FCC RF Test Report

APPLICANT	:	CT Asia
EQUIPMENT	:	WCDMA/GSM smartphone
BRAND NAME	:	Blu
MODEL NAME	:	Elite3.8
FCC ID	:	YHLBLUELITE
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on May 02, 2012 and completely tested on Jun. 13, 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

Jones Tsai / Manager

Testing Laboratory 1190

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR250202B	Rev. 01	Initial issue of report	Jun. 14, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	≤ 20dBc	Pass	Under limit 41.36 dB at 2399.475 MHz
			Conducted Spurious Emission		Pass	Under limit 37.77 dB at 24908.000 MHz
3.5	15.247(d)	A8.5	Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.42 dB at 30.000 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 11.39 dB at 0.380 MHz
3.7	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

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

1.2 Manufacturer

Beijing Tianyu Communication Equipment Co., Ltd.
NO.55 Jiachang 2 road, OPTO-Mechatronics Industrial Park, Tongzhou district, Beijing 101111

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	WCDMA/GSM smartphone
Brand Name	Blu
Model Name	Elite3.8
FCC ID	YHLBLUELITE
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 : 14.87 dBm (0.031 W) 802.11g : 21.83 dBm (0.152 W) 802.11n HT-20 : 21.39 dBm (0.138 W)
Duty Cycle	802.11b : 99.04% 802.11g : 94.93% 802.11n HT-20 : 94.58%
Antenna Type	PIFA Antenna with gain 0.80 dBi
HW Version	P3.1
SW Version	TBW591227_834F_V2029
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 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	CMU200	N/A	N/A	Unshielded, 1.8 m
2.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
4.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
5.	Notebook	Dell	VOSTRO1450	PPD-AR5B195	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

There are two bandwidth systems for 2.4GHz.

For 20MHz bandwidth systems, use Channel 1~11.

For 40MHz bandwidth systems, use Channel 3~9.

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate as below table and the highest power data rates (11b, 11g, 11n HT-20, 11n HT-40 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)	14.87	14.83	14.52	14.85

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)	21.83	21.63	21.49	21.34	21.39	21.62	21.62	21.52

2.4GHz 802.11n HT-20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	21.39	21.32	21.12	21.22	21.26	21.37	21.31	21.19

2.3 Test Mode

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

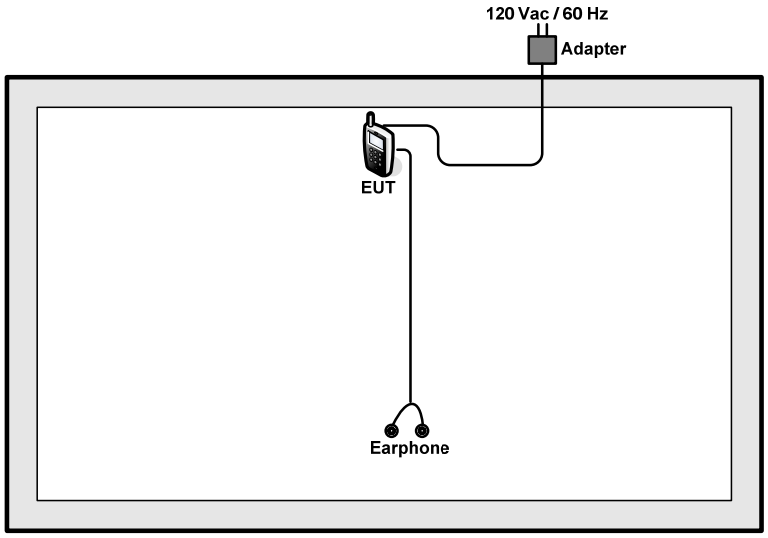
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations.

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

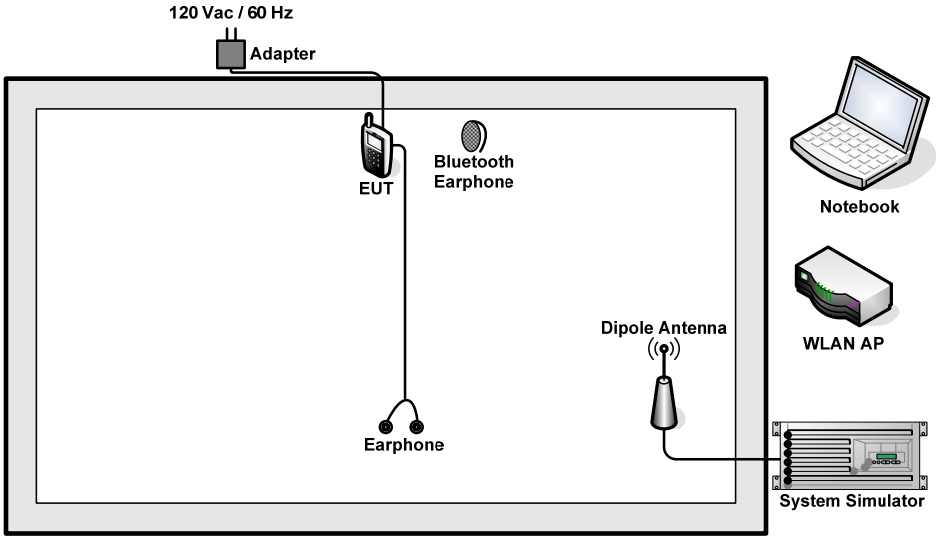
<table>
<tr><th colspan="2">Test Cases</th></tr>
<tr><td>Test Item</td><td>802.11b (Modulation : DSSS)
802.11g/n (Modulation : OFDM)</td></tr>
<tr><td>Conducted TCs</td><td>
<table>
<tr><th>Test Mode</th><th>802.11b</th><th>802.11g</th><th>802.11n HT-20</th></tr>
<tr><td>CH01</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>CH06</td><td>2</td><td>5</td><td>8</td></tr>
<tr><td>CH11</td><td>3</td><td>6</td><td>9</td></tr>
</table>
</td></tr>
<tr><td>Radiated TCs</td><td>
<table>
<tr><th>Test Mode</th><th>802.11b</th><th>802.11g</th><th>802.11n HT-20</th></tr>
<tr><td>CH01</td><td>1</td><td>4</td><td>7</td></tr>
<tr><td>CH06</td><td>2</td><td>5</td><td>8</td></tr>
<tr><td>CH11</td><td>3</td><td>6</td><td>9</td></tr>
</table>
</td></tr>
<tr><td>AC Conducted Emission</td><td>Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone</td></tr>
</table>

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF utility “ADB” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

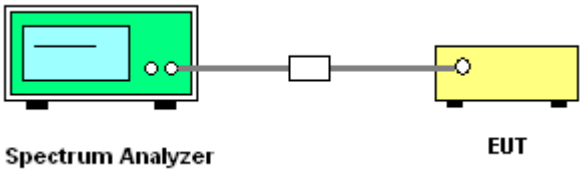
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
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) ≥ 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

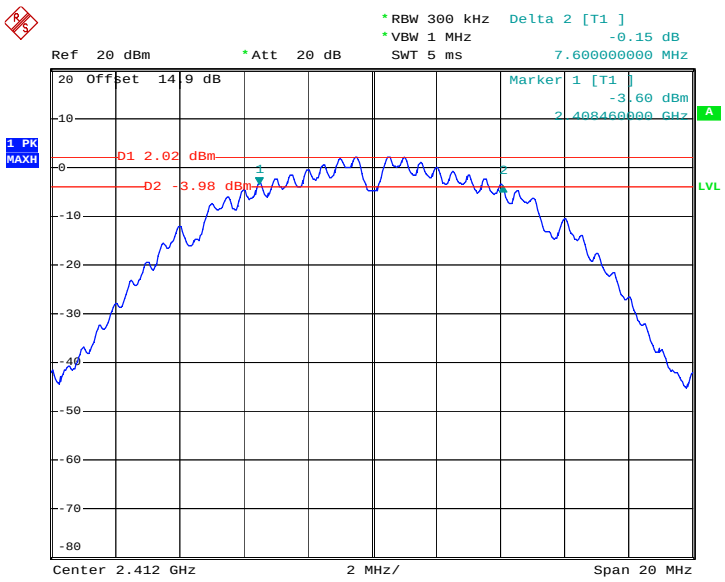


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

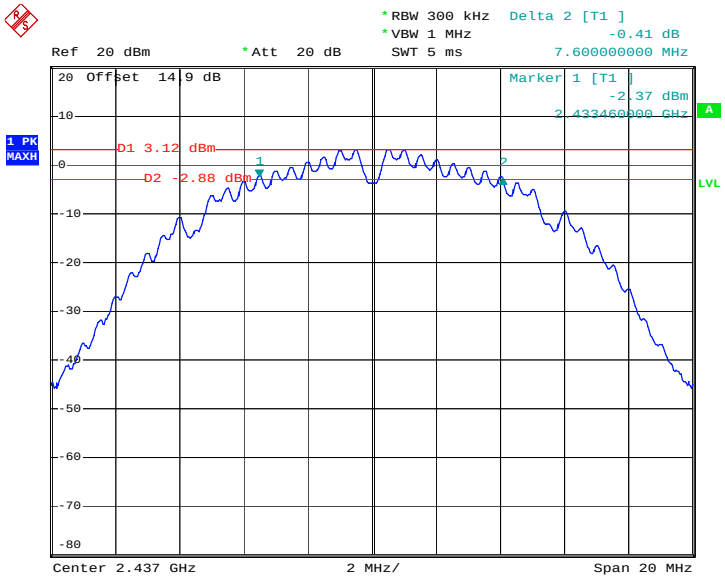
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.60	0.5	Pass
06	2437	7.60	0.5	Pass
11	2462	7.64	0.5	Pass

6 dB Bandwidth Plot on 802.11b Channel 01



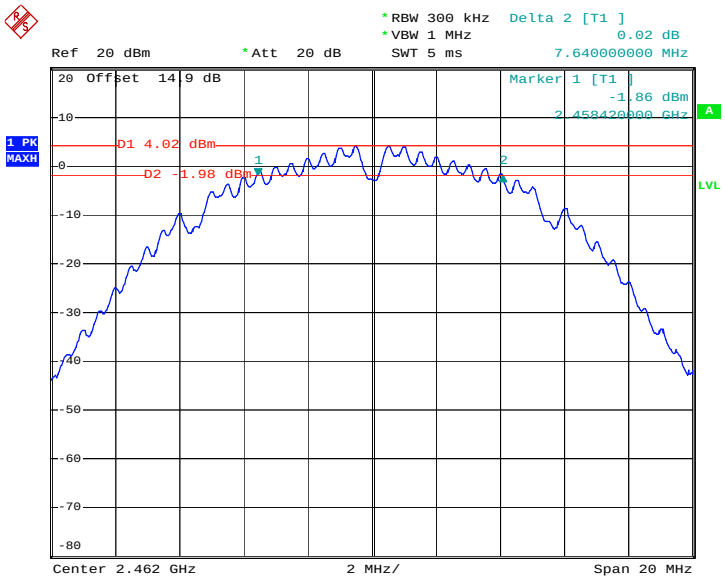
Date: 8.JUN.2012 01:55:17

6 dB Bandwidth Plot on 802.11b Channel 06



Date: 8.JUN.2012 01:59:14

6 dB Bandwidth Plot on 802.11b Channel 11

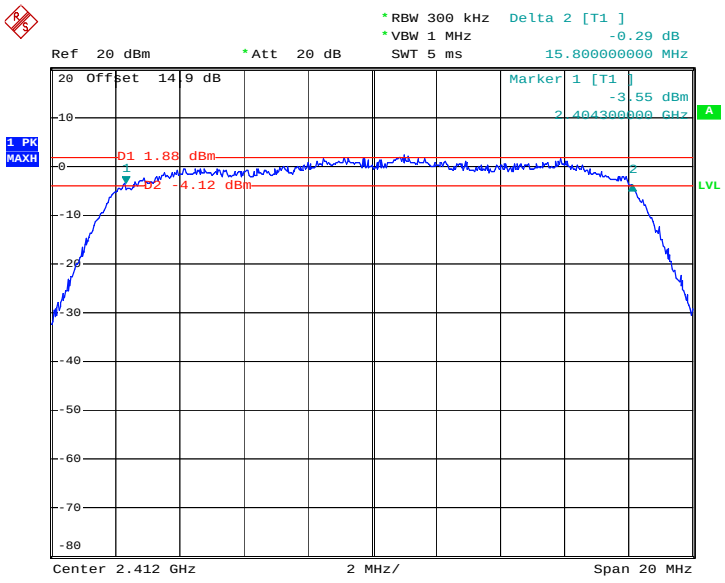


Date: 8.JUN.2012 02:01:49

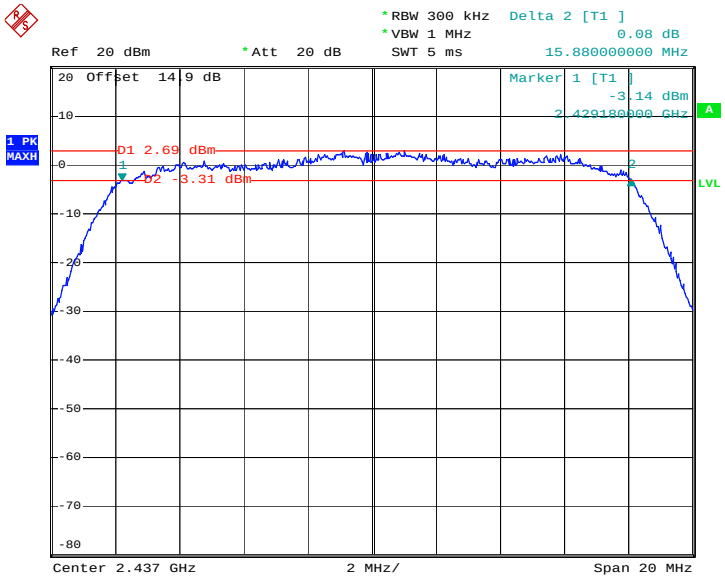
Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.80	0.5	Pass
06	2437	15.88	0.5	Pass
11	2462	15.80	0.5	Pass

