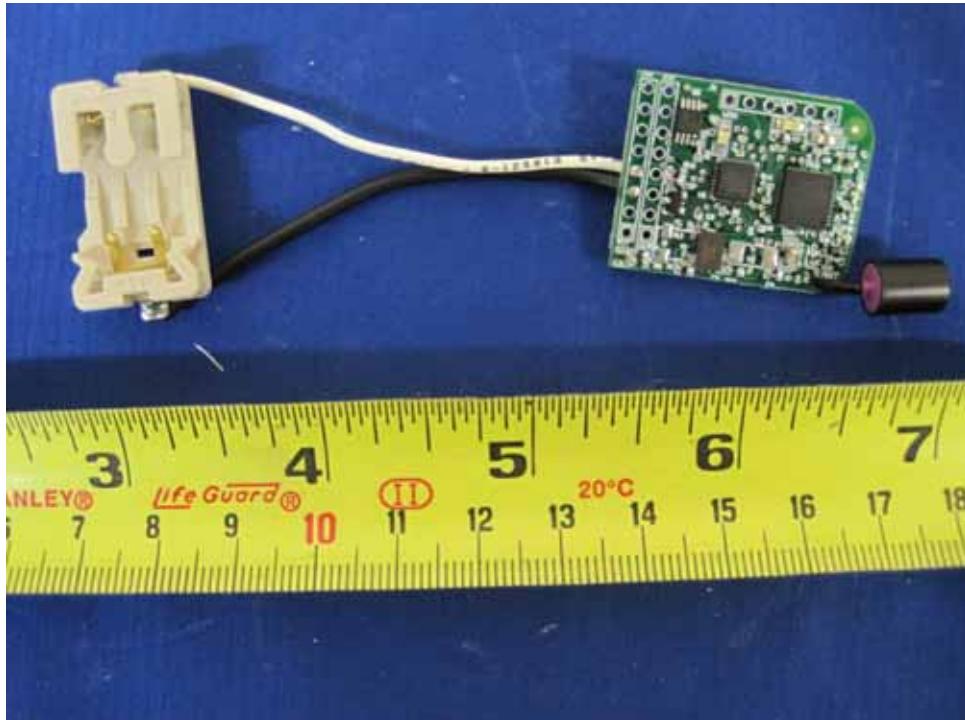


# TAGSENSE, INC

RFID Module  
Model: ZT-ZR

28 October 2009

Report No.: SL09090101-TAG-001 (15.247)( ZT-ZR)  
(This report supersedes NONE)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

Choon Sian Ooi	Test Engineer	Leslie Bai	Engineering Reviewer

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

**EMC Test Report**  
To: FCC Part 15.247

**SIEMIC, INC.**  
Accessing global markets

## Laboratory Introduction

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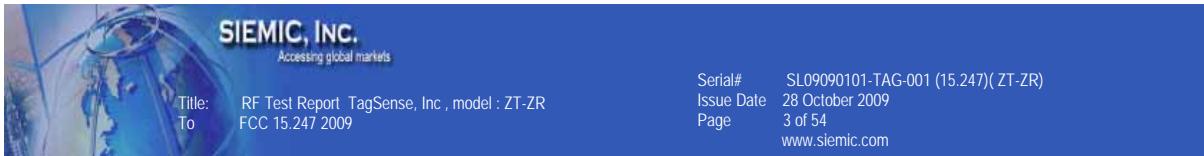
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### Accreditations for Conformity Assessment

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

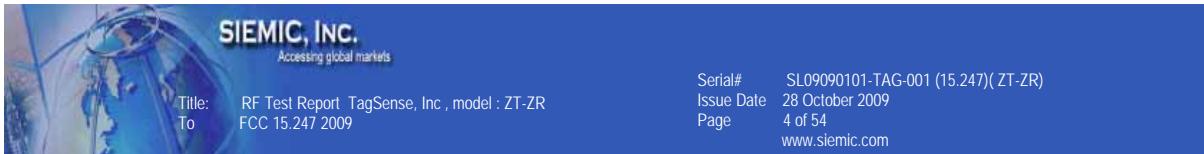
### Accreditations for Product Certifications

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



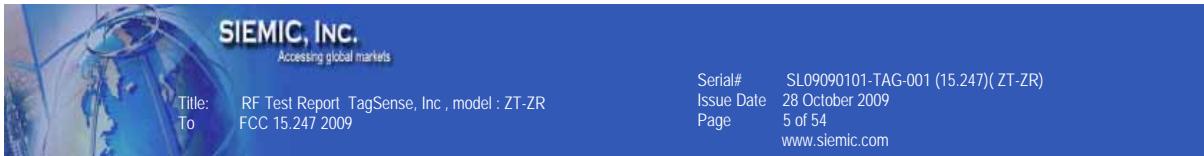
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## CONTENTS

1	EXECUTIVE SUMMARY & EUT INFORMATION .....	6
2	TECHNICAL DETAILS.....	7
3	MODIFICATION.....	8
4	TEST SUMMARY.....	9
5	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS .....	10
	ANNEX A. TEST INSTRUMENT & METHOD .....	29
	ANNEX B EUT AND TEST SETUP PHOTOGRAPHS .....	33
	ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT .....	33
	ANNEX D USER MANUAL, BLOCK & CIRCUIT DIAGRAM .....	37



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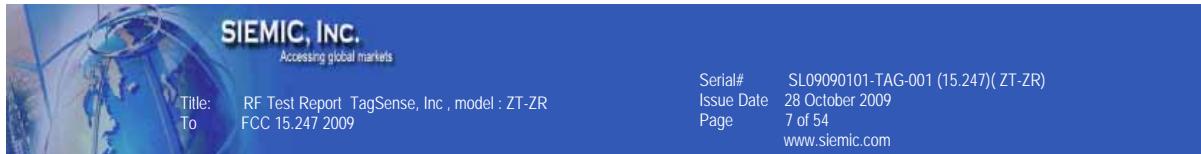
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## 1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the TagSense, Inc , RFID Module , and Model: ZT-ZR against the current Stipulated Standards. The RFID Module have demonstrated compliance with the FCC 15.247 2009.

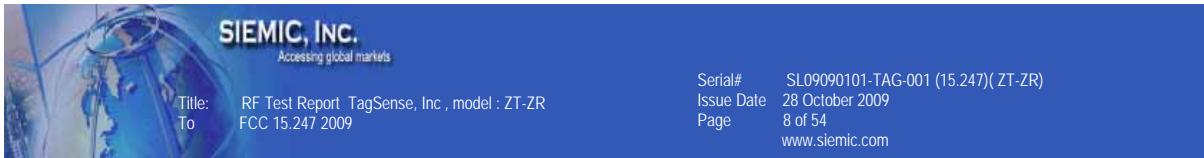
### EUT Information

<b>EUT Description</b>	:	The ZT-ZR module is a general-purpose radio module that can be used as a stand-alone RFID tag or it can be connected to an external circuit board for additional sensor functionality and control. In some configurations, an external antenna is provided as an option
<b>Model No</b>	:	ZT-ZR
<b>Serial No</b>	:	01
<b>Input Power</b>	:	2.2 - 3 Vdc
<b>Classification Per Stipulated Test Standard</b>	:	Spread Spectrum System / Device



## 2 TECHNICAL DETAILS

Purpose	Compliance testing of RFID Radio Module with stipulated standard
Applicant / Client	TagSense, Inc
Manufacturer	TagSense, Inc 1035 Cambridge St., Suite 8 Cambridge, MA 02141
Laboratory performing the tests	SIEMIC Laboratories
Test report reference number	SL09090101-TAG-001 (15.247)( ZT-ZR)
Date EUT received	11 October 2009
Standard applied	47 CFR §15.247 (2007)
Dates of test (from – to)	14 October 2009 - 24 October 2009
No of Units:	1
Equipment Category:	DTS
Trade Name:	TagSense, Inc
Model :	ZT-ZR
RF Operating Frequency (ies)	2406 to 2478 MHz
FCC ID :	XQ7TAGSENSE-ZT-ZR



### 3 MODIFICATION

**NONE**

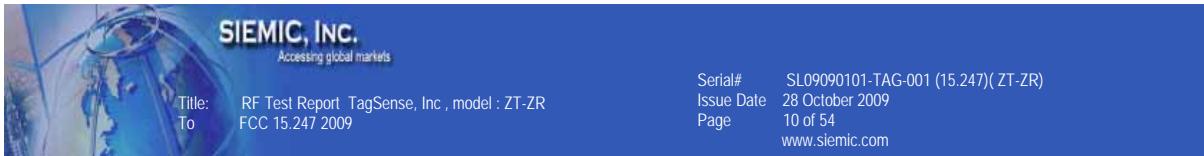
## 4 TEST SUMMARY

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

Spread Spectrum System / Device

### Test Results Summary

Test Standard	Description	Pass / Fail
CFR 47 Part 15.247: 2009		
15.203	Antenna Requirement	Pass
15.205	Restricted Band of Operation	Pass
15.207(a)	Conducted Emissions Voltage	Pass
15.247(a)(1)	Channel Separation	N/A
15.247(a)(1)	Occupied Bandwidth	Pass
15.247(a)(2)	Bandwidth	Pass
15.247(a)(1)	Number of Hopping Channels	N/A
15.247(a)(1)	Time of Occupancy	N/A
15.247(b)	Output Power	Pass
15.247(c)	Antenna Gain > 6 dBi	N/A
15.247(d)	Conducted Spurious Emissions	Pass
15.209; 15.247(d)	Radiated Spurious Emissions	Pass
15.247(e)	Power Spectral Density	Pass
15.247(f)	Hybrid System Requirement	N/A
15.247(g)	Hopping Capability	N/A
15.247(h)	Hopping Coordination Requirement	N/A
15.247(i)	RF Exposure requirement	Pass
ANSI C63.4: 2003/		
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.

#### **Internal Antenna**

The antenna is permanently attached to the device type. Antenna maximum gain is 1.7dBi.

#### **Antenna model: HG2405RD-RTP**

The antenna is unique type of connector to attach to the device. Antenna maximum gain is 5.5dBi.

#### **Antenna model: ANT-2.4-JJB-xx**

The antenna is permanently attached to the device type.

