ZEBRA TECHNOLOGY CORP

CARD PRINTER

Model: ZXP Series 3

20 Oct 2010

Report No.: SL10082605-ZBR-066 ZXP Series 3(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 **Compliance Engineer Director of Certification**

This test report may be reproduced in full only. Test result presented in this test report is applicable to the representative sample only.







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Laboratory Introduction

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In addition to <u>testing</u> and <u>certification</u>, SIEMIC provides initial design reviews and <u>compliance</u> <u>management</u> through out a project. Our extensive experience with <u>China</u>, <u>Asia Pacific</u>, <u>North America</u>, <u>European</u>, <u>and international</u> compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the <u>global markets</u>.

Accreditations for Conformity Assessment

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

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC, RF, Telecom



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1 Executive Summary & EUT information

The purpose of this test programmed was to demonstrate compliance of the Zebra Technologies Corp., Model: ZXP Series 3 against the current Stipulated Standards. The Card Printer have demonstrated compliance with the FCC 15.225 2010 & RSS-210 Issue 7: 2007.

The equipment under test radio operating frequency is 13.56 MHz.

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

EUT Information

EUT

Description

13.56MHz RFID Reader Module in ZXP Series 3 host printer

Model No

ZXP Series 3

.

Serial No

Z32103300070

.

Input Power

100-240 VAC; 50-60Hz

Classification

Per Stipulated

: RFID

Test Standard



2 <u>TECHNICAL DETAILS</u>					
Purpose	Compliance testing of Card Printer , model ZXP Series 3 with stipulated standard				
Applicant / Client	Zebra Technologies Corp				
Manufacturer	Zebra Technologies Corp 333 Corporate Woods Parkway Vernon Hills, IL 60061 USA				
Laboratory performing the tests	SIEMIC Laboratories				
Test report reference number	SL10082605-ZBR-066 ZXP Series 3(15.225 & RSS-210)				
Date EUT received	08 October 2010				
Standard applied	47 CFR §15.225: 2010 & RSS 210 Issue 7: 2007				
Dates of test (from - to)	11 - 15 Oct 2010				
No of Units:	1				
Trade Name:	Zebra				
Model:	ZXP Series 3				
RF Operating Frequency (ies)	13.56 MHz (RFID)				
Number of Channels :	1				
Modulation :	ASK				
FCC ID:	I28RFIDCPMFS-01				
IC ID :	3798B-CPMFS01				



3 MODIFICATION

NONE

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TEST SUMMARY

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

Test Results Summary

Г	rest results outlined y						
Test S	Standard	Description	Pass / Fail				
47 CFR Part 15.225: 2010	RSS 210 Issue 7: 2007	Description	Fass / Fall				
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	Refer to FCC ID: I28RFID- CPMFS-01				
15.225(b)	RSS210(A2.6)	Limit in the band of 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	Refer to FCC ID: I28RFID- CPMFS-01				
15.225(c)	RSS210(A2.6)	Limit in the band of 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	Refer to FCC ID: I28RFID- CPMFS-01				
15.225(d), 15.209	RSS210(A2.6)	Limit outside the band of 13.110 – 14.010 MHz	Pass				
15.225(e)	15.225(e) RSS210(A2.6)		Refer to FCC ID: I28RFID- CPMFS-01				
	RSS-210(5.9.1)	Occupied Bandwidth	Refer to FCC ID: I28RFID- CPMFS-01				

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

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.
- 1) The RFID antenna is attached 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 lin	nit (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

^{*}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 150kHz – 30MHz (Average & Quasi-peak) is ±3.5dB.

