# HID GLOBAL CORPORATION

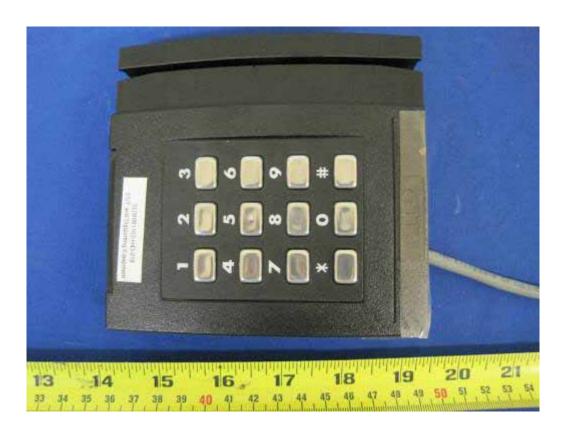
## RFID READER, OPERATING ON 125 KHZ AND 13.56 MHZ

Model: RMPK40C

29 September 2009

Report No.: SL09081103-HID-018 (15.225 & RSS-210)

(This report supersedes NONE)



Modifications made to the product: None

This Test Report is Issued Under the Authority of:

Choon Sian Ooi

Leslie Bai

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Test result presented in this test report is applicable to the representative sample only.







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# 1 Executive Summary & EUT information

The purpose of this test programmed was to demonstrate compliance of the HID Global Corp., Model:RMPK40C against the current Stipulated Standards.

The equipment under test radio operating frequency is 125 kHz and 13.56 MHz.

The test has demonstrated that this unit complies with stipulated standards.

#### **EUT Information**

**EUT** Description

The HID RMPK40C is an inductive RFID card reader intended to be used in access control systems, parking systems and other applications using RFID readers. It is capable of reading

125 kHz and 13.56 MHz inductive tags.

Model No : RMPK40C

Serial No : N/A

Input Power : 12 VDC

Classification

Per Stipulated : RFID Reader

**Test Standard** 



Model:

FCC ID:

RF Operating Frequency (ies)

Number of Channels :

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RMPK40C

JQ6-RMPK40C

125 kHz and 13.56 MHz (RFID)

125 kHz (1) & 13.56 MHz (1)

## **TECHNICAL DETAILS** Compliance testing of RFID Reader, operating on 125 KHz and 13.56 MHz with stipulated standard **Purpose** Applicant / Client **HID Global Corporation HID Global Corporation** Manufacturer 15730 Barranca Parkway Irvine, CA 92618 USA Laboratory performing the tests **SIEMIC Laboratories** Test report reference number SL09081103-HID-018 (15.225 & RSS-210) Date EUT received 18 September 2009 47 CFR §15.207, 15.209, 15.255: 2008 & Canadian Standards RS-GEN Standard applied Issue 2: 2007, RSS-210 Issue 7: 2007 & RSS-310 Issue 2: 2007 Dates of test (from - to) 14 September –18 September 2009 No of Units: 1 **Equipment Category:** DXX & DCD



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# 3 MODIFICATION

NONE

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#### **TEST SUMMARY** 4

The product was tested in accordance with the following specifications. All testing has been performed according to below product classification:

### **RFID Reader**

**Test Results Summary** 

Test S	Standard		
47 CFR Part 15.225: 2008	RSS 210 Issue 7: 2007 & RSS-310 Issue 2: 2007	Description	Pass / Fail
15.203		Antenna Requirement	Pass
15.207(a)	RSS Gen(7.2.2)	Conducted Emissions Voltage	Pass
15.225(a)	RSS210(A2.6)	Limit in the band of 13.553 – 13.567 MHz	Pass
15.225(b)	RSS210(A2.6)	Limit in the band of 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	Pass
15.225(c)	RSS210(A2.6)	Limit in the band of 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	Pass
15.225(d), 15.209	RSS210(A2.6)	Limit outside the band of 13.110 – 14.010 MHz	Pass
15.225(e)	RSS210(A2.6)	Frequency Stability	Pass
	RSS-210(5.9.1)	Occupied Bandwidth	Pass
	RSS-310 (3.7)	Very Low Power Devices Operating Below 490 kHz	Pass

ANSI C63.4: 2003/ RSS-Gen Issue 2: 2007

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.
- 1) The RFID antenna is integral to the main board permanently to the device which meets the requirement.

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## 5.2 Conducted Emissions Voltage

Requirement(s): 47 CFR §15.207

#### 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. Conducted Emissions Measurement Uncertainty

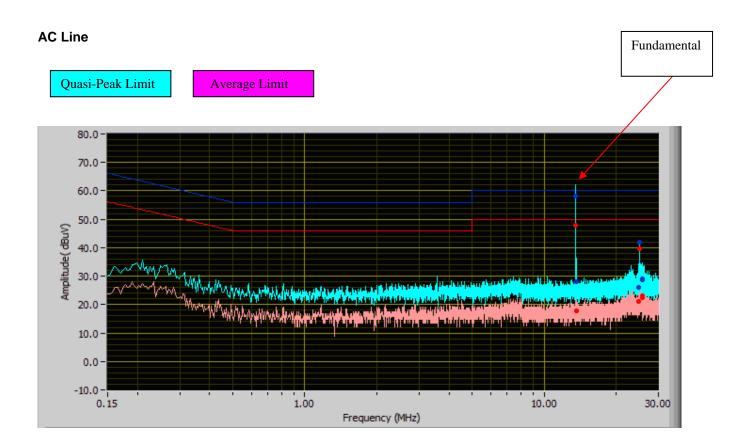
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz - 30MHz (Average & Quasi-peak) is  $\pm 3.5dB$ .