## 5.2 Conducted Emissions Voltage

Requirement :

<b>Frequency of emission (MHz)</b>	<b>Conducted limit (dB<math>\mu</math>V)</b>	
	<b>Quasi-peak</b>	<b>Average</b>
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. Conducted Emissions Measurement Uncertainty  
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz – 30MHz (Average & Quasi-peak) is  $\pm 3.5$ dB.
4. Environmental Conditions
 

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

Test Date : 14 October 2009 - 24 October 2009

Tested By :Choon Sian Ooi

**Results: N/A**

## 5.3 6dB & 99% Occupied Bandwidth

### 1. Conducted Measurement

EUT was set for low , mid, high channel with modulated mode and highest RF output power. The spectrum analyzer was connected to the antenna terminal.

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

### 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 30MHz – 40GHz is  $\pm 1.5\text{dB}$ .

4 Test Date : 14 October 2009 - 24 October 2009

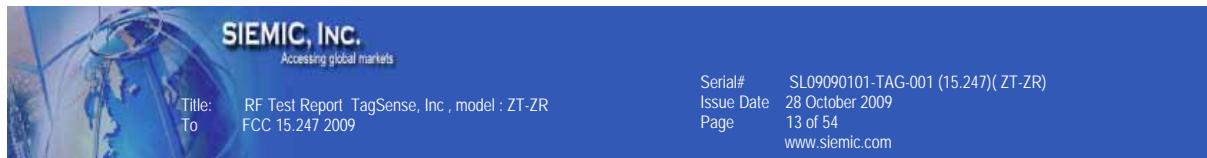
Tested By :Choon Sian Ooi

**Requirement(s):** 47 CFR §15.247(a)(1)

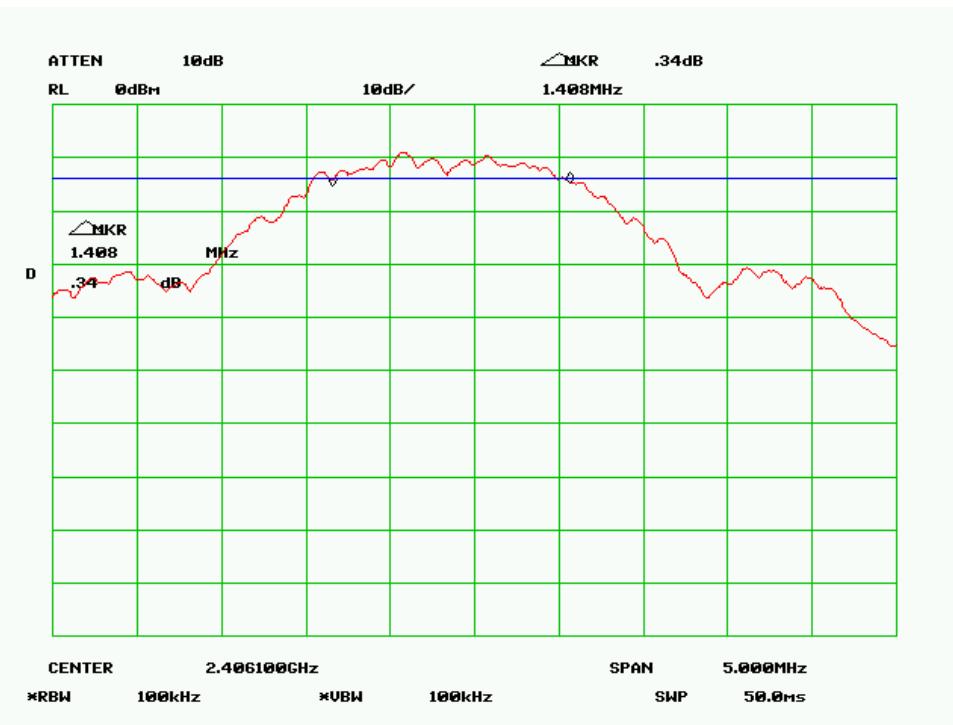
**Procedures:** The 6dB bandwidths were measured conducted using a spectrum analyzer at low, mid, and hi channels. 6 dB Bandwidth Limit: > 500 kHz.

Channel	Channel Frequency (MHz)	6 dB Channel Bandwidth (MHz)	6 dB Occupied Bandwidth Limit (MHz)
Low	2406	1.408	0.5
Mid	2440	1.625	0.5
High	2478	1.525	0.5

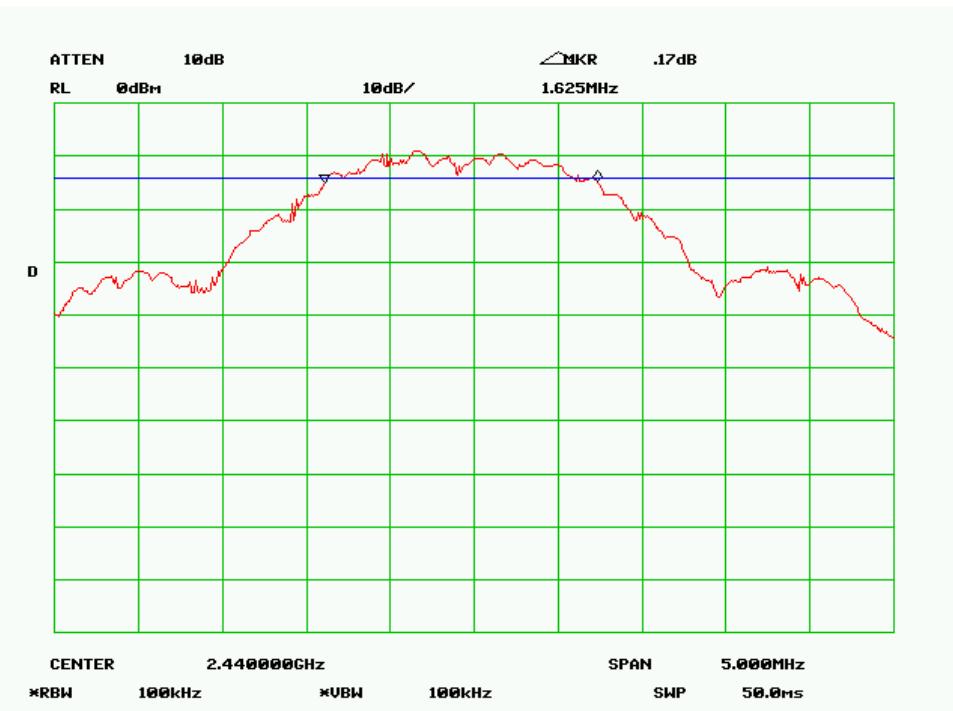
Refer to the attached plots.

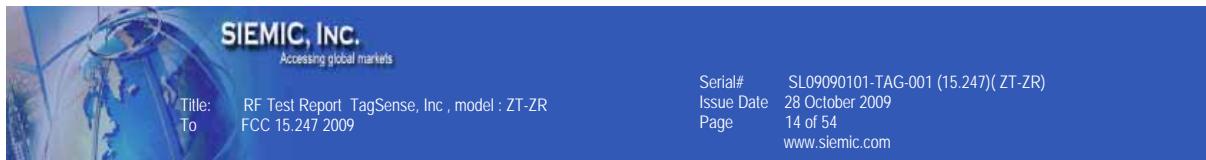


### 6 dB Bandwidth - Low Channel

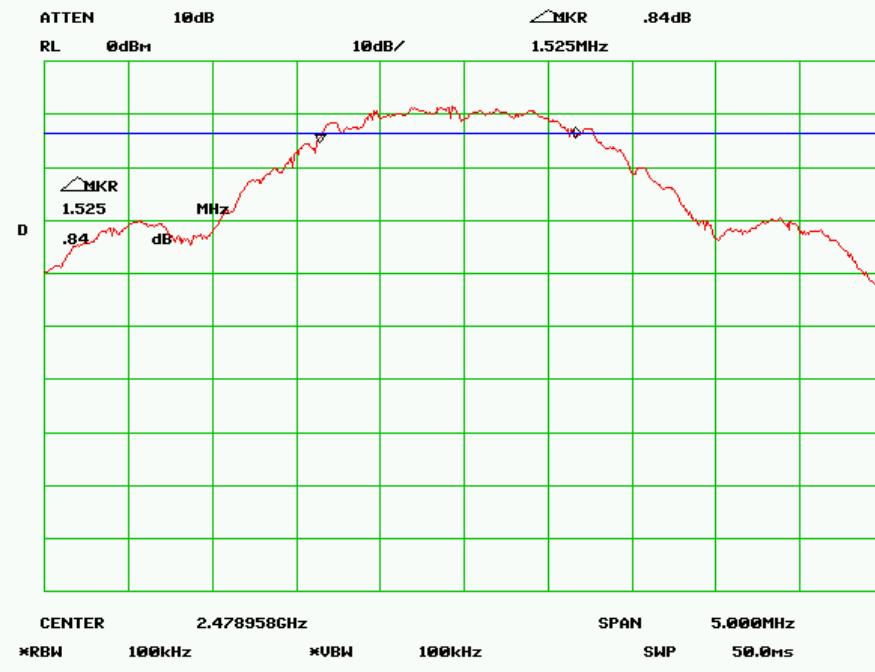


### 6 dB Bandwidth - Mid Channel





### 6 dB Bandwidth – High Channel



## **5.4 Peak Spectral Density**

1. Conducted Measurement  
EUT was set for low , mid, high channel with modulated mode and highest RF output power. The spectrum analyzer was connected to the antenna terminal.
2. 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 30MHz – 40GHz is  $\pm 1.5$ dB.
3. Environmental Conditions
 

Temperature	$23^{\circ}\text{C}$
Relative Humidity	50%
Atmospheric Pressure	1019mbar
4. Test Date : 14 October 2009 - 24 October 2009  
Tested By :Choon Sian Ooi

