

APPLICATION FOR CERTIFICATION

On Behalf of

LG Electronics Inc.

WLAN Adapter Card

Model No.: WN7111B

FCC ID: BEJ9QK-WN7111B

IC: 2703H-WN7111B

Brand: LG

Prepared for : LG Electronics Inc.
19-1, Cheongho-ri, Jinwi-myeon,
Pyeongtaek-si, Gyeonggi-do,
451-713 Korea

Prepared by : AUDIX Technology Corporation
EMC Department
No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan, R.O.C.

Tel : (02) 2609-9301, 2609-2133

Fax : (02) 2609-9303

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TEST REPORT CERTIFICATION

Applicant : LG Electronics Inc.
Manufacturer : Compal Networking (Kunshan) Co., Ltd.
EUT Description : WLAN Adapter Card
FCC ID : **BEJ9QK-WN7111B**
IC : **2703H-WN7111B**
(A) Model No. : WN7111B
(B) Serial No. : N/A
(C) Brand : LG
(D) Power Supply : DC 5V (Powered by Notebook PC)

Measurement Procedure Used:

Industry Canada Rules and Regulations RSS-Gen (Issue 3), December 2010 and
RSS-210 (Issue 8), December 2010

FCC Rules and Regulations Part 15 Subpart C, Oct. 2010

And ANSI C63.4/2003

(Canada RSS-210 §Annex 8 and FCC 47 CFR Part 15C, §15.205 and §15.207 and §15.209
and §15.407)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C and Canada RSS-210 limits.

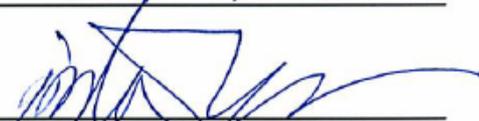
The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC Part 15 and Industry Canada RSS-Gen, RSS-210 standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: Oct. 11 ~ 14, 2011

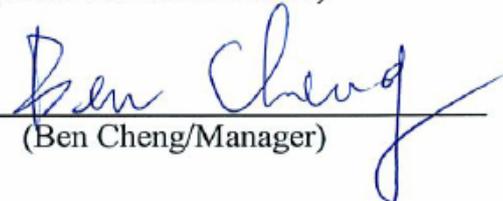
Date of Report: Oct. 18, 2011

Producer:



(Nita Lee/Administrator)

Signatory:



(Ben Cheng/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	WLAN Adapter Card
Model Number	:	WN7111B
Brand	:	LG
FCC ID	:	BEJ9QK-WN7111B
Canada IC	:	2703H-WN7111B
Applicant	:	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713 Korea
Manufacturer	:	Compal Networking (Kunshan) Co., Ltd. 520 Nanbang Rd., Economic & Technical Development Zone, Kunshan, Jiangsu, P.R. China.
Fundamental Range	:	2400MHz ~ 2483.5MHz
Frequency Channel	:	802.11b/g: 11 channels 802.11n-HT20: 11 channels 802.11n-HT40: 7 channels
Radio Technology	:	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g/n: OFDM Modulation 1T1R, (BPSK/QPSK/16QAM/64QAM)
Data Transfer Rate	:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Antenna Gain	:	1.63dBi (Peak)
Date of Receipt of Sample	:	Oct. 11, 2011
Date of Test	:	Oct. 11 ~ 14, 2011

1.2. Data Rate Relative to Output Power

This Table is measured base on low channel.

802.11b			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	DBPSK	1	18.74
1	DQPSK	2	18.73
1	CCK	5.5	18.70
1	CCK	11	18.68

802.11g			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	BPSK	6	14.30
1	BPSK	9	14.28
1	QPSK	12	14.25
1	QPSK	18	14.25
1	16-QAM	24	14.22
1	16-QAM	36	14.20
1	64-QAM	48	14.19
1	64-QAM	54	14.19

802.11n-HT20			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	BPSK	6.5	14.33
1	QPSK	13	14.32
1	QPSK	19.5	14.30
1	16-QAM	26	14.29
1	16-QAM	39	14.27
1	64-QAM	52	14.26
1	64-QAM	58.6	14.24
1	64-QAM	65	14.21

802.11g-HT40			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
3	BPSK	13.5	12.16
3	QPSK	27	12.13
3	QPSK	40.5	12.11
3	16-QAM	54	12.09
3	16-QAM	81	12.07
3	64-QAM	108	12.05
3	64-QAM	121.5	12.04
3	64-QAM	150	12.01

1.3. Test Configuration for Each Test Item

Test Item	802.11b	802.11g	802.11n-HT20	802.11n-HT40
	Data Rate for Test (Mbps)			
6dB BW	1	6	6.5	13.5
Peak Power Spectral Density	1	6	6.5	13.5
Peak Output Power	1	6	6.5	13.5
Band Edge	1	6	6.5	13.5
99% BW	1	6	6.5	13.5
Conducted Spurious Emission	1	6	6.5	13.5
Radiated Spurious Emission	1	6	6.5	13.5

1.4. Tested Supporting System Details

1.4.1. NOTEBOOK PC

Model Number : PP2130
 Serial Number : 5Y32KSQZ40ME
 FCC ID : By DoC
 BSMI ID : 3912A556
 Brand : Compaq
 AC Adapter : COMPAQ, M/N: PA-1650-02C
 DC Cord: Non-Shielded, Undetachable, 1.8m
 Bonded one ferrite core
 USB Cable : Non-Shielded, Detachable, 0.25m
 Power Cord : Non-Shielded, Detachable, 1.8m

1.5. Description of Test Facility

Name of Firm	:	AUDIX Technology Corporation EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
Test Site (C3/Semi-AC)	:	No. 3 Shielded Room No. 67-4, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C. Semi-Anechoic Chamber No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C. May 14, 2009 Renewal on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

1.6. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.74dB
	Above 1GHz	± 5.02dB

Remark : Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dBm
Emission Limitations	± 0.13dB
Band edges	± 0.13dB
Power spectral density	± 0.13dB
Occupied Bandwidth 99% Power	± 1kHz

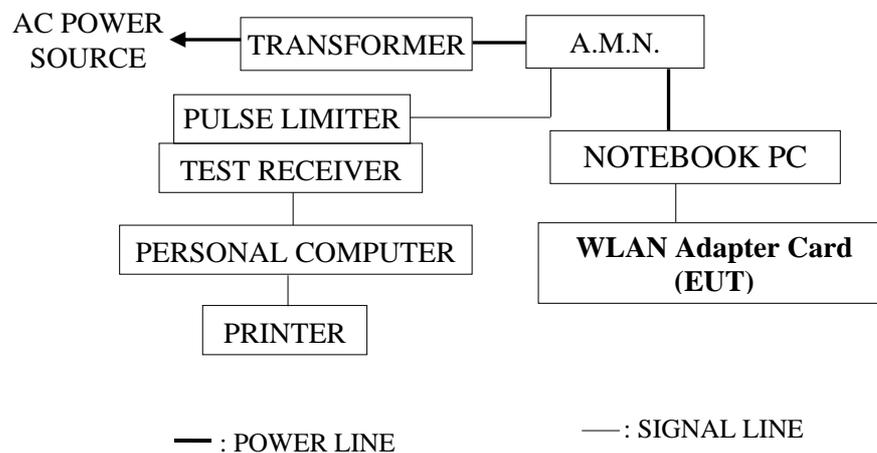
2. CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipment was used during the conducted emission measurement :
 (No. 3 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCS30	100337	Apr. 11, 11'	Apr. 10, 12'
2.	A.M.N	Kyoritsu	KNW-244C	8-1373-5	Jul. 14, 11'	Jul. 13, 12'
3.	Pulse Limiter	R&S	ESH3-Z2	100041	Feb. 01, 11'	Jan. 31, 12'

