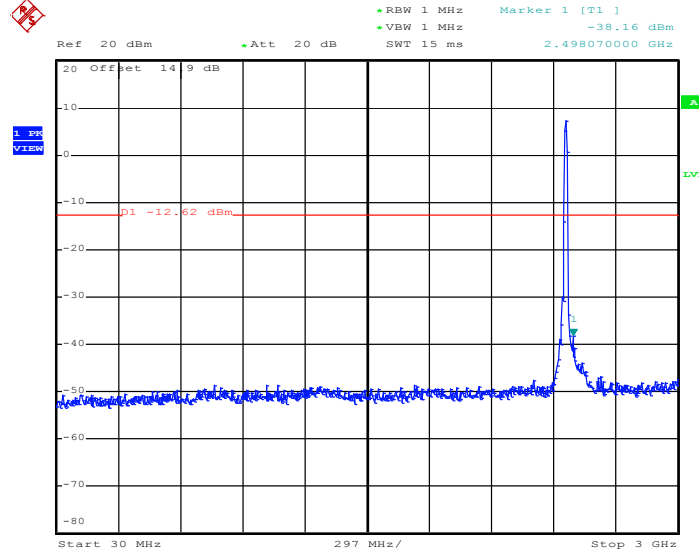


Date: 14.MAY.2012 23:19:50



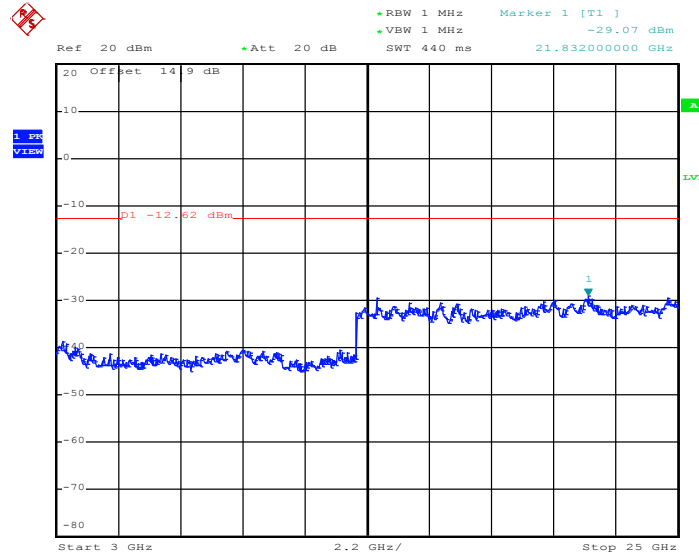
Test Mode :	Mode 9	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.MAY.2012 23:24:29

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 14.MAY.2012 23:24:48

## 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.

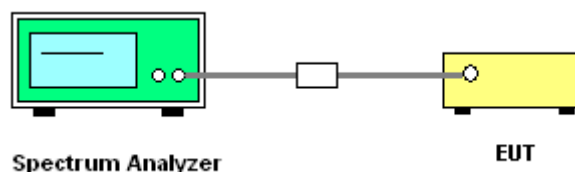
### 3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.5.3 Test Procedures

1. The testing follows Measurement Procedure PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Record the measurement data derived from spectrum analyzer.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz. Video bandwidth (VBW)  $\geq$  300 KHz In order to make an accurate measurement, set the span to 5-30% greater than Emission Bandwidth (EBW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz} = -15.2\text{ dB})$ .

### 3.5.4 Test Setup



### 3.5.5 Test Result of Power Spectral Density

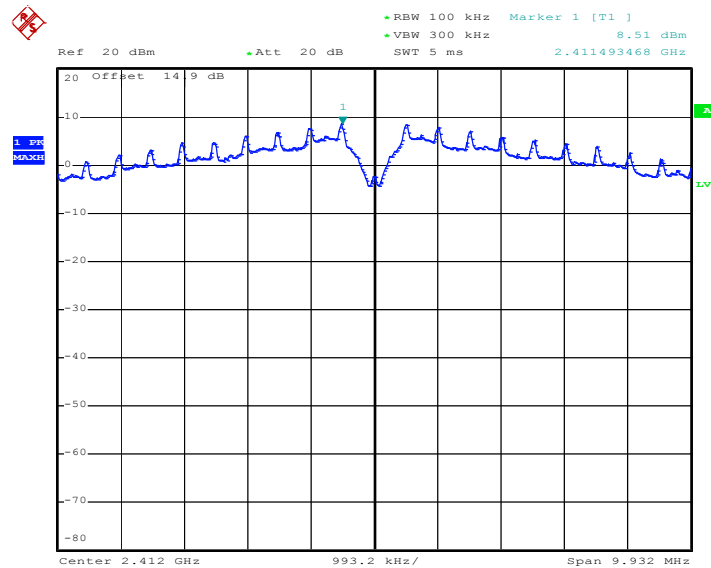
Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Zhi Lu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	8.51	-6.69	8	Pass
06	2437	8.40	-6.80	8	Pass
11	2462	8.14	-7.06	8	Pass

**Note:**

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) =  $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3kHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

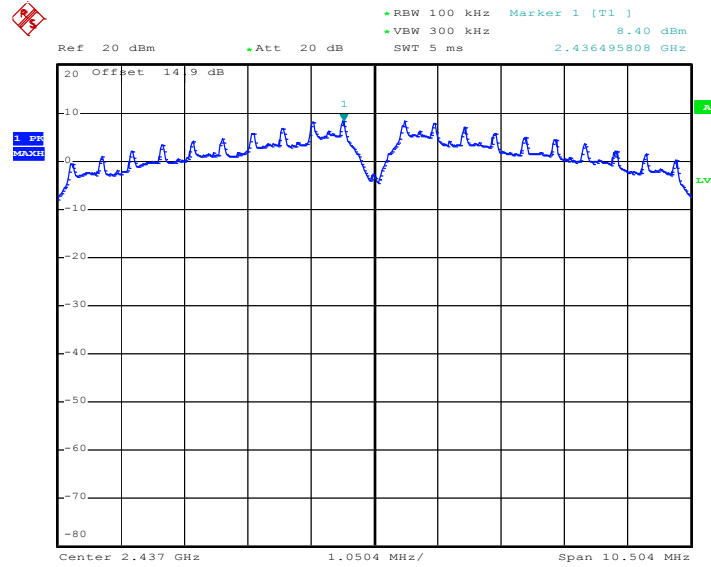
#### Mode 1 : PSD Plot on 802.11b Channel 01



