

# FCC RF Test Report

**APPLICANT** : ZTE CORPORATION  
**EQUIPMENT** : cdma2000 Digital Mobile Handset  
**BRAND NAME** : ZTE  
**MODEL NAME** : N8000  
**FCC ID** : Q78-N8000  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DTS) Digital Transmission System

The product was received on Aug. 03, 2012 and completely tested on Aug. 30, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures 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:



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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	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 1.01 dB at 2483.500 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 14.84 dB at 0.410 MHz
3.7	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, P.R.China

## 1.2 Manufacturer

**ZTE CORPORATION**

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

## 1.3 Feature of Equipment Under Test

Product Feature	
Equipment	cdma2000 Digital Mobile Handset
Brand Name	ZTE
Model Name	N8000
FCC ID	Q78-N8000
EUT supports Radios application	CDMA/EV-DO/WLAN 11bgn/Bluetooth
HW Version	QB8655-03A_V1CMB_B
SW Version	N8000_CKT_1.12
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.

Product Specification subjective to this standard	
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
Maximum Output Power to Antenna	802.11b : 17.39 dBm (0.055 W) 802.11g : 22.62 dBm (0.183 W) 802.11n HT-20 : 22.43 dBm (0.175 W)
Antenna Type	PIFA Antenna with gain 0.35 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

### 1.4 Testing Site

<b>Test Site</b>	SPORTON INTERNATIONAL (KUNSHAN) INC.			
<b>Test Site Location</b>	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
<b>Test Site No.</b>	<b>Sporton Site No.</b>			<b>FCC/IC Registration No.</b>
	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
- ♦ FCC TCB Workshop 2012, April
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

**Remark:**

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



### 1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GWINSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	VOSTRO 1450	PPD-AR5B195	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A

## 2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals 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) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y, Z plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

### 2.1 Carrier Frequency Channel

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 and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

Channel	Frequency	2.4GHz 802.11b mode			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	17.02	16.88	16.89	16.97
CH 06	2437 MHz	17.39	17.18	17.26	17.36
CH 11	2462 MHz	17.26	17.17	17.18	17.22

Channel	Frequency	2.4GHz 802.11g mode							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	22.38	21.7	22.01	21.98	22.36	22.28	22.03	21.67
CH 06	2437 MHz	22.44	22.02	22.28	22.38	22.58	22.41	22.36	22.22
CH 11	2462 MHz	22.62	22.15	22.44	22.03	22.49	22.29	22.58	22.26

Channel	Frequency	2.4GHz 802.11n HT-20 mode							
		OFDM Data Rate							
		MCS=0	MCS=1	MCS=2	MCS=3	MCS=4	MCS=5	MCS=6	MCS=7
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 01	2412 MHz	22.06	21.92	22.05	21.26	20.64	21.02	21.23	18.02
CH 06	2437 MHz	22.29	22.04	22.25	21.69	21.71	21.77	22.05	18.92
CH 11	2462 MHz	22.43	22.17	22.32	22.24	22.22	22.34	22.41	19.39

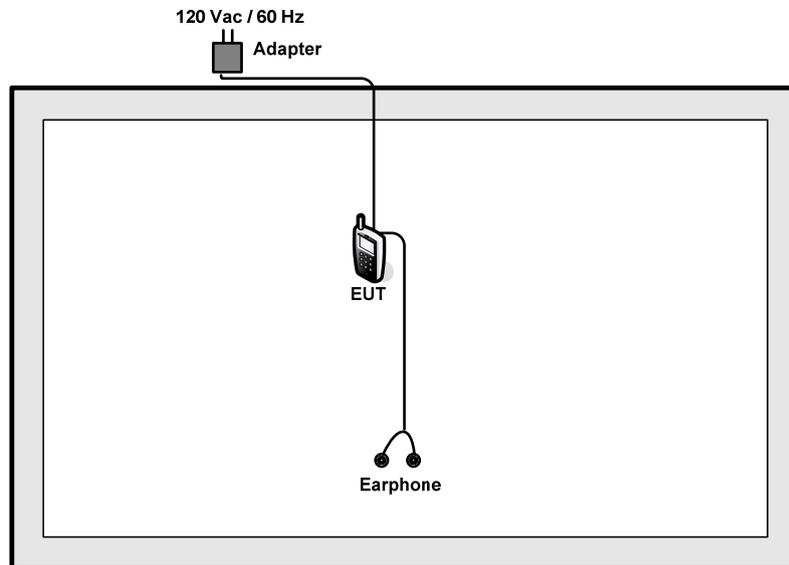
## 2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

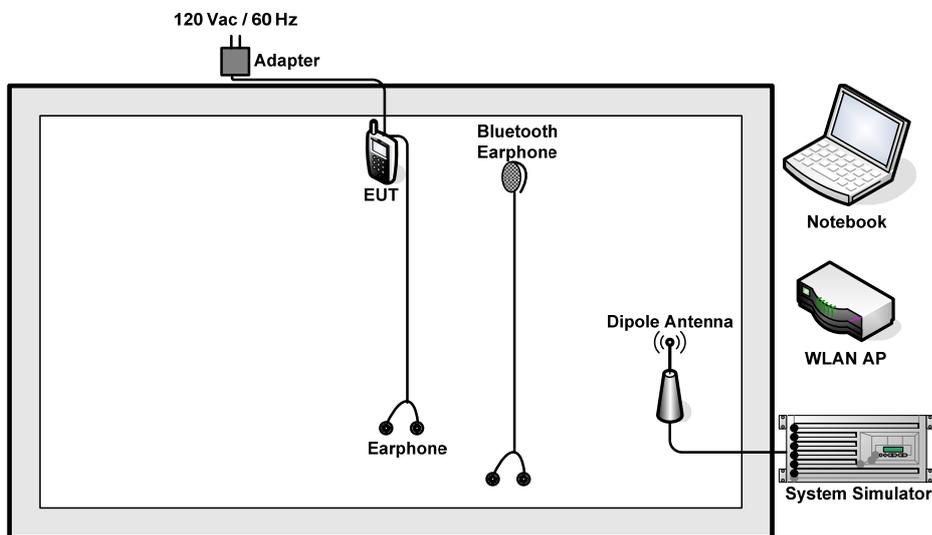
Test Cases				
	Test Items	Mode	Data Rate	Test Channel
Conducted TCs	6dB BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT-20	6.5 Mbps	1/6/11
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT-20	6.5 Mbps	1/6/11
	Conducted Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT-20	6.5 Mbps	1/11
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT-20	6.5 Mbps	1/6/11
Radiated TCs	Radiated Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT-20	6.5 Mbps	1/11
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT-20	6.5 Mbps	1/6/11
AC Conducted Emission	Mode 1 : CDMA 2000 BC0 Idle + USB Cable (Charging from Adapter) + WLAN Link + Bluetooth Link + Earphone + Camera			

## 2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



## 2.5 RF Utility

For WLAN function, programmed RF utility, "ADB" installed in the PC make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

### 3 Test Result

#### 3.1 6dB Bandwidth Measurement

##### 3.1.1 Limit of 6dB Bandwidth

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

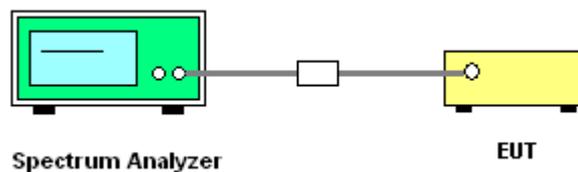
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 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. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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.

##### 3.1.4 Test Setup



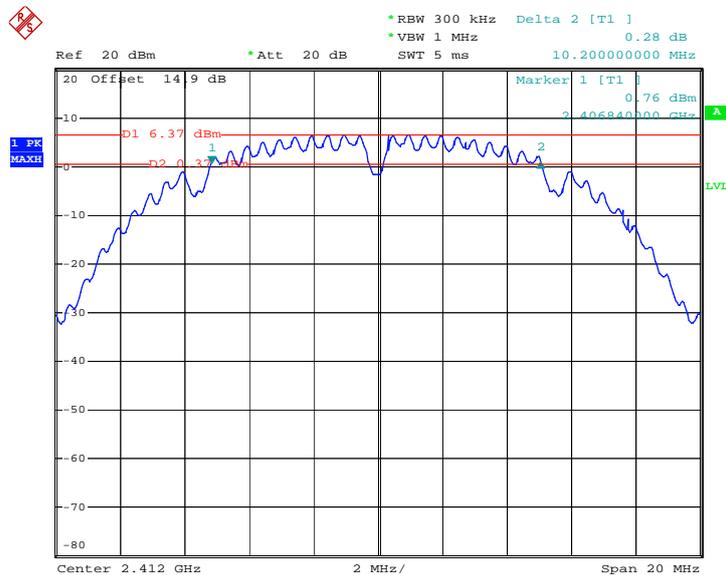


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	23~24°C
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	10.20	0.5	Pass
06	2437	10.20	0.5	Pass
11	2462	10.24	0.5	Pass

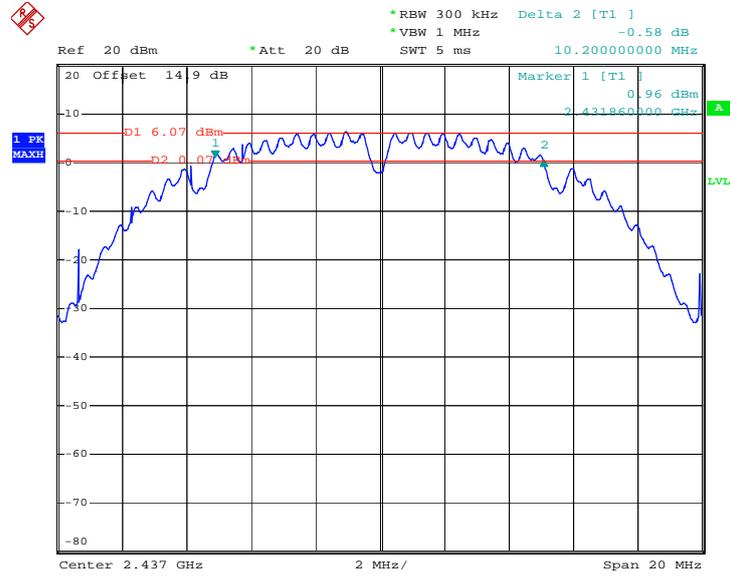
6 dB Bandwidth Plot on 802.11b Channel 01



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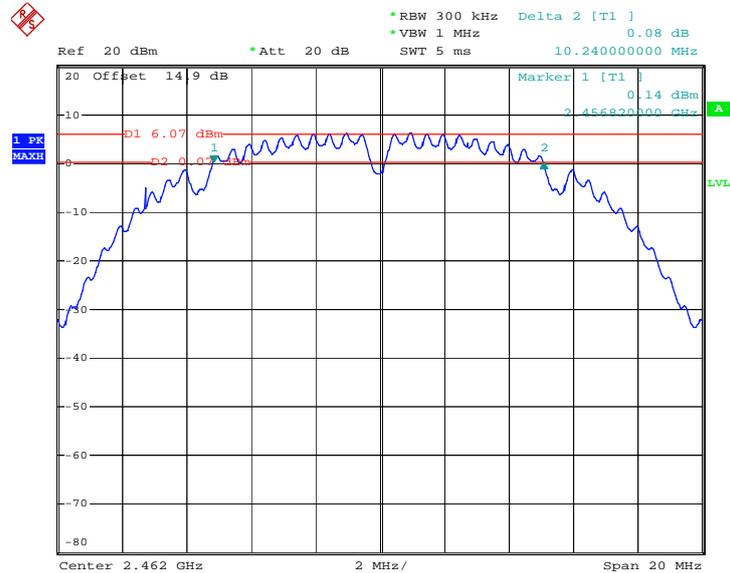


6 dB Bandwidth Plot on 802.11b Channel 06



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6 dB Bandwidth Plot on 802.11b Channel 11



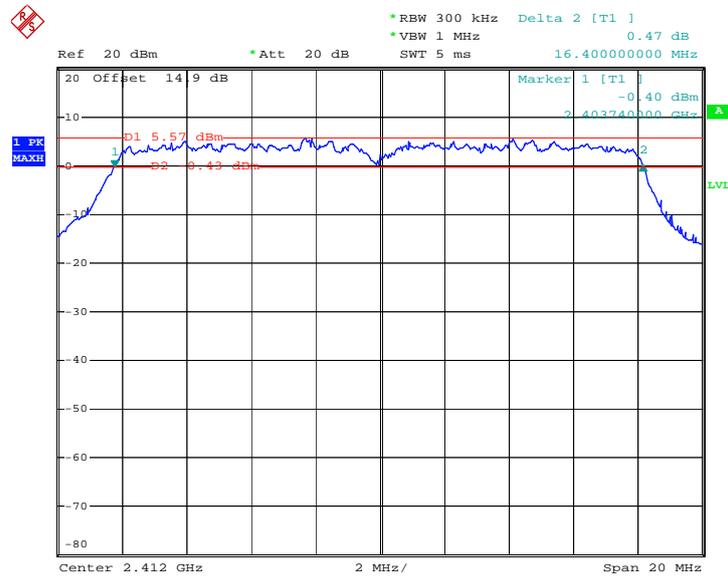
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Test Mode :	802.11g	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.40	0.5	Pass
06	2437	16.40	0.5	Pass
11	2462	16.44	0.5	Pass

