UBIQUITI NETWORKS, INC

AIRMAX TDMA BASESTATION

Model: Rocket M3

Dec 01st, 2011
Report No.: SL11102001-UBN-001(EMC)
(This report supersedes: NONE)

R&TTE Test Report
EN 301 489 -4 V1.4.1

SIEMIC, INC.
Accessing global markets

Modifications made to the product : None

This Test Report is Issued Under the Authority of:	
David Zhang	Bai
David Zhang Compliance Engineer	Leslie Bai Director of Certification

This test report may be reproduced in full only.

CERTIFICATE OF TEST

Date of Issue : **Dec 01st, 2011**

Company Name : **Ubiquiti Networks, Inc**

Product Name/Model : **AirMax TDMA BaseStation / Rocket M3**

Stipulated Standard: **(1) EN 301 489-4 V1.4.1 (2009-05)**

Equipment complied with the specification **[X]**
Equipment did not comply with the specification **[ ]**

The submission documentation to a National Regulatory Body for type approval purposes shall consist of two parts; **Part one: Application Form;**
Part two: Test Report;

ATTESTATION OF CONFORMITY

CE

Presented To:

Ubiquiti Networks, Inc

UBIQUITI NETWORKS

91 E.Tasman Drive, San Jose, CA 95134 USA

For Product/Model:

AirMax TDMA BaseStation
Rocket M3

Was evaluated and confirmed to comply with:

EN 301 489-4 V1.4.1 (2009-05)

Leslie Bai
Director of Certification

SIEMIC, INC.
Accessing global markets

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

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom , SAR
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom , SAR
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 , SAR
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, SAR

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
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF , Telecom
HongKong	OFTA (US002)	RF , Telecom

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1 Executive Summary & EUT information

The purpose of this test program was to demonstrate compliance of the Ubiquiti Networks, Inc, AirMax TDMA BaseStation, and model: Rocket M3 against the current Stipulated Standards. The Rocket M3 have demonstrated compliance with the EN 301 489-4 V1.4.1 (2009-05), .

EUT Information

EUT Description	:	AirMax TDMA BaseStation The Rocket is a rugged, hi-power, very linear 2x2 MIMO radio with enhanced receiver performance. It features incredible range performance (50+km) and breakthrough speed (150+Mbps real TCPI/IP). The device was specifically designed for outdoor PtP bridging and PTMP AirMax base-station applications.
Model No	:	Rocket M3
Serial No	:	N/A
Input Power	:	24V, 1A POE Supply
Classification Per Stipulated Test Standard	:	Class A Emission Product Per EN 301 489

2 TECHNICAL DETAILS

Purpose	**Compliance testing of AirMax TDMA BaseStation with stipulated standard**
Applicant / Client	**Ubiquiti Networks, Inc 91 E.Tasman Drive San Jose, CA 95134 USA**
Manufacturer	**Ubiquiti Networks, Inc 91 E.Tasman Drive San Jose, CA 95134 USA**
Laboratory performing the tests	**SIEMIC Laboratories**
Test report reference number	**SL11102001-UBN-001(EMC)**
Date EUT received	**Oct 21st 2011**
Standard applied	**See page 2**
Dates of test (from – to)	**Oct 21st - Nov 30th 2011**
No of Units:	**# 1**
Equipment Category:	**Fixed Radio Links**
Trade Name:	**Ubiquiti Networks, Inc**
Microprocessor (s)	**unidentified**
RF Operating Frequency (ies)	**3,415 – 3,695MHz(TX/RX) / 5MHz Channel Separation & Bandwidth 3,420 – 3,690MHz(TX/RX) / 10MHz Channel Separation & Bandwidth 3,425 – 3,680MHz(TX/RX) / 15MHz Channel Separation & Bandwidth**
Clock/Oscillator Frequency (ies)	**--**
Rated Input Power	**24V, 1A POE Supply**
Port/Connectors	**RJ45, POE**

3 MODIFICATION

NONE

4 TEST SUMMARY

The product was tested in accordance with the following specifications. The Pass / Fail Criteria for the immunity tests were specified in Annex Ciii.

All Testing has been performed according to below product classification:

Class A Emission Product Per EN 301 489

Test Results Summary

Emissions			
Test Standard	**Description**	**Product Class**	**Pass / Fail**
EN 301 489-4 V1.4.1 (2009-05)	Conducted Emission	See above	Pass
	Radiated Spurious Emission	See above	Pass
	Harmonic Current Emission	N/A	Pass
	Limit of Voltage Change, Fluctuation & Flicker	N/A	Pass

Immunity			
Test Standard	**Description**	**Criterion**	**Pass / Fail**
EN 301 489-4 V1.4.1 (2009-05)	Electrostatic Discharge Immunity	B	Pass
	Radiated RF Immunity	A	Pass
	Electrical Fast Transient / Burst Immunity	B	Pass
	Voltage Surge Immunity	B	Pass
	Voltage Dip Immunity	N/A	N/A
	Conducted Disturbance Immunity	A	Pass

PS: All Measurement Uncertainty is not taken into consideration for presented test data

