# **Outform Ltd**

## **IVIEW TOUCH 10.2"DIGITAL DISPLAY**

Model: UID0004-B;UID0004-W

20 April 2011 Report No.: 11020252 (This report supersedes NONE)



Modifications made to the product: None This Test Report is Issued Under the Authority of: **Alex Wang Spring Zhou** Compliance Engineer **Technical Manager** 

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# **Laboratory Introduction**

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**Accreditations for Conformity Assessment** 

	Accordance to Comorning Accordance					
Country/Region	Accreditation Body	Scope				
USA	FCC, A2LA	EMC, RF/Wireless, Telecom				
Canada	IC, A2LA, NIST	EMC, RF/Wireless, Telecom				
Taiwan	BSMI, NCC, NIST	EMC, RF, Telecom , Safety				
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom				
Australia	NATA, NIST	EMC, RF, Telecom , Safety				
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety				
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom				
Mexico	NOM, COFETEL, Caniety	Safety, EMC, RF/Wireless, Telecom				
Europe	A2LA, NIST	EMC, RF, Telecom , Safety				

#### **Accreditations for Product Certifications**

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB , NIST	EMC, RF, Telecom
Singapore	iDA, NIST	EMC, RF, Telecom
EU	NB	EMC & R&TTE Directive



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# 1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the Outform Ltd IVIEW TOUCH 10.2"DIGITAL DISPLAY, and model UID0004-B;UID0004-W against the current Stipulated Standards. The IVIEW TOUCH 10.2"DIGITAL DISPLAY has demonstrated compliance with the FCC 15.247:2010.

### **EUT Information**

EUT : IVIEW TOUCH 10.2"DIGITAL DISPLAY

Description

Model No : UID0004-B;UID0004-W

Serial No : N/A

Input Power : Powered by main board

Classification

Per Stipulated : Spread Spectrum System/Device

**Test Standard** 



FCC ID:

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Y34-UID0004

	2 <u>TECHNICAL DETAILS</u>
Purpose	Compliance testing of IVIEW TOUCH 10.2"DIGITAL DISPLAY with stipul ated standard
Applicant / Client	Outform Ltd R405,East,Buliding 203,Tai Ran Industrial Zone,Chengongmiao,Futian,Shenzhen,China
Manufacturer	Outform Ltd R405,East,Buliding 203,Tai Ran Industrial Zone,Chengongmiao,Futian,Shenzhen,China
Laboratory performing the tests	SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com
Test report reference number	11020252
Date EUT received	April 01 2011
Standard applied	FCC 15.247:2010
Dates of test (from – to)	April 03~19 2011
No of Units:	#1
Equipment Category:	DTS
Trade Name:	N/A
Model :	UID0004-B;UID0004-W
RF Operating Frequency (ies)	2412MHz-2462MHz 2422 MHz -2452 MHz
Number of Channels :	11
Modulation :	802.11b/g/n



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# **MODIFICATION**

NONE

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# 4 TEST SUMMARY

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

Spread Spectrum System/Device

**Test Results Summary** 

Test Standard	Description	Pass / Fail
CFR 47 Part 15.247: 2010		
15.203	Antenna Requirement	Pass
15.205	Restricted Band of Operation	Pass
15.207(a)	Conducted Emissions Voltage	Pass
15.247(a)(1)	Channel Separation	N/A
15.247(a)(1)	Occupied Bandwidth	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(a)(1)	Number of Hopping Channels	N/A
15.247(a)(1)	Time of Occupancy	N/A
15.247(b)	Output Power	Pass
15.247(c)	Antenna Gain > 6 dBi	Pass
15.247(d)	Conducted Spurious Emissions	Pass
15.209; 15.247(d)	Radiated Spurious Emissions	Pass
15.247(e)	Power Spectral Density	Pass
15.247(f)	Hybrid System Requirement	N/A
15.247(g)	Hopping Capability	N/A
15.247(h)	Hopping Coordination Requirement	N/A
15.247(i)	RF Exposure requirement	Pass

ANSI C63.4: 2010

PS: All measurement uncertainties are not taken into consideration for all presented test result.

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## 5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 5.1 Antenna Requirement

Requirement(s): 47 CFR §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna requirement must meet at least one of the following:

- a) Antenna must be permanently attached to the device.
- b) Antenna must use a unique type of connector to attach to the device.
- c) Device must be professionally installed. Installer shall be responsible for ensuring that the correct antenna is employed with the device.

The EUT antenna is using a unique type of connector. Antenna maximum gain is 0.79dBi.

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## 5.2 Conducted Emissions Voltage

#### Requirement:

	Conducted lin	Conducted limit (dBµV)		
Frequency of emission (MHz)	Quasi-peak	Average		
0.15–0.5	66 to 56*	56 to 46*		
0.5–5	56	46		
5–30	60	50		

<sup>\*</sup>Decreases with the logarithm of the frequency.

#### **Procedures:**

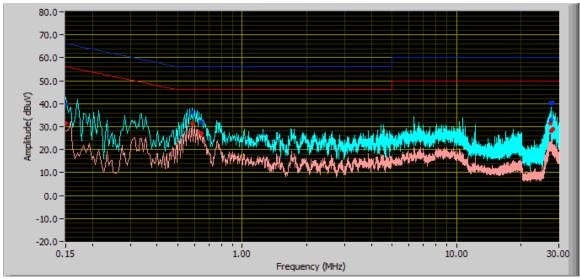
- All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR and Average detectors, are reported. All other emissions were relatively insignificant.
- 2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
- 3. Conducted Emissions Measurement Uncertainty
  All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz 30MHz (Average & Quasi-peak) is ±3.5dB.

4. Environmental Conditions Temperature 16°C
Relative Humidity 50%
Atmospheric Pressure 1019mbar

5. Test date : April 03~19 2011 Tested By : Alex Wang

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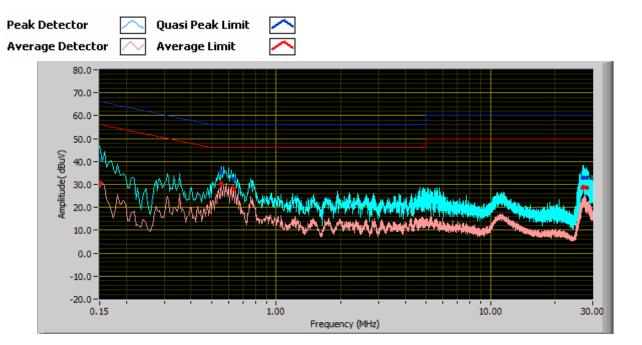




#### Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
0.58	36.28	56.00	-19.72	31.43	46.00	-14.57	10.15
0.64	31.81	56.00	-24.19	27.04	46.00	-18.96	10.14
27.70	32.89	60.00	-27.11	28.20	50.00	-21.80	11.10
0.15	39.74	66.19	-26.45	31.29	56.19	-24.90	10.40
28.27	40.42	60.00	-19.58	28.78	50.00	-21.22	11.14
27.33	40.42	60.00	-19.58	31.56	50.00	-18.44	11.08

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### Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
0.55	35.64	56.00	-20.36	30.32	46.00	-15.68	10.16
0.15	40.72	66.19	-25.47	30.78	56.19	-25.41	10.40
0.63	32.11	56.00	-23.89	28.11	46.00	-17.89	10.14
27.17	33.06	60.00	-26.94	29.08	50.00	-20.92	11.07
27.03	33.03	60.00	-26.97	28.56	50.00	-21.44	11.06
28.24	33.12	60.00	-26.88	28.58	50.00	-21.42	11.13

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### 5.3 6dB Occupied Bandwidth

1. <u>Conducted Measurement</u>

EUT was set for low, mid, high channel with modulated mode and highest RF output power.

The spectrum analyzer was connected to the antenna terminal.

2. Environmental Conditions Temperature 16°C

Relative Humidity 50% Atmospheric Pressure 1019mbar

3. Conducted Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz - 40GHz is  $\pm 1.5dB$ .

4. Test date: April 03~19 2011

Tested By: Alex Wang

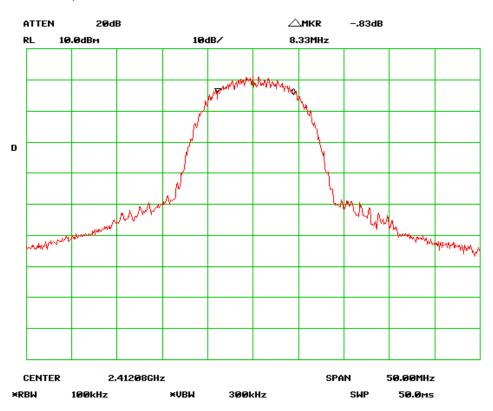
**Requirement(s):** 47 CFR § 15.247(a)(1)

**Procedures:** The 6dB Bandwidths were measured conducted using a spectrum analyzer at low, mid, and hi channels. 6dB Bandwidth Limit: >500kHz.

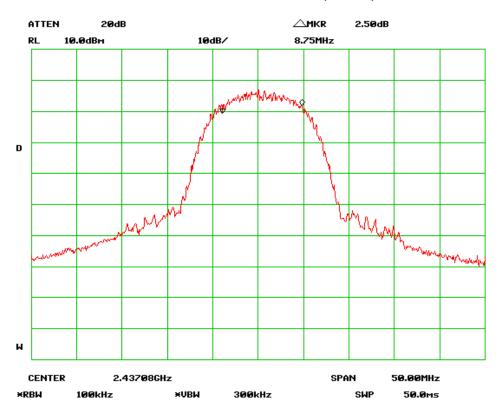
Protocol	Channel	Channel Frequency (MHz)	6dB Occupied Bandwidth Limit (MHz)	6dB Channel Bandwidth (MHz)
802.11b	Low	2412	0.5	8.33
802.11b	Mid	2437	0.5	8.75
802.11b	High	2462	0.5	8.08
802.11g	Low	2412	0.5	16.67
802.11g	Mid	2437	0.5	16.67
802.11g	High	2462	0.5	16.75
802.11n-20MHz	Low	2412	0.5	17.58
802.11n-20MHz	Mid	2437	0.5	17.92
802.11n-20MHz	High	2462	0.5	17.83
802.11n-40MHz	Low	2422	0.5	36.2
802.11n-40MHz	Mid	2437	0.5	36.2
802.11n-40MHz	High	2452	0.5	36.7

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#### Refer to the attached plots.



6dB Bandwidth - Low Channel (802.11b)



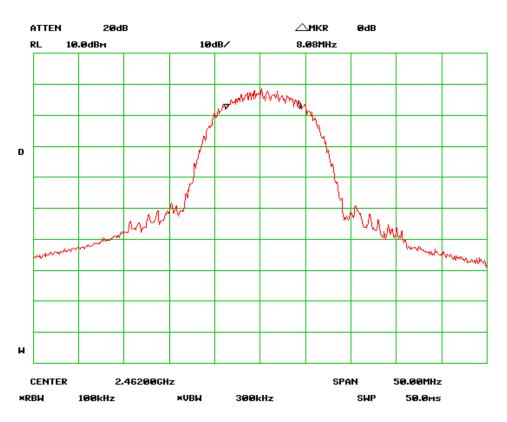
6dB Bandwidth - Mid Channel (802.11b)

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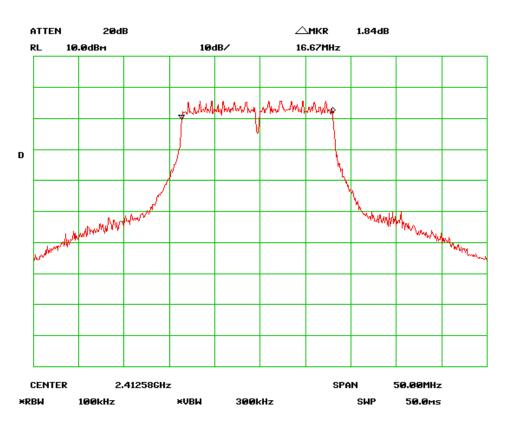
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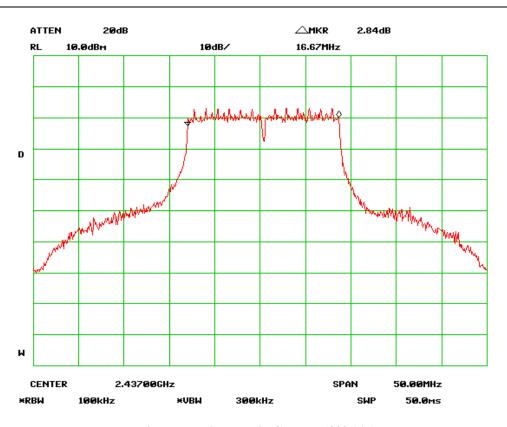


6dB Bandwidth - High Channel (802.11b)

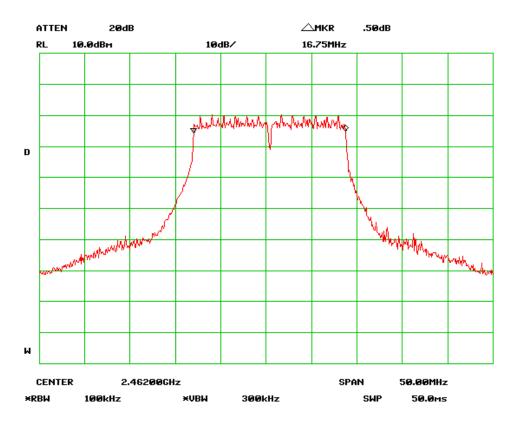


6dB Bandwidth - Low Channel (802.11g)

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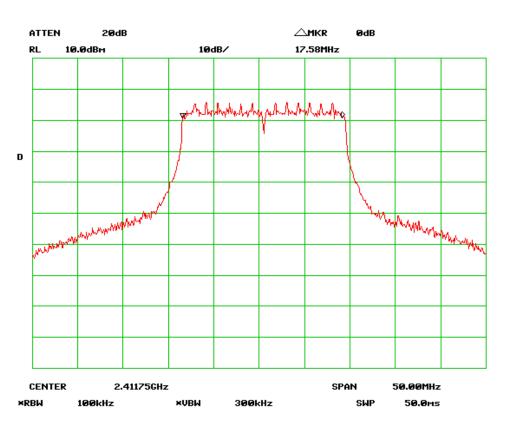


6dB Bandwidth - Mid Channel (802.11g)

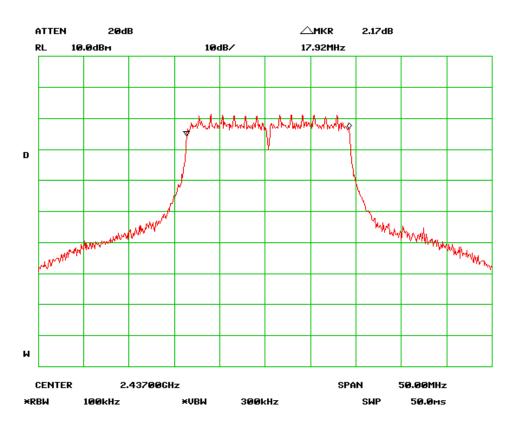


6dB Bandwidth - High Channel (802.11g)

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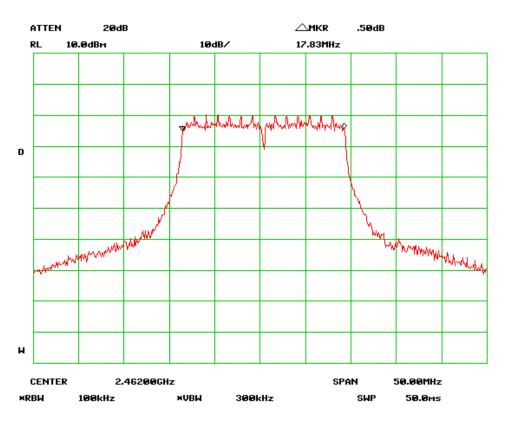


6dB Bandwidth - Low Channel (802.11n-20MHz)

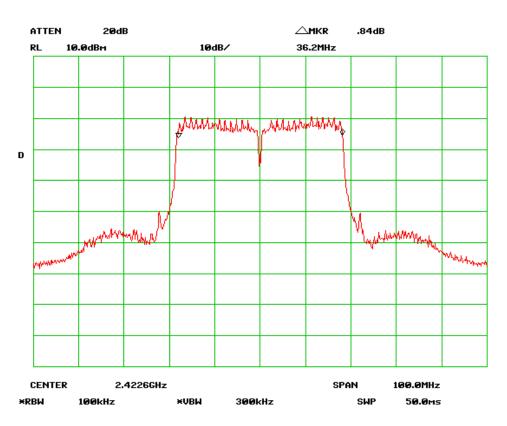


6dB Bandwidth - Mid Channel (802.11n-20MHz)

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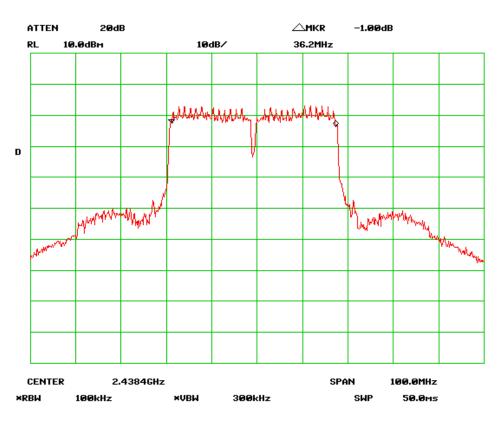


6dB Bandwidth - High Channel (802.11n-20MHz)

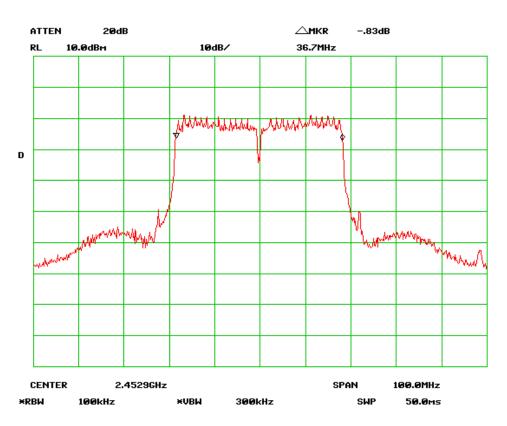


6dB Bandwidth - Low Channel (802.11n-40MHz)

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6dB Bandwidth - Mid Channel (802.11n-40MHz)



6dB Bandwidth - High Channel (802.11n-40MHz)

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### 5.4 Power Spectral Density

1. <u>Conducted Measurement</u>

EUT was set for low, mid, high channel with modulated mode and highest RF output power.

The spectrum analyzer was connected to the antenna terminal.

2. Environmental Conditions Temperature 16°C

Relative Humidity 50% Atmospheric Pressure 1019mbar

3. Conducted Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are

normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.

4. Test date : April 03~19 2011

Tested By: Alex Wang

**Requirement(s):** 47 CFR § 15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3KHz band during any time interval of continuous transmission.

**Procedures:** The power spectral density measurement was taken conducted using a spectrum analyzer.

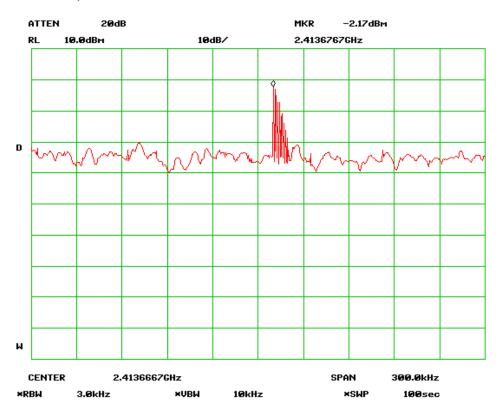
RBW=3KHz, VBW>RBW, Sweep time to SPAN/RBW(s).