4. Environmental Conditions

Temperature 25°C
Relative Humidity 50%
Atmospheric Pressure 1019mbar

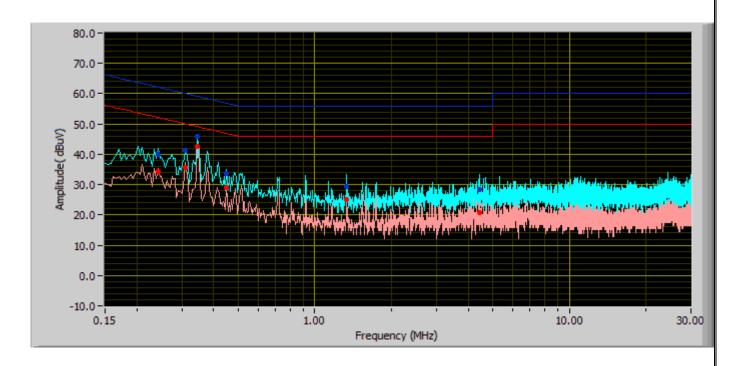
Test Date: Oct 11-15 2010 Tested By: Choon Sian Ooi

Results: Pass

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Antenna 1 (upper)

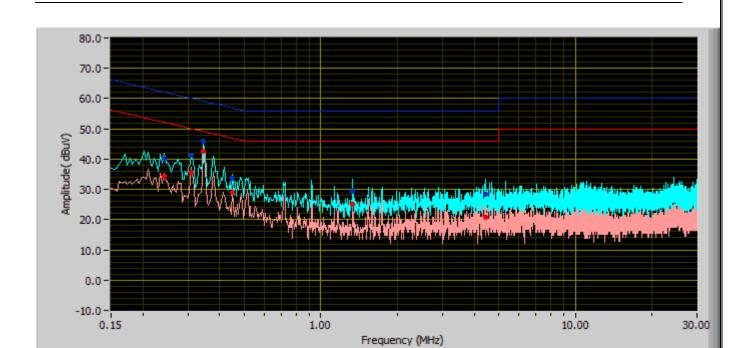


Quasi-Peak Limit

Average Limit

Phase Line Plot at 120Vac, 60Hz

Frequency (MHz)	QP Value (dΒμV)	Class B Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class B Limit (dB)	Margin (dB)
0.35	45.95	59.11	-13.16	42.62	49.11	-6.50
0.31	41.22	60.04	-18.83	35.64	50.04	-14.41
0.24	40.07	62.14	-22.07	34.39	52.14	-17.75
0.45	33.64	56.89	-23.24	28.96	46.89	-17.93
4.42	28.27	56.00	-27.73	20.76	46.00	-25.24
1.33	29.38	56.00	-26.62	25.01	46.00	-20.99



Quasi-Peak Limit

Average Limit

Neutral Line Plot at 120Vac, 60Hz

Frequency (MHz)	QP Value (dΒμV)	Class B Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class B Limit (dB)	Margin (dB)
0.35	45.95	59.11	-13.16	42.62	49.11	-6.50
0.31	41.22	60.04	-18.83	35.64	50.04	-14.41
0.24	40.07	62.14	-22.07	34.39	52.14	-17.75
0.45	33.64	56.89	-23.24	28.96	46.89	-17.93
4.42	28.27	56.00	-27.73	20.76	46.00	-25.24
1.33	29.38	56.00	-26.62	25.01	46.00	-20.99

5.3 Radiated Emissions < 30 MHz (outside 13.110 – 14.010 MHz)

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 3 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

- 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.
- Radiated Emissions Measurement Uncertainty

 All test measurements parried out are transplet

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, is +/-6dB.