6 dB Bandwidth Plot on 802.11g Channel 01

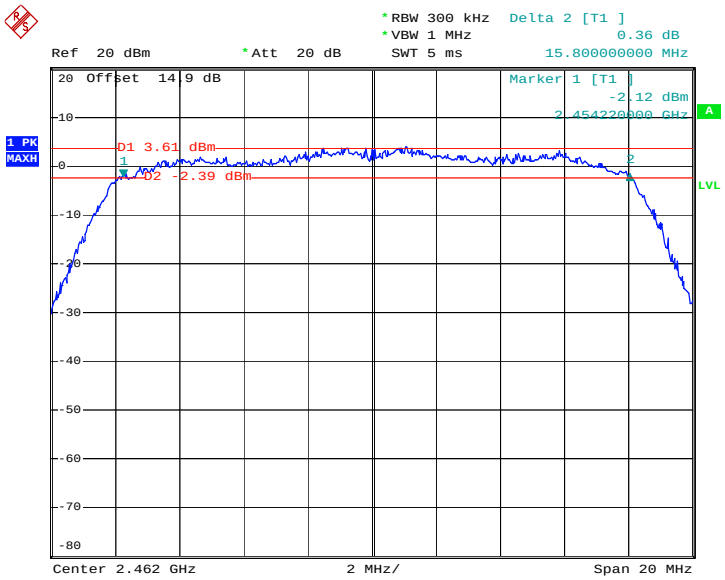


6 dB Bandwidth Plot on 802.11g Channel 06



Date: 8.JUN.2012 02:09:20

6 dB Bandwidth Plot on 802.11g Channel 11

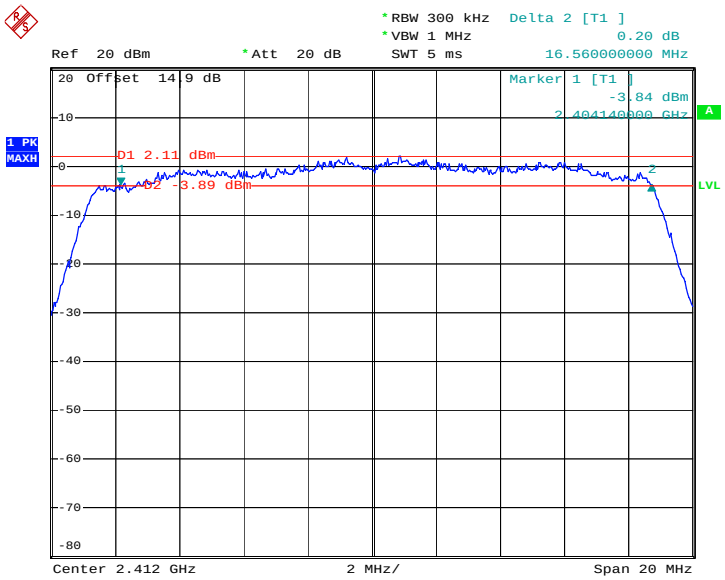


Date: 8.JUN.2012 02:12:23

Test Mode :	802.11n HT-20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

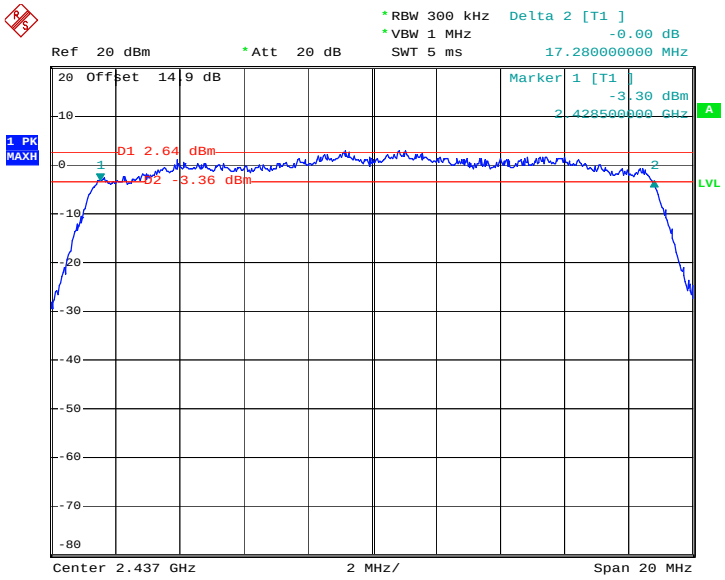
Channel	Frequency (MHz)	2.4GHz 802.11n HT-20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.56	0.5	Pass
06	2437	17.28	0.5	Pass
11	2462	17.20	0.5	Pass

6 dB Bandwidth Plot on 802.11n HT-20 Channel 01



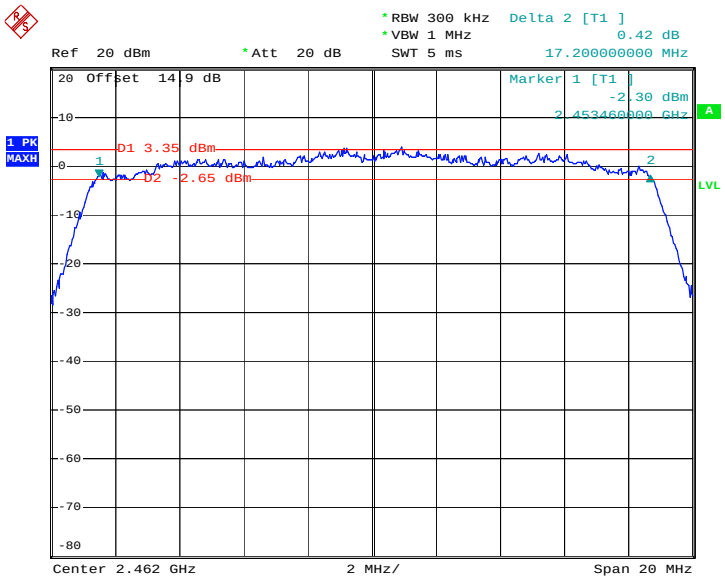
Date: 8.JUN.2012 02:16:49

6 dB Bandwidth Plot on 802.11n HT-20 Channel 06



Date: 8.JUN.2012 02:20:18

6 dB Bandwidth Plot on 802.11n HT-20 Channel 11



Date: 8.JUN.2012 02:23:02

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.

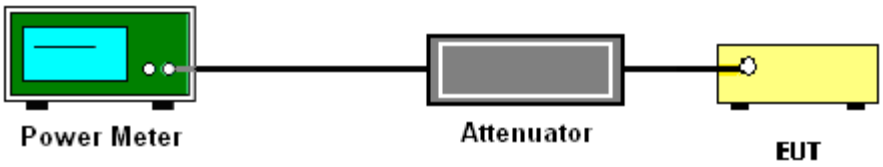
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure 7.2.1.3 Option 3(peak power meter method) 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 :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	13.66	30	Pass
06	2437	13.89	30	Pass
11	2462	14.87	30	Pass

Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.50	30	Pass
06	2437	21.66	30	Pass
11	2462	21.83	30	Pass

Test Mode :	802.11n HT-20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	2.4GHz 802.11n HT-20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.02	30	Pass
06	2437	20.86	30	Pass
11	2462	21.39	30	Pass

3.3 Power Spectral Density Measurement

3.3.1 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.

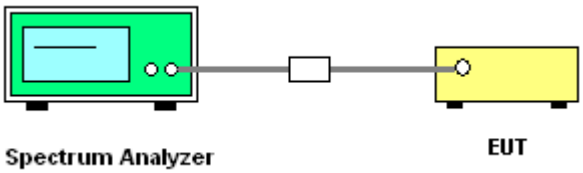
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 5.3.1 (Peak PSD) of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
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) >= 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 = 10log (3 kHz/100 kHz = -15.2 dB).

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

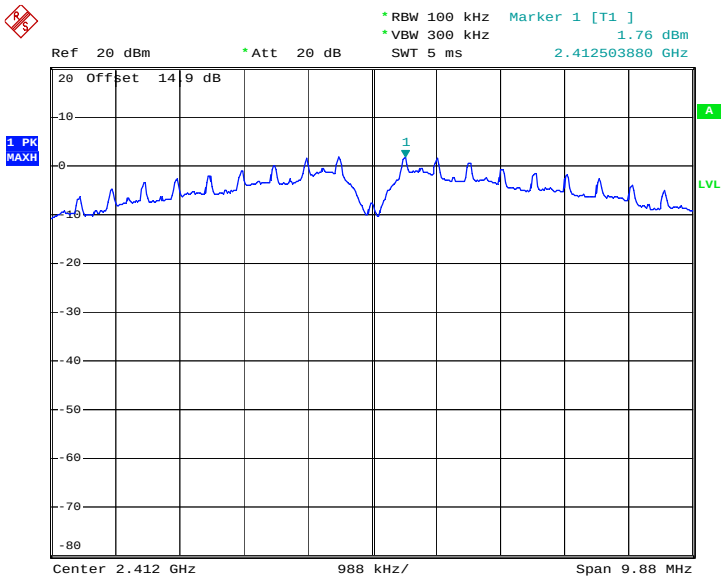
Test Mode :	802.11b	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.76	-13.44	8	Pass
06	2437	2.79	-12.41	8	Pass
11	2462	3.78	-11.42	8	Pass

Note:

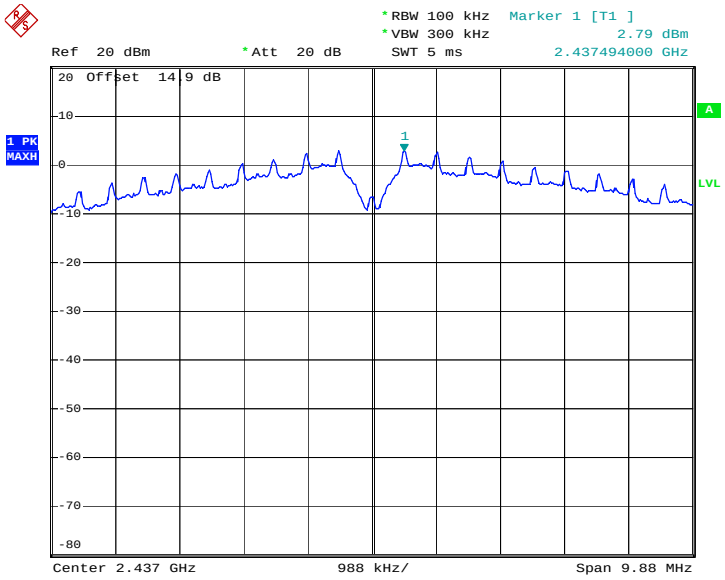
1. *Measured power density (dBm) has offset with cable loss.*
2. *BWCF (dB) = 10 log (3k/100k) = -15.2 dB*
3. *Power Density/ 3kHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)*

PSD Plot on 802.11b Channel 01



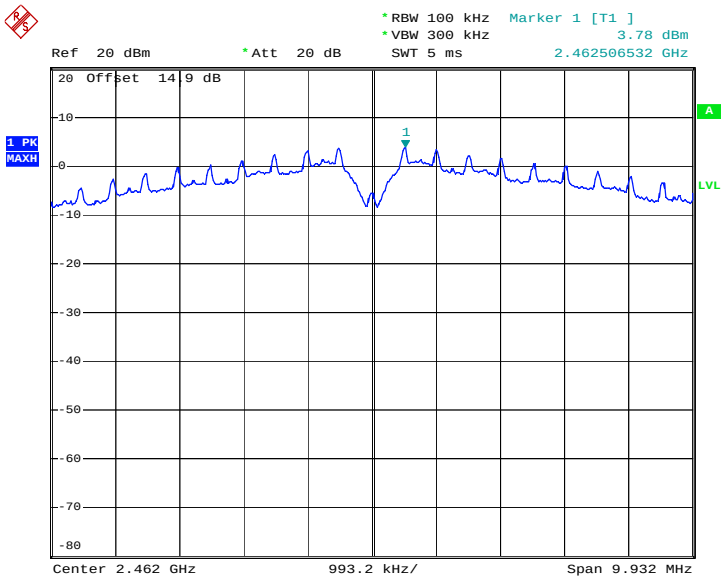
Date: 8.JUN.2012 01:55:41

PSD Plot on 802.11b Channel 06



Date: 8.JUN.2012 01:59:34

PSD Plot on 802.11b Channel 11



Date: 8.JUN.2012 02:02:11

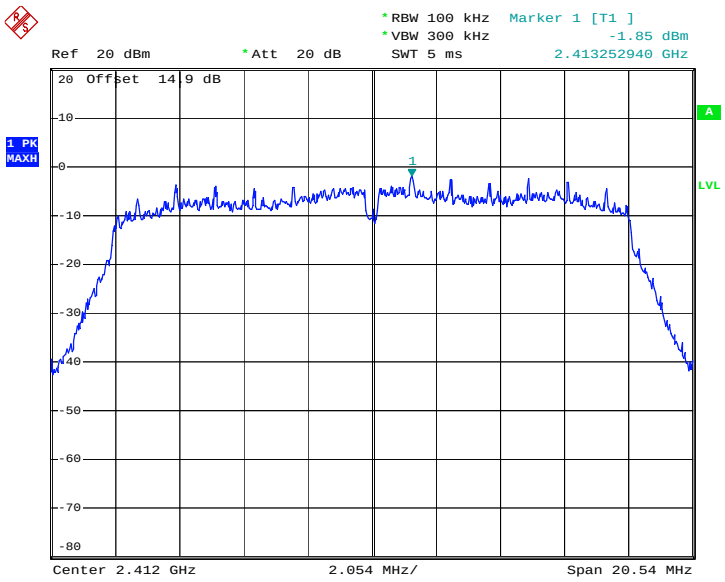
Test Mode :	802.11g	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-1.85	-17.05	8	Pass
06	2437	-0.91	-16.11	8	Pass
11	2462	0.00	-15.20	8	Pass