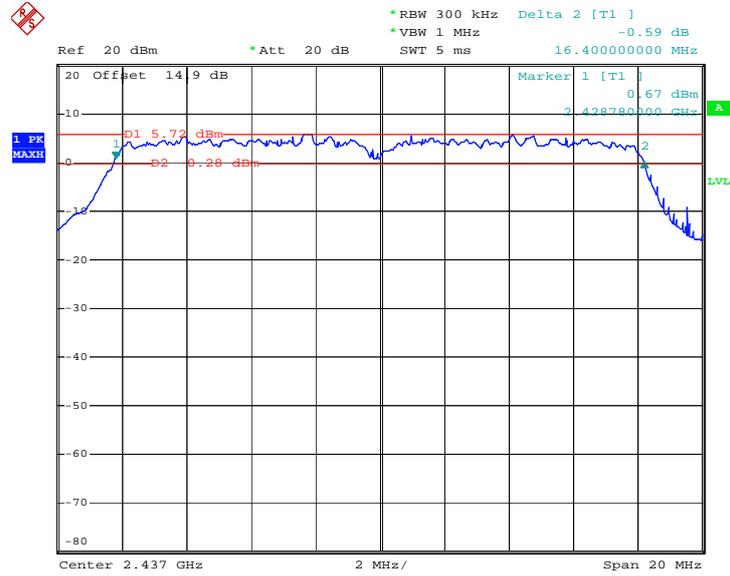
6 dB Bandwidth Plot on 802.11g Channel 01



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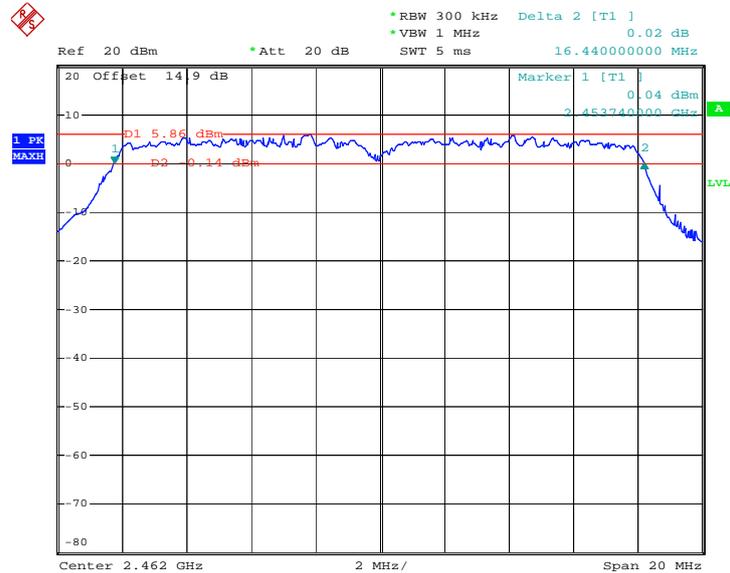


### 6 dB Bandwidth Plot on 802.11g Channel 06



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### 6 dB Bandwidth Plot on 802.11g Channel 11



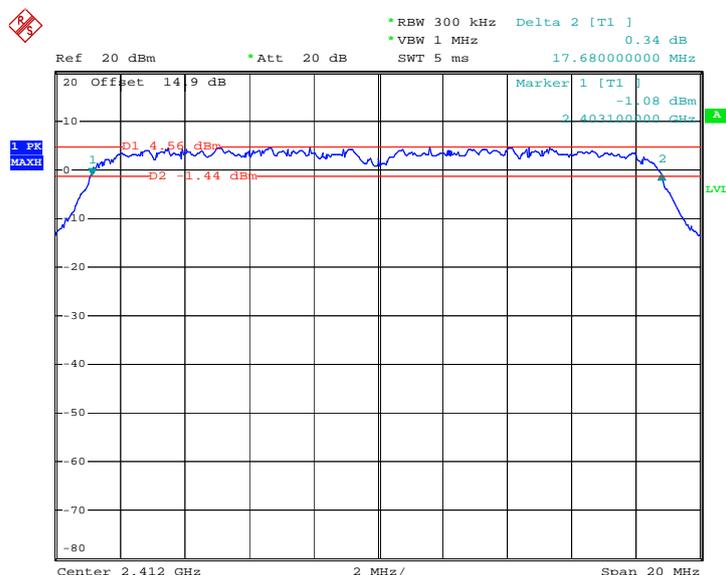
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Test Mode :	802.11n HT-20	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	2.4GHz 802.11n HT-20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.68	0.5	Pass
06	2437	17.72	0.5	Pass
11	2462	17.68	0.5	Pass

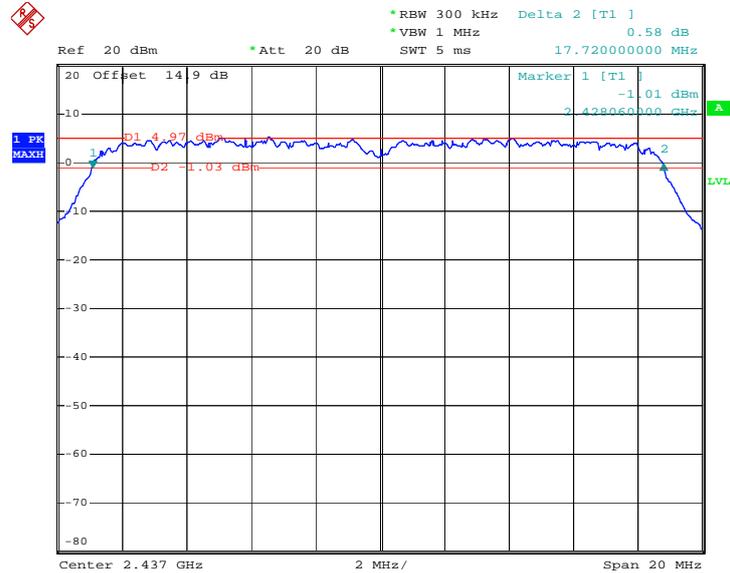
6 dB Bandwidth Plot on 802.11n HT-20 Channel 01



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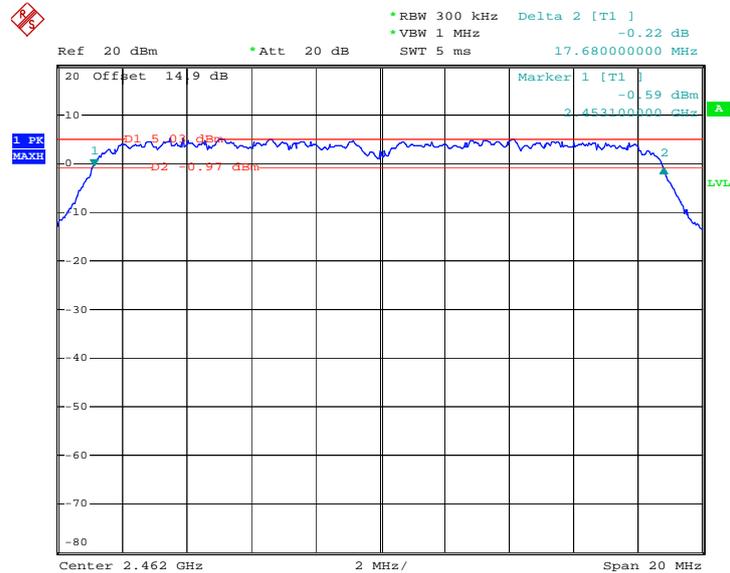


6 dB Bandwidth Plot on 802.11n HT-20 Channel 06



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



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## 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.

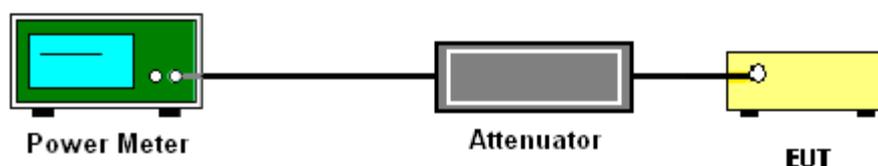
### 3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance and TCB Workshop 2012, April.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

### 3.2.4 Test Setup





3.2.5 Test Result of Peak Output Power

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

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.02	30	Pass
06	2437	17.39	30	Pass
11	2462	17.26	30	Pass

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

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.38	30	Pass
06	2437	22.44	30	Pass
11	2462	22.62	30	Pass

Test Mode :	802.11n HT-20	Temperature :	23~24°C
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	22.06	30	Pass
06	2437	22.29	30	Pass
11	2462	22.43	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	14.46
06	2437	14.88
11	2462	14.75

Test Mode :	802.11g	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	98.10%	Duty Factor:	0.08dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	13.36
06	2437	13.57
11	2462	13.60

Test Mode :	802.11n HT-20	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%
Duty Cycle:	97.86%	Duty Factor:	0.09dB

Channel	Frequency (MHz)	802.11n HT-20 Average Output Power (dBm)
01	2412	13.46
06	2437	13.55
11	2462	13.65

### 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.

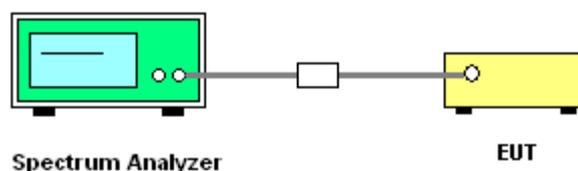
#### 3.3.2 Measuring Instruments

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. Set to the maximum power setting and enable the EUT transmit continuously.
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. Record the measurement data derived from spectrum analyzer.
7. 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  $BWCF = 10\log(3 \text{ kHz}/100 \text{ kHz}) = -15.2 \text{ dB}$ .

#### 3.3.4 Test Setup



### 3.3.5 Test Result of Power Spectral Density

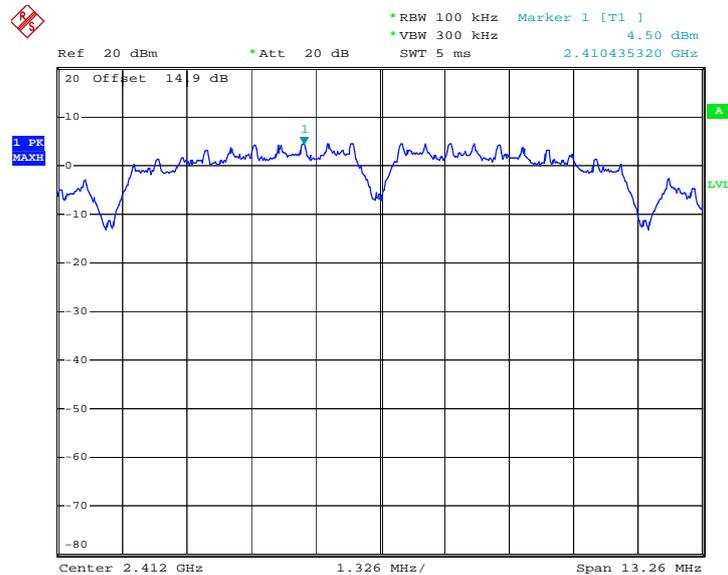
Test Mode :	802.11b	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	4.50	-10.70	8	Pass
06	2437	4.11	-11.09	8	Pass
11	2462	4.12	-11.08	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)

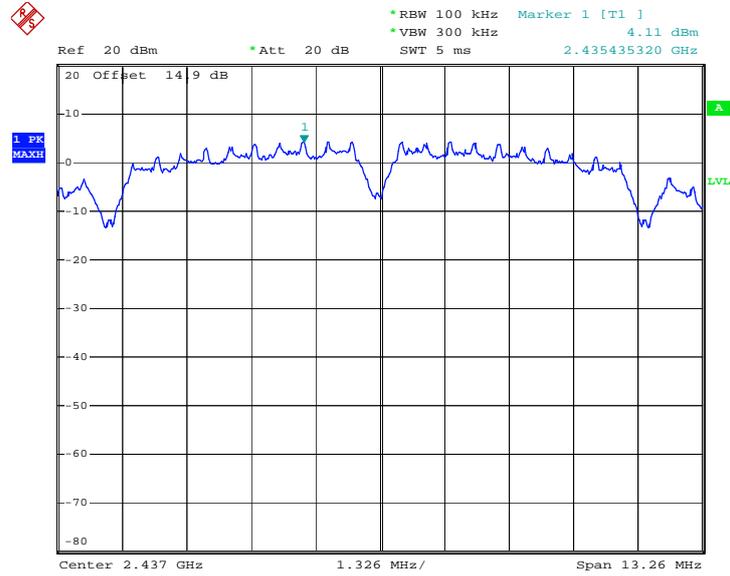
**PSD Plot on 802.11b Channel 01**



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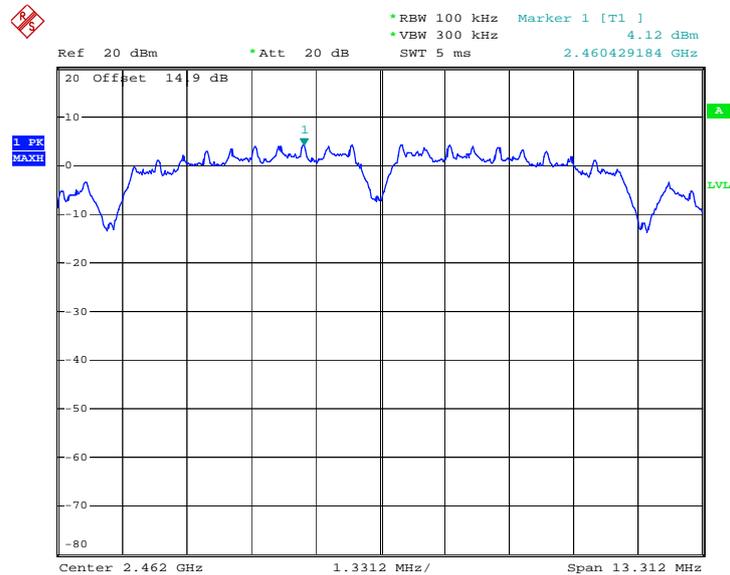


PSD Plot on 802.11b Channel 06



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PSD Plot on 802.11b Channel 11