4. Environmental Conditions

Temperature 28°C
Relative Humidity 50%
Atmospheric Pressure 1019mbar

Test Date: September 14~18 2009 Tested By: Choon Sian Ooi

Results: Pass

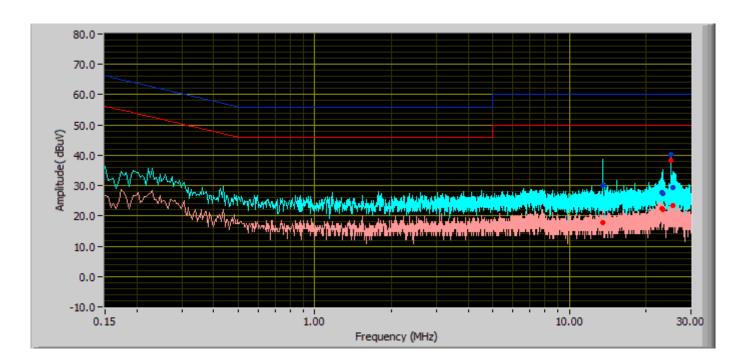


#### 110V, 60Hz, Neutral Line

1101, 00112, 1104141 21110									
Frequency (MHz)	QP Value (dBμV)	Class B Limit (dB)	Pass / Fail	Margin (dB)	Avg Value (dBµV)	Class B Limit (dB)	Pass / Fail	Margin (dB)	Line
13.56	58.00	60.00	PASS	-2.00	48.01	50.00	PASS	-1.99	Neutral
25.06	41.79	60.00	PASS	-18.21	39.59	50.00	PASS	-10.41	Neutral
13.60	28.00	60.00	PASS	-32.00	17.94	50.00	PASS	-32.06	Neutral
25.76	28.55	60.00	PASS	-31.45	22.53	50.00	PASS	-27.47	Neutral
24.80	26.08	60.00	PASS	-33.92	20.97	50.00	PASS	-29.03	Neutral
25.62	29.02	60.00	PASS	-30.98	23.00	50.00	PASS	-27.00	Neutral

Quasi-Peak Limit

Average Limit



#### 110V. 60Hz. Neutral Line

Frequency (MHz)	QP Value (dBµV)	Class B Limit (dB)	Pass / Fail	Margin (dB)	Avg Value (dBµV)	Class B Limit (dB)	Pass / Fail	Margin (dB)	Line
25.06	40.36	60.00	PASS	-19.64	38.19	50.00	PASS	-11.81	Neutral
13.51	30.17	60.00	PASS	-29.83	17.93	50.00	PASS	-32.07	Neutral
23.28	27.24	60.00	PASS	-32.76	22.03	50.00	PASS	-27.97	Neutral
25.58	29.46	60.00	PASS	-30.54	23.44	50.00	PASS	-26.56	Neutral
13.49	29.97	60.00	PASS	-30.03	17.93	50.00	PASS	-32.07	Neutral
23.02	27.78	60.00	PASS	-32.22	22.52	50.00	PASS	-27.48	Neutral

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## 5.3 Radiated Emission < 30MHz (9kHz - 30MHz, H-Field)

Requirement(s): 47 CFR §15.225 & RSS-210 (A2.6) & RSS-310 (3.7)

Procedures: For < 30MHz, Radiated emissions were measured according to ANSI C63.4. The EUT was

set to transmit at the highest output power. The EUT was set 10 meter away from the measuring antenna. The loop antenna was positioned 1 meter above the ground from the centre of the loop. The measuring bandwidth was set to 10 kHz. (Note: During testing the receive antenna was rotated about its axis to maximize the emission from the EUT.)

