## WILPAX USA, INC.

## 3-IN-1 WIRELESS BLUETOOTH KEYBOARD CASE MODEL: WPGB20800

May 24th 2011 Report No.: SL11051601-WIL-001(15.249 PCII) (This report supersedes NONE)



Modifications made to the product: None

This Test Report is Issued Under the Authority of:	
David Zhang	Bi
David Zhang	Leslie Bai
Compliance Engineer	Engineering Reviewer





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## **Laboratory Introduction**

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**Accreditations for Conformity Assessment** 

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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
Europe	NB	EMC, RF, Safety, Telecom
Japan	RCB, NIST	RF, Telecom

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## 1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the FCC approved 3-in-1 Wireless Bluetooth Keyboard Case, model: WPGB20800 and FCC ID: YTDWPGB20800, with updated keyboard PCB design against the current Stipulated Standards. The 3-in-1 Wireless Bluetooth Keyboard Case have demonstrated compliance with the FCC 15.249 2010.

#### **EUT Information**

**EUT** : 3-in-1 Wireless Bluetooth Keyboard Case

Description
Model No

WPGB20800

Serial No : N/A Input Power : 5 VDC

Classification

Per Stipulated

Spread Spectrum System / Device

Test Standard



2 <u>TECHNICAL DETAILS</u>
Compliance testing of Buletooth Radio Module with stipulated standard
Wilpax USA, Inc.
Wilpax USA, Inc. 10073 Valley View Street, #123 Cypress, CA 90630, USA
SIEMIC Laboratories
SL11051601-WIL-001(15.249 PCII)
May 16 <sup>th</sup> , 2011
47 CFR §15.249 (2010)
May 16th - May 24th, 2011
2
DXX
Wilpax USA, Inc.
WPGB20800
2402 to 2480 MHz
79
GFSK YTDWPGB20800



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## 3 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 15.249: 2010		
15.203	Antenna Requirement	Pass
15.205	Restricted Band of Operation	Pass
15.207(a)	Conducted Emissions Voltage	Pass(Original)
15.209; 15.249	Fundamental field strength	Pass(Original)
15.209; 15.249	Radiated Spurious Emissions	

ANSI C63.4: 2009

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

### 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 antenna is printed inverted PCB antenna.

## **5.2** Conducted Emissions Voltage

#### Requirement:

	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:

- 1. 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. <u>Conducted Emissions Measurement Uncertainty</u>

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  $\pm 3.5dB$ .

4. Environmental Conditions

Temperature 22°C Relative Humidity 53% Atmospheric Pressure 1019mbar

Test Date: May 16th - May 24th, 2011

Tested By : David Zhang

Test Result: Pass

Please see Original FCC Report SL101100402-WIL-001(15.249).

## 5.10 Radiated Spurious Emission < 1GHz

- 1. <u>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.</u>
- 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 22.5°C
Relative Humidity 54%
Atmospheric Pressure 1019mbar

Test Date: May 16th - May 24th, 2011

Tested By : David Zhang

Standard Requirement: 47 CFR §15.249

**Procedures:** Radiated emissions were measured according to ANSI C63.4. The EUT was set to transmit

at the highest output power. The EUT was set to transmit at mid channel. Note that setting the

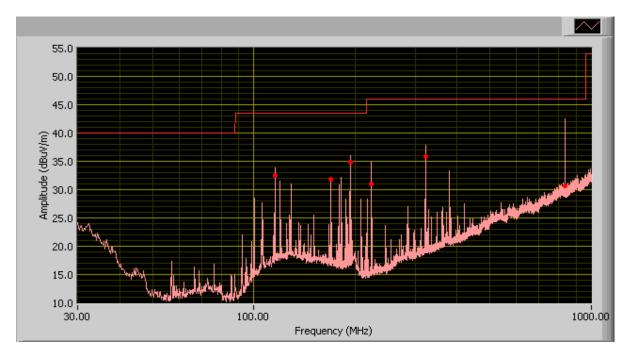
channel other than mid, the spurious emissions are the same.