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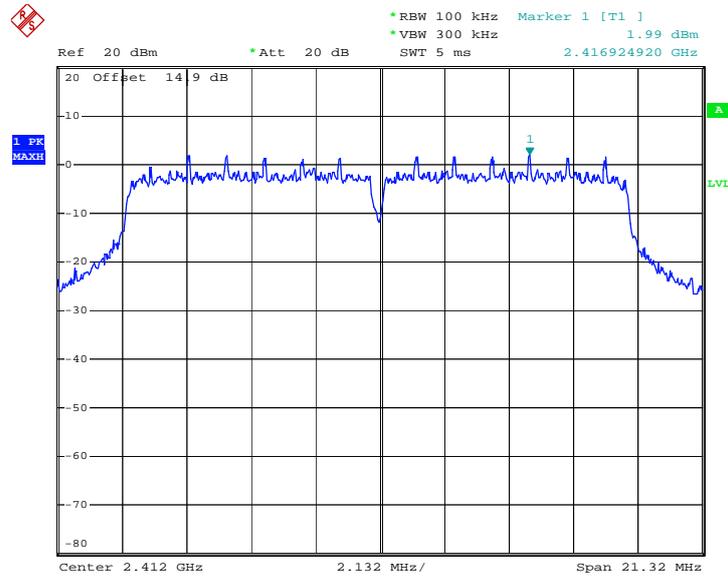
Test Mode :	802.11g	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.99	-13.21	8	Pass
06	2437	2.53	-12.67	8	Pass
11	2462	2.56	-12.64	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.  $Power \ Density/ \ 3KHz \ (dBm) = Measured \ power \ density/ \ 100KHz \ (dBm) + BWCF \ (dB)$

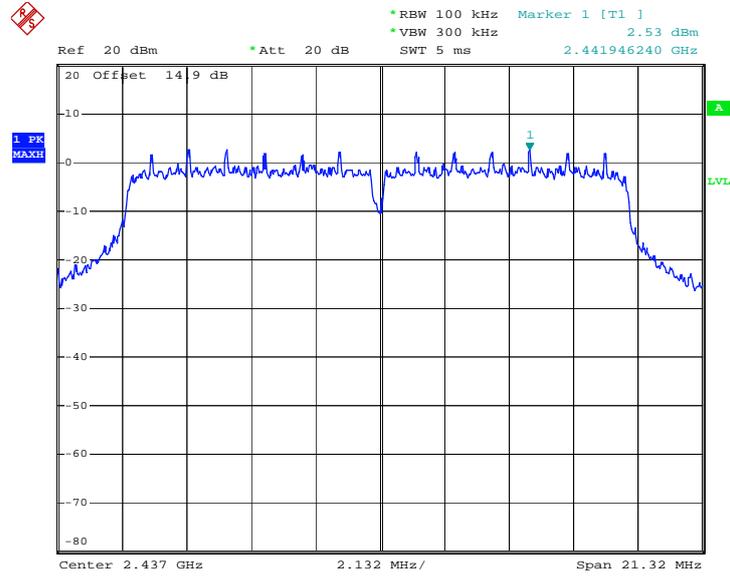
**PSD Plot on 802.11g Channel 01**



Date: 22.AUG.2012 18:35:02

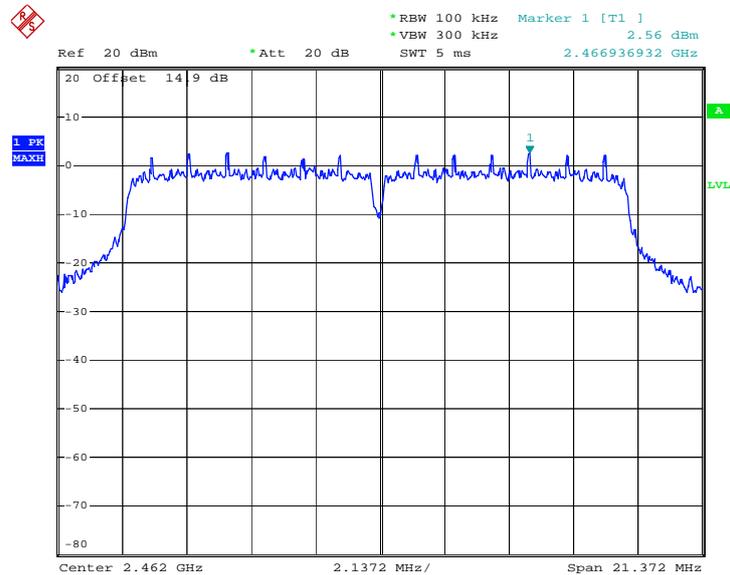


PSD Plot on 802.11g Channel 06



Date: 22.AUG.2012 18:39:02

PSD Plot on 802.11g Channel 11



Date: 22.AUG.2012 18:43:12



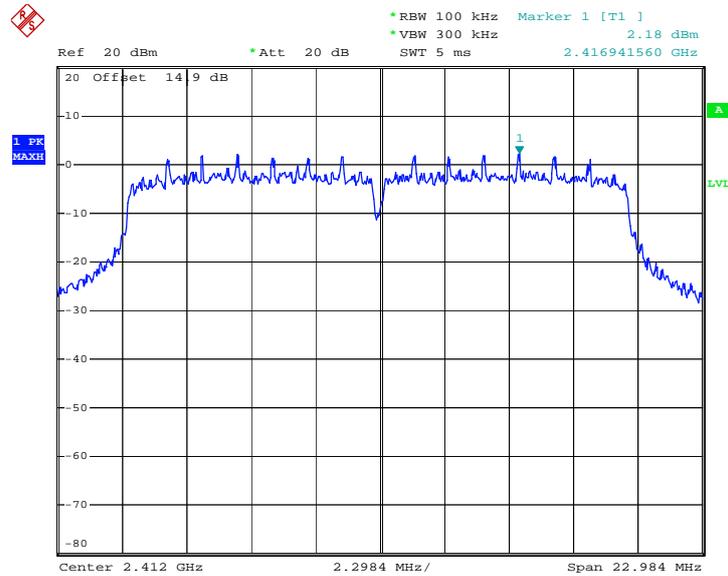
Test Mode :	802.11n HT-20	Temperature :	23~24°C
Test Engineer :	Lizy Li	Relative Humidity :	47~48%

Channel	Frequency (MHz)	802.11n HT-20 Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	2.18	-13.02	8	Pass
06	2437	2.66	-12.54	8	Pass
11	2462	2.57	-12.63	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.  $Power \ Density/ \ 3KHz \ (dBm) = Measured \ power \ density/ \ 100KHz \ (dBm) + BWCF \ (dB)$

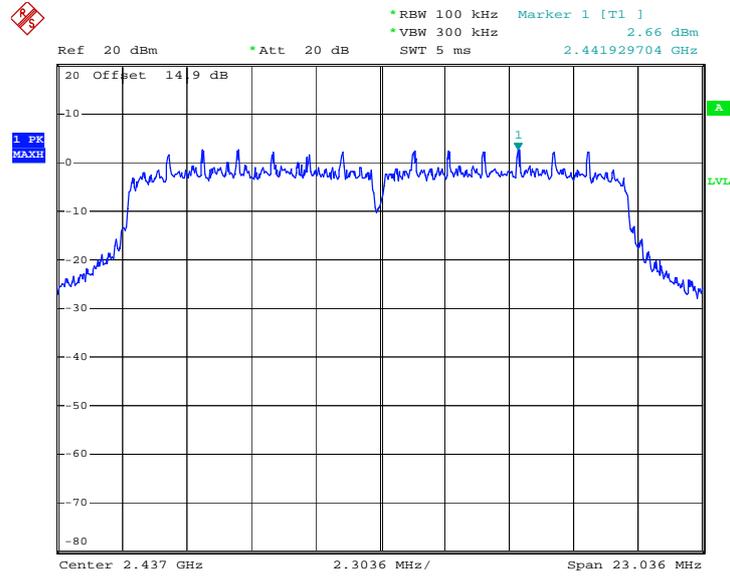
PSD Plot on 802.11n HT-20 Channel 01



Date: 22.AUG.2012 18:50:05

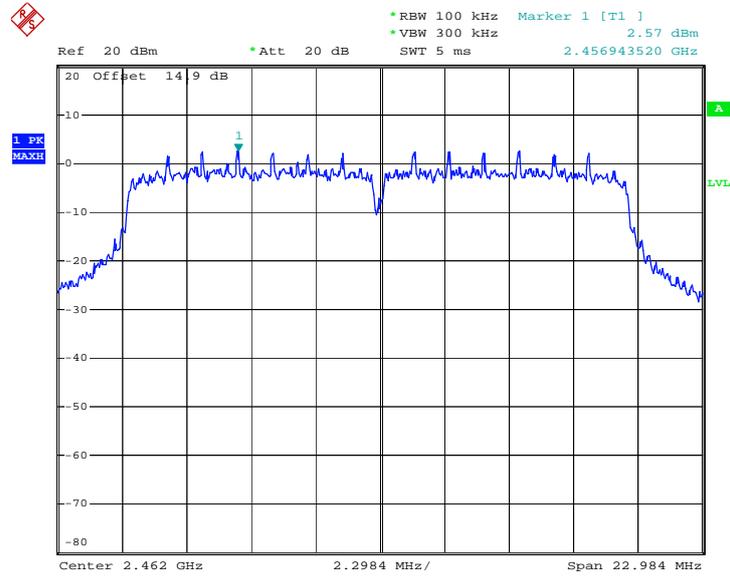


PSD Plot on 802.11n HT-20 Channel 06



Date: 22.AUG.2012 18:56:29

PSD Plot on 802.11n HT-20 Channel 11



Date: 22.AUG.2012 19:00:46

## 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).

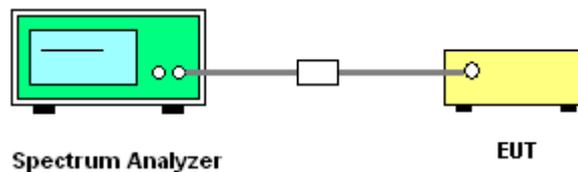
### 3.4.2 Measuring Instruments

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 to the maximum power setting and enable the EUT transmit continuously.
3. 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.
4. Measure and record the results in the test report.

### 3.4.4 Test Setup

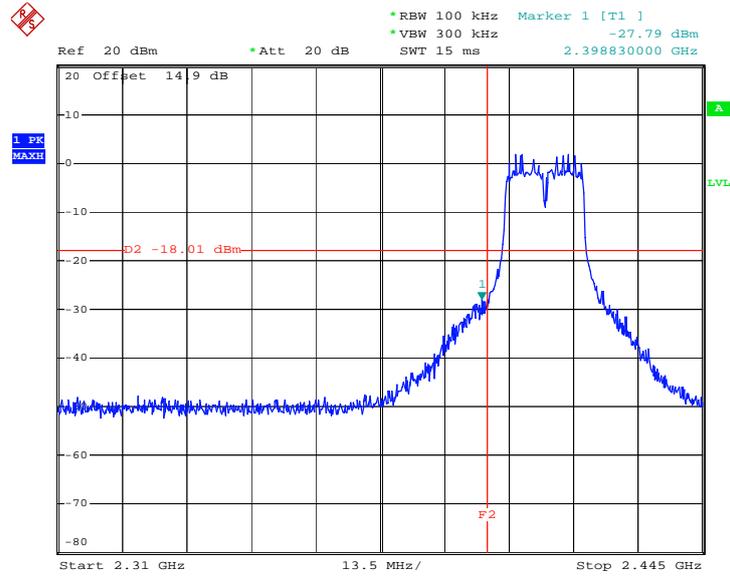






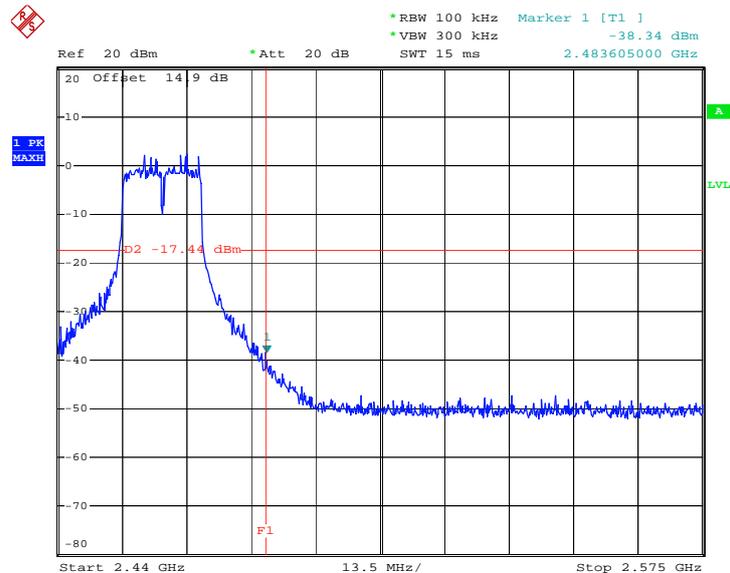
Test Mode :	802.11g	Temperature :	23~24°C
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