Date: 14.MAY.2012 23:06:13

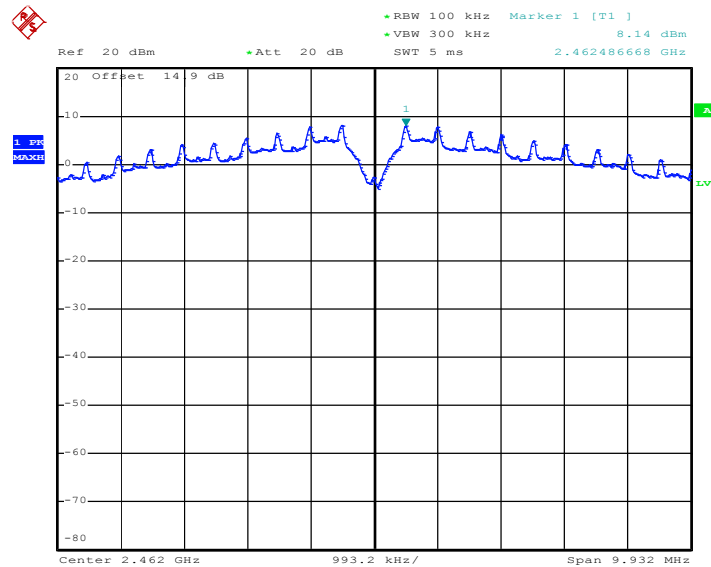


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 14.MAY.2012 23:11:12

Mode 3 : PSD Plot on 802.11b Channel 11



Date: 14.MAY.2012 23:13:51



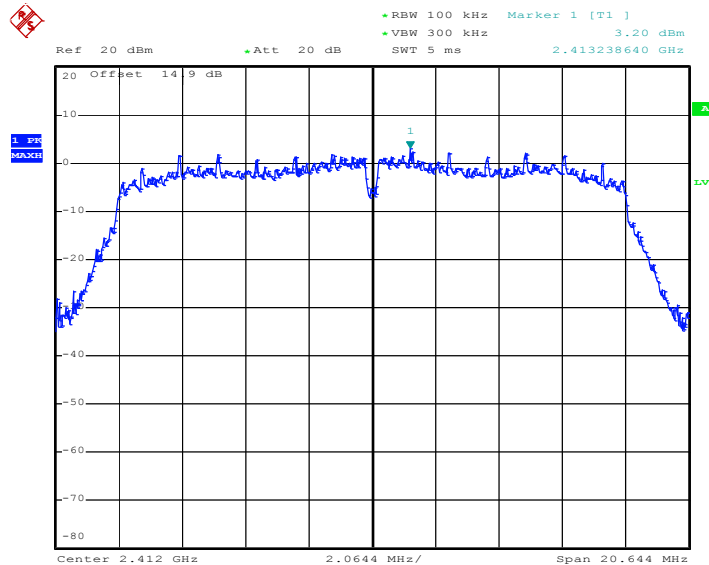
Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Zhi Lu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	3.20	-12.00	8	Pass
06	2437	3.44	-11.76	8	Pass
11	2462	3.38	-11.82	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) =  $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3KHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

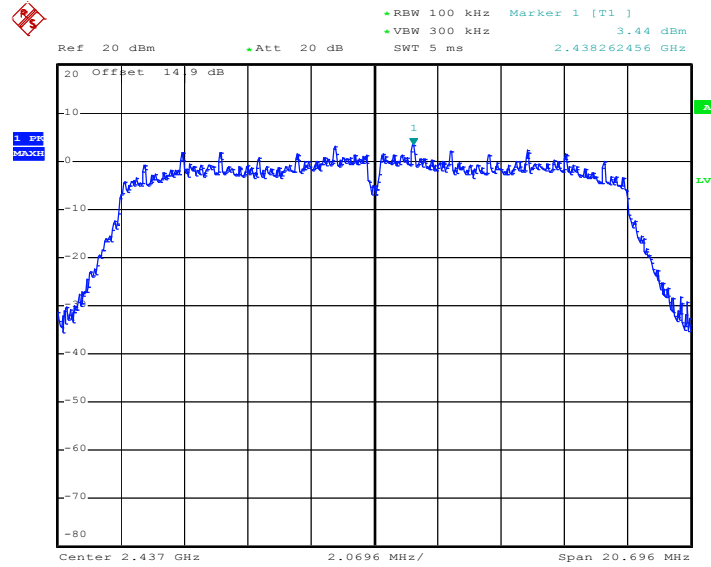
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 14.MAY.2012 23:17:40

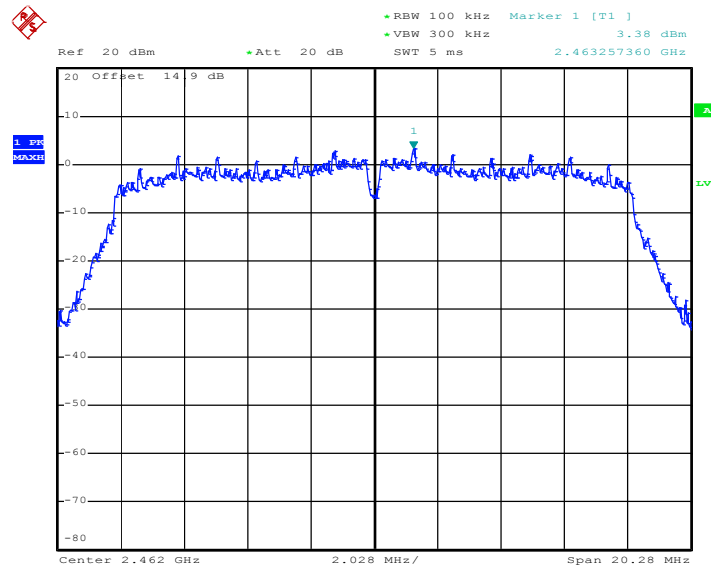


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 14.MAY.2012 23:21:51

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 14.MAY.2012 23:24:41



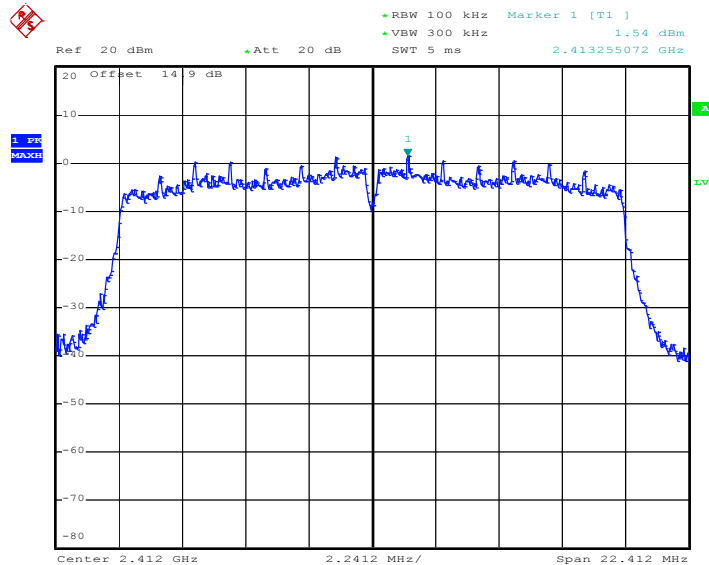
Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Zhi Lu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.54	-13.66	8	Pass
06	2437	1.19	-14.01	8	Pass
11	2462	-0.67	-15.87	8	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. BWCF (dB) =  $10 \log (3k/100k) = -15.2 \text{ dB}$
3. Power Density/ 3KHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