**Standard Requirement :** 47 CFR §15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

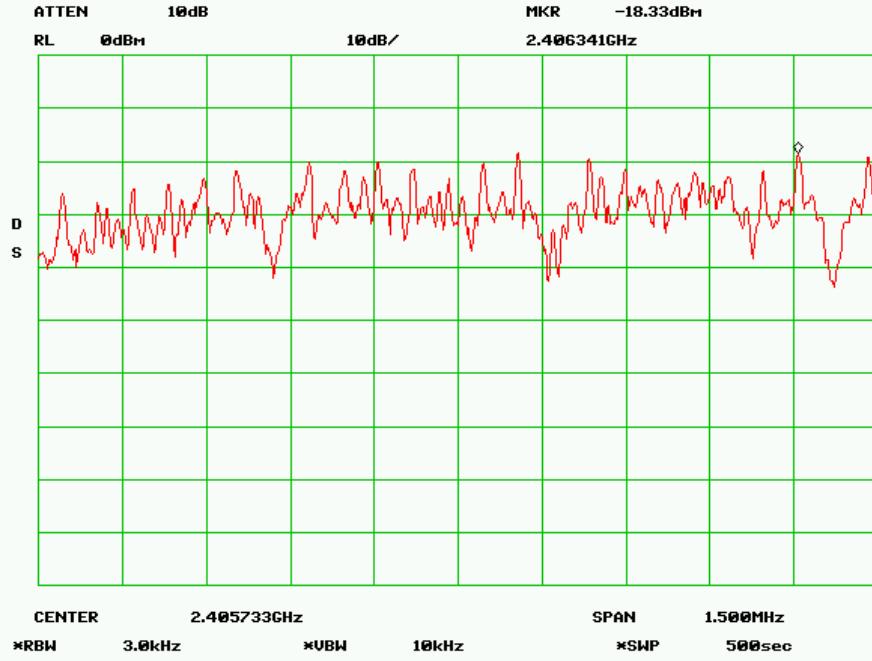
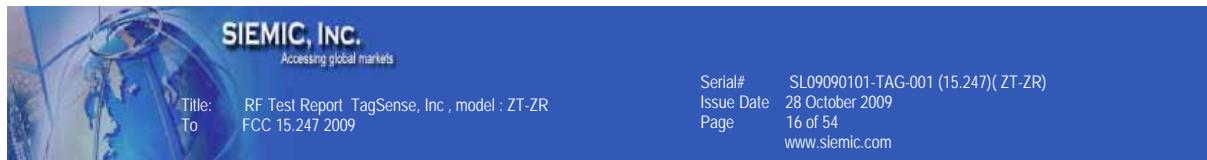
**Procedures:** The Peak Spectral density measurement was taken conducted using a spectrum analyzer.

RBW=3KHz, VBW > RBW , Sweep time to SPAN/RBW (sec)

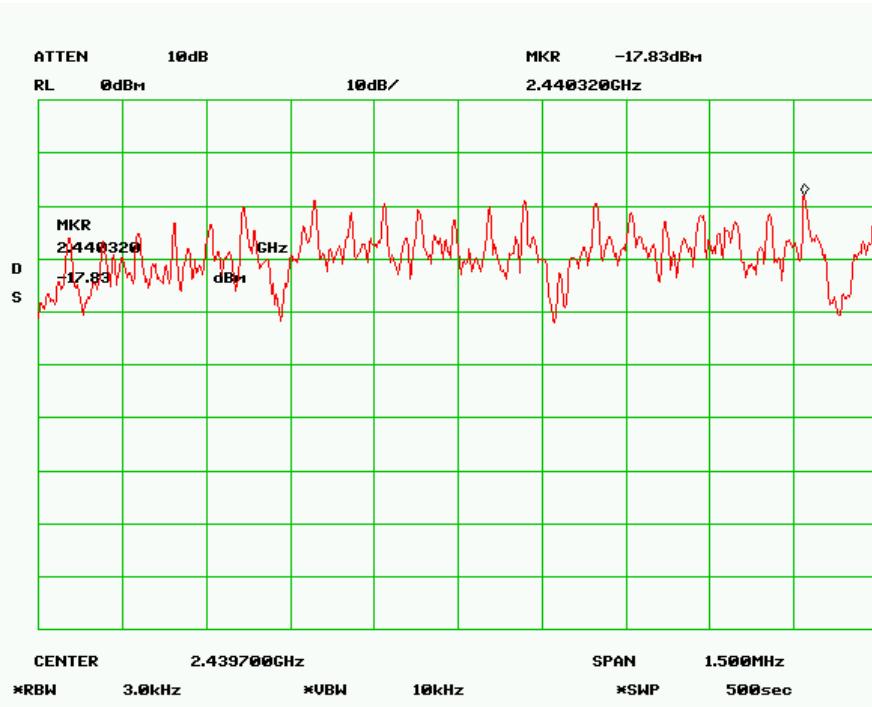
**Test Result :**

Channel	Channel Frequency (MHz)	Peak Spectral Density Limit (dBm/3KHz)	Peak Spectral Density (dBm/3KHz)
Low	2406	8	-18.33
Mid	2440	8	-17.83
High	2478	8	-16.83

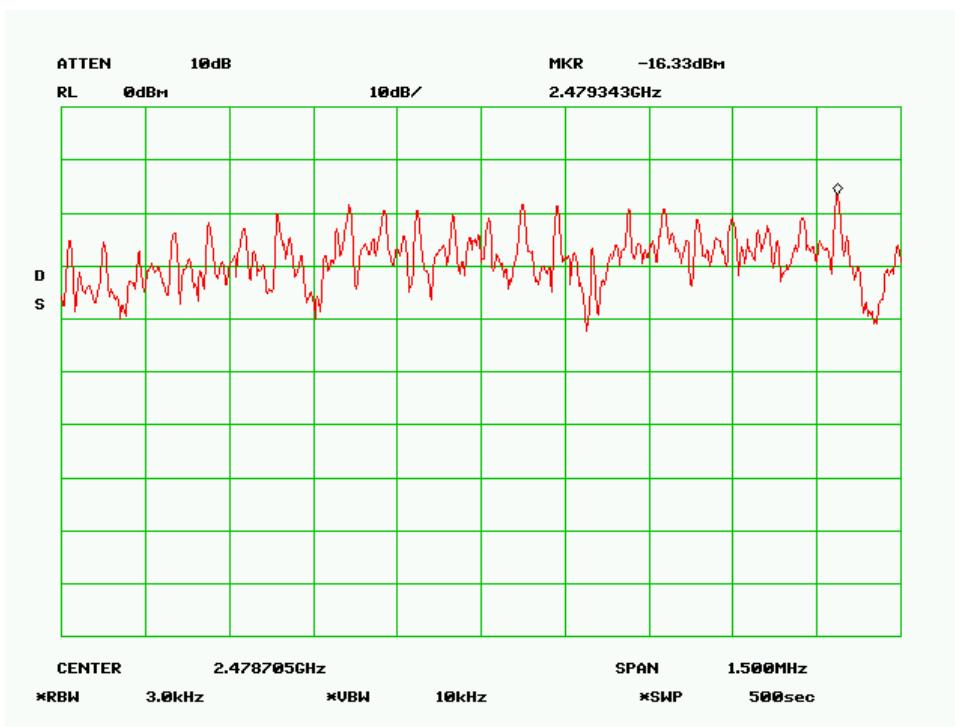
Refer to the attached plots.



PSD Low Channel



PSD Mid Channel



PSD High Channel

## 5.10 Peak Output Power

1. Conducted Measurement  
EUT was set for low , mid, high channel with modulated mode and highest RF output power.  
The spectrum analyzer was connected to the antenna terminal.
2. 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 30MHz – 40GHz is  $\pm 1.5$ dB.
3. Environmental Conditions
 

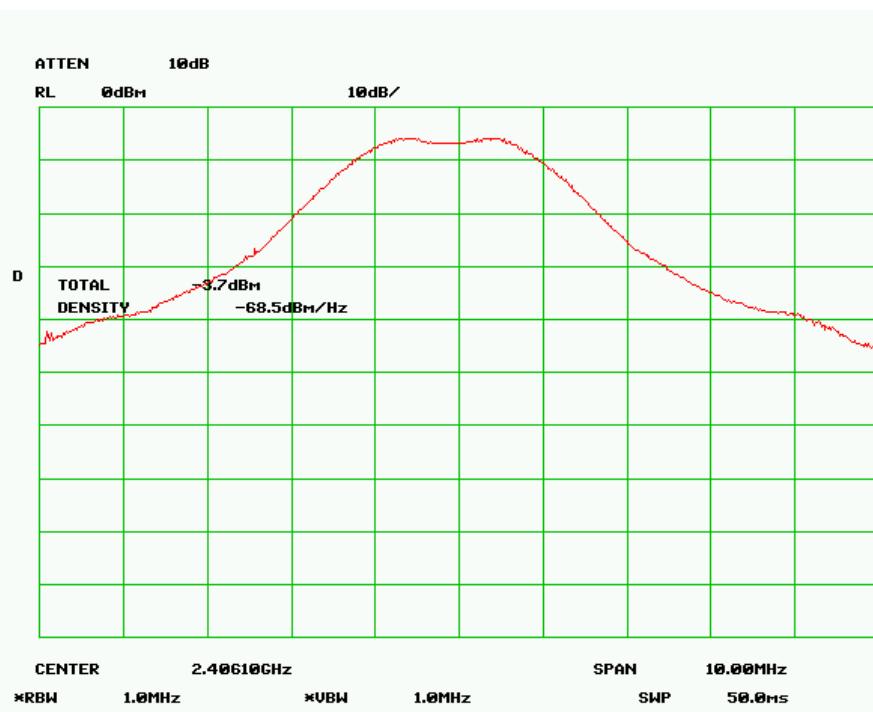
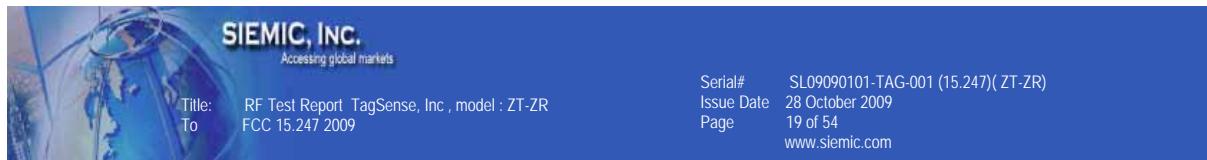
Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
4. Test Date : 14 October 2009 - 24 October 2009  
Tested By :Choon Sian Ooi

Standard Requirement : 47 CFR §15.247(b)

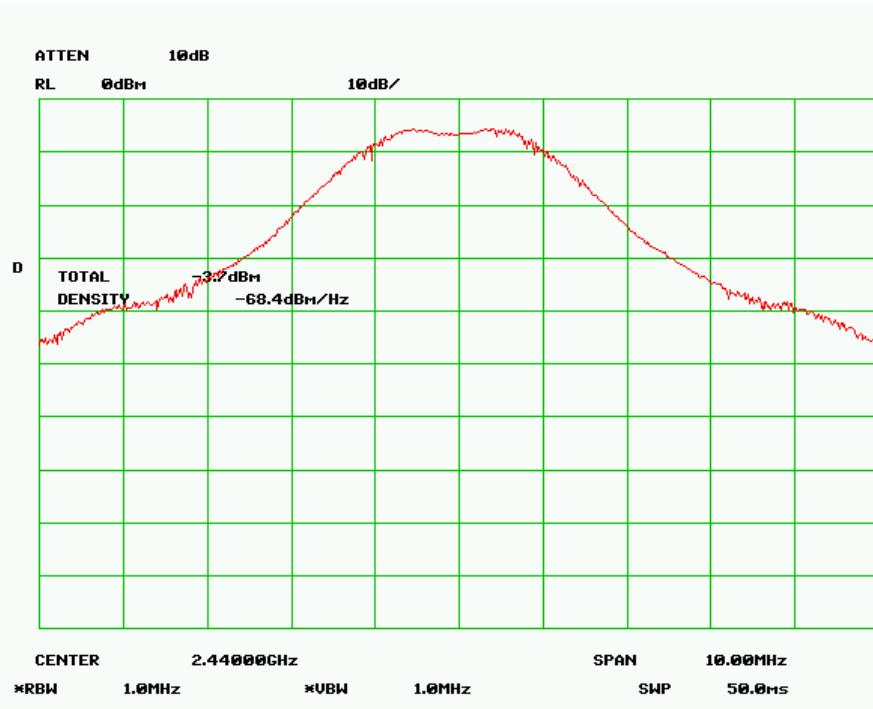
**Procedures:** The peak output power was measured conducted using a spectrum analyzer at low, mid, and hi channels. Peak detector was set to measure the power output. The power is converted from watt to dBm, therefore, 1 watt = 30 dBm.