2.2. Block Diagram of Test Setup



2.3. Conducted Emission Limits (§15.207, RSS-Gen §7.2.2/Table 2)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

- 2.4.1. Setup the EUT and simulator as shown on 2.2.
- 2.4.2. Turn on the power of all equipment.
- 2.4.3. The Notebook PC was running test software “QA Tool” to set EUT (WLAN Adapter Card) on transmitting and receiving during all testing.

2.5. Test Procedure

The EUT (link Notebook PC) was put on table which was above the ground by 80cm and Notebook PC's AC adapter's power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50Ω coupling impedance for the tested equipment. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to ANSI C63.4-2003, RSS-Gen and RSS-210 during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was pre-scanned with a peak detector.

The all final readings from test receiver were measured with Quasi-Peak detector and Average detector. (Remark : If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.6. Conducted Emission Measurement Results

PASSED.

(All the emissions not reported below are too low against the prescribed limits.)

The EUT was performed during this section testing and all the test results are attached in next pages.

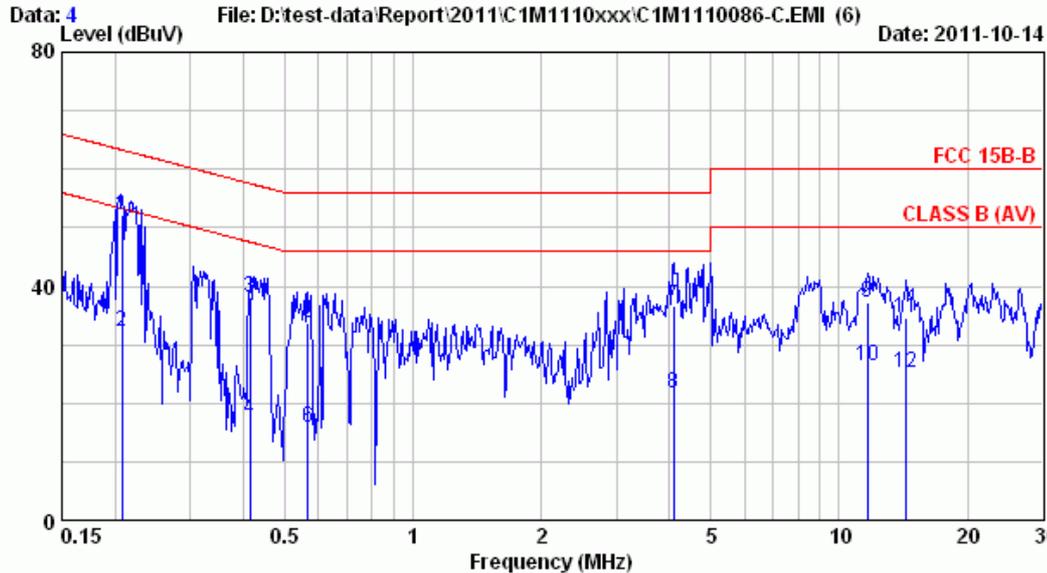
EUT : WLAN Adapter Card M/N : WN7111B

Test Date : Oct. 14, 2011 Temperature : 25 Humidity : 52%

Reference Test Data : Neutral # 4; Line # 3



AUDIX TECHNOLOGY Corp. EMC Laboratory
 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei
 County, Taiwan R.O.C. Post Code:24443
 Tel:+886-2-26092133 Fax:+886-2-26099303
 Email:emc@audixtech.com



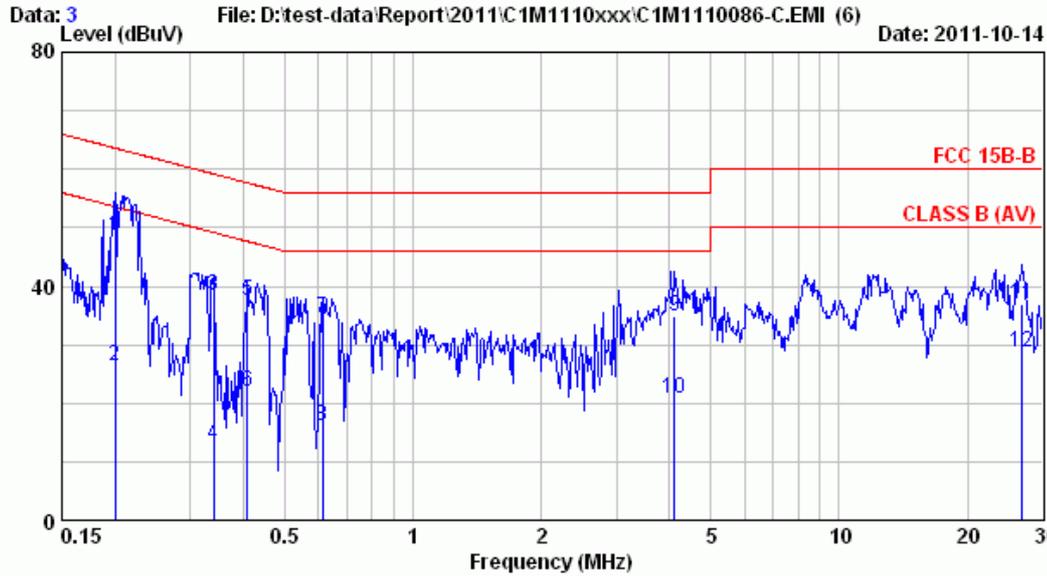
Site : No.3 Shielded Room Data : 4
 Condition : KNW-244C Phase : NEUTRAL
 Limit : FCC 15B-B
 Env. / Ins. : 25°C / 52% ESCS 30 (337) Engineer: Edward
 EUT M/N : WN7111B
 Power Rating : 120Vac / 60Hz
 Test Mode : OPERATING