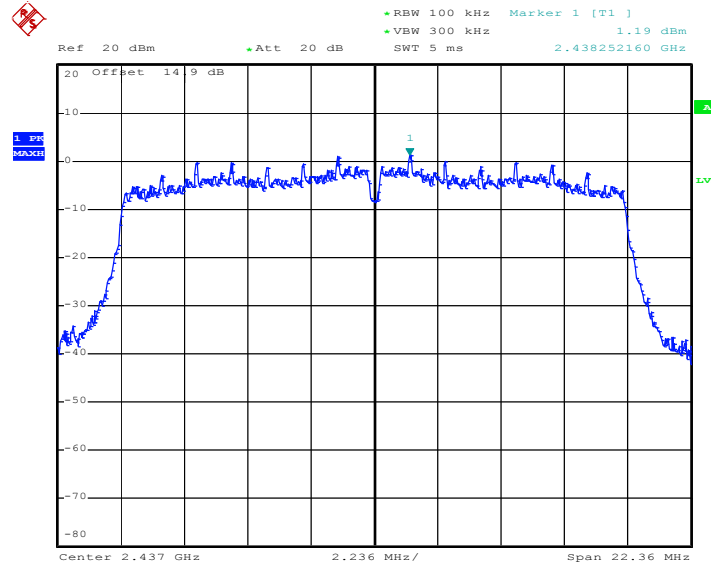
Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01



Date: 14.MAY.2012 23:29:40

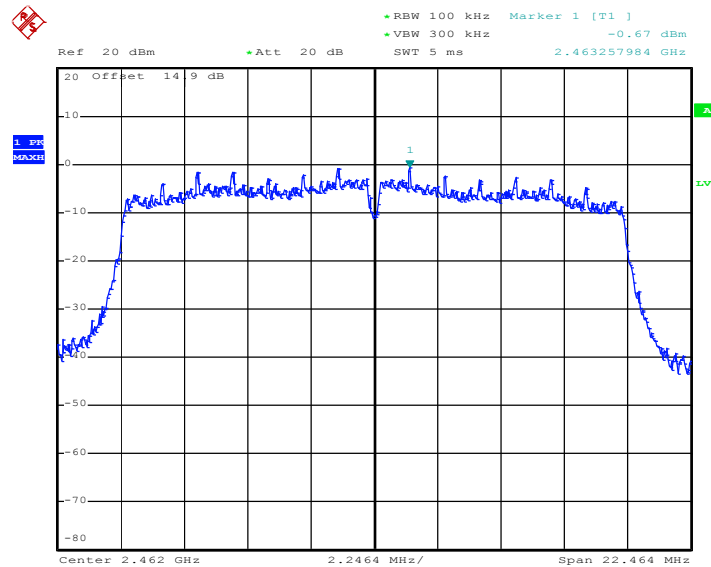


Mode 8 : PSD Plot on 802.11g/n (BW 20MHz) Channel 06



Date: 14.MAY.2012 23:18:40

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



Date: 14.MAY.2012 23:23:21

## 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.

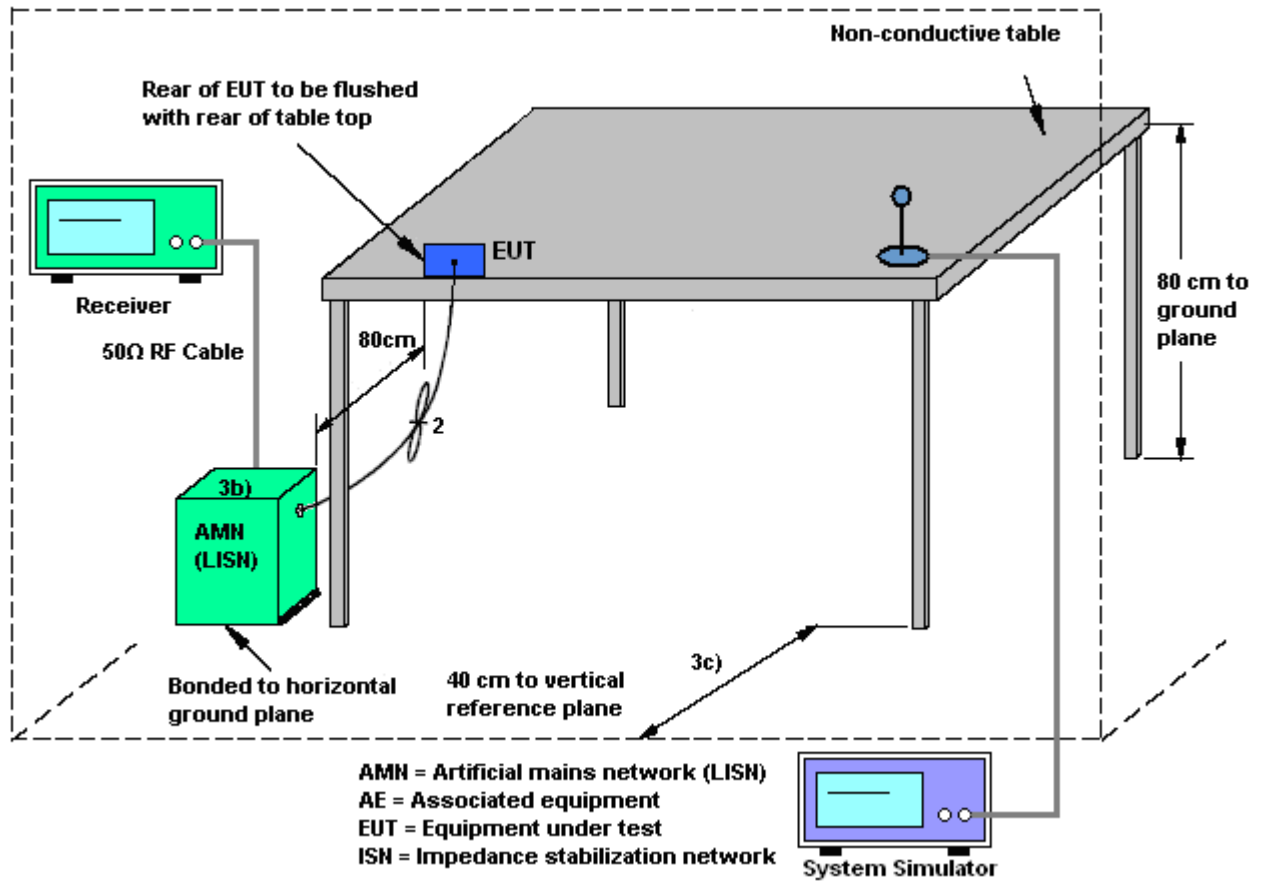
### 3.6.2 Measuring Instruments

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.

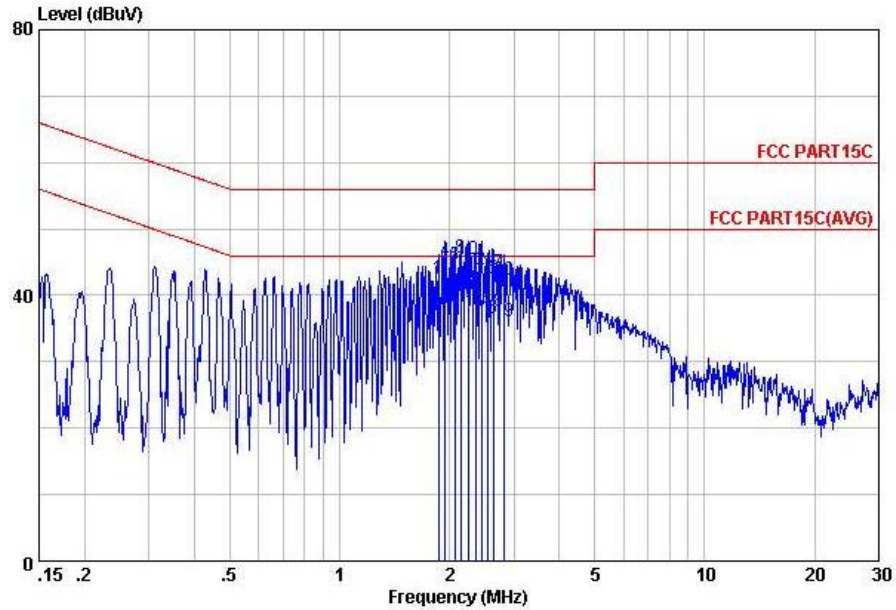
### 3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

