

FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : CDMA 1X-EVDO Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : ZTE N860
FCC ID : Q78-ZTEN860C
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Apr. 19, 2012 and completely tested on May 29, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) 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:



Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.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	≥ 0.5MHz	Pass	-
3.1	-	Gen 4.6.1	99% Bandwidth	-	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 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 13.02 dB at 0.370 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.09 dB at 2483.660 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	CDMA 1X-EVDO Digital Mobile Phone
Brand Name	ZTE
Model Name	ZTE N860
FCC ID	Q78-ZTEN860C
Tx/Rx Frequency Range	2412 MHz ~ 2462 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 : 18.56 dBm (0.072 W) 802.11g : 20.28 dBm (0.107 W) 802.11g/n (BW 20MHz) : 20.32 dBm (0.108 W)
Duty Cycle	802.11b : 100.00% 802.11g : 100.00% 802.11g/n (BW 20MHz) : 100.00%
Antenna Type	PIFA Antenna with gain -4.30 dBi
HW Version	c8hA
SW Version	GB_PMI_N860V1.0.0B01
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

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	CO01-KS	03CH01-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 v01
- ♦ 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	CMU200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
4.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
5.	Notebook	DELL	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

Preliminary tests were performed in different data rate as below table and the highest power data rates (11b, 11g, 11g/n (BW 20MHz) modes) were chosen for full test in the following sections to demonstrate compliance to the FCC limit line.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	18.56	18.04	18.21	18.29

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	20.28	20.17	20.12	20.24	20.22	20.21	20.27	20.25

2.4GHz 802.11g/n (BW 20MHz) mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.32	20.21	20.19	20.16	20.22	20.21	20.31	20.16

2.2 Maximum Peak Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	15.81	17.91	18.56	18.85	20.28	19.67

Band	2.4GHz 802.11g/n (BW 20MHz) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	18.58	20.32	19.75

Remark:

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

2.3 Maximum Average Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Average Power	13.01	15.39	15.98	11.04	13.26	13.01

Band	2.4GHz 802.11g/n (BW 20MHz) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	11.09	13.34	13.08

Remark:

1. The average power, which is used by the test method, AVG2, in DTS Meas. Guidance v01, 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).

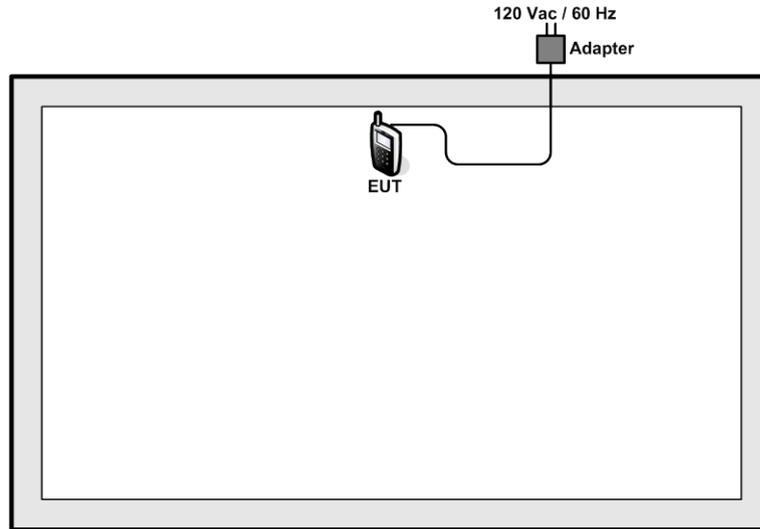
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

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

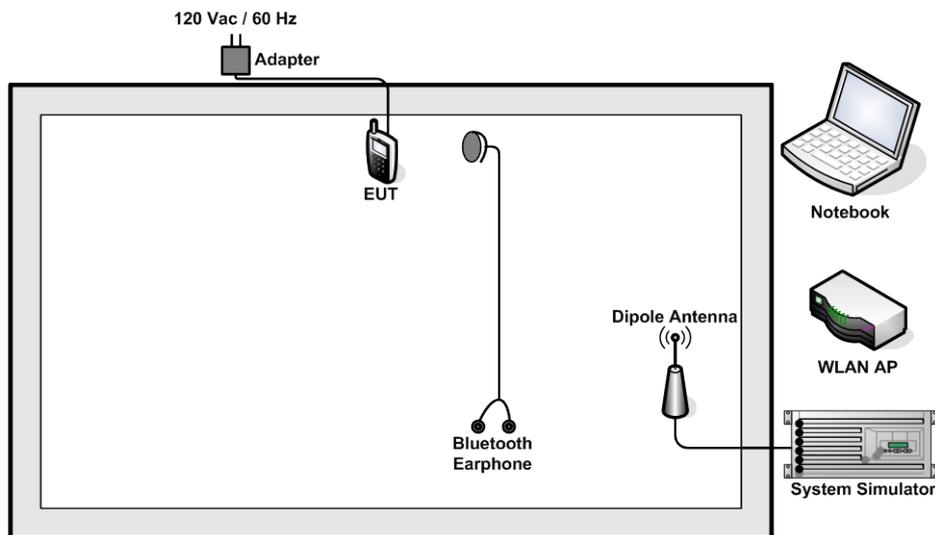
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11g/n (BW 20M)_CH01_2412 MHz Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz Mode 9: 802.11g/n (BW 20M)_CH11_2462 MHz
AC Conducted Emission	Mode 1 : CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + Adapter + Camera	

2.5 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.6 RF Utility

The programmed RF utility “ADB” is installed in Notebook 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 and 99% Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

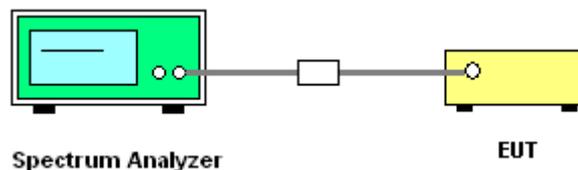
3.1.2 Measuring Instruments

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 v01.
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

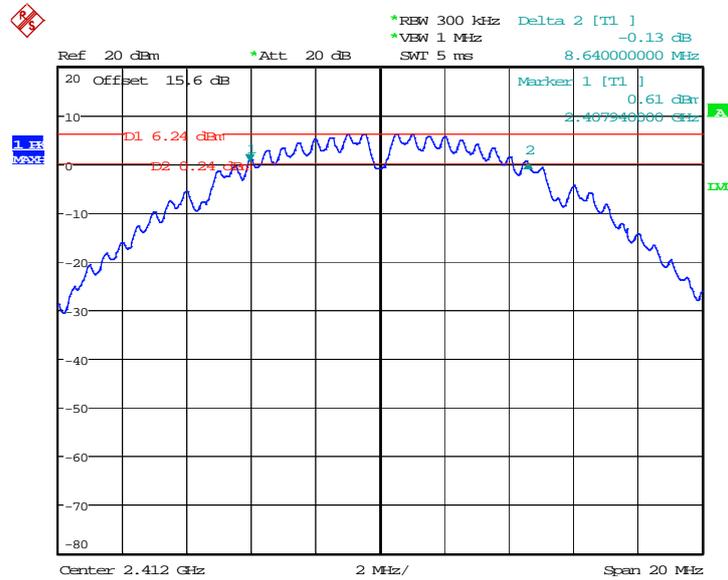


3.1.5 Test Result of 6dB Bandwidth

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

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.64	0.5	Pass
06	2437	9.04	0.5	Pass
11	2462	9.16	0.5	Pass

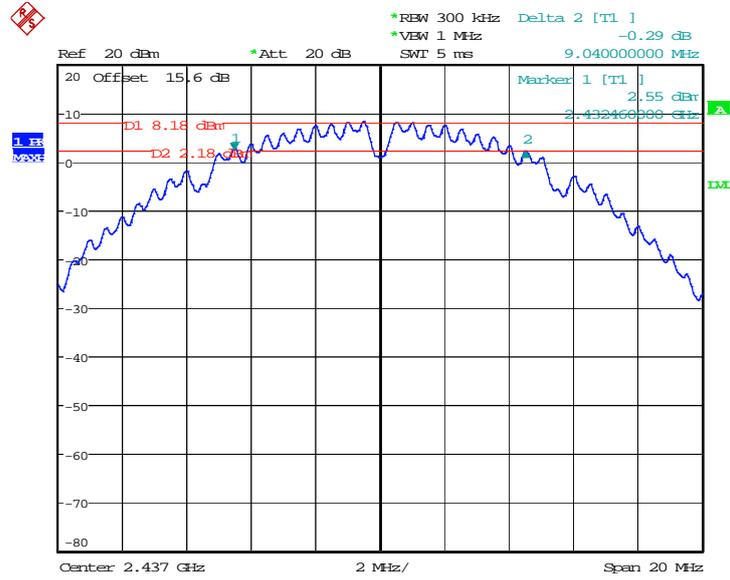
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



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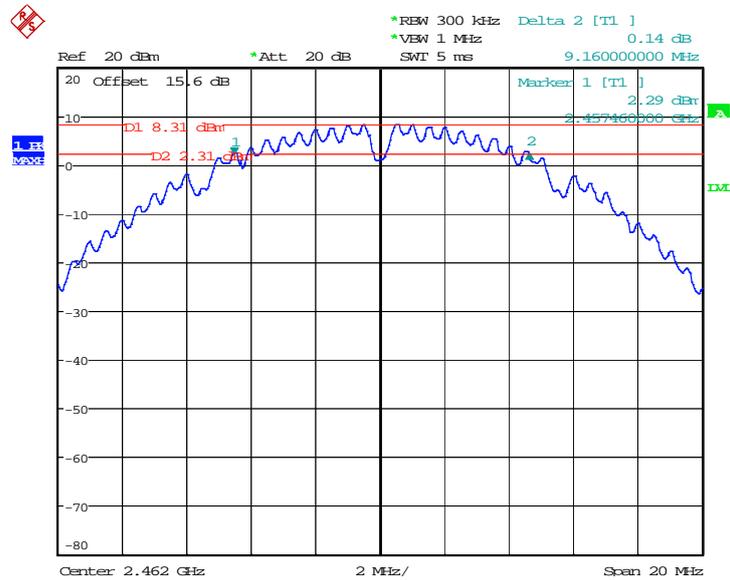


Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



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



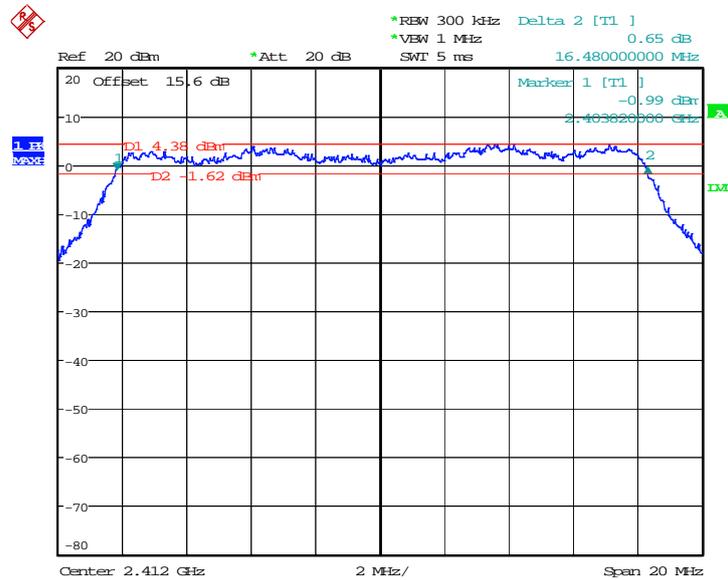
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Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.48	0.5	Pass
06	2437	16.48	0.5	Pass
11	2462	16.48	0.5	Pass

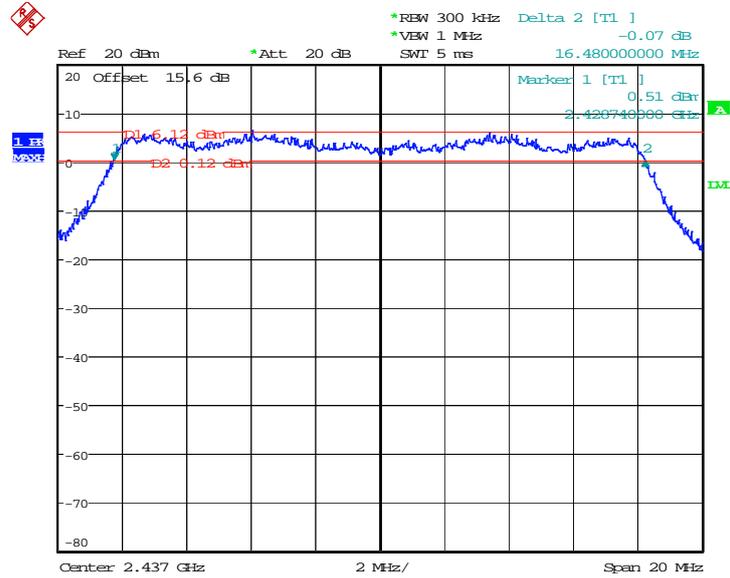
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



Date: 28.MAY.2012 18:42:27

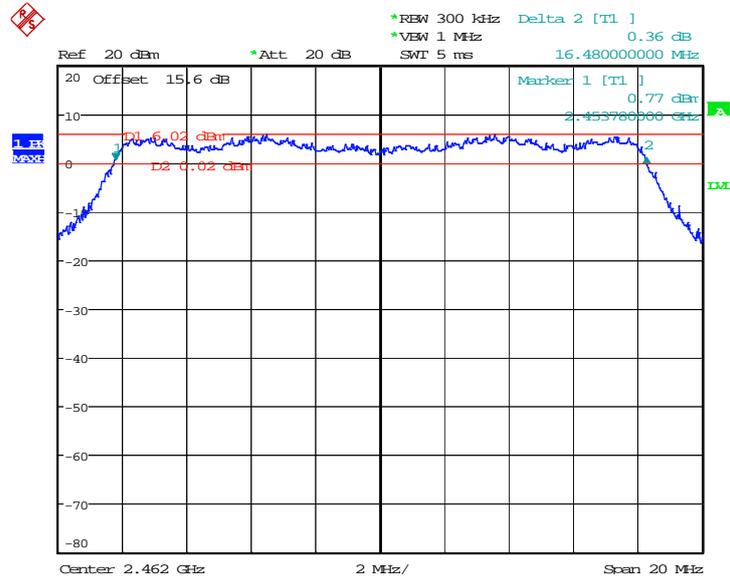


Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



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



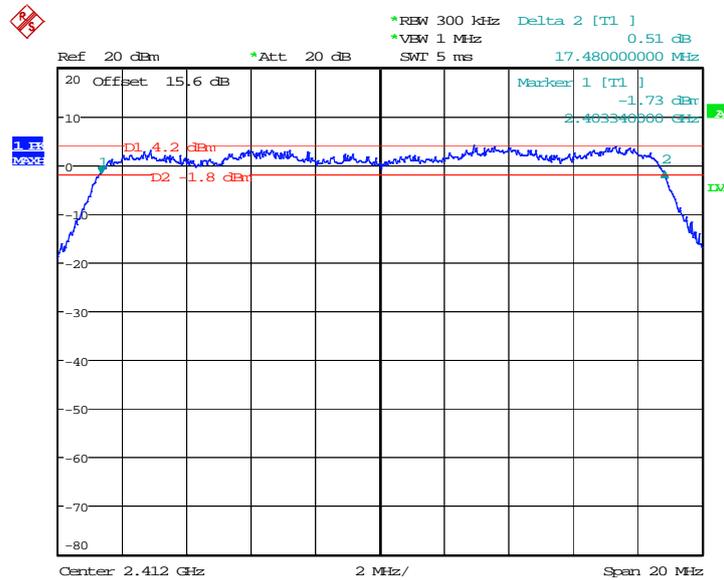
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Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.48	0.5	Pass
06	2437	17.68	0.5	Pass
11	2462	17.60	0.5	Pass