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.207	0.10	0.20	51.93	52.23	63.32	11.09	QP
2	0.207	0.10	0.20	31.96	32.26	53.32	21.06	AVERAGE
3	0.415	0.10	0.20	37.75	38.05	57.55	19.50	QP
4	0.415	0.10	0.20	17.12	17.42	47.55	30.13	AVERAGE
5	0.567	0.10	0.20	33.53	33.83	56.00	22.17	QP
6	0.567	0.10	0.20	15.39	15.69	46.00	30.31	AVERAGE
7	4.092	0.20	0.60	35.88	36.68	56.00	19.32	QP
8	4.092	0.20	0.60	20.89	21.69	46.00	24.31	AVERAGE
9	11.621	0.34	0.70	36.14	37.18	60.00	22.82	QP
10	11.621	0.34	0.70	25.36	26.40	50.00	23.60	AVERAGE
11	14.364	0.39	0.70	33.57	34.66	60.00	25.34	QP
12	14.364	0.39	0.70	24.02	25.11	50.00	24.89	AVERAGE

Remarks: 1.Emission Level= AMN Factor + Cable Loss + Reading.
 2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



AUDIX TECHNOLOGY Corp. EMC Laboratory
 No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei
 County, Taiwan R.O.C. Post Code:24443
 Tel:+886-2-26092133 Fax:+886-2-26099303
 Email:emc@audixtech.com



Site : No.3 Shielded Room Data : 3
 Condition : KNW-244C Phase : LINE
 Limit : FCC 15B-B
 Env. / Ins. : 25°C / 52% ESCS 30 (337) Engineer: Edward
 EUT M/N : WN7111B
 Power Rating : 120Vac / 60Hz
 Test Mode : OPERATING

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.200	0.10	0.20	48.49	48.79	63.62	14.83	QP
2	0.200	0.10	0.20	26.22	26.52	53.62	27.10	AVERAGE
3	0.341	0.10	0.20	37.95	38.25	59.18	20.93	QP
4	0.341	0.10	0.20	12.56	12.86	49.18	36.32	AVERAGE
5	0.408	0.10	0.20	37.18	37.48	57.68	20.20	QP
6	0.408	0.10	0.20	21.73	22.03	47.68	25.65	AVERAGE
7	0.614	0.10	0.20	34.28	34.58	56.00	21.42	QP
8	0.614	0.10	0.20	15.79	16.09	46.00	29.91	AVERAGE
9	4.114	0.21	0.60	33.96	34.77	56.00	21.23	QP
10	4.114	0.21	0.60	19.93	20.74	46.00	25.26	AVERAGE
11	26.841	0.34	0.70	35.94	36.98	60.00	23.02	QP
12	26.841	0.34	0.70	27.64	28.68	50.00	21.32	AVERAGE

Remarks: 1.Emission Level= AMN Factor + Cable Loss + Reading.
 2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

3.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 11'	Aug. 03, 12'
2.	Test Receiver	R & S	ESCS30	100265	Aug. 25, 11'	Aug. 24, 12'
3.	Pre-Amplifier	HP	8447D	2944A06305	Feb. 10, 11'	Feb. 09, 12'
4.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 08, 11'	Mar. 07, 12'
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0810	Mar. 08, 11'	Mar. 07, 12'

3.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

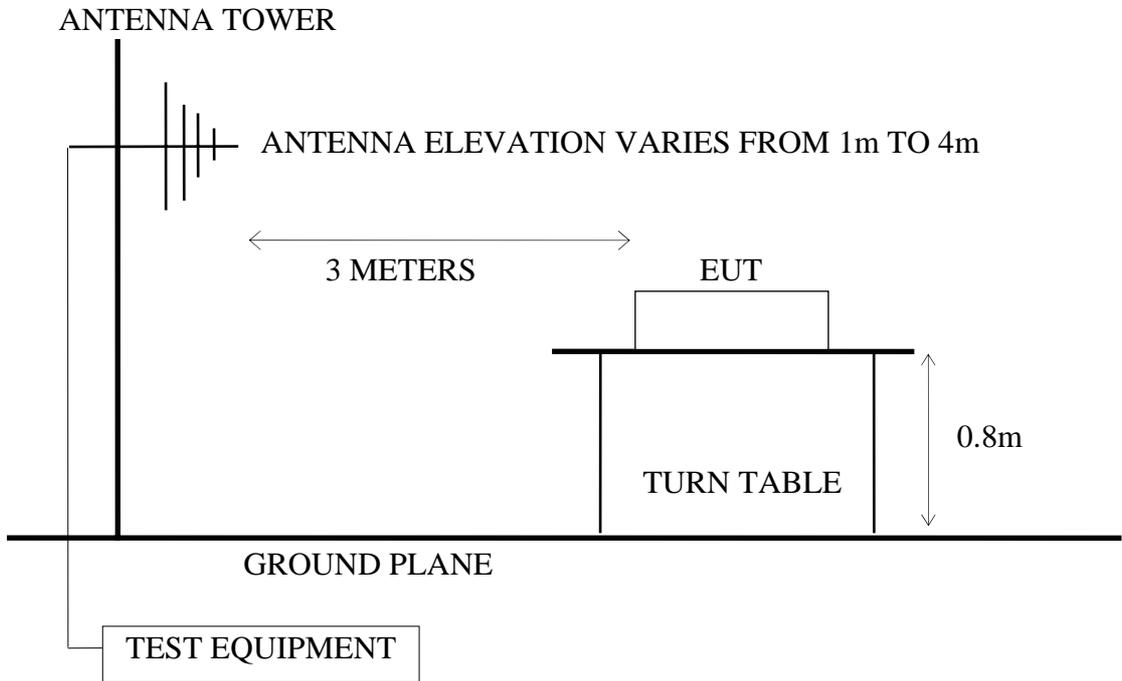
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 11'	Aug. 03, 12'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 12, 11'	Jul. 11, 12'
3.	Amplifier	HP	8449B	3008A00529	Dec. 10, 10'	Dec. 09, 11'
4.	2.4GHz Notch Filter	EWT	EWT-14-0070-R1	G2	Dec. 05, 10'	Dec. 04, 11'
5.	3.5G High Pass Filter	HP	84300-80038	005	Jan. 05, 11'	Jan. 04, 12'
6.	Horn Antenna	EMCO	3115	9112-3775	May 09, 11'	May 08, 12'
7.	Horn Antenna	EMCO	3116	2653	Oct. 07, 11'	Oct. 06, 12'

