Guangzhou ITS Communications Equipment Co., Ltd

Electronic Tag(OBU)

Model: DP268-A-OBU

Nov 30 2010 Report No.: 10021167 (This report supersedes NONE)

1 12 13 14 16 1		•
9 10	Filet.»	
en1 2 3 4 5	Nariat program	-
	3 4 5 6 7 8 9 10 11 12 13 14 15	

Modifications made to the product : None

This Test Report is Issued Under the Authority of:

Flex won Alex Wang

Compliance Engineer

Will yang Will Yang

Technical Manager

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





Serial#: 10021167 Issue Date: Nov 30 2010 Page 2 of 39 www.siemic.com.cn

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



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</u> <u>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

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

Serial#: 10021167 Issue Date: Nov 30 2010 Page 3 of 39

This page has been left blank intentionally.

CONTENTS

1	EXECUTIVE SUMMARY & EUT INFORMATION	5
2	TECHNICAL DETAILS	6
3	MODIFICATION	7
4	TEST SUMMARY	8
5	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	9
ANN	EX A. TEST INSTRUMENT & METHOD	.17
ANN	EX B. EUT AND TEST SETUP PHOTOGRAPHS	.21
ANN	EX C. TEST SETUP AND SUPPORTING EQUIPMENT	.25
ANN	EX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PART LIST	28
ANN	NEX E. SIEMIC ACCREDITATION CERTIFICATES	29





Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 5 of 39 www.siemic.com.cn

Executive Summary & EUT information 1

The purpose of this test program was to demonstrate compliance of the Guangzhou ITS Communications Equipment Co., Ltd, Electronic Tag(OBU), and model: DP268-A-OBU against the current Stipulated Standards. The Electronic Tag(OBU)has demonstrated compliance with the FCC 15.249:2009.

EUT Information

EUT	Electronic Tag(OBU)
Description	
Model No	DP268-A-OBU
Input Power	3.6V & 20mA(Working)/2µA(sleeping)
Classification Per Stipulated Test Standard	Class B Emission product per FCC 15.249:2009



 Serial#:
 10021167

 Issue Date:
 Nov 30 2010

 Page
 6 of 39
 www.siemic.com.cn

2	2 TECHNICAL DETAILS						
Purpose	Compliance testing of Electronic Tag(OBU) with stipulated standard						
Applicant / Client	Guangzhou ITS Communications Equipment Co., Ltd						
Manufacturer	Guangzhou ITS Communications Equipment Co., Ltd 12A ,15th F,Jin Shan Building ,Tian He Bei Road, Tianhe, Guangzhou, China						
Laboratory performing the tests	SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com						
Test report reference number	10021167						
Date EUT received	Nov 15 2010						
Standard applied	FCC 15.249:2009						
Dates of test (from – to)	Nov 16~29 2010						
No of Units:	#2						
Equipment Category:	DTS						
Model :	DP268-A-OBU						
RF Operating Frequency (ies)	TX:5750.0-5840.0MHz						
Modulation :	ASK						
FCC ID:	YH7ARTCDP268A-OBU						



SIEMIC, INC. Accessing global mariets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 7 of 39

3 MODIFICATION

NONE



SIEMIC, INC. Accessing global martets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FOC 15.249:2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 8 of 39 www.siemic.com.cn

4 TEST SUMMARY

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

DXX

Test Results Summary

Test Standard	Description	Pass / Fail
CFR 47 Part 15.249: 2009		
15.203	Antenna Requirement	Pass
15.207	Conducted Emissions Voltage	Pass
15.209; 15.249	Radiated Spurious Emissions	Pass
15.249	RF Exposure requirement	Pass

ANSI C63.4: 2003

PS: Preliminary AC line and radiated emissions testing has been performed on all models, only worst case test result is presented in this test report.

Serial#: 10021167 Issue Date: Nov 30 2010 Page 9 of 39 www.siemic.com.cn

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 antenna which permanently attached to the device.

5.2 Conducted Emissions Voltage

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.
- <u>Conducted Emissions Measurement Uncertainty</u> All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz – 30MHz (Average & Quasi-peak) is ±3.5dB.
 Environmental Conditions Temperature 23°C
- 5. Test date : Nov 16~29 2010 Tested By : Alex Wang

Temperature Relative Humidity Atmospheric Pressure 23°C 50% 1019mbar

N/A : Battery operated



Serial# 10021167 Issue Date: Nov 30 2010 11 of 39 www.siemic.com.cn

Page

5.3 Radiated Spurious Emission < 1GHz

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

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

Environmental Conditions 4.