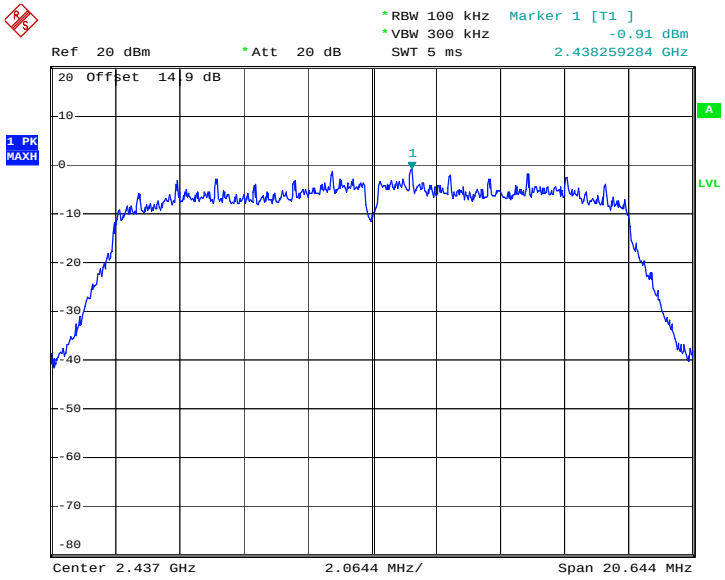
Note:

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

PSD Plot on 802.11g Channel 01

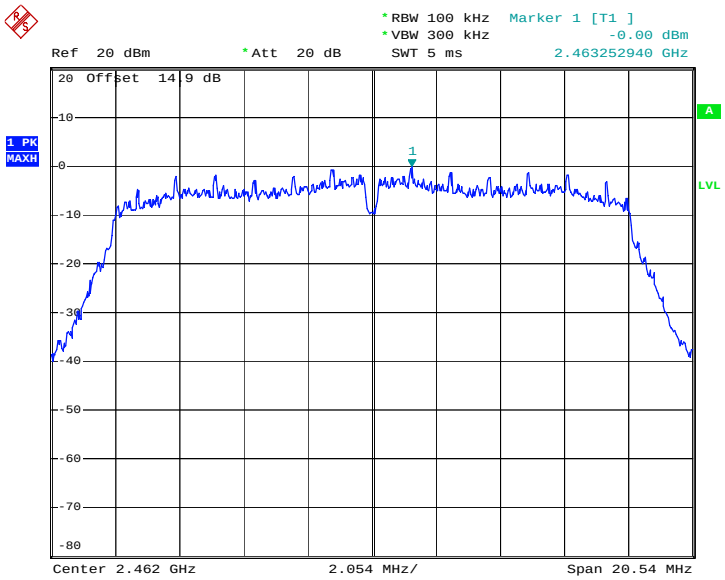


PSD Plot on 802.11g Channel 06



Date: 8.JUN.2012 02:09:46

PSD Plot on 802.11g Channel 11



Date: 8.JUN.2012 02:12:45

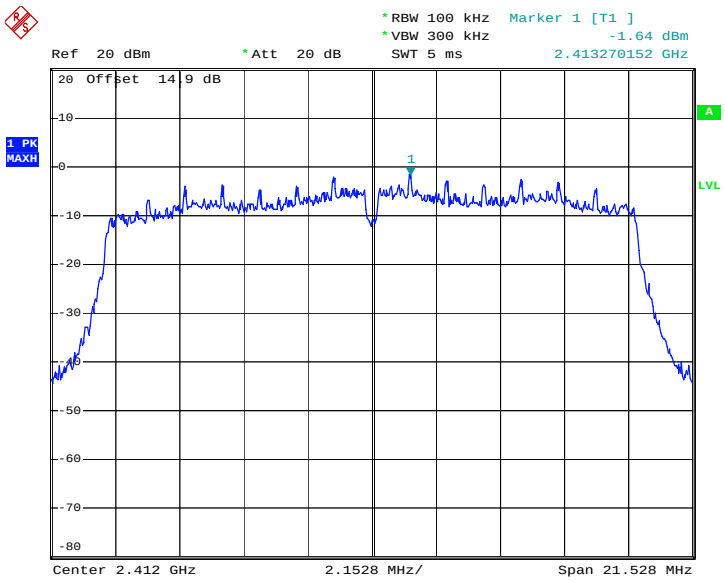
Test Mode :	802.11n HT-20	Temperature :	23~24℃
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n HT-20 Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-1.64	-16.84	8	Pass
06	2437	-0.75	-15.95	8	Pass
11	2462	0.13	-15.07	8	Pass

Note:

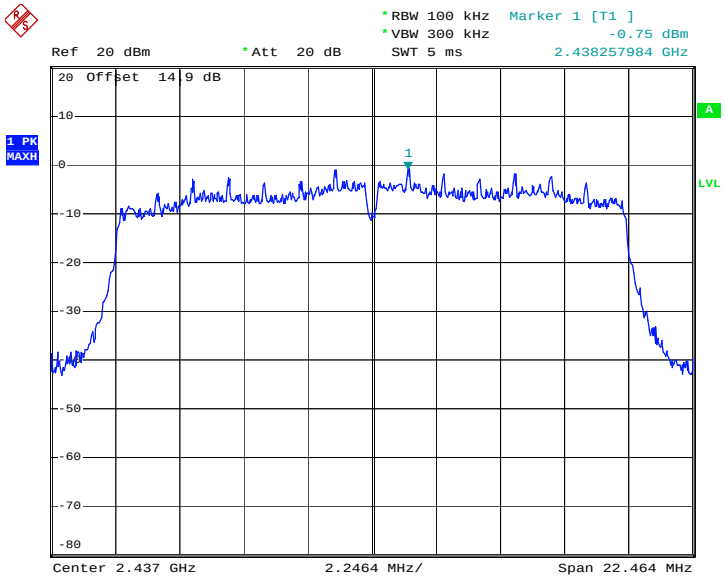
1. *Measured power density (dBm) has offset with cable loss.*
2. *BWCF (dB) = 10 log (3k/100k) = -15.2 dB*
3. *Power Density/ 3KHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)*

PSD Plot on 802.11n HT-20 Channel 01



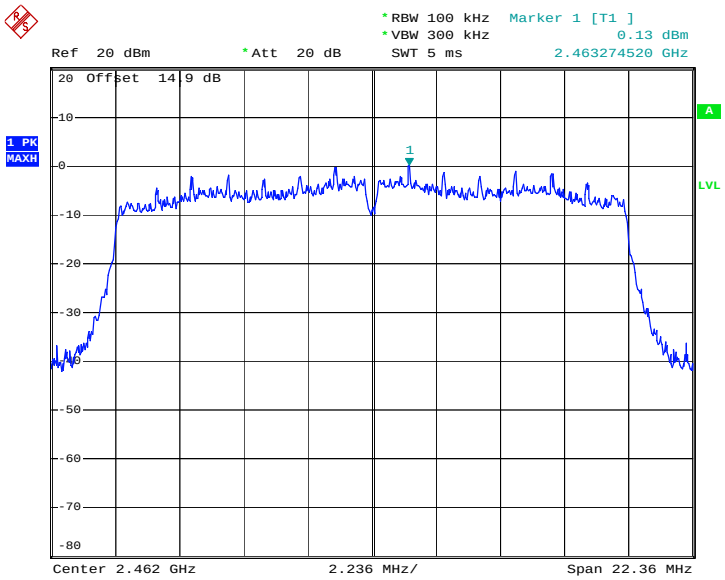
Date: 8.JUN.2012 02:17:13

PSD Plot on 802.11n HT-20 Channel 06



Date: 8.JUN.2012 02:20:43

PSD Plot on 802.11n HT-20 Channel 11



Date: 8.JUN.2012 02:23:26

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

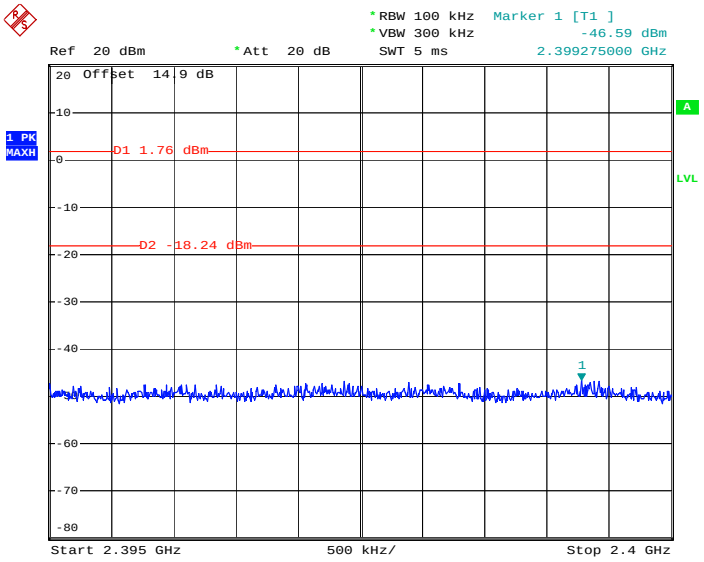
1. The testing follows the guidelines in the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
2. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used. The attenuation is set to 30dB, when maximum conducted output power procedure is used.

3.4.4 Test Setup

3.4.5 Test Plots of Conducted Band Edges

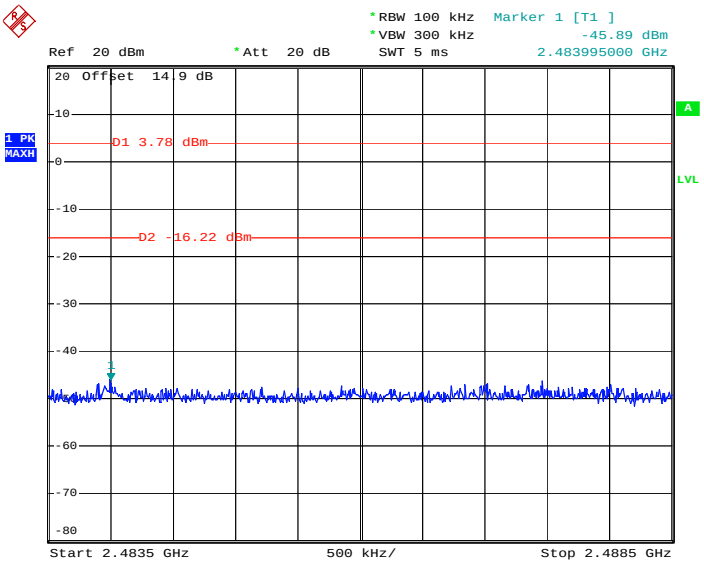
Test Mode :	802.11b	Temperature :	23~24℃
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11b Channel 01



Date: 8.JUN.2012 01:56:32

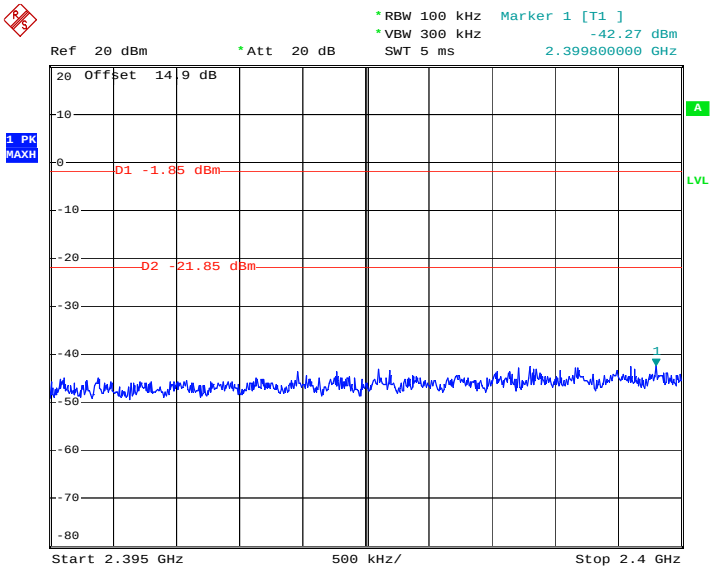
High Band Edge Plot on 802.11b Channel 11



Date: 8.JUN.2012 02:02:42

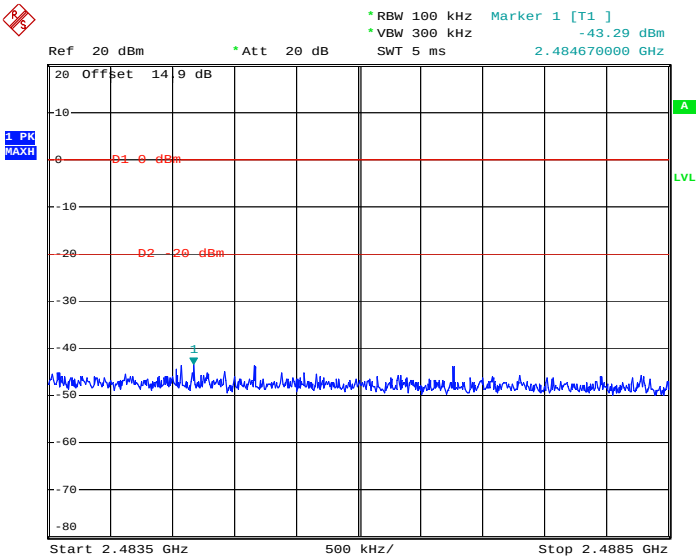
Test Mode :	802.11g	Temperature :	23~24℃
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11g Channel 01