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

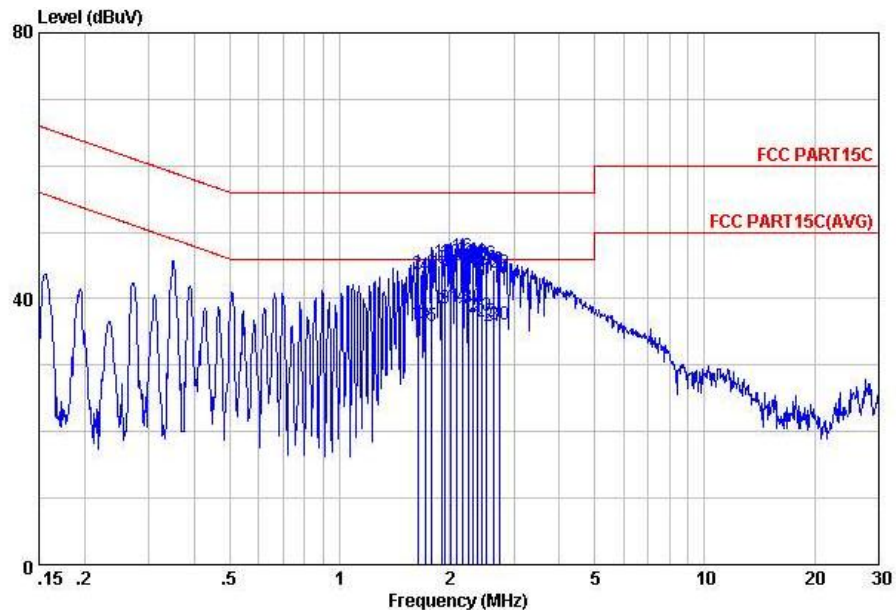


Site : C001-KS  
 Condition: FCC PART15C LISN-100807 LINE  
 Project : (FR) 250428  
 mode : Mode 2

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	1.87	42.51	-13.49	56.00	32.30	-0.11	10.32	QP
2	1.87	37.21	-8.79	46.00	27.00	-0.11	10.32	Average
3	1.95	39.92	-6.08	46.00	29.70	-0.11	10.33	Average
4	1.95	45.22	-10.78	56.00	35.00	-0.11	10.33	QP
5	2.07	44.52	-11.48	56.00	34.30	-0.11	10.33	QP
6	2.07	38.42	-7.58	46.00	28.20	-0.11	10.33	Average
7	2.14	39.83	-6.17	46.00	29.60	-0.11	10.34	Average
8	2.14	45.73	-10.27	56.00	35.50	-0.11	10.34	QP
9	2.26	39.83	-6.17	46.00	29.60	-0.11	10.34	Average
10	2.26	45.43	-10.57	56.00	35.20	-0.11	10.34	QP
11	2.37	37.74	-8.26	46.00	27.50	-0.11	10.35	Average
12	2.37	43.94	-12.06	56.00	33.70	-0.11	10.35	QP
13	2.45	38.04	-7.96	46.00	27.80	-0.11	10.35	Average
14	2.45	39.04	-16.96	56.00	28.80	-0.11	10.35	QP
15	2.54	42.54	-13.46	56.00	32.30	-0.11	10.35	QP
16	2.54	36.64	-9.36	46.00	26.40	-0.11	10.35	Average
17	2.65	43.44	-12.56	56.00	33.19	-0.11	10.36	QP
18	2.65	37.74	-8.26	46.00	27.49	-0.11	10.36	Average
19	2.81	36.15	-9.85	46.00	25.91	-0.12	10.36	Average
20	2.81	42.25	-13.75	56.00	32.01	-0.12	10.36	QP



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

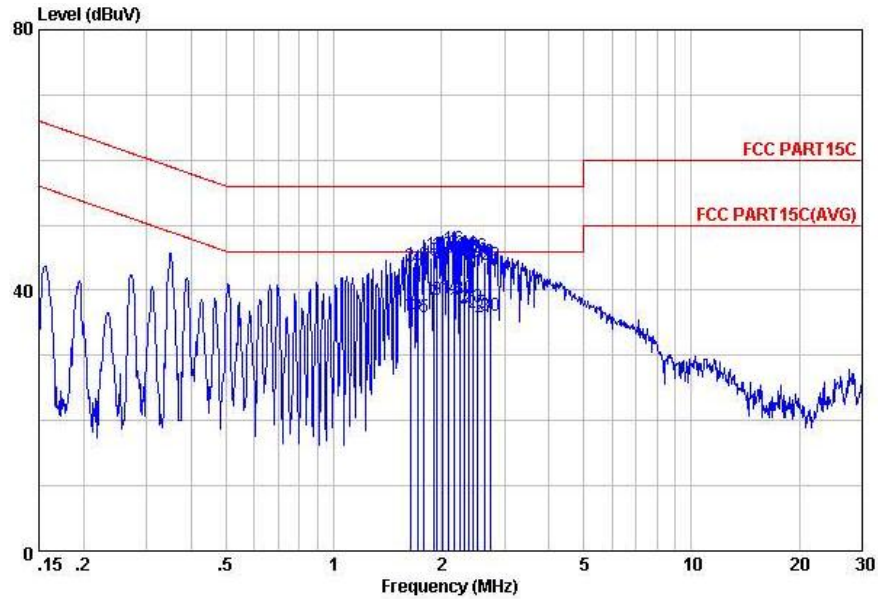


Site : C001-KS  
 Condition: FCC PART15C LISN-100807 NEUTRAL  
 Project : (FR) 250428  
 mode : Mode 2  
 IMEI : 13# 352546050000146