The limit is converted from microvolts/meter to decibel microvolts/meter.

Sample Calculation: Corrected Amplitude = Raw Amplitude(dBµV/m) + ACF(dB) + Cable Loss(dB)

Test Result: Pass

#### Radiated Emission Plot (Transmit Mode)



Test Data

Frequency (MHz)	Quasi-Peak (dBµV/m)	Turntable position (deg)	Polarity	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)
834.74	30.51	257.00	Н	171.00	46.00	-15.49
193.30	34.88	266.00	Н	137.00	43.50	-8.62
322.00	35.86	129.00	Н	289.00	46.00	-10.14
115.32	32.44	256.00	V	393.00	43.50	-11.06
222.95	31.01	47.00	V	341.00	46.00	-14.99
169.18	31.77	297.00	Н	270.00	43.50	-11.73

## 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 +/-6dB.

**Environmental Conditions** Temperature 23°C 4. Relative Humidity 50%

Atmospheric Pressure 1019mbar

Test Date : May 16th - May 24th, 2011

Tested By : David Zhang

Standard Requirement: 47 CFR §15.249

Procedures: Equipment was setup in a semi-anechoic chamber. For measurements above 1 GHz an average measurement was taken with a 10Hz video bandwidth. The EUT was tested at low, mid and high with the highest output power. Investigated up to 10th harmonic of the operating frequency.

Sample Calculation:

EUT Field Strength = Raw Amplitude(dBµV/m) - Amplifier Gain(dB) + Antenna Factor(dB) + Cable Loss(dB) + Filter Attenuation(dB, if used)

Test Result:

#### Low Channel @ 2402MHz @ 3 Meter

Frequency (GHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	15.249/15.209 Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
4.804	45.20	236.00	1.80	V	33.00	4.13	32.49	49.84	74.00	-24.17	Peak
4.804	46.12	248.00	1.90	h	33.00	4.13	32.49	50.76	74.00	-23.25	Peak
4.804	26.12	236.00	1.80	V	33.00	4.13	32.49	30.76	54.00	-23.25	Ave
4.804	25.89	248.00	1.90	h	33.00	4.13	32.49	30.53	54.00	-23.48	Ave
7.206	47.32	188.00	1.40	V	35.50	5.22	32.39	55.65	74.00	-18.35	Peak
7.206	49.68	250.00	2.10	h	35.50	5.22	32.39	58.01	74.00	-15.99	Peak
7.206	27.22	188.00	1.40	V	35.50	5.22	32.39	35.55	54.00	-18.45	Ave
7.206	27.35	250.00	2.10	h	35.50	5.22	32.39	35.68	54.00	-18.32	Ave
2.400	38.83	257	2.2	V	28.70	2.50	32.04	37.99	74.00	-36.01	Peak
2.400	40.45	271	1.7	h	28.70	2.50	0	71.65	74.00	-2.35	Peak
2.400	15.24	257	2.2	V	28.70	2.50	0	46.44	54.00	-7.56	Ave
2.400	15.47	271	1.7	h	28.70	2.50	0	46.67	54.00	-7.33	Ave

**Note:** Emission was scanned up to 25GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

#### Mid Channel @ 2441MHz @ 3 Meter

Frequency (GHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	15.249/15.209 Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
4.882	42.56	260.00	2.1	V	33.00	4.13	32.49	47.20	74.00	-26.81	Peak
4.882	43.85	260.00	2.1	h	33.00	4.13	32.49	48.49	74.00	-25.52	Peak
4.882	28.43	260.00	2.1	V	33.00	4.13	32.49	33.07	54.00	-20.94	Ave
4.882	29.86	260.00	2.1	h	33.00	4.13	32.49	34.50	54.00	-19.51	Ave
7.323	49.18	216.00	1.5	V	35.50	5.22	32.39	57.51	74.00	-16.49	Peak
7.323	49.45	252.00	1.6	h	35.50	5.22	32.39	57.78	74.00	-16.22	Peak
7.323	32.56	216.00	1.5	V	35.50	5.22	32.39	40.89	54.00	-13.11	Ave
7.323	32.89	252.00	1.6	h	35.50	5.22	32.39	41.22	54.00	-12.78	Ave