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

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

Distance Correction Factor

Environmental Conditions Temperature 23°C

Relative Humidity 50% Atmospheric Pressure 1019mbar

Test Date: September 14~18 2009

Tested By: Choon Sian Ooi

Results: Pass

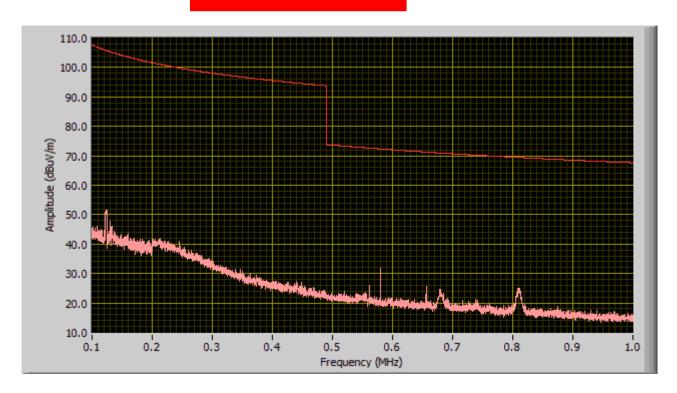
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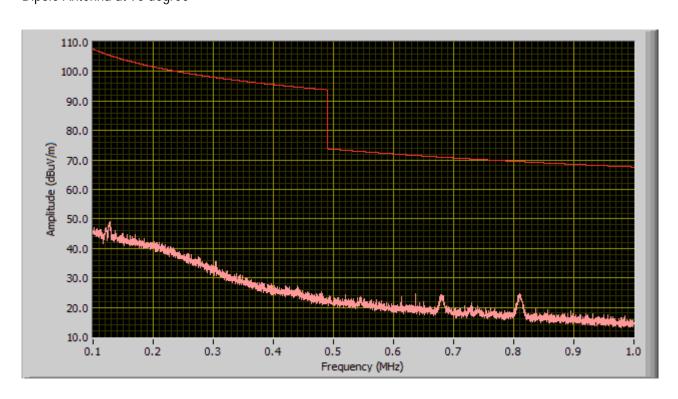
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100KHz ~ 1MHz Dipole Antenna at 0 degree

General Emission Limit @ 3 Meter

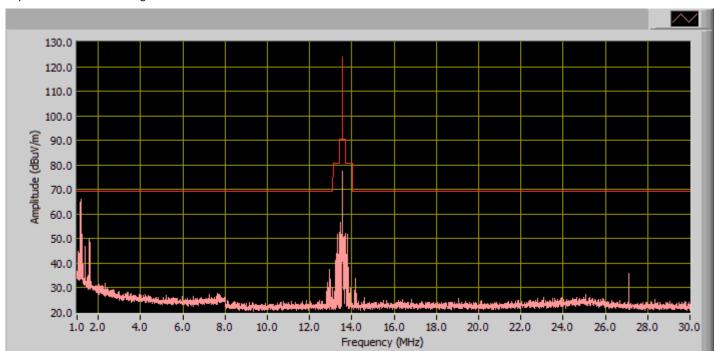


## Dipole Antenna at 90 degree

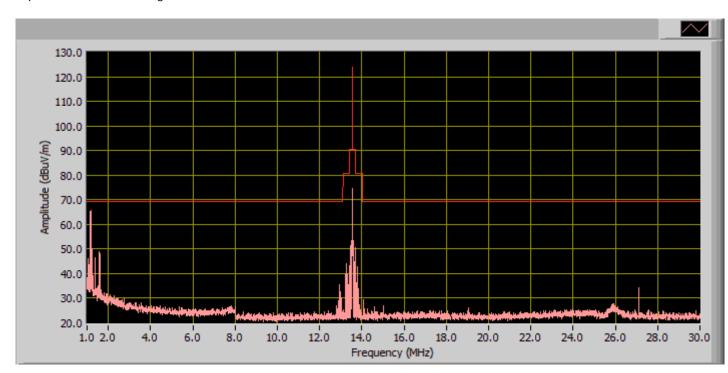


1MHz ~ 30MHz Dipole Antenna at 0 degree

General Emission Limit @ 3 meter



## Dipole Antenna at 90 degree



## 5.4 Radiated Emissions > 30 MHz (30MHz - 1 GHz, E-Field)

Requirement(s): 47 CFR §15.209; 47 CFR §15.225(d) & RSS-210 (A2.6)

**Procedures:** For > 30MHz, Radiated emissions were measured according to ANSI C63.4. The EUT was

set to transmit at the highest output power. The EUT was set 10 meter away from the measuring antenna. The Log periodic antenna was positioned 1 meter above the ground from the centre of the antenna. The measuring bandwidth was set to 120 kHz. (Note: During testing the receive antenna was raise from 1~4 meters to maximize the emission from the

EUT.)