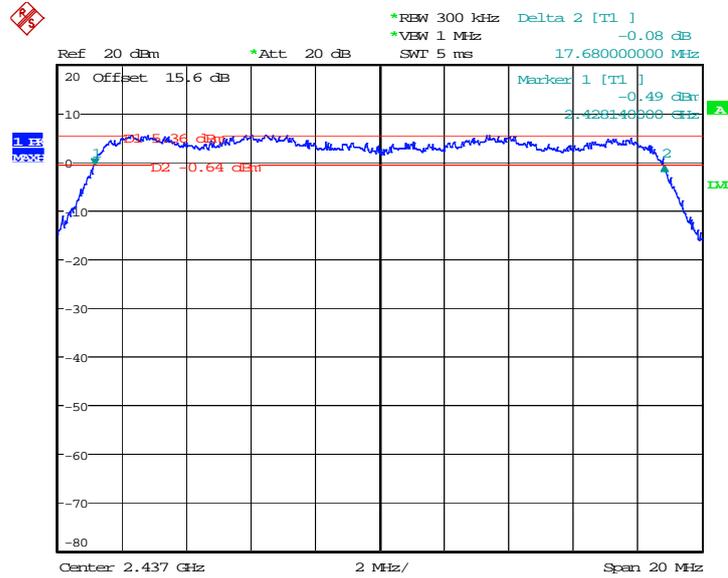
Mode 7 : 6 dB Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 01



Date: 28.MAY.2012 19:01:21

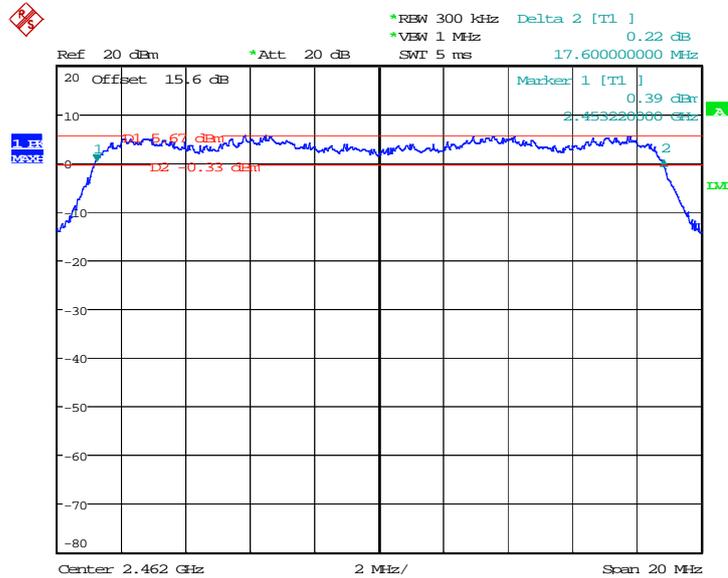


Mode 8 : 6 dB Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 06



Date: 28.MAY.2012 19:07:07

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



Date: 28.MAY.2012 19:11:01

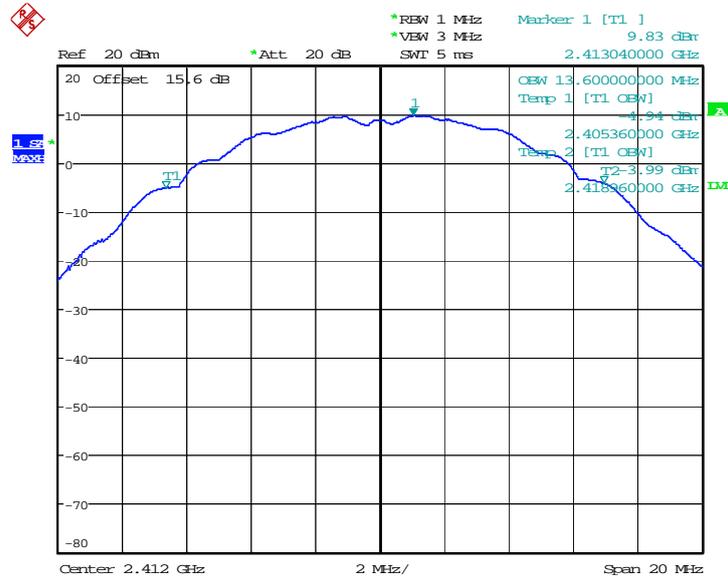


3.1.6 Test Result of 99% Occupied Bandwidth

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

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	13.60	Pass
06	2437	13.88	Pass
11	2462	14.04	Pass

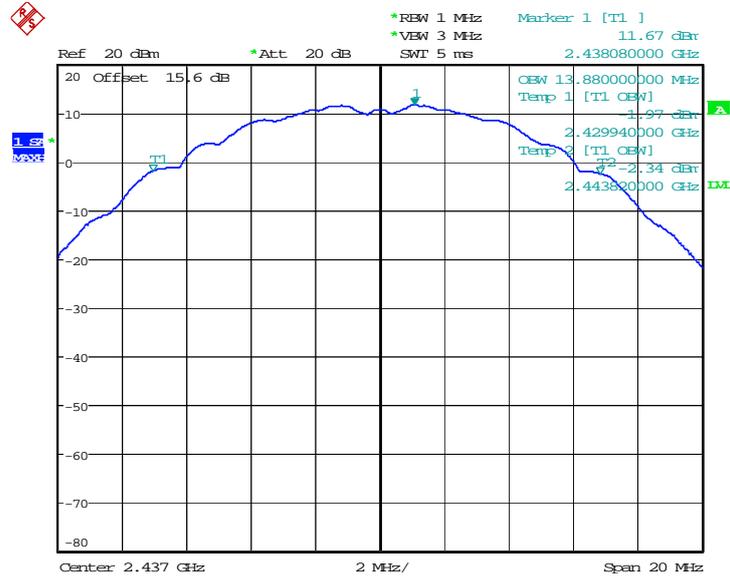
Mode 1 : 99% Occupied Bandwidth Plot on 802.11b Channel 01



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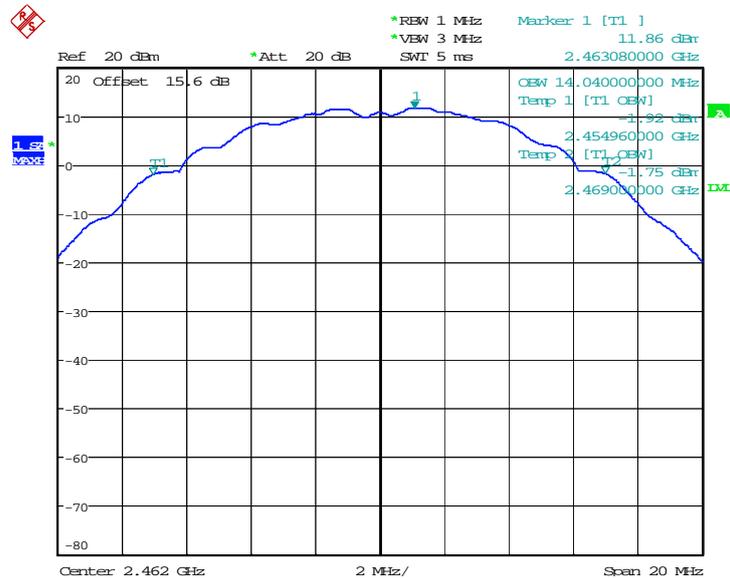


Mode 2 : 99% Occupied Bandwidth Plot on 802.11b Channel 06



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Mode 3 : 99% Occupied Bandwidth Plot on 802.11b Channel 11



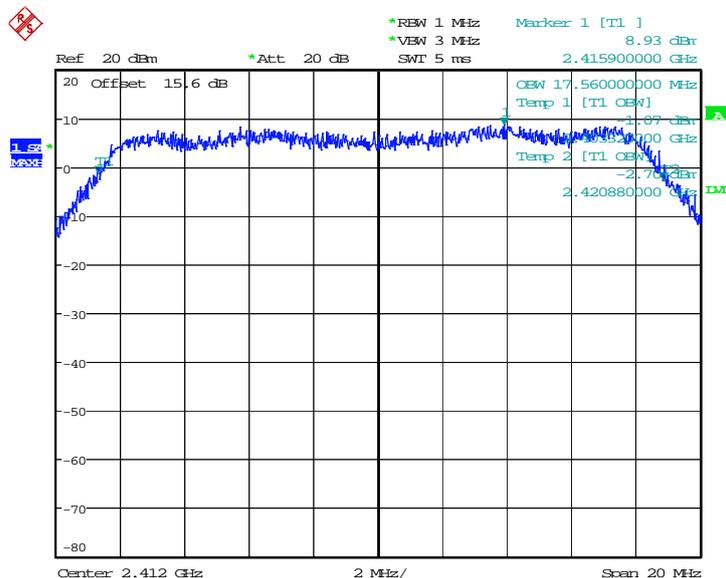
Date: 28.MAY.2012 18:39:43



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

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	17.56	Pass
06	2437	17.64	Pass
11	2462	17.66	Pass

Mode 4 : 99% Occupied Bandwidth Plot on 802.11g Channel 01



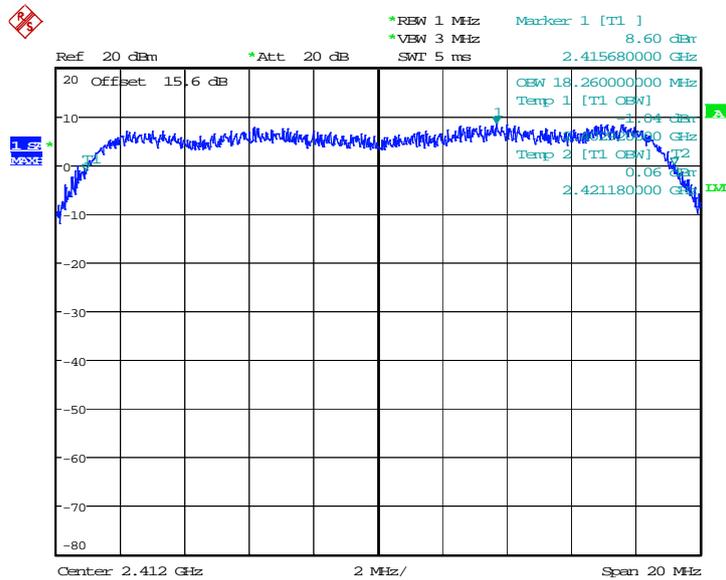
Date: 28.MAY.2012 18:45:52



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

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	18.26	Pass
06	2437	18.26	Pass
11	2462	18.26	Pass

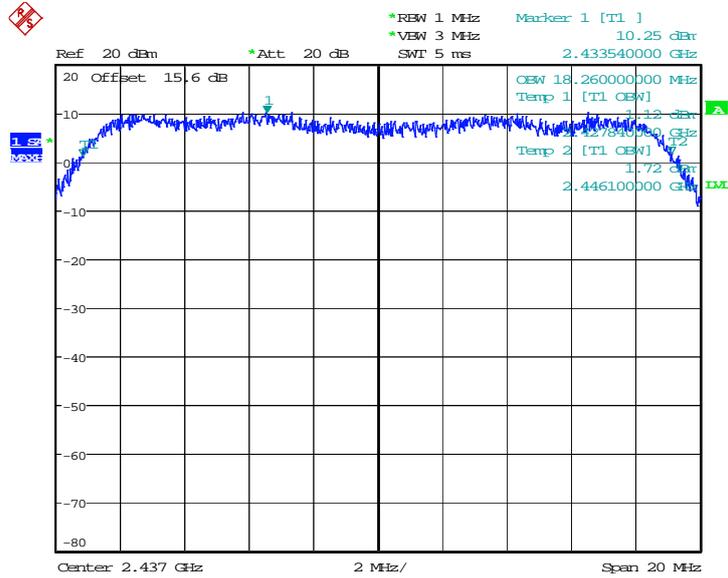
Mode 7 : 99% Occupied Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 01



Date: 28.MAY.2012 19:05:36

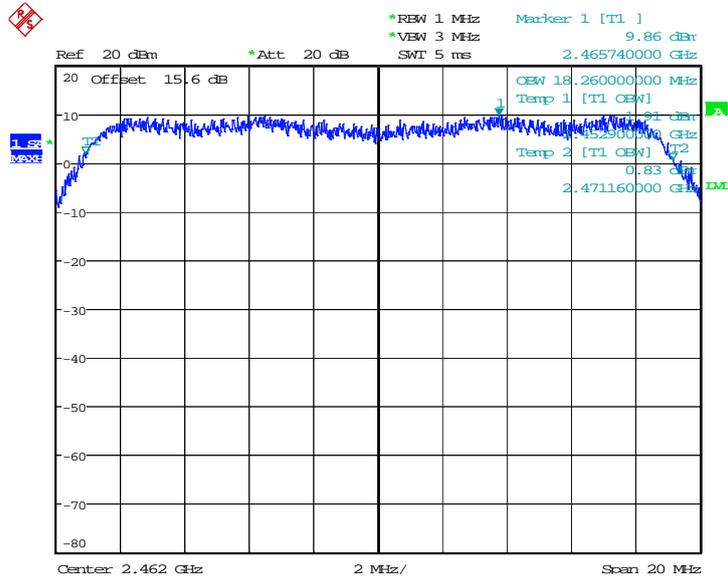


Mode 8 : 99% Occupied Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 06



Date : 28.MAY.2012 19:08:37

Mode 9 : 99% Occupied Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 11



Date : 28.MAY.2012 19:12:48

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.