4. Environmental Conditions

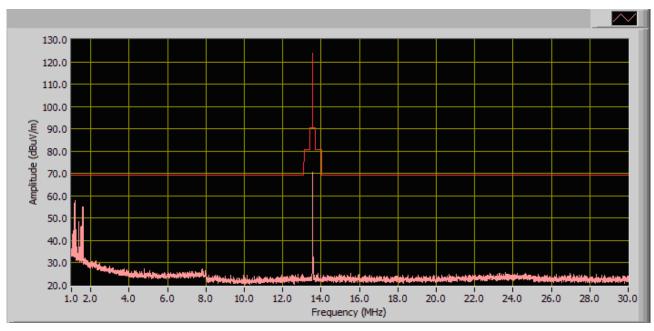
Temperature 22°C
Relative Humidity 52%
Atmospheric Pressure 1019mbar

Test Date: Oct 11-15 2010 Tested By: Choon Sian Ooi

Results: Pass

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Loop Antenna Positioned at 0 degree, Azimuth 0 degree



Radiated Emissions Plot

Frequency	Antenna Factor	Cable Loss	Corrected Reading @ 3m Limit @ 3m		Margin
(MHz)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dBµV/m)
1.17	46.56	0.25	57.89	69.54	-11.65

Radiated Emissions Table

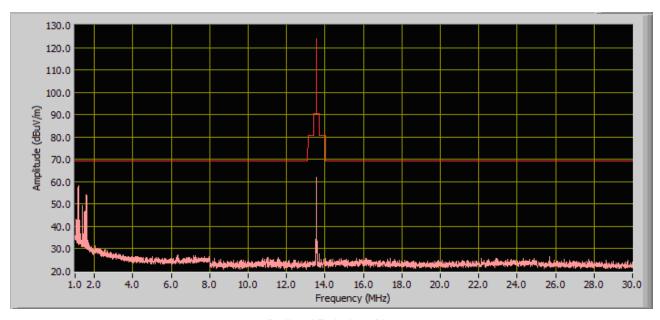
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Loop Antenna Positioned at 90 degree, Azimuth 90 degree



Radiated Emissions Plot

Frequency	Antenna Factor	Cable Loss	Corrected Reading @ 3m	Limit @ 3m	Margin
(MHz)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dBµV/m)
1.17	46.56	0.25	58.41	69.54	-11.13

Radiated Emissions Table

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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 3 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

- 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, is +/-6dB.

4. Environmental Conditions

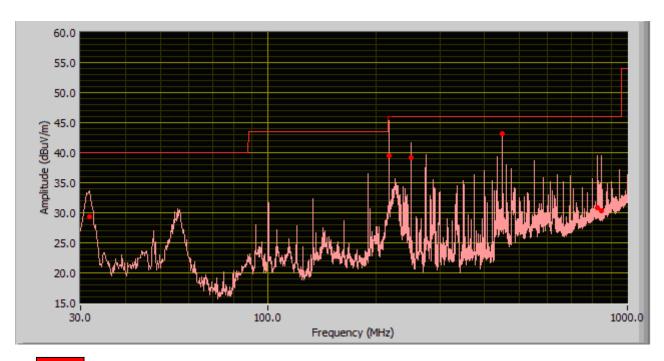
Temperature 22°C
Relative Humidity 52%
Atmospheric Pressure 1019mbar

Test Date: Oct 11-15 2010 Tested By: Choon Sian Ooi

Results: Pass



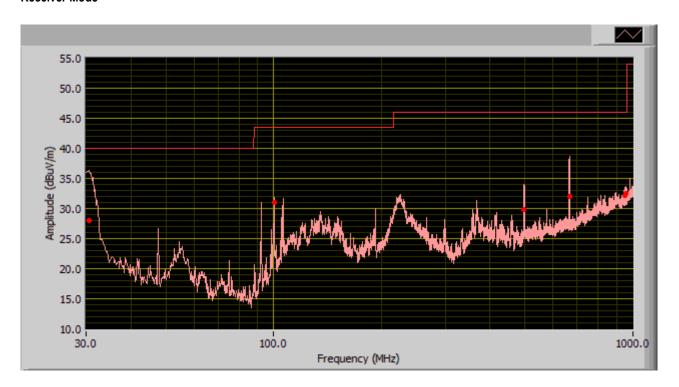
Transmit Mode



30MHz ~1000MHz

Frequency (MHz)	Quasi-Peak (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Limit (dBµV/m)	Margin (dB)
824.65	30.78	100.00	V	19.00	46.00	-15.22
845.37	30.32	382.00	V	131.00	46.00	-15.68
216.95	39.90	126.00	Н	101.00	46.00	-6.10
447.44	43.10	172.00	Н	110.00	46.00	-2.90
249.95	39.09	111.00	Н	112.00	46.00	-6.91
31.70	29.37	109.00	V	239.00	40.00	-10.63