Low Band Edge Plot on 802.11g Channel 01



Date: 22.AUG.2012 18:36:05

High Band Edge Plot on 802.11g Channel 11

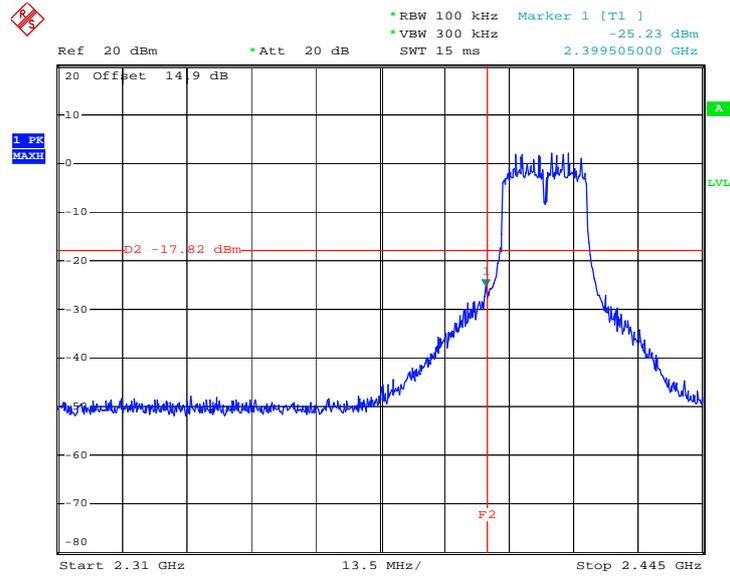


Date: 22.AUG.2012 18:43:56



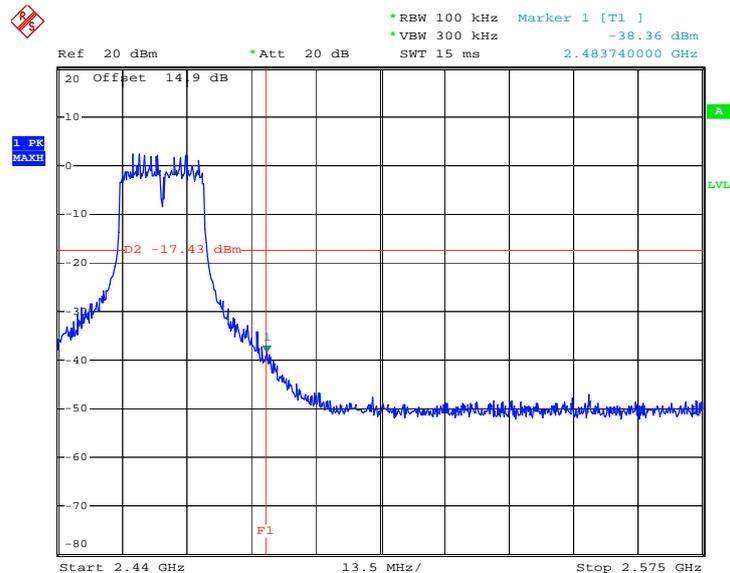
Test Mode :	802.11n HT-20	Temperature :	23~24°C
Test Band :	Low and High	Relative Humidity :	47~48%
Test Channel :	01 and 11	Test Engineer :	Lizy Li

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



Date: 22.AUG.2012 18:51:12

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



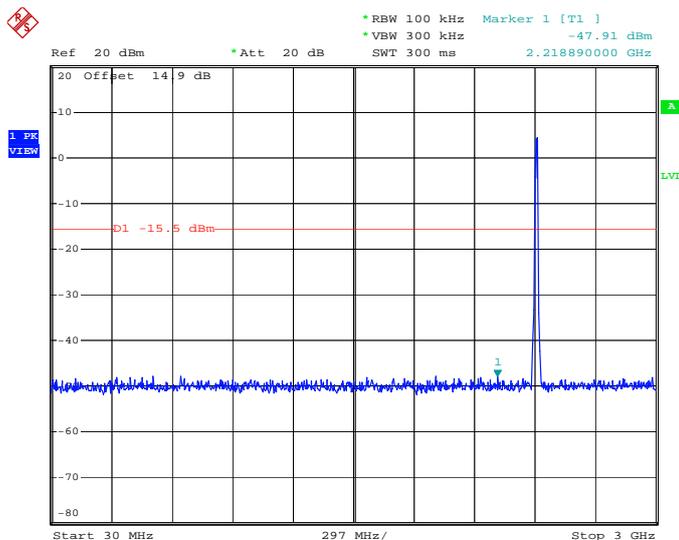
Date: 22.AUG.2012 19:01:53

### 3.4.6 Test Plots of Spurious Emission

Test Mode :	802.11b	Temperature :	23~24°C
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

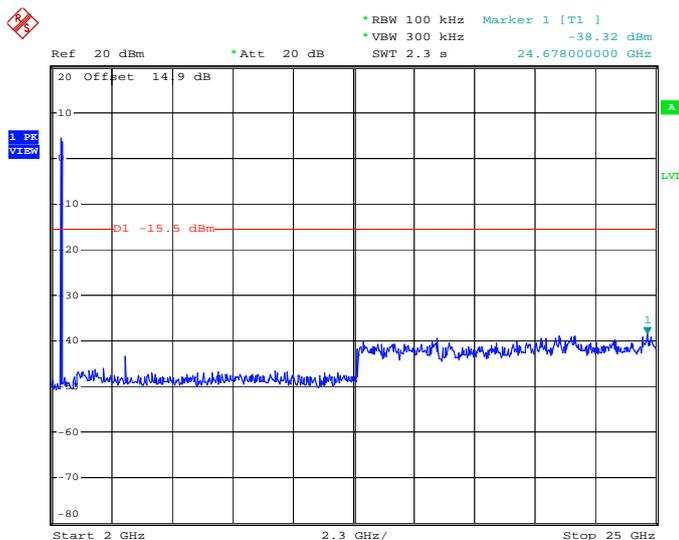
#### Conducted Spurious Emission Plot on Channel 01



Date: 22.AUG.2012 18:21:51

#### 802.11b 2 GHz~25 GHz

#### Conducted Spurious Emission Plot on Channel 01

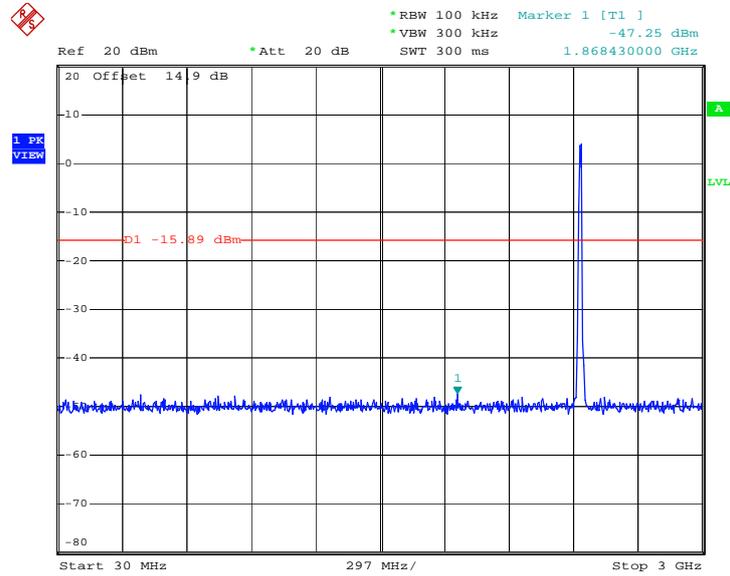


Date: 22.AUG.2012 18:22:10



802.11b 30 MHz~3 GHz

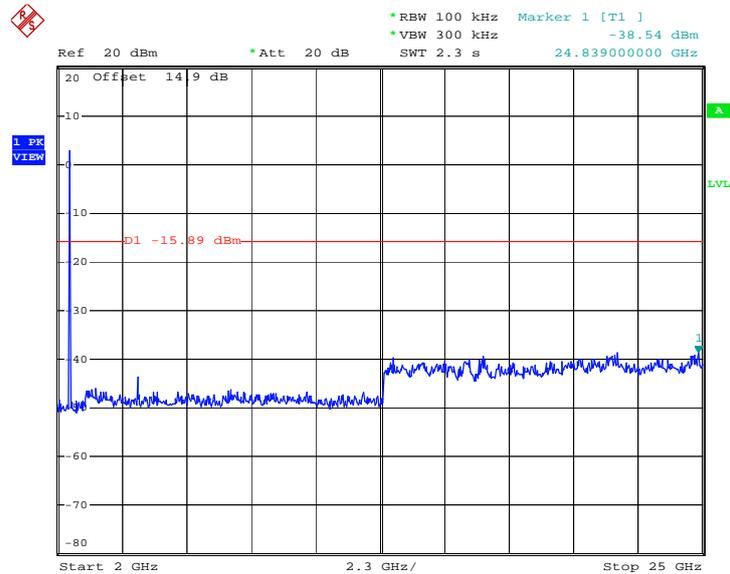
Conducted Spurious Emission Plot on Channel 06



Date: 22.AUG.2012 18:24:54

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

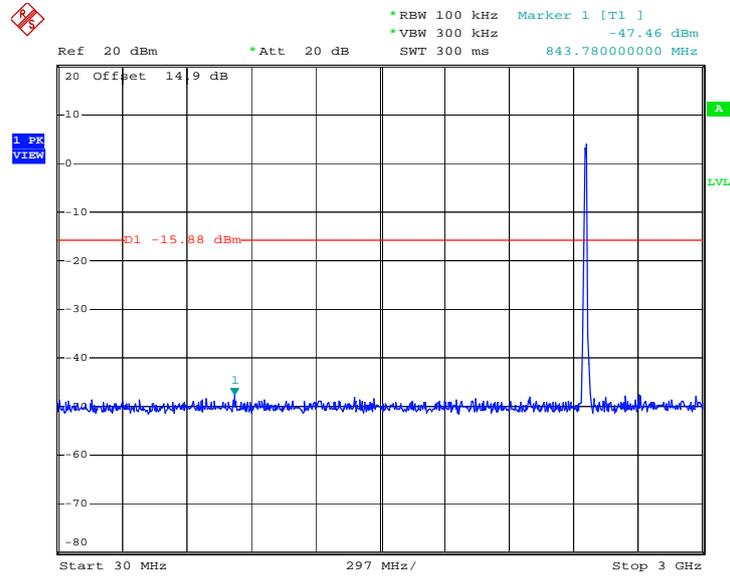


Date: 22.AUG.2012 18:25:12



802.11b 30 MHz~3 GHz

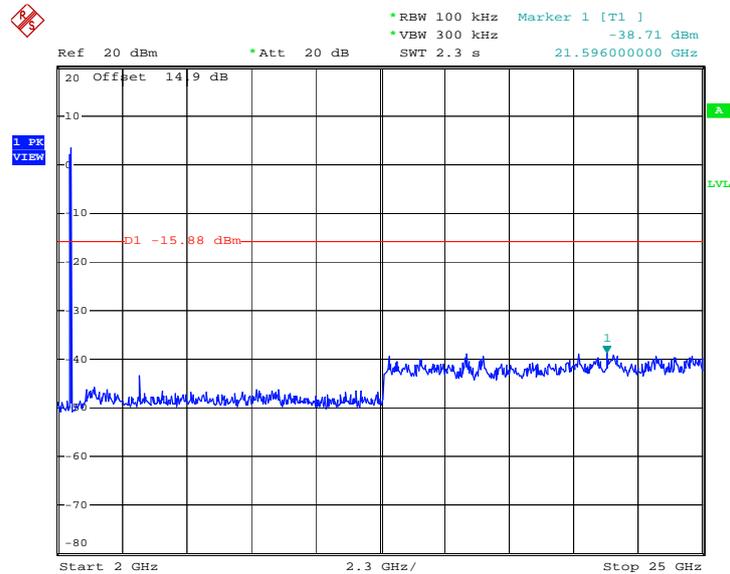
Conducted Spurious Emission Plot on Channel 11



Date: 22.AUG.2012 18:29:29

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



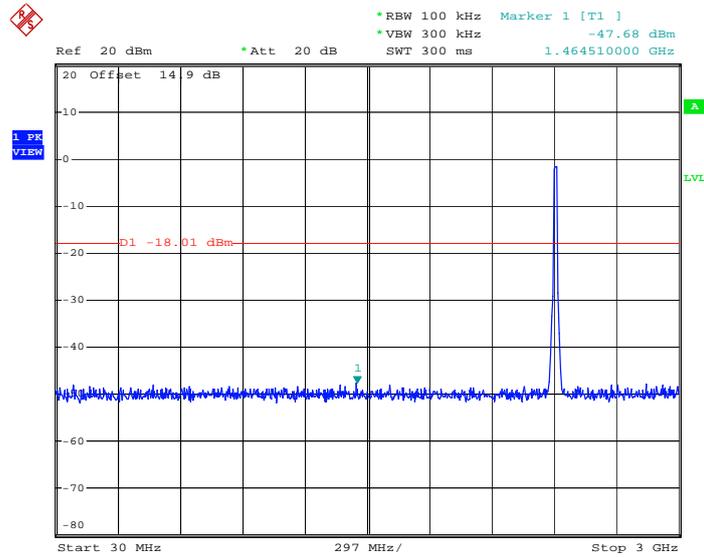
Date: 22.AUG.2012 18:29:48



Test Mode :	802.11g	Temperature :	23~24°C
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

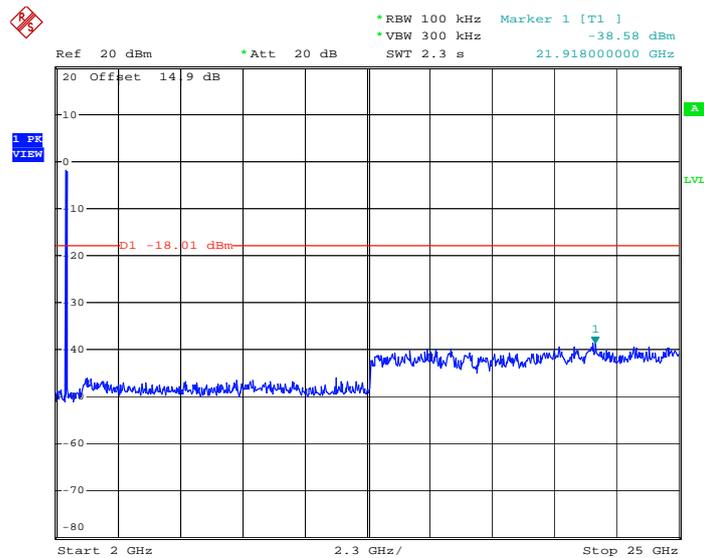
Conducted Spurious Emission Plot on Channel 01