Date: 8.JUN.2012 02:06:41

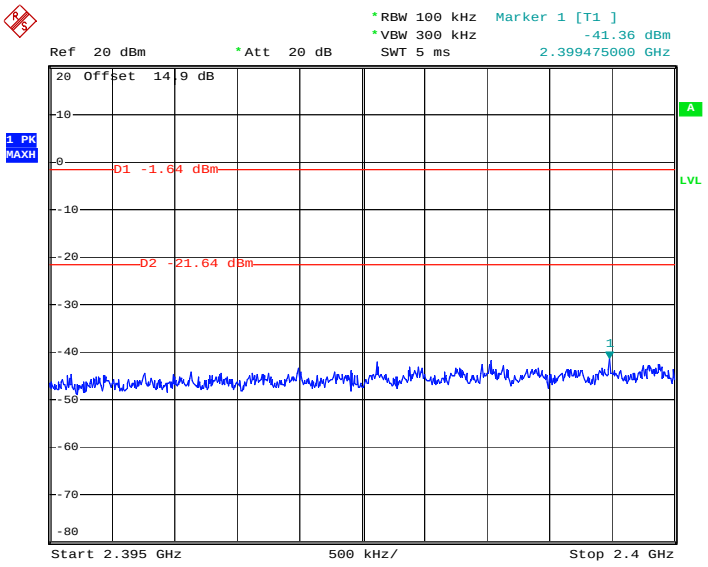
High Band Edge Plot on 802.11g Channel 11



Date: 8.JUN.2012 02:13:49

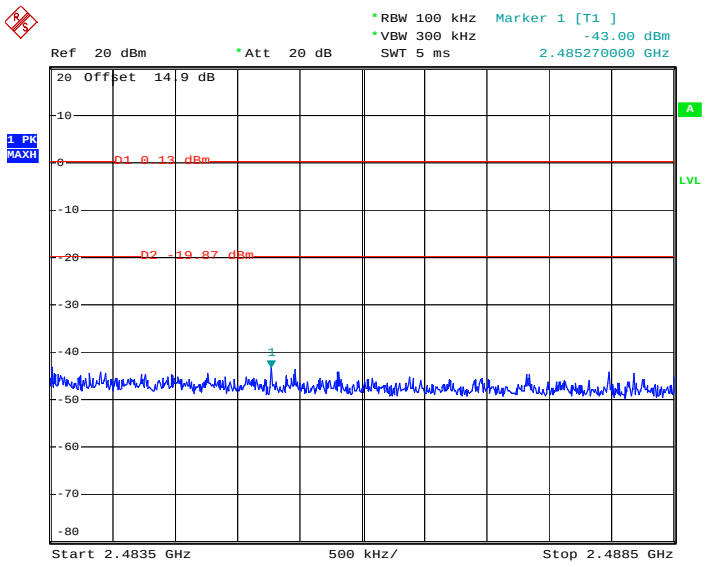
Test Mode :	802.11n HT-20	Temperature :	23~24℃
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11n HT-20 Channel 01



Date: 8.JUN.2012 02:18:14

High Band Edge Plot on 802.11n HT-20 Channel 11



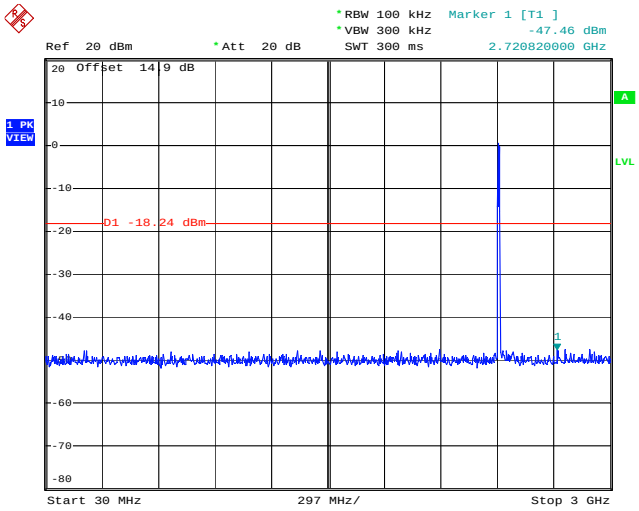
Date: 8.JUN.2012 02:24:07

3.4.6 Test Plots of Spurious Emission

Test Mode :	802.11b	Temperature :	23~24℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11b 30 MHz~3 GHz

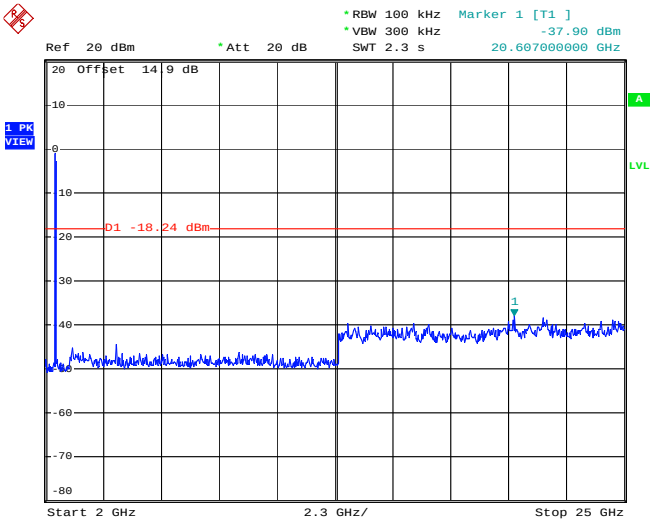
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:17:43

802.11b 2 GHz~25 GHz

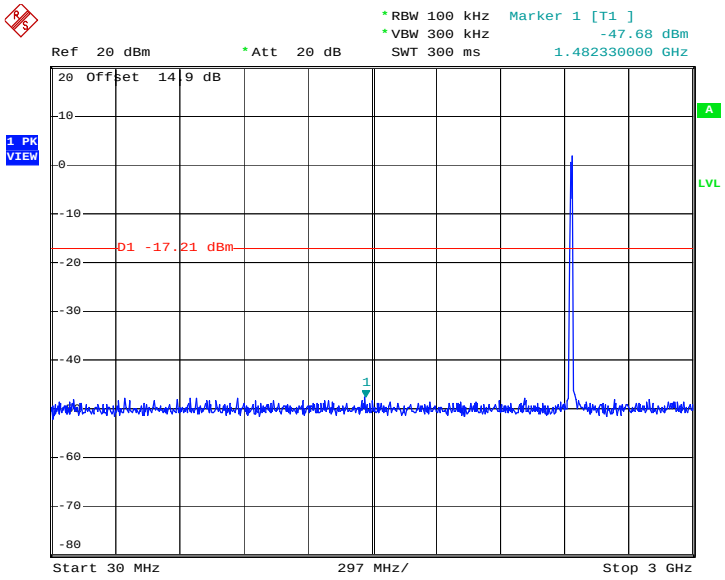
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:18:01

802.11b 30 MHz~3 GHz

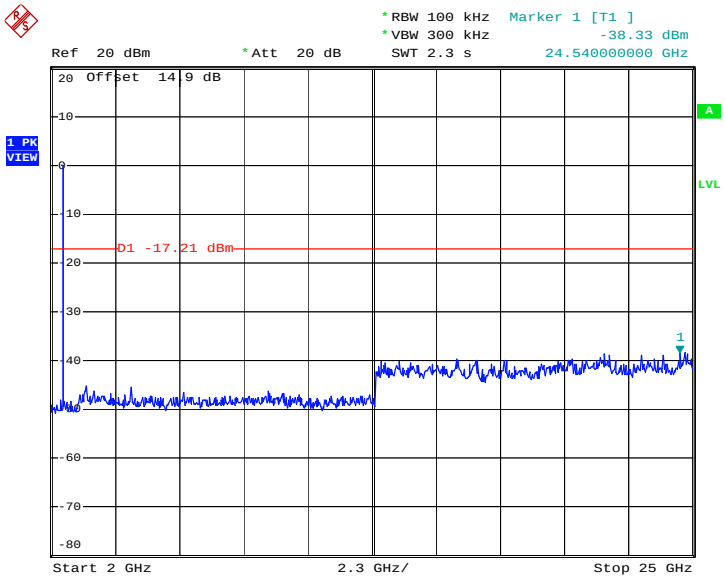
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:28:48

802.11b 2 GHz~25 GHz

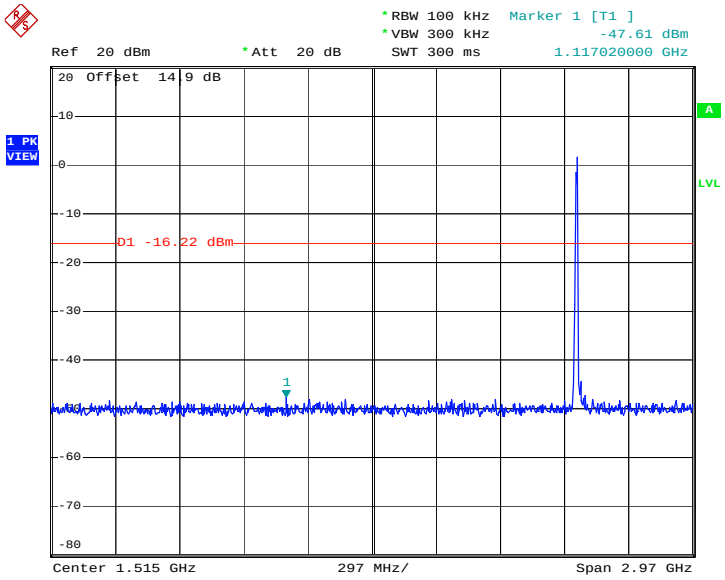
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:29:07

802.11b 30 MHz~3 GHz

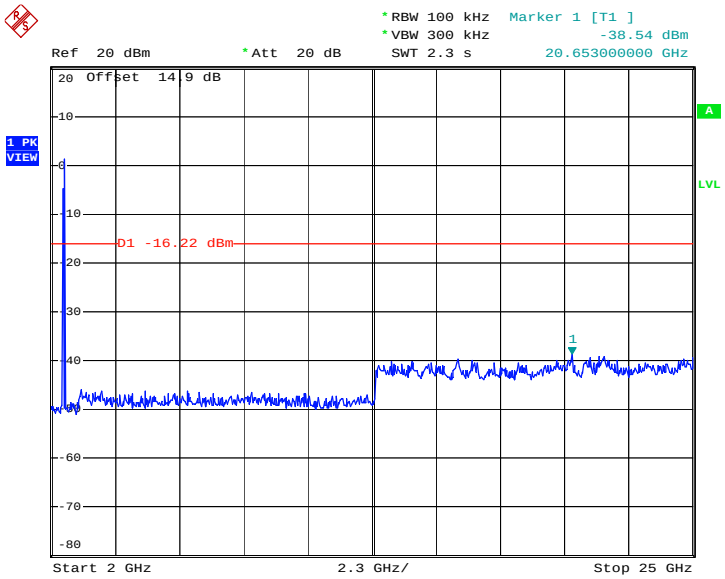
Conducted Spurious Emission Plot on Channel 11



Date: 13.JUN.2012 21:33:40

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11

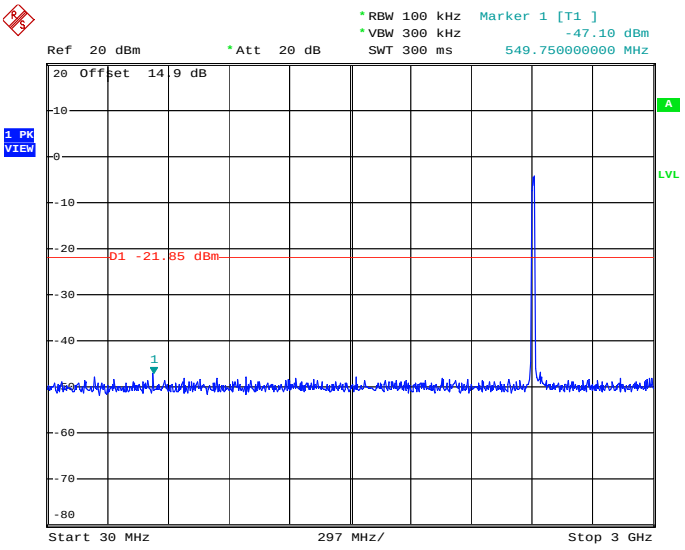


Date: 13.JUN.2012 21:33:58

Test Mode :	802.11g	Temperature :	23~24℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11g 30 MHz~3 GHz

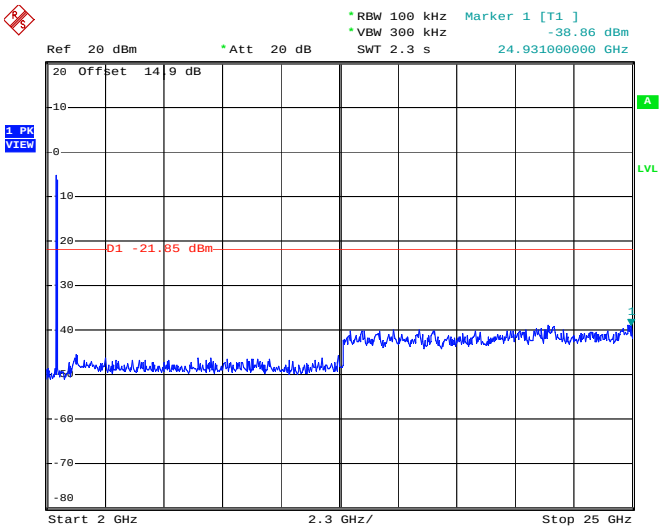
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:37:32