Receiver Mode



30MHz ~1000MHz Result @ 3m

Frequency (MHz)	Corrected Quasi-Peak (dBµV/m) @ 3m	Turntable position (deg)	Polarity	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)
30.58	27.97	65.00	V	160.00	40.00	-12.03
666.23	32.06	95.00	Н	108.00	46.00	-13.94
100.23	31.07	9.00	V	101.00	43.50	-12.43
497.81	29.82	179.00	V	150.00	46.00	-16.18
958.73	32.45	73.00	V	120.00	46.00	-13.55
949.89	32.16	253.00	V	210.00	46.00	-13.84

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Serial #	Calibration Due
Conducted Emissions			
R & S Receiver	ESIB 40	100179	05/19/2011
R&S LISN	ESH2-Z5	861741/013	05/18/2011
CHASE LISN	MN2050B	1018	05/18/2011
Radiated Emissions			
Spectrum Analyzer	8564E	1937A01160	05/17/2011
R & S Receiver	ESIB 40	100179	05/19/2011
R&S LISN	ESH2-Z5	838979/005	5/18/2011
CHASE LISN	MN2050B	1018	05/18/2011
Antenna(1 ~18GHz)	3115	10SL0059	06/2/2011
3 Meters SAC	3M	N/A	12/04/2010
Sekonic Hygro Hermograph	ST-50	HE01-000092	06/04/2012
Sunol Sciences, Inc. antenna (30MHz~2GHz)	JB1	A030702	06/1/2011
ETS-Lingren Loop Antenna	6512	00049120	07/18/2011
Pre-Amplifier(1 ~ 26GHz)	8449	3008A00715	05/17/2011
Horn Antenna (18~40GHz)	AH-840	101013	06/2/2011
Microwave Pre-Amp (18~40GHz)	PA-840	181251	Every 2000 Hours
DMM	Fluke	73111	05/17/2011
Variac	KRM	AEEC-2090	Functional verification
Environment Chamber	Test Equity	1007H	06/01/2011

Note: Functional Verification

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 <u>Annex B</u>.
- 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.
- 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.
- 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 μ V = 47.96 dB μ 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

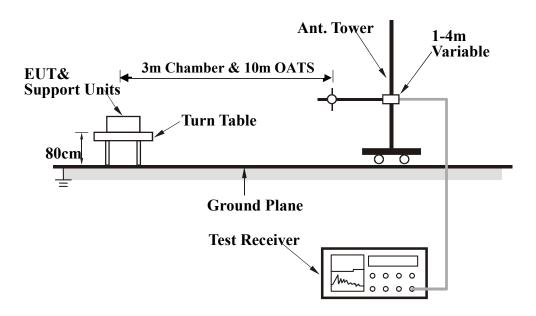
EUT Characterisation

EUT characterisation, over the frequency range from 100kHz – 1GHz to 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) 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.
- 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 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
- 4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 \circ to 360 \circ with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.
- 5. Repeat step 4 until all frequencies need to be measured were complete.
- 6. Repeat step 5 with search antenna in vertical polarized orientations.