The result:

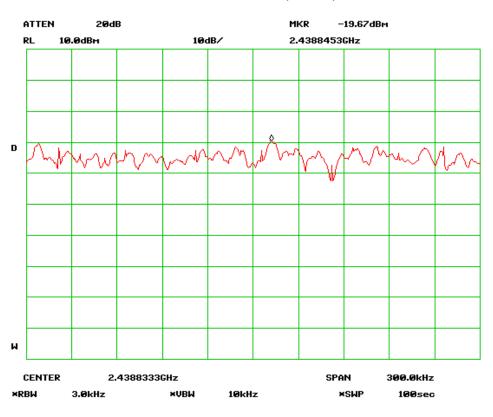
Protocol	Channel	Channel Frequency (MHz)	Peak Spectral Density Limit (dBm/3KHz)	Peak Spectral Density (dBm/3KHz)
802.11b	Low	2412	8	-2.17
802.11b	Mid	2437	8	-19.67
802.11b	High	2462	8	-19.17
802.11g	Low	2412	8	-23.33
802.11g	Mid	2437	8	-26.00
802.11g	High	2462	8	-23.67
802.11n-20MHz	Low	2412	8	-23.83
802.11n-20MHz	Mid	2437	8	-25.67
802.11n-20MHz	High	2462	8	-26.83
802.11n-40MHz	Low	2422	8	-28.17
802.11n-40MHz	Mid	2437	8	-26.17
802.11n-40MHz	High	2452	8	-10.33

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### Refer to the attached plots.

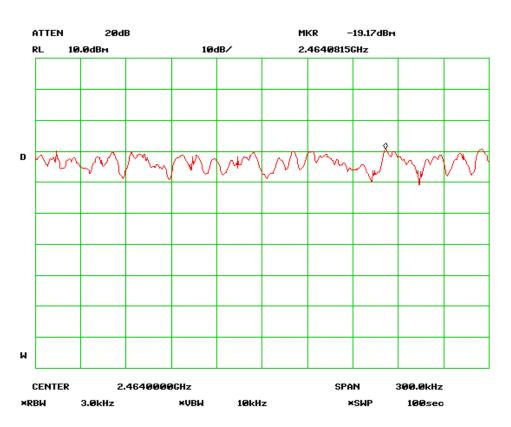


PSD - Low Channel (802.11b)

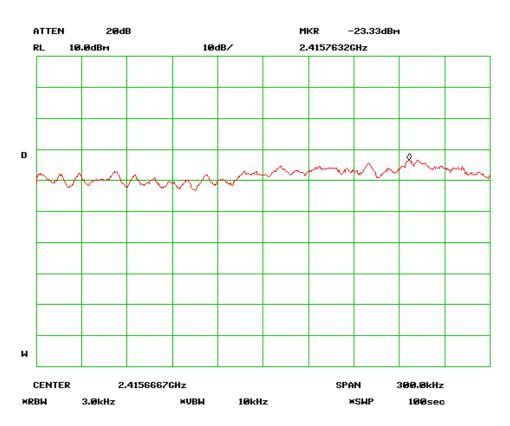


PSD - Mid Channel (802.11b)

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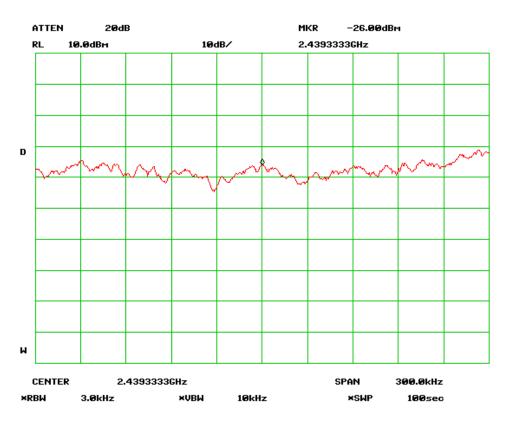


PSD - High Channel (802.11b)

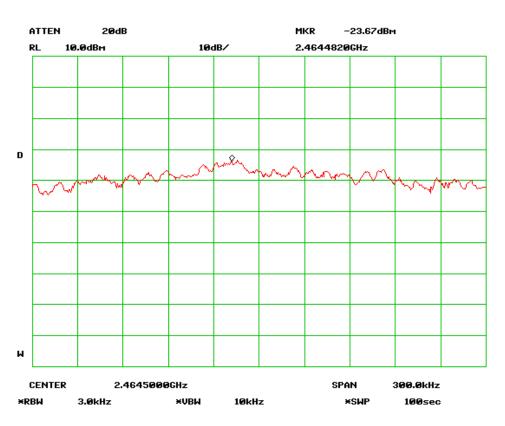


PSD - Low Channel (802.11g)

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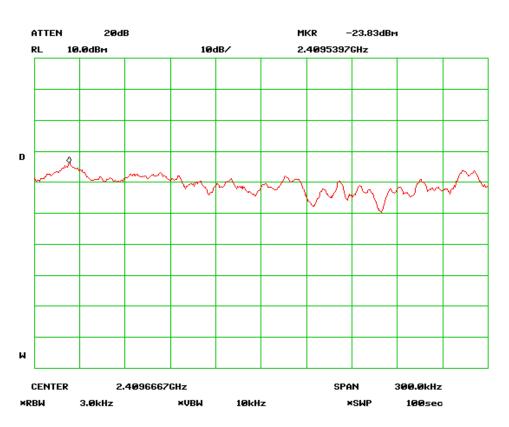


PSD - Mid Channel (802.11g)

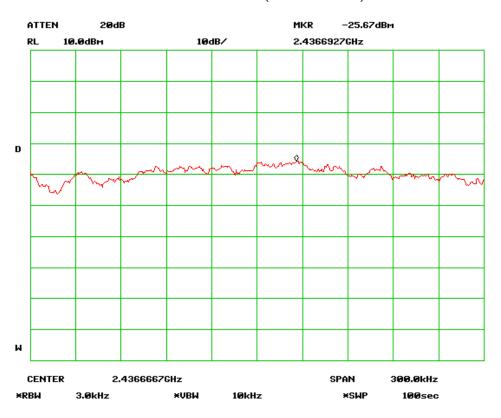


PSD - High Channel (802.11g)

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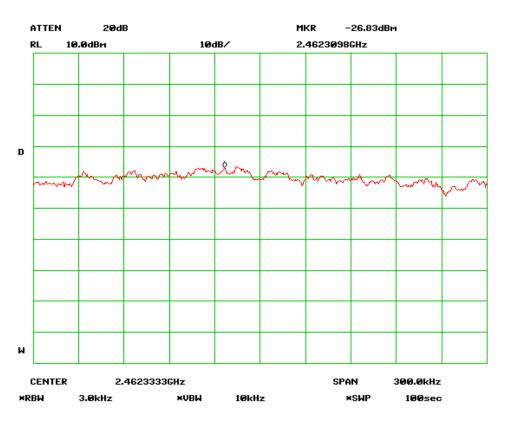


PSD - Low Channel (802.11n-20MHz)

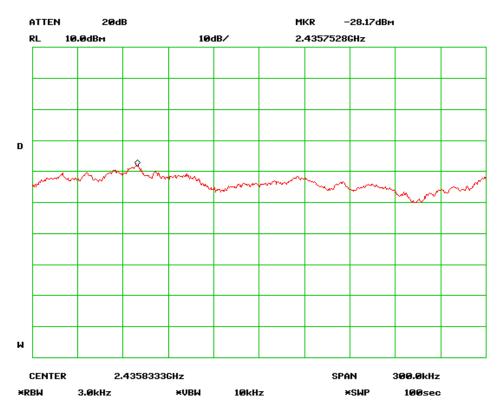


PSD - Mid Channel (802.11n-20MHz)

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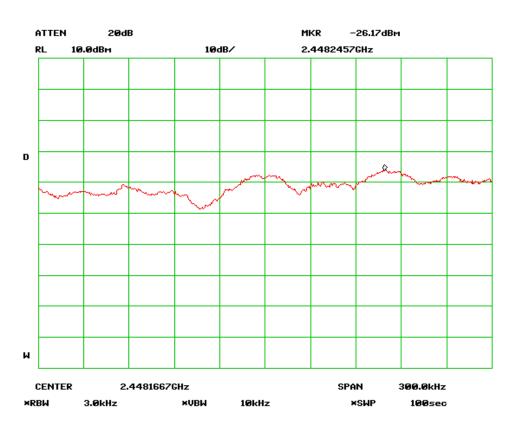


PSD - High Channel (802.11n-20MHz)

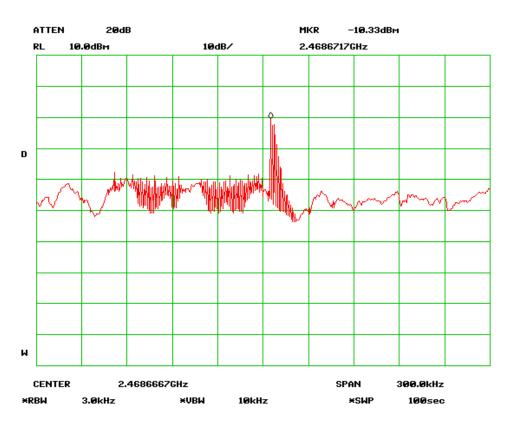


PSD - Low Channel (802.11n-40MHz)

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PSD - Mid Channel (802.11n-40MHz)



PSD - High Channel (802.11n-40MHz)

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# 5.5 Peak Output Power

Conducted Measurement

EUT was set for low, mid, high channel with modulated mode and highest RF output power.

The spectrum analyzer was connected to the antenna terminal.

2. Conducted Emissions Measurement Uncertainty

> All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are

normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.

3. **Environmental Conditions** Temperature Relative Humidity 50%

Atmospheric Pressure 1019mbar

Test date: April 03~19 2011 4. Tested By: Alex Wang

Standard Requirement: 47 CFR § 15.247(b)

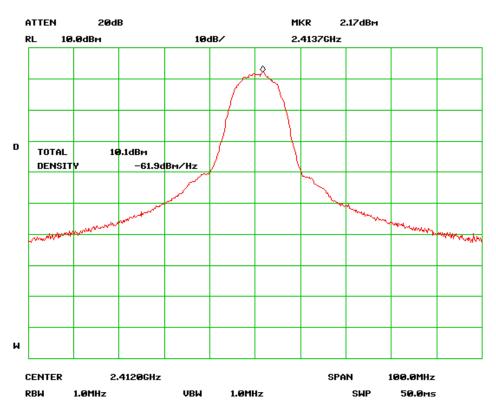
**Procedures:** The peak output power was measured conducted using a spectrum analyzer at low, mid, and hi channels. Peak detector was set to measure the power output. The power is converted from watt to dBm, therefore, 1 watt = 30 dBm. The highest antenna gain that will be used is 0.79dBi.

#### Test Result:

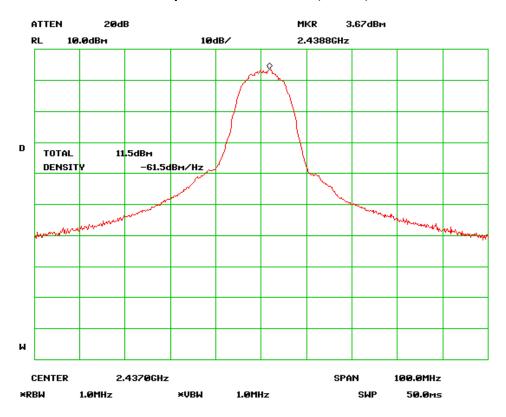
Protocol	Channel	Channel Frequency (MHz)	Peak Output Power Limit (dBm)	Measured Output Power (dBm)
802.11b	Low	2412	30	10.1
802.11b	Mid	2437	30	11.5
802.11b	High	2462	30	12.0
802.11g	Low	2412	30	9.3
802.11g	Mid	2437	30	11.1
802.11g	High	2462	30	9.0
802.11n-20MHz	Low	2412	30	9.3
802.11n-20MHz	Mid	2437	30	9.6
802.11n-20MHz	High	2462	30	8.8
802.11n-40MHz	Low	2422	30	6.5
802.11n-40MHz	Mid	2437	30	8.8
802.11n-40MHz	High	2452	30	7.5

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### Refer to the attached plots.

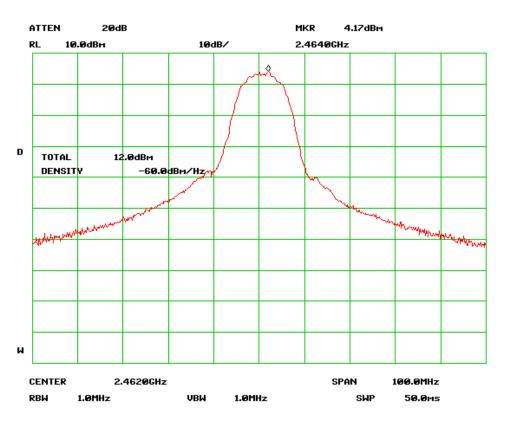


**Output Power Low Channel (802.11b)** 

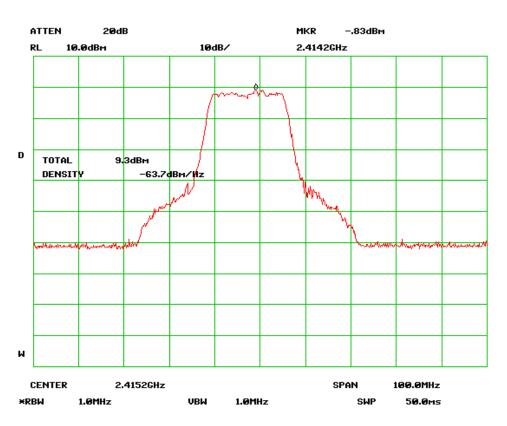


**Output Power Mid Channel (802.11b)** 

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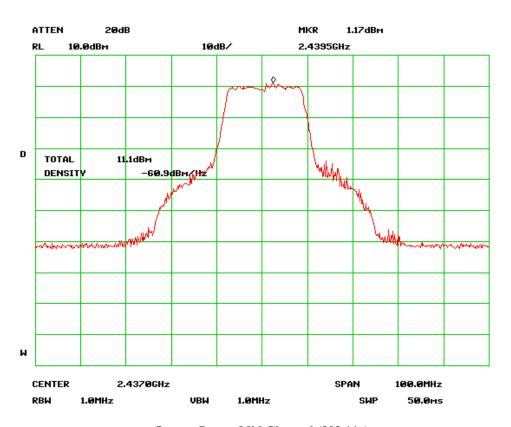


**Output Power High Channel (802.11b)** 

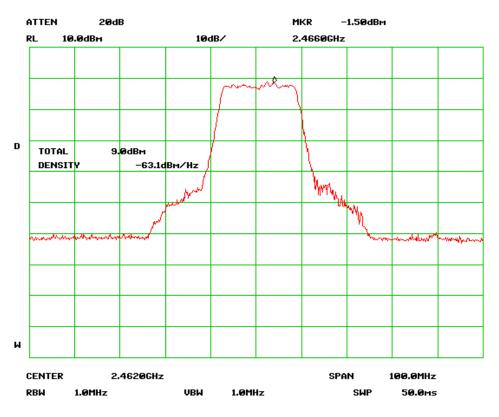


**Output Power Low Channel (802.11g)** 

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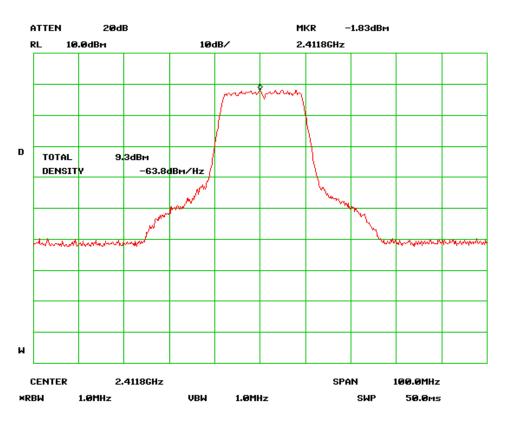


**Output Power Mid Channel (802.11g)** 

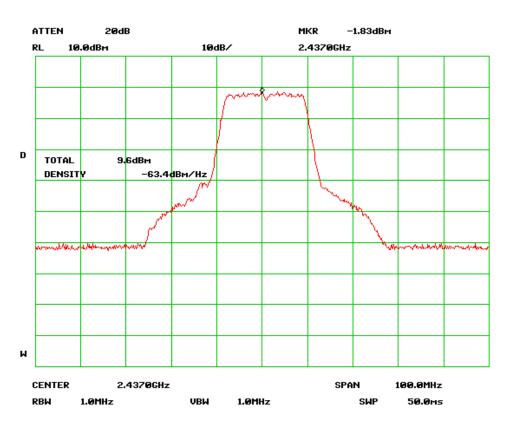


**Output Power High Channel (802.11g)** 

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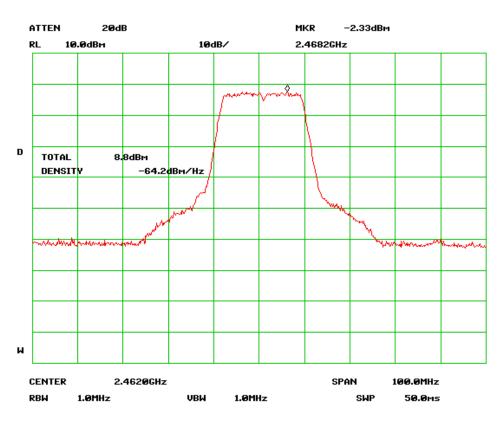


Output Power Low Channel (802.11n-20MHz)

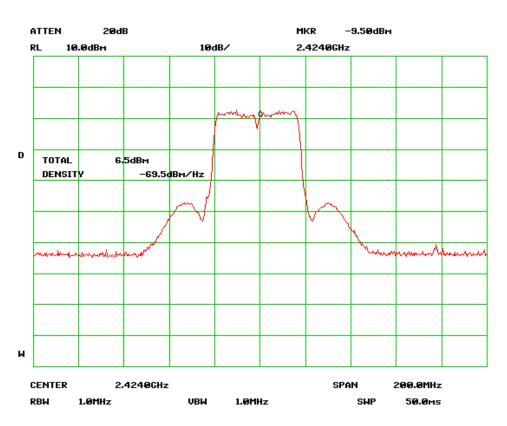


Output Power Mid Channel (802.11n-20MHz)

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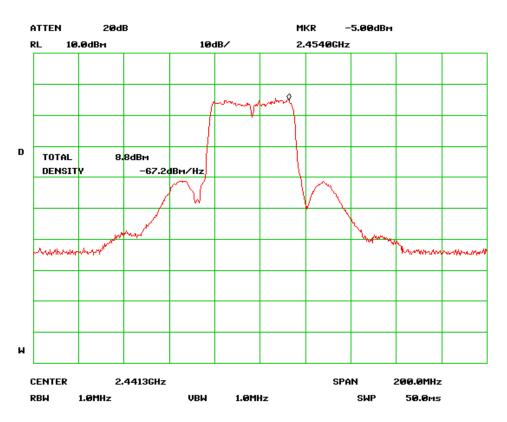


Output Power High Channel (802.11n-20MHz)

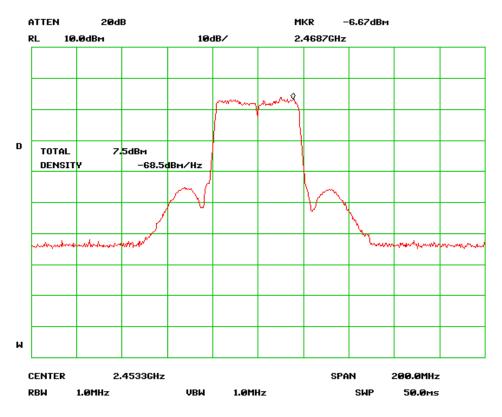


Output Power Low Channel (802.11n-40MHz)

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Output Power Mid Channel (802.11n-40MHz)



Output Power High Channel (802.11n-40MHz)

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### 5.6 Antenna Port Emission

1. <u>Conducted Measurement</u>

EUT was set for low, mid, high channel with modulated mode and highest RF output power.

The spectrum analyzer was connected to the antenna terminal.

Conducted Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are

normal), with a coverage factor of 2, in the range 30MHz - 40GHz is ±1.5dB.