802.11g 2 GHz~25 GHz

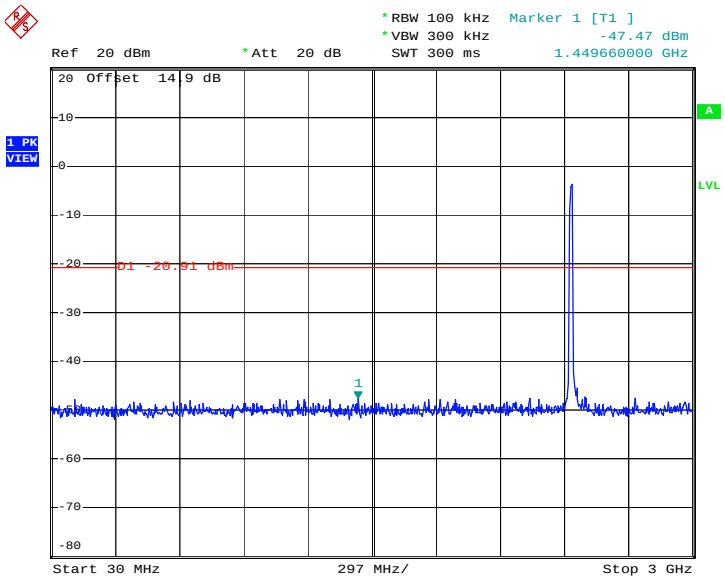
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:37:50

802.11g 30 MHz~3 GHz

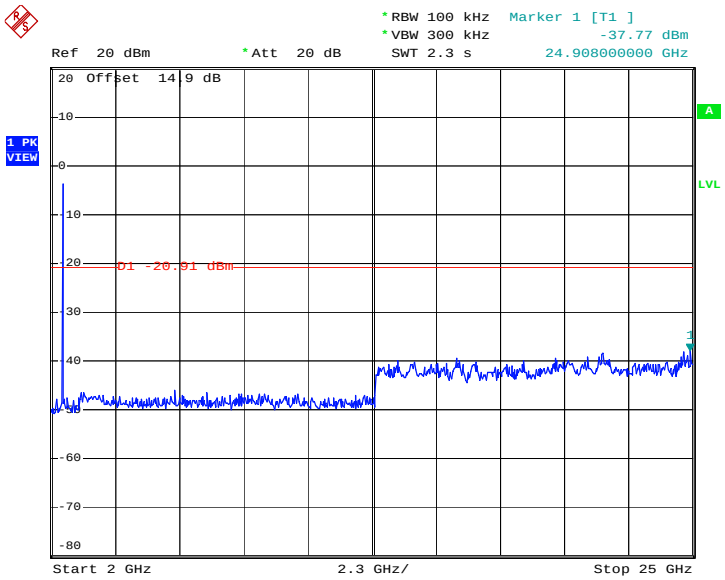
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:44:27

802.11g 2 GHz~25 GHz

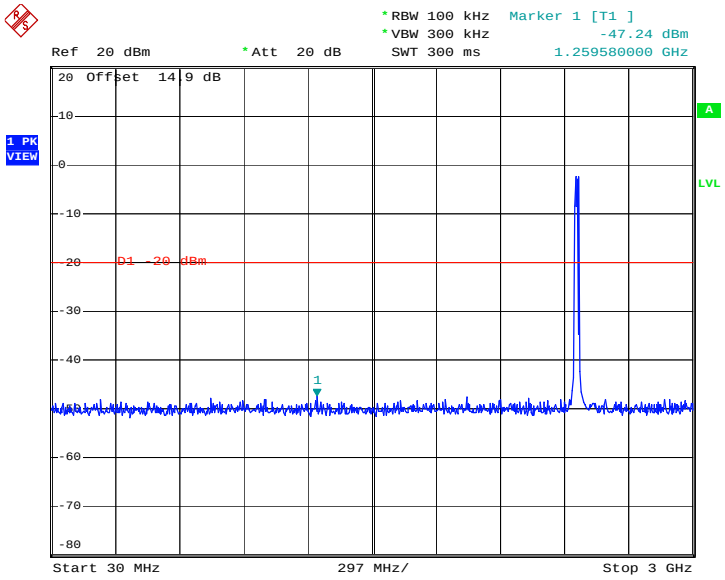
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:44:45

802.11g 30 MHz~3 GHz

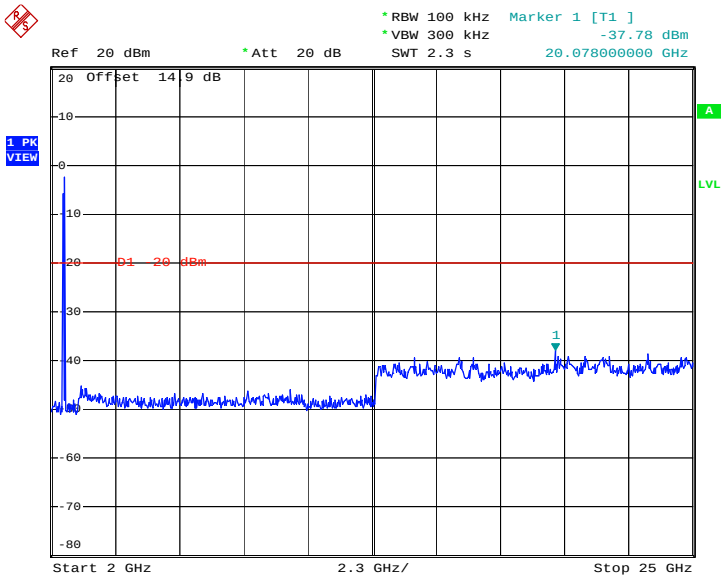
Conducted Spurious Emission Plot on Channel 11



Date: 13.JUN.2012 21:47:08

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11

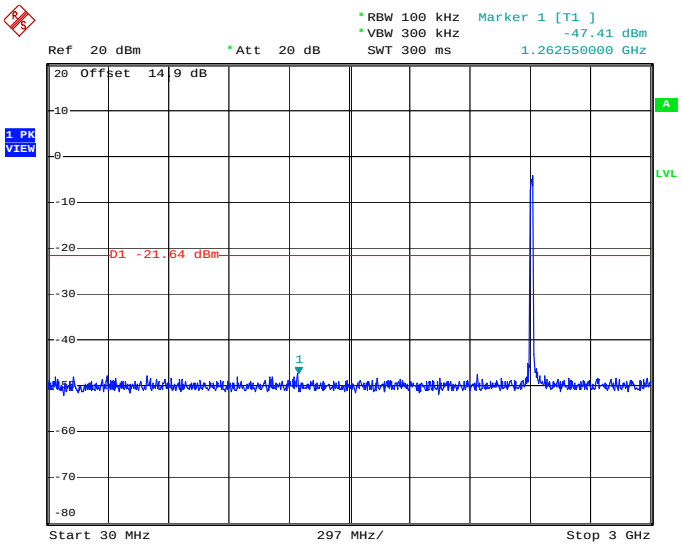


Date: 13.JUN.2012 21:47:26

Test Mode :	802.11n HT-20	Temperature :	23~24℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	47~48%
Test Channel :	01, 06, 11	Test Engineer :	Lizy Li

802.11n HT-20 30 MHz~3 GHz

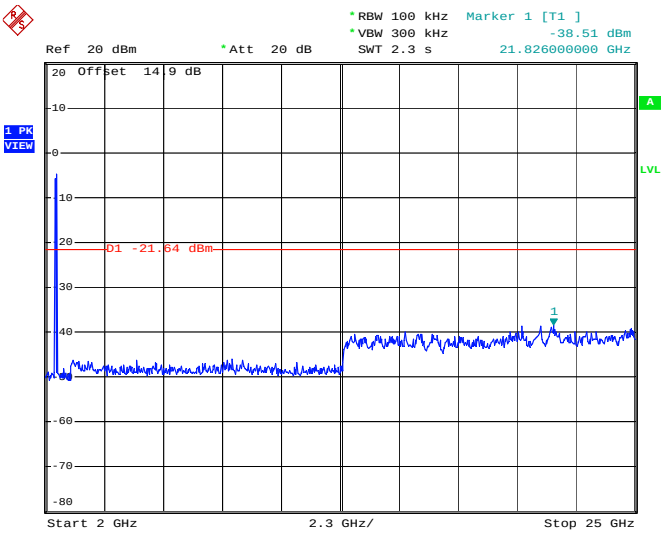
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:50:11

802.11n HT-20 2 GHz~25 GHz

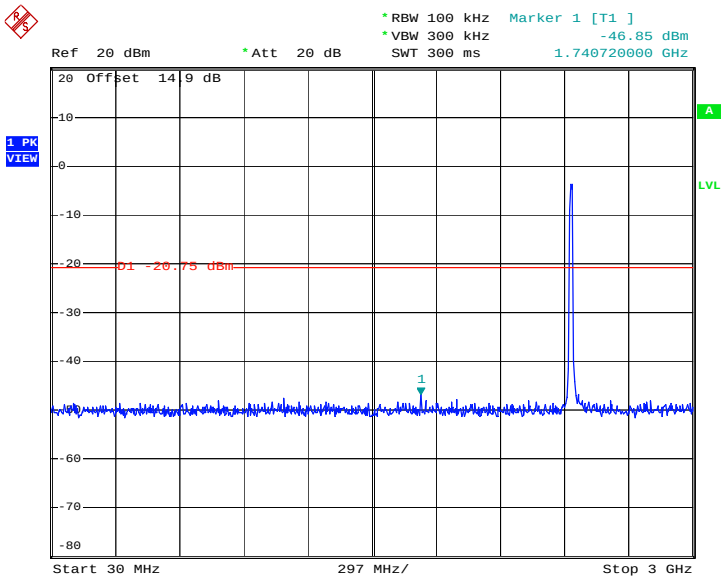
Conducted Spurious Emission Plot on Channel 01



Date: 13.JUN.2012 21:50:29

802.11n HT-20 30 MHz~3 GHz

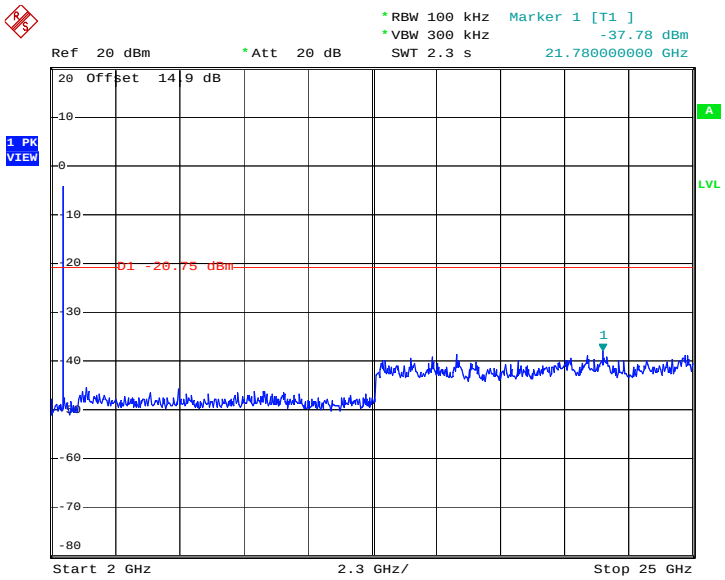
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:52:51

802.11n HT-20 2 GHz~25 GHz

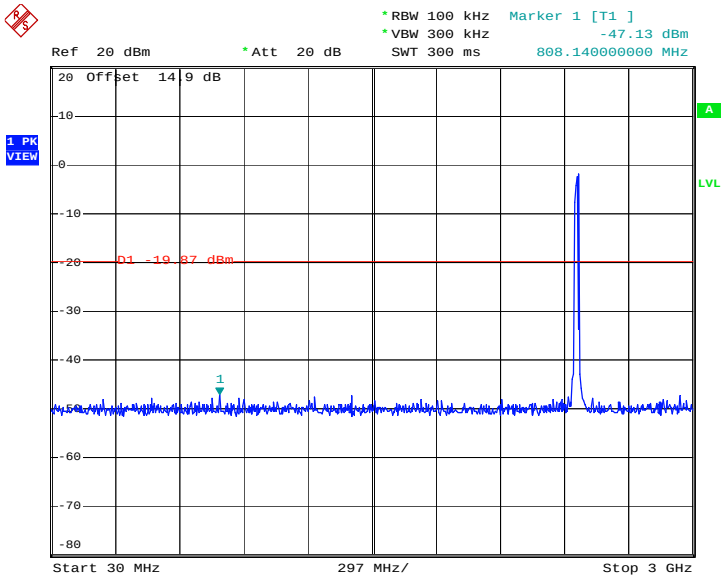
Conducted Spurious Emission Plot on Channel 06



Date: 13.JUN.2012 21:53:10

802.11n HT-20 30 MHz~3 GHz

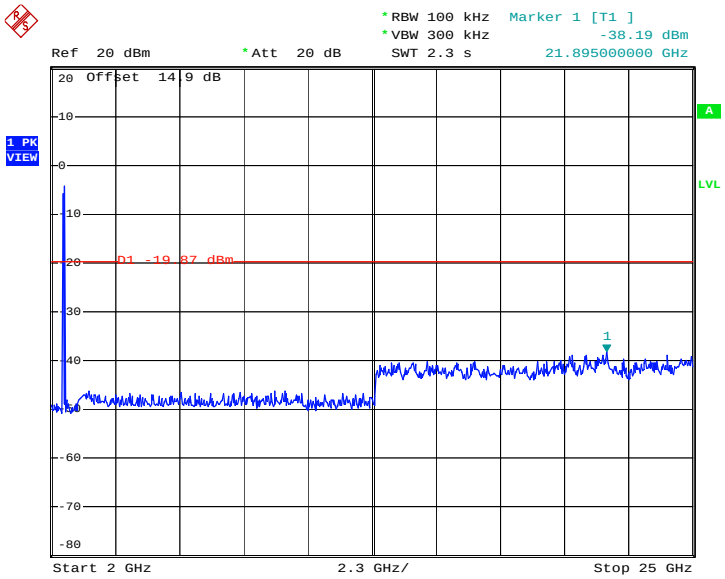
Conducted Spurious Emission Plot on Channel 11



Date: 13.JUN.2012 21:55:07

802.11n HT-20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



Date: 13.JUN.2012 21:55:25

3.5 Radiated Emission Measurement

3.5.1 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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows TCB Workshop 2012, April and the guidelines in ANSI C63.10-2009 and fulfills ANSI C63.4-2003 test site requirement. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. 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.
2. The EUT was placed on a turntable with 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving Antenna, which was mounted on the top of a variable height Antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. 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 ≥ 1 GHz, 100 KHz for f < 1 GHz; VBW ≥ 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.