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

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

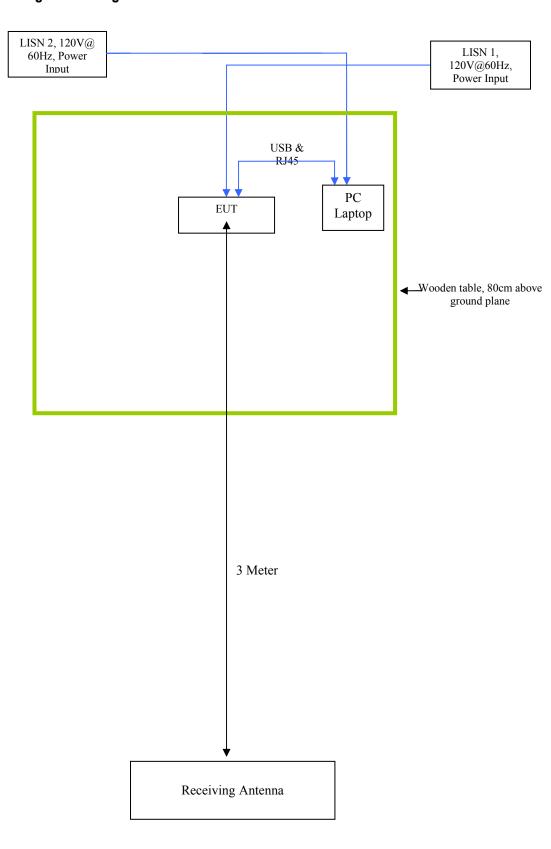
EUT TEST CONDITIONS

Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

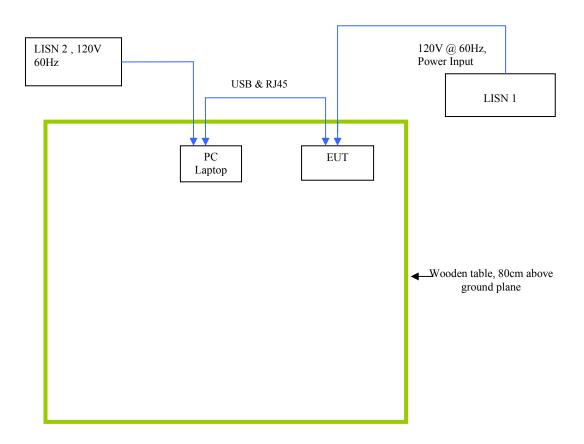
The following is a description of supporting equipment and details of cables used with the EUT.

Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
PC Laptop / DELL	Latitude DS520	USB & RJ45 From PC Laptop to EUT

Block Configuration Diagram for Radiated Emission



Block Configuration Diagram for Conducted Emission





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 Laptop using Program provided by applicant.		
Others Testing	The EUT was controlled via PC Laptop using Program provided by applicant.		



Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

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Annex E. SIEMIC ACCREDITATION CERTIFICATES

SIEMIC ACREDITATION DETAILS: A2LA Certificate Number: 2742.01





THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

SIEMIC LABORATORIES

San Jose, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025-2005 General Registraments for the Comparisons of Fasting and Calibration Laboratorius. 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 18 June 2005).



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 socreditation applies, please refer to the leboratory's Electrical Scope of Accreditation



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 65:1996 General requirements for bodies operating product confification 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 9th 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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Certificate Number 2742.02

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SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 63: 1996

SIEMIC INC 2206 Ringwood Ave San Jose, CA 95131

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

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PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

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), bidustry 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

Telephone Terminal Equipment C

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

(A2LA Cert. No. 2742/02) 01/09/09

Page 1 of 1

^{*}Please refer to FCC TCB Program Roles and Responsibilities, v04, released February 14, 2003 detailing scopevales and responsabilities. http://www.dcc.gov/pet/ea/FCC-Overview-TCB-Program.cult

^{*}Please refer to Industry Canada (IC) website at: http://www.ic.gc.carepicsaterant-gst.insferith_if01542e.inml

^{*}Please refer to Info-Communication Development Authority (IDA) Singapore website at.