Environmental Conditions Temperature 16°C Relative Humidity 50%

Atmospheric Pressure 1019mbar

4. Test date : April 03~19 2011 Tested By : Alex Wang

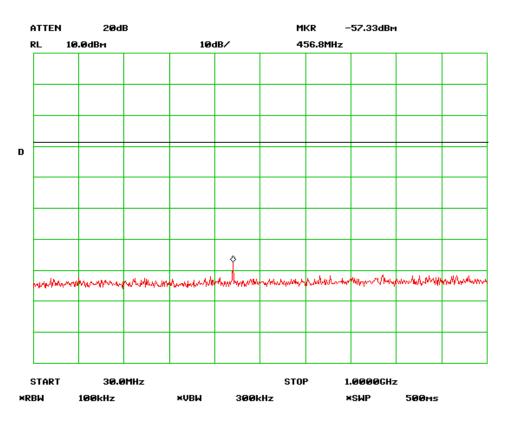
**Standard Requirement:** Radiated emission limits: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

**Procedures:** The conducted spurious emissions were measured conducted using a spectrum analyzer at low, mid, and hi channels. The limit was determined by attenuating 20 dB of the RF peak power output.

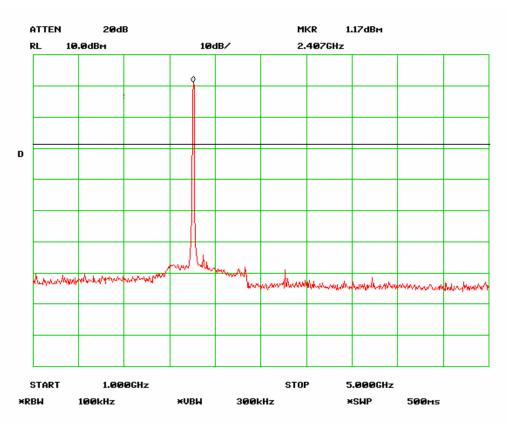
**Test Result:** 

3.

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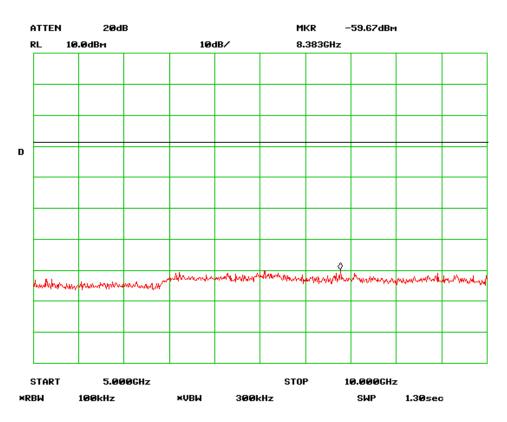


Antenna Port Emission Low Channel -1(802.11b)

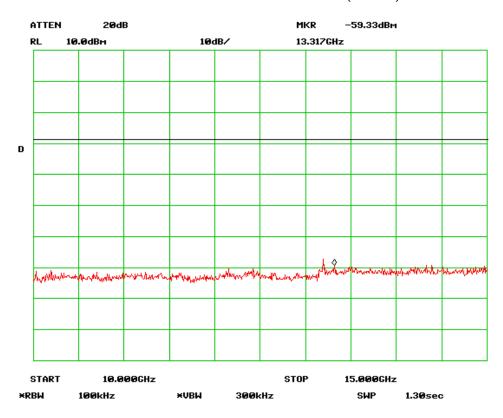


Antenna Port Emission Low Channel -2(802.11b)

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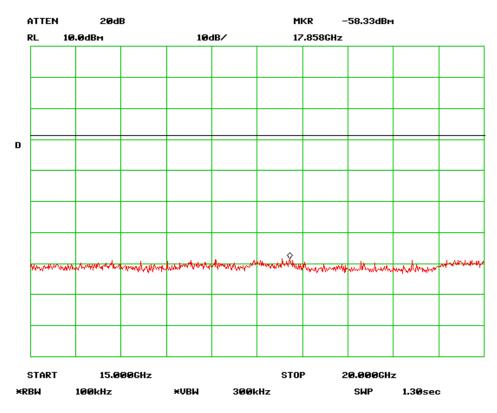


Antenna Port Emission Low Channel -3(802.11b)

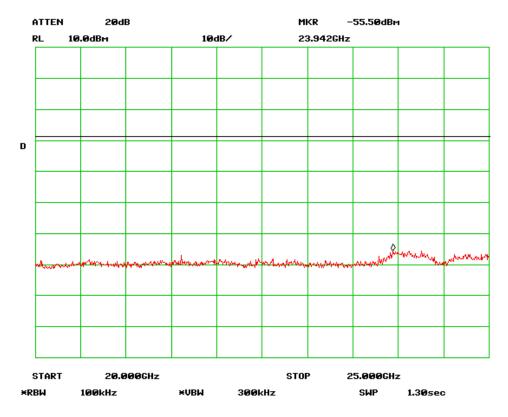


Antenna Port Emission Low Channel -4(802.11b)

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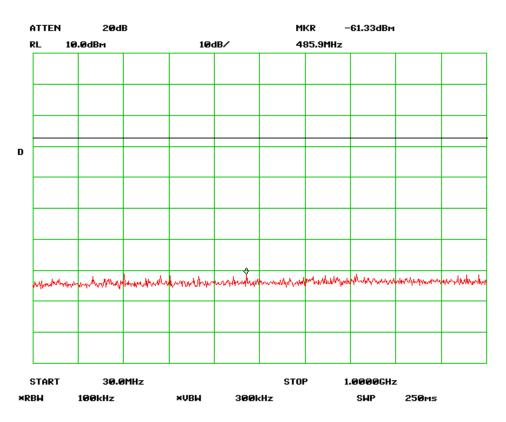


Antenna Port Emission Low Channel -5(802.11b)

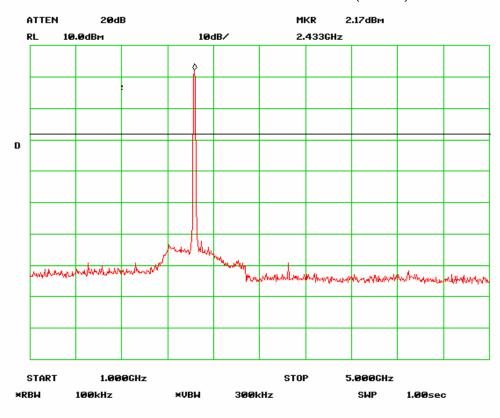


Antenna Port Emission Low Channel -6(802.11b)

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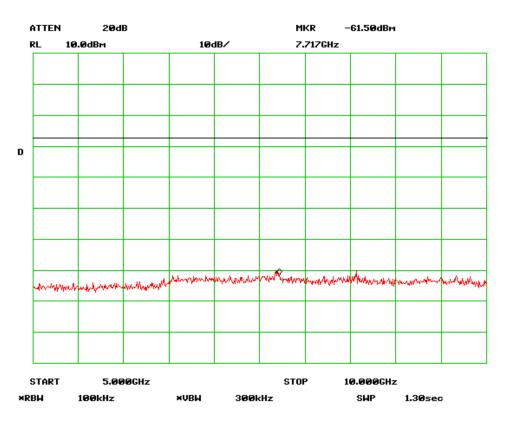


### Antenna Port Emission Mid-1 Channel (802.11b)

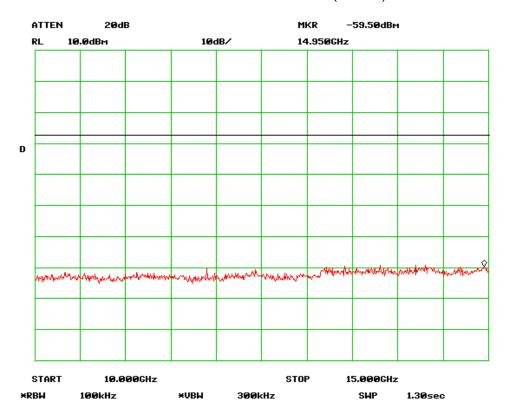


Antenna Port Emission Mid-2 Channel (802.11b)

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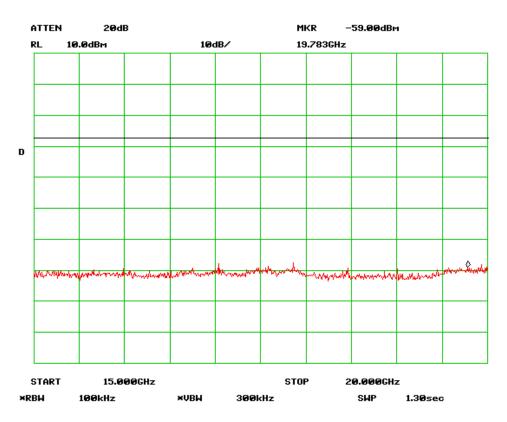


Antenna Port Emission Mid-3 Channel (802.11b)

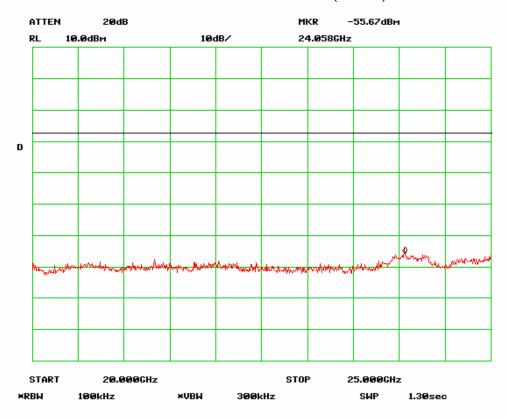


Antenna Port Emission Mid-4 Channel (802.11b)

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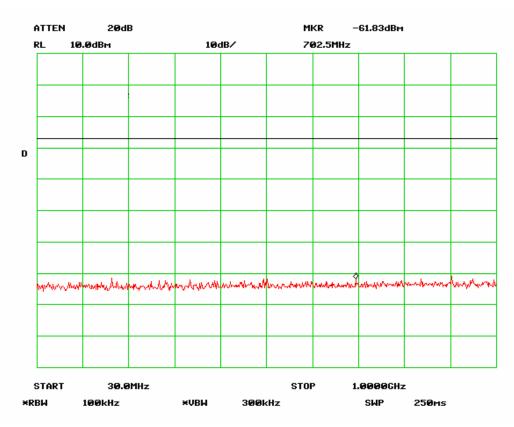


Antenna Port Emission Mid-5 Channel (802.11b)

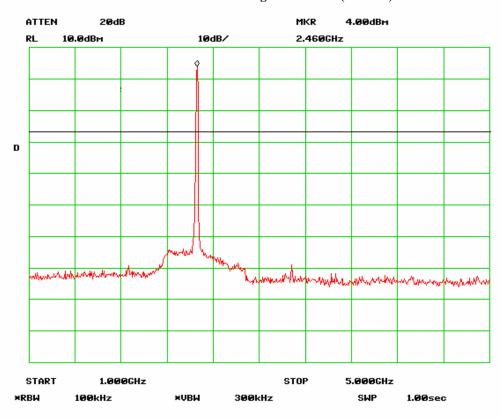


Antenna Port Emission Mid-6 Channel (802.11b)

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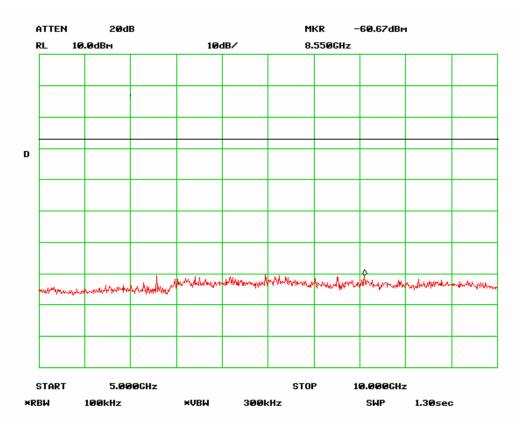


### Antenna Port Emission High-1 Channel (802.11b)

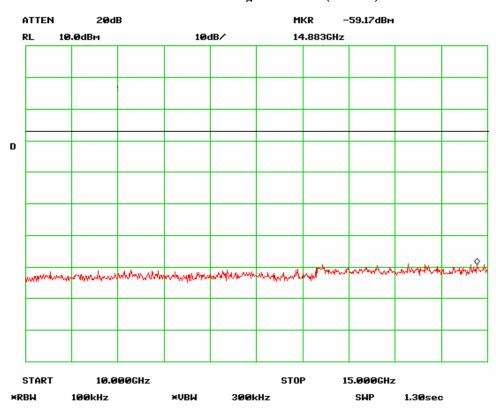


**Antenna Port Emission High-2 Channel (802.11b)** 

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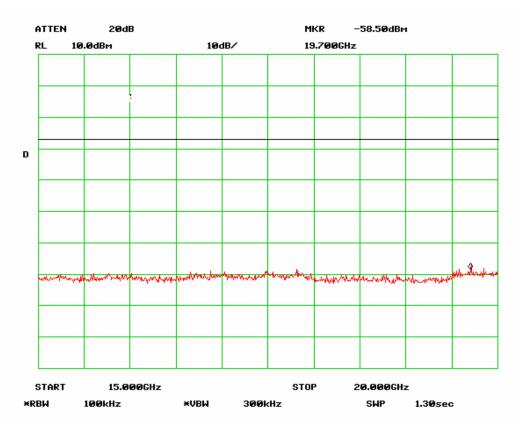


### **Antenna Port Emission High-3 Channel (802.11b)**

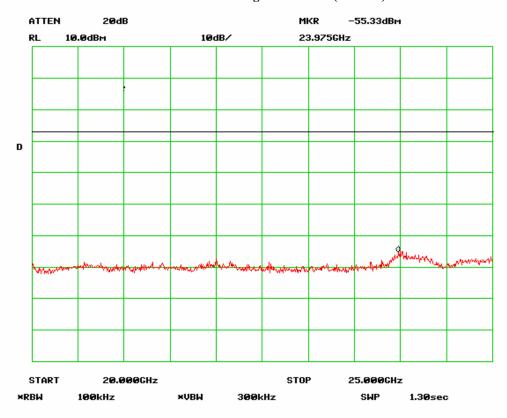


Antenna Port Emission High-4 Channel (802.11b)

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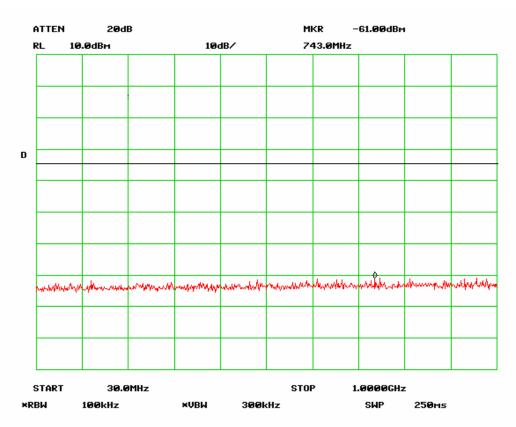


**Antenna Port Emission High-5 Channel (802.11b)** 

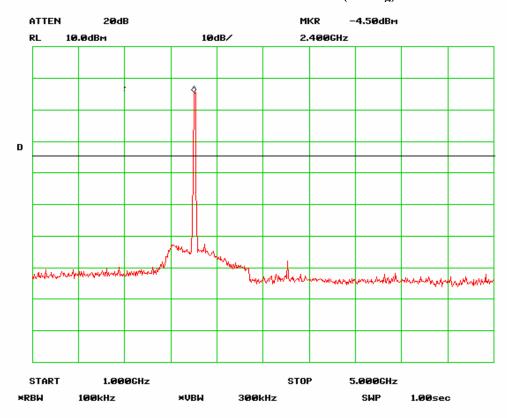


Antenna Port Emission High-6 Channel (802.11b)

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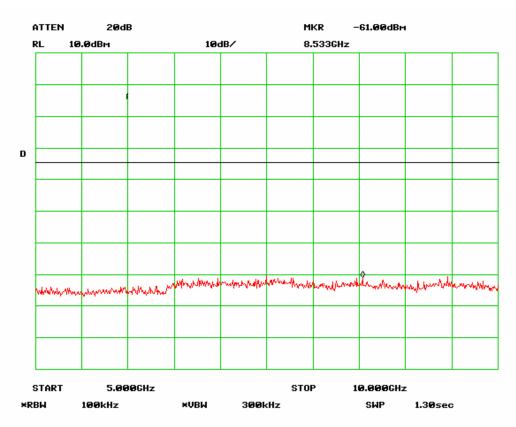


### Antenna Port Emission Low-1 Channel (802.11g)

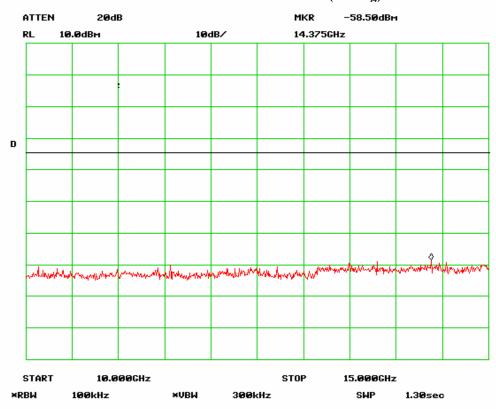


Antenna Port Emission Low-2 Channel (802.11g)

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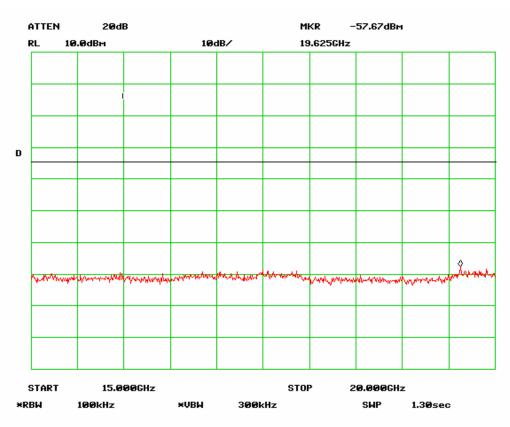


### Antenna Port Emission Low-3 Channel (802.11g)

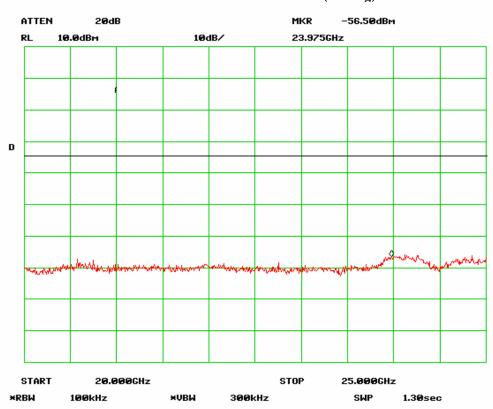


**Antenna Port Emission Low-4 Channel (802.11g)** 

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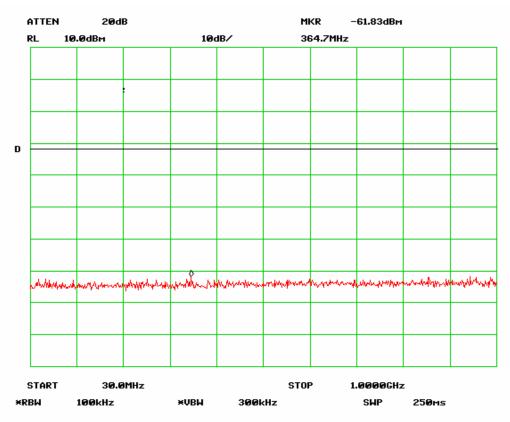