3.2. Test Setup

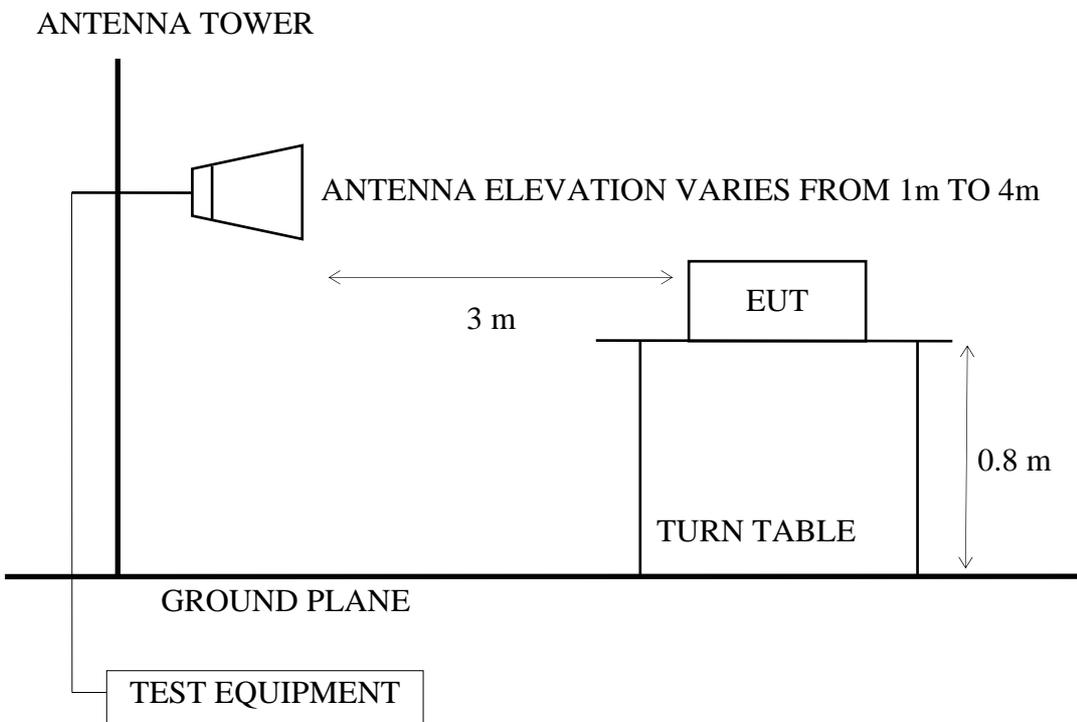
3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



3.3. Radiated Emission Limits (§15.209, RSS-210 §2.7/Table 2)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

Remark : (1) Emission level ($\text{dB}\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$)

- (2) The tighter limit applies at the edge between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
- (5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

3.4. Operating Condition of EUT

- 3.4.1. Set up the EUT (WLAN Adapter Card) via Notebook PC and simulator as shown on 3.2.
- 3.4.2. To turn on the power of all equipments.
- 3.4.3. The EUT was set the Notebook PC using test program "QA Tool".
- 3.4.4. The EUT supports 802.11b/g/n-HT20/n-HT40 modes, we performed pre-scan high, middle, low channels for each mode for spurious emission and listed the worst channel of each mode in test report.

The worst channel of each mode as following:

Mode	Type of Network	Channel
1.	802.11b	CH 1
2.	802.11g	CH 11
3.	802.11n-HT20	CH 1
4.	802.11n-HT40	CH 6

3.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 3 meters away from the receiving antenna which was mounted on a antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 40GHz (Up to 10th harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector.

Above 1GHz was measured with peak and average detector. For frequency from 1GHz to 40GHz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist.

3.6. Test Results

PASSED.

(All emissions not reported below are too low against the prescribed limits.)

EUT : Wlan Adapter Card M/N : WN7111B

Test Date : Oct. 11, 2011 Temperature : 27 Humidity : 60%

The radiation tests on three different axes (stand, lie and side), we assessed the value and we selected the worst radiation position “lie” for our measured results.

For Frequency Range 30MHz~1000MHz:

The EUT select **worst position “lie”** and with following test modes was performed during this section testing and all the test results are listed in section 3.6.1.

No.	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1	WLAN (802.11b)	CH 1	2412MHz	Transmit	# 1	# 2
2	WLAN (802.11g)	CH 11	2462MHz	Transmit	# 2	# 1
3	WLAN (802.11n-HT20)	CH 1	2412MHz	Transmit	# 1	# 2
4	WLAN (802.11n-HT40)	CH 6	2437MHz	Transmit	# 2	# 1
5	WLAN	----	----	Receive	# 2	# 1

* Above all final readings were measured with Quasi-Peak detector.

For Frequency above 1GHz:

The EUT select **worst position “lie”** and with following test modes was performed during this section testing and all the test results are listed in section 3.6.1.

No.	Type of Network	Channel	Frequency	Test Mode	Reference Test Data		
					Horizontal		Vertical
1	WLAN (802.11b)	CH 1	2412MHz	Transmit	Peak	# 6	# 5
					Average	# 4	# 3
2	WLAN (802.11g)	CH 11	2462MHz	Transmit	Peak	# 6	# 5
					Average	# 4	# 3
3	WLAN (802.11n-HT20)	CH 1	2412MHz	Transmit	Peak	# 4	# 3
					Average	# 6	# 5
4	WLAN (802.11n-HT40)	CH 6	2437MHz	Transmit	Peak	# 4	# 3
					Average	# 6	# 5
5	WLAN	----	----	Receive	Peak	None (Note)	None (Note)

* Above all final readings were measured with Peak detector and Average detector.
Note: The emissions (up to 25GHz) not reported are too low to be measured.

For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

No.	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1	WLAN (802.11b)	CH 1	2412MHz	Transmit	# 2, # 3	# 1, # 4
2		CH 11	2462MHz	Transmit	# 7, # 6	# 8, # 5
3	WLAN (802.11g)	CH 1	2412MHz	Transmit	# 3, # 2	# 4, # 1
4		CH 11	2462MHz	Transmit	# 7, # 6	# 8, # 5
5	WLAN (802.11n-HT20)	CH 1	2412MHz	Transmit	# 3, # 2	# 4, # 1
6		CH 11	2462MHz	Transmit	# 6, # 7	# 5, # 8
7	WLAN (802.11n-HT40)	CH 3	2422MHz	Transmit	# 6, # 7	# 5, # 8
8		CH 9	2452MHz	Transmit	# 3, # 2	# 4, # 1

3.6.1. For 30-1000MHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2412MHz

Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	6.53	27.91	43.50	15.59	QP
2	192.960	21.66	3.00	10.78	35.44	43.50	8.06	QP
3	288.990	25.97	3.80	4.91	34.68	46.00	11.32	QP
4	360.770	16.24	4.43	12.42	33.09	46.00	12.91	QP
5	793.390	23.98	6.90	7.55	38.43	46.00	7.57	QP
6	840.920	25.08	7.10	5.47	37.65	46.00	8.35	QP
7	961.200	26.50	7.60	10.08	44.18	54.00	9.82	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	57.160	13.77	1.60	6.98	22.35	40.00	17.65	QP
2	192.960	21.66	3.00	3.42	28.08	43.50	15.42	QP
3	360.770	16.24	4.43	6.00	26.67	46.00	19.33	QP
4	408.300	17.28	4.90	3.96	26.14	46.00	19.86	QP
5	486.870	18.67	6.20	4.46	29.33	46.00	16.67	QP
6	793.390	23.98	6.90	4.59	35.47	46.00	10.53	QP
7	961.200	26.50	7.60	2.94	37.04	54.00	16.96	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11g, Transmit, Frequency: 2462MHz

