

# CY INTERNATIONAL LIMITED

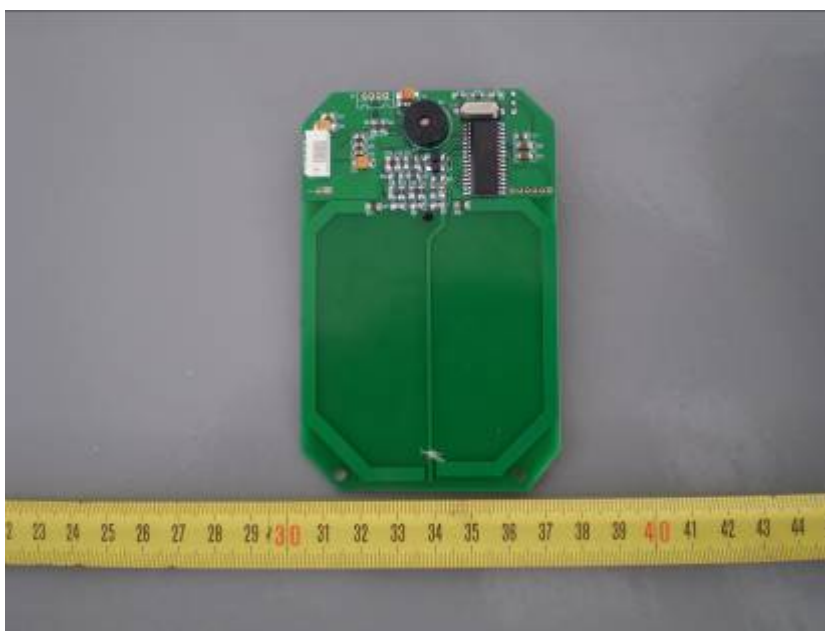
## CONTACTLESS IC CARD READER

MODEL: URF-35-1

21 MAY 2009

Report No: SLNJ09LTL001

(This report supersedes NONE)



SIEMIC, INC.  
Accessing global markets

# EMC Test Report

FCC PART 15 C: 2008

This Test Report is Issued Under the Authority of:

**Alex Wang**  
Compliance Engineer

**Leslie Bai**  
Director of Engineering

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

**SIEMIC ACCREDITATION DETAILS: A2LA Certificate**



THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION

**ACCREDITED LABORATORY**

A2LA has accredited

**SIEMIC LABORATORIES**

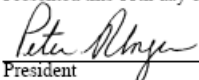
**San Jose, CA**

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 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).

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.

**SIEMIC ACCREDITATION DETAILS: ISO Guide 65 for US TCB**

# CERTIFICATE OF ACCREDITATION

## PRODUCT CERTIFICATION PROGRAM

The American National Standards Institute hereby affirms that

**SIEMIC INC.**  
SAN JOSE, CA

Accreditation ID #0759

meets the ANSI accreditation program requirements  
and those set forth in

**ISO/IEC GUIDE 65:1996  
GENERAL REQUIREMENTS FOR BODIES OPERATING  
PRODUCT CERTIFICATION SYSTEMS  
AND  
FEDERAL COMMUNICATIONS COMMISSION REQUIREMENTS  
RELATED TO TCB PROGRAMS**

for programs within the following

### SCOPE OF ACCREDITATION

Radio Frequency Devices, Unlicensed (A1, A2, A3, A4)

Radio Frequency Devices, Licensed (B1, B2, B3)

ANSI Accredited Since 2007

June 14, 2009

Valid Through



ANSI Vice President, Accreditation Services

June 15, 2007

Date



ANSI Accredited Program  
PRODUCT CERTIFICATION



**SIEMIC ACCREDITATION DETAILS: FCC Registration No. 986914**



**SIEMIC ACCREDITATION DETAILS: Industry of Canada Registration No. 4842-1**

February 19, 2009

OUR FILE: 46405-4842

Submission No: 131645

**SIEMIC NANJING (CHINA) LABORATORIES**

2-1 Longcang Avenue  
Yuhua Economic & Technology Dev. Park  
Nanjing  
China

Attention: Leslie Bai

Dear Sir/Madame:

The Bureau has received your application for the registration of a 3m/10m alternative test site. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought ( 4842B-1 ). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please keep for your records the following information;

- Your primary code is: 4842

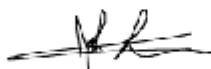
- The company number associated to the site(s) located at the above address is: 4842B

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 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.ca/epic/internet/inceb-bhst.nsf/en/h\\_tt00052e.html](http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_tt00052e.html).