### Antenna Port Emission Low-5 Channel (802.11g)

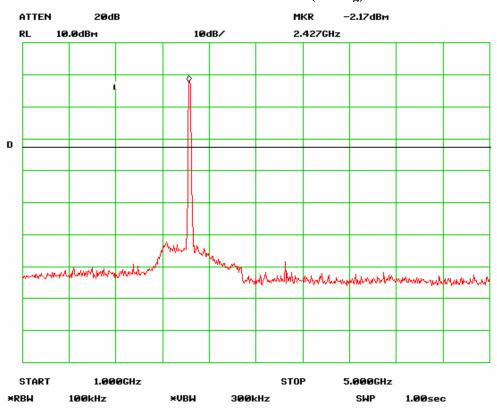


**Antenna Port Emission Low-6 Channel (802.11g)** 

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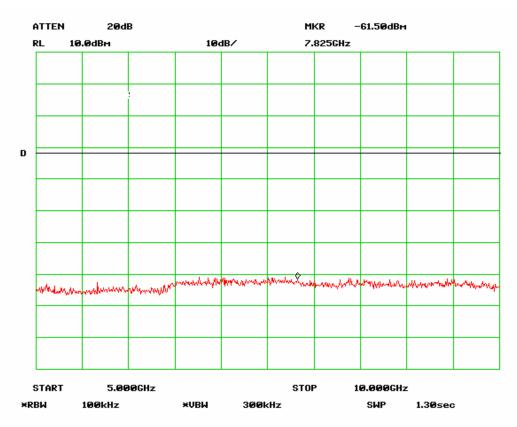


### Antenna Port Emission Mid-1 Channel (802.11g)

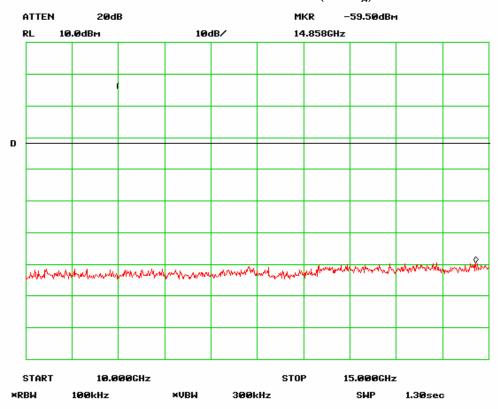


**Antenna Port Emission Mid-2 Channel (802.11g)** 

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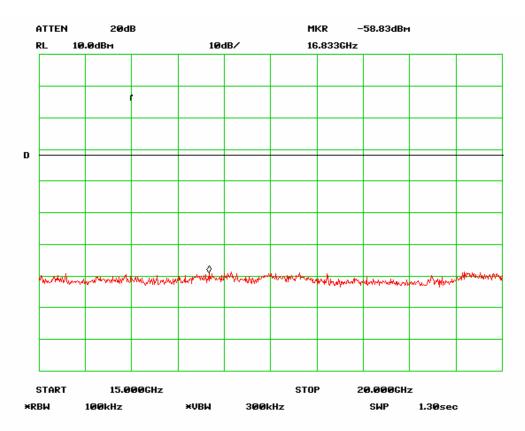


### **Antenna Port Emission Mid-3 Channel (802.11g)**

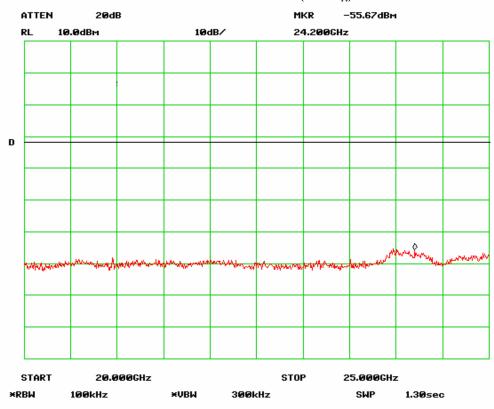


Antenna Port Emission Mid-4 Channel (802.11g)

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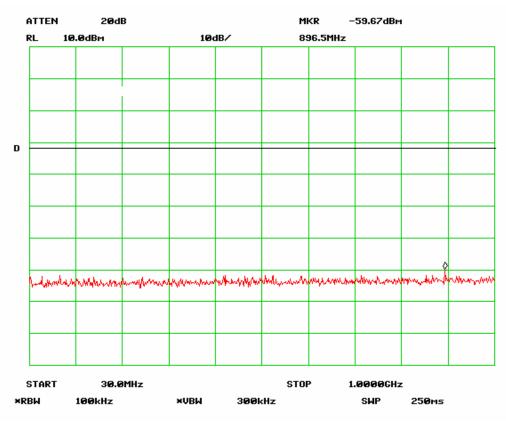


### Antenna Port Emission Mid-5 Channel (802.11g)

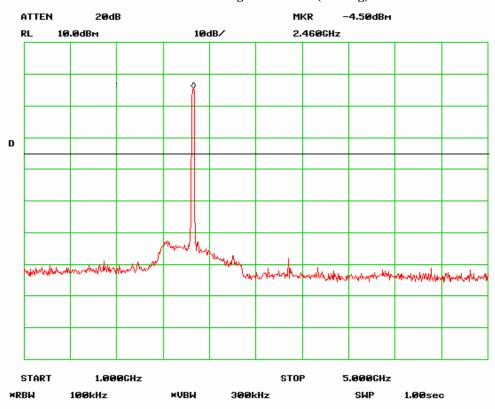


Antenna Port Emission Mid-6 Channel (802.11g)

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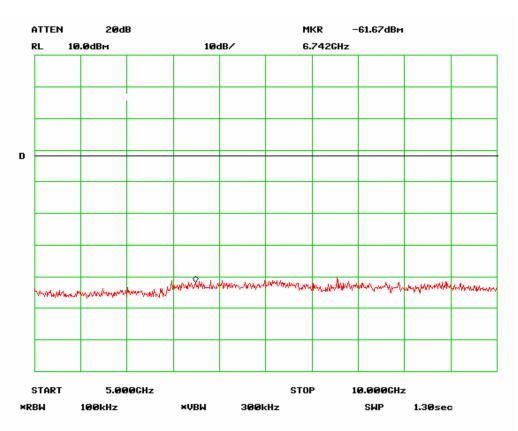


### Antenna Port Emission High-1 Channel (802.11g)

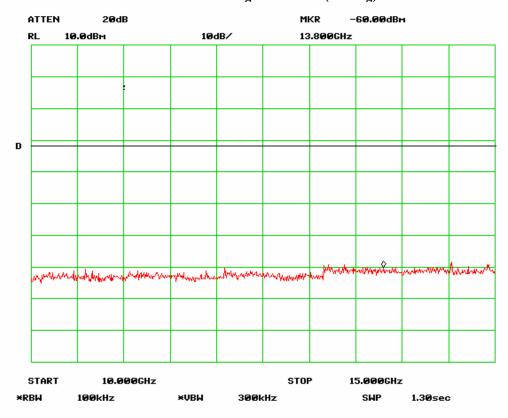


**Antenna Port Emission High-2 Channel (802.11g)** 

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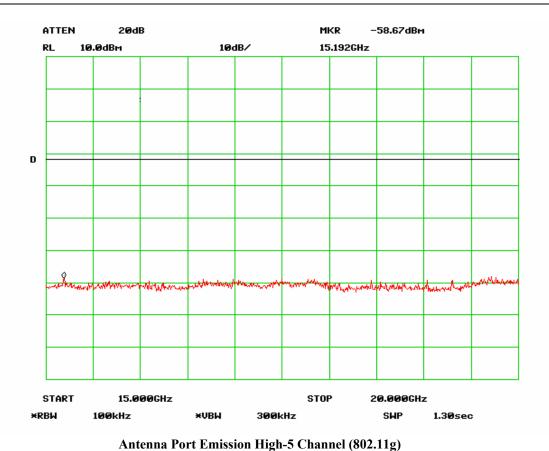


Antenna Port Emission High-3 Channel (802.11g)



Antenna Port Emission High-4 Channel (802.11g)

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# ATTEN 20dB MKR -56,33dBH RL 10.0dBH 10dB/ 23,975CHz D START 20.000CHz STOP 25,000CHz

**Antenna Port Emission High-6 Channel (802.11g)** 

3**00**kHz

SWP

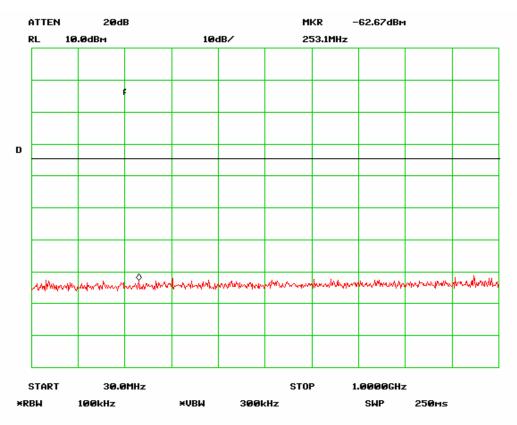
1.3**0**sec

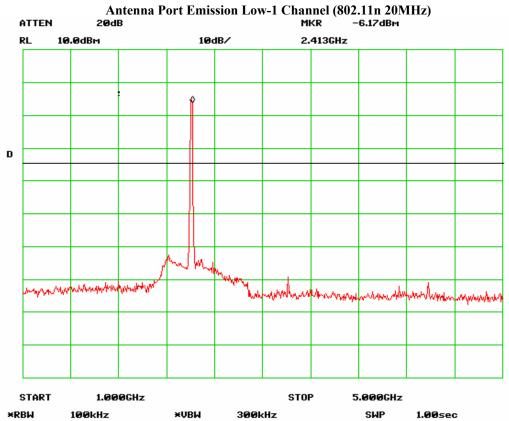
×VB₩

×RB₩

100kHz

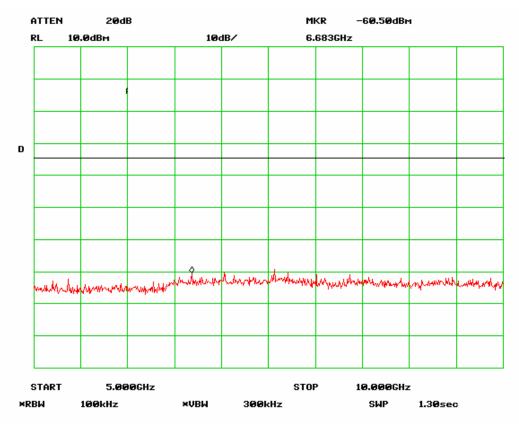
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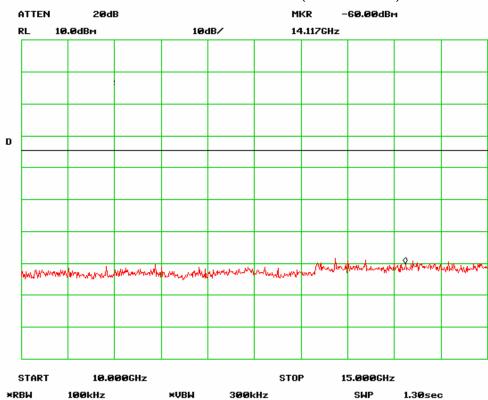


Antenna Port Emission Low-2 Channel (802.11n 20MHz)

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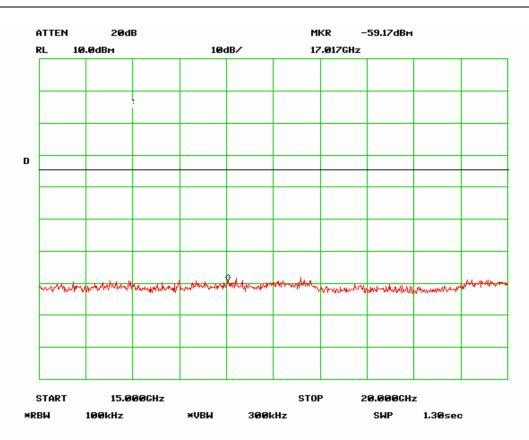


### Antenna Port Emission Low-3 Channel (802.11n 20MHz)

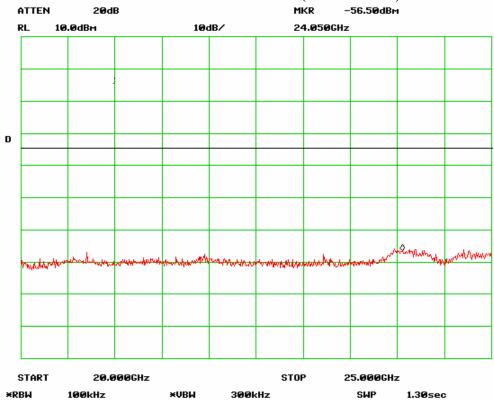


Antenna Port Emission Low-4 Channel (802.11n 20MHz)

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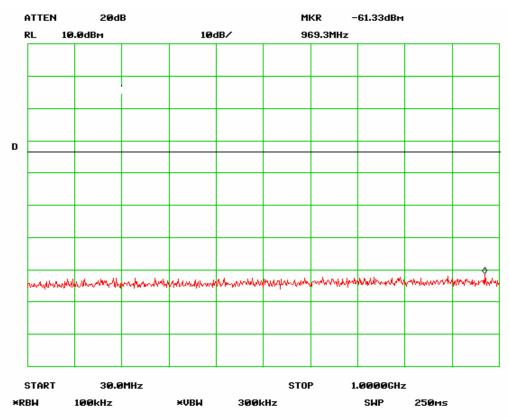


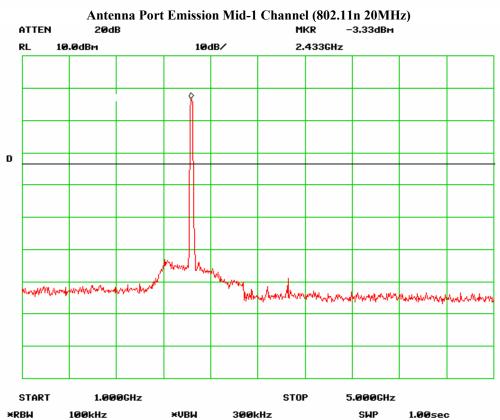
### Antenna Port Emission Low-5 Channel (802.11n 20MHz)



Antenna Port Emission Low-6 Channel (802.11n 20MHz)

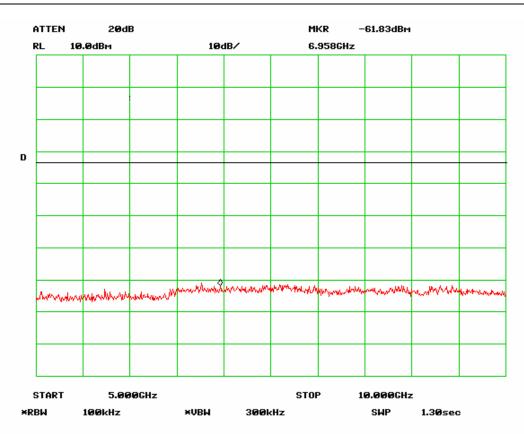
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Antenna Port Emission Mid-2 Channel (802.11n 20MHz)

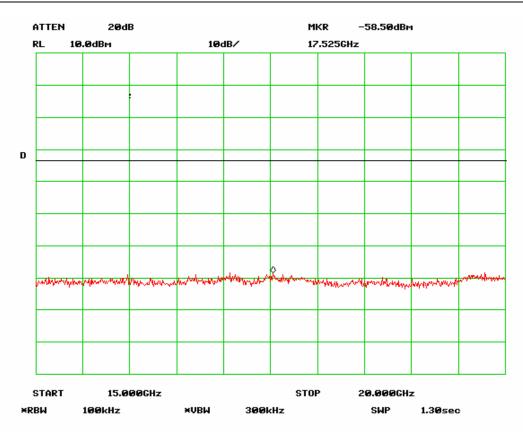
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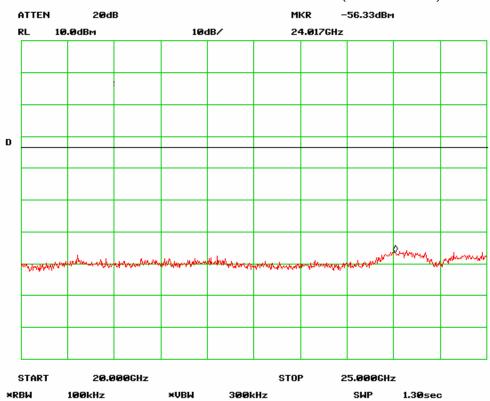
# Antenna Port Emission Mid-3 Channel (802.11n 20MHz) ATTEN MKR -59.50dВм RL1**0.0**dB∺ 10dB/ 14.208GHz D START 10.000GHz STOP 15.000GHz ×RB₩ 100kHz ×VBW 300kHz SWP 1.3**0**sec

Antenna Port Emission Mid-4 Channel (802.11n 20MHz)

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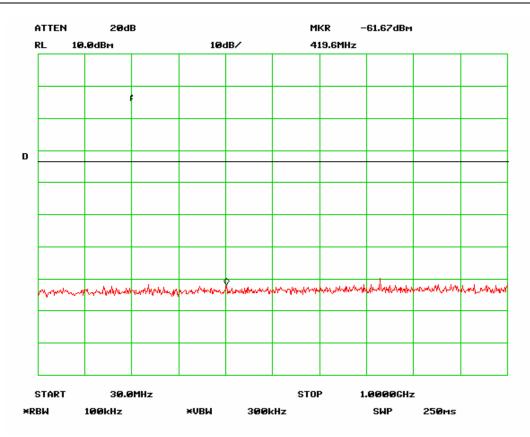


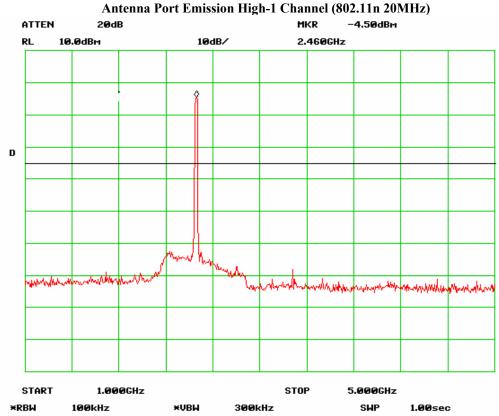
### **Antenna Port Emission Mid-5 Channel (802.11n 20MHz)**



Antenna Port Emission Mid-6 Channel (802.11n 20MHz)

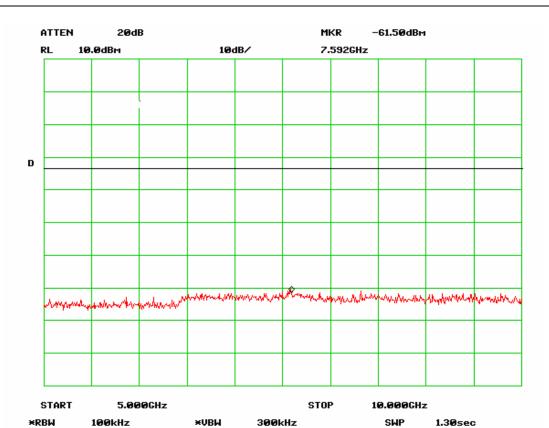
Serial#: 11020252 Issue Date: 20 April 2011 Page: 59 of 114 www.siemic.com.i



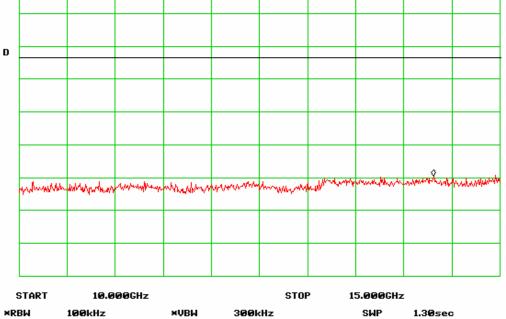


Antenna Port Emission High-2 Channel (802.11n 20MHz)

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Antenna Port Emission High-3 Channel (802.11n 20MHz) ATTEN MKR 20dB -59.5**0**dB<sub>™</sub> 1**0.0**dB∺ 1**0**dB/ 14.308GHz RL



300kHz Antenna Port Emission High-4 Channel (802.11n 20MHz)