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.64	36.40	-9.60	46.00	26.20	-0.11	10.31	Average
2	1.64	43.70	-12.30	56.00	33.50	-0.11	10.31	QP
3	1.72	36.11	-9.89	46.00	25.91	-0.11	10.31	Average
4	1.72	43.41	-12.59	56.00	33.21	-0.11	10.31	QP
5	1.79	35.81	-10.19	46.00	25.60	-0.11	10.32	Average
6	1.79	43.91	-12.09	56.00	33.70	-0.11	10.32	QP
7	1.91	38.21	-7.79	46.00	28.00	-0.11	10.32	Average
8	1.91	44.61	-11.39	56.00	34.40	-0.11	10.32	QP
9	1.95	38.52	-7.48	46.00	28.30	-0.11	10.33	Average
10	1.95	45.52	-10.48	56.00	35.30	-0.11	10.33	QP
11	2.02	38.72	-7.28	46.00	28.50	-0.11	10.33	Average
12	2.02	45.52	-10.48	56.00	35.30	-0.11	10.33	QP
13	2.10	45.62	-10.38	56.00	35.40	-0.11	10.33	QP
14	2.10	38.82	-7.18	46.00	28.60	-0.11	10.33	Average
15	2.18	38.53	-7.47	46.00	28.30	-0.11	10.34	Average
16	2.18	46.43	-9.57	56.00	36.20	-0.11	10.34	QP
17	2.26	37.13	-8.87	46.00	26.90	-0.11	10.34	Average
18	2.26	45.13	-10.87	56.00	34.90	-0.11	10.34	QP
19	2.31	45.03	-10.97	56.00	34.80	-0.11	10.34	QP
20	2.31	38.83	-7.17	46.00	28.60	-0.11	10.34	Average
21	2.38	37.14	-8.86	46.00	26.90	-0.11	10.35	Average
22	2.38	45.44	-10.56	56.00	35.20	-0.11	10.35	QP
23	2.45	37.34	-8.66	46.00	27.10	-0.11	10.35	Average
24	2.45	44.54	-11.46	56.00	34.30	-0.11	10.35	QP
25	2.53	36.54	-9.46	46.00	26.30	-0.11	10.35	Average
26	2.53	45.24	-10.76	56.00	35.00	-0.11	10.35	QP
27	2.65	35.94	-10.06	46.00	25.69	-0.11	10.36	Average



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



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

Freq	Level	Over	Limit	Read	LISN	Cable	Remark
MHz	dBuV	Limit	Line	Level	Factor	Loss	
		dB	dBuV	dBuV	dB	dB	
28	2.65	44.34	-11.66	56.00	34.09	-0.11	10.36 QP
29	2.74	43.85	-12.15	56.00	33.61	-0.12	10.36 QP
30	2.74	36.05	-9.95	46.00	25.81	-0.12	10.36 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

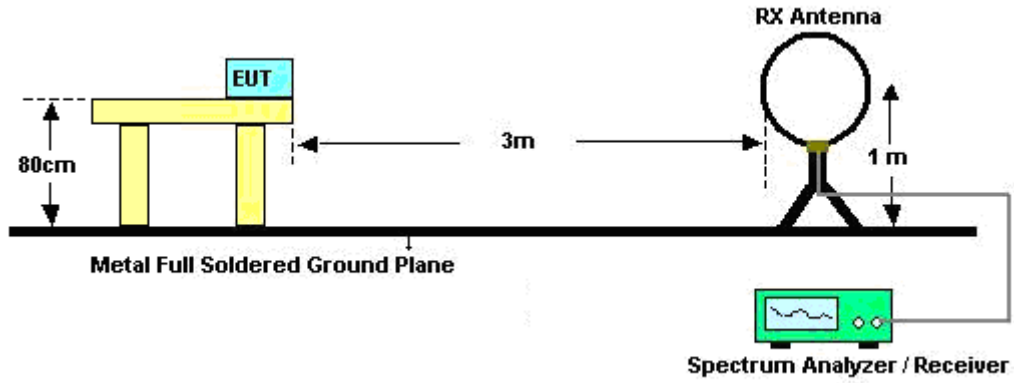
See list of measuring instruments of this test report.

#### 3.7.3 Test Procedures

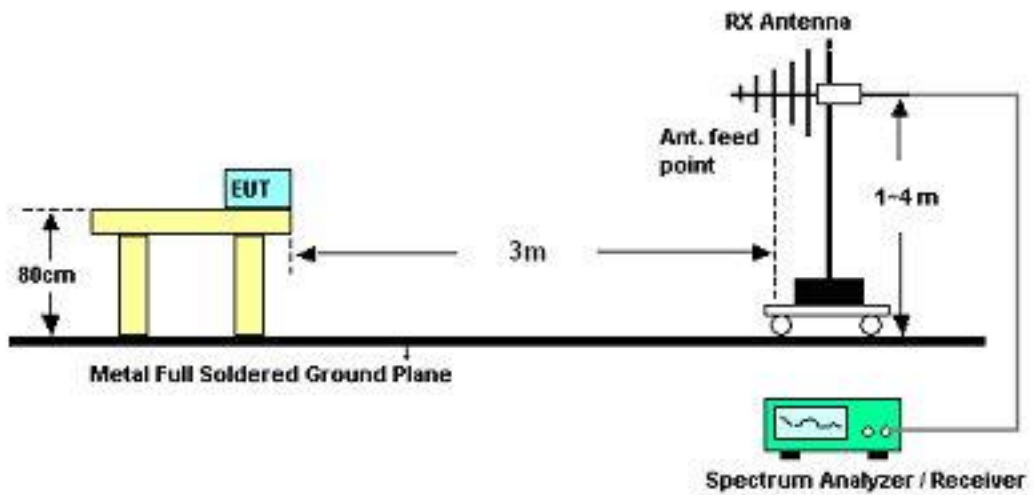
1. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW = 1 MHz for  $f \geq 1$  GHz, 100 KHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Measurement above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB per decade from 3m to 1m.  
 Distance extrapolation factor =  $20 \log(\text{specific distance [3m]} / \text{test distance [1m]})$  (dB)
2. Maximize the emission by rotating the EUT for three orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines in ANSI C63.4-2003.

### 3.7.4 Test Setup

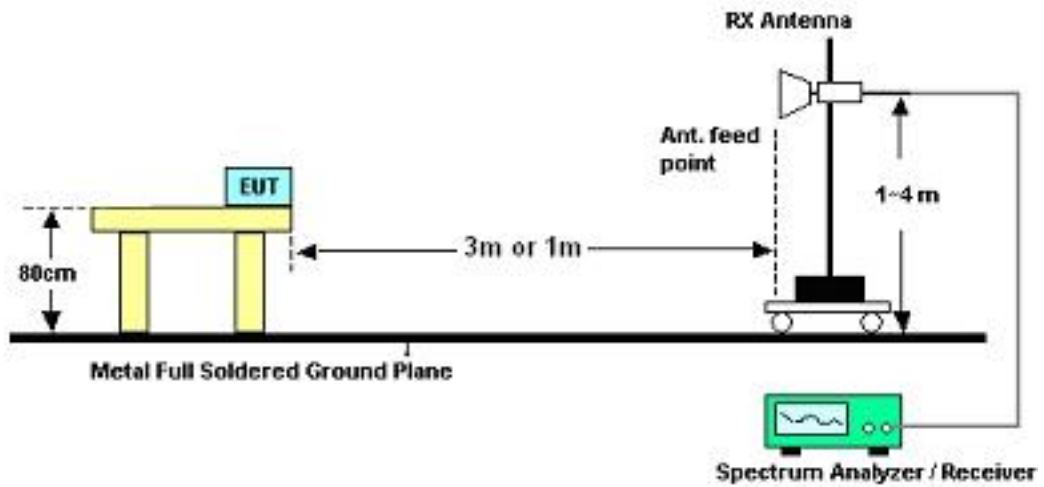
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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