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

Yours sincerely,



Joshua Leviollette  
For: Wireless Laboratory Manager  
Certification and Engineering Bureau  
3701 Carling Ave., Building 94  
P.O. Box 11490, Station "H"  
Ottawa, Ontario K2H 8S2  
Email: [joshua.leviollette@ic.gc.ca](mailto:joshua.leviollette@ic.gc.ca)  
Tel. No. (613) 990-2681  
Fax. No. (613) 990-4752



**SIEMIC, Inc.**  
Accessing global markets

Title: EMC Test Report of CONTACTLESS IC CARD READER Model : URF-35-1  
To: FCC Part 15 C: 2008

Serial# SLNJ09LTL001  
Issue Date 21 May 2009  
Page 6 of 39  
[www.siemc.com](http://www.siemc.com)

**SIEMIC ACCREDITATION DETAILS: Japan VCCI Registration No. 2195**



Voluntary Control Council for Interference  
by Information Technology Equipment  
3F NOA Bldg. 2-3-5, Azabudai,  
Minato-Ku, Tokyo, Japan, 106-0041  
Tel: +81-3-5575-3138  
Fax: +81-3-5575-3137  
<http://www.vccj.or.jp>

February 12, 2004

**TO: SIEMIC, INC.**

**Membership NO: 2195**

We confirmed your payment for annual membership fee and admission fee. Thank you very much for your remitting.

Please find enclosed VCCI documents. As admission fee and annual membership fee were confirmed, your company registered as VCCI official member.

From now on, it is possible for your company to submit conformity verification report or/and application for registration of measurement facilities.

Please find necessary forms for your submission from VCCI web-site.  
[www.vccj.or.jp](http://www.vccj.or.jp)

When you submit conformity verification report, please submit to Ms. Yoko Inagaki / [inagaki@vccj.or.jp](mailto:inagaki@vccj.or.jp) and application for registration of measurement facilities, please submit to Mr. Masaru Denda / [denda@vccj.or.jp](mailto:denda@vccj.or.jp)

Their address, phone and fax number are absolutely same as L. Please refer address indicated on top right-hand corner of this page.

If you have any other questions regarding membership, feel free to contact me. Thank you very much.

Best Regards,

Naoko Hori (Ms.)  
VCCI  
[hori@vccj.or.jp](mailto:hori@vccj.or.jp)

Enclosure

情報処理装置等電波障害自主規制協議会 (通称VCCI)

〒106-6641 東京都港区浜松町2-3-5 ノアビルディング (NOAビル) 7階 Tel: 03-5575-3138 Fax: 03-5575-3137



**SIEMIC ACCREDITATION DETAILS: Japan RF Technologies Accreditation No. MRF050927**

<b>RFT</b>	
<h1>Certificate</h1>	
<p>This is to certify that the Quality Management System of</p>	
<p><b>SIEMIC , Inc.</b> <b>2206 Ringwood Avenue</b> <b>San Jose, California 95131 U.S.A</b></p>	
<p>has been authorized to carry out Japan Specified Radio Equipment test by order and under supervision of RF Technologies Co., Ltd. according to Notification No.88 of Radio Law.</p>	
<p>An assessment of the laboratory was conducted according to the "Procedure and Conditions for Appointments of 2.4GHz Band Low power data communications system that Bluetooth and Wireless LAN test with reference to ISO/IEC 17025 by an RF Technologies Co., Ltd. auditor.</p>	
<p><b>Audit Report No. MRF050927</b></p>	
 Kazuyuki Sarashina Auditor RF Technologies Co., Ltd.	 Toshihiro Ikegami President RF Technologies Co., Ltd.
<p>Audit Date September 27th, 2005</p>	<p>Issued Date October 5th, 2005</p>
<p>This Certificate is valid until <b>September 26<sup>th</sup> 2006 or next schedule audit.</b></p>	
<p>No:006 Registered Certification Body RF Technologies Co., Ltd. 472, Nippa-cho, Kohoku-ku, Yokohama, 223-0057, Japan</p>	
	



**SIEMIC, INC.**  
Accessing global markets

Title: EMC Test Report of CONTACTLESS IC CARD READER Model : URF-35-1  
To: FCC Part 15 C: 2008

Serial# SLNJ09LTL001  
Issue Date 21 May, 2009  
Page 8 of 39  
www.sieminc.com

**SIEMIC ACCREDITATION DETAILS: Korea MIC Lab Code: KR0032**

# 시험기관지정서

## Certificate

of Designated Testing Laboratory

지정번호(No.) : KR0032

시험기관명 : (주)현대교정인증기술원

(Name of Lab.) (Hyundai Calibration & Certification Technologies Co., Ltd)

주 소 : 경기도 이천시 부발읍 아미리 산136-1

(Address) (136-1, Ami-ri, Bubal-eup, Icheon-si, Kyunggi-Do, Korea)  
2206 Ringwood Avenue San Jose, CA, USA.

시험분야 및 범위 : 유선(Telecommunication Part)

(Area & Category) 무선(Radio Communication Part)

전자파장해(EMD) : 미국지사 포함

전자파내성(EMS) : 미국지사 포함

전기안전(Safety)

전자파흡수율(SAR)

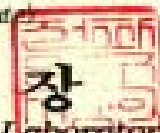
위 기관을 정보통신기기시험기관지정및관리등에관한규칙에  
의해 정보통신기기시험기관으로 지정합니다.