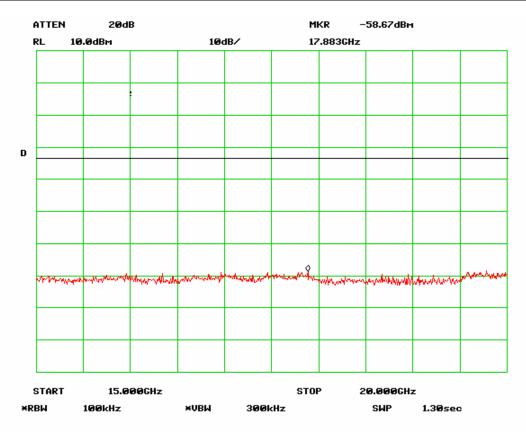
SWP

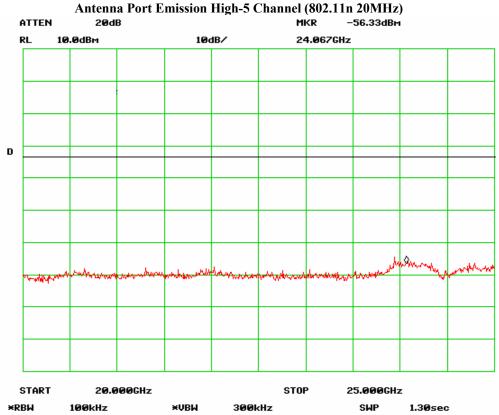
1.3**0**sec

×ŲBW

×RBW

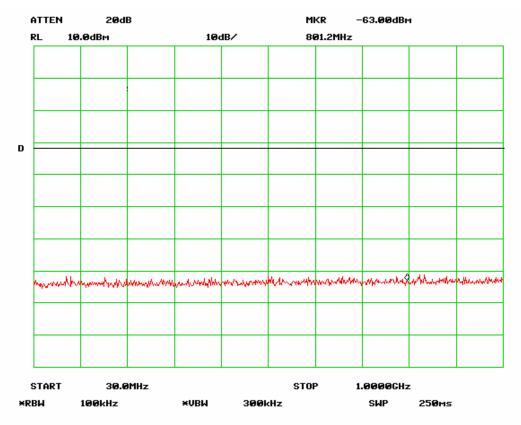
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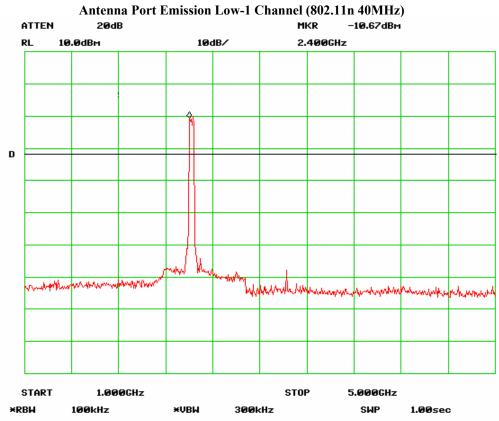




Antenna Port Emission High-6 Channel (802.11n 20MHz)

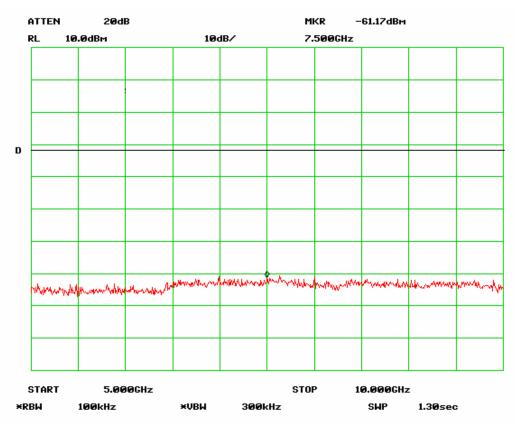
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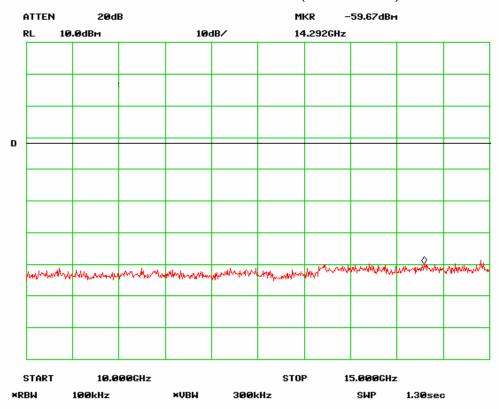


Antenna Port Emission Low-2 Channel (802.11n 40MHz)

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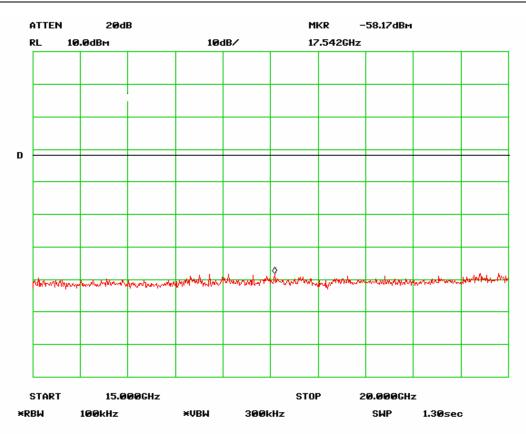


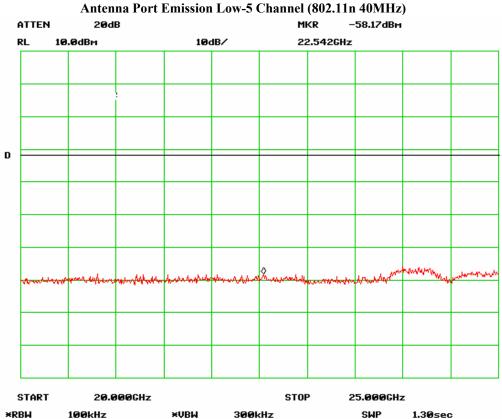
### Antenna Port Emission Low-3 Channel (802.11n 40MHz)



Antenna Port Emission Low-1 Channel (802.11n 40MHz)

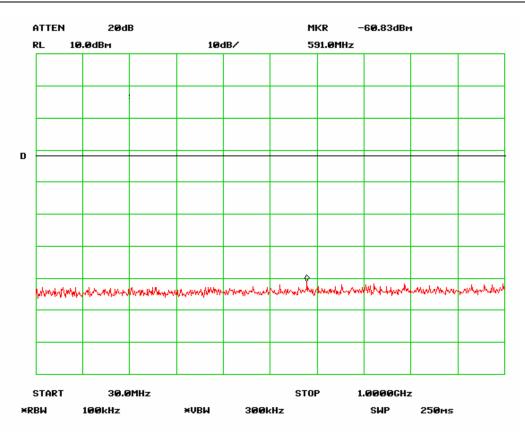
Serial#: 11020252 Issue Date: 20 April 2011 Page: 64 of 114 www.siemic.com.c



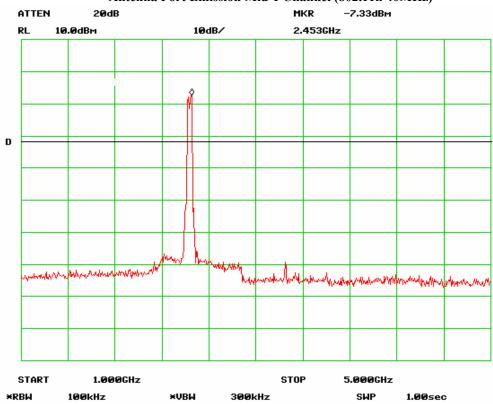


Antenna Port Emission Low-1 Channel (802.11n 40MHz)

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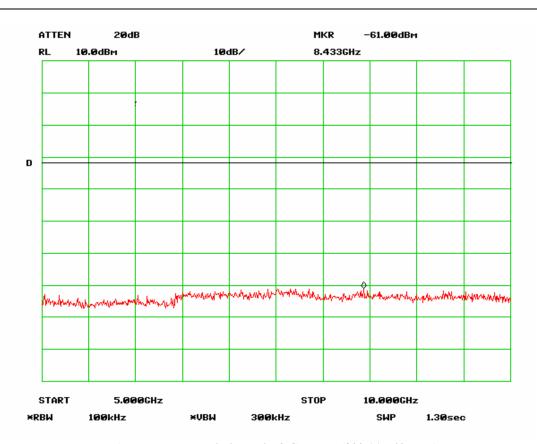


### Antenna Port Emission Mid-1 Channel (802.11n 40MHz)

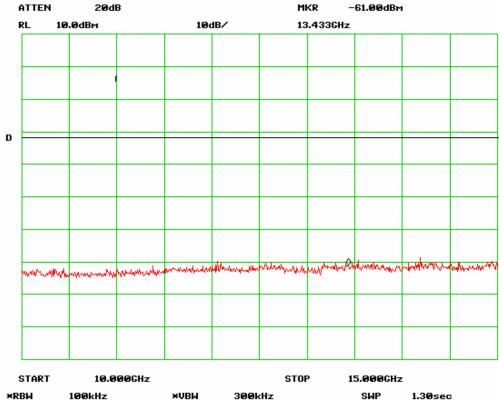


Antenna Port Emission Mid-2 Channel (802.11n 40MHz)

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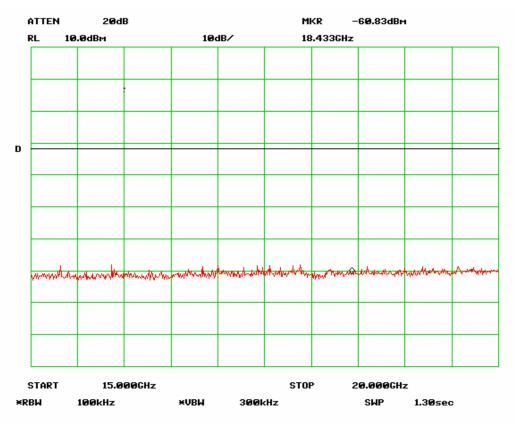


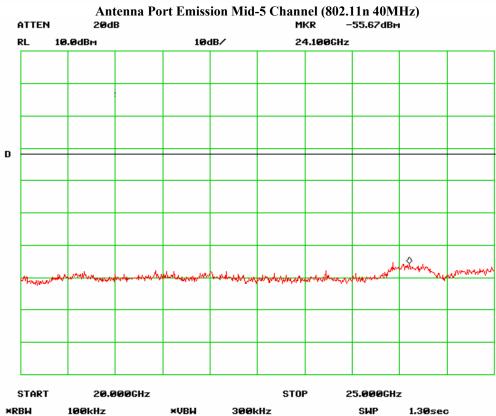
# Antenna Port Emission Mid-3 Channel (802.11n 40MHz) 20dB MKR -61.00dBm



Antenna Port Emission Mid-4 Channel (802.11n 40MHz)

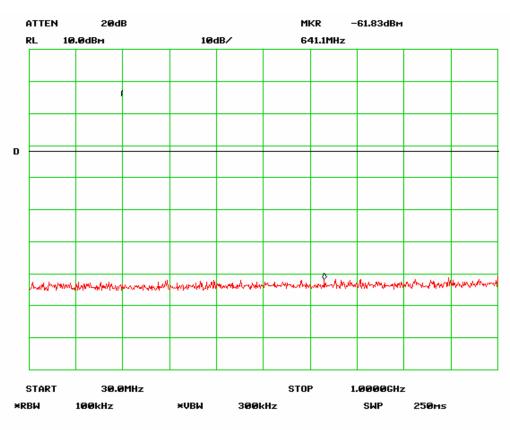
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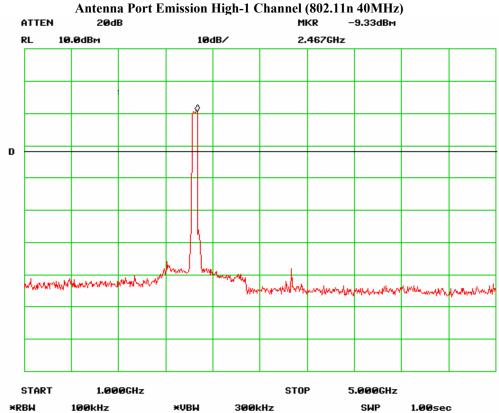




Antenna Port Emission Mid-6 Channel (802.11n 40MHz)

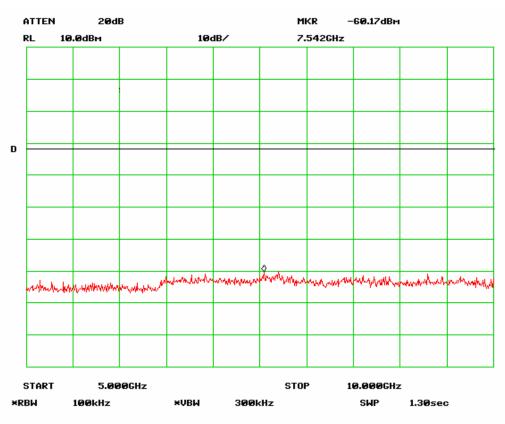
Serial#: 11020252 Issue Date: 20 April 2011 Page: 68 of 114 www.siemic.com.u

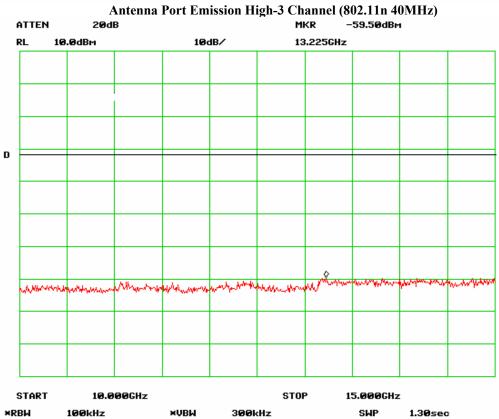




Antenna Port Emission High-2 Channel (802.11n 40MHz)

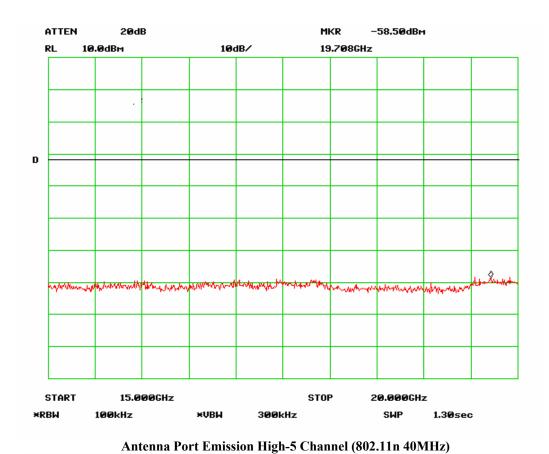
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Antenna Port Emission High-4 Channel (802.11n 40MHz)

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# АТТЕN 29dB MKR -55.33dBm RL 10.0dBm 10dB/ 24.000CHz

Antenna Port Emission High-6 Channel (802.11n 40MHz)

300kHz

STOP

25.000GHz

1.30sec

SWP

20.000GHz

×VB₩

100kHz

START

×RB₩

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# 5.7 Radiated Spurious Emission < 1GHz

- 1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
- 2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
- 3. Radiated Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 1GHz & 1GHz above (3m & 10m) is +/-6dB.

4. Environmental Conditions Temperature 16°C Relative Humidity 50%

Atmospheric Pressure 1019mbar

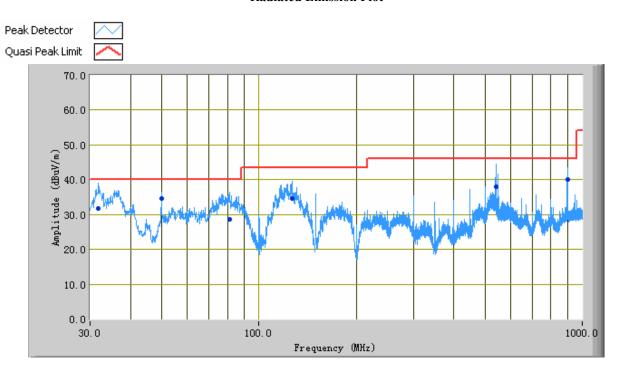
5. Test date : April 03~19 2011 Tested By : Alex Wang

**Standard Requirement:** The emissions from the Low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges.

**Test Result:** 

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### **Radiated Emission Plot**



## Test Data

Frequency (MHz)	Quasi Peak (dBuV/m)	Azimuth	Polarity(H /V)	Height (cm)	Factors (dB)	Limit (dBuV/m)	Margin (dB)
31.92	31.63	42.00	V	124.00	-23.65	40.00	-8.37
540.04	37.95	213.00	V	185.00	-26.10	46.00	-8.05
900.07	40.11	232.00	V	113.00	-17.71	46.00	-5.89
50.01	34.70	83.00	V	114.00	-35.06	40.00	-5.30
80.88	28.59	31.00	V	100.00	-37.67	40.00	-11.41
126.42	34.59	337.00	V	103.00	-30.97	43.50	-8.91

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## 5.8 Radiated Spurious Emissions > 1GHz & Band Edge

- 1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
- 2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
- 3. Radiated Emissions Measurement Uncertainty All test measurements carried out are traceable to national standards. The uncertainty of the

measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz - 1GHz & 1GHz above (3m & 10m) is

**Environmental Conditions** 16°C 4. Temperature Relative Humidity 50%

Atmospheric Pressure 1019mbar

5. Test date: April 03~19 2011 Tested By: Alex Wang

Standard Requirement: The emissions from the Low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges.

Test Result:

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Mode: 802.11b

#### @ 2412MHz @ 3 Meter

									1
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.824	9.00	1.07	V	5.15	55.00	55.4	74.00	-18.6	Peak
4.824	12.00	1.10	h	5.15	55.00	51.8	74.00	-22.2	Peak
4.824	9.00	1.07	٧	5.15	55.00	42.6	54.00	-11.4	Ave
4.824	12.00	1.10	h	5.15	55.00	40.6	54.00	-13.4	Ave
7.236	5.30	1.12	٧	7.23	55.00	65.6	74.00	-8.4	Peak
7.236	6.11	1.15	h	7.23	55.00	63.7	74.00	-10.3	Peak
7.236	5.30	1.12	٧	7.23	55.00	49.5	54.00	-4.5	Ave
7.236	6.11	1.15	h	7.23	55.00	47.9	54.00	-6.1	Ave
9.678	31.0	1.26	V	8.56	55.00	55.1	74.00	-18.9	Peak
9.678	3.0	1.34	h	8.56	55.00	54.3	74.00	-19.7	Peak
9.678	31.0	1.26	٧	8.56	55.00	44.3	54.00	-9.7	Ave
9.678	3.0	1.34	h	8.56	55.00	43.2	54.00	-10.8	Ave
12.06	0	1.06	٧	11.03	55.00	51.1	74.00	-22.9	Peak
12.06	12.0	1.24	h	11.03	55.00	50.7	74.00	-23.3	Peak
12.06	0	1.06	٧	11.03	55.00	42.2	54.00	-11.8	Ave
12.06	12.0	1.24	h	11.03	55.00	40.6	54.00	-13.4	Ave

Emission was scanned up to 25GHz.