**Test Result :**

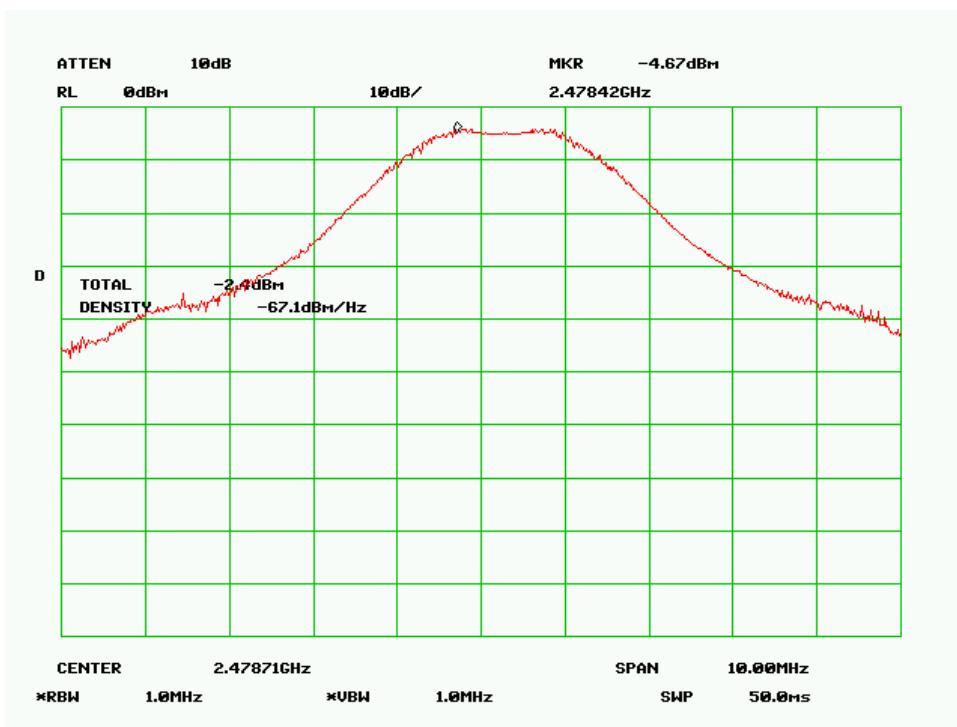
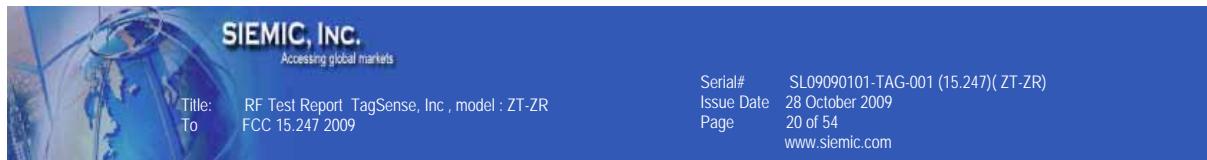
Channel	Channel Frequency (MHz)	Peak Output Power Limit (dBm)	Measured Output Power(dBm)
Low	2406	30	-3.70
Mid	2440	30	-3.70
High	2478	30	-2.40



Output Power Low Channel



Output Power Mid Channel



Output Power High Channel

## 5.10 Antenna Port Emission

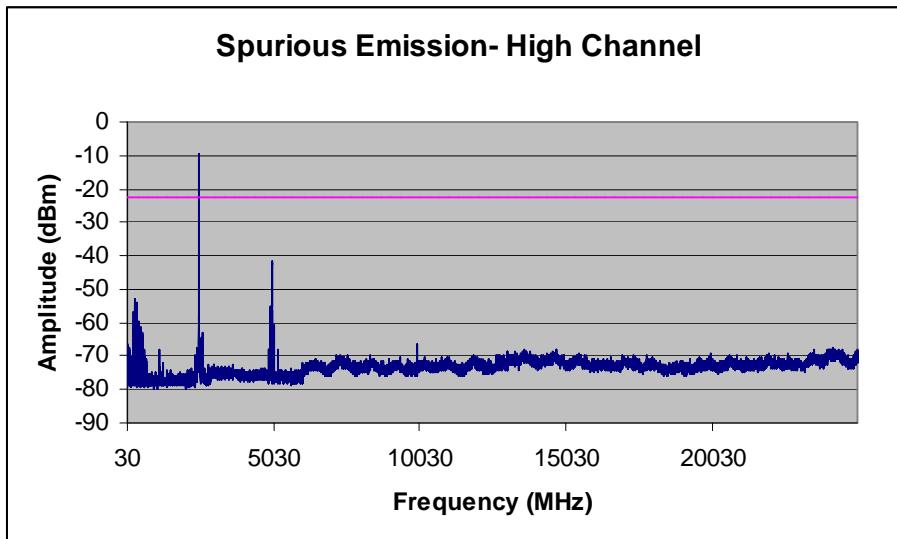
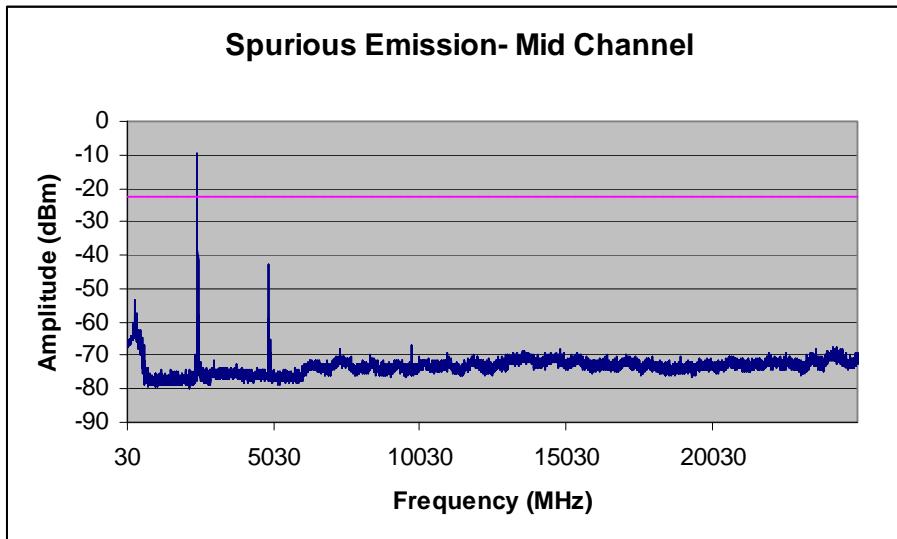
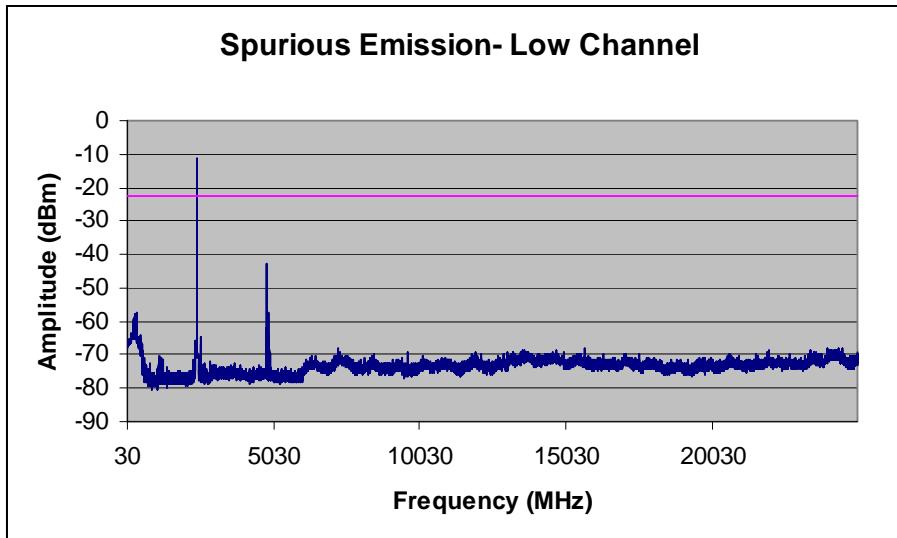
1. Conducted Measurement  
EUT was set for low, mid, high channel with modulated mode and highest RF output power.  
The spectrum analyzer was connected to the antenna terminal.
  2. Conducted Emissions Measurement Uncertainty  
All test measurements carried out are traceable to national standards. The 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 30MHz – 40GHz is  $\pm 1.5\text{dB}$ .
  3. 