*This is to certify that  
the above mentioned laboratory is designated  
as the testing laboratory in accordance with  
the Regulations on Designation of Testing Laboratory  
for Information and Communication Equipment.*

2005년(Year) 7월(Month) 5일(Date)




**전 파 연 구 소 장**

Director General of Radio Research Laboratory  
Ministry of Information and Communication  
Republic of Korea





**SIEMIC ACCREDITATION DETAILS: Korea CAB ID: US0160**

		<b>UNITED STATES DEPARTMENT OF COMMERCE</b> <b>National Institute of Standards and Technology</b> 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, <b>Phase I</b> 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:	<b>EMI:</b> KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI <b>EMS:</b> 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 <b>Wireless:</b> 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 <b>Wired:</b> 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 <a href="http://ts.nist.gov/mra">http://ts.nist.gov/mra</a> . If you have any questions please contact Ramona Saar at (301) 975-5521 or <a href="mailto:ramona.saar@nist.gov">ramona.saar@nist.gov</a> .		
Sincerely,  David F. Alderman Group Leader, Standards Coordination and Conformity Group Standards Services Division		
Enclosure		
cc: Ramona Saar		
		

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



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

May 3, 2006

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

Dear Mr. Bai:

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

- BSMI number: **SL2-IN-E-1130R** (Must be applied to the test reports)
- U.S Identification No: **US0160**
- Scope of Designation: **CNS 13438**
- Authorized signatory: **Mr. Leslie Bai**

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

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group

cc: Jogindar Dhillon

**NIST**

**SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160**



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

November 25, 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 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](mailto:ramona.saar@nist.gov).

Sincerely,

David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Ramona Saar

**NIST**

## SIEMIC ACCREDITATION DETAILS: Mexico NOM Recognition



CAMARA NACIONAL  
DE LA INDUSTRIA  
ELECTRONICA, DE  
TELECOMUNICACIONES  
E INFORMATICA

### Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

LESLIE 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 intención de firmar un Acuerdo de Reconocimiento Mutuo, para lo cual adjunto a este escrito encontrara el Acuerdo en idioma ingles y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si este de acuerdo poder firmarlo para mandarlo con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

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

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

Atentamente:



Ing. Faustino Gómez González  
Gerente Técnico del Laboratorio de  
CANIETI

Culiacán 71  
Hidráulica Cometa  
06100 México, D.F.  
Tel. 5264-6000 con 12 líneas  
Fax 5264-0498  
www.canieti.org



**SIEMIC ACCREDITATION DETAILS: Hong Kong OFTA Recognition No. D23/16V**

Your Ref 來函檔號 : D23/16 V  
Our Ref 本局檔號 :

Telephone 電話 : (852) 2961 6320  
Fax No 圖文傳真 : (852) 2838 5004  
E-mail 電郵地址 : 20 July 2005

Mr. Leslie Bai  
Director of Certification,  
SIEMIC Laboratories  
2206 Ringwood Avenue  
San Jose, California 95131  
USA

Dear Mr. Bai,

**Application of Recognised Testing Agency (RTA)**

Referring your submission of 28 June 2005 in relation to the application of RTA, I am pleased to inform you that OFTA has appointed SIEMIC Laboratories (SIEMIC) as a Recognised Testing Agency (RTA) :

Please note that, under the Hong Kong Telecommunications Equipment Evaluation and Certification (HKTEC) Scheme, SIEMIC is authorized to conduct evaluation tests on telecommunications equipment against the following HKTA specifications :

**Scope of recognition (HKTA Specifications) :**

1001, 1002, 1004, 1006, 1007, 1008  
1010, 1015, 1016  
1022, 1026, 1027, 1029  
1030, 1031, 1032, 1033, 1034, 1035, 1039  
1041, 1042, 1043, 1045, 1047, 1048  
2001

You are requested to refer to and comply with the code of practice and guidelines for RTA as given in the Information Note OFTA I 411 "Recognised Testing Agency (RTA) for Conducting Evaluation Test of Telecommunications Equipment", which can be downloaded from OFTA's homepage at <http://www.ofta.gov.hk/tec/information-notes.html>.

If you have any queries, please do not hesitate to contact me.

Yours sincerely,



(K K Sin)  
for Director-General  
of Telecommunications

Office of the Telecommunications Authority  
29/F Wu Chung House 213 Queen's Road East Wan Chai Hong Kong  
電訊管理局  
香港灣仔皇后大道東 213 號胡忠大廈 29 字樓

<http://www.ofta.gov.hk>

**SIEMIC ACCREDITATION DETAILS: Hong Kong OFTA 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](mailto:ramona.saar@nist.gov).