3.7.6 Test Result of Radiated Emission (30 MHz ~ 10<sup>th</sup> Harmonic)

Test Mode :	Mode 1	Temperature :	19~20°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	21.72	-18.28	40	33.54	18	0.26	30.08	-	-	Peak
100.81	29.35	-14.15	43.5	48.28	10.62	0.41	29.96	102	12	Peak
115.36	25.57	-17.93	43.5	43.3	11.8	0.44	29.97	-	-	Peak
575.14	23.18	-22.82	46	33.24	18.55	1.04	29.65	-	-	Peak
876.81	29.27	-16.73	46	37.06	20.48	1.29	29.56	-	-	Peak
960.23	31.68	-22.32	54	39.09	20.79	1.34	29.54	-	-	Peak
2387.71	52.39	-21.61	74	50.11	32.86	3.47	34.05	200	338	Peak
2387.71	43.49	-10.51	54	41.21	32.86	3.47	34.05	200	338	Average
2412	103.91	-	-	101.58	32.89	3.52	34.08	151	332	Peak
2412	100.55	-	-	98.22	32.89	3.52	34.08	151	332	Average
2490.31	50.94	-23.06	74	48.4	33.05	3.72	34.23	143	119	Peak
2490.31	40.83	-13.17	54	38.29	33.05	3.72	34.23	143	119	Average



<b>Test Mode :</b>	Mode 1	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
52.31	32.08	-7.92	40	54.91	7.01	0.29	30.13	199	347	Peak
103.72	27.47	-16.03	43.5	46	11.01	0.42	29.96	-	-	Peak
205.57	21.18	-22.32	43.5	41.33	9.25	0.6	30	-	-	Peak
577.08	23.35	-22.65	46	33.4	18.56	1.04	29.65	-	-	Peak
762.35	25.5	-20.5	46	33.97	19.89	1.19	29.55	-	-	Peak
960.23	31.22	-22.78	54	38.63	20.79	1.34	29.54	-	-	Peak
2384.67	54.07	-19.93	74	51.83	32.83	3.42	34.01	102	49	Peak
2384.67	43.83	-10.17	54	41.59	32.83	3.42	34.01	102	49	Average
2412	105.96	-	-	103.63	32.89	3.52	34.08	100	42	Peak
2412	101.74	-	-	99.41	32.89	3.52	34.08	100	42	Average
2492.21	51.61	-22.39	74	49.07	33.05	3.72	34.23	200	0	Peak
2492.21	41.78	-12.22	54	39.24	33.05	3.72	34.23	200	0	Average



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	20.93	-19.07	40	32.75	18	0.26	30.08	152	206	Peak
103.72	23.17	-20.33	43.5	41.7	11.01	0.42	29.96	-	-	Peak
200.72	19.84	-23.66	43.5	40.22	9.04	0.59	30.01	-	-	Peak
533.43	22.79	-23.21	46	33.35	18.14	0.99	29.69	-	-	Peak
876.81	26.67	-19.33	46	34.46	20.48	1.29	29.56	-	-	Peak
960.23	32.37	-21.63	54	39.78	20.79	1.34	29.54	-	-	Peak
2350.28	50.71	-23.29	74	48.54	32.78	3.33	33.94	189	347	Peak
2350.28	38.66	-15.34	54	36.49	32.78	3.33	33.94	189	347	Average
2437	104.68	-	-	102.28	32.95	3.6	34.15	200	31	Peak
2437	100.52	-	-	98.12	32.95	3.6	34.15	200	31	Average
2490.5	52.3	-21.7	74	49.76	33.05	3.72	34.23	102	28	Peak
2490.5	42.23	-11.77	54	39.69	33.05	3.72	34.23	102	28	Average



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
53.28	32.47	-7.53	40	55.51	6.8	0.29	30.13	200	350	Peak
104.69	27.55	-15.95	43.5	45.94	11.15	0.42	29.96	-	-	Peak
569.32	24.75	-21.25	46	34.86	18.53	1.02	29.66	-	-	Peak
673.11	25.42	-20.58	46	34.92	19.08	1.11	29.69	-	-	Peak
878.75	27.01	-18.99	46	34.8	20.47	1.29	29.55	-	-	Peak
960.23	30.58	-23.42	54	37.99	20.79	1.34	29.54	-	-	Peak
2377.26	51.21	-22.79	74	48.97	32.83	3.42	34.01	120	10	Peak
2377.26	40.48	-13.52	54	38.24	32.83	3.42	34.01	120	10	Average
2437	105.31	-	-	102.91	32.95	3.6	34.15	101	43	Peak
2437	101.32	-	-	98.92	32.95	3.6	34.15	101	43	Average
2491.45	51.8	-22.2	74	49.26	33.05	3.72	34.23	200	344	Peak
2491.45	42.52	-11.48	54	39.98	33.05	3.72	34.23	200	344	Average



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	21.2	-18.8	40	33.02	18	0.26	30.08	-	-	Peak
98.87	28.77	-14.73	43.5	47.99	10.33	0.41	29.96	122	339	Peak
200.72	20.29	-23.21	43.5	40.67	9.04	0.59	30.01	-	-	Peak
475.23	22.49	-23.51	46	34.57	16.75	0.93	29.76	-	-	Peak
876.81	25.47	-20.53	46	33.26	20.48	1.29	29.56	-	-	Peak
960.23	31.78	-22.22	54	39.19	20.79	1.34	29.54	-	-	Peak
2357.31	50.49	-23.51	74	48.28	32.81	3.38	33.98	164	218	Peak
2357.31	40.58	-13.42	54	38.37	32.81	3.38	33.98	164	218	Average
2462	105.67	-	-	103.22	32.98	3.64	34.17	199	37	Peak
2462	101.33	-	-	98.88	32.98	3.64	34.17	199	37	Average
2498.86	53.85	-20.15	74	51.31	33.05	3.72	34.23	200	30	Peak
2498.86	44.22	-9.78	54	41.68	33.05	3.72	34.23	200	30	Average



Test Mode :	Mode 3	Temperature :	19~20°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
39.7	33.08	-6.92	40	50.55	12.3	0.25	30.02	200	0	Peak
52.31	32.73	-7.27	40	55.56	7.01	0.29	30.13	-	-	Peak
101.78	28.88	-14.62	43.5	47.69	10.74	0.41	29.96	-	-	Peak
749.74	25.43	-20.57	46	33.89	19.9	1.18	29.54	-	-	Peak
876.81	27.47	-18.53	46	35.26	20.48	1.29	29.56	-	-	Peak
960.23	30.48	-23.52	54	37.89	20.79	1.34	29.54	-	-	Peak
2314.56	51.27	-22.73	74	49.18	32.73	3.22	33.86	112	148	Peak
2314.56	41.51	-12.49	54	39.42	32.73	3.22	33.86	112	148	Average
2462	106.06	-	-	103.61	32.98	3.64	34.17	101	43	Peak
2462	101.67	-	-	99.22	32.98	3.64	34.17	101	43	Average
2484.42	53.9	-20.1	74	51.41	33.01	3.68	34.2	100	0	Peak
2484.42	42.82	-11.18	54	40.33	33.01	3.68	34.2	100	0	Average



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	22.45	-17.55	40	34.27	18	0.26	30.08	140	114	Peak
104.69	22.91	-20.59	43.5	41.3	11.15	0.42	29.96	-	-	Peak
525.67	22.84	-23.16	46	33.67	17.89	0.98	29.7	-	-	Peak
645.95	25.98	-20.02	46	35.66	18.88	1.09	29.65	-	-	Peak
875.84	26.78	-19.22	46	34.57	20.48	1.29	29.56	-	-	Peak
960.23	31.86	-22.14	54	39.27	20.79	1.34	29.54	-	-	Peak
2384.48	60.12	-13.88	74	57.88	32.83	3.42	34.01	198	315	Peak
2384.48	45.7	-8.3	54	43.46	32.83	3.42	34.01	198	315	Average
2412	104.12	-	-	101.79	32.89	3.52	34.08	200	332	Peak
2412	90.85	-	-	88.52	32.89	3.52	34.08	200	332	Average
2485.75	52.53	-21.47	74	50.04	33.01	3.68	34.2	100	122	Peak
2485.75	41.95	-12.05	54	39.46	33.01	3.68	34.2	100	122	Average