Environmental Conditions	Temperature	23°C
	Relative Humidity	50%
	Atmospheric Pressure	1019mbar
  4. Test Date : 14 October 2009 - 24 October 2009  
Tested By :Choon Sian Ooi

**Standard Requirement :** 47 CFR §15.247(d)

**Procedures:** The conducted spurious emissions were measured using a spectrum analyzer at low, mid, and hi channels. The limit was determined by attenuating 20 dB of the RF peak power output

## Test Result:



## 5.10 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 (QP only @ 3m & 10m) is +5.6dB/-4.5dB (for EUTs < 0.5m X 0.5m X 0.5m).
4. Environmental Conditions      Temperature      23°C  
    Relative Humidity      50%  
    Atmospheric Pressure      1019mbar

Test Date : 14 October 2009 - 24 October 2009

Tested By :Choon Sian Ooi

**Standard Requirement :** 47 CFR §15.247(d)

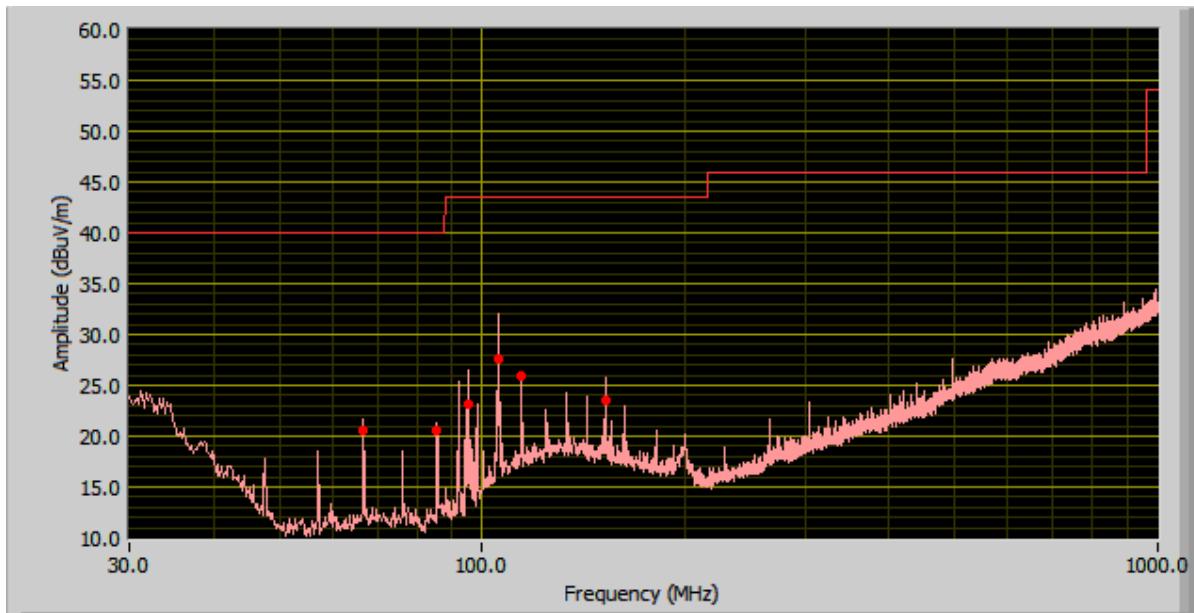
**Procedures:** Radiated emissions were measured according to ANSI C63.4. The EUT was set to transmit at the highest output power. The EUT was set to transmit at mid channel. Note that setting the channel other than mid, the spurious emissions are the same.

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

Sample Calculation: Corrected Amplitude = Raw Amplitude(dB $\mu$ V/m) + ACF(dB) + Cable Loss(dB)

**Test Result:**

### Radiated Emission Plot (Transmit Mode)



### Test Data

Frequency (MHz)	Quasi-Peak (dB $\mu$ V/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Limit (dB $\mu$ V/m)	Margin (dB)
105.70	27.56	246.00	V	100.00	43.50	-15.94
114.43	25.89	145.00	V	249.00	43.50	-17.61
95.34	23.22	178.00	V	243.00	43.50	-20.28
152.55	23.61	285.00	V	201.00	43.50	-19.89
66.74	20.49	343.00	V	115.00	40.00	-19.51
85.81	20.49	121.00	V	296.00	40.00	-19.51

## **5.10 Radiated Spurious Emissions > 1GHz & Band Edge**

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Radiated Emissions Measurement Uncertainty  
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 1GHz – 40GH is +5.6dB/-4.5dB (for EUTs < 0.5m X 0.5m X 0.5m).
4. Environmental Conditions      Temperature      23°C  
    Relative Humidity      50%  
    Atmospheric Pressure      1019mbar

Test Date : 14 October 2009 - 24 October 2009

Tested By :Choon Sian Ooi

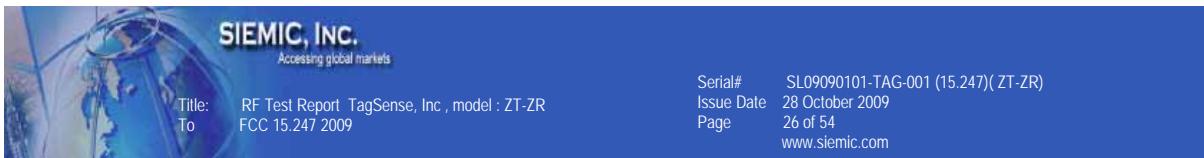
Standard Requirement: 47 CFR §15.247(d)

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

Sample Calculation:

EUT Field Strength = Raw Amplitude(dB $\mu$ V/m) – Amplifier Gain(dB) + Antenna Factor(dB) + Cable Loss(dB) + Filter Attenuation(dB, if used)

**Test Result:**



## With Internal Antenna

### @ Low Channel @ 3Meter

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
2.400	49.56	160.00	1.00	v	27.50	2.50	32.04	47.52	74.00	-26.48	Peak
2.400	48.87	178.00	1.30	h	27.50	2.50	32.04	46.83	74.00	-27.17	Peak
2.400	29.23	160.00	1.00	v	27.50	2.50	32.04	27.19	54.00	-26.81	Ave
2.400	28.14	178.00	1.30	h	27.50	2.50	32.04	26.10	54.00	-27.90	Ave
4.812	58.24	140.00	1.00	v	32.20	4.13	32.49	62.08	74.00	-11.93	Peak
4.812	54.46	143.00	1.00	h	32.20	4.13	32.49	58.30	74.00	-15.71	Peak
4.812	39.76	140.00	1.00	v	32.20	4.13	32.49	43.60	54.00	-10.41	Ave
4.812	38.67	143.00	1.30	h	32.20	4.13	32.49	42.51	54.00	-11.50	Ave

Emission was scanned up to 25GHz.

### @ Mid Channel @ 3 Meter

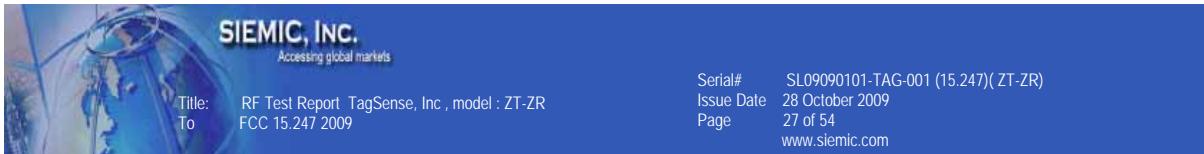
Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.881	57.56	200.00	1.00	v	32.20	4.13	32.49	61.40	74.00	-12.61	Peak
4.881	56.96	187.00	1.20	h	32.20	4.13	32.49	60.80	74.00	-13.21	Peak
4.881	37.67	200.00	1.00	v	32.20	4.13	32.49	41.51	54.00	-12.50	Ave
4.881	36.78	187.00	1.20	h	32.20	4.13	32.49	40.62	54.00	-13.39	Ave

Emission was scanned up to 25GHz.

### @ High Channel @ 3Meter

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.958	57.87	24.00	1.00	v	32.20	4.13	32.49	61.71	74.00	-12.30	Peak
4.958	56.26	102.00	1.00	h	32.20	4.13	32.49	60.10	74.00	-13.91	Peak
4.958	37.57	24.00	1.00	v	32.20	4.13	32.49	41.41	54.00	-12.60	Ave
4.958	36.72	180.00	1.30	h	32.20	4.13	32.49	40.56	54.00	-13.45	Ave
2.480	54.56	115.00	1.10	v	27.50	2.50	32.04	52.52	74.00	-21.48	Peak
2.480	49.56	235.00	1.70	h	27.50	2.50	32.04	47.52	74.00	-26.48	Peak
2.480	32.56	115.00	1.10	v	27.50	2.50	32.04	30.52	54.00	-23.48	Ave
2.480	30.45	235.00	1.70	h	27.50	2.50	32.04	28.41	54.00	-25.59	Ave

Emission was scanned up to 25GHz.



### With antenna model: HG2405RD-RTP

#### @ Low Channel @ 3Meter

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
2.40	55.64	160.00	1.00	v	27.50	2.50	32.04	53.60	74.00	-20.40	Peak
2.40	52.57	178.00	1.30	h	27.50	2.50	32.04	50.53	74.00	-23.47	Peak
2.40	31.67	160.00	1.00	v	27.50	2.50	32.04	29.63	54.00	-24.37	Ave
2.40	29.94	178.00	1.30	h	27.50	2.50	32.04	27.90	54.00	-26.10	Ave
4.81	63.16	140.00	1.00	v	32.20	4.13	32.49	67.00	74.00	-7.01	Peak
4.81	56.15	143.00	1.00	h	32.20	4.13	32.49	59.99	74.00	-14.02	Peak
4.81	44.57	140.00	1.00	v	32.20	4.13	32.49	48.41	54.00	-5.59	Ave
4.81	41.76	143.00	1.30	h	32.20	4.13	32.49	45.60	54.00	-8.40	Ave

Emission was scanned up to 25GHz.

#### @ Mid Channel @ 3 Meter

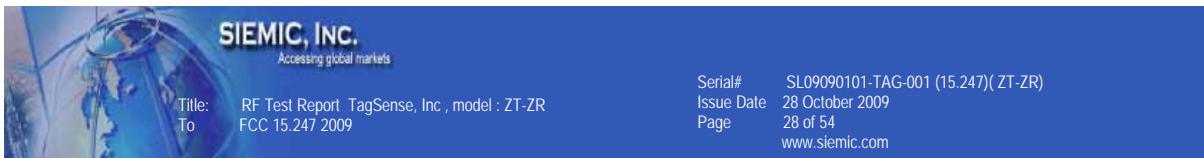
Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.88	64.74	200.00	1.00	v	32.20	4.13	32.49	68.58	74.00	-5.43	Peak
4.88	60.72	187.00	1.20	h	32.20	4.13	32.49	64.56	74.00	-9.44	Peak
4.88	45.15	200.00	1.00	v	32.20	4.13	32.49	48.99	54.00	-5.02	Ave
4.88	43.15	187.00	1.20	h	32.20	4.13	32.49	46.99	54.00	-7.02	Ave

Emission was scanned up to 25GHz.