Τo

Temperature **Relative Humidity** Atmospheric Pressure 23°C 50% 1019mbar

Test date : Nov 16~29 2010 5. Tested By : Alex Wang

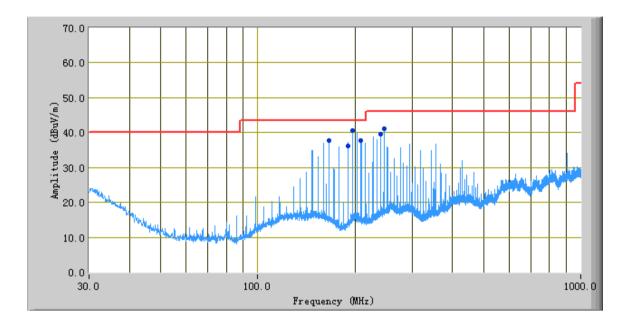
Standard Requirement: The emissions from the Low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges.

Test Result: Pass



Serial#: 10021167 Issue Date: Nov 30 2010 Page 12 of 39 www.siemic.com.cn

Operating mode: transmitting



Test Data

Frequency (MHz)	Quasi Peak (dBuV/m)	Azimuth	Polarity(H /V)	Height (cm)	Factors (dB)	Limit (dBuV/m)	Margin (dB)
196.62	40.60	48.00	V	192.00	-32.80	43.50	-2.90
245.78	41.16	48.00	Н	145.00	-31.33	46.00	-4.84
208.91	37.60	49.00	V	170.00	-33.57	43.50	-5.90
165.90	37.78	66.00	V	238.00	-32.55	43.50	-5.72
239.63	39.61	64.00	V	165.00	-31.76	46.00	-6.39
190.47	36.24	58.00	V	198.00	-34.10	43.50	-7.26



Serial#: 10021167 Issue Date: Nov 30 2010 Page 13 of 39 www.siemic.com.cn

1019mbar

5.4 Radiated Spurious Emissions > 1GHz & Band Edge

- <u>All possible modes of operation were investigated.</u> Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
 <u>A</u> "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the
- 3. <u>Radiated 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 30MHz – 1GHz & 1GHz above (3m & 10m) is +/-6dB.
 4. Environmental Conditions Temperature 23°C Relative Humidity 50%

Atmospheric Pressure

5. Test date : Nov 16~29 2010 Tested By : Alex Wang

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

Test Result:



SIEMIC, INC. Accessing global mariets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15 249:2009

 Serial#:
 10021167

 Issue Date:
 Nov 30 2010

 Page
 14 of 39

Fundamental aw ahannal

Frequenc y	Directio n	Heigh t	Pola r	Cable loss	Amplifie r	Corrected Reading			
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margi n	Detector
5.750	121.00	1.37	V	5.15	55.00	61.61	114.00	-52.39	PK
5.750	123.00	2.10	h	5.15	55.00	61.11	114.00	-52.89	PK
5.750	121.00	1.47	V	5.15	55.00	60.61	94.00	-33.39	AV
5.750	123.00	1.90	h	5.15	55.00	60.11	94.00	-33.89	AV

Middle channel

Frequenc	Directio	Heigh	Pola	Cable	Amplifie	Corrected			
У	n	t	r	loss	r	Reading			
								Margi	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	n	Margin
5.795	89.00	1.50	v	5.15	55.00	61.66	114.00	-52.34	PK
5.795	86.00	2.10	h	5.15	55.00	62.52	114.00	-51.48	PK
5.795	89.00	1.50	V	5.15	55.00	60.66	94.00	-33.34	AV
5.795	86.00	2.10	h	5.15	55.00	60.52	94.00	-33.48	AV

Frequenc y	Directio n	Heigh t	Pola r	Cable loss	Amplifie r	Corrected Reading			
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margi n	Margin
5.840	111.00	1.50	V	5.15	55.00	60.59	114.00	-53.41	PK
5.840	111.00	1.50	V	5.15	55.00	61.59	114.00	-52.41	PK
5.840	133.00	2.30	h	5.15	55.00	60.02	94.00	-33.98	AV
5.840	133.00	2.30	h	5.15	55.00	60.02	94.00	-33.98	AV

High channel

SIEMIC, INC. Accessing global martels Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