Date: 22.AUG.2012 18:36:49

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

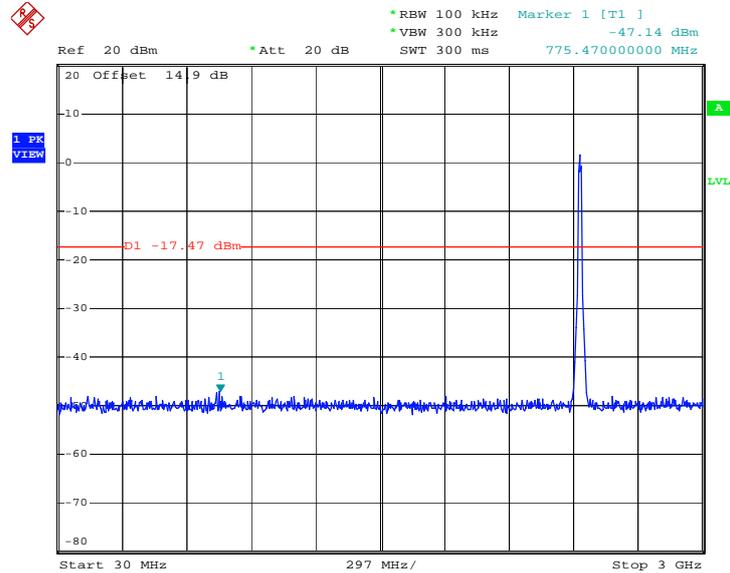


Date: 22.AUG.2012 18:37:07



802.11g 30 MHz~3 GHz

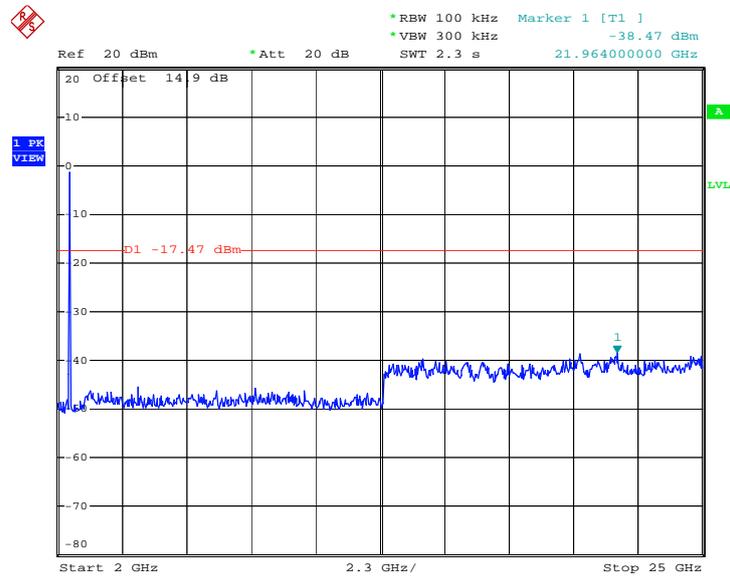
Conducted Spurious Emission Plot on Channel 06



Date: 22.AUG.2012 18:39:56

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

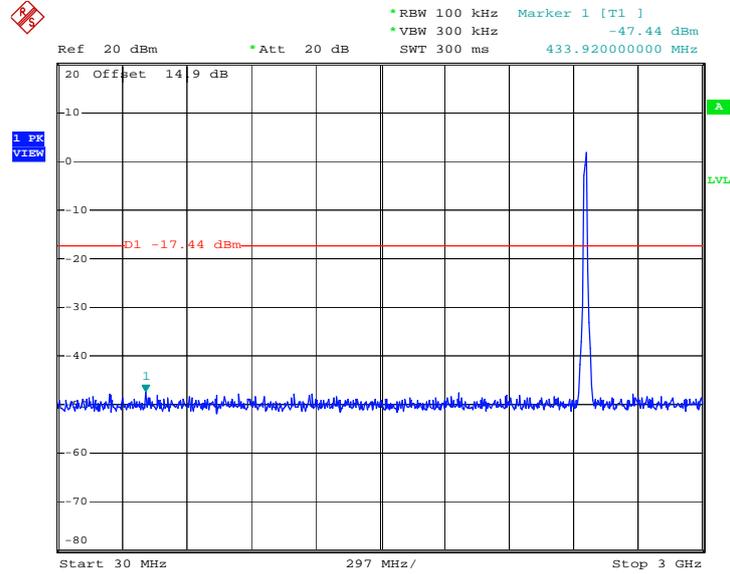


Date: 22.AUG.2012 18:40:14



802.11g 30 MHz~3 GHz

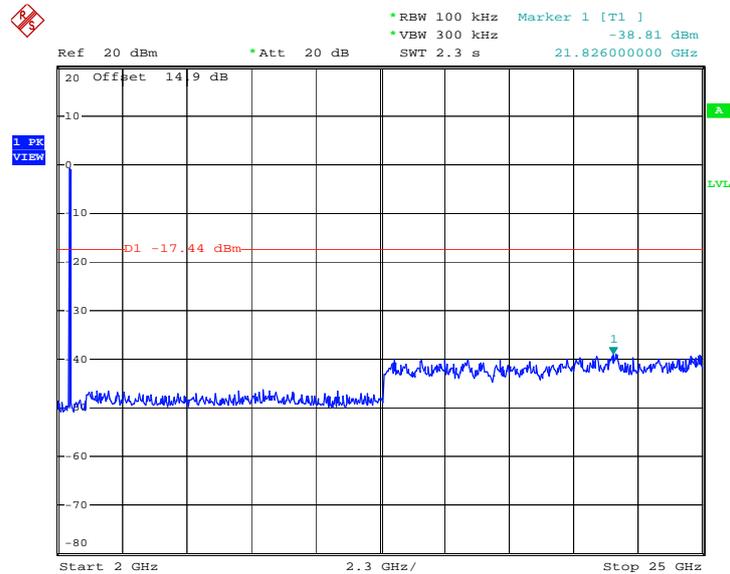
Conducted Spurious Emission Plot on Channel 11



Date: 22.AUG.2012 18:45:07

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



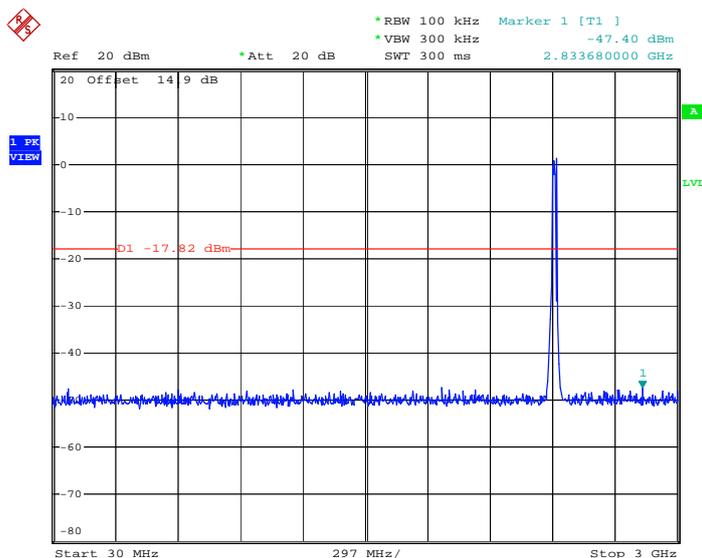
Date: 22.AUG.2012 18:45:26



Test Mode :	802.11n HT-20	Temperature :	23~24°C
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

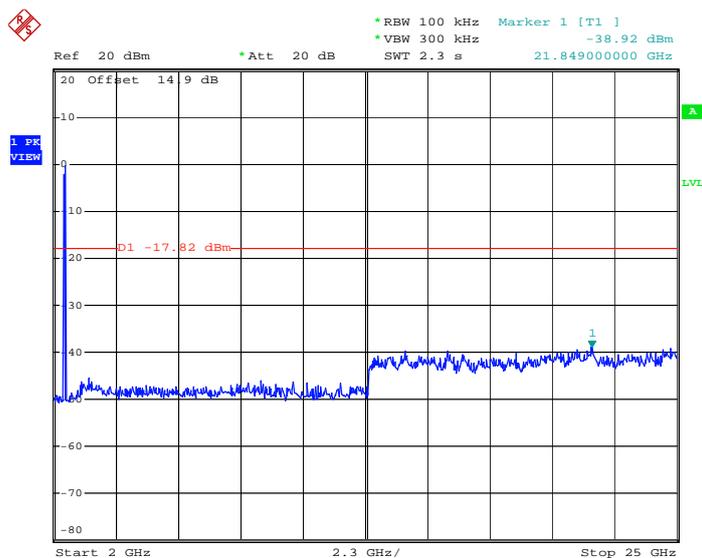
Conducted Spurious Emission Plot on Channel 01



Date: 22.AUG.2012 18:52:14

802.11n HT-20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

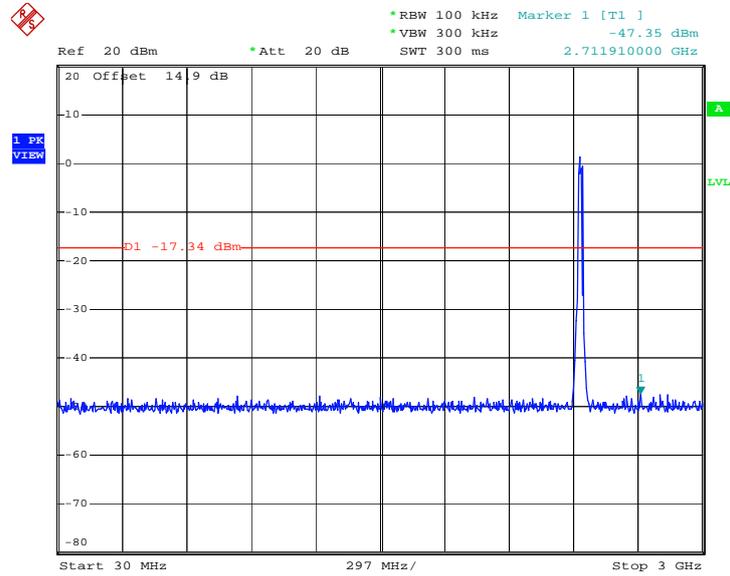


Date: 22.AUG.2012 18:52:33



802.11n HT-20 30 MHz~3 GHz

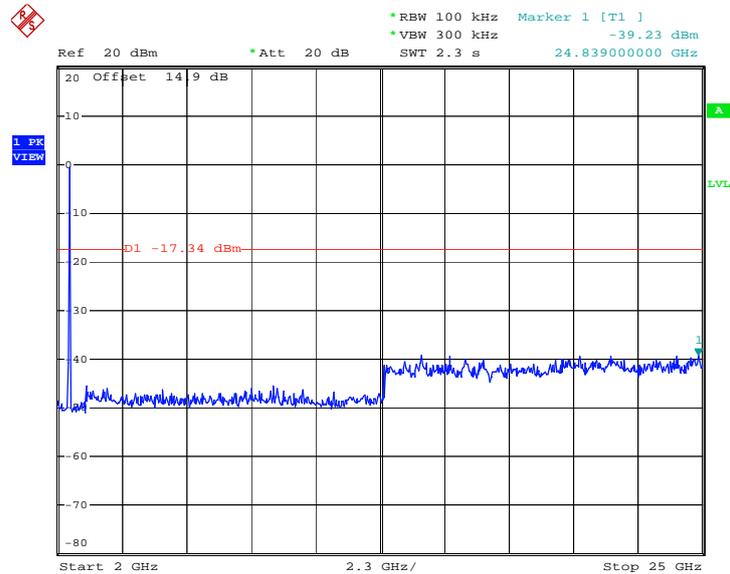
Conducted Spurious Emission Plot on Channel 06



Date: 22.AUG.2012 18:57:12

802.11n HT-20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

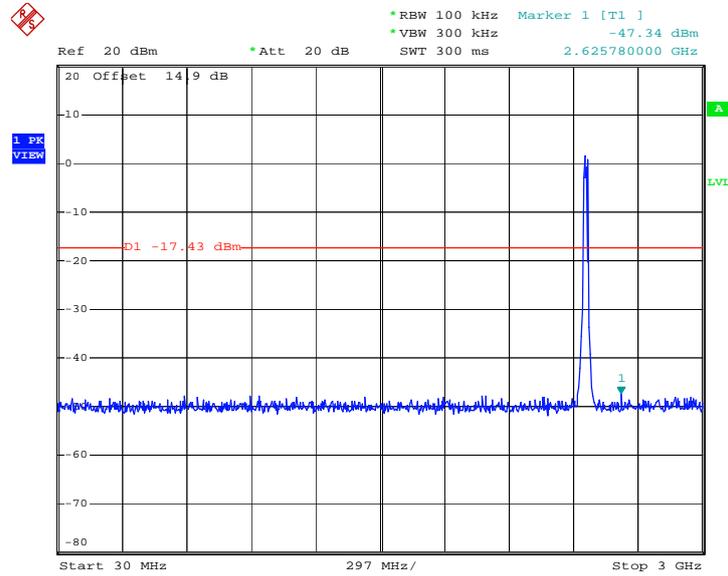


Date: 22.AUG.2012 18:57:30



802.11n HT-20 30 MHz~3 GHz

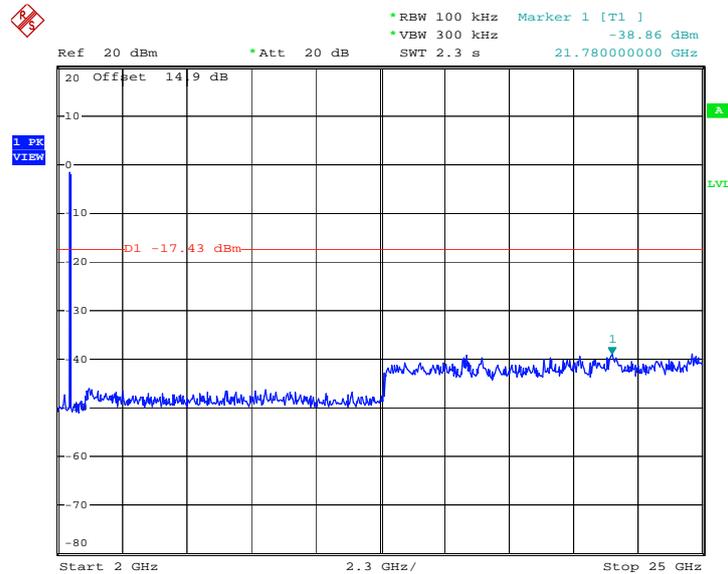
Conducted Spurious Emission Plot on Channel 11



Date: 22.AUG.2012 19:02:54

802.11n HT-20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



Date: 22.AUG.2012 19:03:13



### 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

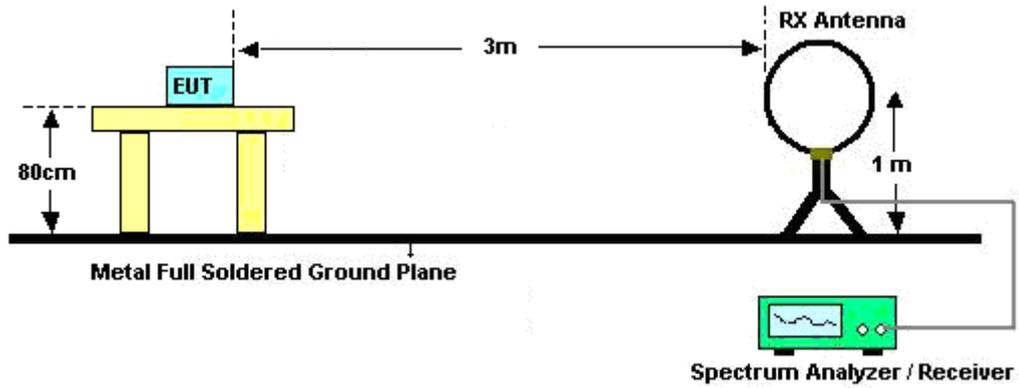
See list of measuring instruments of this test report.