#### @ High Channel @ 3Meter

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.96	63.76	24.00	1.00	v	32.20	4.13	32.49	67.60	74.00	-6.41	Peak
4.96	63.11	102.00	1.00	h	32.20	4.13	32.49	66.95	74.00	-7.06	Peak
4.96	45.64	24.00	1.00	v	32.20	4.13	32.49	49.48	54.00	-4.53	Ave
4.96	45.23	180.00	1.30	h	32.20	4.13	32.49	49.07	54.00	-4.94	Ave
2.48	58.48	115.00	1.10	v	27.50	2.50	32.04	56.44	100.54	-44.10	Peak
2.48	51.67	235.00	1.70	h	27.50	2.50	32.04	49.63	86.04	-36.41	Peak
2.48	36.96	115.00	1.10	v	27.50	2.50	32.04	34.92	90.24	-55.32	Ave
2.48	33.65	235.00	1.70	h	27.50	2.50	32.04	31.61	75.40	-43.79	Ave

Emission was scanned up to 25GHz.



**With antenna model: ANT-2.4-JJB-xx**

**@ Low Channel @ 3Meter**

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
2.40	53.57	160.00	1.00	v	27.50	2.50	32.04	51.53	74.00	-22.47	Peak
2.40	50.35	178.00	1.30	h	27.50	2.50	32.04	48.31	74.00	-25.69	Peak
2.40	30.11	160.00	1.00	v	27.50	2.50	32.04	28.07	54.00	-25.93	Ave
2.40	28.44	178.00	1.30	h	27.50	2.50	32.04	26.40	54.00	-27.60	Ave
4.81	61.24	140.00	1.00	v	32.20	4.13	32.49	65.08	74.00	-8.93	Peak
4.81	54.24	143.00	1.00	h	32.20	4.13	32.49	58.08	74.00	-15.93	Peak
4.81	44.68	140.00	1.00	v	32.20	4.13	32.49	48.52	54.00	-5.49	Ave
4.81	39.24	143.00	1.30	h	32.20	4.13	32.49	43.08	54.00	-10.93	Ave

Emission was scanned up to 25GHz.

**@ Mid Channel @ 3 Meter**

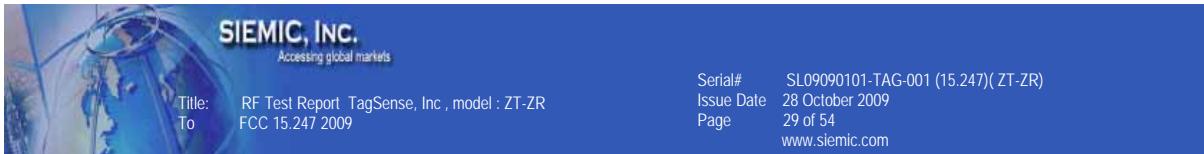
Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.88	62.43	200.00	1.00	v	32.20	4.13	32.49	66.27	74.00	-7.74	Peak
4.88	58.50	187.00	1.20	h	32.20	4.13	32.49	62.34	74.00	-11.67	Peak
4.88	44.25	200.00	1.00	v	32.20	4.13	32.49	48.09	54.00	-5.92	Ave
4.88	41.92	187.00	1.20	h	32.20	4.13	32.49	45.76	54.00	-8.25	Ave

Emission was scanned up to 25GHz.

**@ High Channel @ 3Meter**

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Corrected Reading	15.247/15.209	15.247/15.209	
GHz	(dBuV/m)	Degree	Meter	H / V	(dB)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin	Comments
4.96	61.60	24.00	1.00	v	32.20	4.13	32.49	65.44	74.00	-8.57	Peak
4.96	60.17	102.00	1.00	h	32.20	4.13	32.49	64.01	74.00	-10.00	Peak
4.96	43.31	24.00	1.00	v	32.20	4.13	32.49	47.15	54.00	-6.86	Ave
4.96	43.52	180.00	1.30	h	32.20	4.13	32.49	47.36	54.00	-6.65	Ave
2.48	55.56	115.00	1.10	v	27.50	2.50	32.04	53.52	100.54	-47.02	Peak
2.48	48.69	235.00	1.70	h	27.50	2.50	32.04	46.65	86.04	-39.39	Peak
2.48	33.52	115.00	1.10	v	27.50	2.50	32.04	31.48	90.24	-58.76	Ave
2.48	30.16	235.00	1.70	h	27.50	2.50	32.04	28.12	75.40	-47.28	Ave

Emission was scanned up to 25GHz.



## Annex A. TEST INSTRUMENT & METHOD

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

<b>Instrument</b>	<b>Manufacturer</b>	<b>Model</b>	<b>CAL Due Date</b>
Spectrum Analyzer	HP	8564E	04/26/2010
EMI Receiver	Rohde & Schwarz	ESIB 40	4/25/2010
R&S LISN	R&S	ESH2-Z5	04/24/2010
CHASE LISN	Chase	MN2050B	04/24/2010
Antenna(1 ~18GHz)	Emco	3115	01/04/2010
Antenna (30MHz~2GHz)	Sunol Sciences	JB1	01/04/2010
Chamber	Lingren	3m	04/18/2010
Pre-Amplifier(1 ~ 26GHz)	HP	8449	04/24/2010
Horn Antenna (18~40GHz)	Com Power	AH-840	03/19/2010
Microwave Pre-Amp (18~40GHz)	Com Power	PA-840	03/19/2010

Note: No calibration required.

## 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  $50\Omega/50\mu\text{H}$  EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
4. All other supporting equipments were powered separately from another main supply.

### Test Method

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

### Sample Calculation Example

At 20 MHz

limit =  $250 \mu\text{V} = 47.96 \text{ dB}\mu\text{V}$

Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.20 dB

Q-P reading obtained directly from EMI Receiver =  $40.00 \text{ dB}\mu\text{V}$   
 (Calibrated for system losses)

Therefore, Q-P margin =  $47.96 - 40.00 = 7.96$

i.e. **7.96 dB below limit**

## Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

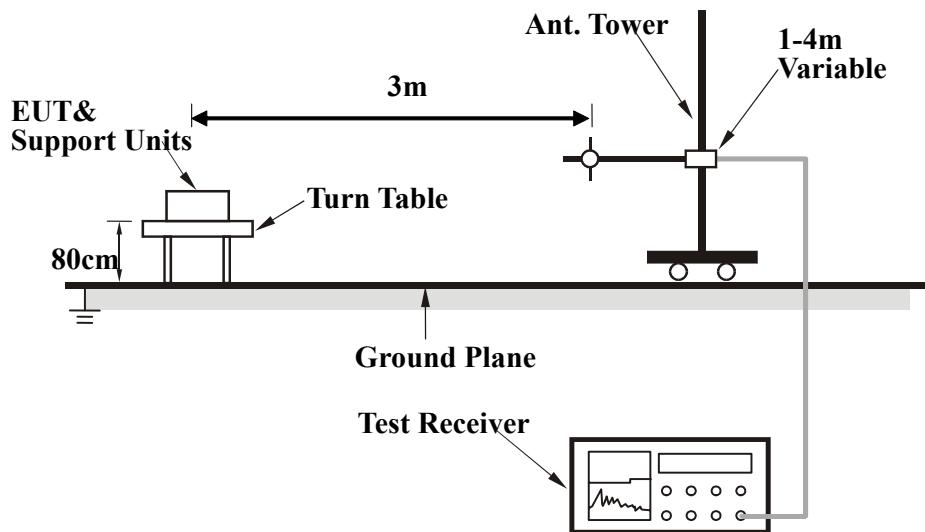
### EUT Characterisation

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

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

### Test Set-up

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



## **Test Method**

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

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

### Final Radiated Emission Measurement

1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° 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:

$$\text{Peak} = \text{Reading} + \text{Corrected Factor}$$

where

$$\text{Corr. Factor} = \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain (if any)}$$