Sincerely,



David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: Ramona Saar

**NIST**

## SIEMIC ACCREDITATION 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;
2. 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.asn.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: [Christopher.Norton@nata.asn.au](mailto:Christopher.Norton@nata.asn.au)  
Internet: [www.nata.asn.au](http://www.nata.asn.au)

CONTENTS

1 EXECUTIVE SUMMARY & EUT INFORMATION..... 17

2 TECHNICAL DETAILS..... 18

3 MODIFICATION..... 19

4 TEST SUMMARY ..... 20

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS..... 21

ANNEX A. TEST INSTRUMENT & METHOD ..... 30

ANNEX B EUT AND TEST SETUP PHOTOGRAPHS..... 33

ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT ..... 37



## 1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the Contactless ic card reader, against the current Stipulated Standards. The Contactless ic card reader has demonstrated compliance with the To: FCC part 15 C: 2008

### EUT Information

**EUT Description** : USB powered, support ISO 15693 standard RF card  
**Model No** : URF-35-1  
**Serial No** : N/A  
**Input Power** : 5VDC

**Classification Per Stipulated Test Standard** : Class B Emission Product

## 2 TECHNICAL DETAILS

Purpose	Compliance testing of Contactless ic card reader with stipulated standard
Applicant / Client	CY International Limited.
Manufacturer	Shenzhen Wanfang Hi-tech Co., Ltd.
Laboratory performing the tests	SIEMIC Nanjing (China) Laboratories, 2-1 Longcang Avenue, Yuhua Economic and Technology Development Zone Tel:(86)(25)86730128
Test report reference number	SLNJ09LTL001
Date EUT received	14 May 2009
Standard applied	FCC part 15 C: 2008
Dates of test (from - to)	14-21 March 2009
No of Units:	# 3
Equipment Category:	Contactless ic card reader
Trade Name:	N/A
Operating Frequency (ies)	13.56MHz
Rated Voltage	5VDC
Rated Input Power	2.5W
FCC ID:	XDKURF-35

### 3 MODIFICATION

NONE

## 4 TEST SUMMARY

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

Class B Emission Product

**Test Results Summary**

Test Standard	Description	Pass / Fail
47 CFR Part 15.225:2008		
15.203	Antenna Requirement	Pass
15.207(a)	Conducted Emission Voltage	Pass
15.225(a)	Limit in the band of 13.553-13.567MHz	Pass
15.225(b)	Limit in the band of 13.410-13.553MHz and 13.567-13.710MHz	Pass
15.225(c)	Limit in the band of 13.110-13.410MHz and 13.710-14.010MHz	Pass
15.225(d),15.209	Limit outside the band of 13.110-14.010MHz	Pass
15.225(e)	Frequency Stability	Pass

PS: All measurement Uncertainties is not taken into consideration for all presented test data.



## 5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 5.1 Antenna Requirement

**Requirement(s):** 47 CFR §15.203

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

Antenna requirement must meet at least one of the following:

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

The antenna is integral to the main board permanently to the device which meet the requirement

## 5.2 Conducted Emissions Test Result

Requirement(s): 47 CFR §15.207

Requirement :

Frequency of emission(MHz)	Conducted limit ( dBμV)	
	Quasi-peak	Average
0.15-0.5	66to56*	56to46*
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. 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 ±2.64dB.