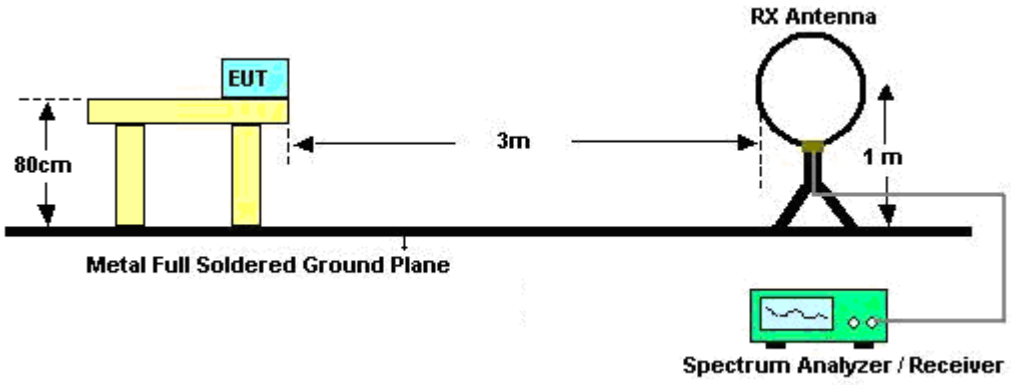
Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB)

6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

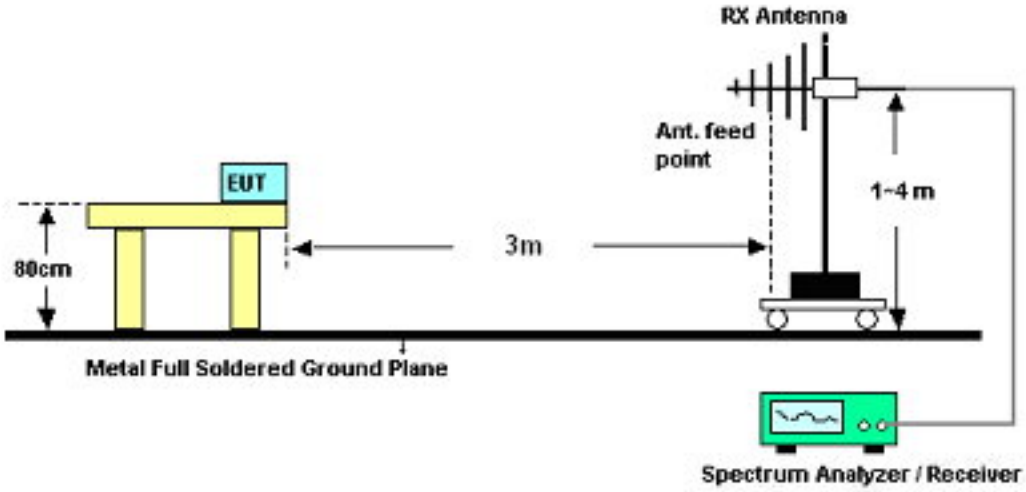
7. If the emission level of the EUT measured by the peak detector is more than 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported

3.5.4 Test Setup

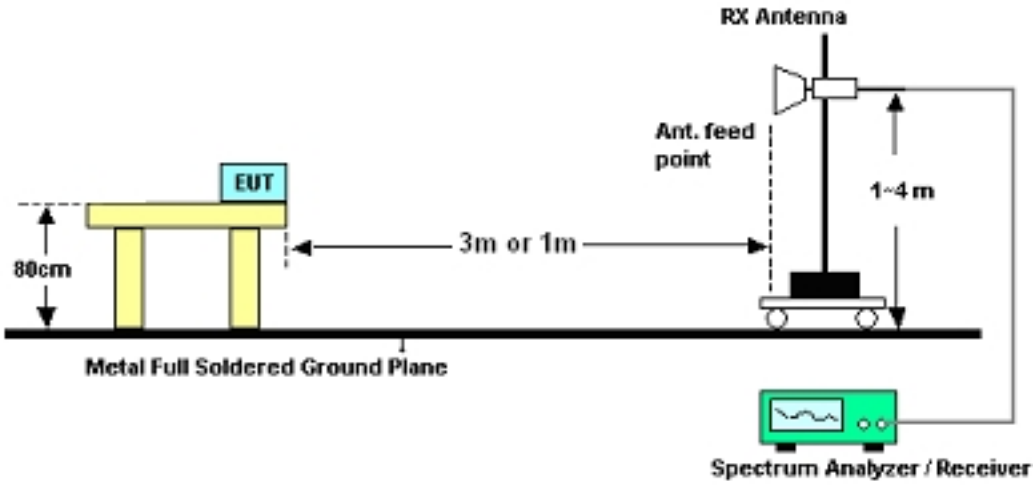
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 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.

3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	40~41%
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
2389.42	53.19	-20.81	74	50.91	32.86	3.47	34.05	116	351	Peak
2389.42	42.34	-11.66	54	40.06	32.86	3.47	34.05	116	351	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	55.42	-18.58	74	53.14	32.86	3.47	34.05	100	245	Peak
2389.99	45.08	-8.92	54	42.8	32.86	3.47	34.05	100	245	Average

Test Mode :	802.11b	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	40~41%
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
2483.85	51.49	-22.51	74	49	33.01	3.68	34.2	113	0	Peak
2483.85	39.89	-14.11	54	37.4	33.01	3.68	34.2	113	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
2498.67	51.64	-22.36	74	49.1	33.05	3.72	34.23	100	257	Peak
2498.67	39.56	-14.44	54	37.02	33.05	3.72	34.23	100	257	Average

Test Mode :	802.11g	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	40~41%
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
2389.04	59.43	-14.57	74	57.15	32.86	3.47	34.05	120	360	Peak
2389.04	44.99	-9.01	54	42.71	32.86	3.47	34.05	120	360	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
2387.71	60.29	-13.71	74	58.01	32.86	3.47	34.05	100	230	Peak
2387.71	46.21	-7.79	54	43.93	32.86	3.47	34.05	100	230	Average

Test Mode :	802.11g	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	40~41%
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
2484.99	61.19	-12.81	74	58.7	33.01	3.68	34.2	111	360	Peak
2484.99	43.97	-10.03	54	41.48	33.01	3.68	34.2	111	360	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
2486.32	59.13	-14.87	74	56.64	33.01	3.68	34.2	110	288	Peak
2486.32	44.1	-9.9	54	41.61	33.01	3.68	34.2	110	288	Average

Test Mode :	802.11n HT-20	Temperature :	21~22°C
Test Band :	Low	Relative Humidity :	40~41%
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
2389.23	60.11	-13.89	74	57.83	32.86	3.47	34.05	130	360	Peak
2389.23	43.54	-10.46	54	41.26	32.86	3.47	34.05	130	360	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
2388.85	56.41	-17.59	74	54.13	32.86	3.47	34.05	100	300	Peak
2388.85	40.75	-13.25	54	38.47	32.86	3.47	34.05	100	300	Average

Test Mode :	802.11n HT-20	Temperature :	21~22°C
Test Band :	High	Relative Humidity :	40~41%
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
2484.99	64.92	-9.08	74	62.43	33.01	3.68	34.2	127	360	Peak
2484.99	40.16	-13.84	54	37.67	33.01	3.68	34.2	127	360	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	54.64	-19.36	74	52.15	33.01	3.68	34.2	135	344	Peak
2484.42	42.04	-11.96	54	39.55	33.01	3.68	34.2	135	344	Average

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

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
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	32.37	-7.63	40	44.19	18	0.26	30.08	262	325	QP
89.17	35.81	-7.69	43.5	56.8	8.61	0.39	29.99	-	-	Peak
171.62	33	-10.5	43.5	53.27	9.08	0.55	29.9	-	-	Peak
270.56	26.65	-19.35	46	43.48	12.39	0.69	29.91	-	-	Peak
670.2	25.87	-20.13	46	35.4	19.05	1.1	29.68	-	-	Peak
869.05	26.78	-19.22	46	34.6	20.49	1.29	29.6	-	-	Peak
2389.42	53.19	-20.81	74	50.91	32.86	3.47	34.05	116	351	Peak
2389.42	42.34	-11.66	54	40.06	32.86	3.47	34.05	116	351	Average
2412	104.58	-	-	102.25	32.89	3.52	34.08	116	351	Peak
2412	100.24	-	-	97.91	32.89	3.52	34.08	116	351	Average
2495.44	50.66	-23.34	74	48.12	33.05	3.72	34.23	116	351	Peak
2495.44	35.21	-18.79	54	32.67	33.05	3.72	34.23	116	351	Average
4824	51.83	-22.17	74	43.96	35.17	4.97	32.27	111	332	Peak
4824	44.28	-9.72	54	36.41	35.17	4.97	32.27	111	332	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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
61.04	32.65	-7.35	40	57.19	5.28	0.31	30.13	-	-	Peak
97.9	37.34	-6.16	43.5	56.75	10.15	0.41	29.97	124	198	Peak
129.91	29.1	-14.4	43.5	46.92	11.7	0.47	29.99	-	-	Peak
579.99	26.08	-19.92	46	36.12	18.56	1.04	29.64	-	-	Peak
720.64	29	-17	46	37.98	19.53	1.15	29.66	-	-	Peak
994.18	29.08	-24.92	54	36.12	21.07	1.41	29.52	-	-	Peak
2389.99	55.42	-18.58	74	53.14	32.86	3.47	34.05	100	245	Peak
2389.99	45.08	-8.92	54	42.8	32.86	3.47	34.05	100	245	Average
2412	106.81	-	-	104.48	32.89	3.52	34.08	100	245	Peak
2412	100.62	-	-	98.29	32.89	3.52	34.08	100	245	Average
2497.72	50.75	-23.25	74	48.21	33.05	3.72	34.23	100	245	Peak
2497.72	37.94	-16.06	54	35.4	33.05	3.72	34.23	100	245	Average
4824	51.99	-22.01	74	44.12	35.17	4.97	32.27	100	44	Peak
4824	43.32	-10.68	54	35.45	35.17	4.97	32.27	100	44	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	36.16	-3.84	40	48.7	17.29	0.25	30.08	100	360	Peak
89.17	36.02	-7.48	43.5	57.01	8.61	0.39	29.99	-	-	Peak
171.62	32.84	-10.66	43.5	53.11	9.08	0.55	29.9	-	-	Peak
270.56	27.77	-18.23	46	44.6	12.39	0.69	29.91	-	-	Peak
666.32	26.1	-19.9	46	35.66	19.01	1.1	29.67	-	-	Peak
924.34	26.11	-19.89	46	33.71	20.59	1.32	29.51	-	-	Peak
2354.84	50.02	-23.98	74	47.81	32.81	3.38	33.98	116	359	Peak
2354.84	37.31	-16.69	54	35.1	32.81	3.38	33.98	116	359	Average
2437	102.19	-	-	99.79	32.95	3.6	34.15	116	359	Peak
2437	97.99	-	-	95.59	32.95	3.6	34.15	116	359	Average
2496.39	50.26	-23.74	74	47.72	33.05	3.72	34.23	116	359	Peak
2496.39	39.35	-14.65	54	36.81	33.05	3.72	34.23	116	359	Average
4875	50.55	-23.45	74	42.66	35.18	4.98	32.27	130	332	Peak
4875	42.6	-11.4	54	34.71	35.18	4.98	32.27	130	332	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
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
61.04	33.4	-6.6	40	57.94	5.28	0.31	30.13	-	-	Peak
97.9	37.93	-5.57	43.5	57.34	10.15	0.41	29.97	129	324	Peak
133.79	29.22	-14.28	43.5	47.34	11.39	0.48	29.99	-	-	Peak
616.85	26.23	-19.77	46	36.1	18.68	1.08	29.63	-	-	Peak
718.7	30.28	-15.72	46	39.3	19.5	1.15	29.67	-	-	Peak
986.42	29.1	-24.9	54	36.2	21.02	1.4	29.52	-	-	Peak
2379.16	50.94	-23.06	74	48.7	32.83	3.42	34.01	106	65	Peak
2379.16	37.57	-16.43	54	35.33	32.83	3.42	34.01	106	65	Average
2437	104.29	-	-	101.89	32.95	3.6	34.15	106	65	Peak
2437	97.85	-	-	95.45	32.95	3.6	34.15	106	65	Average
2496.39	51.56	-22.44	74	49.02	33.05	3.72	34.23	106	65	Peak
2496.39	38.09	-15.91	54	35.55	33.05	3.72	34.23	106	65	Average
4875	51.26	-22.74	74	43.37	35.18	4.98	32.27	110	324	Peak
4875	43.07	-10.93	54	35.18	35.18	4.98	32.27	110	324	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	35.16	-4.84	40	47.7	17.29	0.25	30.08	176	53	Peak
90.14	37.54	-5.96	43.5	58.24	8.9	0.39	29.99	-	-	Peak
171.62	32.72	-10.78	43.5	52.99	9.08	0.55	29.9	-	-	Peak
270.56	27.41	-18.59	46	44.24	12.39	0.69	29.91	-	-	Peak
667.29	27.94	-18.06	46	37.49	19.02	1.1	29.67	-	-	Peak
900.09	26.46	-19.54	46	34.19	20.45	1.3	29.48	-	-	Peak
2376.5	49.17	-24.83	74	46.93	32.83	3.42	34.01	113	0	Peak
2376.5	35.94	-18.06	54	33.7	32.83	3.42	34.01	113	0	Average
2462	101.84	-	-	99.39	32.98	3.64	34.17	113	0	Peak
2462	97.57	-	-	95.12	32.98	3.64	34.17	113	0	Average
2483.85	51.49	-22.51	74	49	33.01	3.68	34.2	113	0	Peak
2483.85	39.89	-14.11	54	37.4	33.01	3.68	34.2	113	0	Average
4923	52.35	-21.65	74	44.43	35.19	4.99	32.26	113	0	Peak
4923	43.73	-10.27	54	35.81	35.19	4.99	32.26	113	0	Average