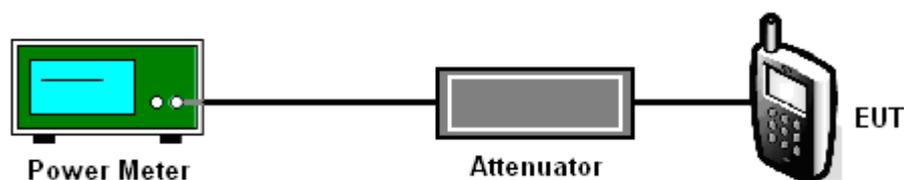
3.2.2 Measuring Instruments

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 v01.
2. The RF output of EUT was connected to the power meter by a low loss cable.
3. Measure the power by power meter.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

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

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.81	30	Pass
06	2437	17.91	30	Pass
11	2462	18.56	30	Pass

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

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.85	30	Pass
06	2437	20.28	30	Pass
11	2462	19.67	30	Pass

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

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.58	30	Pass
06	2437	20.32	30	Pass
11	2462	19.75	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

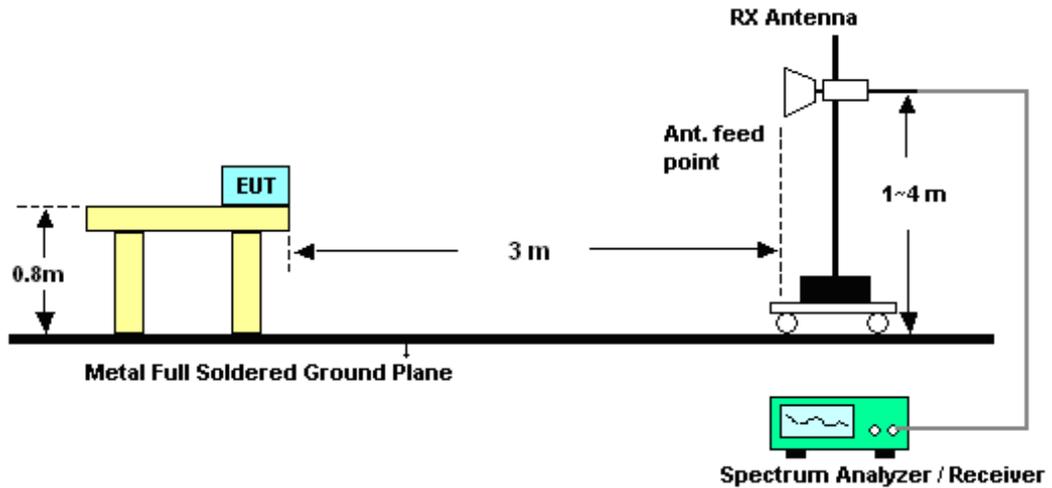
See list of measuring instruments of this test report.

3.3.3 Test Procedures

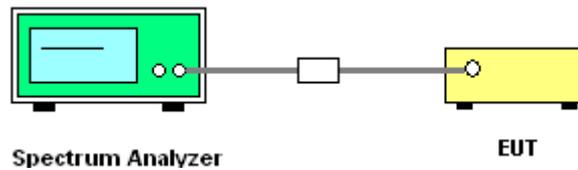
1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW. Out of the authorized frequency band emissions must be at least 20 dB lower 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 :	23~25°C
Test Band :	802.11b	Relative Humidity :	43~45%
Test Channel :	01	Test Engineer :	Steven Hao

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
2350.66	50.33	-23.67	74	48.16	32.78	3.33	33.94	100	213	Peak
2350.66	36.7	-17.3	54	34.53	32.78	3.33	33.94	100	213	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
2325.77	51.22	-22.78	74	49.09	32.76	3.27	33.9	100	123	Peak
2325.77	37.74	-16.26	54	35.61	32.76	3.27	33.9	100	123	Average

Test Mode :	Mode 3	Temperature :	23~25°C
Test Band :	802.11b	Relative Humidity :	43~45%
Test Channel :	11	Test Engineer :	Steven Hao

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	50.23	-23.77	74	47.74	33.01	3.68	34.2	100	181	Peak
2483.5	37.41	-16.59	54	34.92	33.01	3.68	34.2	100	181	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
2497.34	50.36	-23.64	74	47.82	33.05	3.72	34.23	100	0	Peak
2497.34	37.22	-16.78	54	34.68	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Band :	802.11g	Relative Humidity :	43~45%
Test Channel :	01	Test Engineer :	Steven Hao

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
2390	65.82	-8.18	74	63.54	32.86	3.47	34.05	100	226	Peak
2390	49.14	-4.86	54	46.86	32.86	3.47	34.05	100	226	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
2390	68.66	-5.34	74	66.38	32.86	3.47	34.05	100	275	Peak
2390	52.6	-1.4	54	50.32	32.86	3.47	34.05	100	275	Average

Test Mode :	Mode 6	Temperature :	23~25°C
Test Band :	802.11g	Relative Humidity :	43~45%
Test Channel :	11	Test Engineer :	Steven Hao

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
2484.04	68.42	-5.58	74	65.93	33.01	3.68	34.2	100	297	Peak
2484.04	49.52	-4.48	54	47.03	33.01	3.68	34.2	100	297	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	72.3	-1.7	74	69.81	33.01	3.68	34.2	100	267	Peak
2483.66	52.91	-1.09	54	50.42	33.01	3.68	34.2	100	267	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	43~45%
Test Channel :	01	Test Engineer :	Steven Hao

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
2390	58.04	-15.96	74	55.76	32.86	3.47	34.05	100	68	Peak
2390	42.09	-11.91	54	39.81	32.86	3.47	34.05	100	68	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
2390	62.62	-11.38	74	60.34	32.86	3.47	34.05	100	278	Peak
2390	46.08	-7.92	54	43.8	32.86	3.47	34.05	100	278	Average

Test Mode :	Mode 9	Temperature :	23~25°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	43~45%
Test Channel :	11	Test Engineer :	Steven Hao

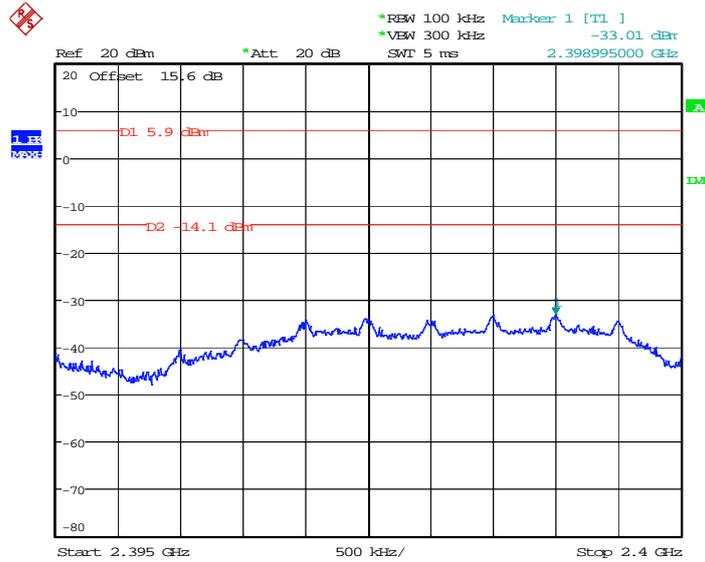
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.8	64.57	-9.43	74	62.08	33.01	3.68	34.2	100	263	Peak
2484.8	48.3	-5.7	54	45.81	33.01	3.68	34.2	100	263	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	69.92	-4.08	74	67.43	33.01	3.68	34.2	100	201	Peak
2484.23	51.8	-2.2	54	49.31	33.01	3.68	34.2	100	201	Average

3.3.6 Test Plots of Conducted Band Edges

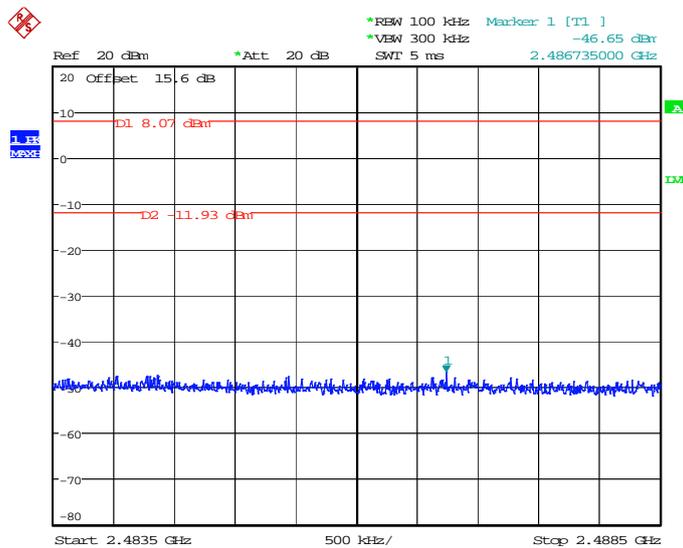
Test Mode :	Mode 1 and 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11b Channel 01



Date: 28.MAY.2012 18:33:03

High Band Edge Plot on 802.11b Channel 11

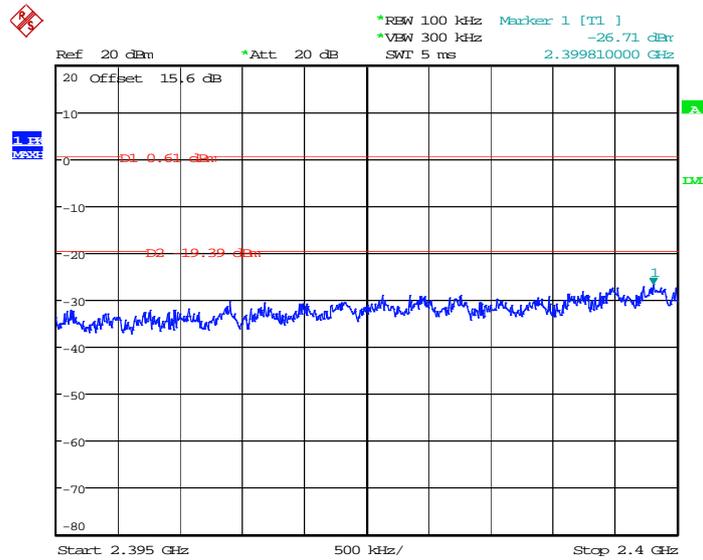


Date: 28.MAY.2012 18:38:28



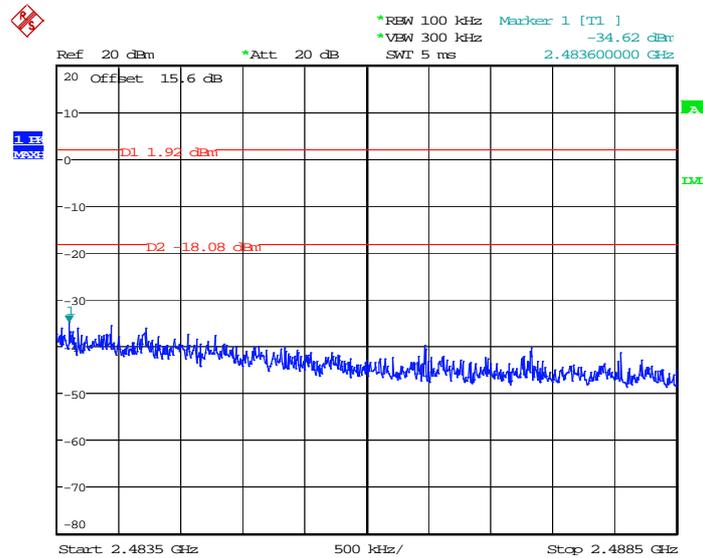
Test Mode :	Mode 4 and 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

Low Band Edge Plot on 802.11g Channel 01



Date: 28.MAY.2012 18:44:11

High Band Edge Plot on 802.11g Channel 11

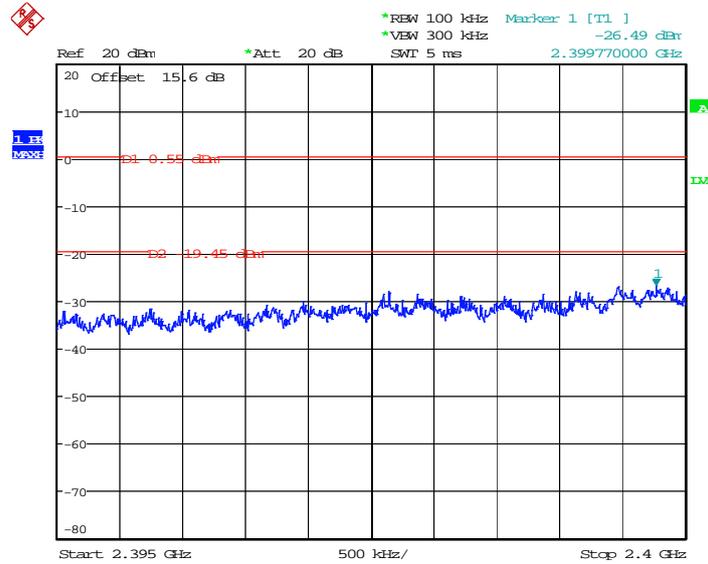


Date: 28.MAY.2012 18:54:10



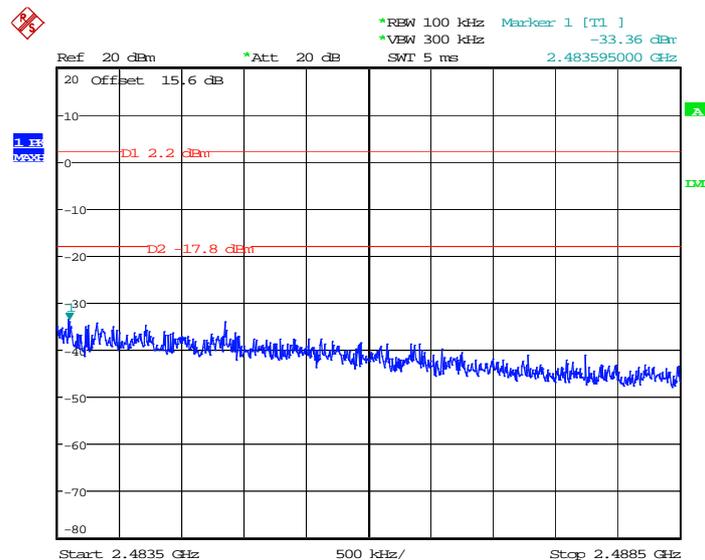
Test Mode :	Mode 7 and 9	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Zhi Lu

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



Date: 28.MAY.2012 19:02:27

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



Date: 28.MAY.2012 19:11:53

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.

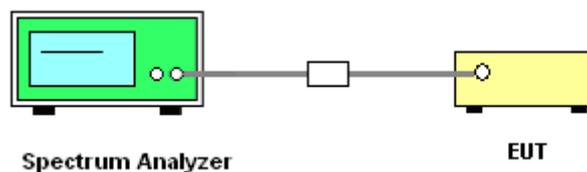
3.4.2 Measuring Instruments

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.