Temperature: 28 °C

Relative humidity: 50%

Pressure: 1019mbar

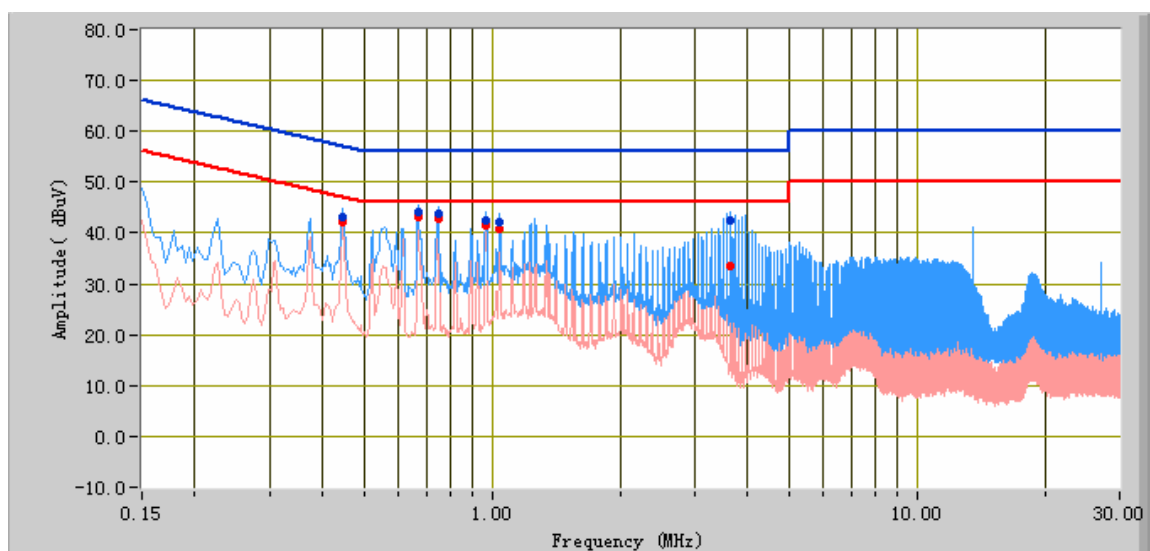
Test By: Alex Wang

Test Date: 18-21 May 2009

**Results:** Pass

## Line

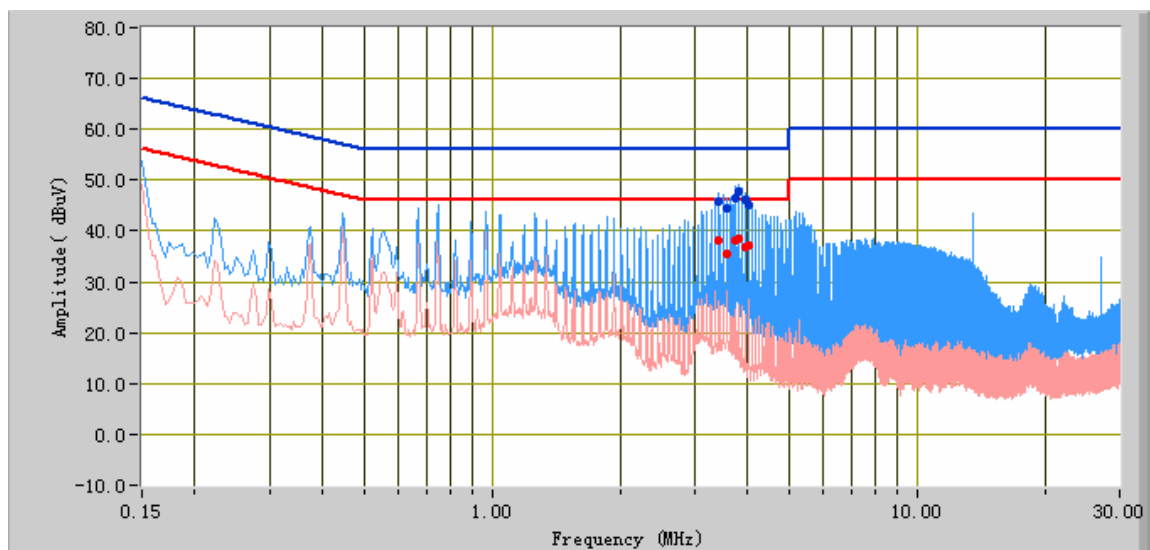
**Peak Detector**  **Quasi Peak Limit**   
**Average Detector**  **Average Limit** 



Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
0.67	44.06	56.00	-11.94	43.28	46.00	-2.72	10.13
0.75	43.75	56.00	-12.25	42.93	46.00	-3.07	10.14
3.65	42.47	56.00	-13.53	33.58	46.00	-12.42	10.40
0.97	42.56	56.00	-13.44	41.49	46.00	-4.51	10.16
0.45	43.24	56.96	-13.73	42.29	46.96	-4.68	10.17
1.04	42.01	56.00	-13.99	40.79	46.00	-5.21	10.16

## Neutral

**Peak Detector**  **Quasi Peak Limit**   
**Average Detector**  **Average Limit** 



Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
3.80	47.90	56.00	-8.10	38.47	46.00	-7.53	10.47
3.72	46.37	56.00	-9.63	38.02	46.00	-7.98	10.44
3.95	46.11	56.00	-9.89	36.81	46.00	-9.19	10.51
3.43	45.69	56.00	-10.31	38.02	46.00	-7.98	10.35
4.02	45.20	56.00	-10.80	37.03	46.00	-8.97	10.53
3.58	44.56	56.00	-11.44	35.53	46.00	-10.47	10.40



### 5.3 Radiated Emissions < 30MHz(9KHz-30MHz, H-Field)

**Requirement(s):** 47 CFR §15.225

**Procedures:** For < 30MHz, Radiated emission 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.)

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

Temperature: 28 °C

Relative humidity: 50%

Pressure: 1019mbar

Test by: Alex Wang

Test Date: 18-21 May 2009

**Results:** Pass

### Loop Antenna Positioned at 0 degrees, Azimuth 0 degrees

Frequency	Raw Amplitued@10m	Measure	Ant. Height	Ant Factor	Cable Loss	Pre Amp Gain	Distance Correction Factor	Corrected Amplitude @30m	Limits Part 15.209&Part 15.225	Margin
(MHz)	(dBμV/m)	(Avg/QP)	(m)	(dB)	(dB)	(dBm)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)
13.5600	66.84	Peak	1.0	40	0.5	48	19.08	40.26	84	-43.74
27.1196	48.51	Peak	1.0	41	0.5	48	19.08	22.93	39.54	-16.61

### Loop Antenna Positioned at 90 degrees, Azimuth 90 degrees

Frequency	Raw Amplitued@10m	Measure	Ant. Height	Ant Factor	Cable Loss	Pre Amp Gain	Distance Correction Factor	Corrected Amplitude @30m	Limits Part 15.209&Part 15.225	Margin
(MHz)	(dBμV/m)	(Avg/QP)	(m)	(dB)	(dB)	(dBm)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)
13.5600	82.56	Peak	1.0	40	0.5	48	19.08	55.98	84	-28.02
27.1196	45.83	Peak	1.0	41	0.5	48	19.08	20.25	39.54	-19.29

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

**Requirement(s)** : 47 CFR § 15.209; CFR § 15.225(d)

**Procedures:** For > 30MHz, Radiated emission 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 rise from 1-4metrs to maximize the emission from the EUT.)