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	4.31	25.69	43.50	17.81	QP
2	192.960	21.66	3.00	13.20	37.86	43.50	5.64	QP
3	360.770	16.24	4.43	12.21	32.88	46.00	13.12	QP
4	432.550	17.28	5.20	8.18	30.66	46.00	15.34	QP
5	793.390	23.98	6.90	7.33	38.21	46.00	7.79	QP
6	840.920	25.08	7.10	3.84	36.02	46.00	9.98	QP
7	961.200	26.50	7.60	9.82	43.92	54.00	10.08	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	0.91	22.29	43.50	21.21	QP
2	192.960	21.66	3.00	3.77	28.43	43.50	15.07	QP
3	360.770	16.24	4.43	7.26	27.93	46.00	18.07	QP
4	408.300	17.28	4.90	5.98	28.16	46.00	17.84	QP
5	554.770	19.46	6.80	-0.51	25.75	46.00	20.25	QP
6	793.390	23.98	6.90	2.52	33.40	46.00	12.60	QP
7	961.200	26.50	7.60	1.34	35.44	54.00	18.56	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT20, Transmit, Frequency: 2412MHz

Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	2.22	23.60	43.50	19.90	QP
2	168.710	20.99	2.80	10.37	34.16	43.50	9.34	QP
3	192.960	21.66	3.00	11.24	35.90	43.50	7.60	QP
4	360.770	16.24	4.43	8.05	28.72	46.00	17.28	QP
5	456.800	17.77	5.52	6.34	29.63	46.00	16.37	QP
6	721.610	22.21	6.50	3.62	32.33	46.00	13.67	QP
7	793.390	23.98	6.90	5.51	36.39	46.00	9.61	QP
8	961.200	26.50	7.60	6.73	40.83	54.00	13.17	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	63.950	11.90	1.67	2.63	16.20	40.00	23.80	QP
2	168.710	20.99	2.80	1.12	24.91	43.50	18.59	QP
3	360.770	16.24	4.43	4.11	24.78	46.00	21.22	QP
4	408.300	17.28	4.90	5.38	27.56	46.00	18.44	QP
5	793.390	23.98	6.90	0.06	30.94	46.00	15.06	QP
6	961.200	26.50	7.60	-3.88	30.22	54.00	23.78	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT40, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	5.30	26.68	43.50	16.82	QP
2	168.710	20.99	2.80	11.73	35.52	43.50	7.98	QP
3	217.210	21.90	3.20	10.40	35.50	46.00	10.50	QP
4	360.770	16.24	4.43	11.30	31.97	46.00	14.03	QP
5	456.800	17.77	5.52	7.36	30.64	46.00	15.36	QP
6	793.390	23.98	6.90	7.52	38.40	46.00	7.60	QP
7	840.920	25.08	7.10	2.71	34.89	46.00	11.11	QP
8	961.200	26.50	7.60	9.98	44.08	54.00	9.92	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	54.250	14.79	1.50	1.38	17.67	40.00	22.33	QP
2	192.960	21.66	3.00	3.98	28.64	43.50	14.86	QP
3	360.770	16.24	4.43	5.47	26.14	46.00	19.86	QP
4	386.960	17.43	4.70	10.59	32.71	46.00	13.29	QP
5	488.810	18.59	6.24	3.17	27.99	46.00	18.01	QP
6	793.390	23.98	6.90	0.96	31.84	46.00	14.16	QP
7	961.200	26.50	7.60	0.68	34.78	54.00	19.22	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11, Receive

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : RX (802.11 RX)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	120.210	19.08	2.30	3.71	25.09	43.50	18.41	QP
2	168.710	20.99	2.80	10.74	34.53	43.50	8.97	QP
3	192.960	21.66	3.00	11.40	36.06	43.50	7.44	QP
4	360.770	16.24	4.43	10.09	30.76	46.00	15.24	QP
5	432.550	17.28	5.20	10.02	32.49	46.00	13.51	QP
6	793.390	23.98	6.90	4.87	35.75	46.00	10.25	QP
7	961.200	26.50	7.60	5.66	39.76	54.00	14.24	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : RX (802.11 RX)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	69.770	12.03	1.70	3.40	17.13	40.00	22.87	QP
2	168.710	20.99	2.80	1.12	24.91	43.50	18.59	QP
3	360.770	16.24	4.43	4.56	25.23	46.00	20.77	QP
4	408.300	17.28	4.90	4.57	26.75	46.00	19.25	QP
5	793.390	23.98	6.90	2.89	33.77	46.00	12.23	QP
6	961.200	26.50	7.60	0.22	34.32	54.00	19.68	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

3.6.2. For Above 1GHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2412MHz

Site no. : A/C Chamber
 Dis. / Ant. : 3m 3115(3775)
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60%
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

Data no. : 6
 Ant. pol. : HORIZONTAL
 □Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1199.920	24.88	4.59	14.77	44.24	74.00	29.76	Peak
2	1440.160	25.56	5.26	15.30	46.12	74.00	27.88	Peak
3	1599.760	26.10	6.14	16.04	48.28	74.00	25.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber
 Dis. / Ant. : 3m 3115(3775)
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60%
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

Data no. : 5
 Ant. pol. : VERTICAL
 □Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1196.560	24.88	4.58	14.04	43.50	74.00	30.50	Peak
2	1599.760	26.10	6.14	15.85	48.09	74.00	25.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1199.920	24.88	4.59	9.46	38.93	54.00	15.07	Average
2	1440.160	25.56	5.26	9.97	40.78	54.00	13.22	Average
3	1599.760	26.10	6.14	10.54	42.78	54.00	11.22	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1196.560	24.88	4.58	9.42	38.88	54.00	15.12	Average
2	1599.760	26.10	6.14	10.00	42.24	54.00	11.76	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11g, Transmit, Frequency: 2462MHz

Site no. : A/C Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	12.80	42.19	74.00	31.81	Peak
2	1599.760	26.10	6.14	16.11	48.35	74.00	25.65	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1031.920	24.40	4.24	15.05	43.69	74.00	30.31	Peak
2	1196.560	24.88	4.58	12.20	41.66	74.00	32.34	Peak
3	1599.760	26.10	6.14	19.76	52.00	74.00	22.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	7.80	37.19	54.00	16.81	Average
2	1599.760	26.10	6.14	11.11	43.35	54.00	10.65	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2462 (802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1031.920	24.40	4.24	9.86	38.51	54.00	15.49	Average
2	1196.560	24.88	4.58	7.12	36.58	54.00	17.42	Average
3	1599.760	26.10	6.14	13.91	46.15	54.00	7.85	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT20, Transmit, Frequency: 2412MHz

Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	13.33	42.72	74.00	31.28	Peak
2	1594.720	26.10	6.12	14.06	46.28	74.00	27.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	17.32	46.71	74.00	27.29	Peak
2	1599.760	26.10	6.14	19.23	51.47	74.00	22.53	Peak
3	1997.920	27.70	5.89	13.70	47.29	74.00	26.71	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	9.55	38.95	54.00	15.05	Average
2	1594.720	26.10	6.12	10.48	42.70	54.00	11.30	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2412 (802.11n HT-20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	1191.520	24.83	4.56	13.55	42.95	54.00	11.05	Average
2	1599.760	26.10	6.14	15.71	47.95	54.00	6.05	Average
3	1997.920	27.70	5.89	9.91	43.50	54.00	10.50	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT40, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber
 Dis. / Ant. : 3m 3115(3775)
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60%
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