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

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

Distance Correction Factor

Environmental Conditions Temperature 23°C

Relative Humidity 50%

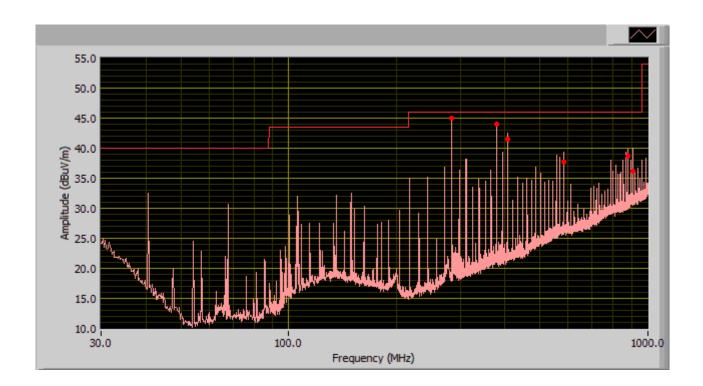
Atmospheric Pressure 1019mbar

Test Date: September 14~18 Tested By: Choon Sian Ooi

Results: Pass

### 30MHz ~ 1000MHz

General Emission Limit @ 3 meter



### Radiated Emission Test Table 30MHz ~ 1000MHz

Frequency (MHz)	Amplitude @ 3m	Azimuth (degree)	Antenna Polarity	Antenna Height (cm)	Limit @ 3 meter	margin (dB)
284.76	45.02	114.00	Н	166.00	46.00	-0.98
379.69	44.01	108.00	Н	102.00	46.00	-1.99
406.79	41.45	122.00	Н	102.00	46.00	-4.55
908.54	36.15	217.00	Н	232.00	46.00	-9.85
881.39	38.72	193.00	Н	106.00	46.00	-7.28
583.09	37.69	359.00	V	111.00	46.00	-8.31



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## 5.5 Frequency Stability

Requirement(s): 47 CFR §15.225(e) & RSS-210 (A2.6)

Frequency Stability was measured according to 47 CFR §2.1055. Measurement was taken **Procedures:** 

with spectrum analyzer. The spectrum analyzer bandwidth and span was set to read in

hertz. A voltmeter was used to monitor when varying the voltage.

Limit:  $\pm 0.01\%$  of 13.56 MHz = 1356 Hz,  $\pm 0.01\%$  of 125 kHz = 125 Hz

**Environmental Conditions** 23°C **Temperature** 

Relative Humidity 50% Atmospheric Pressure 1019mbar

Test Date: September 14~18 Tested By: Choon Sian Ooi

Results: Pass

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Reference Frequency: 125.07 kHz at -20°C and +50°C

Temperature (°C)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail			
50	125.074	4	<0.01	Pass			
20	Reference						
-20	125.073	3	<0.01	Pass			

Table 6

Note: The EUT met the applicable requirement throughout the temperature range. Only the extremes are reported

Frequency Stability versus Input Voltage: The Frequency tolerance of the carrier signal shall be maintained within ± 0.01%, the frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at 20°C environmental temperature.

Carrier Frequency: 125.07 kHz at 20°C at 12VDC

Measured Voltage ±15% of nominal (DC)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
10.2	125.072	2	<0.01	Pass
13.8	125.073	3	<0.01	Pass

Table 7

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Frequency Stability versus Temperature: The Frequency tolerance of the carrier signal shall be maintained within ± 0.01% of the operating frequency over a temperature variation of -20°C to +50°C at normal supply voltage.

Reference Frequency: 13.560416 MHz at -20°C and +50°C

Temperature	Measured Freq.	Freq. Drift	Freq. Deviation	Pass/Fail
(°C)	(MHz)	(Hz)	(Limit: 0.01%)	Pass/Fall
50	13.56064	224	<0.01	Pass
40	13.56073	314	<0.01	Pass
30	13.56067	254	<0.01	Pass
20		Reference		
10	13.56074	324	<0.01	Pass
0	13.56069	274	<0.01	Pass
-10	13.56062	204	<0.01	Pass
-20	13.56073	314	<0.01	Pass

Table 8

Frequency Stability versus Input Voltage: The Frequency tolerance of the carrier signal shall be maintained within ± 0.01%, the frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at 20°C environmental temperature.

Carrier Frequency: 13.560416 MHz at 20°C at 12VDC

Measured Voltage ±15% of nominal (DC)	Measured Freq. (MHz)	·		Pass/Fail
10.2	13.56073	314	<0.01	Pass
13.8	13.56069	274	<0.01	Pass

Table 9



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## 5.6 Fundamental Field Strength Test Result

- 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 (QP only @ 3m & 10m) is +5.6dB/-4.5dB (for EUTs < 0.5m X 0.5m X 0.5m).

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

Atmospheric Pressure 1019mbar

Test Date: September 14~18 Tested By: Choon Sian Ooi

### Test Requirement :

13.56 MHz --- The field strength of any emissions within allowed operating band shall not exceed 10mV/m at 30 meters.

125KHz ----- The fundamental field strength should not exceed general spurious emission requirement.

#### Dipole Antenna at 0 degree

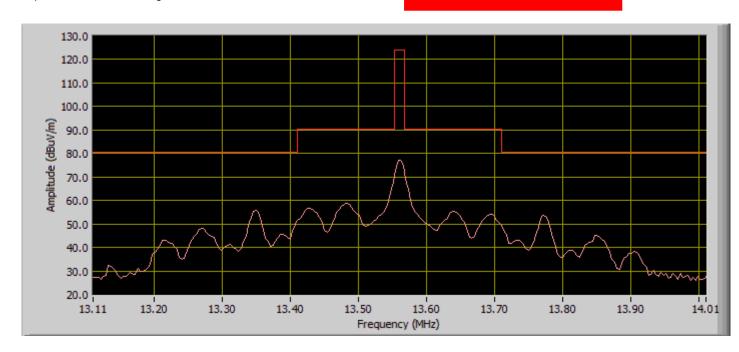
Frequency	Measure	Ant. Height	Factor	Amplitude @ 3m	Limits @ 3m	Margin
(MHz)	(Avg/QP)	(m)	(dB)	(dBµV/m)	(dBµV/m)	(dBµV/m)
0.125	Peak	1.00	64.76	58.64	105.67	-47.03