### 3.5.3 Test Procedures

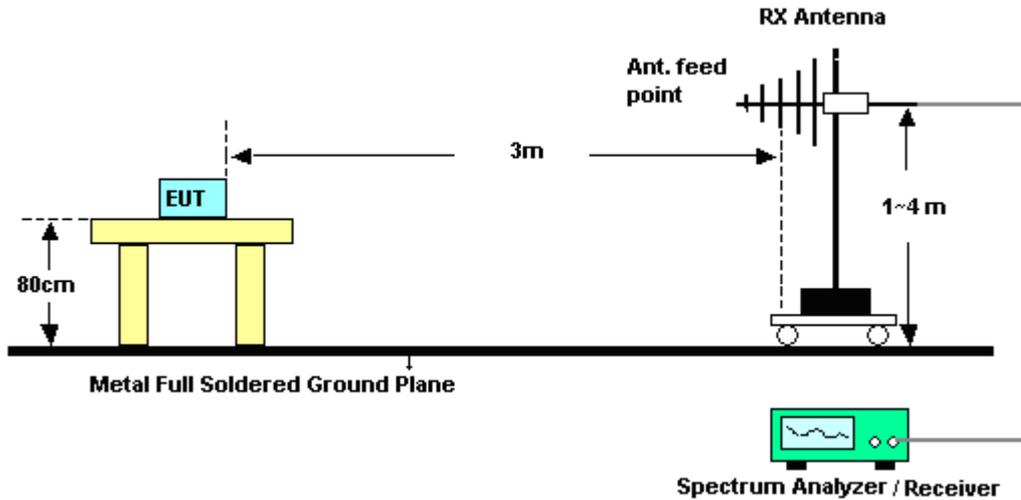
1. The testing follows TCB Workshop 2012, April and fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test site requirement. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) 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. Set to the maximum power setting and enable the EUT transmit continuously.
5. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW=100 KHz for  $f < 1$  GHz;  $VBW \geq RBW$ ; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW= 3MHz for  $f \geq 1$  GHz for Peak measurement, and then set VBW=10Hz, while maintaining all of the other instrument settings for Average measurement.
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 reported by using the quasi-peak detector.

### 3.5.4 Test Setup

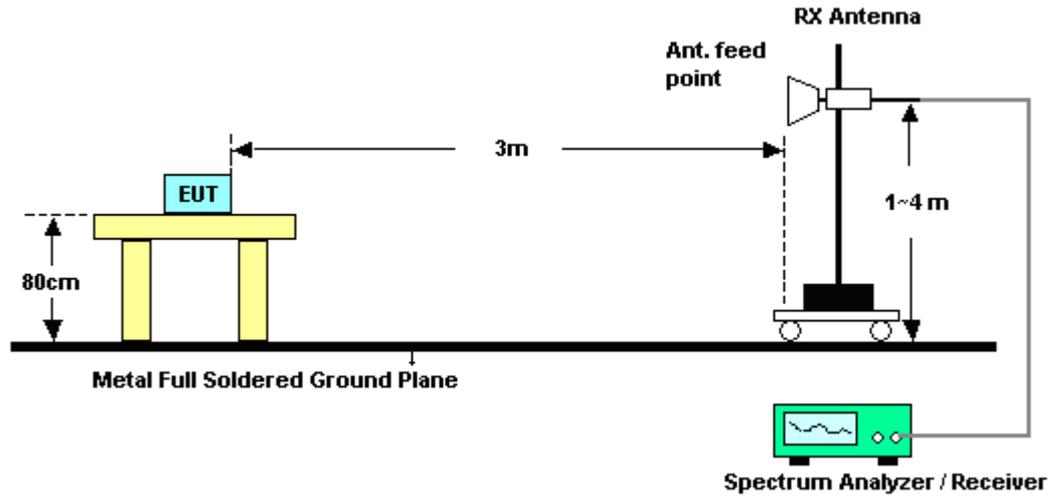
For radiated emissions below 30MHz



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 :	20~21°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.8	52.35	-21.65	74	50.07	32.86	3.47	34.05	108	324	Peak
2389.8	41.24	-12.76	54	38.96	32.86	3.47	34.05	108	324	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
2389.61	51.46	-22.54	74	49.18	32.86	3.47	34.05	110	320	Peak
2389.61	40.7	-13.3	54	38.42	32.86	3.47	34.05	110	320	Average

Test Mode :	802.11b	Temperature :	20~21°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.42	55.02	-18.98	74	52.53	33.01	3.68	34.2	100	46	Peak
2484.42	44.68	-9.32	54	42.19	33.01	3.68	34.2	100	46	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
2484.61	54.93	-19.07	74	52.44	33.01	3.68	34.2	110	324	Peak
2484.61	44.25	-9.75	54	41.76	33.01	3.68	34.2	110	324	Average



Test Mode :	802.11g	Temperature :	20~21°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2389.8	68.74	-5.26	74	66.46	32.86	3.47	34.05	130	10	Peak
2389.8	49.46	-4.54	54	47.18	32.86	3.47	34.05	130	10	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	69.16	-4.84	74	66.88	32.86	3.47	34.05	121	35	Peak
2389.99	50.69	-3.31	54	48.41	32.86	3.47	34.05	121	35	Average

Test Mode :	802.11g	Temperature :	20~21°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.66	67.55	-6.45	74	65.06	33.01	3.68	34.2	100	245	Peak
2483.66	50.97	-3.03	54	48.48	33.01	3.68	34.2	100	245	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
2484.04	59.08	-14.92	74	56.59	33.01	3.68	34.2	110	346	Peak
2484.04	46.06	-7.94	54	43.57	33.01	3.68	34.2	110	346	Average



Test Mode :	802.11n HT-20	Temperature :	20~21°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2390	71.92	-2.08	74	63.91	32.86	4.23	29.08	110	359	Peak
2390	52.68	-1.32	54	44.67	32.86	4.23	29.08	110	359	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	68.06	-5.94	74	60.05	32.86	4.23	29.08	101	341	Peak
2390	50.89	-3.11	54	42.88	32.86	4.23	29.08	101	341	Average

Test Mode :	802.11n HT-20	Temperature :	20~21°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.5	66.72	-7.28	74	58.42	33.01	4.29	29	105	356	Peak
2483.5	52.99	-1.01	54	44.69	33.01	4.29	29	105	356	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
2483.5	65.75	-8.25	74	57.45	33.01	4.29	29	113	204	Peak
2483.5	50.6	-3.4	54	42.3	33.01	4.29	29	113	204	Average



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

Test Mode :	802.11b	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	31.88	-8.12	40	48	13.7	0.24	30.06	108	360	Peak
43.05	30.9	-9.1	40	50.25	10.48	0.26	30.09	-	-	Peak
169.6	23.45	-20.05	43.5	43.62	9.2	0.54	29.91	-	-	Peak
517.25	22.26	-23.74	46	33.43	17.58	0.97	29.72	-	-	Peak
670.49	25.87	-20.13	46	35.4	19.05	1.1	29.68	-	-	Peak
839.18	26.94	-19.06	46	34.92	20.4	1.27	29.65	-	-	Peak
2389.8	41.24	-12.76	54	38.96	32.86	3.47	34.05	108	324	Average
2389.8	52.35	-21.65	74	50.07	32.86	3.47	34.05	108	324	Peak
2412	99.36	-	-	97.03	32.89	3.52	34.08	110	314	Average
2412	105.41	-	-	103.08	32.89	3.52	34.08	110	314	Peak
2489.17	36.79	-17.21	54	34.25	33.05	3.72	34.23	114	289	Average
2489.17	50.64	-23.36	74	48.1	33.05	3.72	34.23	114	289	Peak
4824	39.27	-14.73	54	31.4	35.17	4.97	32.27	100	324	Average
4824	52.45	-21.55	74	44.58	35.17	4.97	32.27	100	324	Peak



Test Mode :	802.11b	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
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
36	34.84	-5.16	40	50.04	14.65	0.23	30.08	125	39	Peak
43.05	26.04	-13.96	40	45.39	10.48	0.26	30.09	-	-	Peak
169.01	17.76	-25.74	43.5	37.89	9.24	0.54	29.91	-	-	Peak
339.59	19.88	-26.12	46	34.77	14.25	0.8	29.94	-	-	Peak
582.74	26.48	-19.52	46	36.5	18.57	1.05	29.64	-	-	Peak
719.2	28.99	-17.01	46	37.98	19.52	1.15	29.66	-	-	Peak
2389.61	40.7	-13.3	54	38.42	32.86	3.47	34.05	110	320	Average
2389.61	51.46	-22.54	74	49.18	32.86	3.47	34.05	110	320	Peak
2412	99.54	-	-	97.21	32.89	3.52	34.08	100	285	Average
2412	104.31	-	-	101.98	32.89	3.52	34.08	100	285	Peak
2492.78	36.86	-17.14	54	34.32	33.05	3.72	34.23	108	275	Average
2492.78	50.88	-23.12	74	48.34	33.05	3.72	34.23	108	275	Peak
4824	39.25	-14.75	54	31.38	35.17	4.97	32.27	100	318	Average
4824	51.54	-22.46	74	43.67	35.17	4.97	32.27	100	318	Peak



Test Mode :	802.11b	Temperature :	20~21°C
Test Channel :	06	Relative Humidity :	41~42%
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
37.81	33.67	-6.33	40	49.79	13.7	0.24	30.06	100	324	Peak
58.2	24.67	-15.33	40	48.92	5.59	0.3	30.14	-	-	Peak
130.38	17.56	-25.94	43.5	35.38	11.7	0.47	29.99	-	-	Peak
506.48	23.2	-22.8	46	34.66	17.31	0.96	29.73	-	-	Peak
670.49	25.24	-20.76	46	34.77	19.05	1.1	29.68	-	-	Peak
842.13	26.21	-19.79	46	34.15	20.43	1.28	29.65	-	-	Peak
2350.85	36.38	-17.62	54	34.21	32.78	3.33	33.94	105	330	Average
2350.85	50.54	-23.46	74	48.37	32.78	3.33	33.94	105	330	Peak
2437	99.07	-	-	96.67	32.95	3.6	34.15	100	338	Average
2437	104.82	-	-	102.42	32.95	3.6	34.15	100	338	Peak
2493.92	36.97	-17.03	54	34.43	33.05	3.72	34.23	100	320	Average
2493.92	50.56	-23.44	74	48.02	33.05	3.72	34.23	100	320	Peak
4874	39.54	-14.46	54	31.65	35.18	4.98	32.27	120	0	Average
4874	52.33	-21.67	74	44.44	35.18	4.98	32.27	120	0	Peak



Test Mode :	802.11b	Temperature :	20~21°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	34.13	-5.87	40	50.25	13.7	0.24	30.06	120	0	Peak
126.77	12.9	-30.6	43.5	30.69	11.73	0.46	29.98	-	-	Peak
229.29	17.15	-28.85	46	35.59	10.83	0.64	29.91	-	-	Peak
339.59	18.25	-27.75	46	33.14	14.25	0.8	29.94	-	-	Peak
580.7	25.6	-20.4	46	35.62	18.57	1.05	29.64	-	-	Peak
719.2	26.32	-19.68	46	35.31	19.52	1.15	29.66	-	-	Peak
2319.5	36.5	-17.5	54	34.37	32.76	3.27	33.9	110	100	Average
2319.5	50.69	-23.31	74	48.56	32.76	3.27	33.9	110	100	Peak
2437	96.23	-	-	93.83	32.95	3.6	34.15	151	149	Average
2437	101.79	-	-	99.39	32.95	3.6	34.15	151	149	Peak
2483.68	36.83	-17.17	54	34.34	33.01	3.68	34.2	145	60	Average
2483.68	51.19	-22.81	74	48.7	33.01	3.68	34.2	145	60	Peak
4874	39.61	-14.39	54	31.72	35.18	4.98	32.27	168	0	Average
4874	51.64	-22.36	74	43.75	35.18	4.98	32.27	168	0	Peak



<b>Test Mode :</b>	802.11b	<b>Temperature :</b>	20~21°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	35.04	-4.96	40	51.16	13.7	0.24	30.06	115	216	Peak
59.86	25.45	-14.55	40	49.98	5.3	0.31	30.14	-	-	Peak
129.47	17.65	-25.85	43.5	35.47	11.7	0.47	29.99	-	-	Peak
331.35	20.74	-25.26	46	35.87	14.02	0.79	29.94	-	-	Peak
672.84	25.41	-20.59	46	34.91	19.08	1.11	29.69	-	-	Peak
848.06	25.91	-20.09	46	33.8	20.49	1.28	29.66	-	-	Peak
2350.09	36.27	-17.73	54	34.1	32.78	3.33	33.94	108	300	Average
2350.09	50.76	-23.24	74	48.59	32.78	3.33	33.94	108	300	Peak
2462	100.47	-	-	98.02	32.98	3.64	34.17	110	65	Average
2462	104.27	-	-	101.82	32.98	3.64	34.17	110	65	Peak
2484.42	44.68	-9.32	54	42.19	33.01	3.68	34.2	100	46	Average
2484.42	55.02	-18.98	74	52.53	33.01	3.68	34.2	100	46	Peak
4924	40.73	-13.27	54	32.81	35.19	4.99	32.26	114	360	Average
4924	52.09	-21.91	74	44.17	35.19	4.99	32.26	114	360	Peak