**Note:** Emission was scanned up to 25GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

#### High Channel @ 2480MHz @ 3 Meter

Frequency (GHz)	Reading (dBuV/m)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected Reading (dBuV/m)	15.249/15.209 Limit @ 3m (dBuV/m)	Margin (dBuV/m)	Detector (pk/avg)
4.960	44.20	242.00	1.90	V	33.00	4.13	32.49	48.84	74.00	-25.17	Peak
4.960	46.12	247.00	1.50	h	33.00	4.13	32.49	50.76	74.00	-23.25	Peak
4.960	27.85	242.00	1.90	V	33.00	4.13	32.49	32.49	54.00	-21.52	Ave
4.960	31.25	247.00	1.50	h	33.00	4.13	32.49	35.89	54.00	-18.12	Ave
7.440	48.86	263.00	2.00	V	35.50	5.22	32.39	57.19	74.00	-16.81	Peak
7.440	43.18	203.00	1.90	h	35.50	5.22	32.39	51.51	74.00	-22.49	Peak
7.440	29.13	263.00	2.00	V	35.50	5.22	32.39	37.46	54.00	-16.54	Ave
7.440	30.21	203.00	1.90	h	35.50	5.22	32.39	38.54	54.00	-15.46	Ave
2.484	44.32	190	1.1	V	28.70	2.50	32.04	43.48	74.00	-30.52	Peak
2.484	43.16	271	1.7	h	28.70	2.50	32.04	42.32	74.00	-31.68	Peak
2.484	35.09	190	1.1	V	28.70	2.50	32.04	14.25	54.00	-19.75	Ave
2.484	34.98	271	1.7	h	28.70	2.50	32.04	14.14	54.00	-19.86	Ave

**Note:** Emission was scanned up to 25 GHz; no emissions were detected above the noise floor which was at least 20dB below the specification limit

## Annex A. TEST INSTRUMENT & METHOD

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

Instrument	Model	Calibration Due
AC Conducted Emissions		
R&S EMI Test Receiver	ESIB40	05/19/2012
R&S LISN	ESH2-Z5	05/18/2012
CHASE LISN	MN2050B	05/18/2012
Radiated Emissions		
Spectrum Analyzer	8564E	05/19/2012
EMI Receiver	ESIB 40	05/18/2012
R&S LISN	ESH2-Z5	05/18/2012
CHASE LISN	MN2050B	05/19/2012
Antenna(1 ~18GHz)	3115	6/2/2012
Antenna (30MHz~2GHz)	JB1	6/1/2012
3m Semi-Anechoic Chamber	3M	10/13/2011
Pre-Amplifier(1 ~ 26GHz)	8449	5/17/2012
Horn Antenna (18~40GHz)	AH-840	7/23/2013
Microwave Pre-Amp (18~40GHz)	PA-840	Every 2000 Hours
Universal Radio Communication Tester	CMU200	02/22/2012
Signal Analyzer	FSIQ7	5/5/2012
Sekonic Hygro Hermograph	ST-50	HE01-000092

Note: No calibration required.

<sup>\*</sup> Or Pre-determined used hours, whichever meet first.

#### 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.
- 3. 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

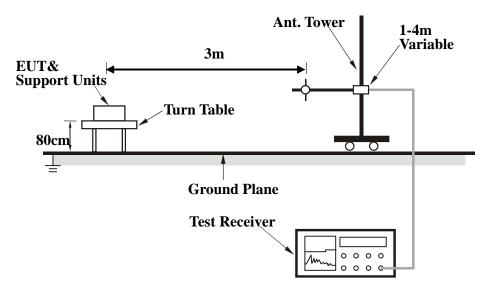
#### **EUT Characterisation**

EUT characterisation, over the frequency range from 30MHz to 10th 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.