Data no. : 4
 Ant. pol. : HORIZONTAL
Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1073.920	24.49	4.34	13.08	41.91	74.00	32.09	Peak
2	1196.560	24.88	4.58	15.62	45.08	74.00	28.92	Peak
3	1599.760	26.10	6.14	13.72	45.96	74.00	28.04	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber
 Dis. / Ant. : 3m 3115(3775)
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 27°C/60%
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

Data no. : 3
 Ant. pol. : VERTICAL
Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1196.560	24.88	4.58	16.10	45.56	74.00	28.44	Peak
2	1477.120	25.65	5.36	13.93	44.93	74.00	29.07	Peak
3	1603.120	26.10	6.18	14.05	46.33	74.00	27.67	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1073.920	24.49	4.34	7.83	36.66	54.00	17.34	Average
2	1196.560	24.88	4.58	10.72	40.18	54.00	13.82	Average
3	1599.760	26.10	6.14	8.36	40.60	54.00	13.40	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 27°C/60% □Jarwei Wang
 EUT : WN7111B
 Power Rating : DC 5V
 Test Mode : TX2437 (802.11n HT-40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1196.560	24.88	4.58	10.44	39.90	54.00	14.10	Average
2	1477.120	25.65	5.36	7.71	38.71	54.00	15.29	Average
3	1603.120	26.10	6.18	10.67	42.94	54.00	11.06	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

3.6.3. Restricted Bands Measurement Results

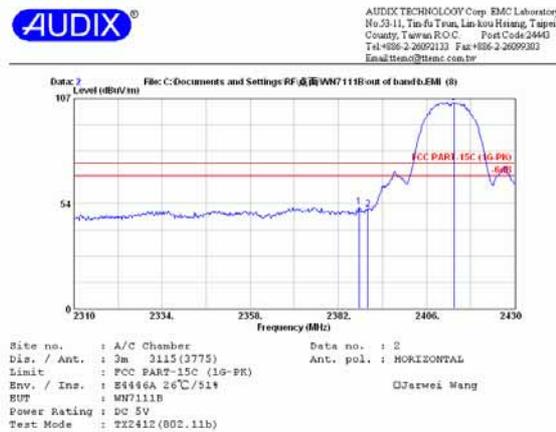
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11b, Transmit, Channel: 01, Frequency: 2412MHz

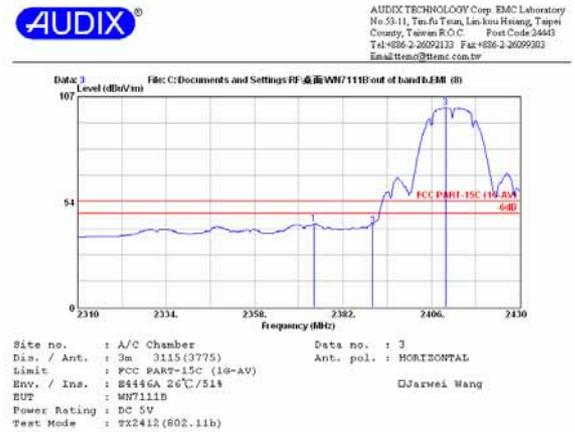
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2387.640	28.10	6.34	17.30	51.74	74.00	22.26
Average *	2374.080	28.08	6.32	8.11	42.51	54.00	11.49

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2387.640	28.10	6.34	17.30	51.74	74.00	22.26	Peak
2	2390.040	28.10	6.34	16.01	50.45	74.00	23.55	Peak
3	2412.440	28.11	6.36	10.72	105.20	74.00	-31.20	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the of cial limit are not reported.



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2374.080	28.08	6.32	8.11	42.51	54.00	11.49	Average
2	2390.040	28.10	6.34	6.89	41.33	54.00	12.67	Average
3	2409.840	28.11	6.36	67.03	101.50	54.00	-47.50	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

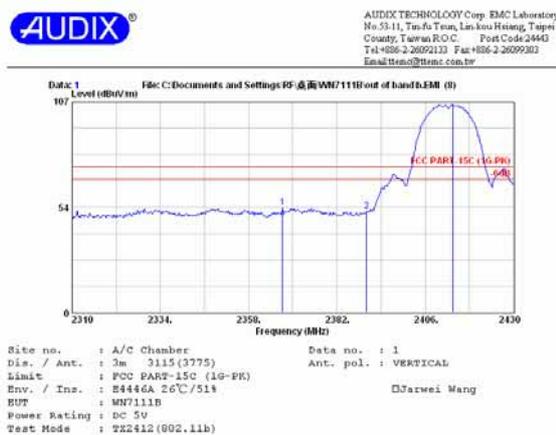
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11b, Transmit, Channel: 01, Frequency: 2412MHz

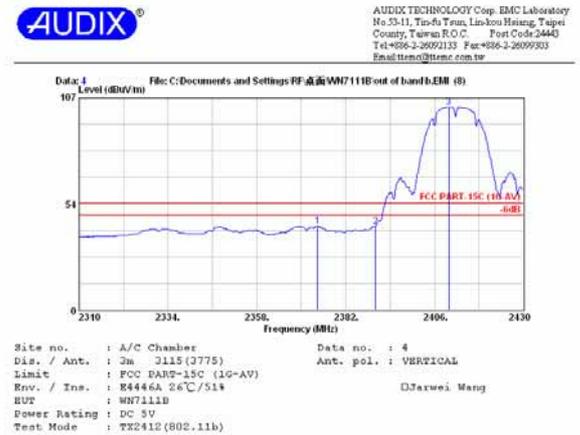
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2367.240	28.06	6.31	18.98	53.35	74.00	20.65
Average *	2374.440	28.08	6.32	7.91	42.31	54.00	11.69

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2367.240	28.06	6.31	18.98	53.35	74.00	20.65	Peak
2 2390.040	28.10	6.34	16.84	51.28	74.00	22.72	Peak
3 2413.440	28.11	6.36	71.22	105.70	74.00	-31.70	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2374.440	28.08	6.32	7.91	42.31	54.00	11.69	Average
2 2390.040	28.10	6.34	7.36	41.80	54.00	12.20	Average
3 2409.840	28.11	6.36	67.91	102.38	54.00	-48.38	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

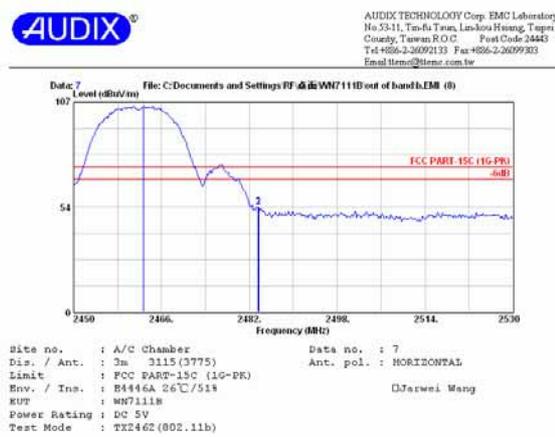
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11b, Transmit, Channel: 11, Frequency: 2462MHz