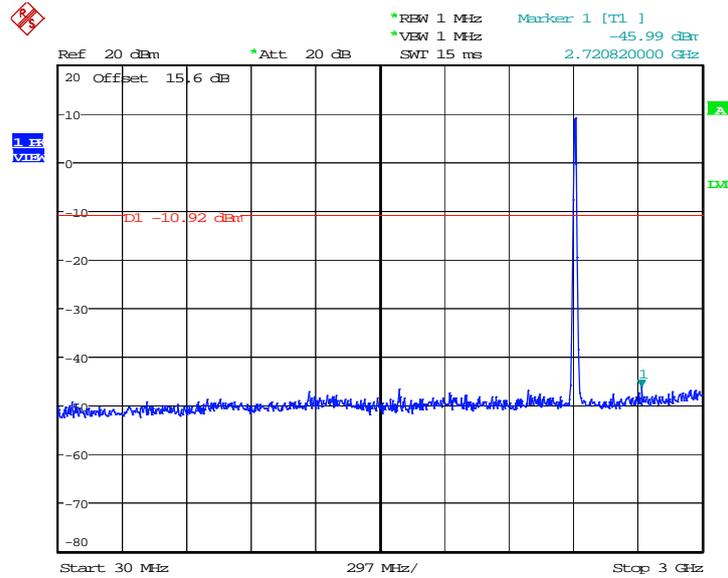
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

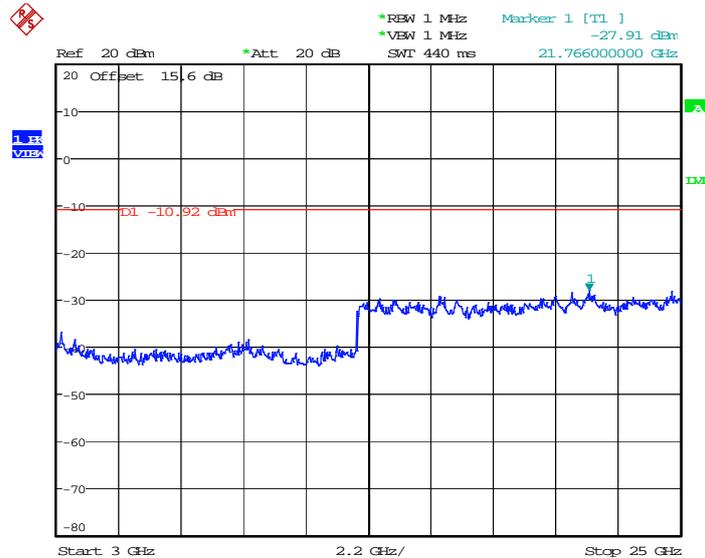
Test Mode :	Mode 1	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 18:33:27

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

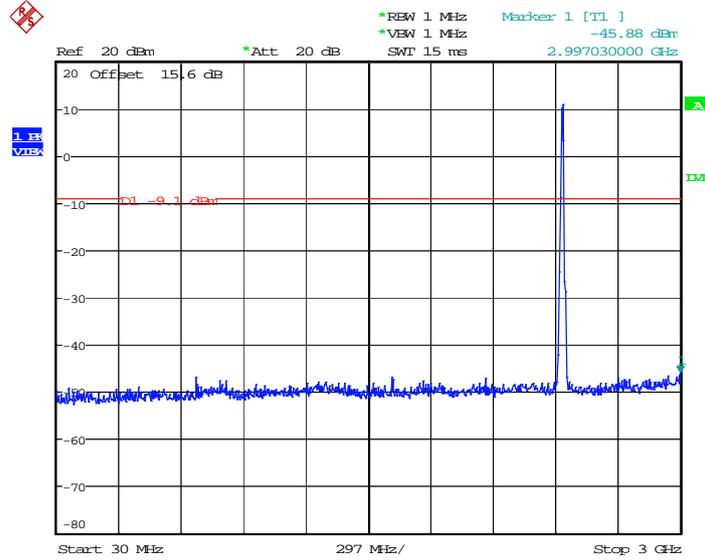


Date: 28.MAY.2012 18:33:45



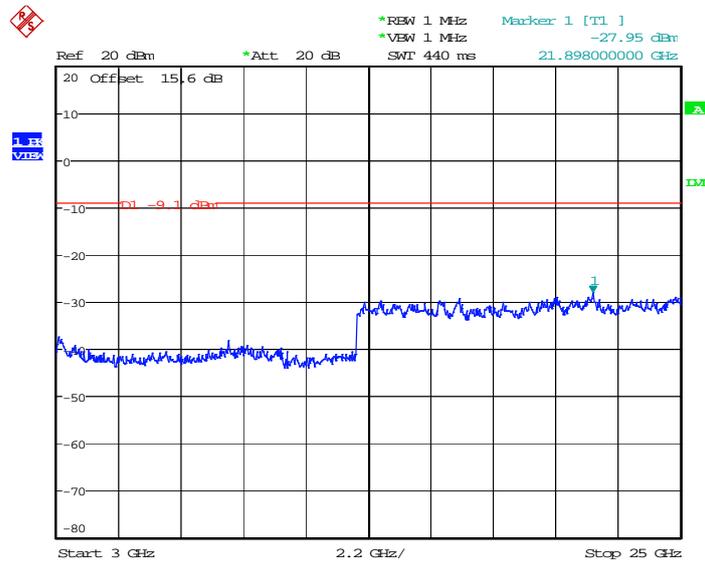
Test Mode :	Mode 2	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 18:35:45

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

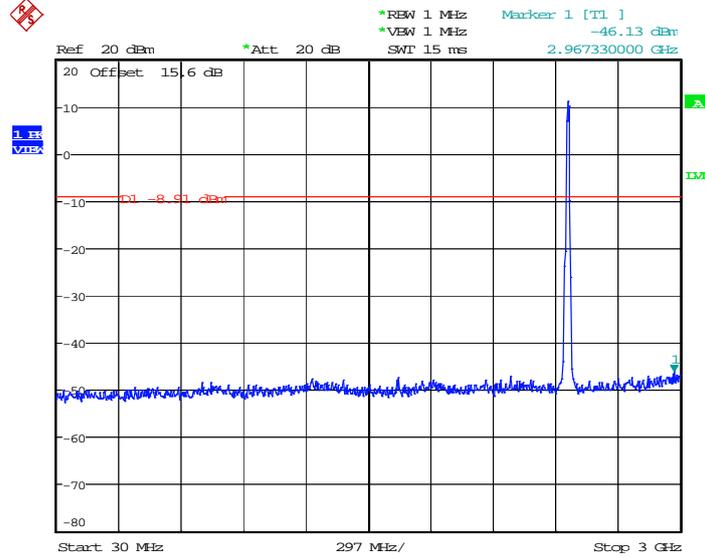


Date: 28.MAY.2012 18:36:03



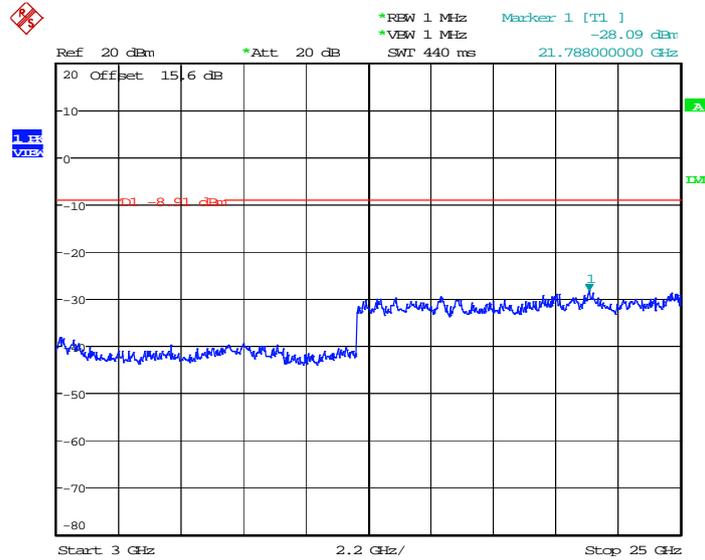
Test Mode :	Mode 3	Temperature :	23~24°C
Test Band :	802.11b	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 18:39:01

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

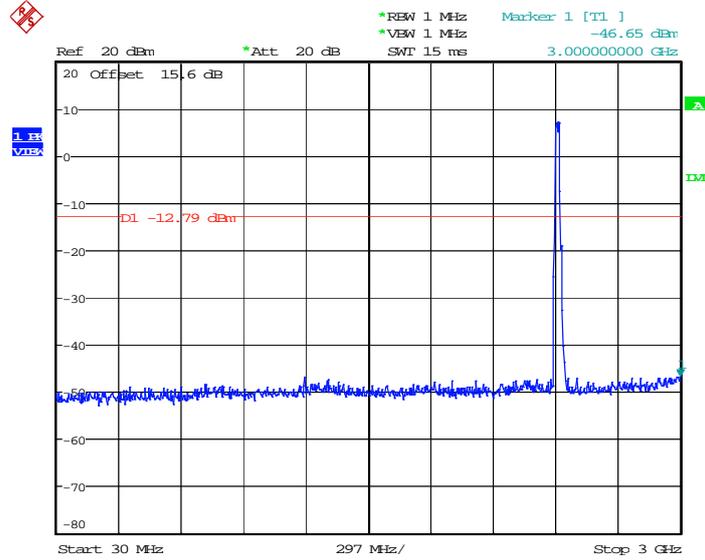


Date: 28.MAY.2012 18:39:19



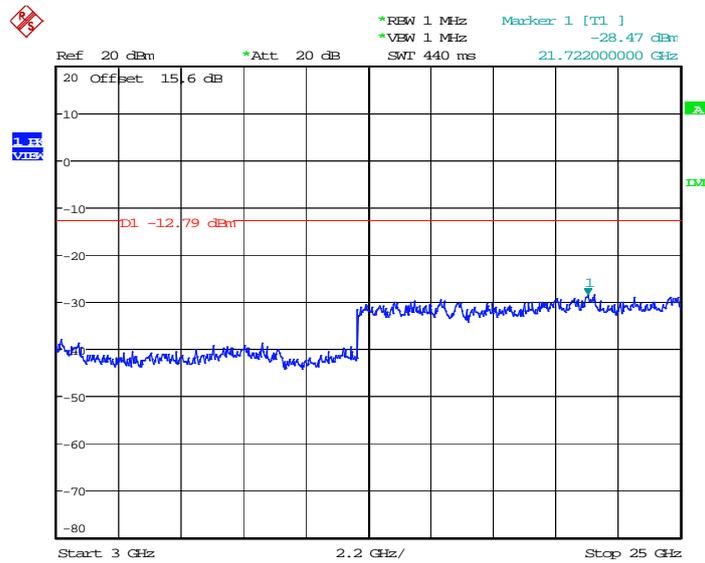
Test Mode :	Mode 4	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 18:44:57

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

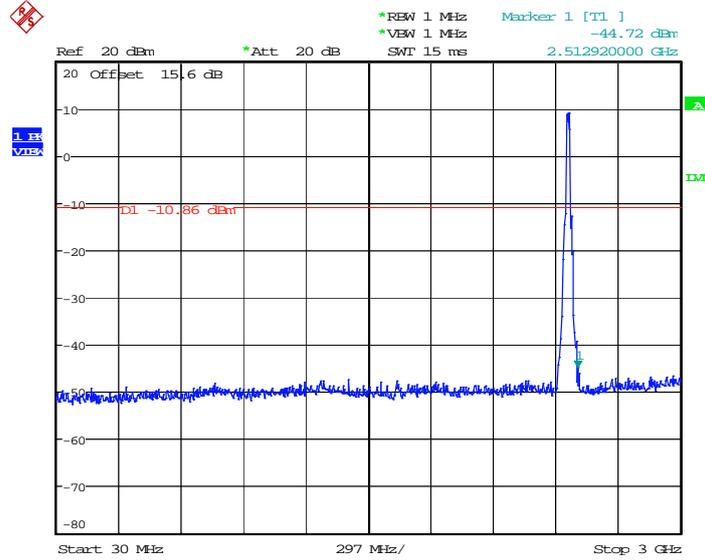


Date: 28.MAY.2012 18:45:17



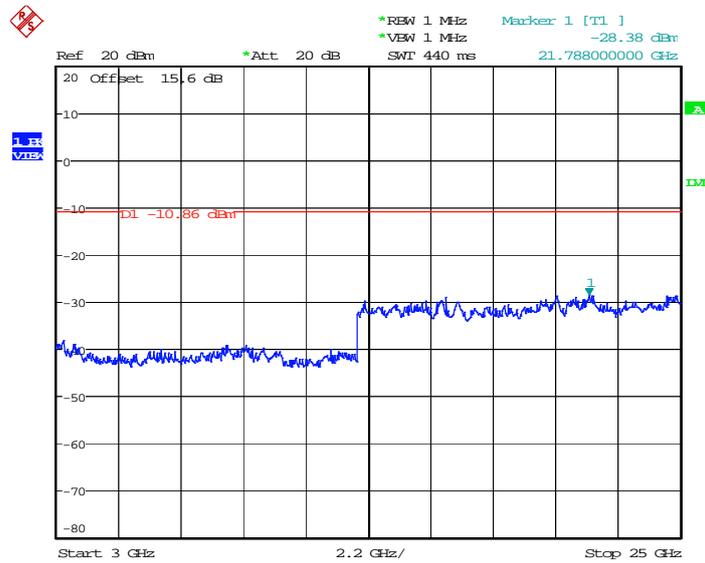
Test Mode :	Mode 5	Temperature :	23~24
Test Band :	802.11g	Relative Humidity :	47~48
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 19:29:38