#### **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  $0 \circ 1360 \circ 1$
- 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:

Ī	Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
	30 to 1000	Peak	100 kHz	100 kHz
	Above 1000	Peak	1 MHz	1 MHz
		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.

## Annex B EUT AND TEST SETUP PHOTOGRAPHS

Please see the attachment

## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

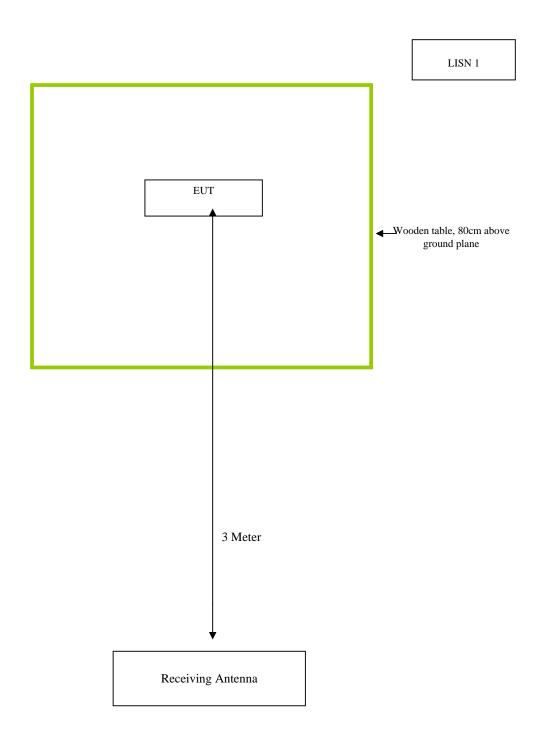
### **EUT TEST CONDITIONS**

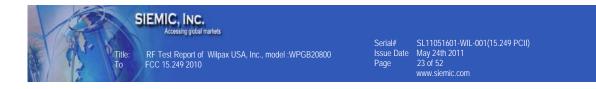
#### Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

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)

### Block Configuration Diagram for Radiated Emission





**Block Configuration Diagram for Conducted Emission** 

N/A

### Annex C.ii. EUT OPERATING CONDITIONS

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

Test	Description Of Operation	
Emissions Testing	The EUT was controlled via PC Using manufacturer's program.	
Others Testing	TX mode is normal mode with full power.	

### Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

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#### Annex E SIEMIC ACCREDITATION

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



## 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-LAF 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 1 2206 Ringwood Ave. San Jose, CA 95131

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#### 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 61000-4-3; (limited up to 2.7 GHz and 3V/m); IEC 61000-4-3; (limited up to 2.7 GHz and 3V/m): IEC 61000-4-6; EN 61000-4-5; EN 61000-4-5; EN 61000-4-6; EN 61000-4-6; EN 61000-4-8; EN 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 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 16-2-4(2008-05); KN 16-2-2(2008-05); KN 16-2-3(2008-05); KN 16-2-4(2008-05)	

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SAE J1113-11, SAE J1113-12; SAE J1113-41; SAE J1113-4; SAE J1113-13; FCC Method 47 CFR Part 18, FCC Report and Order ET Docket 98-153 (FCC 02-48); FCC Method 47 CFR Parts15, including Subpart G, using FCC Order 04-425 ANSI C63.4(2009); ANSI C63.10(2009); ANSI C63.4:2003 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) with FCC Method 47 CFR Part 15, Subpart B	
ICES-001; ICES-002; ICES-003 Issue 4; ICES-003 Issue 4 (2004); ICES-006 Issue 1	
TCN 68-193:2003; TCN 68-196:2001; TCVN 7189:2002	
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	
JEITA IT-3001; VCCI-V-3:2010.4 (up to 6 GHz)	
GB9254; GB17625.1	
CNS 13438 (up to 6 GHz); CNS 13783-1; CNS 13803; CNS 13439	
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	
A1: 47 CFR Parts 11 (Emergency Alert System (EAS)), 15 (Radio Frequency Devices) and 18 (Industrial, Scientific, and Medical Equipment) FCC OST/MP-5(1986); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009)  A2: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009)	
A3: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.17:2006; ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005 A4: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005	
B1: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 24 (Personal Communications Services), 25 (Satellite Communications), and 27 (Miscellaneous Wireless Communications Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard; IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005	