#### Dipole Antenna at 90 degree

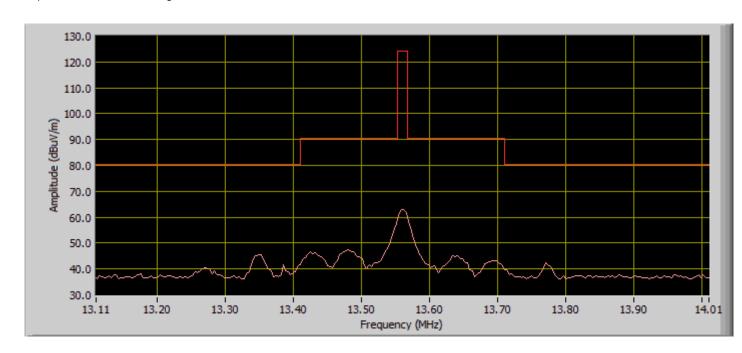
Frequency	Measure	Ant. Height	Factor	Amplitude @ 3m	Limits @ 3m	Margin
(MHz)	(Avg/QP)	(m)	(dB)	(dBµV/m)	(dBµV/m)	(dBµV/m)
0.125	Peak	1.00	64.76	49.01	105.67	-56.66

## Dipole Antenna at 0 degree

General Emission Limit @ 3 meter



## Dipole Antenna at 90 degree





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## 5.7 Occupied Bandwidth

**Requirement(s):** RSS-210 (5.9.1)

**Procedures:** Occupied Bandwidth was measured according to RSS-210 (5.9.1). Measurement was taken

with spectrum analyzer. The spectrum analyzer bandwidth and span was set to read in

23°C **Environmental Conditions** Temperature

Relative Humidity 50%

Atmospheric Pressure 1019mbar

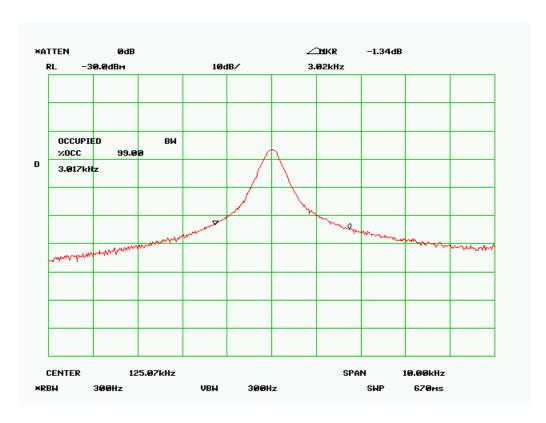
Test Date: September 14~18 Tested By: Choon Sian Ooi

Results: Pass

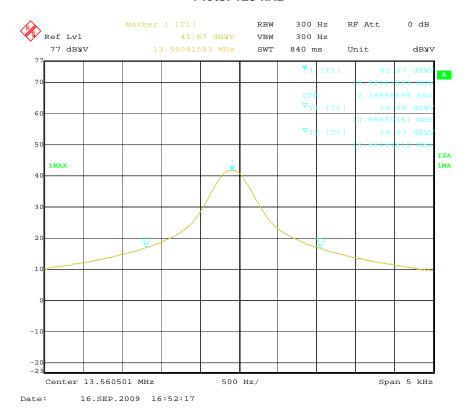
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Plots: 125 kHz



Plots: 13.56 MHz

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## 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	04/25/2010
R&S LISN	ESH2-Z5	04/24/2010
CHASE LISN	MN2050B	04/24/2010
Radiated Emissions		
Spectrum Analyzer	8564E	04/26/2010
EMI Receiver	ESIB 40	4/25/2010
R&S LISN	ESH2-Z5	04/24/2010
CHASE LISN	MN2050B	04/24/2010
Antenna(1 ~18GHz)	3115	01/04/2010
Antenna (30MHz~2GHz)	JB1	01/04/2010
Chamber	3m	04/18/2010
Pre-Amplifier(1 ~ 26GHz)	8449	04/24/2010
Horn Antenna (18~40GHz)	AH-840	03/19/2010
Microwave Pre-Amp (18~40GHz)	PA-840	03/19/2010*

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#### 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.
- 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.
- 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

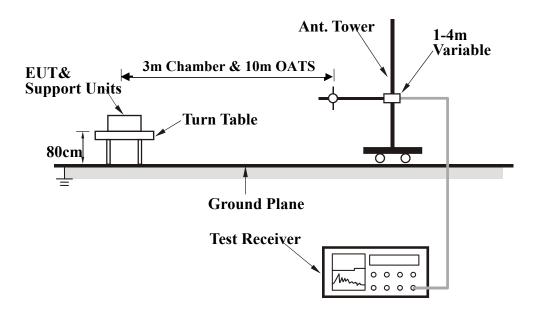
#### **EUT Characterisation**

EUT characterisation, over the frequency range from 100kHz – 1GHz 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) at 10m distance.