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
52.31	32.8	-7.2	40	55.63	7.01	0.29	30.13	199	342	Peak
105.66	31.87	-11.63	43.5	50.12	11.29	0.42	29.96	-	-	Peak
131.85	24.37	-19.13	43.5	42.34	11.55	0.47	29.99	-	-	Peak
576.11	25.01	-20.99	46	35.07	18.55	1.04	29.65	-	-	Peak
714.82	25.7	-20.3	46	34.79	19.45	1.14	29.68	-	-	Peak
960.23	31.14	-22.86	54	38.55	20.79	1.34	29.54	-	-	Peak
2389.99	65.38	-8.62	74	63.1	32.86	3.47	34.05	100	40	Peak
2389.99	50.48	-3.52	54	48.2	32.86	3.47	34.05	100	40	Average
2412	104.15	-	-	101.82	32.89	3.52	34.08	101	42	Peak
2412	92.04	-	-	89.71	32.89	3.52	34.08	101	42	Average
2492.21	50.97	-23.03	74	48.43	33.05	3.72	34.23	120	360	Peak
2492.21	39.13	-14.87	54	36.59	33.05	3.72	34.23	120	360	Average



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
53.28	30.25	-9.75	40	53.29	6.8	0.29	30.13	200	322	Peak
103.72	23.94	-19.56	43.5	42.47	11.01	0.42	29.96	-	-	Peak
568.35	22.38	-23.62	46	32.49	18.53	1.02	29.66	-	-	Peak
876.81	25.56	-20.44	46	33.35	20.48	1.29	29.56	-	-	Peak
935.98	27.34	-18.66	46	34.88	20.67	1.32	29.53	-	-	Peak
960.23	31.9	-22.1	54	39.31	20.79	1.34	29.54	-	-	Peak
2388.47	55.05	-18.95	74	52.77	32.86	3.47	34.05	152	120	Peak
2388.47	41.76	-12.24	54	39.48	32.86	3.47	34.05	152	120	Average
2437	104.7	-	-	102.3	32.95	3.6	34.15	103	343	Peak
2437	91.02	-	-	88.62	32.95	3.6	34.15	103	343	Average
2484.8	57.78	-16.22	74	55.29	33.01	3.68	34.2	110	360	Peak
2484.8	41.73	-12.27	54	39.24	33.01	3.68	34.2	110	360	Average



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
31.94	29.35	-10.65	40	42.65	16.55	0.24	30.09	-	-	Peak
52.31	32.54	-7.46	40	55.37	7.01	0.29	30.13	198	360	Peak
103.72	27.89	-15.61	43.5	46.42	11.01	0.42	29.96	-	-	Peak
645.95	24.83	-21.17	46	34.51	18.88	1.09	29.65	-	-	Peak
876.81	28.34	-17.66	46	36.13	20.48	1.29	29.56	-	-	Peak
960.23	31.64	-22.36	54	39.05	20.79	1.34	29.54	-	-	Peak
2389.99	56.15	-17.85	74	53.87	32.86	3.47	34.05	100	55	Peak
2389.99	41.44	-12.56	54	39.16	32.86	3.47	34.05	100	55	Average
2437	105.94	-	-	103.54	32.95	3.6	34.15	102	42	Peak
2437	92.68	-	-	90.28	32.95	3.6	34.15	102	42	Average
2484.04	56.62	-17.38	74	54.13	33.01	3.68	34.2	155	227	Peak
2484.04	41.65	-12.35	54	39.16	33.01	3.68	34.2	155	227	Average



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	21.57	-18.43	40	33.39	18	0.26	30.08	-	-	Peak
103.72	24.09	-19.41	43.5	42.62	11.01	0.42	29.96	-	-	Peak
746.83	24.46	-21.54	46	32.95	19.88	1.18	29.55	-	-	Peak
875.84	26.75	-19.25	46	34.54	20.48	1.29	29.56	-	-	Peak
935.98	28.64	-17.36	46	36.18	20.67	1.32	29.53	200	123	Peak
960.23	31.86	-22.14	54	39.27	20.79	1.34	29.54	-	-	Peak
2348.95	50.53	-23.47	74	48.36	32.78	3.33	33.94	132	204	Peak
2348.95	39.33	-14.67	54	37.16	32.78	3.33	33.94	132	204	Average
2462	105.24	-	-	102.79	32.98	3.64	34.17	102	341	Peak
2462	90.76	-	-	88.31	32.98	3.64	34.17	102	341	Average
2484.42	63.9	-10.1	74	61.41	33.01	3.68	34.2	100	340	Peak
2484.42	50.08	-3.92	54	47.59	33.01	3.68	34.2	100	340	Average



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.76	32.87	-7.13	40	48.99	13.7	0.24	30.06	134	256	Peak
52.31	32.18	-7.82	40	55.01	7.01	0.29	30.13	-	-	Peak
102.75	27.38	-16.12	43.5	46.05	10.87	0.42	29.96	-	-	Peak
876.81	27.19	-18.81	46	34.98	20.48	1.29	29.56	-	-	Peak
937.92	27.31	-18.69	46	34.84	20.68	1.32	29.53	-	-	Peak
960.23	31.75	-22.25	54	39.16	20.79	1.34	29.54	-	-	Peak
2386.19	49.82	-24.18	74	47.54	32.86	3.47	34.05	113	344	Peak
2386.19	38.92	-15.08	54	36.64	32.86	3.47	34.05	113	344	Average
2462	104.85	-	-	102.4	32.98	3.64	34.17	101	43	Peak
2462	92.35	-	-	89.9	32.98	3.64	34.17	101	43	Average
2484.23	63.99	-10.01	74	61.5	33.01	3.68	34.2	100	43	Peak
2484.23	50.5	-3.5	54	48.01	33.01	3.68	34.2	100	43	Average



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30.97	21.8	-18.2	40	34.34	17.29	0.25	30.08	120	0	Peak
104.69	23.51	-19.99	43.5	41.9	11.15	0.42	29.96	-	-	Peak
531.49	23.57	-22.43	46	34.2	18.08	0.99	29.7	-	-	Peak
719.67	23.92	-22.08	46	32.91	19.52	1.15	29.66	-	-	Peak
876.81	30.48	-15.52	46	38.27	20.48	1.29	29.56	-	-	Peak
960.23	32.1	-21.9	54	39.51	20.79	1.34	29.54	-	-	Peak
2388.85	61.43	-12.57	74	59.15	32.86	3.47	34.05	160	0	Peak
2388.85	44.2	-9.8	54	41.92	32.86	3.47	34.05	160	0	Average
2412	100.64	-	-	98.31	32.89	3.52	34.08	162	343	Peak
2412	89	-	-	86.67	32.89	3.52	34.08	162	343	Average
2492.4	51.27	-22.73	74	48.73	33.05	3.72	34.23	176	133	Peak
2492.4	40.03	-13.97	54	37.49	33.05	3.72	34.23	176	133	Average