#### @ 2437MHz @ 3Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.874	31.00	1.10	V	5.16	55.00	56.5	74.00	-17.6	Peak
4.874	25.00	1.00	h	5.16	55.00	53.1	74.00	-20.9	Peak
4.874	31.00	1.10	٧	5.16	55.00	44.9	54.00	-9.1	Ave
4.874	25.00	1.00	h	5.16	55.00	43.6	54.00	-10.4	Ave
7.311	13.00	1.20	٧	7.31	55.00	68.1	74.00	-5.9	Peak
7.311	4.00	1.03	h	7.31	55.00	66.4	74.00	-7.6	Peak
7.311	13.00	1.20	٧	7.31	55.00	50.5	54.00	-3.5	Ave
7.311	4.00	1.03	h	7.31	55.00	50.1	54.00	-3.9	Ave
9.748	22.0	1.30	V	8.66	55.00	57.6	74.00	-16.4	Peak
9.748	7.0	1.00	h	8.66	55.00	56.0	74.00	-18.0	Peak
9.748	22.0	1.30	V	8.66	55.00	44.3	54.00	-9.7	Ave
9.748	7.0	1.00	h	8.66	55.00	45.2	54.00	-8.8	Ave
12.185	0	1.20	٧	11.22	55.00	52.0	74.00	-22.0	Peak
12.185	0	1.08	h	11.22	55.00	51.4	74.00	-22.6	Peak
12.185	0	1.20	V	11.22	55.00	43.1	54.00	-10.9	Ave
12.185	0	1.08	h	11.22	55.00	40.7	54.00	-13.3	Ave

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#### @ 2462MHz @ 3Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.924	15.00	1.07	٧	5.17	55.00	54.3	74.00	-19.7	Peak
4.924	25.00	1.10	h	5.17	55.00	53.1	74.00	-20.9	Peak
4.924	15.00	1.07	V	5.17	55.00	44.5	54.00	-9.5	Ave
4.924	25.00	1.10	h	5.17	55.00	42.6	54.00	-11.4	Ave
7.386	0	1.20	٧	7.36	55.00	66.4	74.00	-7.6	Peak
7.386	3.00	1.00	h	7.36	55.00	64.4	74.00	-9.6	Peak
7.386	0	1.20	٧	7.36	55.00	48.9	54.00	-5.1	Ave
7.386	3.00	1.00	h	7.36	55.00	48.2	54.00	-5.8	Ave
9.848	6.00	1.10	V	8.74	55.00	55.3	74.00	-18.7	Peak
9.848	21.00	1.08	h	8.74	55.00	54.8	74.00	-19.2	Peak
9.848	6.00	1.10	٧	8.74	55.00	43.3	54.00	-10.7	Ave
9.848	21.00	1.08	h	8.74	55.00	45.2	54.00	-8.8	Ave
12.31	4.00	1.34	٧	11.39	55.00	51.0	74.00	-23.0	Peak
12.31	9.00	1.27	h	11.39	55.00	50.5	74.00	-23.5	Peak
12.31	4.00	1.34	V	11.39	55.00	42.7	54.00	-11.3	Ave
12.31	9.00	1.27	h	11.39	55.00	40.3	54.00	-13.7	Ave

Emission was scanned up to 25GHz.

Mode: 802.11g

#### @ 2412MHz @ 3 Meter

	<u>@ 2412MHz @ 3 Meter</u>									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209		
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments	
4.824	9.00	1.07	V	5.15	55.00	54.7	74.00	-19.3	Peak	
4.824	12.00	1.10	h	5.15	55.00	51.6	74.00	-22.4	Peak	
4.824	9.00	1.07	V	5.15	55.00	41.4	54.00	-12.6	Ave	
4.824	12.00	1.10	h	5.15	55.00	40.0	54.00	-14.0	Ave	
7.236	5.30	1.12	٧	7.23	55.00	64.2	74.00	-9.8	Peak	
7.236	6.11	1.15	h	7.23	55.00	62.8	74.00	-11.2	Peak	
7.236	5.30	1.12	V	7.23	55.00	48.1	54.00	-5.9	Ave	
7.236	6.11	1.15	h	7.23	55.00	47.4	54.00	-6.6	Ave	
9.678	31.0	1.26	V	8.56	55.00	54.6	74.00	-19.4	Peak	
9.678	3.0	1.34	h	8.56	55.00	53.5	74.00	-20.5	Peak	
9.678	31.0	1.26	V	8.56	55.00	42.8	54.00	-11.2	Ave	
9.678	3.0	1.34	h	8.56	55.00	41.9	54.00	-12.1	Ave	
12.06	0	1.06	V	11.03	55.00	50.9	74.00	-23.1	Peak	
12.06	12.0	1.24	h	11.03	55.00	49.7	74.00	-24.3	Peak	
12.06	0	1.06	V	11.03	55.00	41.8	54.00	-12.2	Ave	
12.06	12.0	1.24	h	11.03	55.00	40.4	54.00	-13.6	Ave	

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#### @ 2437MHz @ 3Meter

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Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.874	31.00	1.10	V	5.16	55.00	54.6	74.00	-19.4	Peak
4.874	25.00	1.00	h	5.16	55.00	52.2	74.00	-21.8	Peak
4.874	31.00	1.10	V	5.16	55.00	43.5	54.00	-10.5	Ave
4.874	25.00	1.00	h	5.16	55.00	42.6	54.00	-11.4	Ave
7.311	13.00	1.20	٧	7.31	55.00	64.7	74.00	-9.3	Peak
7.311	4.00	1.03	h	7.31	55.00	63.1	74.00	-10.9	Peak
7.311	13.00	1.20	٧	7.31	55.00	48.2	54.00	-5.8	Ave
7.311	4.00	1.03	h	7.31	55.00	47.6	54.00	-6.4	Ave
9.748	22.0	1.30	٧	8.66	55.00	55.1	74.00	-18.9	Peak
9.748	7.0	1.00	h	8.66	55.00	53.2	74.00	-20.8	Peak
9.748	22.0	1.30	V	8.66	55.00	41.3	54.00	-12.7	Ave
9.748	7.0	1.00	h	8.66	55.00	43.6	54.00	-10.4	Ave
12.185	0	1.20	V	11.22	55.00	50.5	74.00	-23.5	Peak
12.185	0	1.08	h	11.22	55.00	50.9	74.00	-23.1	Peak
12.185	0	1.20	V	11.22	55.00	42.1	54.00	-11.9	Ave
12.185	0	1.08	h	11.22	55.00	40.8	54.00	-13.2	Ave

Emission was scanned up to 25GHz.

#### @ 2462MHz @ 3Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.924	15.00	1.07	٧	5.17	55.00	51.9	74.00	-22.1	Peak
4.924	25.00	1.10	h	5.17	55.00	52.8	74.00	-21.2	Peak
4.924	15.00	1.07	V	5.17	55.00	45.6	54.00	-8.4	Ave
4.924	25.00	1.10	h	5.17	55.00	43.1	54.00	-10.9	Ave
7.386	0	1.20	٧	7.36	55.00	63.6	74.00	-10.4	Peak
7.386	3.00	1.00	h	7.36	55.00	62.0	74.00	-12.0	Peak
7.386	0	1.20	٧	7.36	55.00	47.7	54.00	-6.3	Ave
7.386	3.00	1.00	h	7.36	55.00	46.4	54.00	-7.6	Ave
9.848	6.00	1.10	٧	8.74	55.00	54.3	74.00	-19.7	Peak
9.848	21.00	1.08	h	8.74	55.00	52.8	74.00	-21.2	Peak
9.848	6.00	1.10	V	8.74	55.00	41.5	54.00	-12.5	Ave
9.848	21.00	1.08	h	8.74	55.00	43.1	54.00	-10.9	Ave
12.31	4.00	1.34	V	11.39	55.00	50.3	74.00	-23.7	Peak
12.31	9.00	1.27	h	11.39	55.00	49.6	74.00	-24.4	Peak
12.31	4.00	1.34	٧	11.39	55.00	42.7	54.00	-11.3	Ave
12.31	9.00	1.27	h	11.39	55.00	41.7	54.00	-12.3	Ave

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Mode: 802.11n-20MHz

#### @ 2412MHz @ 3 Meter

(6) 2 112 11112 (6) 6 1/10001									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.824	9.00	1.07	V	5.15	55.00	54.7	74.00	-19.3	Peak
4.824	12.00	1.10	h	5.15	55.00	51.6	74.00	-22.4	Peak
4.824	9.00	1.07	٧	5.15	55.00	41.4	54.00	-12.6	Ave
4.824	12.00	1.10	h	5.15	55.00	40.0	54.00	-14.0	Ave
7.236	5.30	1.12	V	7.23	55.00	64.2	74.00	-9.8	Peak
7.236	6.11	1.15	h	7.23	55.00	62.8	74.00	-11.2	Peak
7.236	5.30	1.12	٧	7.23	55.00	48.1	54.00	-5.9	Ave
7.236	6.11	1.15	h	7.23	55.00	47.4	54.00	-6.6	Ave
9.678	31.0	1.26	V	8.56	55.00	54.6	74.00	-19.4	Peak
9.678	3.0	1.34	h	8.56	55.00	53.5	74.00	-20.5	Peak
9.678	31.0	1.26	٧	8.56	55.00	42.8	54.00	-11.2	Ave
9.678	3.0	1.34	h	8.56	55.00	41.9	54.00	-12.1	Ave
12.06	0	1.06	٧	11.03	55.00	50.9	74.00	-23.1	Peak
12.06	12.0	1.24	h	11.03	55.00	49.7	74.00	-24.3	Peak
12.06	0	1.06	V	11.03	55.00	41.8	54.00	-12.2	Ave
12.06	12.0	1.24	h	11.03	55.00	40.4	54.00	-13.6	Ave

Emission was scanned up to 25GHz.

#### @ 2437MHz @ 3Meter

	(a) 243/MHz (a) 3Meter									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209		
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments	
4.874	31.00	1.10	V	5.16	55.00	51.6	74.00	-22.4	Peak	
4.874	25.00	1.00	h	5.16	55.00	51.3	74.00	-22.7	Peak	
4.874	31.00	1.10	V	5.16	55.00	44.1	54.00	-9.9	Ave	
4.874	25.00	1.00	h	5.16	55.00	43.4	54.00	-10.6	Ave	
7.311	13.00	1.20	٧	7.31	55.00	62.0	74.00	-12.0	Peak	
7.311	4.00	1.03	h	7.31	55.00	60.8	74.00	-13.2	Peak	
7.311	13.00	1.20	٧	7.31	55.00	47.5	54.00	-6.5	Ave	
7.311	4.00	1.03	h	7.31	55.00	46.4	54.00	-7.6	Ave	
9.748	22.0	1.30	V	8.66	55.00	54.3	74.00	-19.7	Peak	
9.748	7.0	1.00	h	8.66	55.00	51.8	74.00	-22.2	Peak	
9.748	22.0	1.30	V	8.66	55.00	40.6	54.00	-13.4	Ave	
9.748	7.0	1.00	h	8.66	55.00	41.7	54.00	-12.3	Ave	
12.185	0	1.20	V	11.22	55.00	51.2	74.00	-23.8	Peak	
12.185	0	1.08	h	11.22	55.00	52.7	74.00	-21.3	Peak	
12.185	0	1.20	V	11.22	55.00	43.4	54.00	-10.6	Ave	
12.185	0	1.08	h	11.22	55.00	42.5	54.00	-11.5	Ave	

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#### @ 2462MHz @ 3Meter

(a) 2402/11112 (a) 5/1/1000									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.924	15.00	1.07	V	5.17	55.00	51.6	74.00	-22.4	Peak
4.924	25.00	1.10	h	5.17	55.00	49.5	74.00	-24.5	Peak
4.924	15.00	1.07	٧	5.17	55.00	46.3	54.00	-7.7	Ave
4.924	25.00	1.10	h	5.17	55.00	44.0	54.00	-10.0	Ave
7.386	0	1.20	٧	7.36	55.00	60.6	74.00	-13.4	Peak
7.386	3.00	1.00	h	7.36	55.00	58.7	74.00	-15.3	Peak
7.386	0	1.20	٧	7.36	55.00	46.7	54.00	-7.3	Ave
7.386	3.00	1.00	h	7.36	55.00	46.4	54.00	-7.6	Ave
9.848	6.00	1.10	V	8.74	55.00	53.4	74.00	-20.6	Peak
9.848	21.00	1.08	h	8.74	55.00	51.7	74.00	-22.3	Peak
9.848	6.00	1.10	V	8.74	55.00	42.4	54.00	-11.6	Ave
9.848	21.00	1.08	h	8.74	55.00	41.8	54.00	-12.2	Ave
12.31	4.00	1.34	٧	11.39	55.00	51.6	74.00	-22.4	Peak
12.31	9.00	1.27	h	11.39	55.00	50.3	74.00	-23.7	Peak
12.31	4.00	1.34	٧	11.39	55.00	41.8	54.00	-12.2	Ave
12.31	9.00	1.27	h	11.39	55.00	40.9	54.00	-13.1	Ave

Emission was scanned up to 25GHz.

Mode: 802.11n-40MHz

#### @ 2422MHz @ 3 Meter

	( <i>ii</i> ) 2422 viii 2 ( <i>ii</i> ) 3 vietei									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209		
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments	
4.844	9.00	1.07	٧	5.15	55.00	54.7	74.00	-19.3	Peak	
4.844	12.00	1.10	h	5.15	55.00	51.6	74.00	-22.4	Peak	
4.844	9.00	1.07	٧	5.15	55.00	41.4	54.00	-12.6	Ave	
4.844	12.00	1.10	h	5.15	55.00	40.0	54.00	-14.0	Ave	
7.266	5.30	1.12	٧	7.23	55.00	64.2	74.00	-9.8	Peak	
7.266	6.11	1.15	h	7.23	55.00	62.8	74.00	-11.2	Peak	
7.266	5.30	1.12	٧	7.23	55.00	48.1	54.00	-5.9	Ave	
7.266	6.11	1.15	h	7.23	55.00	47.4	54.00	-6.6	Ave	
9.688	31.0	1.26	٧	8.56	55.00	54.6	74.00	-19.4	Peak	
9.688	3.0	1.34	h	8.56	55.00	53.5	74.00	-20.5	Peak	
9.688	31.0	1.26	٧	8.56	55.00	42.8	54.00	-11.2	Ave	
9.688	3.0	1.34	h	8.56	55.00	41.9	54.00	-12.1	Ave	
12.11	0	1.06	٧	11.03	55.00	50.9	74.00	-23.1	Peak	
12.11	12.0	1.24	h	11.03	55.00	49.7	74.00	-24.3	Peak	
12.11	0	1.06	V	11.03	55.00	41.8	54.00	-12.2	Ave	
12.11	12.0	1.24	h	11.03	55.00	40.4	54.00	-13.6	Ave	

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#### @ 2437MHz @ 3Meter

W 245 TITLE W STICKET									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.874	31.00	1.10	V	5.16	55.00	53.5	74.00	-20.5	Peak
4.874	25.00	1.00	h	5.16	55.00	52.0	74.00	-22.0	Peak
4.874	31.00	1.10	٧	5.16	55.00	44.9	54.00	-9.1	Ave
4.874	25.00	1.00	h	5.16	55.00	43.1	54.00	-10.9	Ave
7.311	13.00	1.20	٧	7.31	55.00	65.6	74.00	-8.4	Peak
7.311	4.00	1.03	h	7.31	55.00	63.4	74.00	-10.6	Peak
7.311	13.00	1.20	٧	7.31	55.00	49.6	54.00	-4.4	Ave
7.311	4.00	1.03	h	7.31	55.00	48.3	54.00	-5.7	Ave
9.748	22.0	1.30	V	8.66	55.00	56.5	74.00	-17.5	Peak
9.748	7.0	1.00	h	8.66	55.00	54.2	74.00	-19.8	Peak
9.748	22.0	1.30	V	8.66	55.00	42.4	54.00	-11.6	Ave
9.748	7.0	1.00	h	8.66	55.00	44.1	54.00	-19.9	Ave
12.185	0	1.20	٧	11.22	55.00	51.9	74.00	-22.1	Peak
12.185	0	1.08	h	11.22	55.00	52.7	74.00	-21.3	Peak
12.185	0	1.20	V	11.22	55.00	43.7	54.00	-10.3	Ave
12.185	0	1.08	h	11.22	55.00	41.9	54.00	-12.1	Ave

Emission was scanned up to 25GHz.

#### @ 2452MHz @ 3Meter

(a) 2432WIIIZ (a) SWEEEI									
Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.904	15.00	1.07	V	5.17	55.00	55.8	74.00	-18.2	Peak
4.904	25.00	1.10	h	5.17	55.00	54.3	74.00	-19.7	Peak
4.904	15.00	1.07	V	5.17	55.00	46.4	54.00	-7.6	Ave
4.904	25.00	1.10	h	5.17	55.00	44.3	54.00	-9.7	Ave
7.356	0	1.20	٧	7.36	55.00	64.8	74.00	-9.2	Peak
7.356	3.00	1.00	h	7.36	55.00	63.1	74.00	-10.9	Peak
7.356	0	1.20	٧	7.36	55.00	48.2	54.00	-5.8	Ave
7.356	3.00	1.00	h	7.36	55.00	47.0	54.00	-7.0	Ave
9.808	6.00	1.10	٧	8.74	55.00	56.9	74.00	-17.1	Peak
9.808	21.00	1.08	h	8.74	55.00	53.4	74.00	-20.6	Peak
9.808	6.00	1.10	V	8.74	55.00	43.6	54.00	-10.4	Ave
9.808	21.00	1.08	h	8.74	55.00	44.0	54.00	-10.0	Ave
12.26	4.00	1.34	٧	11.39	55.00	52.1	74.00	-21.9	Peak
12.26	9.00	1.27	h	11.39	55.00	50.9	74.00	-23.1	Peak
12.26	4.00	1.34	٧	11.39	55.00	43.4	54.00	-10.6	Ave
12.26	9.00	1.27	h	11.39	55.00	42.0	54.00	-12.0	Ave



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# **Band Edge**

#### 2412-2462

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
Low Channel	V	Peak	2400	36.56	74	-37.44
Low Channel	Н	Peak	2400	42.12	74	-31.88
Low Channel	V	Avg	2400	24.12	54	-29.88
Low Channel	Н	Avg	2400	24.71	54	-29.29

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
High Channel	V	Peak	2483.5	45.67	74	-28.33
High Channel	Н	Peak	2483.5	41.23	74	-32.77
High Channel	V	Avg	2483.5	27.15	54	-26.85
High Channel	Н	Avg	2483.5	31.30	54	-22.7

#### 2422-2452

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
Low Channel	V	Peak	2400	36.10	74	-37.9
Low Channel	Н	Peak	2400	41.14	74	-32.86
Low Channel	V	Avg	2400	25.12	54	-28.88
Low Channel	Н	Avg	2400	25.22	54	-28.78

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
High Channel	V	Peak	2483.5	41.13	74	-32.87
High Channel	Н	Peak	2483.5	40.10	74	-33.9
High Channel	V	Avg	2483.5	29.22	54	-24.78
High Channel	Н	Avg	2483.5	32.33	54	-21.67

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## Annex A. TEST INSTRUMENT & METHOD

#### **Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES**

Instrument	Manufacturer	Model	CAL Due Date	CAL Date
Spectrum Analyzer	HP	8564 E	2011.04.26	2010.04.25
EMI Receiver	Rohde & Schwarz	ESPI 3	2012.02.19	2011.02.18
Antenna (30MHz~2GHz)	Sunol Sciences	JB1	2011.10.04	2010.10.03
Horn Antenna (1~18GHz)	A-INFOMW	JXTXLB-10180	2011.11.18	2010.11.17
Horn Antenna (1~18GHz)	N/A	N/A	2011.10.04	2010.10.03
Pre-Amplifier(0.01 ~ 1.3GHz)	HP	8447F	2011.04.24	2010.04.23
Pre-Amplifier(0.1 ~ 18GHz)	MITEQ	AMF-7D-00101800- 30-10P	2012.03.05	2011.03.04
Horn Antenna (18~40GHz)	Com Power	AH-840	2011.05.21	2010.05.20
Microwave Pre-Amp (18~40GHz)	Com Power	PA-840	2011.05.21	2010.05.20

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 40 mg/s

#### Annex A.ii. CONDUCTED EMISSIONS TEST DESCRIPTION

#### **Test Set-up**

- 1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table, as shown in Annex B.
- 2. The power supply for the EUT was fed through a  $50\Omega/50\mu H$  EUT LISN, connected to filtered mains.
- The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
- 4. All other supporting equipments were powered separately from another main supply.

#### **Test Method**

- 1. The EUT was switched on and allowed to warm up to its normal operating condition.
- 2. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.
- 3. High peaks, relative to the limit line, were then selected.
- 4. The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 KHz. For FCC tests, only Quasi-peak measurements were made; while for CISPR/EN tests, both Quasi-peak and Average measurements were made.
- 5. Steps 2 to 4 were then repeated for the LIVE line (for AC mains) or DC line (for DC power).