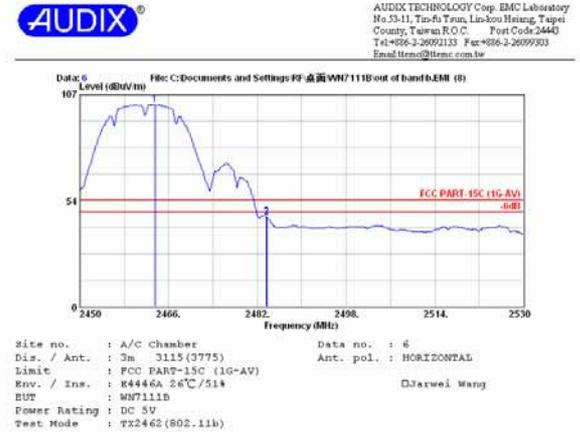
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.600	28.18	6.45	18.93	53.56	74.00	20.44
Average *	2483.600	28.18	6.45	10.68	45.31	54.00	8.69

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. High frequency section (spurious in the restricted band 2450-2530MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2462.720	28.17	6.42	70.43	105.02	74.00	-31.02	Peak #
2 2483.600	28.18	6.45	18.93	53.57	74.00	20.43	Peak #
3 2483.680	28.18	6.45	18.81	53.45	74.00	20.55	Peak #

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the of cial limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2463.520	28.17	6.42	67.49	102.00	54.00	-48.00	Average #
2 2483.600	28.18	6.45	10.68	45.32	54.00	8.68	Average #
3 2483.680	28.18	6.45	10.52	45.16	54.00	8.84	Average #

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

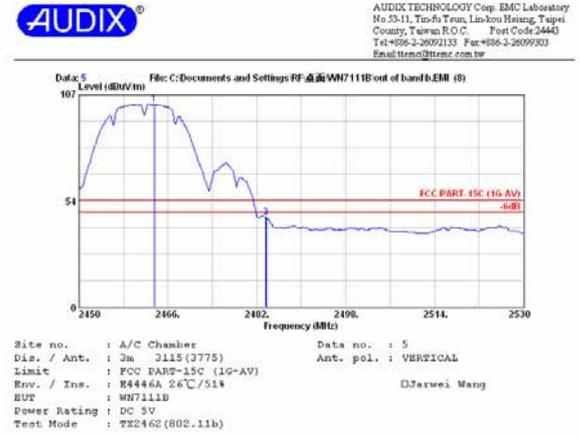
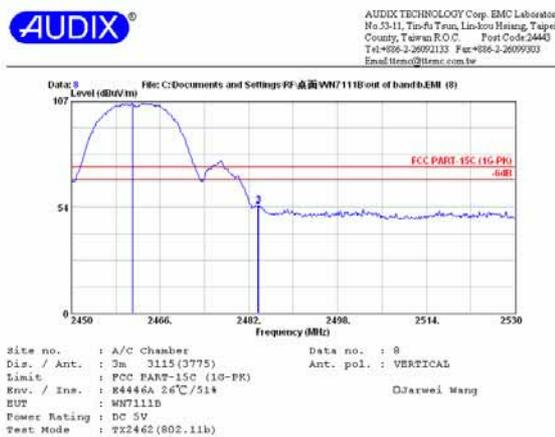
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11b, Transmit, Channel: 11, Frequency: 2462MHz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.760	28.18	6.45	19.77	54.40	74.00	19.60
Average *	2483.600	28.18	6.45	10.52	45.15	54.00	8.85

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. High frequency section (spurious in the restricted band 2450-2530MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2460.960	28.17	6.42	71.65	106.24	74.00	-32.24	Peak 0
2 2483.600	28.18	6.45	19.35	53.98	74.00	20.02	Peak
3 2483.760	28.18	6.45	19.77	54.40	74.00	19.60	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2462.520	28.17	6.42	67.74	102.33	54.00	-48.33	Average 0
2 2483.600	28.18	6.45	10.52	45.16	54.00	8.84	Average 0
3 2483.680	28.18	6.45	10.36	45.00	54.00	9.00	Average 0

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

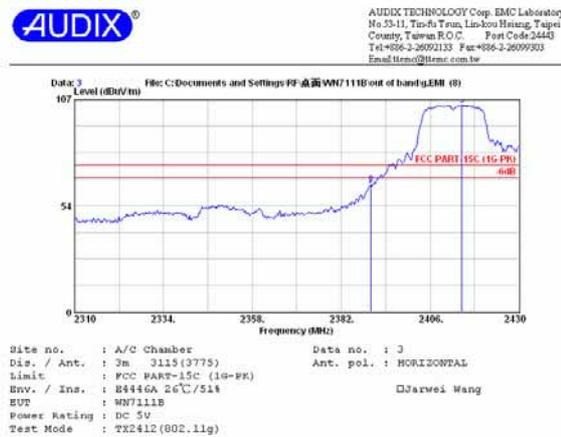
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11g, Transmit, Channel: 01, Frequency: 2412MHz

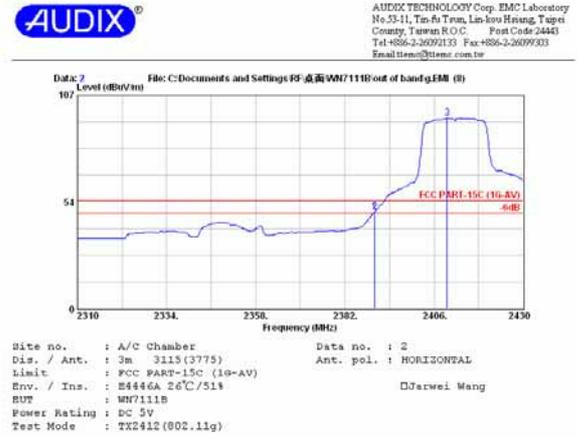
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2389.920	28.10	6.34	29.25	63.69	74.00	10.31
Average *	2389.920	28.10	6.34	13.96	48.40	54.00	5.60

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.920	28.10	6.34	29.25	63.69	74.00	10.31	Peak
2 2390.040	28.10	6.34	29.33	63.77	74.00	10.23	Peak
3 2414.640	20.11	6.36	69.72	104.19	74.00	-30.19	Peak X

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.920	28.10	6.34	13.96	48.40	54.00	5.60	Average !
2 2390.040	28.10	6.34	14.20	48.64	54.00	5.36	Average !
3 2409.480	28.11	6.36	61.03	95.50	54.00	-41.50	Average #