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

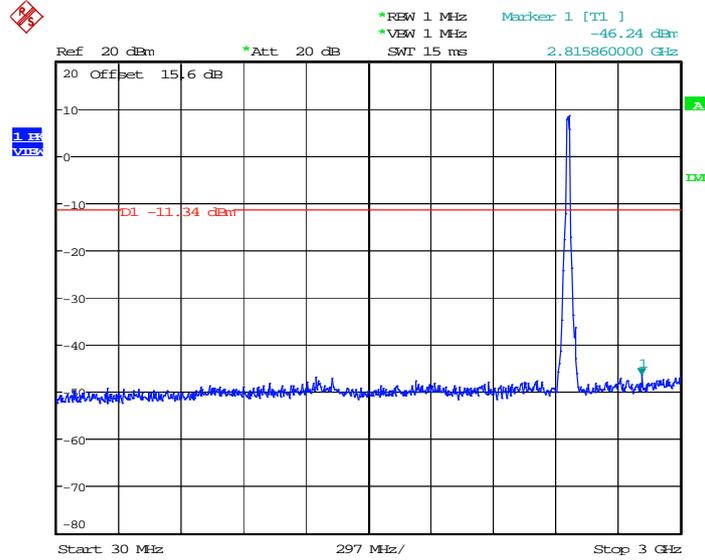


Date: 28.MAY.2012 19:29:56



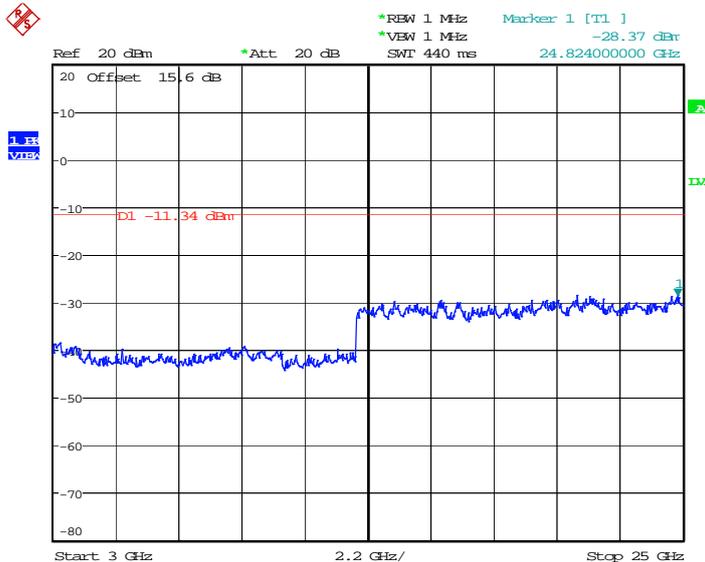
Test Mode :	Mode 6	Temperature :	23~24°C
Test Band :	802.11g	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 18:54:43

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

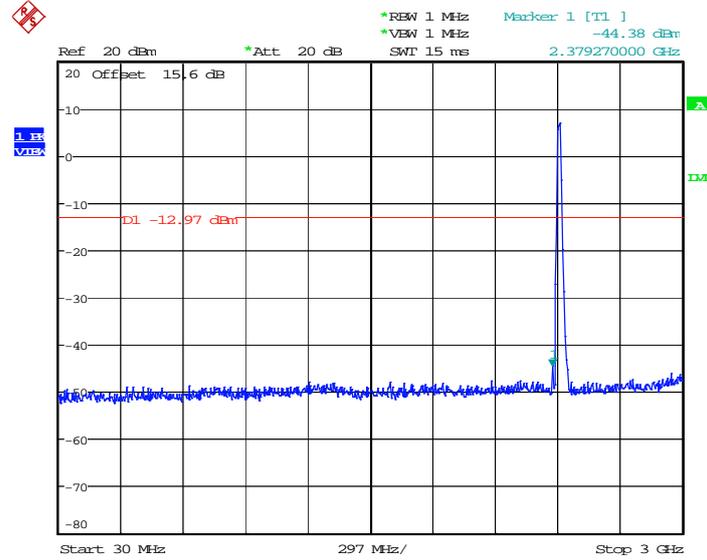


Date: 28.MAY.2012 18:55:02



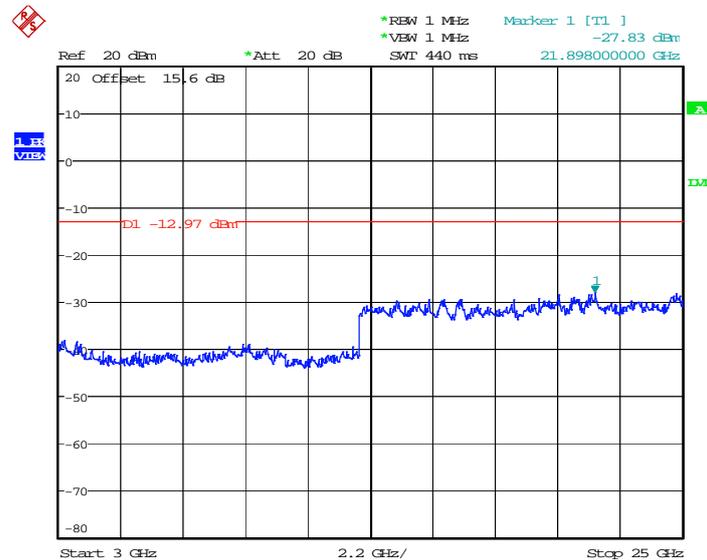
Test Mode :	Mode 7	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	01	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 19:02:48

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

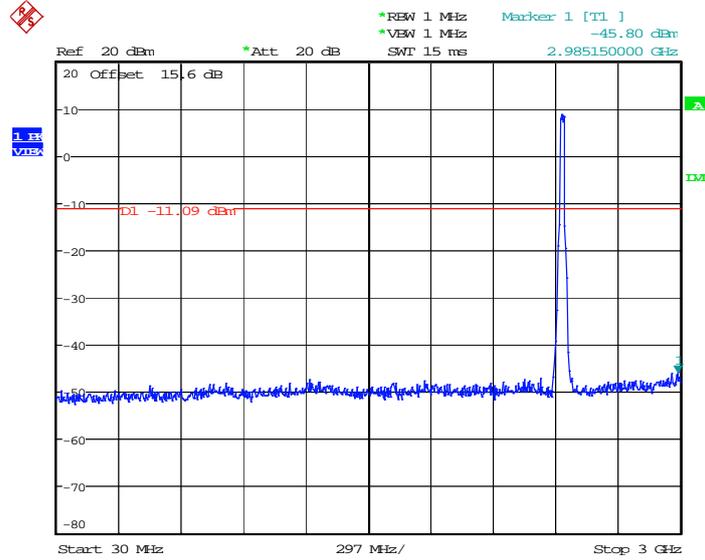


Date: 28.MAY.2012 19:03:06



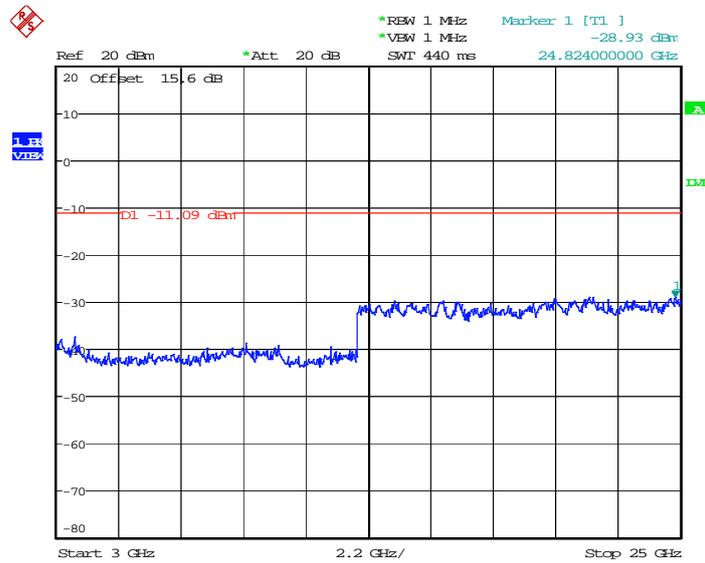
Test Mode :	Mode 8	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	06	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 19:08:06

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

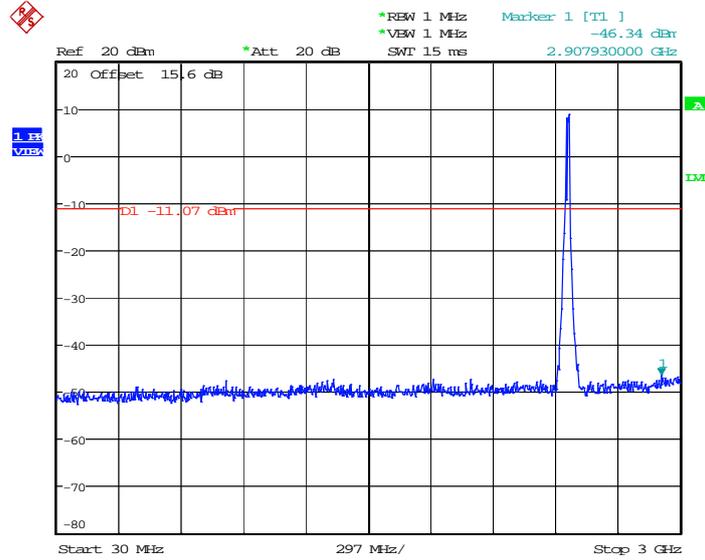


Date: 28.MAY.2012 19:08:24



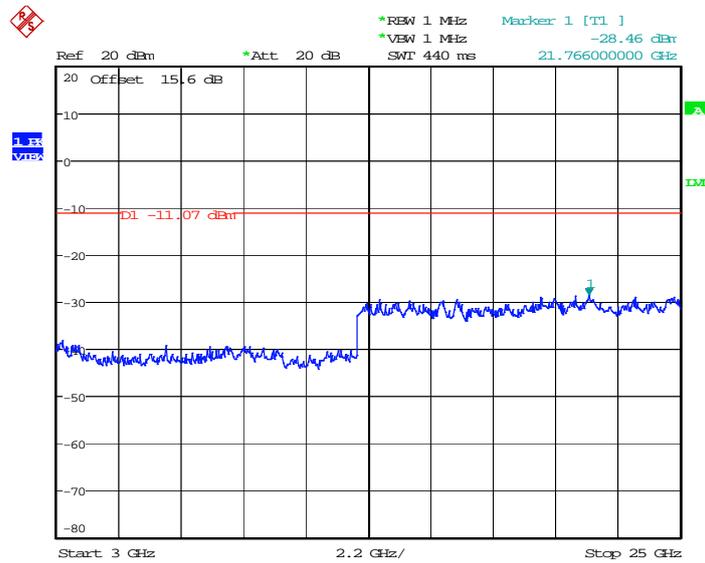
Test Mode :	Mode 9	Temperature :	23~24°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	47~48%
Test Channel :	11	Test Engineer :	Zhi Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 28.MAY.2012 19:12:14

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 28.MAY.2012 19:12:32

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.

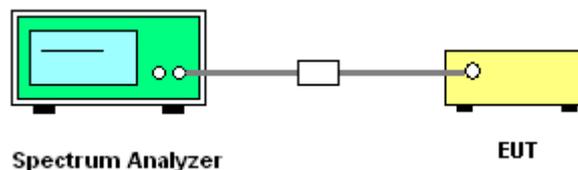
3.5.2 Measuring Instruments

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 v01.
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

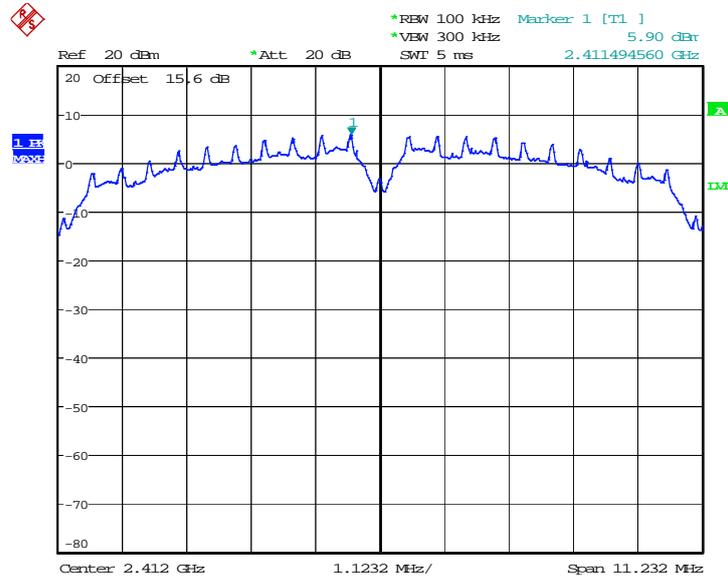
Test Mode :	Mode 1, 2, 3	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	5.90	-9.30	8	Pass
06	2437	7.94	-7.26	8	Pass
11	2462	8.07	-7.13	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)

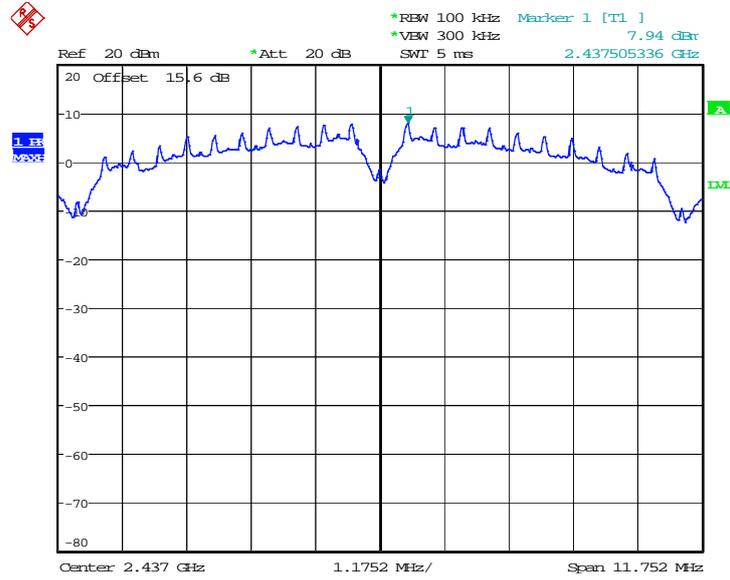
Mode 1 : PSD Plot on 802.11b Channel 01



Date : 28.MAY.2012 18:32:21

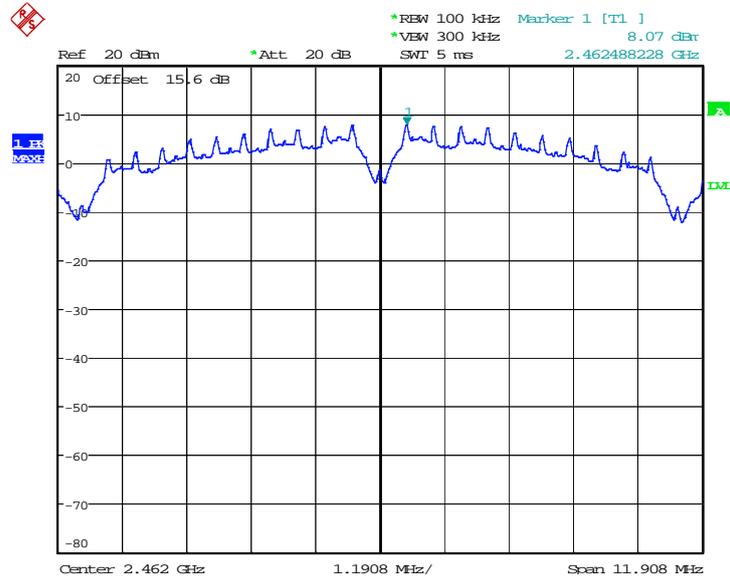


Mode 2 : PSD Plot on 802.11b Channel 06



Date: 28.MAY.2012 18:35:23

Mode 3 : PSD Plot on 802.11b Channel 11



Date: 28.MAY.2012 18:37:46



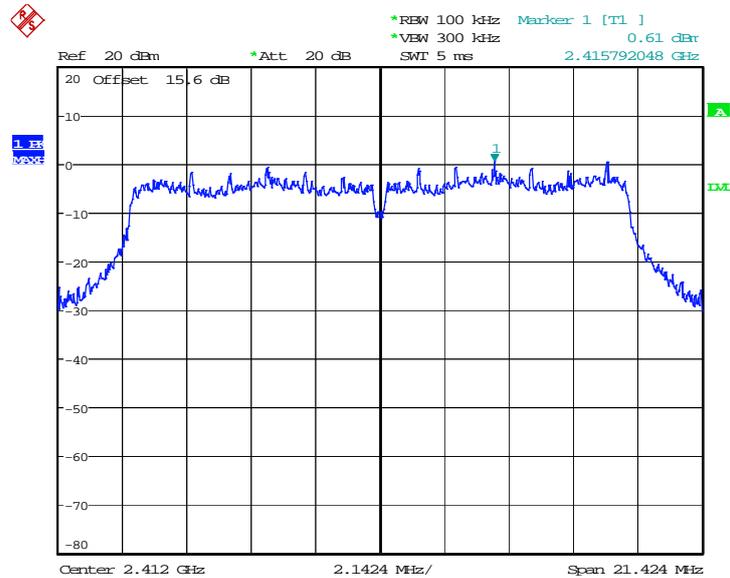
Test Mode :	Mode 4, 5, 6	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	0.61	-14.59	8	Pass
06	2437	2.51	-12.69	8	Pass
11	2462	1.92	-13.28	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)