#### **Sample Calculation Example**

At 20 MHz  $limit = 250 \mu V = 47.96 dB\mu V$ 

Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.20 dB

Q-P reading obtained directly from EMI Receiver =  $40.00 \text{ dB}_{\mu}\text{V}$  (Calibrated for system losses)

Therefore, Q-P margin = 47.96 - 40.00 = 7.96 i.e. **7.96 dB below limit** 

#### Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

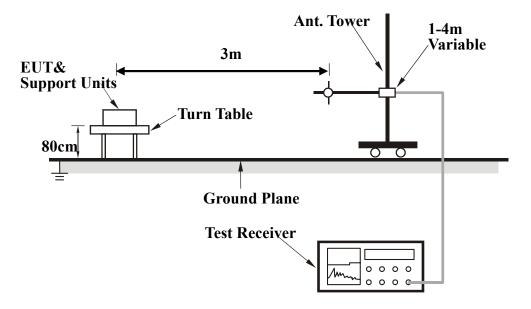
#### **EUT Characterisation**

EUT characterisation, over the frequency range from 30MHz to 10<sup>th</sup> Harmonic , was done in order to minimise radiated emissions testing time while still maintaining high confidence in the test results.

The EUT was placed in the chamber, at a height of about 0.8m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 3m away from the EUT. Radiated emissions from the EUT were maximised by rotating the turntable manually, changing the antenna polarisation and manipulating the EUT cables while observing the frequency profile on the spectrum analyzer / receiver. Frequency points at which maximum emissions occurred, clock frequencies and operating frequencies were then noted for the formal radiated emissions test at the Open Area Test Site (OATS).

#### **Test Set-up**

- 1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.
- 2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.
- 3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.



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#### **Test Method**

The following procedure was performed to determine the maximum emission axis of EUT:

- 1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
- 2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
- 3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

Final Radiated Emission Measurement

- 1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.
- 2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
- 3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
- 4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from  $0 \circ to 360 \circ with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.$
- 5. Repeat step 4 until all frequencies need to be measured were complete.
- 6. Repeat step 5 with search antenna in vertical polarized orientations.

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz
Above 1000	Peak	1 MHz	1 MHz
Above 1000	Average	1 MHz	10 Hz

#### **Sample Calculation Example**

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. For the limit is employed average value, therefore the peak value can be transferred to average value by subtracting the duty factor. The basic equation with a sample calculation is as follows:

Peak = Reading + Corrected Factor

where

Corr. Factor = Antenna Factor + Cable Factor - Amplifier Gain (if any)

And the average value is

Average = Peak Value + Duty Factor or

Set RBW = 1MHz, VBW = 10Hz.

Note:

If the measured frequencies are fall in the restricted frequency band, the limit employed must be quasi peak value when frequencies are below or equal to 1 GHz. And the measuring instrument is set to quasi peak detector function.

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## Annex B. EUT AND TEST SETUP PHOTOGRAPHS

Please see attachment

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## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

## **EUT TEST CONDITIONS**

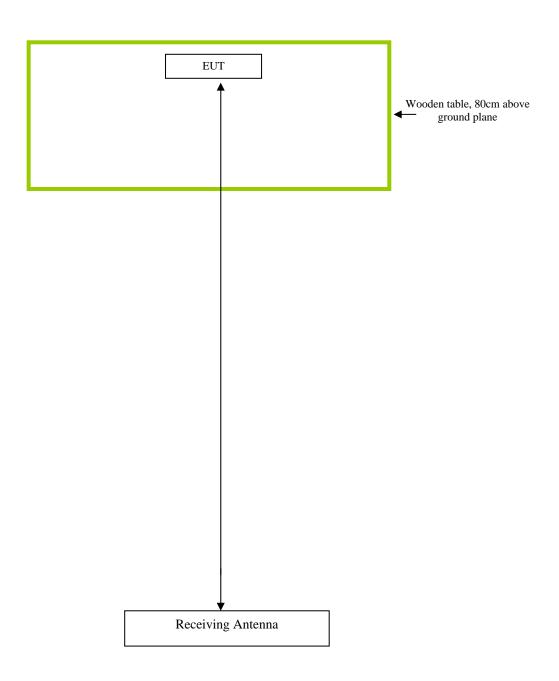
## Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

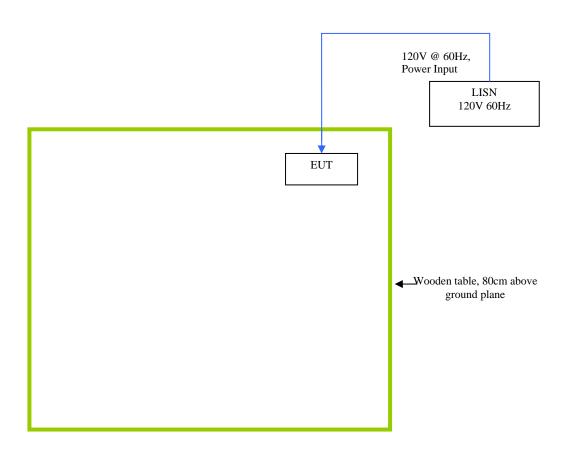
Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
N/A	N/A	N/A

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## **Block Configuration Diagram for Radiated Emission**



## **Block Configuration Diagram for Conducted Emission**



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## Annex C.ii. EUT OPERATING CONDITIONS

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions	The EUT was continuously transmitting to stimulate the worst case.

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Annex D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PART LIST	
Please see attachment	
riease see attachment	

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## Annex E. SIEMIC ACCREDITATION CERTIFICATES

SIEMIC ACREDITATION DETAILS: A2LA 17025 & ISO Guide 65: 2742.01, 2742.2



The American Association for Laboratory Accreditation

World Class Accreditation

# Accredited Laboratory

A2LA has accredited

## SIEMIC LABORATORIES

San Jose, CA for technical competence in the field of

#### Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 23rd day of November 2010.

President & CEO For the Accreditation Council Certificate Number 2742.01 Valid to September 30, 2012

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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#### The American Association for Laboratory Accreditation

#### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

#### SIEMIC LABORATORIES <sup>1</sup> 2206 Ringwood Ave. San Jose, CA 95131

Mr. Leslie Bai Phone: 408 526 1188 Email: leslie.bai@siemic.com Mr. Snell Leong Phone: 408 526 1188 Email: snell.leong@siemic.com www.siemic.com

#### ELECTRICAL

Valid to: September 30, 2012 Certificate Number: 2742.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following EMC, Product Safety, Radio and Telecommunication tests:

Test Description:	Test Method:  IEC/CISPR 11; IEC/CISPR 12; EN 55011; IEC/CISPR 22; EN 55022; IEC/CISPR 20; EN 55020; EN 61000-6-1; EN 61000-6-2; EN 61000-6-3; EN 61000-6-4; EN 61204-3; EN 61326, EN 61326-1; EN 61000-3-2; EN 61000-3-3; EN 50081-1, EN 50081-2; EN 50082-1; IEC 61000-4-2; EN 61000-4-2; IEC 61000-4-2; EN 61000-4-2; IEC 61000-4-3; (limited up to 2.7 GHz and 3V/m); IEC 61000-4-4; IEC 61000-4-5; EN 61000-4-5; IEC 61000-4-6; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-11; IEC/CISPR 24; EN 55024; EN 50412-2-1; EN 50083-2; EN 50090-2-2; EN 50091-2; EN 50130-4; EN 50130-4 +A12; IEC 60601-1-2; EN 12184; EN 55015; EN 61547; CISPR 16-1-4		
EN & IEC – Emissions & Immunity			
Korea – Emissions & Immunity	KCC Notice 2009-27, Nov. 5, 2009; RRA Announce 2009-9, Dec. 21, 2009; KN 22:2007-12; KCC Notice 2009-27, Nov. 5, 2009; RRA Notice 2009-10, Dec. 21, 2009; KN 24:2008-5; KN 61000-4-2:2008-5; KN 61000-4-3:2008-5; KN 61000-4-4:2008-5; KN 61000-4-5:2008-5; KN 61000-4-6:2008-5; KN 61000-4-8:2008-5; KN 61000-4-11:2008-5; RRL Notice 2008-3; RRL Notice 2008-4; RRL Notice 2005-131; RRL Notice 2007-99; RRL Notice 2007-101; RRL Notice 2008-4; RRA Notice No 2008-11(2008.12.16); RRA Notice No 2008-12(2008.12.16); KN 60601-1-2; KCC Notice 2009-27; KN 301 489-1(2008-05); KN 301 489-7(2008-05); KN 301 489-17(2008-05); KN 301 489-24(2008-05); KN 16-1-1(2008-05); KN 16-1-2(2008-05); KN 16-1-3(2008-05); KN 16-1-4(2008-05); KN 16-1-5(2008-05); KN 16-2-1(2008-05); KN 16-2-2(2008-05); KN 16-2-3(2008-05); KN 16-2-4(2008-05)		

(A2LA Certificate No. 2742.01) 11/23/2010

Allow Page 1

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FCC – Emissions	ANSI C63.17:2006; ANSI C63.4(2003) with FCC Method 47 CFR Part 11; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart E; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart C; ANSI C63.4(2003) and DA 02-2138; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart B; ANSI C63.4(2009); ANSI C63.10(2009); FCC Method 47 CFR Part 18, FCC OST/MP-5(1986); FCC Report and Order ET Docket 98-153 (FCC 02-48); FCC Method 47 CFR Part 15, Subpart G, using FCC Order 04-425; FCC Method 47 CFR Parts 11 (Emergency Alert System (EAS)), 15 (Radio Frequency Devices) and 18 (Industrial, Scientific, and Medical Equipment); SAE J1113-11, SAE J1113-12; SAE J1113-41; SAE J1113-13
Canada – Emissions	ICES-001; ICES-002; ICES-003 Issue 4; ICES-003 Issue 4 (2004); ICES-006 Issue 1
Vietnam – Emission & Immunity	TCN 68-193:2003; TCN 68-196:2001; TCVN 7189:2002
Australia / New Zealand – Emissions and Immunity	AS/NZS 1044; AS/NZS 4251.1; AS/NZS 4251.2; AS/NZS CISPR 22; AS/NZS 3548; AS/NZS 2279.3; AS/NZS 61000-3-3; AS/NZS CISPR 11; AS/NZS CISPR 24; AS/NZS 61000.6.3; AS/NZS 61000.6.4; AS/NZS CISPR 14.1; AS/NZS 61000.3.2
Japan – Emissions	JEITA IT-3001; VCCI-V-3:2010.4 (up to 6 GHz)
China – Emissions	GB9254; GB17625.1
Taiwan – Emissions	CNS 13438 (up to 6 GHz); CNS 13783-1; CNS 13803; CNS 13439
Singapore – Emissions & Immunity	IDA TS EMC; CISPR 22; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6
FCC – Radio TIA/EIA 603-C with 47 CFR Part 2	Maritime and Aviation Radio Services in 47 CFR Parts 80 and 87; Personal Mobile Radio Services in 47 CFR Parts 22 (cellular), 24, 25, 26, and 27; Personal Mobile Radio Services in 47 CFR Part 22 (cellular) and Part 24 — [limited to TX conducted and radiated power and RX - TX radiated spurious emissions]; General Mobile Radio Services in 47 CFR Parts 22 (non-cellular), 74, 90, 95, and 97; General Mobile Radio Services in 47 CFR Part 90; Microwave Radio Services in 47 CFR Parts 21, 27, 74, and 101
Canada – Radio	RSS 102; RSS 111; RSS 112; RSS 117; RSS 118; RSS 119; RSS 123; RSS 125; RSS 127; RSS 128; RSS 129; RSS 131; RSS 132; RSS 133; RSS 134; RSS 135; RSS 136; RSS 137; RSS 138; RSS 139; RSS 141; RSS 142; RSS 170; RSS 181; RSS 182; RSS 188; RSS 191; RSS 192; RSS 193; RSS 194; RSS 195; RSS 196; RSS 197; RSS 198; RSS 199; RSS 210; RSS 220; RSS 213; RSS 215; RSS 243; RSS 287; RSS 310; RSS Gen

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CE – Radio	EN 301 502; EN 301 511; EN 301 526; EN 301 681; EN 301 721;
	EN 301 751; EN 301 753; EN 301 783-2; EN 301 796; EN 301 797;
	EN 301 840-2; EN 301 843-1; EN 301 843-4; EN 301 843-5;
	EN 301 893; EN 301 908-01; EN 301 908-02; EN 301 908-03;
	EN 301 908-04; EN 301 908-05; EN 301 908-06; EN 301 908-07;
	EN 301 908-08; EN 301 908-09; EN 301 908-10; EN 301 908-11;
	EN 301 929-2; EN 301 997-2; EN 302 018-2; EN 302 054-2;
	EN 302 064-2; EN 302 066-2; EN 302 077-2; EN 302 186; EN 302 195-2;
	EN 302 217-3; EN 302 245-2; EN 302 288-2; EN 302 291-2; EN 302 296;
	EN 302 297; EN 302 326-2; EN 302 326-3; EN 302 340; EN 302 372-2;
	EN 302 426; EN 302 454-2; EN 302 502; EN 302 510-2;
	EN 302 217-4-2; EN 300 224-1; EN 300 279; EN 300 339; EN 300 385;
	EN 301 839-2; EN 301 843-6; EN 302 017-2; EN 302 208-2;
	EN 302 217-2-2; ETS 300 329; ETS 300 445; ETS 300 446; ETS 300 683;
	ETS 300 826; ETS EN 300 328; ETSI EN 300 086-2; EN 302217-1;
	EN 302217-2-1; EN 302217-4-1; EN 302288-1; EN 302908-12;
	EN 302326-1; EN 301929-1; EN 301997-1; EN 300224-2; EN 301839-1;
	EN 301843-1; EN 301843-2; EN 301843-3; EN 301843-4; EN 301843-5;
	EN 302017-1; EN 302208-1; EN 300086-1; EN 300113-1; EN 300224-1;
	EN 300341-1; EN 302291-1; EN 302500-1; EN 302500-2;
	ETSI EN 300 113-2; ETSI EN 300 197; ETSI EN 300 198;
	ETSI EN 300 219-1; ETSI EN 300 219-2;
	ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 220-3; ETSI EN 300 224-2; ETSI EN 300 296-1; ETSI EN 300 296-2;
	ETSI EN 300 224-2, ETSI EN 300 290-1, ETSI EN 300 290-2, ETSI EN 300 328-1; ETSI EN 300 328-2;
	ETSI EN 300 326-1, ETSI EN 300 326-2, ETSI EN 300 330: ETSI EN 300 330-1: ETSI EN 300 330-2:
	ETSI EN 300 330, ETSI EN 300 330-1; ETSI EN 300 373-2;
	ETSI EN 300 373-3; ETSI EN 300 390-1; ETSI EN 300 379-2;
	ETSI EN 300 422-1; ETSI EN 300 422-2; ETSI EN 300 431;
	ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 300 454-1;
	ETSI EN 300 454-2; ETSI EN 300 718-2; ETSI EN 301 021;
	ETSI EN 301 166-1; ETSI EN 301 166-2; ETSI EN 301 178-2;
	ETSI EN 301 213-1; ETSI EN 301 213-2; ETSI EN 301 213-3;
	ETSI EN 301 213-4; ETSI EN 301 213-5; ETSI EN 301 357-1;
	ETSI EN 301 357-2; ETSI EN 301 390; ETSI EN 301 459;
	ETSI EN 301 489-01(excluding section 9.6); ETSI EN 301 489-02;
	ETSI EN 301 489-03; ETSI EN 301 489-04; ETSI EN 301 489-05;
	ETSI EN 301 489-06; ETSI EN 301 489-07; ETSI EN 301 489-08;
	ETSI EN 301 489-09; ETSI EN 301 489-10; ETSI EN 301 489-11;
	ETSI EN 301 489-12; ETSI EN 301 489-13; ETSI EN 301 489-14;
	ETSI EN 301 489-15; ETSI EN 301 489-16; ETSI EN 301 489-17;
	ETSI EN 301 489-18; ETSI EN 301 489-19; ETSI EN 301 489-20;
	ETSI EN 301 489-22; ETSI EN 301 489-23; ETSI EN 301 489-24;
	ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 301 489-27;
	ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-32; IEC 60945
IDA – Radio	IDA TS 3G-BS; IDA TS 3G-MT; IDA TS AR; IDA TS CT-CTS;
	IDA TS GMPCS; IDA TS GSM-BS; IDA TS GSM-MT; IDA TS LMR;
	IDA TS RPG; IDA TS SRD; IDA TS UWB; IDA TS WBA
Vietnam – Radio	TCN 68-242:2006; TCN 68-243:2006; TCN 68-246:2006

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Korea – Radio	KCC Notice 2009-13; KCC Notice 2008-26; RRL Notice 2008-2; RRL Notice 2005-105; RRL Notice 2008-17; RRL Notice 2005-24; RRL Notice 2005-25; RRL Notice 2005-179; RRL Notice 2008-10; RRL Notice 2007-49; RRL Notice 2007-20; RRL Notice 2007-11; RRL Notice 2007-80; RRL Notice 2004-68; KCC Notice 2009-36, Dec. 8, 2009; RRL Notice 2009-6, October 15, 2009; KCC Notice 2010-1; KCC Notice 2010-12; KCC Notice 2010-13
Taiwan – Radio	LP0002; PLMN07; PLMN01; PLMN08
Australia - New Zealand – Radio	AS 2772.2; AS/NZS 4281; AS/NZS 4268; AS/NZS 4280.1; AS/NZS 4583; AS/NZS 4280.2; AS/NZS 4281; AS/NZS 4295; AS/NZS 4582; AS/NZS 4769.1; AS/NZS 4769.2; AS/NZS 4770; AS/NZS 4771
Hong Kong – Radio	HKTA 1002; HKTA 1007; HKTA 1008; HKTA 1010; HKTA 1015; HKTA 1016; HKTA 1020; HKTA 1022; HKTA 1026; HKTA 1027; HKTA 1029; HKTA 1030; HKTA 1031; HKTA 1032; HKTA 1033; HKTA 1034; HKTA 1035; HKTA 1036; HKTA 1037; HKTA 1039; HKTA 1041; HKTA 1042; HKTA 1043; HKTA 1044; HKTA 1046; HKTA 1047; HKTA 1048; HKTA 1049; HKTA 1051; HKTA1052; HKTA1053; HKTA 1054; HKTA 1055
USA – Telecom	ANSI/TIA-968-A:03; ANSI/TIA-968-A-1:03; ANSI/TIA-968-A-2:04; ANSI/TIA-968-A-3:05; ANSI/TIA-968-A-4:07; ANSI/TIA-968-A-5:07; TIA-968-B; FCC Rule Part 68; 47 CFR Part 68.316; 47 CFR Part 68.317; ANSI/TIA/EIA-464-C; TIA-810-B; T1.TRQ6 (2002); TCB-31-B (1998); TIA-470.110-C; TIA-810-B; TIA-920
Canada — Telecom	CS-03 Part V Issue 9:2009 Amendment 1; CS-03 Part VIII Issue 9:2009 Amendment 4; CS-03 Part I Issue 9:2006 Amendment 3; CS-03 Part II Issue 9:2004; CS-03 Part III Issue 9:2004; CS-03 Part V Issue 9:2004; CS-03 Part VI Issue 9:2004; CS-03 Part VII Issue 9:2006 Amendment 3; CS-03 Part VIII Issue 9:2007 Amendment 3; CS-03 Issue 9:04 + A2(06) + A3(06)
Europe – Telecom	TBR 2: 01-1997; TBR 004 Ed.1.95 + A1 (97); TBR 1; TBR 3; TBR 12:A1 01-1996; TBR 013 ed.1; TBR 024 ed.1; TBR 25; TBR 38 ed.1; ETSI ES 203 021-05; ETSI ES 203 021-2; ETSI ES 021-3; TBR 021; ETSI EG 201 121; ETSI EN 301 437; ETSI TS 101 270-1; ITU-T Recommendation Q.920; ITU-T Recommendation Q.920 – Amendment 1; ITU-T Recommendation Q.921; ITU-T Recommendation Q.921 – Amendment 1; ITU-T Recommendation Q.931; ITU-T Recommendation Q.931 – Amendment 1; Erratum 1 (02/2003) ITU-T Recommendation Q.931 (05/1998); ISDN User Network Interface Layer 3 Specification for Basic Call Control, ITU-T Recommendation P.300
Australia –Telecom	AS/CA S003.1:2010; AS/CA S003.2:2010; AS/CA S003.3:2010; AS/CA S004:2010; AS/ACIF S006/2008; AS/ACIF S041.1:2009