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

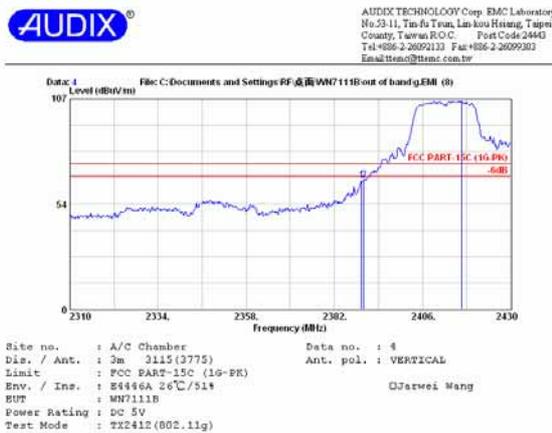
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11g, Transmit, Channel: 01, Frequency: 2412MHz

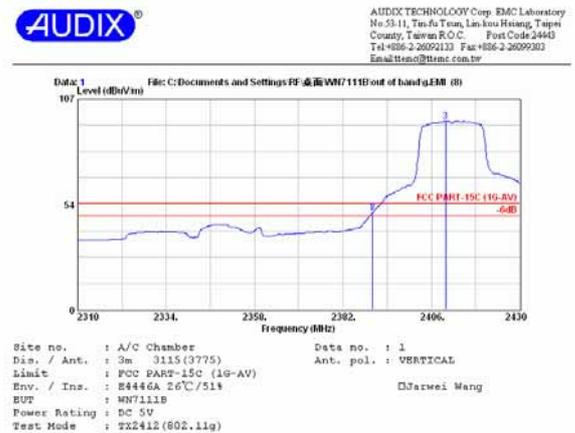
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2389.440	28.10	6.34	31.04	65.48	74.00	8.52
Average *	2389.920	28.10	6.34	14.58	49.02	54.00	4.98

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.440	28.10	6.34	31.04	65.48	74.00	8.52	Peak
2 2390.040	28.10	6.34	21.51	65.95	74.00	8.05	Peak
3 2416.600	28.11	6.37	71.34	105.03	74.00	-31.03	Peak X

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.920	28.10	6.34	14.58	49.01	54.00	4.99	Average 1
2 2390.040	28.10	6.34	14.79	49.23	54.00	4.77	Average 1
3 2409.840	28.11	6.36	61.13	95.60	54.00	-41.60	Average 0

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

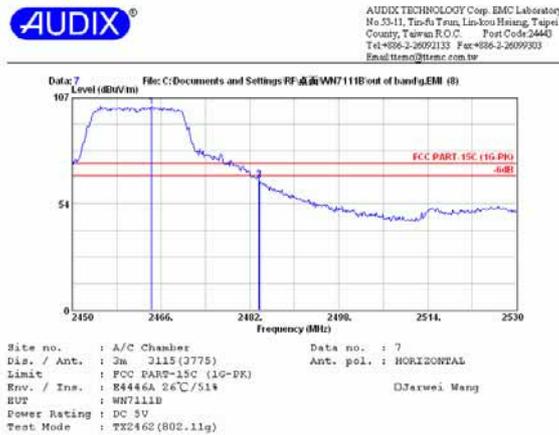
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11g, Transmit, Channel: 11, Frequency: 2462MHz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.600	28.18	6.45	31.07	65.70	74.00	8.30
Average *	2483.600	28.18	6.45	15.17	49.80	54.00	4.20

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. High frequency section (spurious in the restricted band 2450-2530MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2464.320	20.17	6.42	69.20	102.07	74.00	-28.07	Peak X
2 2483.600	28.18	6.45	31.07	65.70	74.00	8.30	Peak
3 2483.680	28.18	6.45	30.35	64.98	74.00	9.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2464.160	28.17	6.42	60.17	94.76	54.00	-40.76	Average 0
2 2483.600	28.18	6.45	15.17	49.80	54.00	4.19	Average 1
3 2483.680	28.18	6.45	14.99	49.63	54.00	4.37	Average 1

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

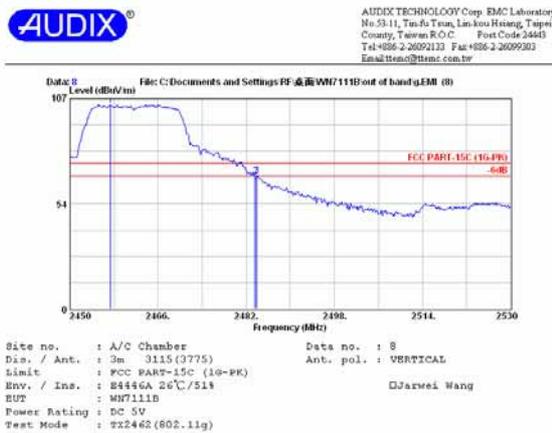
Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11g, Transmit, Channel: 11, Frequency: 2462MHz

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.920	28.18	6.45	33.09	67.72	74.00	6.28
Average *	2483.600	28.18	6.45	15.44	50.07	54.00	3.93

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. High frequency section (spurious in the restricted band 2450-2530MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2457.360	28.17	6.42	69.29	103.07	74.00	-29.07	Peak X
2 2483.600	28.18	6.45	32.80	67.44	74.00	6.56	Peak
3 2483.920	28.18	6.45	33.09	67.72	74.00	6.28	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the of al limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2459.520	28.17	6.42	60.17	94.75	54.00	-40.75	Average 0
2 2483.600	28.18	6.45	15.44	50.08	54.00	2.92	Average 1
3 2483.680	28.18	6.45	15.29	49.93	54.00	4.07	Average 1

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : Oct. 11, 2011 Temperature : 26

EUT : WLAN Adapter Card Humidity : 51%

Test Mode : 802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz

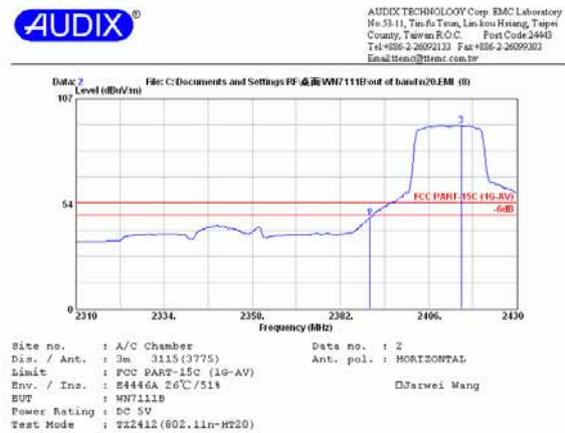
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2389.920	28.10	6.34	31.24	65.68	74.00	8.32
Average *	2389.920	28.10	6.34	11.78	46.22	54.00	7.78

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.920	28.10	6.34	31.24	65.68	74.00	8.32	Peak
2 2390.040	28.10	6.34	32.03	66.47	74.00	7.53	Peak
3 2409.240	28.11	6.36	68.71	103.19	74.00	-29.19	Peak X

Remarks: 1. Emission Level = Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1 2389.920	28.10	6.34	11.78	46.22	54.00	7.78	Average
2 2390.040	28.10	6.34	11.90	46.34	54.00	7.66	Average
3 2414.880	28.11	6.36	58.97	93.44	54.00	-39.44	Average 0

Remarks: 1. Emission Level = Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.