Test Mode :	802.11b	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
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
30.97	34.99	-5.01	40	47.53	17.29	0.25	30.08	189	45	Peak
97.9	37.48	-6.02	43.5	56.89	10.15	0.41	29.97	-	-	Peak
134.76	29.13	-14.37	43.5	47.34	11.3	0.48	29.99	-	-	Peak
270.56	27.05	-18.95	46	43.88	12.39	0.69	29.91	-	-	Peak
718.7	29.08	-16.92	46	38.1	19.5	1.15	29.67	-	-	Peak
988.36	29.78	-24.22	54	36.87	21.03	1.4	29.52	-	-	Peak
2321.97	49.46	-24.54	74	47.33	32.76	3.27	33.9	100	257	Peak
2321.97	35.62	-18.38	54	33.49	32.76	3.27	33.9	100	257	Average
2462	103.25	-	-	100.8	32.98	3.64	34.17	100	257	Peak
2462	98.72	-	-	96.27	32.98	3.64	34.17	100	257	Average
2498.67	51.64	-22.36	74	49.1	33.05	3.72	34.23	100	257	Peak
2498.67	39.56	-14.44	54	37.02	33.05	3.72	34.23	100	257	Average
4923	50.85	-23.15	74	42.93	35.19	4.99	32.26	100	234	Peak
4923	39.28	-14.72	54	31.36	35.19	4.99	32.26	100	234	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
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	35.25	-4.75	40	47.07	18	0.26	30.08	189	78	Peak
90.14	37.44	-6.06	43.5	58.14	8.9	0.39	29.99	-	-	Peak
171.62	33.83	-9.67	43.5	54.1	9.08	0.55	29.9	-	-	Peak
355.92	25.87	-20.13	46	40.35	14.63	0.82	29.93	-	-	Peak
670.2	26.2	-19.8	46	35.73	19.05	1.1	29.68	-	-	Peak
924.34	26.55	-19.45	46	34.15	20.59	1.32	29.51	-	-	Peak
2389.04	59.43	-14.57	74	57.15	32.86	3.47	34.05	120	360	Peak
2389.04	44.99	-9.01	54	42.71	32.86	3.47	34.05	120	360	Average
2412	106.13	-	-	103.8	32.89	3.52	34.08	120	360	Peak
2412	94.65	-	-	92.32	32.89	3.52	34.08	120	360	Average
2498.29	51.96	-22.04	74	49.42	33.05	3.72	34.23	120	360	Peak
2498.29	39.26	-14.74	54	36.72	33.05	3.72	34.23	120	360	Average
4824	52.99	-21.01	74	45.12	35.17	4.97	32.27	128	268	Peak
4824	39.76	-14.24	54	31.89	35.17	4.97	32.27	128	268	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.97	35.98	-4.02	40	48.52	17.29	0.25	30.08	127	261	Peak
97.9	37.42	-6.08	43.5	56.83	10.15	0.41	29.97	-	-	Peak
131.85	29.19	-14.31	43.5	47.16	11.55	0.47	29.99	-	-	Peak
270.56	26.98	-19.02	46	43.81	12.39	0.69	29.91	-	-	Peak
721.61	29.51	-16.49	46	38.46	19.55	1.15	29.65	-	-	Peak
990.3	29.64	-24.36	54	36.7	21.05	1.41	29.52	-	-	Peak
2387.71	60.29	-13.71	74	58.01	32.86	3.47	34.05	100	230	Peak
2387.71	46.21	-7.79	54	43.93	32.86	3.47	34.05	100	230	Average
2412	107.62	-	-	105.29	32.89	3.52	34.08	100	230	Peak
2412	94.9	-	-	92.57	32.89	3.52	34.08	100	230	Average
2496.39	50.35	-23.65	74	47.81	33.05	3.72	34.23	100	230	Peak
2496.39	39.08	-14.92	54	36.54	33.05	3.72	34.23	100	230	Average
4824	51.94	-22.06	74	44.07	35.17	4.97	32.27	100	230	Peak
4824	40.04	-13.96	54	32.17	35.17	4.97	32.27	100	230	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	36.58	-3.42	40	48.4	18	0.26	30.08	189	65	Peak
90.14	35.13	-8.37	43.5	55.83	8.9	0.39	29.99	-	-	Peak
134.76	32.26	-11.24	43.5	50.47	11.3	0.48	29.99	-	-	Peak
515.97	23.61	-22.39	46	34.81	17.55	0.97	29.72	-	-	Peak
665.35	26.41	-19.59	46	35.98	19	1.1	29.67	-	-	Peak
902.03	26.88	-19.12	46	34.6	20.46	1.3	29.48	-	-	Peak
2387.33	51.76	-22.24	74	49.48	32.86	3.47	34.05	118	360	Peak
2387.33	39.68	-14.32	54	37.4	32.86	3.47	34.05	118	360	Average
2437	103.43	-	-	101.03	32.95	3.6	34.15	118	360	Peak
2437	91.85	-	-	89.45	32.95	3.6	34.15	118	360	Average
2494.3	51.76	-22.24	74	49.22	33.05	3.72	34.23	118	360	Peak
2494.3	39.66	-14.34	54	37.12	33.05	3.72	34.23	118	360	Average
4875	51.4	-22.6	74	43.51	35.18	4.98	32.27	126	342	Peak
4875	39.8	-14.2	54	31.91	35.18	4.98	32.27	126	342	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
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
30.97	36.29	-3.71	40	48.83	17.29	0.25	30.08	128	258	Peak
97.9	37.62	-5.88	43.5	57.03	10.15	0.41	29.97	-	-	Peak
129.91	29.57	-13.93	43.5	47.39	11.7	0.47	29.99	-	-	Peak
270.56	25.93	-20.07	46	42.76	12.39	0.69	29.91	-	-	Peak
720.64	29.21	-16.79	46	38.19	19.53	1.15	29.66	-	-	Peak
990.3	30.1	-23.9	54	37.16	21.05	1.41	29.52	-	-	Peak
2388.47	52.3	-21.7	74	50.02	32.86	3.47	34.05	100	231	Peak
2388.47	41.01	-12.99	54	38.73	32.86	3.47	34.05	100	231	Average
2437	105.19	-	-	102.79	32.95	3.6	34.15	100	231	Peak
2437	93.07	-	-	90.67	32.95	3.6	34.15	100	231	Average
2500	51.93	-22.07	74	49.39	33.05	3.72	34.23	100	231	Peak
2500	40.17	-13.83	54	37.63	33.05	3.72	34.23	100	231	Average
4875	53.08	-20.92	74	45.19	35.18	4.98	32.27	100	352	Peak
4875	39.96	-14.04	54	32.07	35.18	4.98	32.27	100	352	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	30.17	-9.83	40	41.99	18	0.26	30.08	200	45	QP
89.17	34.76	-8.74	43.5	55.75	8.61	0.39	29.99	-	-	Peak
132.82	32.62	-10.88	43.5	50.66	11.47	0.48	29.99	-	-	Peak
171.62	31.06	-12.44	43.5	51.33	9.08	0.55	29.9	-	-	Peak
668.26	26.78	-19.22	46	36.33	19.03	1.1	29.68	-	-	Peak
874.87	27.61	-18.39	46	35.41	20.48	1.29	29.57	-	-	Peak
2379.54	49.66	-24.34	74	47.42	32.83	3.42	34.01	111	360	Peak
2379.54	36.33	-17.67	54	34.09	32.83	3.42	34.01	111	360	Average
2462	103.28	-	-	100.83	32.98	3.64	34.17	111	360	Peak
2462	91.91	-	-	89.46	32.98	3.64	34.17	111	360	Average
2484.99	61.19	-12.81	74	58.7	33.01	3.68	34.2	111	360	Peak
2484.99	43.97	-10.03	54	41.48	33.01	3.68	34.2	111	360	Average
4924	52.08	-21.92	74	44.16	35.19	4.99	32.26	129	276	Peak
4924	40.15	-13.85	54	32.23	35.19	4.99	32.26	129	276	Average

Test Mode :	802.11g	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
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
61.04	32.98	-7.02	40	57.52	5.28	0.31	30.13	125	268	Peak
97.9	36.32	-7.18	43.5	55.73	10.15	0.41	29.97	-	-	Peak
472.32	23.62	-22.38	46	35.8	16.67	0.92	29.77	-	-	Peak
579.02	27.3	-18.7	46	37.34	18.56	1.04	29.64	-	-	Peak
722.58	29.13	-16.87	46	38.07	19.56	1.15	29.65	-	-	Peak
992.24	29.46	-24.54	54	36.51	21.06	1.41	29.52	-	-	Peak
2330.71	49.97	-24.03	74	47.84	32.76	3.27	33.9	110	288	Peak
2330.71	36.12	-17.88	54	33.99	32.76	3.27	33.9	110	288	Average
2462	103.95	-	-	101.5	32.98	3.64	34.17	110	288	Peak
2462	90.77	-	-	88.32	32.98	3.64	34.17	110	288	Average
2486.32	59.13	-14.87	74	56.64	33.01	3.68	34.2	110	288	Peak
2486.32	44.1	-9.9	54	41.61	33.01	3.68	34.2	110	288	Average
4924	52	-22	74	44.08	35.19	4.99	32.26	100	360	Peak
4924	40.15	-13.85	54	32.23	35.19	4.99	32.26	100	360	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
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	31.22	-8.78	40	43.04	18	0.26	30.08	135	318	QP
91.11	36.04	-7.46	43.5	56.52	9.12	0.39	29.99	-	-	Peak
171.62	30.29	-13.21	43.5	50.56	9.08	0.55	29.9	-	-	Peak
282.2	28.43	-17.57	46	44.97	12.7	0.71	29.95	-	-	Peak
671.17	26	-20	46	35.51	19.06	1.11	29.68	-	-	Peak
900.09	27.42	-18.58	46	35.15	20.45	1.3	29.48	-	-	Peak
2389.23	60.11	-13.89	74	57.83	32.86	3.47	34.05	130	360	Peak
2389.23	43.54	-10.46	54	41.26	32.86	3.47	34.05	130	360	Average
2412	105.6	-	-	103.27	32.89	3.52	34.08	130	360	Peak
2412	92.62	-	-	90.29	32.89	3.52	34.08	130	360	Average
2498.48	51.04	-22.96	74	48.5	33.05	3.72	34.23	130	360	Peak
2498.48	38.43	-15.57	54	35.89	33.05	3.72	34.23	130	360	Average
4824	52.88	-21.12	74	45.01	35.17	4.97	32.27	130	360	Peak
4824	40.24	-13.76	54	32.37	35.17	4.97	32.27	130	360	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	40~41%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.97	34.43	-5.57	40	46.97	17.29	0.25	30.08	126	315	Peak
97.9	36.62	-6.88	43.5	56.03	10.15	0.41	29.97	-	-	Peak
240.49	26.35	-19.65	46	43.95	11.56	0.66	29.82	-	-	Peak
578.05	26.81	-19.19	46	36.85	18.56	1.04	29.64	-	-	Peak
719.67	28.97	-17.03	46	37.96	19.52	1.15	29.66	-	-	Peak
990.3	29.4	-24.6	54	36.46	21.05	1.41	29.52	-	-	Peak
2388.85	56.41	-17.59	74	54.13	32.86	3.47	34.05	100	300	Peak
2388.85	40.75	-13.25	54	38.47	32.86	3.47	34.05	100	300	Average
2412	100.54	-	-	98.21	32.89	3.52	34.08	100	300	Peak
2412	88.37	-	-	86.04	32.89	3.52	34.08	100	300	Average
2500	49.78	-24.22	74	47.24	33.05	3.72	34.23	100	300	Peak
2500	36.91	-17.09	54	34.37	33.05	3.72	34.23	100	300	Average
4824	52.04	-21.96	74	44.17	35.17	4.97	32.27	100	360	Peak
4824	40.48	-13.52	54	32.61	35.17	4.97	32.27	100	360	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	31.47	-8.53	40	44.01	17.29	0.25	30.08	224	340	QP
89.17	34.63	-8.87	43.5	55.62	8.61	0.39	29.99	-	-	Peak
133.79	32.19	-11.31	43.5	50.31	11.39	0.48	29.99	-	-	Peak
270.56	30.23	-15.77	46	47.06	12.39	0.69	29.91	-	-	Peak
671.17	26.53	-19.47	46	36.04	19.06	1.11	29.68	-	-	Peak
925.31	25.64	-20.36	46	33.23	20.6	1.32	29.51	-	-	Peak
2388.09	53.07	-20.93	74	50.79	32.86	3.47	34.05	100	360	Peak
2388.09	39.9	-14.1	54	37.62	32.86	3.47	34.05	100	360	Average
2437	105.16	-	-	102.76	32.95	3.6	34.15	100	360	Peak
2437	92.93	-	-	90.53	32.95	3.6	34.15	100	360	Average
2492.78	53.23	-20.77	74	50.69	33.05	3.72	34.23	100	360	Peak
2492.78	39.84	-14.16	54	37.3	33.05	3.72	34.23	100	360	Average
4875	51.76	-22.24	74	43.87	35.18	4.98	32.27	100	329	Peak
4875	39.67	-14.33	54	31.78	35.18	4.98	32.27	100	329	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	40~41%
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
62.01	33.38	-6.62	40	57.92	5.27	0.32	30.13	-	-	Peak
97.9	37.87	-5.63	43.5	57.28	10.15	0.41	29.97	100	352	Peak
270.56	26.74	-19.26	46	43.57	12.39	0.69	29.91	-	-	Peak
581.93	27.51	-18.49	46	37.53	18.57	1.05	29.64	-	-	Peak
719.67	28.75	-17.25	46	37.74	19.52	1.15	29.66	-	-	Peak
990.3	29.17	-24.83	54	36.23	21.05	1.41	29.52	-	-	Peak
2325.77	49.36	-24.64	74	47.23	32.76	3.27	33.9	108	353	Peak
2325.77	35.84	-18.16	54	33.71	32.76	3.27	33.9	108	353	Average
2437	98.11	-	-	95.71	32.95	3.6	34.15	108	353	Peak
2437	87.57	-	-	85.17	32.95	3.6	34.15	108	353	Average
2490.5	49.37	-24.63	74	46.83	33.05	3.72	34.23	108	353	Peak
2490.5	37.74	-16.26	54	35.2	33.05	3.72	34.23	108	353	Average
4875	52.72	-21.28	74	44.83	35.18	4.98	32.27	100	360	Peak
4875	39.92	-14.08	54	32.03	35.18	4.98	32.27	100	360	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
Test Engineer :	Jack Li	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	32.27	-7.73	40	44.81	17.29	0.25	30.08	122	340	QP
89.17	36	-7.5	43.5	56.99	8.61	0.39	29.99	-	-	Peak
132.82	32.3	-11.2	43.5	50.34	11.47	0.48	29.99	-	-	Peak
270.56	30.1	-15.9	46	46.93	12.39	0.69	29.91	-	-	Peak
668.26	25.84	-20.16	46	35.39	19.03	1.1	29.68	-	-	Peak
799.21	25.84	-20.16	46	34.33	19.85	1.25	29.59	-	-	Peak
2389.23	50.74	-23.26	74	48.46	32.86	3.47	34.05	127	360	Peak
2389.23	38.25	-15.75	54	35.97	32.86	3.47	34.05	127	360	Average
2462	104.85	-	-	102.4	32.98	3.64	34.17	127	360	Peak
2462	92.37	-	-	89.92	32.98	3.64	34.17	127	360	Average
2484.99	64.92	-9.08	74	62.43	33.01	3.68	34.2	127	360	Peak
2484.99	40.16	-13.84	54	37.67	33.01	3.68	34.2	127	360	Average
4924	51.17	-22.83	74	43.25	35.19	4.99	32.26	118	40	Peak
4924	40.41	-13.59	54	32.49	35.19	4.99	32.26	118	40	Average