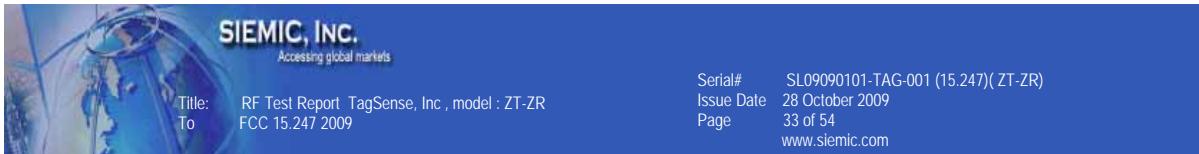
And the average value is

$$\text{Average} = \text{Peak Value} + \text{Duty Factor or}$$

$$\text{Set RBW} = 1\text{MHz}, \text{VBW} = 10\text{Hz}.$$

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**

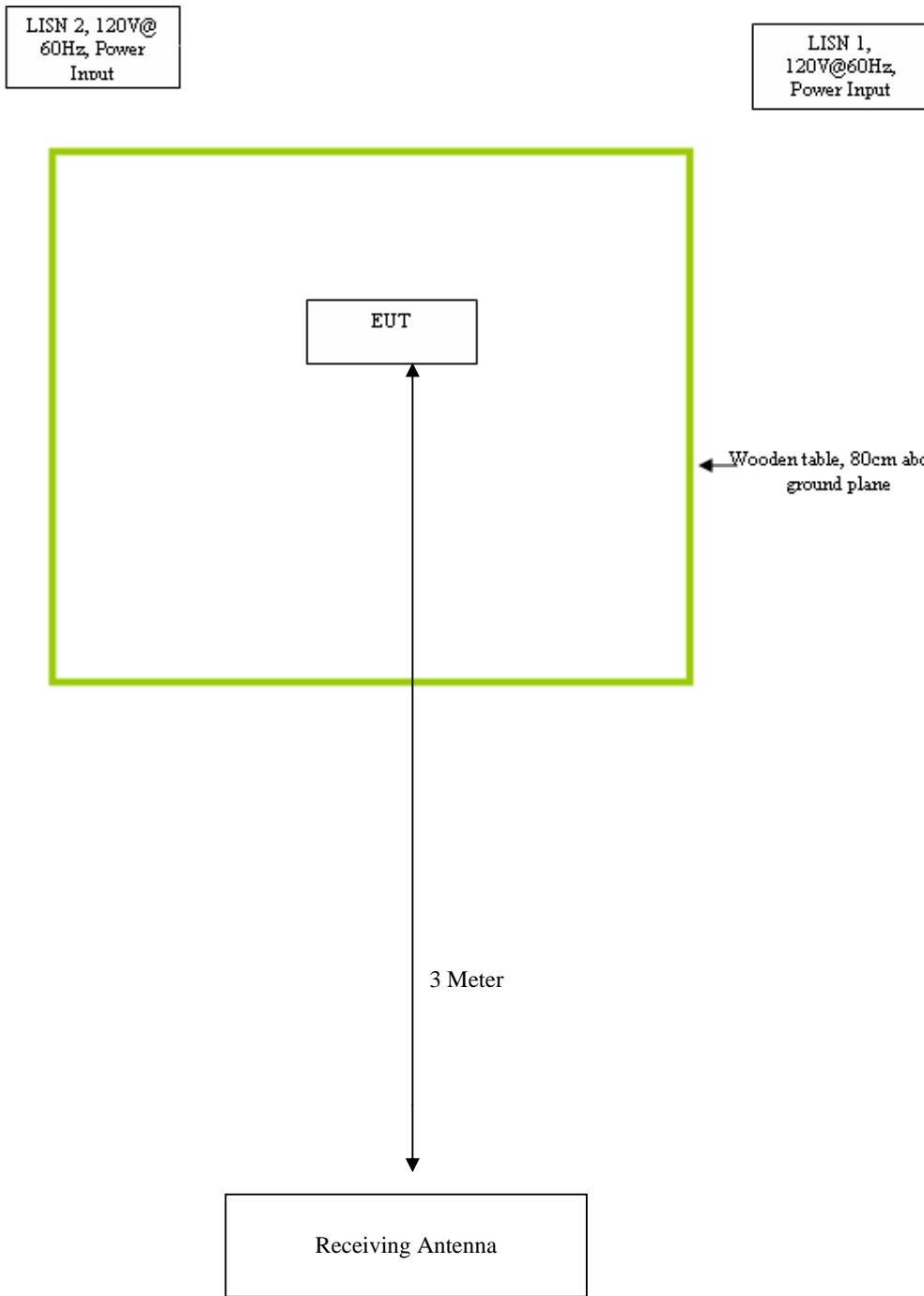
#### **Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION**

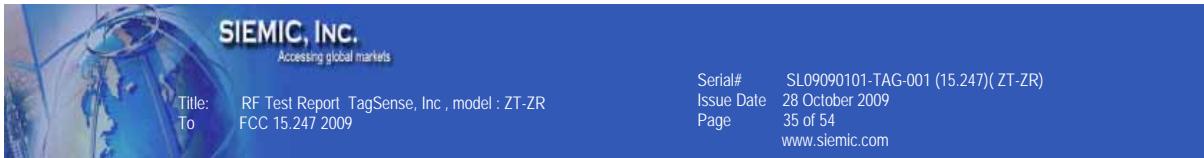
The following is a description of supporting equipment and details of cables used with the EUT.

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

Remarks: The device does not have any supporting equipment, but it is controlled by itself when performing the compliance evaluations.

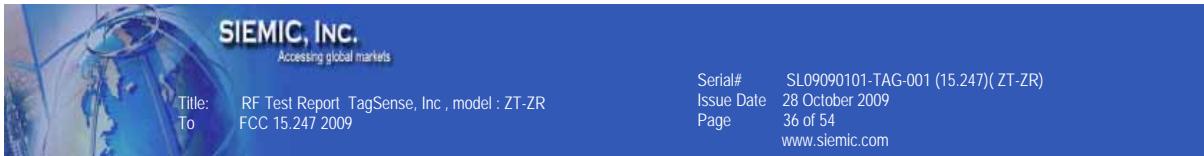
## Block Configuration Diagram for Radiated Emission





## Block Configuration Diagram for Conducted Emission

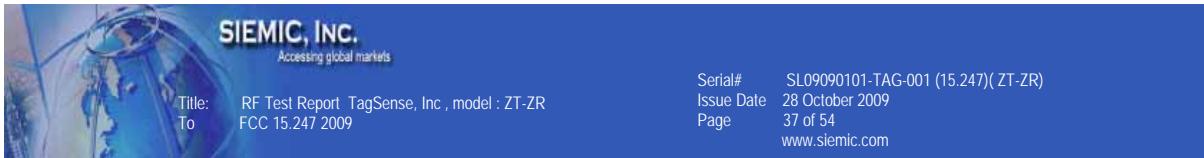
N/A



## **Annex C.ii. EUT OPERATING CONDITIONS**

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

Test	Description Of Operation
<b>Emissions Testing</b>	The EUT was controlled by itself Using manufacturer's program.
<b>Others Testing</b>	TX mode is normal mode with full power.



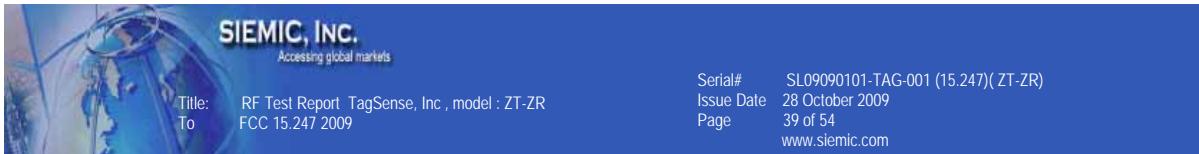
## Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

**Please see attachment**

## Annex E. SIEMIC ACCREDITATION CERTIFICATES

### SIEMIC ACREDITATION DETAILS: A2LA Certificate Number: 2742.01





### SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 65:1996

SIEMIC INC.  
2206 Ringwood Ave.  
San Jose, CA 95131  
Mr. Snell Leong (Authorized Representative) Phone: 408 526 1188  
[www.siemic.com](http://www.siemic.com)

### PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2010

Certificate Number: 2742.02

In recognition of the successful completion of the A2LA Certification Body Accreditation Program evaluation, including the US Federal Communications Commission (FCC), Industry Canada (IC) and Singapore (IDA) requirements for the indicated types of product certifications, accreditation is granted to this organization to perform the following product certification schemes:

Economy Scope

#### Federal Communication Commission - (FCC)

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

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

#### Industry Canada - (IC)

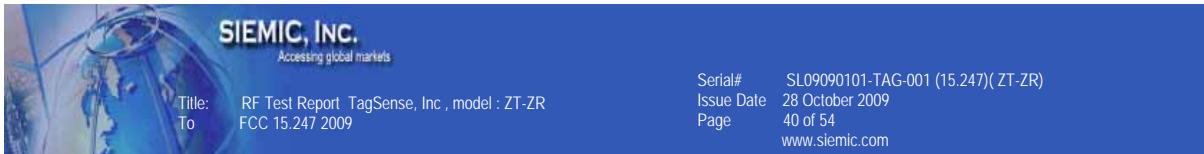
Radio	All Radio Standards Specifications (RSS) in Category I Equipment Standards List Radio
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*\*Please refer to Industry Canada (IC) website at: [http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/h\\_sf01342e.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/h_sf01342e.html)*

#### IDA – Singapore

Line Terminal Equipment	All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2008, Annex 2
Radio-Communication Equipment	All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2008, Annex 2

*\*Please refer to Info-Communication Development Authority (IDA) Singapore website at: [http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies\\_and\\_Regulation\\_Level2/20060609145118/MRA\\_RecScheme.pdf](http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/20060609145118/MRA_RecScheme.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

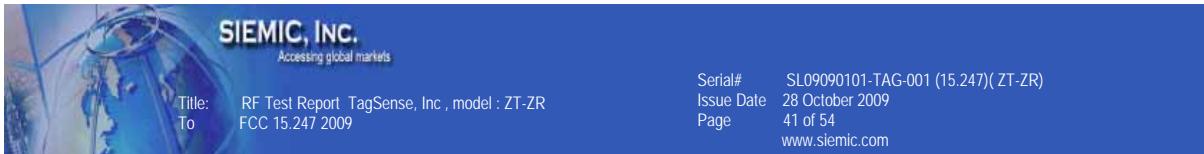
Dear Sir or Madam:

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](http://www.fcc.gov) under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish  
Industry Analyst



## SIEMIC ACREDITATION DETAILS: Industry of Canada CAB ID : US0160



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

March 4, 2009

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

Dear Mr. Bai:

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

CAB Name: SIEMIC, Inc.  
Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131 USA  
Identification No.: US0160  
Recognized Scope: CS-03 Part I, II, V, VI, VII and VIII

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

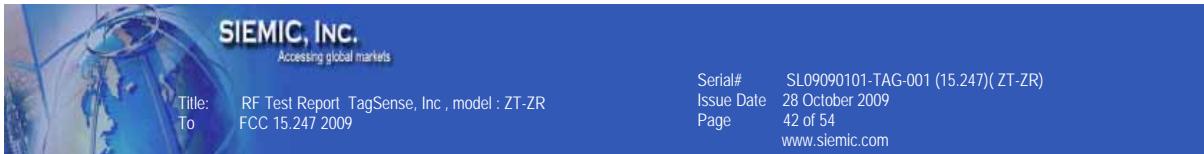
Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. Please contact Ms. Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov) if you have any questions.

Sincerely,

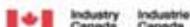
David F. Alderman  
Group Leader, Standards Coordination and Conformity Group  
Standards Services Division

Enclosure

cc: CAB Program Manager



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



May 23rd, 2008

OUR FILE: 46405-4842

Submission No: 126429

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

*Attention:* Leslie Bai

Dear Sir/Madame:

The Bureau has received your application for the registration / renewal of a 3/10m OATS. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought (**4842A-1**). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please be informed that the Bureau is now utilizing a **new site numbering scheme** in order to simplify the electronic filing process. Our goal is to reduce the number of secondary codes associated to one particular company. The following changes have been made to your record.