Test Mode :	802.11b	Temperature :	20~21°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
36	33.93	-6.07	40	49.13	14.65	0.23	30.08	105	324	Peak
89.28	14.54	-28.96	43.5	35.53	8.61	0.39	29.99	-	-	Peak
171.39	20.05	-23.45	43.5	40.32	9.08	0.55	29.9	-	-	Peak
339.59	19.07	-26.93	46	33.96	14.25	0.8	29.94	-	-	Peak
582.74	26.21	-19.79	46	36.23	18.57	1.05	29.64	-	-	Peak
719.2	28.76	-17.24	46	37.75	19.52	1.15	29.66	-	-	Peak
2316.27	36.41	-17.59	54	34.32	32.73	3.22	33.86	118	120	Average
2316.27	50.89	-23.11	74	48.8	32.73	3.22	33.86	118	120	Peak
2462	99.16	-	-	96.71	32.98	3.64	34.17	119	137	Average
2462	104.84	-	-	102.39	32.98	3.64	34.17	119	137	Peak
2484.61	44.25	-9.75	54	41.76	33.01	3.68	34.2	110	324	Average
2484.61	54.93	-19.07	74	52.44	33.01	3.68	34.2	110	324	Peak
4924	40.63	-13.37	54	32.71	35.19	4.99	32.26	127	316	Average
4924	52.44	-21.56	74	44.52	35.19	4.99	32.26	127	316	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	34.92	-5.08	40	51.04	13.7	0.24	30.06	124	249	Peak
63.09	23.63	-16.37	40	48.18	5.25	0.32	30.12	-	-	Peak
129.47	16.55	-26.95	43.5	34.37	11.7	0.47	29.99	-	-	Peak
312.18	20.17	-25.83	46	36.08	13.3	0.74	29.95	-	-	Peak
462.35	22.34	-23.66	46	34.73	16.48	0.91	29.78	-	-	Peak
672.84	25.35	-20.65	46	34.85	19.08	1.11	29.69	-	-	Peak
2389.8	49.46	-4.54	54	47.18	32.86	3.47	34.05	130	10	Average
2389.8	68.74	-5.26	74	66.46	32.86	3.47	34.05	130	10	Peak
2412	93.33	-	-	91	32.89	3.52	34.08	130	360	Average
2412	104.18	-	-	101.85	32.89	3.52	34.08	130	360	Peak
2498.67	35.67	-18.33	54	33.13	33.05	3.72	34.23	108	278	Average
2498.67	50.81	-23.19	74	48.27	33.05	3.72	34.23	108	278	Peak
4824	39.25	-14.75	54	31.38	35.17	4.97	32.27	100	30	Average
4824	51.42	-22.58	74	43.55	35.17	4.97	32.27	100	30	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
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
37.81	33.23	-6.77	40	49.35	13.7	0.24	30.06	110	320	Peak
131.3	12.78	-30.72	43.5	30.67	11.63	0.47	29.99	-	-	Peak
240.83	16.01	-29.99	46	33.61	11.56	0.66	29.82	-	-	Peak
331.35	18.26	-27.74	46	33.39	14.02	0.79	29.94	-	-	Peak
478.85	22.64	-23.36	46	34.6	16.85	0.94	29.75	-	-	Peak
719.2	27.44	-18.56	46	36.43	19.52	1.15	29.66	-	-	Peak
2389.99	50.69	-3.31	54	48.41	32.86	3.47	34.05	121	35	Average
2389.99	69.16	-4.84	74	66.88	32.86	3.47	34.05	121	35	Peak
2412	92.05	-	-	89.72	32.89	3.52	34.08	120	30	Average
2412	104.24	-	-	101.91	32.89	3.52	34.08	120	30	Peak
2493.92	36.86	-17.14	54	34.32	33.05	3.72	34.23	115	40	Average
2493.92	50.88	-23.12	74	48.34	33.05	3.72	34.23	115	40	Peak
4824	39.08	-14.92	54	31.21	35.17	4.97	32.27	110	0	Average
4824	51.59	-22.41	74	43.72	35.17	4.97	32.27	110	0	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	06	Relative Humidity :	41~42%
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
37.81	32.04	-7.96	40	48.16	13.7	0.24	30.06	134	89	Peak
57.19	24.26	-15.74	40	48.35	5.75	0.3	30.14	-	-	Peak
135.98	16.15	-27.35	43.5	34.45	11.21	0.48	29.99	-	-	Peak
291.04	19.74	-26.26	46	36.11	12.87	0.71	29.95	-	-	Peak
515.44	22.26	-23.74	46	33.48	17.53	0.97	29.72	-	-	Peak
672.84	25.35	-20.65	46	34.85	19.08	1.11	29.69	-	-	Peak
2355.41	36.84	-17.16	54	34.63	32.81	3.38	33.98	108	124	Average
2355.41	51.57	-22.43	74	49.36	32.81	3.38	33.98	108	124	Peak
2437	92.8	-	-	90.4	32.95	3.6	34.15	100	164	Average
2437	103.61	-	-	101.21	32.95	3.6	34.15	100	164	Peak
2486.13	36.89	-17.11	54	34.4	33.01	3.68	34.2	100	315	Average
2486.13	50.37	-23.63	74	47.88	33.01	3.68	34.2	100	315	Peak
4874	39.4	-14.6	54	31.51	35.18	4.98	32.27	100	360	Average
4874	52.48	-21.52	74	44.59	35.18	4.98	32.27	100	360	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	32.46	-7.54	40	48.58	13.7	0.24	30.06	129	54	Peak
58.2	19.47	-20.53	40	43.72	5.59	0.3	30.14	-	-	Peak
132.22	13.11	-30.39	43.5	31.08	11.55	0.47	29.99	-	-	Peak
235.82	16.39	-29.61	46	34.3	11.29	0.65	29.85	-	-	Peak
578.67	25.04	-20.96	46	35.08	18.56	1.04	29.64	-	-	Peak
719.2	27.94	-18.06	46	36.93	19.52	1.15	29.66	-	-	Peak
2382.01	36.39	-17.61	54	34.15	32.83	3.42	34.01	108	257	Average
2382.01	50.97	-23.03	74	48.73	32.83	3.42	34.01	108	257	Peak
2437	91.83	-	-	89.43	32.95	3.6	34.15	113	286	Average
2437	97.38	-	-	94.98	32.95	3.6	34.15	113	286	Peak
2495.25	36.94	-17.06	54	34.4	33.05	3.72	34.23	110	324	Average
2495.25	50.92	-23.08	74	48.38	33.05	3.72	34.23	110	324	Peak
4874	39.4	-14.6	54	31.51	35.18	4.98	32.27	105	234	Average
4874	51.3	-22.7	74	43.41	35.18	4.98	32.27	105	234	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	11	Relative Humidity :	41~42%
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
37.81	30.22	-9.78	40	46.34	13.7	0.24	30.06	125	246	Peak
54.07	24.92	-15.08	40	48.27	6.49	0.29	30.13	-	-	Peak
132.69	14.85	-28.65	43.5	32.89	11.47	0.48	29.99	-	-	Peak
310	18.34	-27.66	46	34.3	13.25	0.74	29.95	-	-	Peak
670.49	24.68	-21.32	46	34.21	19.05	1.1	29.68	-	-	Peak
839.18	25.66	-20.34	46	33.64	20.4	1.27	29.65	-	-	Peak
2316.65	36.42	-17.58	54	34.33	32.73	3.22	33.86	100	46	Average
2316.65	50.88	-23.12	74	48.79	32.73	3.22	33.86	100	46	Peak
2462	94.43	-	-	91.98	32.98	3.64	34.17	100	18	Average
2462	106.33	-	-	103.88	32.98	3.64	34.17	100	18	Peak
2483.66	50.97	-3.03	54	48.48	33.01	3.68	34.2	100	245	Average
2483.66	67.55	-6.45	74	65.06	33.01	3.68	34.2	100	245	Peak
4924	39.74	-14.26	54	31.82	35.19	4.99	32.26	100	324	Average
4924	51.48	-22.52	74	43.56	35.19	4.99	32.26	100	324	Peak



Test Mode :	802.11g	Temperature :	20~21°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.81	29.22	-10.78	40	45.34	13.7	0.24	30.06	120	360	Peak
129.01	13.55	-29.95	43.5	31.35	11.71	0.47	29.98	-	-	Peak
241.68	16.61	-29.39	46	34.16	11.61	0.66	29.82	-	-	Peak
480.53	22.13	-23.87	46	34.07	16.87	0.94	29.75	-	-	Peak
609.92	25.27	-20.73	46	35.18	18.64	1.07	29.62	-	-	Peak
719.2	27.88	-18.12	46	36.87	19.52	1.15	29.66	-	-	Peak
2319.88	36.47	-17.53	54	34.34	32.76	3.27	33.9	110	314	Average
2319.88	50.73	-23.27	74	48.6	32.76	3.27	33.9	110	314	Peak
2462	91.31	-	-	88.86	32.98	3.64	34.17	114	324	Average
2462	98.27	-	-	95.82	32.98	3.64	34.17	114	324	Peak
2484.04	46.06	-7.94	54	43.57	33.01	3.68	34.2	110	346	Average
2484.04	59.08	-14.92	74	56.59	33.01	3.68	34.2	110	346	Peak
4924	39.75	-14.25	54	31.83	35.19	4.99	32.26	100	360	Average
4924	53.9	-20.1	74	45.98	35.19	4.99	32.26	100	360	Peak



Test Mode :	802.11n-HT20	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30.105	27.88	-12.12	40	39.7	18	0.26	30.08	167	219	Peak
32.979	27.39	-12.61	40	41.2	16.04	0.24	30.09	-	-	Peak
86.503	26.36	-13.64	40	48.11	7.89	0.37	30.01	-	-	Peak
165.487	22.28	-21.22	43.5	42.3	9.36	0.54	29.92	-	-	Peak
270.375	24.42	-21.58	46	41.25	12.39	0.69	29.91	-	-	Peak
948.761	29.58	-16.42	46	37.06	20.73	1.33	29.54	-	-	Peak
2390	71.92	-2.08	74	63.91	32.86	4.23	29.08	110	359	Peak
2390	52.68	-1.32	54	44.67	32.86	4.23	29.08	110	359	Average
2412	106.24	-	-	98.16	32.89	4.24	29.05	110	1	Peak
2412	94.85	-	-	86.77	32.89	4.24	29.05	110	1	Average
2483.85	53.69	-20.31	74	45.39	33.01	4.29	29	172	243	Peak
2483.85	40.58	-13.42	54	32.28	33.01	4.29	29	172	243	Average



Test Mode :	802.11n-HT20	Temperature :	20~21°C
Test Channel :	01	Relative Humidity :	41~42%
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
30.211	27.92	-12.08	40	39.74	18	0.26	30.08	100	0	Peak
31.955	27.19	-12.81	40	40.49	16.55	0.24	30.09	-	-	Peak
53.693	24.89	-15.11	40	47.93	6.8	0.29	30.13	-	-	Peak
125.446	22.26	-21.24	43.5	40.03	11.75	0.46	29.98	-	-	Peak
437.12	22.97	-23.03	46	35.64	16.24	0.89	29.8	-	-	Peak
948.761	28.37	-17.63	46	35.85	20.73	1.33	29.54	-	-	Peak
2390	68.06	-5.94	74	60.05	32.86	4.23	29.08	101	341	Peak
2390	50.89	-3.11	54	42.88	32.86	4.23	29.08	101	341	Average
2412	101.59	-	-	93.51	32.89	4.24	29.05	100	359	Peak
2412	90.36	-	-	82.28	32.89	4.24	29.05	100	359	Average
2499.05	53.09	-20.91	74	44.72	33.05	4.31	28.99	114	21	Peak
2499.05	39.62	-14.38	54	31.25	33.05	4.31	28.99	114	21	Average



<b>Test Mode :</b>	802.11n-HT20	<b>Temperature :</b>	20~21°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	41~42%
<b>Test Engineer :</b>	Jack Li	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30.211	26.17	-13.83	40	37.99	18	0.26	30.08	200	358	Peak
49.707	24.21	-15.79	40	46.31	7.75	0.28	30.13	-	-	Peak
55.221	24	-16	40	47.64	6.2	0.29	30.13	-	-	Peak
147.404	23.5	-20	43.5	42.77	10.21	0.5	29.98	-	-	Peak
270.375	24.68	-21.32	46	41.51	12.39	0.69	29.91	-	-	Peak
948.761	29.71	-16.29	46	37.19	20.73	1.33	29.54	-	-	Peak
2351.61	53.12	-20.88	74	45.24	32.81	4.21	29.14	189	341	Peak
2351.61	40.39	-13.61	54	32.51	32.81	4.21	29.14	189	341	Average
2437	105.48	-	-	97.31	32.95	4.25	29.03	165	360	Peak
2437	94.34	-	-	86.17	32.95	4.25	29.03	165	360	Average
2498.86	53.27	-20.73	74	44.91	33.05	4.3	28.99	112	59	Peak
2498.86	40.04	-13.96	54	31.68	33.05	4.3	28.99	112	59	Average