Test Mode :	802.11n-HT20	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	40~41%
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
31.94	34.39	-5.61	40	47.69	16.55	0.24	30.09	121	235	Peak
97.9	37.33	-6.17	43.5	56.74	10.15	0.41	29.97	-	-	Peak
133.79	29.98	-13.52	43.5	48.1	11.39	0.48	29.99	-	-	Peak
257.95	27.07	-18.93	46	44.13	12.12	0.68	29.86	-	-	Peak
719.67	28.77	-17.23	46	37.76	19.52	1.15	29.66	-	-	Peak
990.3	29.95	-24.05	54	37.01	21.05	1.41	29.52	-	-	Peak
2358.83	49.38	-24.62	74	47.17	32.81	3.38	33.98	135	344	Peak
2358.83	40.44	-13.56	54	38.23	32.81	3.38	33.98	135	344	Average
2462	96.56	-	-	94.11	32.98	3.64	34.17	135	344	Peak
2462	87.39	-	-	84.94	32.98	3.64	34.17	135	344	Average
2484.42	54.64	-19.36	74	52.15	33.01	3.68	34.2	135	344	Peak
2484.42	42.04	-11.96	54	39.55	33.01	3.68	34.2	135	344	Average
4924	52.38	-21.62	74	44.46	35.19	4.99	32.26	100	360	Peak
4924	40.24	-13.76	54	32.32	35.19	4.99	32.26	100	360	Average

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.

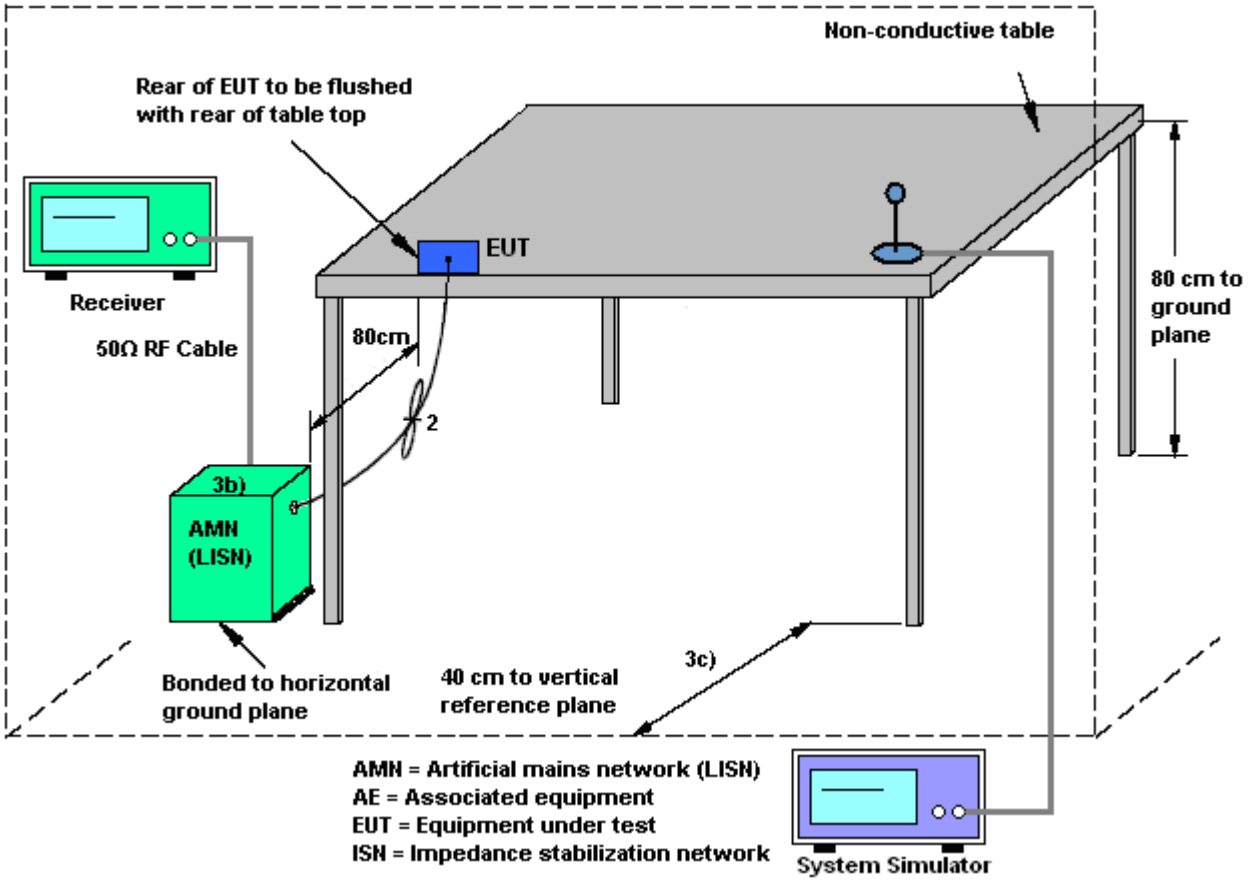
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

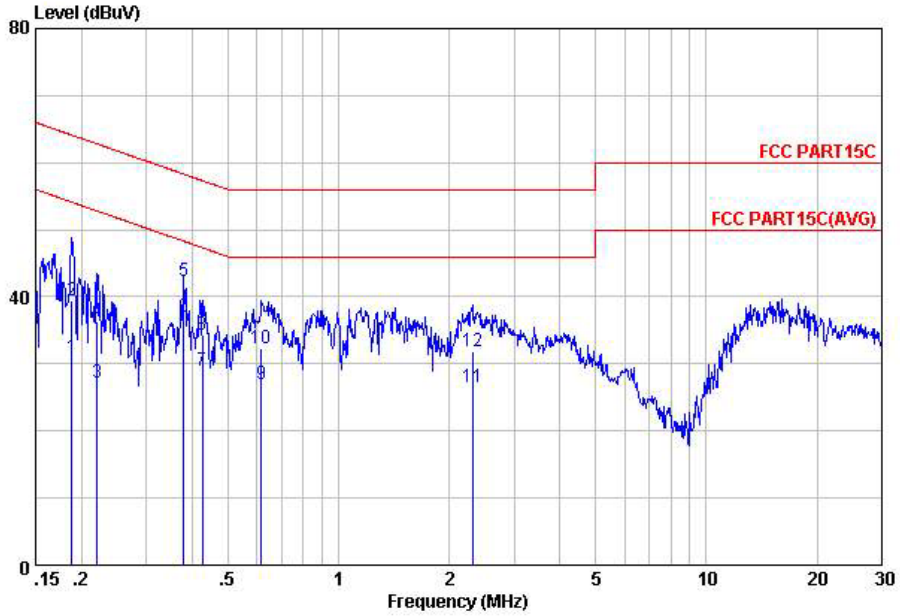
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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℃
Test Engineer :	Tom Wang	**Relative Humidity :**	39~40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

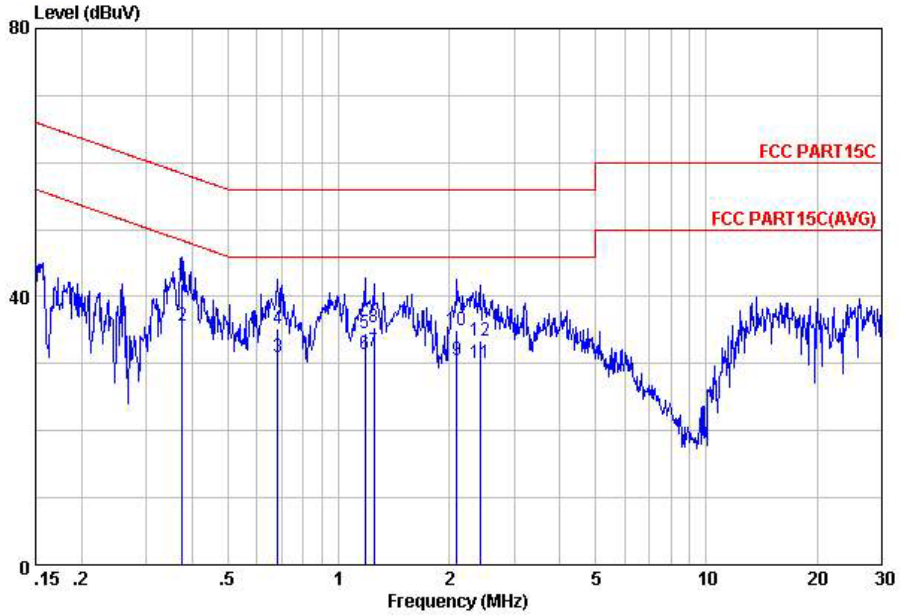


Site : C001-KS
Condition: FCC PART15C LISN-100807 LINE

mode : Mode 1
IMEI : 356379010094173

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19	31.08	-23.03	54.11	21.00	-0.07	10.15	Average
2	0.19	39.48	-24.63	64.11	29.40	-0.07	10.15	QP
3	0.22	27.08	-25.71	52.79	17.00	-0.07	10.15	Average
4	0.22	36.38	-26.41	62.79	26.30	-0.07	10.15	QP
5	0.38	42.41	-15.89	58.30	32.30	-0.08	10.19	QP
6	0.38	36.91	-11.39	48.30	26.80	-0.08	10.19	Average
7	0.43	28.92	-18.41	47.33	18.80	-0.08	10.20	Average
8	0.43	34.42	-22.91	57.33	24.30	-0.08	10.20	QP
9	0.62	27.04	-18.96	46.00	16.91	-0.09	10.22	Average
10	0.62	32.34	-23.66	56.00	22.21	-0.09	10.22	QP
11	2.31	26.43	-19.57	46.00	16.20	-0.11	10.34	Average
12	2.31	31.93	-24.07	56.00	21.70	-0.11	10.34	QP

Test Mode :	Mode 1	Temperature :	19~20℃
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		
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 : 356379010094173

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.38	41.91	-16.48	58.39	31.80	-0.08	10.19	QP
2	0.38	35.61	-12.78	48.39	25.50	-0.08	10.19	Average
3	0.68	31.05	-14.95	46.00	20.90	-0.08	10.23	Average
4	0.68	35.15	-20.85	56.00	25.00	-0.08	10.23	QP
5	1.18	34.58	-21.42	56.00	24.39	-0.09	10.28	QP
6	1.18	31.38	-14.62	46.00	21.19	-0.09	10.28	Average
7	1.25	31.79	-14.21	46.00	21.60	-0.09	10.28	Average
8	1.25	35.49	-20.51	56.00	25.30	-0.09	10.28	QP
9	2.10	30.62	-15.38	46.00	20.40	-0.11	10.33	Average
10	2.10	35.02	-20.98	56.00	24.80	-0.11	10.33	QP
11	2.42	30.14	-15.86	46.00	19.90	-0.11	10.35	Average
12	2.42	33.44	-22.56	56.00	23.20	-0.11	10.35	QP

3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 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	Jun. 08, 2012/ Jun. 13, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 23, 2011	Jun. 08, 2012/ Jun. 13, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 23, 2011	Jun. 08, 2012/ Jun. 13, 2012	Aug. 22, 2012	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 23, 2011	Jun. 08, 2012/ Jun. 13, 2012	Aug. 22, 2012	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	Jun. 08, 2012/ Jun. 13, 2012	Dec. 29, 2012	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	May 25, 2012	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	May 25, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	May 25, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	May 25, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 30, 2011	May 25, 2012	Dec. 29, 2012	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Jun. 13, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Jun. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Jun. 13, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	Jun. 13, 2012	Jul. 27, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Jun. 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Jun. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Jun. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Jun. 13, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Jun. 13, 2012	Oct.10, 2012	Radiation (03CH01-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.54

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.72

Appendix A. Photographs of EUT

Please refer to Sporton report number EP250202 as below.