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

New Site Number	Obsolete Site Number	Description of Site	Expiry Date (YYYY-MM-DD)
4842A-1	4842-1	3m Chamber	2010-05-23

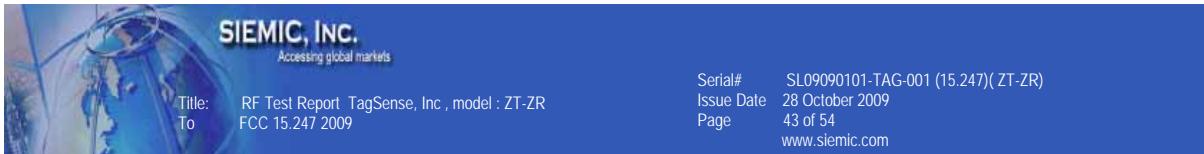
Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 shall be accepted. Please indicate in a letter 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.ic.gc.ca/epic/internet/inceb-blst.nsf/en/h\\_tt000052e.html](http://strategis.ic.gc.ca/epic/internet/inceb-blst.nsf/en/h_tt000052e.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,

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



## SIEMIC ACREDITATION DETAILS: FCC DOC CAB Recognition : US1109

### FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046

August 28, 2008

Siemic Laboratories  
2206 Ringwood Ave.,  
San Jose, CA 95131

Attention: Leslie Bai

Re: Accreditation of Siemic Laboratories  
Designation Number: US1109  
Test Firm Registration #: 540430

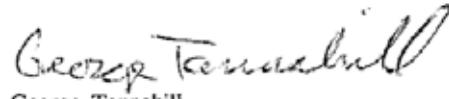
Dear Sir or Madam:

We have been notified by American Association for Laboratory Accreditation that Siemic Laboratories has been accredited as a Conformity Assessment Body (CAB).

At this time Siemic Laboratories is hereby designated to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Parts 15 and 18 of the Commission's Rules.

This designation will expire upon expiration of the accreditation or notification of withdrawal of designation.

Sincerely,

  
George Tannahill  
Electronics Engineer

**SIEMIC ACREDITATION DETAILS: Australia CAB ID : US0160**



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

November 20, 2008

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

Dear Mr. Bai:

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

CAB Name: Siemic, Inc.  
 Physical Location: 2206 Ringwood Avenue, San Jose, CA 95131  
 Identification No.: US0160  
 Recognized Scope: EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4  
Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771  
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

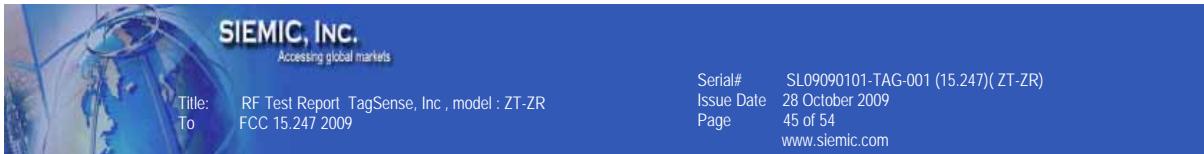
You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. 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](mailto:ramona.saar@nist.gov) if you have questions.

Sincerely,

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

Enclosure

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



## SIEMIC ACREDITATION DETAILS: Korea CAB ID: US0160



October 1, 2008

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

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.

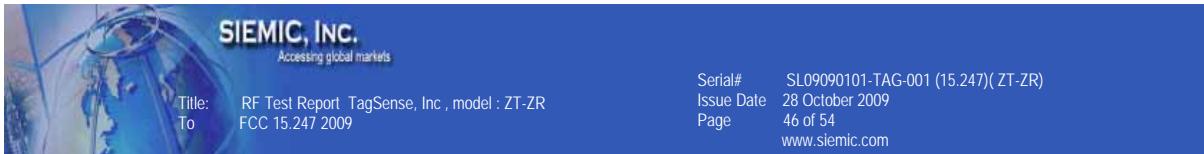
Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,

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

Enclosure

cc: Ramona Saar



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



UNITED STATES DEPARTMENT OF COMMERCE  
National Institute of Standards and Technology  
Gaithersburg, Maryland 20889

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, **Please 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**

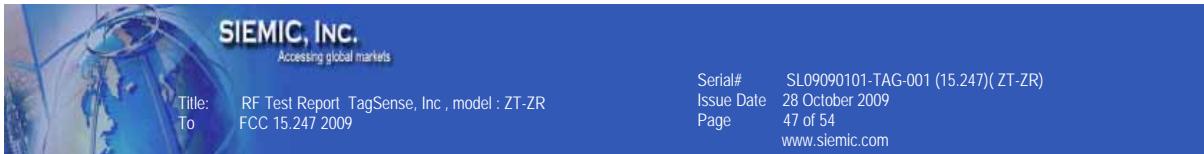
The names of all recognized CABs will be posted on the NIST website at <http://ts.nist.gov/mra>. If you have any questions, please contact Mr. Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

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

cc: Jagminder Dhillon

**NIST**



## 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.

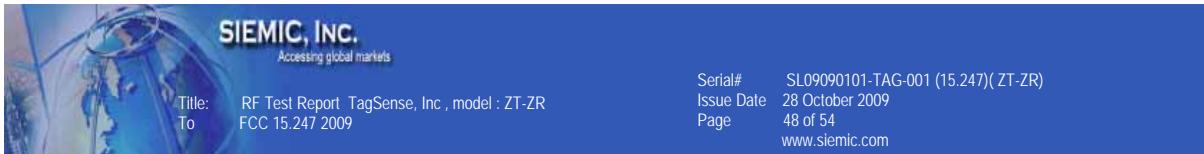
Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,

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

Enclosure

cc: Ramona Saar



## SIEMIC ACREDITATION DETAILS: Mexico NOM Recognition

**Laboratorio Valentín V. Rivero**

**CANETI**  
CÁMARA NACIONAL  
DE LA INDUSTRIA  
ELECTRÓNICA, DE  
TELECOMUNICACIONES  
E INFORMÁTICA

México D.F. a 18 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 comentó 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 inglés y español preferido de los cuales le pido sea revisado y en su caso corregido, para que si esta 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 intermediano gestor será la empresa Isobel 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.

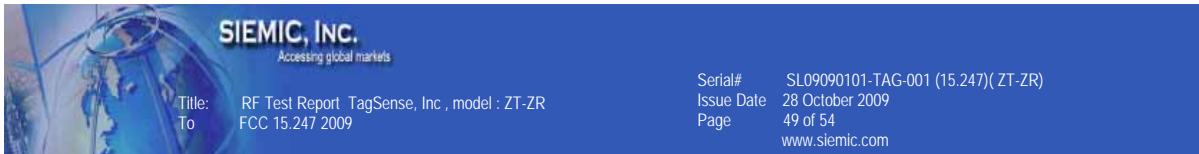
Me despido de usted enviándole un cordial saludo y esperando sus comentarios al Acuerdo que nos ocupa.

Atentamente:

*[Handwritten signature of Ing. Faustino Sánchez González]*

Ing. Faustino Sánchez González.  
Gerente Técnico del Laboratorio de  
CANETI.

Calle 80 N° 11  
Hacienda Codzopa  
06100 México, D.F.  
Tel: 5204-0006 con 12 líneas  
Fax: 5204-9344  
www.canieti.org



## 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.

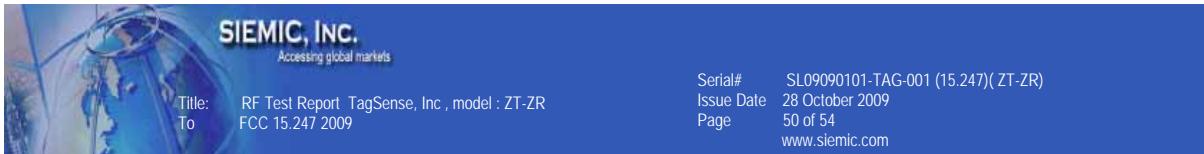
Recognized CABs are listed on the NIST website at <http://ts.nist.gov/mra>. If you have any questions please contact Ramona Saar at (301) 975-5521 or [ramona.saar@nist.gov](mailto:ramona.saar@nist.gov).

Sincerely,

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

Enclosure

cc: Ramona Saar



## SIEMIC ACREDITATION DETAILS: Australia ACMA CAB ID: US0160



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

November 20, 2008

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

Dear Mr. Bai:

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

CAB Name:	Siemic, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Recognized Scope:	<u>EMC</u> : AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 <u>Radiocommunications</u> : 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](mailto:ramona.saar@nist.gov) if you have questions.

Sincerely,

A handwritten signature in black ink that reads "David F. Alderman".

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

Enclosure

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

The NIST logo, consisting of the letters "NIST" in a bold, sans-serif font.

## 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;
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.

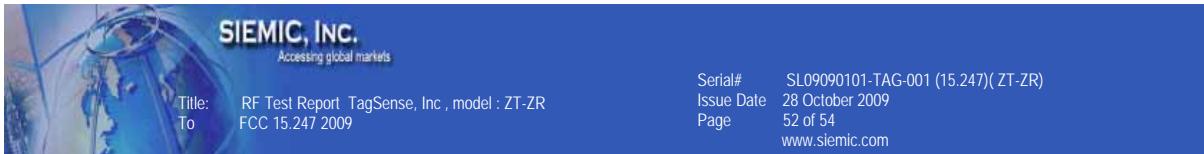
Current information on the Australian Communications and Media Authority and regulatory requirements for telecommunications products within Australia can be obtained from the ACMA's web-site at "<http://www.acma.gov.au>". Further information about NATA may be gained by visiting "<http://www.nata.asn.au>".

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.

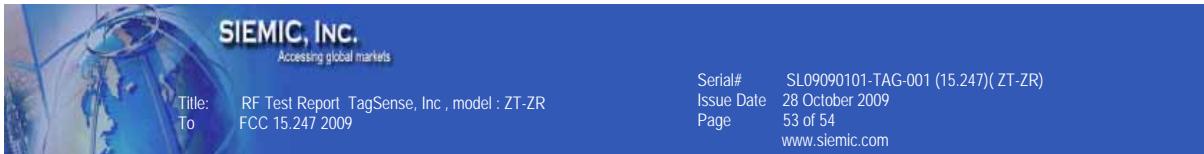
Kind Regards

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)



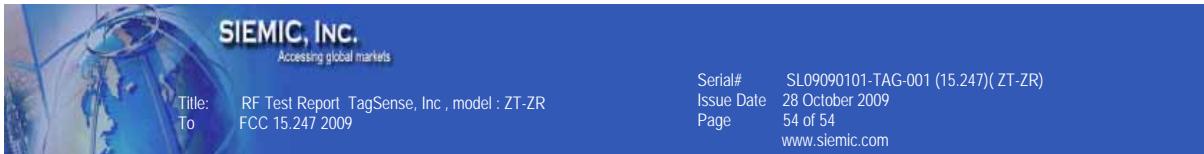
## SIEMIC ACREDITATION DETAILS: VCCI Radiated Test Site Registration No. R-3083





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





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