Test Mode :	802.11n-HT20	Temperature :	20~21°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
37.548	20.82	-19.18	40	36.94	13.7	0.24	30.06	-	-	Peak
186.441	30.64	-12.86	43.5	51.53	8.46	0.57	29.92	-	-	Peak
271.325	33.59	-12.41	46	50.4	12.41	0.69	29.91	112	243	Peak
307.831	33.06	-12.94	46	49.11	13.17	0.73	29.95	-	-	Peak
344.386	31.95	-14.05	46	46.71	14.37	0.81	29.94	-	-	Peak
948.761	29.81	-16.19	46	37.29	20.73	1.33	29.54	-	-	Peak
2362.63	53.79	-20.21	74	45.89	32.81	4.21	29.12	135	142	Peak
2362.63	40.08	-13.92	54	32.18	32.81	4.21	29.12	135	142	Average
2437	102.36	-	-	94.19	32.95	4.25	29.03	200	276	Peak
2437	91.41	-	-	83.24	32.95	4.25	29.03	200	276	Average
2495.25	53.49	-20.51	74	45.13	33.05	4.3	28.99	104	48	Peak
2495.25	40.3	-13.7	54	31.94	33.05	4.3	28.99	104	48	Average



Test Mode :	802.11n-HT20	Temperature :	20~21°C
Test Channel :	11	Relative Humidity :	41~42%
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
30.211	24.99	-15.01	40	36.81	18	0.26	30.08	102	221	Peak
37.945	24.08	-15.92	40	40.2	13.7	0.24	30.06	-	-	Peak
147.404	23.56	-19.94	43.5	42.83	10.21	0.5	29.98	-	-	Peak
171.995	23.47	-20.03	43.5	43.74	9.08	0.55	29.9	-	-	Peak
270.375	25.86	-20.14	46	42.69	12.39	0.69	29.91	-	-	Peak
948.761	28.8	-17.2	46	36.28	20.73	1.33	29.54	-	-	Peak
2377.26	54.05	-19.95	74	46.09	32.83	4.22	29.09	197	144	Peak
2377.26	40.33	-13.67	54	32.37	32.83	4.22	29.09	197	144	Average
2462	105.51	-	-	97.27	32.98	4.27	29.01	134	2	Peak
2462	94.59	-	-	86.35	32.98	4.27	29.01	134	2	Average
2483.5	66.72	-7.28	74	58.42	33.01	4.29	29	105	356	Peak
2483.5	52.99	-1.01	54	44.69	33.01	4.29	29	105	356	Average



Test Mode :	802.11n-HT20	Temperature :	20~21°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
30	27.56	-12.44	40	39.38	18	0.26	30.08	-	-	Peak
31.289	29.33	-10.67	40	41.87	17.29	0.25	30.08	200	344	Peak
53.882	27.48	-12.52	40	50.83	6.49	0.29	30.13	-	-	Peak
116.54	25.22	-18.28	43.5	42.95	11.8	0.44	29.97	-	-	Peak
147.404	24.5	-19	43.5	43.77	10.21	0.5	29.98	-	-	Peak
938.833	29.96	-16.04	46	37.48	20.68	1.33	29.53	-	-	Peak
2348.19	54.19	-19.81	74	46.35	32.78	4.21	29.15	168	120	Peak
2348.19	41.13	-12.87	54	33.29	32.78	4.21	29.15	168	120	Average
2462	103.4	-	-	95.16	32.98	4.27	29.01	120	309	Peak
2462	92.58	-	-	84.34	32.98	4.27	29.01	120	309	Average
2483.5	65.75	-8.25	74	57.45	33.01	4.29	29	113	204	Peak
2483.5	50.6	-3.4	54	42.3	33.01	4.29	29	113	204	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.

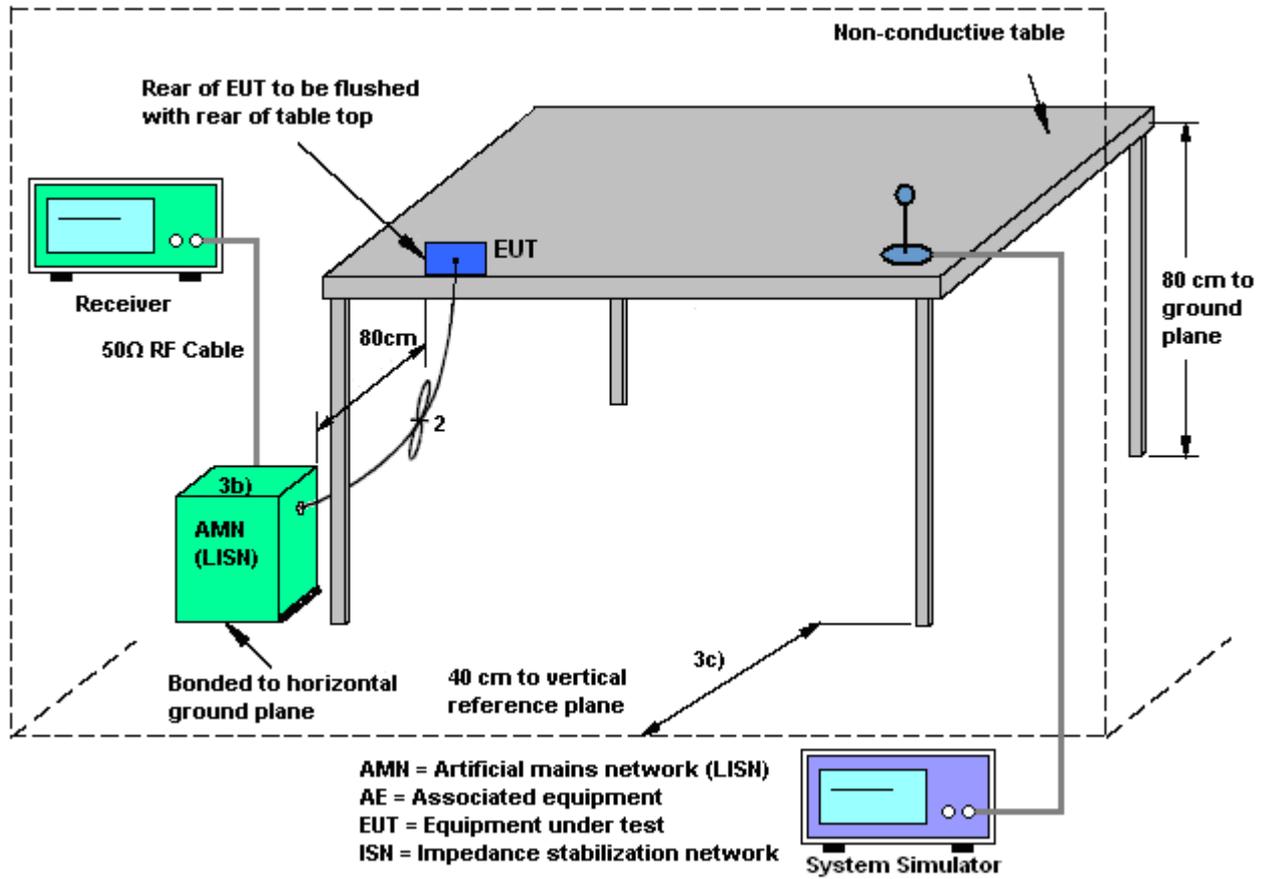
#### 3.6.2 Measuring Instruments

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 and ANSI C63.10-2009.
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.

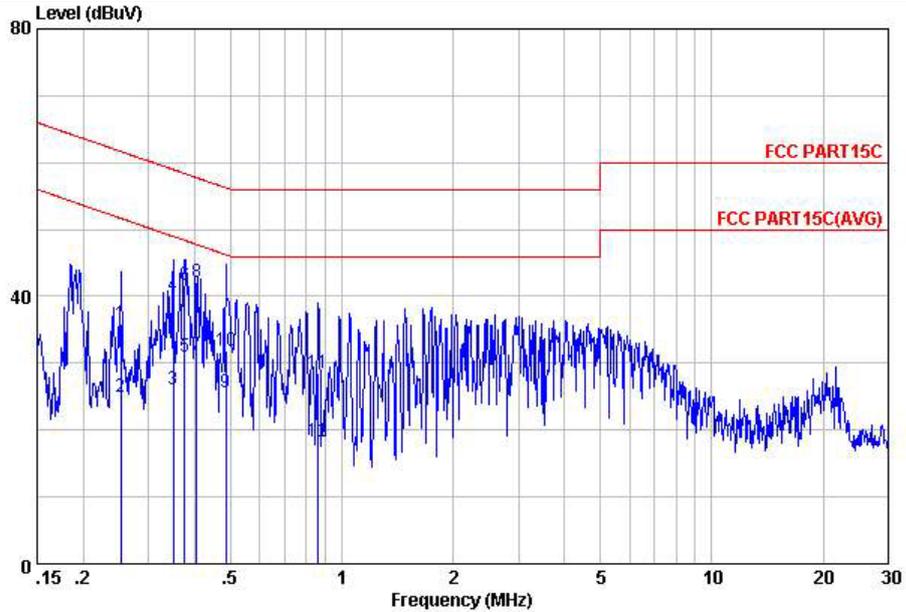
### 3.6.4 Test Setup





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 :	CDMA 2000 BC0 Idle + USB Cable (Charging from Adapter) + WLAN Link + Bluetooth Link + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

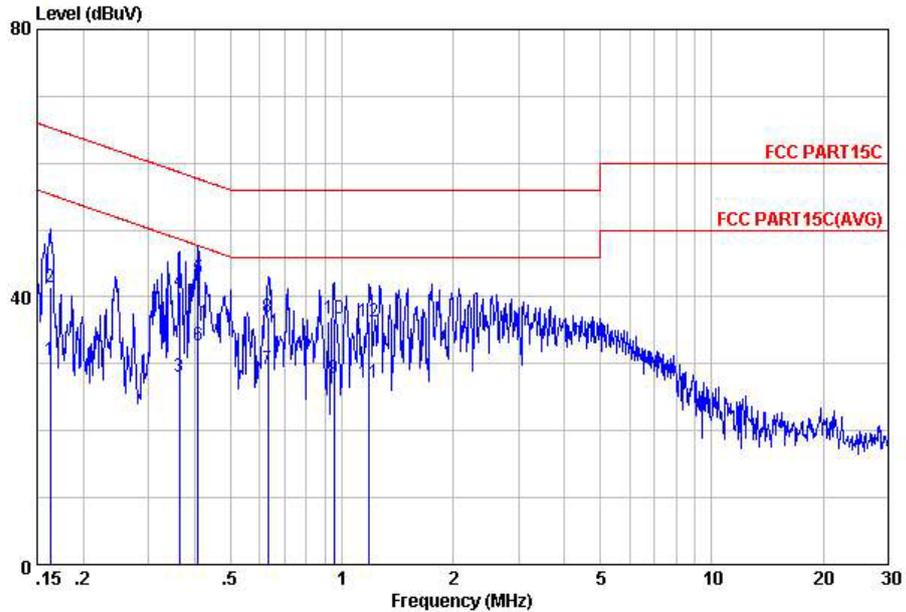


Site : C001-KS  
 Condition: FCC PART15C LISN-111230 LINE  
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.25	35.96	-25.73	61.69	25.50	-0.07	10.53	QP
2	0.25	25.06	-26.63	51.69	14.60	-0.07	10.53	Average
3	0.35	26.13	-22.83	48.96	15.60	-0.08	10.61	Average
4	0.35	40.13	-18.83	58.96	29.60	-0.08	10.61	QP
5	0.38	31.06	-17.33	48.39	20.53	-0.08	10.61	Average
6	0.38	41.74	-16.65	58.39	31.21	-0.08	10.61	QP
7	0.40	31.14	-16.63	47.77	20.60	-0.08	10.62	Average
8	0.40	42.14	-15.63	57.77	31.60	-0.08	10.62	QP
9	0.49	25.54	-20.69	46.23	15.00	-0.08	10.62	Average
10	0.49	31.94	-24.29	56.23	21.40	-0.08	10.62	QP
11	0.86	28.55	-27.45	56.00	18.00	-0.10	10.65	QP
12	0.86	18.25	-27.75	46.00	7.70	-0.10	10.65	Average



Test Mode :	Mode 1	Temperature :	19~20°C
Test Engineer :	Tom Wang	Relative Humidity :	39~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA 2000 BC0 Idle + USB Cable (Charging from Adapter) + WLAN Link + Bluetooth Link + Earphone + Camera		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS  
 Condition: FCC PART15C LISN-111230 NEUTRAL  
 mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	30.61	-24.73	55.34	20.29	-0.08	10.40	Average
2	0.16	41.51	-23.83	65.34	31.19	-0.08	10.40	QP
3	0.36	28.03	-20.62	48.65	17.50	-0.08	10.61	Average
4	0.36	40.73	-17.92	58.65	30.20	-0.08	10.61	QP
5	0.41	42.84	-14.84	57.68	32.30	-0.08	10.62	QP
6	0.41	32.84	-14.84	47.68	22.30	-0.08	10.62	Average
7	0.63	29.15	-16.85	46.00	18.60	-0.08	10.63	Average
8	0.63	36.95	-19.05	56.00	26.40	-0.08	10.63	QP
9	0.95	27.76	-18.24	46.00	17.20	-0.09	10.65	Average
10	0.95	36.76	-19.24	56.00	26.20	-0.09	10.65	QP
11	1.18	27.16	-18.84	46.00	16.59	-0.09	10.66	Average
12	1.18	36.26	-19.74	56.00	25.69	-0.09	10.66	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	Aug. 22, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 22, 2012	Aug. 22, 2012	Aug. 21, 2013	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 22, 2012	Aug. 22, 2012	Aug. 21, 2013	Conducted (TH01-KS)
DC Power Supply	GWINSTEK	GPS-3030D	E1884515	N/A	Aug. 22, 2012	Aug. 22, 2012	Aug. 21, 2013	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	N/A	Dec. 30, 2011	Aug. 22, 2012	Dec. 29, 2012	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Aug. 30, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Aug. 30, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Aug. 30, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 03, 2012	Aug. 30, 2012	Jul. 02, 2014	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Aug. 30, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Aug. 30, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Aug. 30, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Aug. 30, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Aug. 30, 2012	Oct.10, 2012	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	Aug. 07, 2012	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	Aug. 07, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	Aug. 07, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	Aug. 07, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 30, 2011	Aug. 07, 2012	Dec. 29, 2012	Conduction (CO01-KS)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.54
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.72
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### Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.26
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## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP280303 as below.