http://www.ido.gov.kg.doc/Paliciness/Somitss20Regulation/Policies_and_Regulation_Level2/20080009145518/MiLRecScheme.pdf

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

Attention: Leslie Bai

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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SL10082605-ZBR-066 ZXP Series 3(15.225 & RSS-210) Issue Date 20 Oct 2010

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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

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

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,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group Standards Services Division

Enclosure

cc: CAB Program Manager

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www.siemic.com

OUR FILE: 46405-4842

Submission No: 126429

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

| Industry Industrie

May 23rd, 2008

Siemic Inc. 2206 Ringwood Ave. Sun 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):

New Site	Obsolete Site	Description of Site	Expiry Date
Number	Number		(YYYY-MM-DD)
4842A-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.ie.ge.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 bureaufaic gc.c. Please reference our file and submission number above for all correspondence.

Yours sincerely.

S. Prods

Test & Measurement Specialist Certification and Fagineering Buscon-3701 Corling Ave., Building 94 Ottawa, Outsein K2H 882

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 Tannabill
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.:

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

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

David T. alder

Enclosure

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



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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.

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

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Enclosure

cc: Ramona Saar

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



UNITED STATES DEPARTMENT OF COMMERCE National Institute of Standards and Technology Gathendary, Maryland 20888

May J. 2006

Mr. Leslie Bai SIEMIC Laboratories 2206 Ringwood Avenue San Jose, CA 93131

Dear Mr. Bui:

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

Park & Redu

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. Dhi llon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

ee: Jogindar Dhillon



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SIEMIC ACREDITATION DETAILS: Taiwan NCC CAB ID: US0160



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

November 25, 2008

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

Dear Mr. Bai:

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

CAB Name: SIEMIC, Inc.

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

Identification No.: US0160 Current Scope: LP0002

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

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

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

Sincerely,

David F. Alderman

Ravid Z. alder

Group Leader, Standards Coordination and Conformity Group Standards Services Division

Enclosure

cc: Ramona Saar



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SIEMIC ACREDITATION DETAILS: Mexico NOM Recognition



THE EXPOSITION AND EXPORTED BY THE PROPERTY OF THE PROPERTY OF

Laboratorio Valentin V. Rivero

Maxico D.F. a 16 de octubre de 2006.

LESUIE BAI DIRECTOR OF CERTIFICATION SIEMIC LABORATORIES, INC. ACCESSING GLOBAL MARKETS P.R.E.S.E.N.T.E.

En contestación a su escrito de fecha 5 de septiembre del año en curso, le comento que estamos muy interesados en su interción de firmar un Acuerdo de Reconocimiento Mutio, para la cuel adjunto a este escrito encontrara el Acuardo en idioma ingles y español prelienado de los cuales le pido seo revisado 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 este escrito para mencionarie que huestro intermediano gestor será la empresa factel de México. S. A. de C. V., ampresa que ha colaborado durante mucho tempo con nosobra en lo refeccionado 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 cated enviándo/é un cordial seludo y esperando sus comentanos al Acuerdo que nos ocupa

Atentamente:

ing, Fausting Sonez Conzalez Gerente Poetico del Laboratorio de GANTEN

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Serial# Page

SL10082605-ZBR-066 ZXP Series 3(15.225 & RSS-210) Issue Date 20 Oct 2010 40 of 45 www.siemic.com

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

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

Sincerely,

David F. Alderman

Group Leader, Standards Coordination and Conformity Group

Standards Services Division

David T. alder

Enclosure

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

NST

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 "http://www.acma.gov.au. Further information about NATA may be gained by visiting "http://www.nata.asm.au".

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: <u>Christopher Norton@nata.asm.au</u>

Internet. www.nata.asn.au

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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 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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 www.siemic.com

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



VCCI Council

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



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SL10082605-ZBR-066 ZXP Series 3(15.225 & RSS-210) Issue Date 20 Oct 2010 Page 45 of 45 www.siemic.com

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