#### **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.
- 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 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<sub>o</sub> to 360<sub>o</sub> 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
		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.

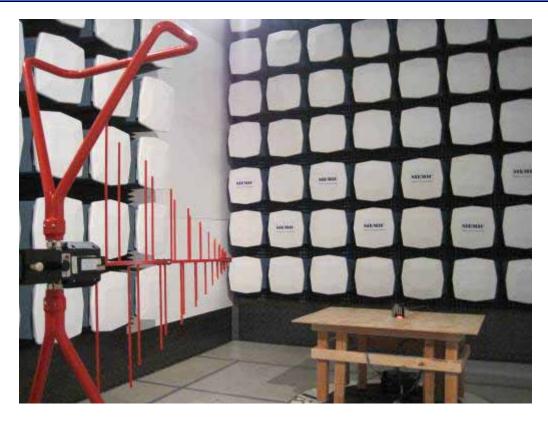


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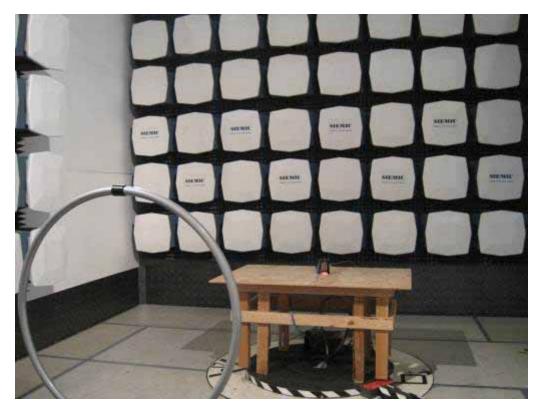
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## Annex B. TEST SETUP PHOTOGRAPHS



Radiated Emission View (>30MHz)



Radiated Emission View (< 30Mhz)



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AC Line Conducted Emission Front View

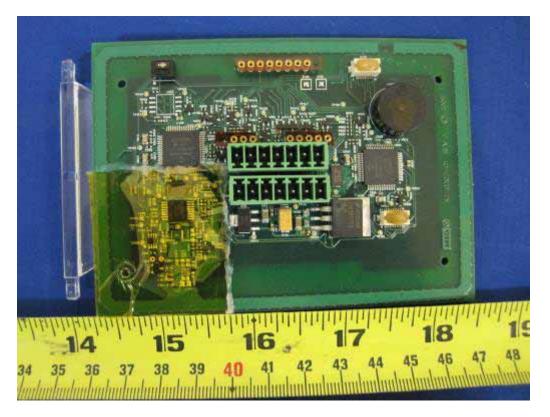


 Serial#
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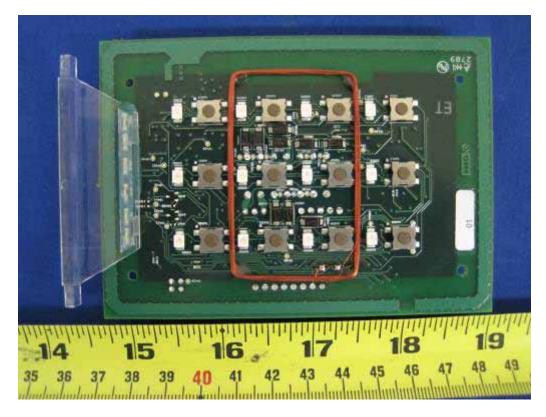
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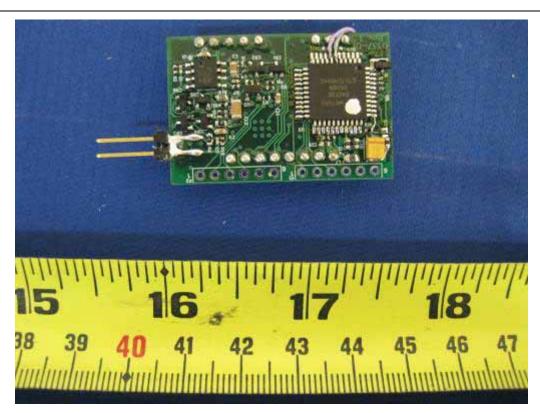
## Annex B. i. EUT INTERNAL PHOTOGRAPHS