 Serial#:
 10021167

 Issue Date:
 Nov 30 2010

 Page
 15 of 39

@ 5750MHz @ 3 Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
11.500	119.00	1.27	V	7.15	55.00	62.22	74.00	-11.78	Peak
11.500	125.00	1.10	h	7.15	55.00	60.15	74.00	-13.85	Peak
11.500	122.00	1.10	٧	7.15	55.00	52.13	54.00	-1.87	Ave
11.500	158.00	1.30	h	7.15	55.00	51.26	54.00	-2.74	Ave

@ 5795MHz @ 3 Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
11.590	129.00	1.77	V	7.15	55.00	61.22	74.00	-12.78	Peak
11.590	123.00	1.20	h	7.15	55.00	60.11	74.00	-13.89	Peak
11.590	114.00	2.20	V	7.15	55.00	50.14	54.00	-3.86	Ave
11.590	138.00	1.30	h	7.15	55.00	50.11	54.00	-3.89	Ave

@ 5840MHz @ 3 Meter

Frequency	Direction	Height	Polar	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	Degree	Meter	H/V	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
11.680	109.00	1.47	V	7.15	55.00	60.25	74.00	-13.75	Peak
11.680	155.00	1.20	h	7.15	55.00	60.22	74.00	-13.78	Peak
11.680	142.00	1.30	٧	7.15	55.00	51.11	54.00	-2.89	Ave
11.680	148.00	1.40	h	7.15	55.00	51.41	54.00	-2.59	Ave

Emission was scanned up to 40GHz.





Band Edge

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
Low Channel	V	Peak	5725	38.56	74	-35.44
Low Channel	Н	Peak	5725	44.12	74	-29.88
Low Channel	V	Avg	5725	25.12	54	-28.88
Low Channel	Н	Avg	5725	25.71	54	-28.29

Channel	Polarity	Detector	Frequency	Result	Limit	Margin
High Channel	V	Peak	5850	41.23	74	-32.77
High Channel	Н	Peak	5850	46.67	74	-27.33
High Channel	V	Avg	5850	28.15	54	-25.85
High Channel	Н	Avg	5850	32.35	54	-21.65



SIEMIC, INC. Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Manufacturer	Model	CAL Due Date
Spectrum Analyzer	HP	8564 E	2011.04.26
EMI Receiver	Rohde & Schwarz	ESPI 3	2011.02.19
Antenna (30MHz~2GHz)	Sunol Sciences	JB1	2011.10.04
Horn Antenna (1~18GHz)	A-INFOMW	JXTXLB-10180	2011.11.18
Horn Antenna (1~18GHz)	N/A	N/A	2011.10.04
Pre-Amplifier(0.01 ~ 1.3GHz)	HP	8447F	2011.04.24
Pre-Amplifier(0.1 ~ 18GHz)	MITEQ	AMF-7D-00101800-30- 10P	2011.03.05
Horn Antenna (18~40GHz)	Com Power	AH-840	2011.05.21
Microwave Pre-Amp (18~40GHz)	Com Power	PA-840	2011.05.21

RF Test Report for Electronic Tag(OBU)

Title:

Τo

Model: DP268-A-OBU FCC 15.249:2009 Serial# Page

10021167 Issue Date: Nov 30 2010 18 of 39 www.siemic.com.cn

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

Test Set-up

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

Test Method

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

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	



SIEMIC, INC. Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 19 of 39 www.siemic.com.cn

Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

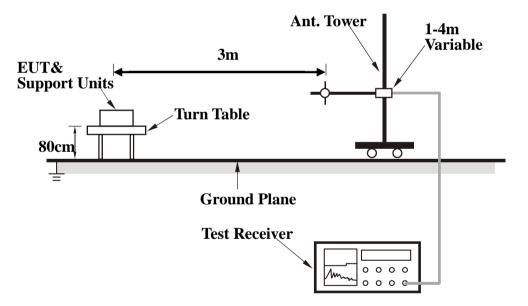
EUT Characterisation

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

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

Test Set-up

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





SIEMIC, INC. Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 20 of 39 www.siemic.com.cn

Test Method

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

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.

2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.

3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

Final Radiated Emission Measurement

1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.

2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.

3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.

4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from $0 \circ to 360 \circ$ with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.