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

Temperature: 28 °C



Relative humidity: 50%

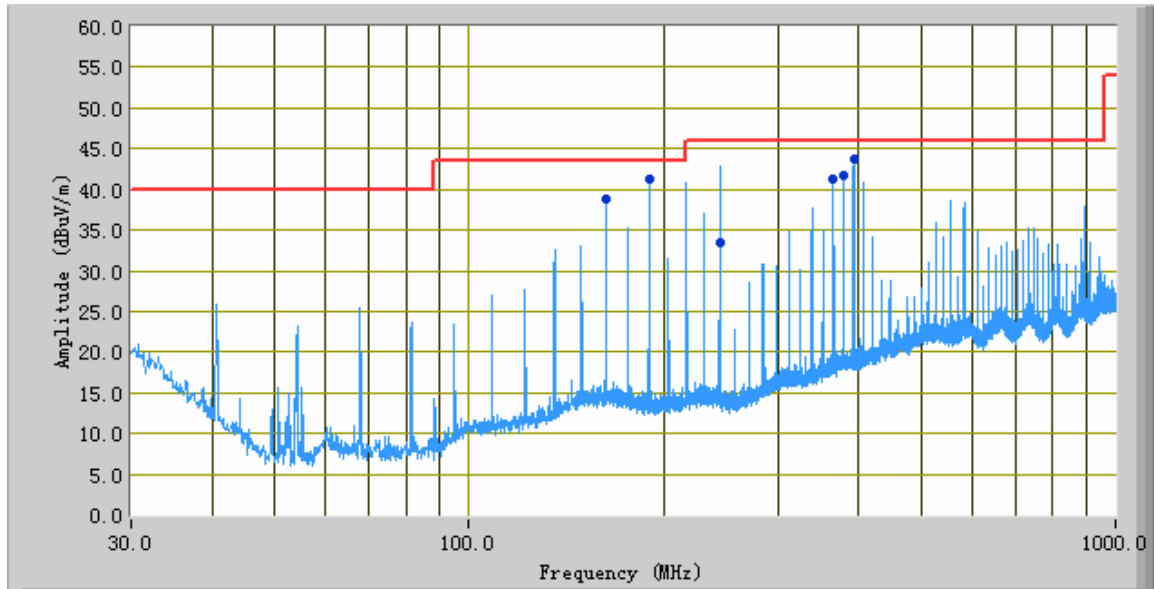
Pressure: 1019mbar

Test by: Alex Wang

Test Date: 18-21 May 2009

**Results:** Pass

Peak Detector   
 Quasi Peak Limit 



Frequency (MHz)	Quasi Peak (dBuV/m)	Azimuth	Polarity(H/V)	Height (cm)	Factors (dB)	Limit (dBuV/m)	Margin (dB)
189.88	41.28	74.00	V	102.00	-32.56	43.52	-2.24
393.32	43.70	223.00	V	167.00	-29.13	46.00	-2.30
244.13	33.52	0.00	V	198.00	-32.98	46.00	-12.48
366.20	41.36	218.00	H	170.00	-29.60	46.00	-4.64
379.76	41.68	227.00	H	171.00	-29.37	46.00	-4.32
162.75	38.76	178.00	V	171.00	-32.53	43.52	-4.76

## 5.4 Frequency Stability

**Requirement(s)** : 47 CFR § 15.225(e)

**Procedures**: Frequency Stability was measured according to 47 CFR §2.1055. Measurement was taken 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 = 1356Hz

Temperature: 28 °C

Relative humidity: 50%

Pressure: 1019mbar

Test by: Alex Wang

Test Date: 18-21 May 2009

**Results**: Pass

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

Reference Frequency: 13.55993 MHz at -20 °C and +50 °C

Temperature (°C)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
50	13.56000	70	<0.01	Pass
40	13.55987	-60	<0.01	Pass
30	13.55990	-30	<0.01	Pass
20	Reference			
10	13.55997	40	<0.01	Pass
0	13.55987	-60	<0.01	Pass
-10	13.55990	-30	<0.01	Pass
-20	13.55987	-60	<0.01	Pass

Frequency Stability versus input voltage: The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$ , 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: 13.55993MHz at 20 °C at 5VDC

Measured Voltage $\pm 15\%$ of nominal (DC)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
5.75	13.55996	30	<0.01	Pass
4.25	13.55992	-10	<0.01	Pass