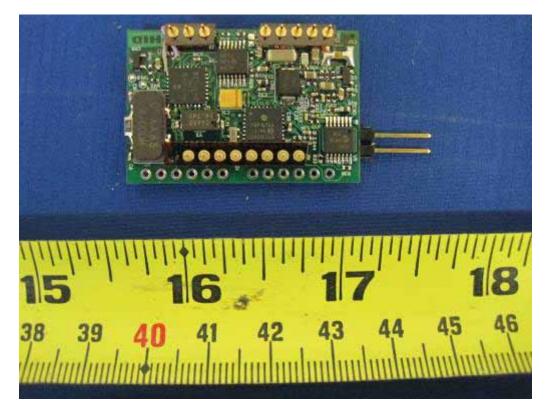
13.56MHz RDID radio board - Bottom







125KHz RDID radio board-Top



125KHz RDID radio board-Bottom



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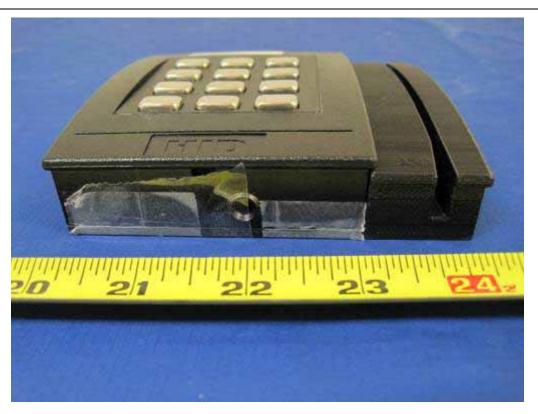
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## Annex B. ii. EUT EXTERNAL PHOTOGRAPHS

















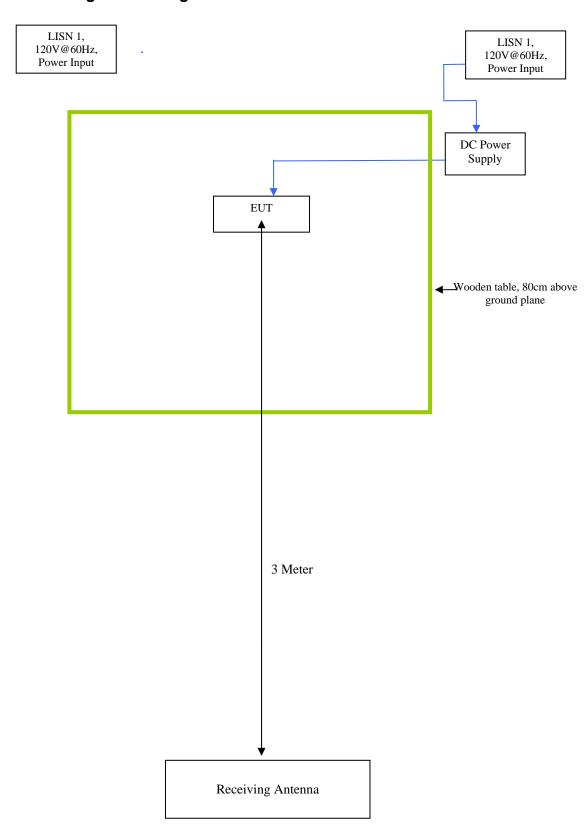
### Annex C. SUPPORTING EQUIPMENT DESCRIPTION

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

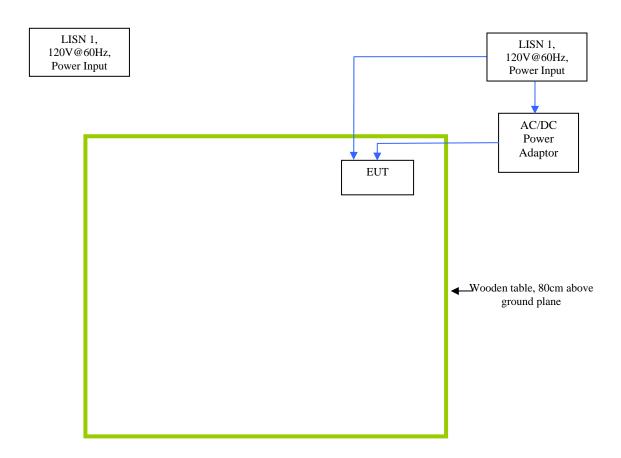
Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
-	-	-

**NOTE:** No special supporting equipment are used or needed during testing to achieve compliance.

# **Block Configuration Diagram for Radiated Emission**



# **Block Configuration Diagram for Conducted Emission**





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# **Annex C. 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 by itself.		
Others Testing	The EUT was controlled by itself.		



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# 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-IAF Communiqué dated 18 June 2005).

Whi. 

Presented this 11th day of July 2008.

President / For the Accreditation Council Certificate Number 2742.01 Valid to September 30, 2010

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

## ACCREDITED PRODUCT CERTIFICATION BODY

A2LA has accredited

SIEMIC INC.

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 55:1996 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) and IC (Canada) requirements.



Presented this 9<sup>th</sup> day of January 2009.