5. Repeat step 4 until all frequencies need to be measured were complete.

6. Repeat step 5 with search antenna in vertical polarized orientations.

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

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



Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

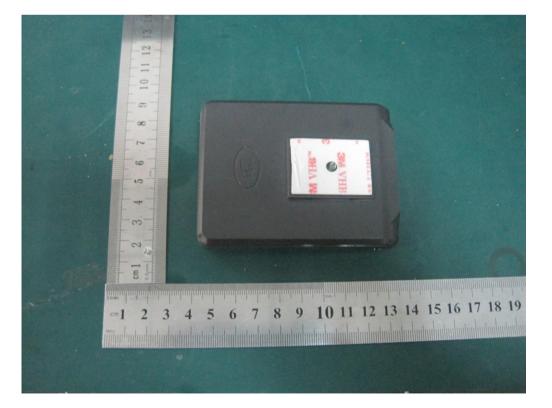
Serial#: Issue Date: Nov 30 2010 Page 21 of 39

10021167 www.siemic.com.cn

Annex B. **EUT AND TEST SETUP PHOTOGRAPHS**

Annex B.i. **Photograph : EUT Photo**



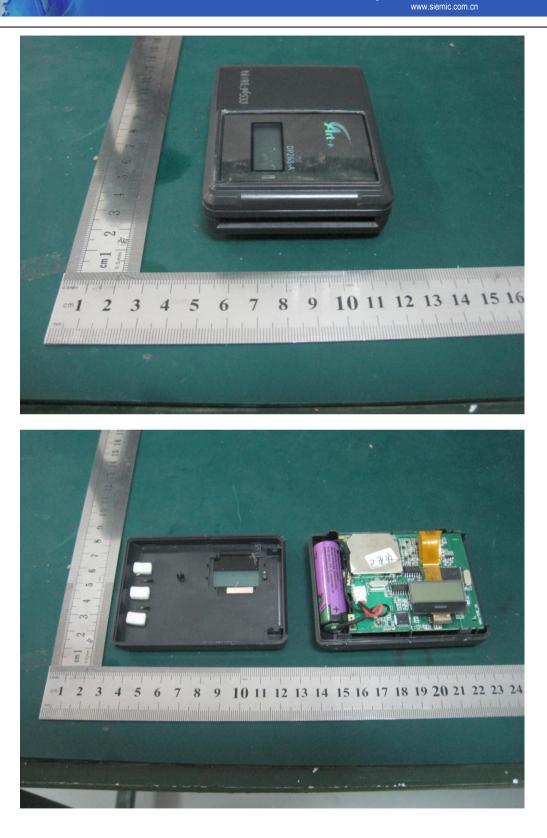


SIEMIC, INC. Accessing global martets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249-2009