FCC – Licensed Radio (continued) B1 to B4	B2: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), 90 (Private Land Mobile Radio Services), 95 (Personal Radio Services), and 97 (Amateur Radio Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard  B3: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 80 (Stations in the Maritime Services), 87 (Aviation Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard  B4: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 27 (Broadband Radio Services (BRS) and Educational Broadband Services (EBS)), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), and 101 (Fixed Microwave Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard
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
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 300 220-3; ETSI EN 300 328-1; ETSI EN 300 328-1; ETSI EN 300 328-2; ETSI EN 300 330-30-30-30-30-30-30-30-30-30-30-30-30-

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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
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
Taiwan – Radio	LP0002; PLMN07; PLMN01; PLMN08
Korea – Radio	KCC Notice 2009-13; KCC Notice 2008-26; RRL Notice 2008-2; RRL Notice 2005-105; RRL Notice 2008-17; RRL Notice 2005-127; 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
Vietnam – Radio	TCN 68-242:2006; TCN 68-243:2006; TCN 68-246:2006
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
CE – Radio (conitnued)	ETSI EN 300 341-2; ETSI EN 300 373-1; ETSI EN 300 373-2; ETSI EN 300 373-3; ETSI EN 300 390-1; ETSI EN 300 390-2; 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 301 489-06; ETSI EN 301 489-07; ETSI EN 301 489-08; ETSI EN 301 489-09; ETSI EN 301 489-07; 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 301 489-17; ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 301 489-27; ETSI EN 301 489-27; ETSI EN 301 489-27; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-26; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-32; ETSI EN 301 489-23; ETSI EN 301 489-32; ETSI EN 301 489-3

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FCC Telephone Terminal Equipment Scope C1	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 – Amendment 1; ITU-T Recommendation Q.921 – Amendment 1; ITU-T Recommendation Q.931; 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 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 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; HKTA 2015; HKTA 2017; HKTA 2018; HKTA 2019; HKTA 2022; HKTA 2023; HKTA 2024; HKTA 2026; HKTA 2027; HKTA 2028; HKTA 2029; HKTA 2030; HKTA 2031; HKTA 2032; HKTA 2033
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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-013 (telephone interface); TE-014; TE-015; TE-018; SWS-001;
	SWS-002; SWS-003; SWS-004; SWS-005; SWS-006; SWS-007; SWS-008; SWS-009; SWS-010
Israel – Telecom	Israel MoC Spe. 23/96
Mexico – Telecom	NOM-151-SCT1-1999; NOM-152-SCT1-1999
Argentina – Telecom	CNC-ST2-44-01
Brazil - Telecom	Resolution 392-2005
International Telecom Union	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
Product Safety	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)
Japan - Radio	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
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SAR & HAC	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 14958-1; CNS 14959; NZS 2772.1; NZS 6609.2; Resolution N 533
Japan – Notification No. 88 of MIC 2004	
Table No 13	CB Radio
Table No 21	Cordless Telephone
Table Nos 22-1 thru 22-17	Low Power Radio Equipment
Table No 36	Low Power Security System
Table No 43	Low Power Data Communication in the 2.4 GHz Band
Table No 44	Low Power Data Communication in the 2.4 GHz Band
Table No 45	Low Power Data Communication in the 5.2, 5.3, 5.6 GHz Bands
Table No 46	Low Power Data Communication in the 25 and 27 GHz Bands
Table No 47	Base Station for 5 GHz Band Wireless Access System
Table No 47	Base Station for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones)
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

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<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.

\*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

# 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), OFTA (Hong Kong), and Japan (MIC) requirements.

Presented this 23rd day of November 2010.