## Annex A. TEST INSTRUMENT & METHOD

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

Instrument	Model	Serial #	Calibration Due
<b>Radiated Emissions</b>			
R & S Receiver	ESPI 3	20SL0039	02/19/2009
Environment Chamer	MENTEK	20SL0060	05/13/2010
Pre-amplifier	8447F	N/A	08/24/2009
Sunol Sciences, Inc. antenna	JB1	20SL0027	07/22/2009
Loop Antenna	6509	20SL0022	02/17/2010
<b>Conducted Emissions</b>			
R & S Receiver	ESPI 3	20SL0039	02/19/2010
LISN	ESH2-Z5	20SL0021	04/27/2010
LIMITER	LIT-153	20SL0032	N/A

## **Annex A. ii      RADIATED EMISSIONS TEST DESCRIPTION**

### **EUT Characterisation**

EUT characterisation, over the frequency range from 30MHz to 1GHz (for FCC tests, until the 5<sup>th</sup> harmonic for operating frequencies  $\geq 108\text{MHz}$ ), 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 0.1m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 10m 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.

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

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 0.1m high wood block
2. The power supply for the EUT was DC
3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.

#### **Test Method**

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by working the EUT for discharge, changing the antenna polarization, and adjusting the antenna height in the following manner:
  - a. Vertical or horizontal polarisation (whichever gave the higher emission level over max power of the EUT) was chosen.
  - b. The EUT was then rotated to the direction that gave the maximum emission.
  - c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. A Quasi-peak measurement was then made for that frequency point.
4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
5. The frequency range covered was from 30MHz to 1GHz (for FCC tests, until the 5<sup>th</sup> harmonic for operating frequencies  $\geq 108\text{MHz}$ )

<b>Annex A.iii</b>	<b>CONDUCTED EMISSIONS TEST DESCRIPTION</b>
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### **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.

The power supply for the EUT was fed through a 50 $\Omega$ /50 $\mu$ H EUT LISN, connected to filtered mains.

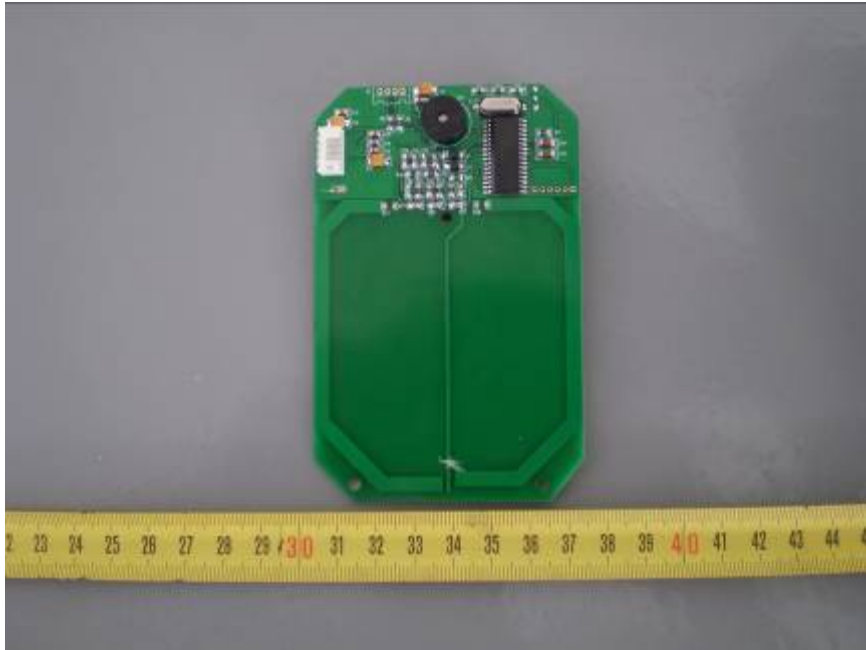
2. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
3. All other supporting equipments were powered separately from another main supply.