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
52.31	32.47	-7.53	40	55.3	7.01	0.29	30.13	200	358	Peak
103.72	26.97	-16.53	43.5	45.5	11.01	0.42	29.96	-	-	Peak
573.2	23.43	-22.57	46	33.51	18.54	1.03	29.65	-	-	Peak
759.44	24.62	-21.38	46	33.09	19.89	1.19	29.55	-	-	Peak
876.81	25.58	-20.42	46	33.37	20.48	1.29	29.56	-	-	Peak
960.23	31.11	-22.89	54	38.52	20.79	1.34	29.54	-	-	Peak
2389.8	61.42	-12.58	74	59.14	32.86	3.47	34.05	102	40	Peak
2389.8	47.09	-6.91	54	44.81	32.86	3.47	34.05	102	40	Average
2412	102.25	-	-	99.92	32.89	3.52	34.08	100	42	Peak
2412	89.46	-	-	87.13	32.89	3.52	34.08	100	42	Average
2490.88	50.62	-23.38	74	48.08	33.05	3.72	34.23	122	154	Peak
2490.88	40.45	-13.55	54	37.91	33.05	3.72	34.23	122	154	Average



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	21.75	-18.25	40	33.57	18	0.26	30.08	102	43	Peak
104.69	21.05	-22.45	43.5	39.44	11.15	0.42	29.96	-	-	Peak
531.49	22.23	-23.77	46	32.86	18.08	0.99	29.7	-	-	Peak
756.53	23.86	-22.14	46	32.31	19.9	1.19	29.54	-	-	Peak
876.81	27.53	-18.47	46	35.32	20.48	1.29	29.56	-	-	Peak
960.23	31.92	-22.08	54	39.33	20.79	1.34	29.54	-	-	Peak
2388.28	50.81	-23.19	74	48.53	32.86	3.47	34.05	105	337	Peak
2388.28	39.82	-14.18	54	37.54	32.86	3.47	34.05	105	337	Average
2437	102.38	-	-	99.98	32.95	3.6	34.15	100	344	Peak
2437	89.09	-	-	86.69	32.95	3.6	34.15	100	344	Average
2487.27	52.97	-21.03	74	50.48	33.01	3.68	34.2	155	204	Peak
2487.27	42.31	-11.69	54	39.82	33.01	3.68	34.2	155	204	Average



Test Mode :	Mode 8	Temperature :	19~20°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
53.28	32.11	-7.89	40	55.15	6.8	0.29	30.13	199	346	Peak
101.78	26.74	-16.76	43.5	45.55	10.74	0.41	29.96	-	-	Peak
570.29	24.05	-21.95	46	34.14	18.54	1.03	29.66	-	-	Peak
708.03	24.5	-21.5	46	33.7	19.37	1.14	29.71	-	-	Peak
876.81	26.4	-19.6	46	34.19	20.48	1.29	29.56	-	-	Peak
960.23	32.7	-21.3	54	40.11	20.79	1.34	29.54	-	-	Peak
2385.81	51.5	-22.5	74	49.22	32.86	3.47	34.05	120	113	Peak
2385.81	40.77	-13.23	54	38.49	32.86	3.47	34.05	120	113	Average
2437	102.7	-	-	100.3	32.95	3.6	34.15	101	43	Peak
2437	90.18	-	-	87.78	32.95	3.6	34.15	101	43	Average
2486.32	52.25	-21.75	74	49.76	33.01	3.68	34.2	163	341	Peak
2486.32	41.01	-12.99	54	38.52	33.01	3.68	34.2	163	341	Average



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	19~20°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30.97	22.25	-17.75	40	34.79	17.29	0.25	30.08	100	322	Peak
106.63	20.72	-22.78	43.5	38.83	11.43	0.42	29.96	-	-	Peak
522.76	22.47	-23.53	46	33.43	17.77	0.98	29.71	-	-	Peak
756.53	25.3	-20.7	46	33.75	19.9	1.19	29.54	-	-	Peak
875.84	26.66	-19.34	46	34.45	20.48	1.29	29.56	-	-	Peak
960.23	31.18	-22.82	54	38.59	20.79	1.34	29.54	-	-	Peak
2344.39	50.86	-23.14	74	48.69	32.78	3.33	33.94	173	301	Peak
2344.39	39.58	-14.42	54	37.41	32.78	3.33	33.94	173	301	Average
2462	102.19	-	-	99.74	32.98	3.64	34.17	100	346	Peak
2462	88.56	-	-	86.11	32.98	3.64	34.17	100	346	Average
2484.42	63.38	-10.62	74	60.89	33.01	3.68	34.2	200	331	Peak
2484.42	47.87	-6.13	54	45.38	33.01	3.68	34.2	200	331	Average



Test Mode :	Mode 9	Temperature :	19~20°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
52.31	30.5	-9.5	40	53.33	7.01	0.29	30.13	200	360	Peak
104.69	22.65	-20.85	43.5	41.04	11.15	0.42	29.96	-	-	Peak
531.49	23.27	-22.73	46	33.9	18.08	0.99	29.7	-	-	Peak
729.37	24.4	-21.6	46	33.17	19.68	1.16	29.61	-	-	Peak
876.81	29.24	-16.76	46	37.03	20.48	1.29	29.56	-	-	Peak
960.23	31.39	-22.61	54	38.8	20.79	1.34	29.54	-	-	Peak
2359.78	50.02	-23.98	74	47.81	32.81	3.38	33.98	200	342	Peak
2359.78	38.68	-15.32	54	36.47	32.81	3.38	33.98	200	342	Average
2462	103.73	-	-	101.28	32.98	3.64	34.17	101	44	Peak
2462	89.69	-	-	87.24	32.98	3.64	34.17	101	44	Average
2484.42	62.23	-11.77	74	59.74	33.01	3.68	34.2	100	45	Peak
2484.42	46.75	-7.25	54	44.26	33.01	3.68	34.2	100	45	Average



## **3.8 Antenna Requirements**

### **3.8.1 Standard Applicable**

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

### **3.8.2 Antenna Connected Construction**

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

### **3.8.3 Antenna Gain**

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



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	May 11, 2012~ May 16, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 23, 2011	May 11, 2012~ May 16, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 23, 2011	May 11, 2012~ May 16, 2012	Aug. 22, 2012	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030 D	E1884515	N/A	Aug. 23, 2011	May 11, 2012~ May 16, 2012	Aug. 22, 2012	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 02, 2011	May 14, 2012	Jun. 01, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 30, 2011	May 14, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	060105	9kHz~30MHz	Dec. 30, 2011	May 14, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	N/A	Nov. 16, 2011	May 14, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	GSM/GPRS850/ 900/1800/1900,	Dec. 30, 2011	May 14, 2012	Dec. 29, 2012	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	May 13, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	May 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Jun. 02, 2011	May 13, 2012	Jun. 01, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	May 13, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	May 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060029	9KHz~2GHz	Jan. 06, 2012	May 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	May 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	May 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 07, 2011	May 13, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15-40GHz	Oct. 11, 2011	May 13, 2012	Oct. 10, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	May 13, 2012	Jul. 28, 2012	Radiation (03CH01-KS)

## 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
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.13</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.26</b>		

### 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
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.54</b>		

**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
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>4.72</b>				