 Serial#:
 10021167

 Issue Date:
 Nov 30 2010

 Page
 22 of 39

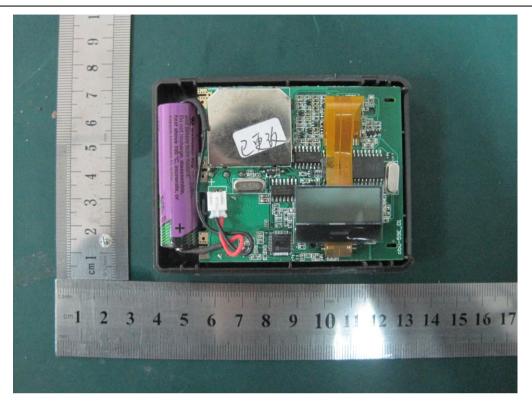


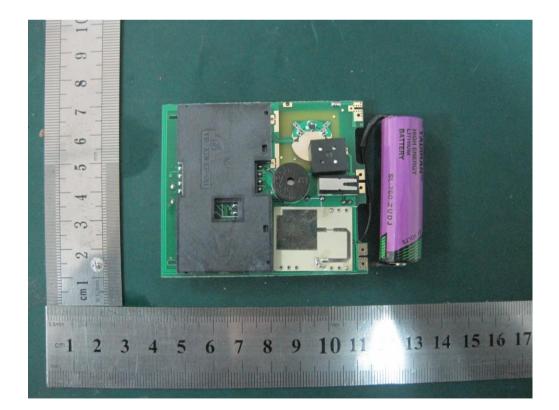
SIEMIC, INC. Accessing global markets

Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

Serial# 10021167 Page

Issue Date: Nov 30 2010 Page 23 of 39 www.siemic.com.cn





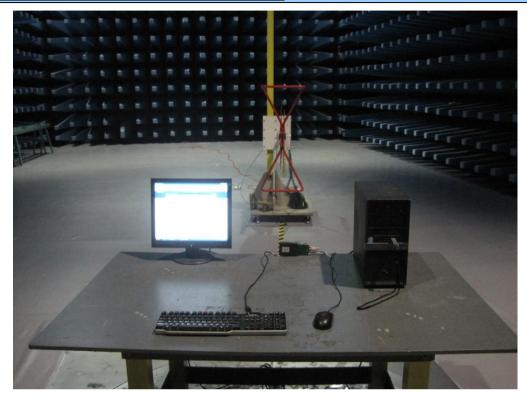
SIEMIC, INC. Accessing global maritets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249-2009

 Serial#:
 10021167

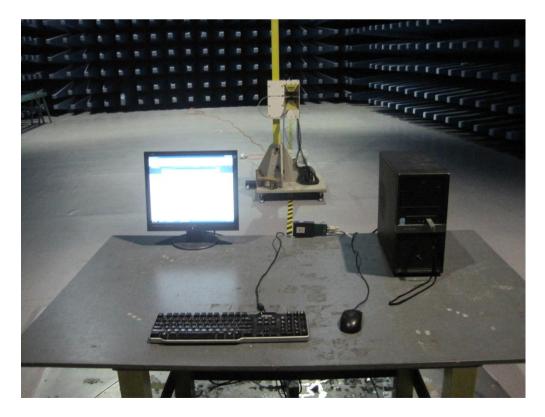
 Issue Date:
 Nov 30 2010

 Page
 24 of 39
 www.siemic.com.cn

Annex B.ii Photograph 4: Test Setup Photo



Radiated Spurious Emissions Test Setup (30MHz-1GHz)



Radiated Spurious Emissions Test Setup (Above 1GHz)



Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009 Serial#: 10021167 Issue Date: Nov 30 2010 Page 25 of 39 www.siemic.com.cn

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

EUT TEST CONDITIONS

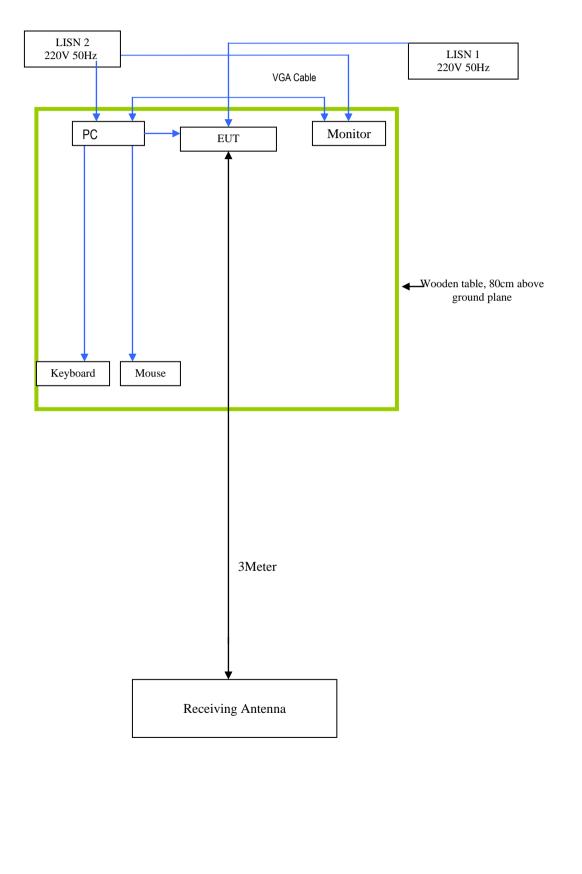
Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

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)
Dell Monitor	SE198WFPf	VGA Cable 3m
Logitech Keyboard	Y-SU61	PS/2 Cable 2m
Logitech Mouse	N/A	PS/2 Cable 1m
Dell PC	DELL	Cable 1m



Block Configuration Diagram for Radiated Emission





Serial#: 10021167 Issue Date: Nov 30 2010 Page 27 of 39

Annex C.ii. EUT OPERATING CONDITIONS

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

Test	Description Of Operation
Emissions	EUT was set to transmit at highest RF power.

 Serial#:
 10021167

 Issue Date:
 Nov 30 2010

 Page
 28 of 39

 www.siemic.com.cn

Annex D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PART LIST

Please see attachment

Title:

То

RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 29 of 39 Page www.siemic.com.cn

SIEMIC ACCREDITATION CERTIFICATES Annex E.