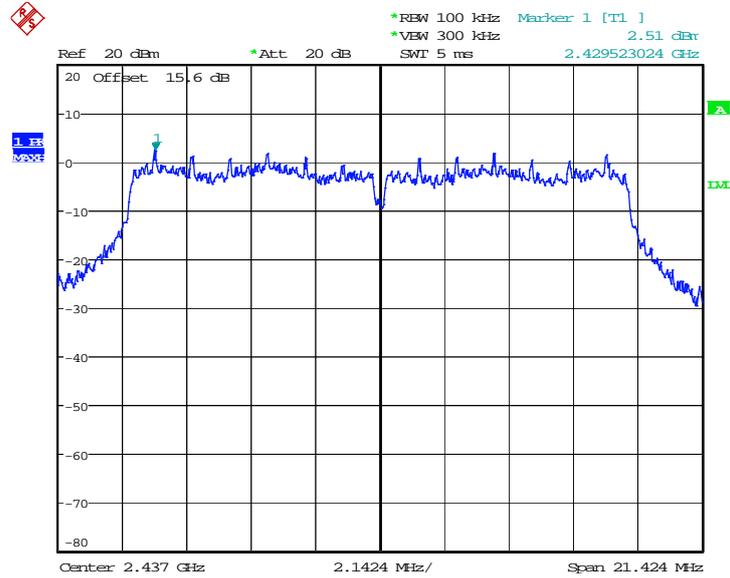
Mode 4 : PSD Plot on 802.11g Channel 01



Date: 28.MAY.2012 18:42:52

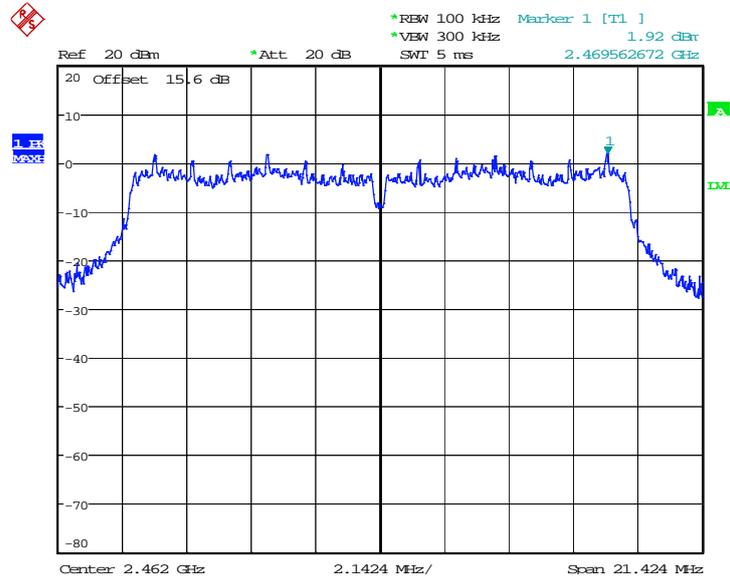


Mode 5 : PSD Plot on 802.11g Channel 06



Date: 28.MAY.2012 18:48:15

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 28.MAY.2012 18:52:44



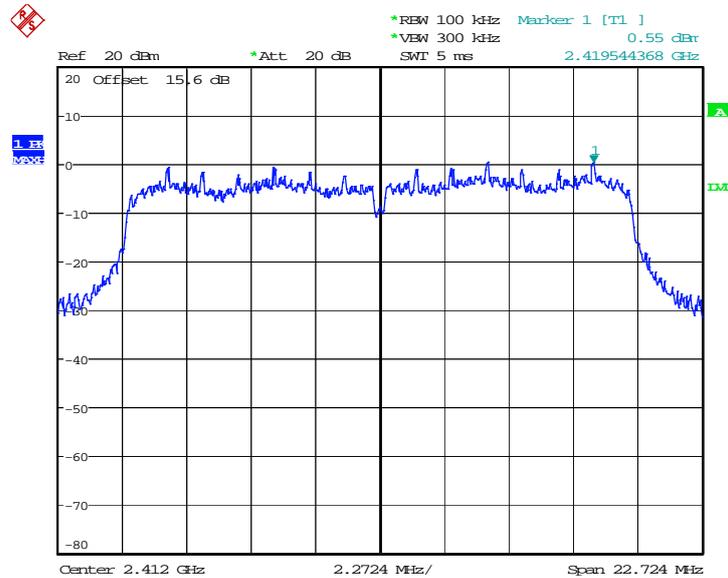
Test Mode :	Mode 7, 8, 9	Temperature :	23~24°C
Test Engineer :	Zhi Lu	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	0.55	-14.65	8	Pass
06	2437	2.52	-12.68	8	Pass
11	2462	2.20	-13.00	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)

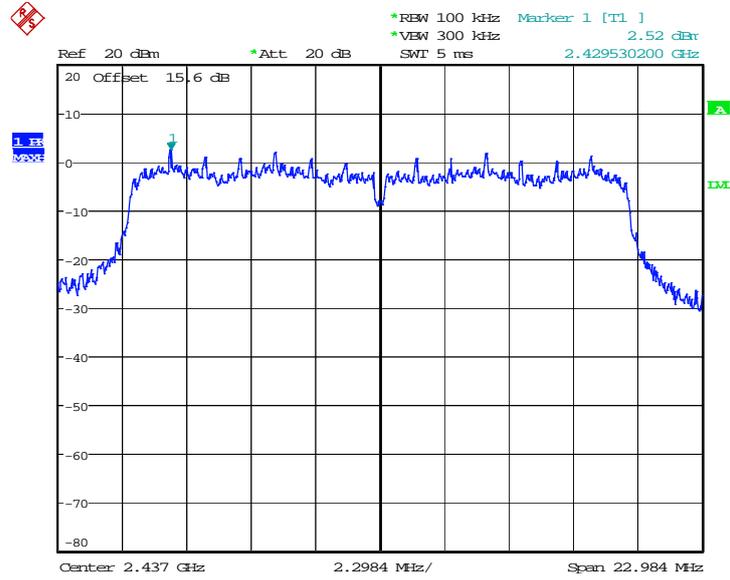
Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01



Date: 28.MAY.2012 19:01:47

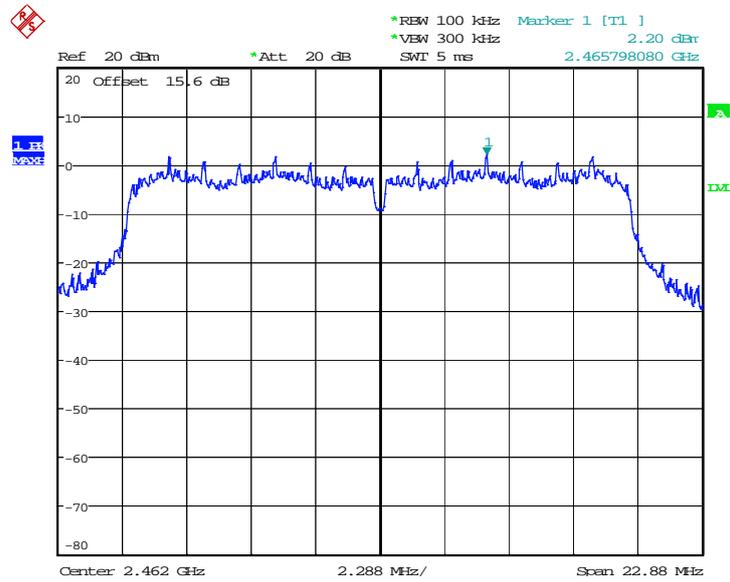


Mode 8 : PSD Plot on 802.11g/n (BW 20MHz) Channel 6



Date: 28.MAY.2012 19:07:39

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



Date: 28.MAY.2012 19:11:23

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.

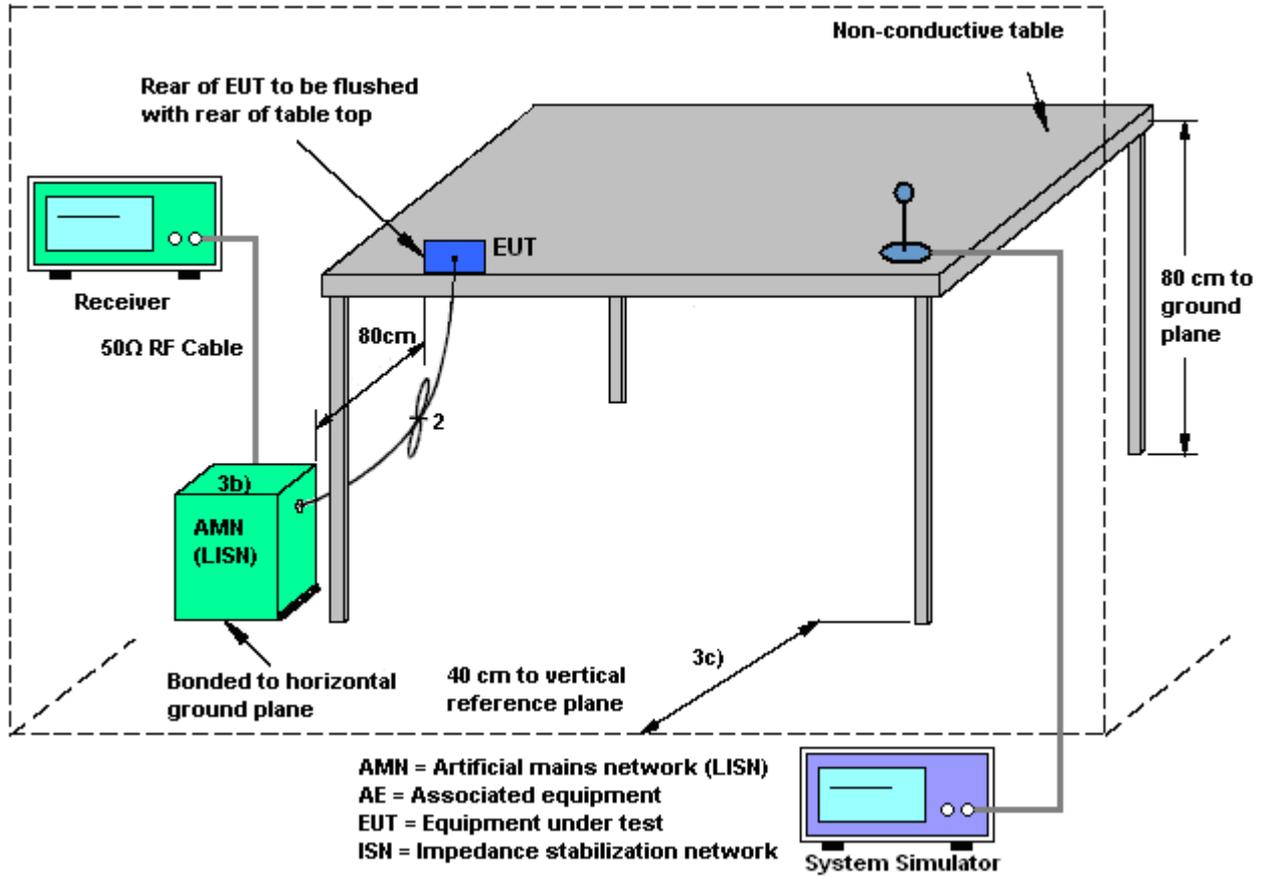
3.6.2 Measuring Instruments

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.