President

For the Accreditation Council Certificate Number: 2742.02 Valid to: September 30, 2010

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

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#### 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)

Certificate Number: 2742.02 Valid to: September 30, 2010

In recognition of the successful completion of the A2LA Certification Body Accreditation Program evaluation, including the US Federal Communications Commission (FCC), Industry Canada (IC) and Singapore (IDA) 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)

Unlicensed Radio Frequency Devices A1, A2, A3, A4 Licensed Radio Frequency Devices B1, B2, B3, B4

C Telephone Terminal Equipment

#### Industry Canada - (IC)

Radio All Radio Standards Specifications (RSS) in Category I

Equipment Standards List Radio

#### IDA - Singapore

Line Terminal Equipment All Technical Specifications for Line Terminal

Equipment - Table 1 of IDA MRA Recognition

Scheme: 2008, Annex 2

Radio-Communication Equipment All Technical Specifications for Radio-Communication

Equipment - Table 2 of IDA MRA Recognition

Scheme: 2008, Annex 2

Please refer to FCC TCB Program Roles and Responsibilities, v04, released February 14, 2008 detailing scopes, roles and responsibilities. http://www.fcc.gov/oet/ea/FCC-Overview-TCB-Program.pdf

<sup>\*</sup>Please refer to Industry Canada (IC) website at: http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/h\_sf01342e.html

<sup>\*</sup>Please refer to Info-Communication Development Authority (iDA) Singapore website at: http://www.ida.gov.sg/doc/Policies%620and%620Regulation/Policies\_and\_Regulation\_Level2/20060609145118/MRA RecScheme.pdf

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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

December 20, 2007

Registration Number: 783147

SIEMIC Laboratories 2206 Ringwood Avenue, San Jose, CA 95131

Leslie Bai Attention:

Re: Measurement facility located at San Jose

3 & 10 meter site

Date of Renewal: December 20, 2007

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on 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 www.fcc.gov under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish Industry Analyst

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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 ramona.saar@nist.gov if you have any questions.

Sincerely,

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

Paris I ald

Enclosure

cc: CAB Program Manager



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OUR FILE: 46405-4842 Submission No: 126429

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

Industry Industrie Canada Canada

May 23rd, 2008

Siemie Inc. 2206 Ringwood Ave. San Jose CA 95131 USA

Attention: Leslie Bai

Dear Sir/Madame:

The Bureau has received your application for the registration / renewal 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 (4842A-1). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please be informed that the Bureau is now utilizing a new site numbering scheme in order to simplify the electronic filing process. Our goal is to reduce the number of secondary codes associated to one particular company. The following changes have been made to your record.

- Your primary code is: 4842
- The company number associated to the site(s) located at the above address is: 4842A
- The table below is a summary of the changes made to the unique site registration number(s):

333	ew Site umber	Obsolete Site Number	Description of Site	Expiry Date (YYYY-MM-DD)
4	842A-1	4842-1	3m Chamber	2010-05-23

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 shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 meter OATS or 3 meter 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 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.ea/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.ge.e Please reference our file and submission number above for all correspondence.

Yours sincerely,

S. Proudy

Test & Measurement Specialist Certification and Engineering Bureau 3701 Carling Ave., Building 94 Ottawa, Ontario K2H 8S2

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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,

GRENCE CERNALIII 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

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. alder

Enclosure

cc:

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





Serial# SL09081103-HID-018 (15.225 & RSS-21)
Issue Date 29 September 2009

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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

NST



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



UNITED STATES DEPARTMENT OF COMMERCE Metional Institute of Standards and Technology Gethersburg, Maryland 20899

May 3, 2006

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

Dear Mr. Bait

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 Asin 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 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,

Part & Rach

Group Leader, Standards Coordination and Conformity Group

ce: Jogindar Dhillon



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# SIEMIC ACREDITATION DETAILS: Taiwan NCC CAB ID: US0160



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,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

Ramid Z. alda

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 interición de firmar un Acuerdo de Reconocimiento Mutto, para la cual adjunto a este escrito encontrara el Acuardo en dioma ingles y español prellenado de los cuales le pido ser evisado y en su caso corregido, para que si esta de acuerdo poder firmado para mandario con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

Aprovecho esta escrito para mencionarle que nuestro intermediano gestor será la empresa lisatel de México. S. A. de C. V., empresa que ha colaborado durante mucho tempo con nosotros en lo refecionado 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 usted enviândole un cordial saludo y experando sus comentanos al Acuerdo que nos soupa

Atentamente:

Ing. Fausting Sorfez González Gerente Poenico del Laboratorio de

CAMIEN.

Cutanin 71 Fantanesa Citatora de tro Miseon, D.F. Fantanesa Con 12 Norda Fan 1884 1884



## 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



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





# CERTIFICATE

Company: SIEMIC Inc.

<Member No. 3081

Facility: SIEMIC Inc.

(Radiation

3 meter site)

Location of Facility:

2206 Ringwood Avenue, 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: June 12, 2009

This Certificate is valid until September 30, 2010





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





# CERTIFICATE

Company: SIEMIC Inc.

<Member No. 3081

Facility: SIEMIC Inc.

(Main Ports Conducted Interference Measurement)

Location of Facility:

2206 Ringwood Avenue, 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: June 12, 2009

This Certificate is valid until September 30, 2010





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





# CERTIFICATE

Company: SIEMIC Inc.

<Member No. 3081 >

Facility: SIEMIC Inc.

(Telecominication Ports Conducted Interference Measurement)

Location of Facility:

2206 Ringwood Avenue, 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: June 12, 2009

This Certificate is valid until September 30, 2010