President & CEO

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

Revised December 16, 2010

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

Certificate Number: 2742.02

#### 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

www.siemic.com

#### PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2012

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:

Economy Scope

#### Federal Communication Commission - (FCC)

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

#### 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

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<sup>\*</sup>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

<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

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

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.ofia.gov.hk/en/standards/HKTASpec/hkta-2xxx.html

#### MIC - Japan

Terminal Equipment Scope A1 - Terminal Equipment for the Purpose of Calls

Radio Equipment Scope B1 - Unlicensed Station (all classes of equipment)

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## SIEMIC ACREDITATION DETAILS: FCC Test Site Registration No. 783147

#### FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division 7435 Oakland Mills Road Columbia, MD 21046

September 12, 2008

Registration Number: 783147

SIEMIC Laboratories 2206 Ringwood Avenue, San Jose, CA 95131

Attention:

Leslie Bai

Re:

Measurement facility located at San Jose

Anechoic chamber (3 meters) Date of Listing: February 10, 2004

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. Please also note that this registration does not recognize the measurement facility to perform testing for products authorized under the Declaration of Conformity (DoC) process. In order to test products subject to DoC authorization process, a measurement facility must be accredited and recognized by the FCC.

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

### 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

Parial In Alda

Enclosure

cc: CAB Program Manager



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OUR FILE: 46405-4842 Submission No: 140856

#### SIEMIC ACREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842-1

industry Industrie
Ganada Canada

May 27, 2010

Siemic Inc. 2206 Ringwood Ave San Jose, CA, 95131 USA

Attention: Snell Leong

Dear Sir/Madame:

The Bureau has received your application for the renewal of a 3m alternative test site. 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 ( 4842A-1 ). 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;

- Your primary code is: 4842
- The company number associated to the site(s) located at the above address is: 4842A

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

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 two 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.

der Gill

For: Wireless Laboratory Manager Certification and Engineering Bureau 3701 Carling Ave., Building 94 P.O. Box 11490, Station "H Ottawa, Ontario K2H 8S2 Email: dalwinder.gill@ic.gc.ca Tel. No. (613) 998-8363

Fax. No. (613) 990-4752

## 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

#### 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="mailto:remains.gov/mra.">remains.gov/mra.gov/mr

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



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## SIEMIC ACREDITATION DETAILS: Korea CAB ID: US0160



## Radio Research Agency

Tel: +82 2 710 6610 Fax: +82 2 710 6619 Homepage: www.rra.go.kr

KOREA COMMUNICATIONS COMMISSION REPUBLIC OF KOREA 1, Wonhyoro-3ga, Yongsan-gu, Seoul, 140-848, Korea

KCC/RRA

14th Jan, 2011

Radio Research Agency Korea Communications Commission #1, Wonhyoro-3ga, Yongsan-gu Seoul Korea 140-848 (Tel) 82-2-710-6610, (Fox) 82-2-710-6619 Jan 14th, 2011

Mr. David F. Alderman Group Leader, Standards Coordination and Conformity Group National Institute of Standards and Technology 100 Bureau Drive, Stop 2100 Gaithersburg, Maryland 20899-2100, USA

Dear Mr. David F. Alderman:

This is to confirm the recognition by Radio Research Agency of

SIEMIC, Inc. (US0160)

as an accredited Conformity Assessment Body (CAB) under the terms of Phase I of the APEC TEL MRA. The scope for which this laboratory has been recognized is given below.

Coverage	Standards	Date of Recognition
Current Scope	EMI: KCC Notice 2008-39, RRL Notice 2008-3 and KN22 EMS: KCC Notice 2008-38, RRL Notice 2008-4, KN24, KN 61000-4-2, -4-3, -4-4, - 4-5, -4-6, -4-8, -4-11 Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-11, RRL Notice 2007-80, RRL Notice 2004-68 Telecom: President Notice 20664, RRL Notice 2007-30, 2008-7(1,3,4,5,6)	Jan 14th, 2011
Updated Scope	SAR: RRA Notice 2008-16, RRA Notice 2008-18, KCC Notice 2009-27	

This recognition is contingent upon the maintenance of this CAB's accreditation status and is limited to the standards listed above.