### **Test Method**

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

## Annex B EUT AND TEST SETUP PHOTOGRAPHS

### Annex B.i. EUT Photo

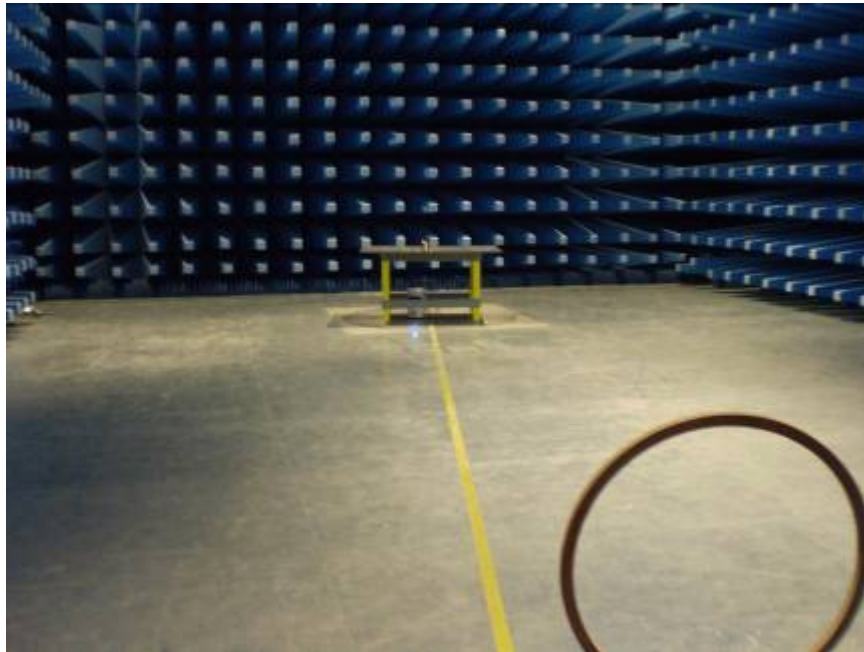


EUT Front View



EUT Rear View

**Annex B.ii. Test Setup Photo**



Radiated Emission <30MHz Test Setup View



Radiated Emission >30MHz Test Setup View





Conducted Emission Test Setup Front View



Conducted Emission Test Setup Side View



Frequency Stability Test Setup View

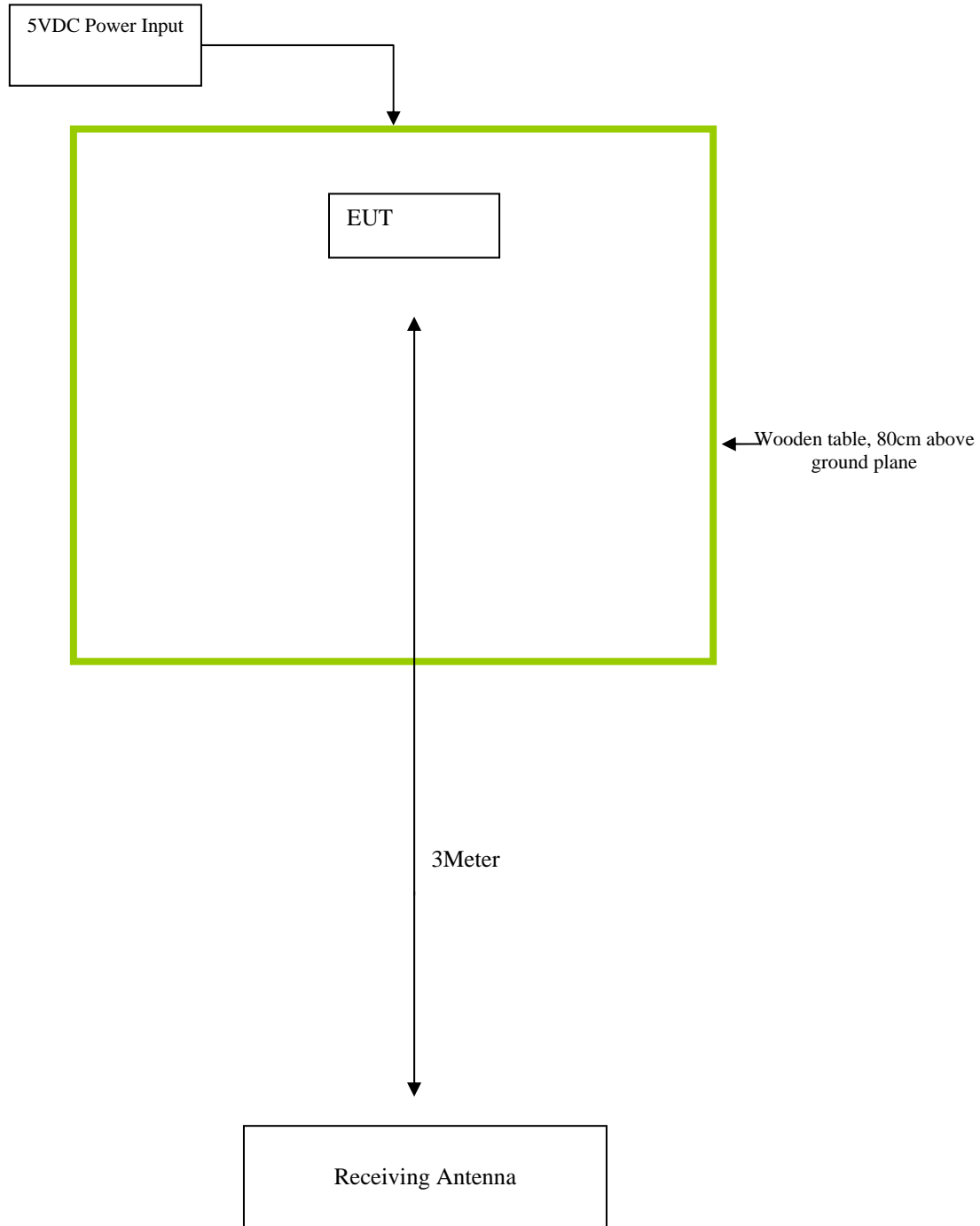
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### EUT TEST CONDITIONS

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

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

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



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

Test	Description Of Operation
Radiated Emissions	EUT is continuous working automatically
Other Test	