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Australia – Telecom	AS/ACIF S041.2:2009; AS/ACIF S041.3:2009; AS/ACIF S042.1:2008; AS/ACIF S043.2:2008; AS/ACIF S043.3:2008; AS/ACIF S002:05;
	AS/ACIF S003:06; AS/ACIF S004:06;
	AS/ACIF S006:01; AS/ACIF S016:01; AS/ACIF S031:01;
	AS/ACIF S038:01; AS/ACIF S040:01; AS/ACIF S041:05;
	AS/ACIF S043.2:06; AS ACIF S042.1
New Zealand – Telecom	PTC200:2006; PTC200 Issue No.2:97 + A1(980); PTC220; PTC273:2007;
	TNA 115; TNA 117
Singapore – Telecom	IDA TS ADSL, Issue 1, Rev. 1 (April 2006);
	IDA TS DLCN, Issue 1 (July 2005);
	IDA TS ISDN BA, Issue 1 (July 2005);
	IDA TS ISDN PRA, Issue 1 (July 2005);
	IDA TS ISDN 3 (Oct. 2000); IDA TS-PSTN, Issue 1 (March 2007); IDA TS ACLIP 07
Hong Kong – Telecom	HKTA 2011; HKTA 2012; HKTA 2013; HKTA 2014;
riong Kong – refection	HKTA 2017; HKTA 2018; HKTA 2022; HKTA 2024;
	HKTA 2026; HKTA 2027; HKTA 2028; HKTA 2029;
	HKTA 2030; HKTA 2031; HKTA 2032; HKTA 2033
Vietnam – Telecom	TCN 68-188:2000; TCN 68-193:2003; TCN 68-196:2001;
	TCN 68-143:2003; TCN 68-192:2003; TCN 68-189:2000;
	TCN 68-221:2004; TCN 68-222:2004; TCN 68-245:2004;
	TCN 68-223:2004
Korea – Telecom	RRA Notice 2009-38, Sep. 11, 2009;
	RRA Notice 2009-7 (including attachments 1, 3, 5,6);
	Presidential Decree 21098, RRL Notice 2007-30;
	RRL Notice 2008-10 (attachments 1, 3, 5, 6); RRL Notice 2009-25; RRL Notice 2008-59
China – Telecom	YD/T 514-1:98; YD/T 1277.1-2003; GB/T 17904.1-1999;
	GB/T 17904.2-1999; GB/T 17154.1-1997; GB/T 17154.2-1997;
	YD/T1091-2000; YD/T1006-1999; GB/T 17789-1999
Taiwan – Telecom	PSTN01:03; ADSL01:08; ID0002; IS6100: 93
Japan – Telecom	JATE Blue Book, Green Book;
	Ministerial Ordinance of the Ministry of Posts and Telecommunications No.
	31 of April 1, 1985 (last amended on March 22 2004);
	Ordinance Concerning Technical Conditions Compliance Approval etc. of Terminal Equipment
South Africa – Telecom	DPT-TE-001; TE-002; TE-003; TE-004; TE-005; TE-006; TE-007;
	TE-008; TE-009; TE-010; TE-012 (telephone interface);
	TE 012 4 L L TE 014 TE 015 TE 019 CNIC 001
	TE-013 (telephone interface); TE-014; TE-015; TE-018; SWS-001;
	SWS-002; SWS-003; SWS-004; SWS-005; SWS-006; SWS-007;
Israel – Telecom	

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CNC-ST2-44-01 Resolution 392-2005
Resolution 392-2005
ITU-T-G.703:01; ITU-T-G.823:93; ITU-T G.824; ITU-T G.825; ITU-T-G.991.2; ITU-T-G.992.1; ITU-T-G.992.3; ITU-T-G.992.5; ITU-T-G.993.1
IEC 60950-1; EN 60950-1; UL 60950-1; IEC 60601-1-1; CAN/CSA 22.2 NO. 60950-1-03; SS-EN 60950-1; AS/NZ 60950-1, (voltage surge testing up to 6kV, excluding Annex A and H); CNS 14336, CNS 14408; GB4943; President Notice 20664; RRL Notice 2008-10 (attachment 4); RRA Notice 2009-7 (attachment 4); TCN 68-190:2003; SABS IEC 60950; IEC/EN 61558; IEC/EN 61558-2-7; EN 62115; IEC 60215; EN 60958; EN 60598; IEC 215 (1987) + A1 (1992) + A2 (1994)
ARIB STD-T81; ARIB STD-T66; RCR STD-1; RCR STD-29; ARIB STD-T94 Fascicle 1; ARIB STD-T90; ARIB STD-T89; RCR STD-33
IEEE P1528:2003 + Ad1; IEEE 1528A:2005; FCC OET Bulletin 65 Supplement C; FCC OET Bulletin 65; ANSI C95; ANSI C63.19; FCC 47 CFR 20.19; H46-2/99-273E; EN 50360; EN 50361; IEC62209-1; IEC 62209-2; EN 50371; EN 50383; EN 50357; EN 50364; RRL 2008-18; RRL 2008-16; KCC 2009-27; RRL 2004-67; CNS 14959; NZS 2772.1; NZS 6609.2; Resolution N 533
CB Radio
Cordless Telephone
Low Power Radio Equipment
Low Power Security System
Low Power Data Communication in the 2.4 GHz Band
Low Power Data Communication in the 2.4 GHz Band
Low Power Data Communication in the 5.2, 5.3, 5.6 GHz Bands
Low Power Data Communication in the 25 and 27 GHz Bands
Base Station for 5 GHz Band Wireless Access System
Base Station for 5 GHz Band Wireless Access System (low spurious type)
Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones)

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Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones, low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low power type)
Table No 50	Digital Cordless Telephone
Table No 50	PHS Base Station
Table No 50	PHS Land Mobile Station
Table No 50	PHS Relay Station
Table No 50	PHS Test Station
Table No 64	Mobile Station for Dedicated Short Range Communication Systems
Table No 64	Base Station for Dedicated Short Range Communication Systems
Table No 64	Test Station for Dedicated Short Range Communication Systems
Table No 70	UWB (Ultra Wide Band) Radio System

<sup>1</sup>Note: This accreditation covers testing performed at the laboratory listed above and the OATS located at 44366 South Grimmer Blvd., Fremont CA 94538. At this site "Radiated Emissions" are tested at a measurement distance of 10m.

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<sup>\*</sup>Limitations for listed standards are indicated by italics and Scope excludes protocol sections of applicable standards.

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## The American Association for Laboratory Accreditation

World Class Accreditation

# Accredited Product Certification Body

A2LA has accredited

### SIEMIC LABORATORIES

San Jose, CA for technical competence as a

#### Product Certification Body

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC Guide 65:1996 General requirements for bodies operating product certification systems. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system for a Telecommunications Certification Body (TCB) meeting FCC (U.S.), IDA (Singapore), IC (Canada) and OFTA Hong Kong requirements.



Presented this 23rd day of November 2010.

President & CEO

For the Accreditation Council Certificate Number 2742.01 Valid to September 30, 2012

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

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#### The American Association for Laboratory Accreditation

#### SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 65:1996

SIEMIC INC. 2206 Ringwood Ave. San Jose, CA 95131

Mr. Snell Leong (Authorized Representative) Phone: 408 526 1188

## PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2012 Certificate Number: 2742.02

In recognition of the successful completion of the A2LA Certification Body Accreditation Program evaluation, including the US Federal Communications Commission (FCC), Industry Canada (IC), Singapore (IDA) and Hong Kong (OFTA) requirements for the indicated types of product certifications, accreditation is granted to this organization to perform the following product certification schemes:

<u>Economy</u> <u>Scope</u>

#### Federal Communication Commission - (FCC)

Unlicensed Radio Frequency Devices A1, A2, A3, A4
Licensed Radio Frequency Devices B1, B2, B3, B4
Telephone Terminal Equipment C

\*Please refer to FCC TCB Program Roles and Responsibilities, released July 22, 2010 detailing scopes, roles and responsibilities. http://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=44683&switch=P

#### Industry Canada - (IC)

Radio Scope 1-Licence-Exempt Radio Frequency Devices;

Scope 2-Licensed Personal Mobile Radio Services;

Scope 3-Licensed General Mobile & Fixed Radio Services; Scope 4-Licensed Maritime & Aviation Radio Services; Scope 5-Licensed Fixed Microwave Radio Services;

#### IDA - Singapore

Line Terminal Equipment All Technical Specifications for Line Terminal

Equipment - Table 1 of IDA MRA Recognition

Scheme: 2009, Annex 2

Radio-Communication Equipment All Technical Specifications for Radio-Communication

Equipment - Table 2 of IDA MRA Recognition

Scheme: 2009, Annex 2

\*Please refer to Info-Communication Development Authority (iDA) Singapore website at:

http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies\_and\_Regulation\_Level2/20060609145118/MRARecSc

heme\_pdf

(A2LA Cert. No. 2742.02) 11/23/2010

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5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

<sup>\*</sup>Please refer to Industry Canada (IC) website at: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09888.html

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#### OFTA - Hong Kong

Radio Equipment HKTA 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008,

1009, 1010, 1015, 1016, 1019, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055

\*Please refer to the Office of the Telecommunications Authority's website at: http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-10xx.html

Fixed Network Equipment HKTA 2001, 2005, 2011, 2012, 2013, 2014, 2015, 2016,

2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034,

2035, 2036, 2037, 2040, 2041, 2102, 2103, 2104, 2108, 2201, 2202, 2203, 2204

\*Please refer to the Office of the Telecommunications Authority's website at: http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-2xxx.html

(A2LA Cert. No. 2742.02) 11/23/2010

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#### SIEMIC ACREDITATION DETAILS: FCC Test Site Registration No. 986914

#### FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division 7435 Oakland Mills Road Columbia, MD 21046

April 25, 2008

Registration Number: 986914

SIEMIC Nanjing (China) Laboratories 2-1 Longcang Avenue, Yuhua Economic and Technology Development Park, Nanjing, 210039 China

Attention: Leslie Bai

Re: Measurement facility located at 2-1 Longcang Avenue, Nanjing, China

Anechoic chamber (3 meters) and 3&10 meter OATS

Date of Listing: April 25, 2008

Dear Sir or Madam:

Your request for registration of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC rules. The information has, therefore, been placed on file and the name of your organization added to the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website <a href="www.fcc.gov">www.fcc.gov</a> under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely.

Katie Hawkins Electronics Engineer

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#### SIEMIC ACREDITATION DETAILS: Industry of Canada CAB ID: US0160



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20899-

March 4, 2009

Mr. Leslie Bai SIEMIC, Inc. 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by Industry Canada (IC), under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.

Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131 USA

Identification No.: US0160

Recognized Scope: CS-03 Part I, II, V, VI, VII and VIII

You may submit test data to IC to verify that the equipment to be imported into Canada satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar at (301) 975-5521 or <a href="mailto:ramona.saar@nist.gov">ramona.saar@nist.gov</a> if you have any questions.

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

David In Alda

Enclosure

cc: CAB Program Manager



Serial#: Issue Date: 20 April 2011

#### SIEMIC ACREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842B

| Industry Industrie

January 25, 2011

OUR FILE: 46405-4842 Submission No: 145222

Siemic Nanjing (China) Laboratories

2-1 Longcang Avenue

Yuhua Economic & Technology Dev. Park, Nanjing

China

Attention: Leslie Bai.

Dear Sir/Madame:

The Bureau has received your application for the registration of a 3/10m OATS. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought ( Site# 4842B-2 ). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please keep for your records the following information;

The company address code associated to the site(s) located at the above address is: 4842B

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 or later shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 metre OATS or 3 metre chamber). If the test facility is not accredited to ANSI C63.4-2003 or later, the test facility shall submit test data demonstrating full compliance with the ANSI standard. The Bureau will evaluate the filing to determine if recognition shall be granted.

The frequency for re-validation of the test site and the information that is required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization. However, in all cases, test site re-validation shall occur on an interval not to exceed three years. There is no fee or form associated with an OATS filing, OATS submissions are encouraged to be submitted electronically to the Bureau using the following URL;

http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h\_tt00052e.html.

If you have any questions, you may contact the Bureau by e-mail at certification bureau@ic.gc.ca Please reference our file and submission number above for all correspondence.

Yours sincerely,

For: Wireless Laboratory Manager Certification and Engineering Bureau 3701 Carling Ave., Building 9 P.O. Box 11490, Station 'Ti Ottawa, Ontario K2H 852

limail: dalwinder.gill@ic.gc.ca Tel. No. (613) 998-8363 Fax. No. (613) 990-4752

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#### SIEMIC ACREDITATION DETAILS: FCC DOC CAB Recognition: US1109

#### FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division 7435 Oakland Mills Road Columbia, MD 21046

August 28, 2008

Siemic Laboratories 2206 Ringwood Ave., San Jose, CA 95131

Attention:

Leslie Bai

Re:

Accreditation of Siemic Laboratories

Designation Number: US1109 Test Firm Registration #: 540430

Dear Sir or Madam:

We have been notified by American Association for Laboratory Accreditation that Siemic Laboratories has been accredited as a Conformity Assessment Body (CAB).

At this time Siemic Laboratories is hereby designated to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Parts 15 and 18 of the Commission's Rules.

This designation will expire upon expiration of the accreditation or notification of withdrawal of designation.

Sincerely,

George Tannahill
Electronics Engineer

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#### SIEMIC ACREDITATION DETAILS: Australia CAB ID: US0160



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20899-

November 20, 2008

Mr. Leslie Bai SIEMIC, Inc. 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Australian Communications and Media Authority (ACMA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: Siemic, Inc.

Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131

Identification No.: US0160

Recognized Scope: EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009),

AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS

61000.6.3, AS/NZS 61000.6.4

Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS

4769.2, AS/NZS 4770, AS/NZS 4771

<u>Telecommunications</u>: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar, at (301) 975-5521 or <a href="mainto:ramona.saar@nist.gov">ramona.saar@nist.gov</a> if you have questions.

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

David T. alder

Enclosure

cc: Snell Leong, Siemic, Inc.; Ramona Saar, NIST

NST

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#### SIEMIC ACREDITATION DETAILS: Korea CAB ID: US0160



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20899

October 1, 2008

Mr. Leslie Bai SIEMIC, Inc. 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Radio Research Agency (RRA) Korea Communications Commission (KCC) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.

Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131

Identification No.: US0160

Recognized Scope: EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI

KN22: Test Method for EMI

EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN-61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS Wireless: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10,

RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21,

RRL Notice 2007-80, RRL Notice 2004-68

Wired: President Notice 20664, RRL Notice 2007-30,

RRL Notice 2008-7 with attachments 1, 3, 5, 6

President Notice 20664, RRL Notice 2008-7 with attachment 4

You may submit test data to RRA/KCC to verify that the equipment to be imported into Korea satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. If you have any questions please contact Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov.

Sincerely, Parrid To alde

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

Enclosure

cc: Ramona Saar



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 www.siemic.com.cn

#### SIEMIC ACREDITATION DETAILS: Taiwan BSMI Accreditation No. SL2-IN-E-1130R



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20898-

May 3, 2006

Mr. Leslie Bui SIEMIC Laboratories 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

I am pleased to inform you that your laboratory has been recognized by the Chinese Taipei's Bureau of Standards, Metrology, and Inspection (BSMI) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC Tel MRA. You may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. The pertinent designation information is as follows:

BSMI number: SL2-IN-E-1130R (Must be applied to the test reports)

- U.S Identification No: US0160
- Scope of Designation: CNS 13438
- Authorized signatory: Mr. Leslie Bai

The names of all recognized CABs will be posted on the NIST website at http://ts.nist.gov/mra. If you have any questions, please contact Mr. Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

Vand F. Alderman

Group Leader, Standards Coordination and Conformity Group

ee: Jogindar Dhillon

NIST

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#### SIEMIC ACREDITATION DETAILS: Taiwan NCC CAB ID: US0160



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20899-

November 25, 2008

Mr. LeslieBai SIEMIC, Inc. 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the National Communications Commission (NCC) for the requested scope expansion under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.

Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131

Identification No.: US0160 Current Scope: LP0002

Additional Scope: PSTN01, ADSL01, ID0002, IS6100 and CNS 14336

You may submit test data to NCC to verify that the equipment to be imported into China satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. If you have any questions please contact Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov.

Sincerely, Parrid Z. ald

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

Enclosure

cc: Ramona Saar

NST

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#### SIEMIC ACREDITATION DETAILS: Mexico NOM Recognition



### Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

LESUIE BAI DIRECTOR OF CERTIFICATION SIEMIC LABORATORIES, INC. ACCESSING GLOBAL MARKETS PRESENTE

En contestación a su escrito de fecha 5 de septiembre del año en curso, le comento que estamos muy interesados en su intención de firmar un Acuerdo de Reconocimiento Mutuo, para lo cual adjunto a este escrito encontrara el Acuardo on idioma ingles y español pretenado de los cuales la pido sea revisado y en au caso corregido, para que si esta de acuerdo poder firmarlo para mandarlo con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

Aprovecho este escrito para mencionarie que nuestro intermediario gestor será la empresa Isatel de México. S. A. de C. V., empresa que ha colaborado durante mucho tiempo con nosotros en lo relacionado a la evaluación de la conformidad y que cuenta con amplia experiencia en la gestoria de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.

Me despido de ustad enviêndole un cordial saludo y esperando sus comentanos al Acuerdo que nos poupa.

Atentamente:

Ing. Faustino Conez González Gerente Terrico del Laboratorio de

CANTERD

Culturale 71 Harberons Condess 28-120 Maleon, D.F. Tur. 5264-2006 con 12 Annes Fax 5264-2006 con Fax 5264-0498 more cataloft.org

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#### SIEMIC ACREDITATION DETAILS: Hong Kong OFTA CAB ID: US0160



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gaithersburg, Maryland 20899-

December 8, 2008

Mr. Leslie Bai SIEMIC, Inc. 2206 Ringwood Avenue San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Office of the Telecommunications Authority (OFTA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name: SIEMIC, Inc.

Physical Location: 2206 Ringwood Avenue, San Jose, California 95131 USA

Identification No.: US0160

Recognized Scope: Radio: HKTA 1002, 1007, 1008, 1010, 1015, 1016, 1020, 1022, 1026,

1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1039, 1041,

1042, 1043, 1044, 1046, 1047, 1048, 1049, 1051

**Telecom:** HKTA 2011, 2012, 2013, 2014, 2017, 2018, 2022, 2024, 2026,

2027, 2028, 2029, 2030, 2031, 2032, 2033

You may submit test data to OFTA to verify that the equipment to be imported into Hong Kong satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. If you have any questions please contact Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov.

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

David I alden

Enclosure

cc: Ramona Saar

NST

Issue Date: 20 April 2011

SIEMIC ACREDITATION DETAILS: VCCI Radiated Test Site Registration No. T-1597





## CERTIFICATE

Company: SIEMIC Laboratories

<Member No. 3081

Facility: SIEMIC Laboratories

(Telecominication Ports Conducted Disturbance Measurement)

Location of Facility:

2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: T-1597

Date of Registration: October 01, 2010

This Certificate is valid until September 30, 2012





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# CERTIFICATE

Company: SIEMIC Laboratories

<Member No. 3081 >

Facility: SIEMIC Laboratories

(Radiation

3

meter site)

Location of Facility:

2206 Ringwood Ave , San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: R-3083

Date of Registration: October 01, 2010

This Certificate is valid until September 30, 2012





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SIEMIC ACREDITATION DETAILS: VCCI Conducted (Telecom Port) Test Site Registration No. C-3421





VCCI Council

## CERTIFICATE

Company: SIEMIC Laboratories

<Member No. 3081

Facility: SIEMIC Laboratories

(Main Ports Conducted Interference Measurement)

Location of Facility:

2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: C-3421

Date of Registration: October 01, 2010

This Certificate is valid until September 30, 2012