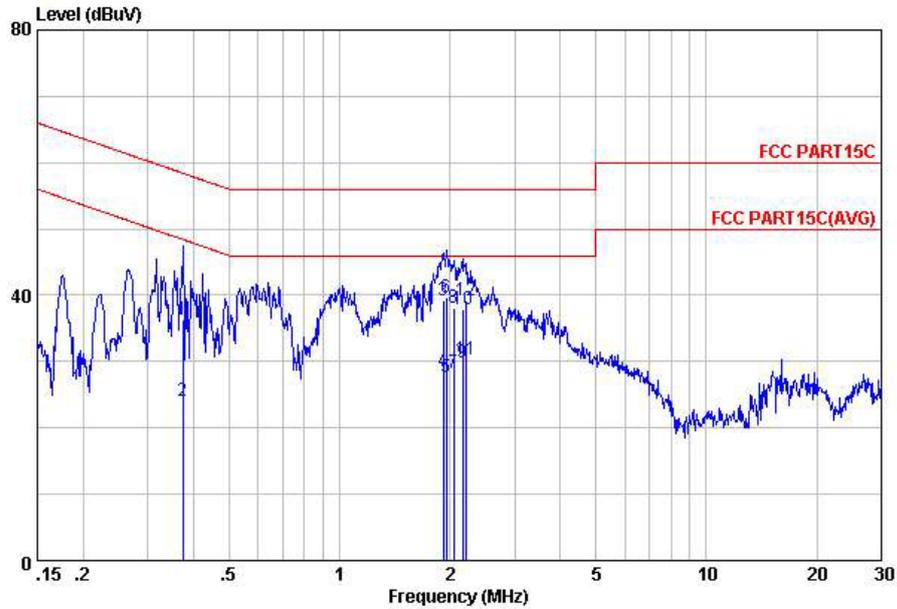
3.6.4 Test Setup





3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN Link + Adapter + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



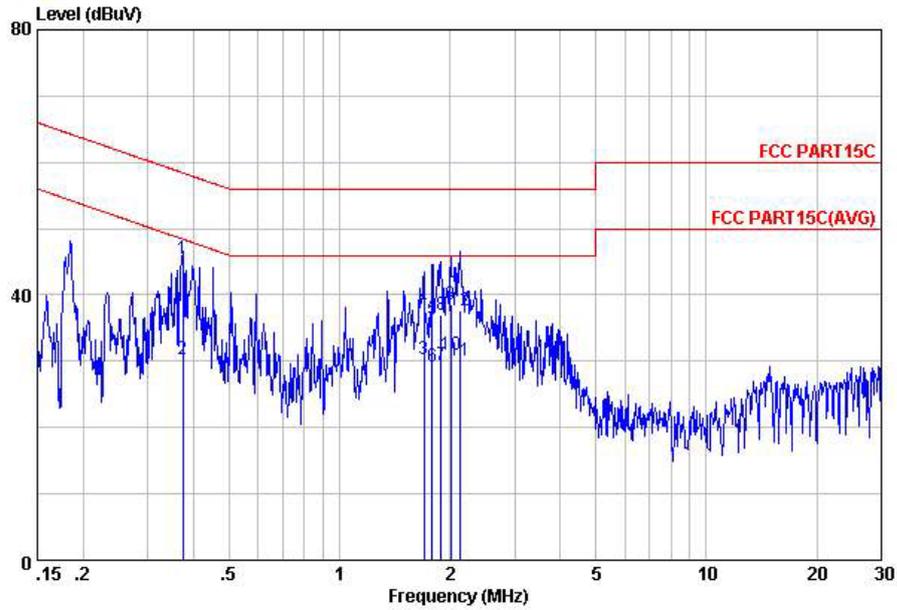
Site : C001-KS
 Condition: FCC PART15C LISN-100807 LINE

mode : Mode 1
 IMEI : A100002311B78A

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.37	36.41	-22.02	58.43	26.30	-0.08	10.19	QP
2	0.37	24.01	-24.42	48.43	13.90	-0.08	10.19	Average
3	1.92	39.32	-16.68	56.00	29.11	-0.11	10.32	QP
4	1.92	28.52	-17.48	46.00	18.31	-0.11	10.32	Average
5	1.96	27.72	-18.28	46.00	17.50	-0.11	10.33	Average
6	1.96	39.62	-16.38	56.00	29.40	-0.11	10.33	QP
7	2.04	28.22	-17.78	46.00	18.00	-0.11	10.33	Average
8	2.04	38.02	-17.98	56.00	27.80	-0.11	10.33	QP
9	2.17	29.93	-16.07	46.00	19.70	-0.11	10.34	Average
10	2.17	37.93	-18.07	56.00	27.70	-0.11	10.34	QP
11	2.21	30.23	-15.77	46.00	20.00	-0.11	10.34	Average
12	2.21	39.33	-16.67	56.00	29.10	-0.11	10.34	QP



Test Mode :	Mode 1	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC0 Idle + Bluetooth Link + WLAN 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 : Mode 1
 IMEI : A100002311B78A

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.37	45.41	-13.02	58.43	35.30	-0.08	10.19	QP
2	0.37	30.41	-18.02	48.43	20.30	-0.08	10.19	Average
3	1.70	30.41	-15.59	46.00	20.21	-0.11	10.31	Average
4	1.70	38.01	-17.99	56.00	27.81	-0.11	10.31	QP
5	1.79	36.31	-19.69	56.00	26.10	-0.11	10.32	QP
6	1.79	29.11	-16.89	46.00	18.90	-0.11	10.32	Average
7	1.89	29.51	-16.49	46.00	19.30	-0.11	10.32	Average
8	1.89	37.01	-18.99	56.00	26.80	-0.11	10.32	QP
9	2.01	38.52	-17.48	56.00	28.30	-0.11	10.33	QP
10	2.01	31.02	-14.98	46.00	20.80	-0.11	10.33	Average
11	2.13	30.13	-15.87	46.00	19.90	-0.11	10.34	Average
12	2.13	37.73	-18.27	56.00	27.50	-0.11	10.34	QP

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

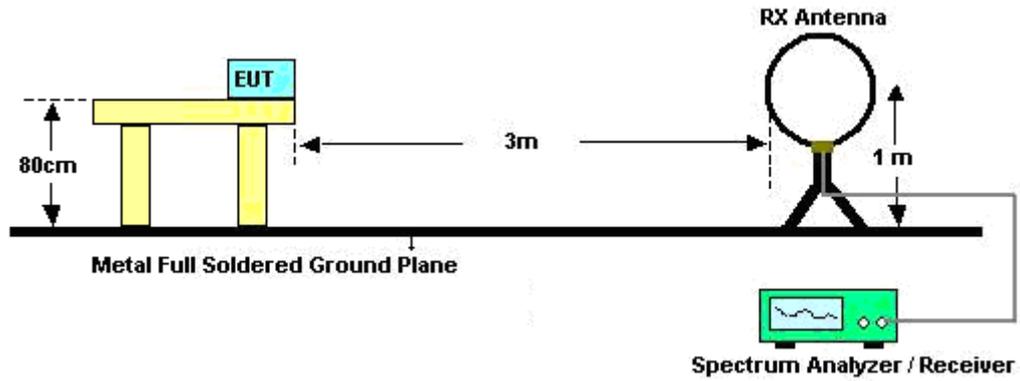
See list of measuring instruments of this test report.

3.7.3 Test Procedures

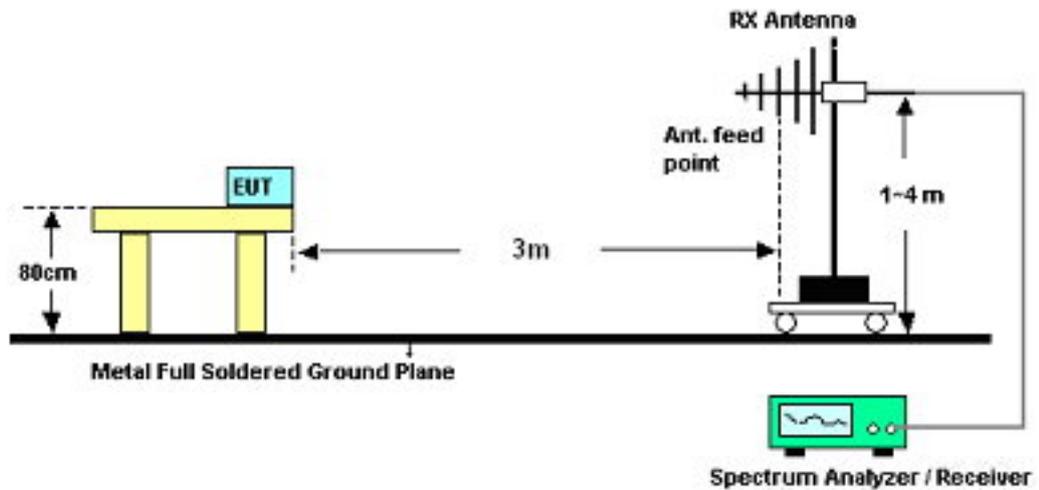
1. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW = 1 MHz for $f \geq 1$ GHz, 100 KHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Measurement above 18 GHz shall 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

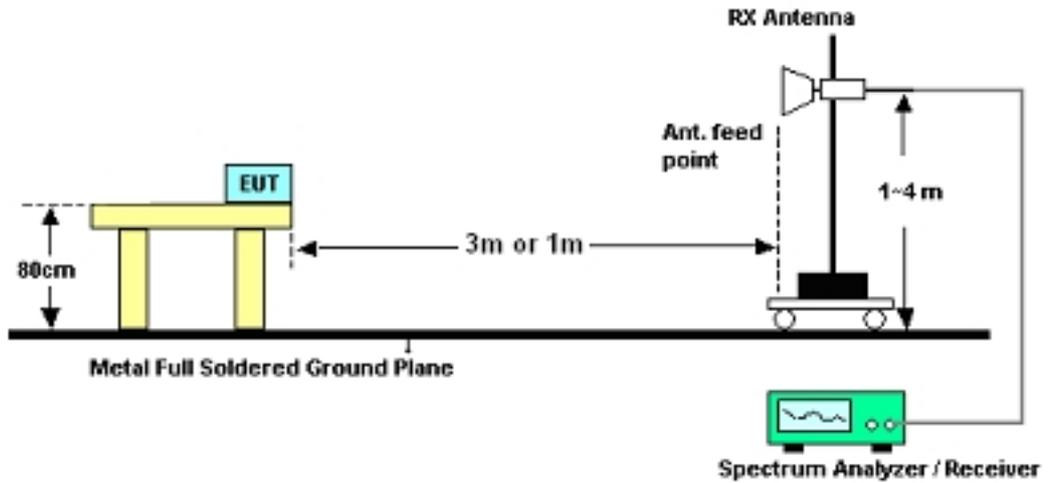
For radiated emissions below 30MHz



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 ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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	21.93	-18.07	40	33.75	18	0.26	30.08	-	-	Peak
95.96	18.53	-24.97	43.5	38.19	9.91	0.4	29.97	-	-	Peak
209.45	20.89	-22.61	43.5	40.85	9.44	0.6	30	-	-	Peak
881.66	22.98	-23.02	46	30.76	20.47	1.29	29.54	-	-	Peak
935.98	31.97	-14.03	46	39.51	20.67	1.32	29.53	100	103	Peak
960.23	31.21	-22.79	54	38.62	20.79	1.34	29.54	-	-	Peak
2350.66	50.33	-23.67	74	48.16	32.78	3.33	33.94	100	213	Peak
2350.66	36.7	-17.3	54	34.53	32.78	3.33	33.94	100	213	Average
2412	95.3	-	-	92.97	32.89	3.52	34.08	100	226	Peak
2412	90.99	-	-	88.66	32.89	3.52	34.08	100	226	Average
2485.56	50.03	-23.97	74	47.54	33.01	3.68	34.2	100	0	Peak
2485.56	37.61	-16.39	54	35.12	33.01	3.68	34.2	100	0	Average



Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
46.49	22.46	-17.54	40	43.44	8.88	0.27	30.13	-	-	Peak
91.11	32.06	-11.44	43.5	52.54	9.12	0.39	29.99	100	0	Peak
211.39	22.53	-20.97	43.5	42.38	9.54	0.6	29.99	-	-	Peak
225.94	23.83	-22.17	46	42.55	10.59	0.63	29.94	-	-	Peak
946.65	32	-14	46	39.49	20.72	1.33	29.54	-	-	Peak
960.23	31.91	-22.09	54	39.32	20.79	1.34	29.54	-	-	Peak
2325.77	51.22	-22.78	74	49.09	32.76	3.27	33.9	100	123	Peak
2325.77	37.74	-16.26	54	35.61	32.76	3.27	33.9	100	123	Average
2412	100.5	-	-	98.17	32.89	3.52	34.08	100	226	Peak
2412	96.97	-	-	94.64	32.89	3.52	34.08	100	226	Average
2490.12	50.15	-23.85	74	47.61	33.05	3.72	34.23	100	0	Peak
2490.12	37.23	-16.77	54	34.69	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.97	19.9	-20.1	40	32.44	17.29	0.25	30.08	-	-	Peak
96.93	17.67	-25.83	43.5	37.21	10.03	0.4	29.97	-	-	Peak
214.3	18.8	-24.7	43.5	38.47	9.71	0.61	29.99	-	-	Peak
712.88	22.44	-23.56	46	31.56	19.43	1.14	29.69	-	-	Peak
946.65	31.71	-14.29	46	39.2	20.72	1.33	29.54	100	62	Peak
960.23	32.12	-21.88	54	39.53	20.79	1.34	29.54	-	-	Peak
2357.12	49.98	-24.02	74	47.77	32.81	3.38	33.98	100	25	Peak
2357.12	36.92	-17.08	54	34.71	32.81	3.38	33.98	100	25	Average
2437	97.49	-	-	95.09	32.95	3.6	34.15	100	181	Peak
2437	93.92	-	-	91.52	32.95	3.6	34.15	100	181	Average
2493.35	49.62	-24.38	74	47.08	33.05	3.72	34.23	100	16	Peak
2493.35	36.86	-17.14	54	34.32	33.05	3.72	34.23	100	16	Average



Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
48.43	23.13	-16.87	40	44.86	8.12	0.28	30.13	-	-	Peak
91.11	31.52	-11.98	43.5	52	9.12	0.39	29.99	100	212	Peak
208.48	22.65	-20.85	43.5	42.66	9.39	0.6	30	-	-	Peak
653.71	23.48	-22.52	46	33.12	18.92	1.09	29.65	-	-	Peak
943.74	31.62	-14.38	46	39.11	20.71	1.33	29.53	-	-	Peak
960.23	32.24	-21.76	54	39.65	20.79	1.34	29.54	-	-	Peak
2355.03	50.05	-23.95	74	47.84	32.81	3.38	33.98	100	0	Peak
2355.03	37.37	-16.63	54	35.16	32.81	3.38	33.98	100	0	Average
2437	103.6	-	-	101.2	32.95	3.6	34.15	100	226	Peak
2437	100.22	-	-	97.82	32.95	3.6	34.15	100	226	Average
2488.41	49.89	-24.11	74	47.35	33.05	3.72	34.23	100	103	Peak
2488.41	37.46	-16.54	54	34.92	33.05	3.72	34.23	100	103	Average



Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	22.53	-17.47	40	34.35	18	0.26	30.08	-	-	Peak
48.43	18.24	-21.76	40	39.97	8.12	0.28	30.13	-	-	Peak
221.09	19.17	-26.83	46	38.35	10.17	0.62	29.97	-	-	Peak
562.53	22.45	-23.55	46	32.59	18.52	1.01	29.67	-	-	Peak
946.65	31.72	-14.28	46	39.21	20.72	1.33	29.54	100	201	Peak
960.23	32.47	-21.53	54	39.88	20.79	1.34	29.54	-	-	Peak
2354.65	50.35	-23.65	74	48.14	32.81	3.38	33.98	100	126	Peak
2354.65	37.84	-16.16	54	35.63	32.81	3.38	33.98	100	126	Average
2462	99.4	-	-	96.95	32.98	3.64	34.17	110	163	Peak
2462	94.61	-	-	92.16	32.98	3.64	34.17	110	163	Average
2483.5	50.23	-23.77	74	47.74	33.01	3.68	34.2	100	181	Peak
2483.5	37.41	-16.59	54	34.92	33.01	3.68	34.2	100	181	Average



Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
45.52	23.7	-16.3	40	44.31	9.25	0.27	30.13	-	-	Peak
90.14	30.05	-13.45	43.5	50.75	8.9	0.39	29.99	-	-	Peak
215.27	22.2	-21.3	43.5	41.81	9.77	0.61	29.99	-	-	Peak
592.6	22.33	-23.67	46	32.31	18.59	1.06	29.63	-	-	Peak
943.74	33.72	-12.28	46	41.21	20.71	1.33	29.53	100	32	Peak
960.23	31.96	-22.04	54	39.37	20.79	1.34	29.54	-	-	Peak
2358.07	50.39	-23.61	74	48.18	32.81	3.38	33.98	100	126	Peak
2358.07	37.4	-16.6	54	35.19	32.81	3.38	33.98	100	126	Average
2462	104.3	-	-	101.85	32.98	3.64	34.17	100	163	Peak
2462	100.61	-	-	98.16	32.98	3.64	34.17	100	163	Average
2497.34	50.36	-23.64	74	47.82	33.05	3.72	34.23	100	0	Peak
2497.34	37.22	-16.78	54	34.68	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
30.97	21.12	-18.88	40	33.66	17.29	0.25	30.08	-	-	Peak
47.46	19.96	-20.04	40	41.32	8.5	0.27	30.13	-	-	Peak
211.39	18.64	-24.86	43.5	38.49	9.54	0.6	29.99	-	-	Peak
891.36	32	-14	46	39.74	20.46	1.3	29.5	100	21	Peak
943.74	30.76	-15.24	46	38.25	20.71	1.33	29.53	-	-	Peak
960.23	29.98	-24.02	54	37.39	20.79	1.34	29.54	-	-	Peak
2390	65.82	-8.18	74	63.54	32.86	3.47	34.05	100	226	Peak
2390	49.14	-4.86	54	46.86	32.86	3.47	34.05	100	226	Average
2412	96.8	-	-	94.47	32.89	3.52	34.08	100	168	Peak
2412	86.18	-	-	83.85	32.89	3.52	34.08	100	168	Average
2497.34	49.83	-24.17	74	47.29	33.05	3.72	34.23	100	0	Peak
2497.34	38.15	-15.85	54	35.61	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
39.7	23.84	-16.16	40	41.31	12.3	0.25	30.02	-	-	Peak
91.11	30.44	-13.06	43.5	50.92	9.12	0.39	29.99	100	251	Peak
214.3	21.46	-22.04	43.5	41.13	9.71	0.61	29.99	-	-	Peak
640.13	23.59	-22.41	46	33.3	18.85	1.09	29.65	-	-	Peak
946.65	31.31	-14.69	46	38.8	20.72	1.33	29.54	-	-	Peak
960.23	32.14	-21.86	54	39.55	20.79	1.34	29.54	-	-	Peak
2390	68.66	-5.34	74	66.38	32.86	3.47	34.05	100	275	Peak
2390	52.6	-1.4	54	50.32	32.86	3.47	34.05	100	275	Average
2412	101.39	-	-	99.06	32.89	3.52	34.08	100	280	Peak
2412	92	-	-	89.67	32.89	3.52	34.08	100	280	Average
2489.36	50.15	-23.85	74	47.61	33.05	3.72	34.23	100	51	Peak
2489.36	38.15	-15.85	54	35.61	33.05	3.72	34.23	100	51	Average



Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	23.1	-16.9	40	34.92	18	0.26	30.08	-	-	Peak
48.43	18.96	-21.04	40	40.69	8.12	0.28	30.13	-	-	Peak
381.14	20.82	-25.18	46	34.37	15.49	0.83	29.87	-	-	Peak
815.7	24.02	-21.98	46	32.35	20.02	1.26	29.61	-	-	Peak
935.98	31.01	-14.99	46	38.55	20.67	1.32	29.53	100	196	Peak
960.23	30.7	-23.3	54	38.11	20.79	1.34	29.54	-	-	Peak
2357.88	49.88	-24.12	74	47.67	32.81	3.38	33.98	100	106	Peak
2357.88	37.68	-16.32	54	35.47	32.81	3.38	33.98	100	106	Average
2437	99.17	-	-	96.77	32.95	3.6	34.15	100	92	Peak
2437	88.96	-	-	86.56	32.95	3.6	34.15	100	92	Average
2494.3	49.79	-24.21	74	47.25	33.05	3.72	34.23	100	0	Peak
2494.3	37.73	-16.27	54	35.19	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
45.52	24.01	-15.99	40	44.62	9.25	0.27	30.13	-	-	Peak
90.14	30.06	-13.44	43.5	50.76	8.9	0.39	29.99	100	51	Peak
184.23	22.14	-21.36	43.5	43.03	8.44	0.57	29.9	-	-	Peak
211.39	21.97	-21.53	43.5	41.82	9.54	0.6	29.99	-	-	Peak
943.74	31.46	-14.54	46	38.95	20.71	1.33	29.53	-	-	Peak
960.23	30.88	-23.12	54	38.29	20.79	1.34	29.54	-	-	Peak
2384.48	49.96	-24.04	74	47.72	32.83	3.42	34.01	100	112	Peak
2384.48	37.42	-16.58	54	35.18	32.83	3.42	34.01	100	112	Average
2437	103.46	-	-	101.06	32.95	3.6	34.15	100	228	Peak
2437	93.93	-	-	91.53	32.95	3.6	34.15	100	228	Average
2484.23	51.22	-22.78	74	48.73	33.01	3.68	34.2	100	10	Peak
2484.23	37.11	-16.89	54	34.62	33.01	3.68	34.2	100	10	Average



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.97	20.7	-19.3	40	33.24	17.29	0.25	30.08	-	-	Peak
213.33	19.56	-23.94	43.5	39.29	9.65	0.61	29.99	-	-	Peak
639.16	22.25	-23.75	46	31.95	18.85	1.09	29.64	-	-	Peak
935.98	31.8	-14.2	46	39.34	20.67	1.32	29.53	-	-	Peak
943.74	32.15	-13.85	46	39.64	20.71	1.33	29.53	100	195	Peak
960.23	29.35	-24.65	54	36.76	20.79	1.34	29.54	-	-	Peak
2363.77	50.45	-23.55	74	48.24	32.81	3.38	33.98	133	147	Peak
2363.77	37.22	-16.78	54	35.01	32.81	3.38	33.98	133	147	Average
2462	99.35	-	-	96.9	32.98	3.64	34.17	200	22	Peak
2462	89.55	-	-	87.1	32.98	3.64	34.17	200	22	Average
2484.04	68.42	-5.58	74	65.93	33.01	3.68	34.2	100	297	Peak
2484.04	49.52	-4.48	54	47.03	33.01	3.68	34.2	100	297	Average



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
45.52	23.81	-16.19	40	44.42	9.25	0.27	30.13	-	-	Peak
89.17	29.71	-13.79	43.5	50.7	8.61	0.39	29.99	100	321	Peak
182.29	20.77	-22.73	43.5	41.68	8.42	0.56	29.89	-	-	Peak
210.42	21.33	-22.17	43.5	41.24	9.49	0.6	30	-	-	Peak
946.65	30.55	-15.45	46	38.04	20.72	1.33	29.54	-	-	Peak
960.23	30.7	-23.3	54	38.11	20.79	1.34	29.54	-	-	Peak
2327.29	50.37	-23.63	74	48.24	32.76	3.27	33.9	155	43	Peak
2327.29	37.29	-16.71	54	35.16	32.76	3.27	33.9	155	43	Average
2462	103.73	-	-	101.28	32.98	3.64	34.17	101	269	Peak
2462	93.84	-	-	91.39	32.98	3.64	34.17	101	269	Average
2483.66	72.3	-1.7	74	69.81	33.01	3.68	34.2	100	267	Peak
2483.66	52.91	-1.09	54	50.42	33.01	3.68	34.2	100	267	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	25.29	-14.71	40	37.11	18	0.26	30.08	100	293	Peak
45.52	23.25	-16.75	40	43.86	9.25	0.27	30.13	-	-	Peak
187.14	18.53	-24.97	43.5	39.41	8.47	0.57	29.92	-	-	Peak
364.65	19.56	-26.44	46	33.79	14.86	0.82	29.91	-	-	Peak
946.65	30.55	-15.45	46	38.04	20.72	1.33	29.54	-	-	Peak
960.23	30.73	-23.27	54	38.14	20.79	1.34	29.54	-	-	Peak
2390	58.04	-15.96	74	55.76	32.86	3.47	34.05	100	68	Peak
2390	42.09	-11.91	54	39.81	32.86	3.47	34.05	100	68	Average
2412	95.4	-	-	93.07	32.89	3.52	34.08	100	265	Peak
2412	83.67	-	-	81.34	32.89	3.52	34.08	100	265	Average
2490.5	49.2	-24.8	74	46.66	33.05	3.72	34.23	100	251	Peak
2490.5	37.07	-16.93	54	34.53	33.05	3.72	34.23	100	251	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
46.49	24.79	-15.21	40	45.77	8.88	0.27	30.13	-	-	Peak
92.08	30.35	-13.15	43.5	50.59	9.35	0.39	29.98	100	0	Peak
187.14	20	-23.5	43.5	40.88	8.47	0.57	29.92	-	-	Peak
214.3	19.77	-23.73	43.5	39.44	9.71	0.61	29.99	-	-	Peak
943.74	31.5	-14.5	46	38.99	20.71	1.33	29.53	-	-	Peak
960.23	31.59	-22.41	54	39	20.79	1.34	29.54	-	-	Peak
2390	62.62	-11.38	74	60.34	32.86	3.47	34.05	100	278	Peak
2390	46.08	-7.92	54	43.8	32.86	3.47	34.05	100	278	Average
2412	98.26	-	-	95.93	32.89	3.52	34.08	100	261	Peak
2412	86.13	-	-	83.8	32.89	3.52	34.08	100	261	Average
2487.46	49.98	-24.02	74	47.49	33.01	3.68	34.2	100	169	Peak
2487.46	37.15	-16.85	54	34.66	33.01	3.68	34.2	100	169	Average



Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	25.99	-14.01	40	37.81	18	0.26	30.08	100	0	Peak
46.49	21.29	-18.71	40	42.27	8.88	0.27	30.13	-	-	Peak
96.93	20.08	-23.42	43.5	39.62	10.03	0.4	29.97	-	-	Peak
730.34	24.17	-21.83	46	32.93	19.69	1.16	29.61	-	-	Peak
943.74	29.8	-16.2	46	37.29	20.71	1.33	29.53	-	-	Peak
960.23	30	-24	54	37.41	20.79	1.34	29.54	-	-	Peak
2370.42	50.33	-23.67	74	48.09	32.83	3.42	34.01	100	21	Peak
2370.42	36.85	-17.15	54	34.61	32.83	3.42	34.01	100	21	Average
2437	99.57	-	-	97.17	32.95	3.6	34.15	100	216	Peak
2437	88.01	-	-	85.61	32.95	3.6	34.15	100	216	Average
2491.07	49.61	-24.39	74	47.07	33.05	3.72	34.23	100	0	Peak
2491.07	37.7	-16.3	54	35.16	33.05	3.72	34.23	100	0	Average



Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
45.52	24.92	-15.08	40	45.53	9.25	0.27	30.13	-	-	Peak
92.08	30.04	-13.46	43.5	50.28	9.35	0.39	29.98	100	39	Peak
212.36	20.76	-22.74	43.5	40.54	9.6	0.61	29.99	-	-	Peak
667.29	22.19	-23.81	46	31.74	19.02	1.1	29.67	-	-	Peak
943.74	30.71	-15.29	46	38.2	20.71	1.33	29.53	-	-	Peak
960.23	30.53	-23.47	54	37.94	20.79	1.34	29.54	-	-	Peak
2325.01	49.77	-24.23	74	47.64	32.76	3.27	33.9	100	106	Peak
2325.01	37.74	-16.26	54	35.61	32.76	3.27	33.9	100	106	Average
2437	99.9	-	-	97.5	32.95	3.6	34.15	100	189	Peak
2437	88.53	-	-	86.13	32.95	3.6	34.15	100	189	Average
2485.56	49.46	-24.54	74	46.97	33.01	3.68	34.2	100	39	Peak
2485.56	37.36	-16.64	54	34.87	33.01	3.68	34.2	100	39	Average



Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	23.08	-16.92	40	34.9	18	0.26	30.08	-	-	Peak
46.49	19.98	-20.02	40	40.96	8.88	0.27	30.13	-	-	Peak
95.96	18.77	-24.73	43.5	38.43	9.91	0.4	29.97	-	-	Peak
221.09	18.98	-27.02	46	38.16	10.17	0.62	29.97	-	-	Peak
943.74	31.17	-14.83	46	38.66	20.71	1.33	29.53	100	291	Peak
960.23	31	-23	54	38.41	20.79	1.34	29.54	-	-	Peak
2326.34	49.99	-24.01	74	47.86	32.76	3.27	33.9	100	251	Peak
2326.34	37.65	-16.35	54	35.52	32.76	3.27	33.9	100	251	Average
2462	97.32	-	-	94.87	32.98	3.64	34.17	100	193	Peak
2462	84.81	-	-	82.36	32.98	3.64	34.17	100	193	Average
2484.8	64.57	-9.43	74	62.08	33.01	3.68	34.2	100	263	Peak
2484.8	48.3	-5.7	54	45.81	33.01	3.68	34.2	100	263	Average



Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	43~45%
Test Engineer :	Steven Hao	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
46.49	23.72	-16.28	40	44.7	8.88	0.27	30.13	-	-	Peak
91.11	29.86	-13.64	43.5	50.34	9.12	0.39	29.99	100	232	Peak
176.47	19.45	-24.05	43.5	40.07	8.71	0.56	29.89	-	-	Peak
210.42	21.28	-22.22	43.5	41.19	9.49	0.6	30	-	-	Peak
943.74	32.04	-13.96	46	39.53	20.71	1.33	29.53	-	-	Peak
960.23	30.37	-23.63	54	37.78	20.79	1.34	29.54	-	-	Peak
2353.13	50.04	-23.96	74	47.83	32.81	3.38	33.98	100	0	Peak
2353.13	38.04	-15.96	54	35.83	32.81	3.38	33.98	100	0	Average
2462	102.64	-	-	100.19	32.98	3.64	34.17	100	266	Peak
2462	90.38	-	-	87.93	32.98	3.64	34.17	100	266	Average
2484.23	69.92	-4.08	74	67.43	33.01	3.68	34.2	100	201	Peak
2484.23	51.8	-2.2	54	49.31	33.01	3.68	34.2	100	201	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 20, 2012 ~ May 28, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 23, 2011	May 20, 2012 ~ May 28, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 23, 2011	May 20, 2012 ~ May 28, 2012	Aug. 22, 2012	Conducted (TH01-KS)
DC Power supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 23, 2011	May 20, 2012 ~ May 28, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	May 20, 2012 ~ May 28, 2012	Dec. 29, 2012	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 02, 2011	May 14, 2012	Jun. 01, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	May 14, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	May 14, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	May 14, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	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 29, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	May 29, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	May 29, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	May 29, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	May 29, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	May 29, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	May 29, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	May 29, 2012	Oct.10, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	May 29, 2012	Jul. 27, 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
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

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

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

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

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP241902 as below.