If you have any inquiries about this recognition, please contact to Certification Division of Radio Research Agency with above address and telephone numbers.

1C.-4.2

Best Regards,

Ahn, Kun-Young Director Certification Division

Enclosure

Ramona Saar - NIST,

JungMin Park - RRA

 Serial#
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 www.siemic.com

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



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

May 3, 2006

Mr. Leslie Bai 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 Bareau 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,

Parid & alderman

Group Leader, Standards Coordination and Conformity Group

ec: 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-

March 16, 2009

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

US0160 Identification No.:

Current Scope: LP0002, PSTN01, ADSL01, ID0002, IS6100 and CNS 14336

Additional Scope: PLMN07

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,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Z alda

Standards Services Division

Enclosure

cc: Ramona Saar



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## SIEMIC ACREDITATION DETAILS: Mexico NOM Recognition



## Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

LESLIE 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 en idioma ingles y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si esta de acuerdo poder firmado para mandado con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

Aprovecho este escrito para mencionarle 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 refacionado a la evaluación de la conformidad y que quenta con amplia experiencia en la gestoria de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.

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

Atentamente:

Ing. Faustino Soriez González Gerente Terrico del Laboratorio de

## 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

David I alden

Group Leader, Standards Coordination and Conformity Group Standards Services Division

Enclosure

cc: Ramona Saar



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#### SIEMIC ACREDITATION DETAILS: Australia ACMA 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: <u>EMC</u>: 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

Telecommunications: 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. aldum

Enclosure

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



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#### SIEMIC ACREDITATION DETAILS: Australia NATA Recognition



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

November 4, 2008

Under Australian government legislation, the Australian Communications and Media Authority (ACMA) has determined the National Association of Testing Authorities, Australia (NATA) as an accreditation body as per Section 409(1) of the Telecommunications Act 1997 (Cth). Pursuant to Section 409(2) of the Telecommunications Act 1997 (Cth), I am pleased to advise that your laboratory has been determined as a Recognised Testing Authority (RTA).

This determination has been made on the basis of your accreditation by A2LA accreditation no. 2742.01 and the Mutual Recognition Agreement between NATA and A2LA. It is effective from 11 July 2008. RTA status applies only to the following standards and is contingent upon their continued inclusion in your laboratory's scope of accreditation.

AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016, AS/ACIF S031, AS/ACIF S038, AS/ACIF S041 and AS/ACIF S043.2

As an RTA, your laboratory has the following obligations:

- 1. the laboratory shall continue to meet all of the accreditation criteria of A2LA;
- the authorised representative of the laboratory shall notify NATA of changes to the staff or operations of the laboratory which would affect the performance of the tests for which the laboratory has been determined;
- 3. compliance of equipment shall be reported on test reports bearing the A2LA logo/endorsement.

Current information on the Australian Communications and Media Authority and regulatory requirements for telecommunications products within Australia can be obtained from the ACMA's web-site at "<a href="http://www.acma.gov.au">http://www.acma.gov.au</a>". Further information about NATA may be gained by visiting "<a href="http://www.nata.asn.au">http://www.nata.asn.au</a>".

Please note that AS/ACIF S040 and New Zealand standards do not form part of the RTA scheme.

Your RTA listing will appear on the NATA website shortly.

Kind Regards

Chris Norton,
Senior Scientific Officer
Measurement Science and Technology
National Association of Testing Authorities (NATA)
71-73 Flemington Road
North Melbourne Vic 3051
Australia

Ph: +61 3 9329 1633 Fx: +61 3 9326 5148 E-Mail: Christopher.Norton@nata.asn.au

Internet: www.nata.asn.au

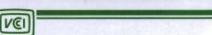


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## SIEMIC ACREDITATION DETAILS: VCCI Radiated Test Site Registration No. R-3083





VCCI Council

## 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 (Main Port) Test Site Registration No. C-3421

VEI



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





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## SIEMIC ACREDITATION DETAILS: VCCI Conducted (Telecom Port) Test Site Registration No. T-1597





VCCI Council

# 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

VCCI Council

VEI

NEI