SIEMIC ACREDITATION DETAILS: A2LA Certificate Number: 2742.01





Titl Moo To:

Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249.2009

Serial#: 10021167 Issue Date: Nov 30 2010 Page 30 of 39

SIEMIC ACCREDITATION DETAILS: FCC Registration NO:986914

LABORATORY RECOGNITION



Presented To:

SIEMIC (NANJING) INFOTECH CO. LTD.

Nanjing Laboratories

2-1 Longcang Avenue, Yuhua Economic Development Zone Nanjing, Jiangsu Province, People's Republic of China

This is to certify that SIEMIC Nanjing Laboratories has been assessed per ISO 17025 and listed as SIEMIC Recognized Laboratory for acceptance of Test Reports for TCB Certifications for the following scopes:

> FCC Unlicensed Scope A1, A2, A3, A4 FCC Licensed Scope B1, B2, B3

14 Leslie Bai

Director of Certification

This certificate of recognition is valid through December 31, 2010

2206 Ringwood Avenue, San Jose, California 95131 U.S.A. Asi, Note 11008-2251188-146, Note 11, 506-518, 12647, wavenum to both Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

SIEMIC ACCREDITATION DETAILS: FCC Listing, Registration NO:986914

FEDERAL COMMUNICATIONS COMMISSION Laboratory Division 7435 Oakland Mills Road Columbia, MD 21046

April 25, 2008

Registration Number: 986914

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

Attention: Leslie Bai

Re:

Measurement facility located at 2-1 Longcang Avenue, Nanjing, China Anechoic chamber (3 meters) and 3&10 meter OATS Date of Listing: April 25, 2008

Dear Sir or Madam:

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

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

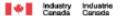
Sincerely,

Katie Hawkins Electronics Engineer

Accessing global markets Title: RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 32 of 39 Page www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: Industry of Canada Registration No. 4842



February 19, 2009

Τo

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.

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

Yours sincerely.

Joshua Laviolette For: Wireless Laboratory Manager Certification and Engineering Bureau 3701 Carling Ave., Building 9 P.O. Box 11490, Station "H" Ottawa, Ontario K2H 8S2 Email: joshua.laviolette@ic.gc.cs Tel. No. (613) 990-2681 Fax. No. (613) 990-4752

Title

Τo

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 33 of 39 Page www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: Korea CAB from NIST: 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: Physical Location: Identification No.: Recognized Scope: SIEMIC, Inc. 2206 Ringwood Avenue, San Jose, CA 95131 **US0160** 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,

Paris To alda

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

Enclosure

cc: Ramona Saar



Title

Τo

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 34 of 39 Pade www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: Taiwan BSMI CAB 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:

CNS 13438 Scope of Designation:

Mr. Leslie Bai Authorized signatory:

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,

2 ach land

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

US0160

Jogindar Dhillon cc:



Title:

То

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 Page 35 of 39 www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160



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

March 16, 2009

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

Dear Mr. Bai:

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

CAB Name: Physical Location: Identification No.: Current Scope: Additional Scope:

SIEMIC, Inc. 2206 Ringwood Avenue, San Jose, CA 95131 US0160 LP0002, PSTN01, ADSL01, ID0002, IS6100 and CNS 14336 PLMN07

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

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

Sincerely,

12 alla Da

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

Enclosure

cc: Ramona Saar



Title:

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU To: FCC 15.249:2009

erial#:	10021167
sue Date:	Nov 30 2010
age	36 of 39
	MANAN Sigmic

om.cn

SIEMIC ACCREDITATION DETAILS: Mexico NOM Recognition



Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 37 of 39 Pade www.siemic.com.cn

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



Title:

Τo

Your Ref 來函檔號: Our Ref 本局檔號:

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 be downloaded from OFTA's can 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,

Ulmi

(KK 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

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

20 July 2005

Title:

То

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 38 of 39 Page www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: OFTA CAB from NIST: 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 I. alden

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

Enclosure

cc: Ramona Saar



Title:

То

Accessing global markets RF Test Report for Electronic Tag(OBU) Model: DP268-A-OBU FCC 15.249:2009

Serial# 10021167 Issue Date: Nov 30 2010 39 of 39 Page www.siemic.com.cn

SIEMIC ACCREDITATION DETAILS: Australia NATA Recognition



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 \$043.2

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 Internet: <u>www.nata.asn.au</u>