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 TEST RESULT

5.1.1 Conducted Emission Test Result

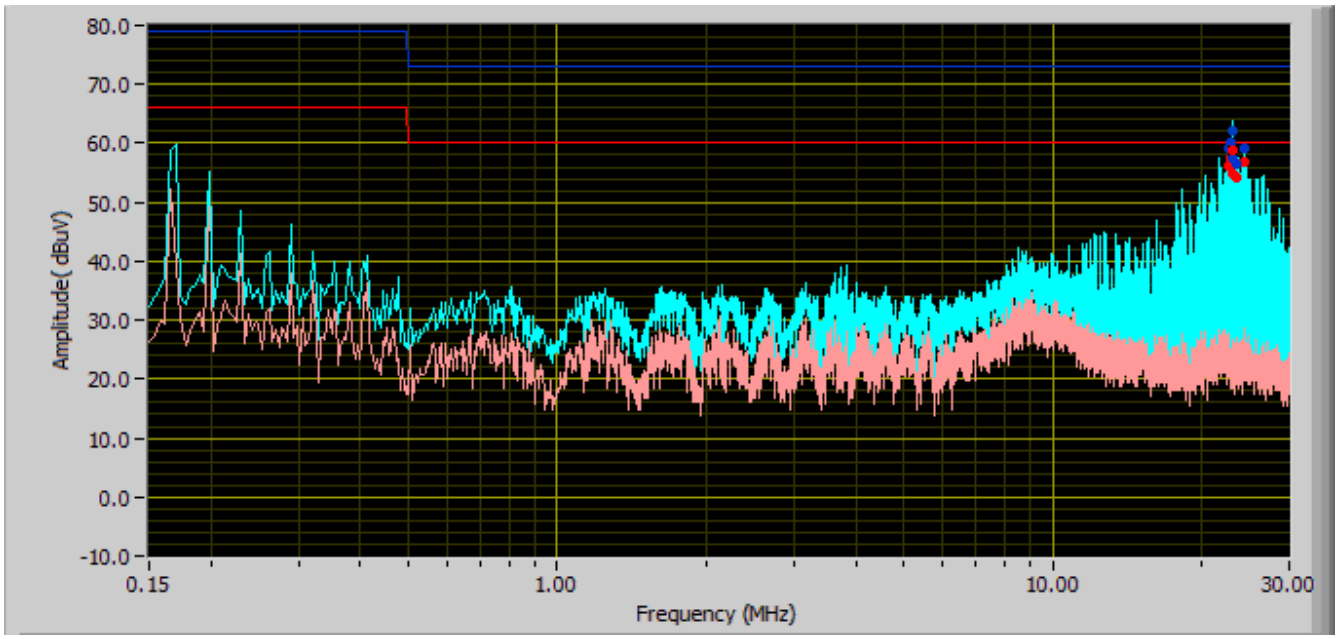
Note:

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 ±3.86dB.
4. Environmental Conditions

Temperature	26°C
Relative Humidity	62%
Atmospheric Pressure	1010mbar

Test date : Oct 21st - Nov 30th, 2011
Tested by : David Zhang

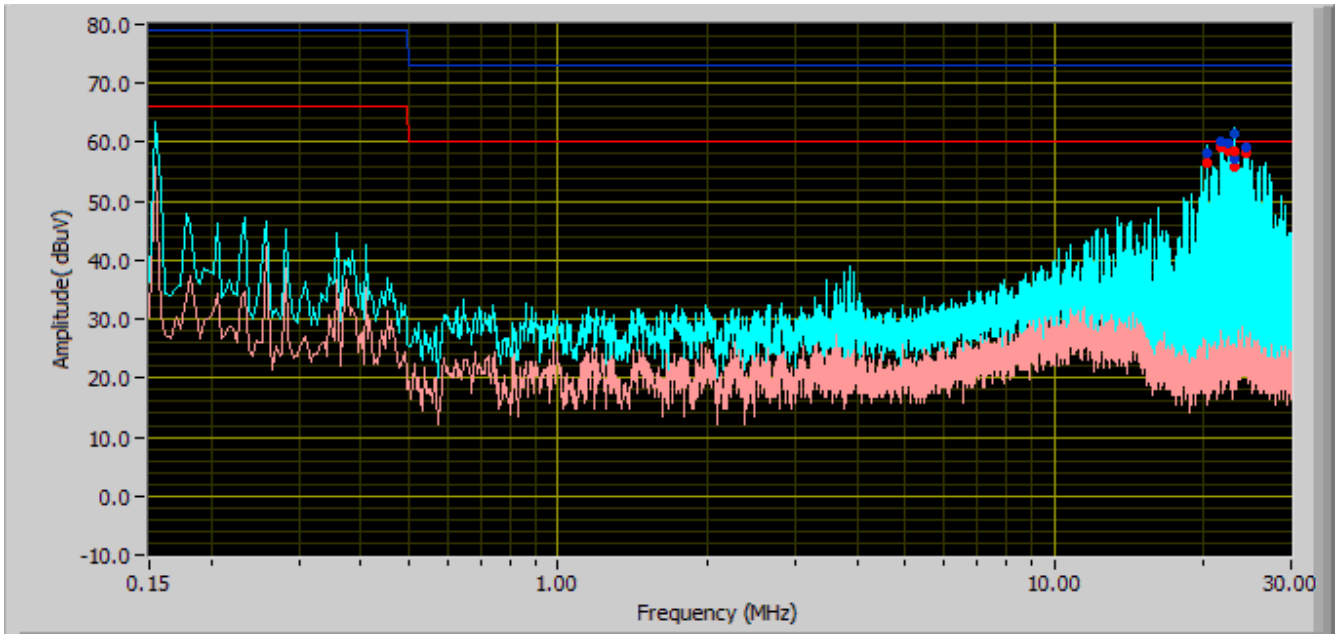
5.1.1.1 Conducted Emission Test Result



Quasi-Peak Limit Average Limit

230VAC, 50Hz Phase Line @ EUT with Dish antenna

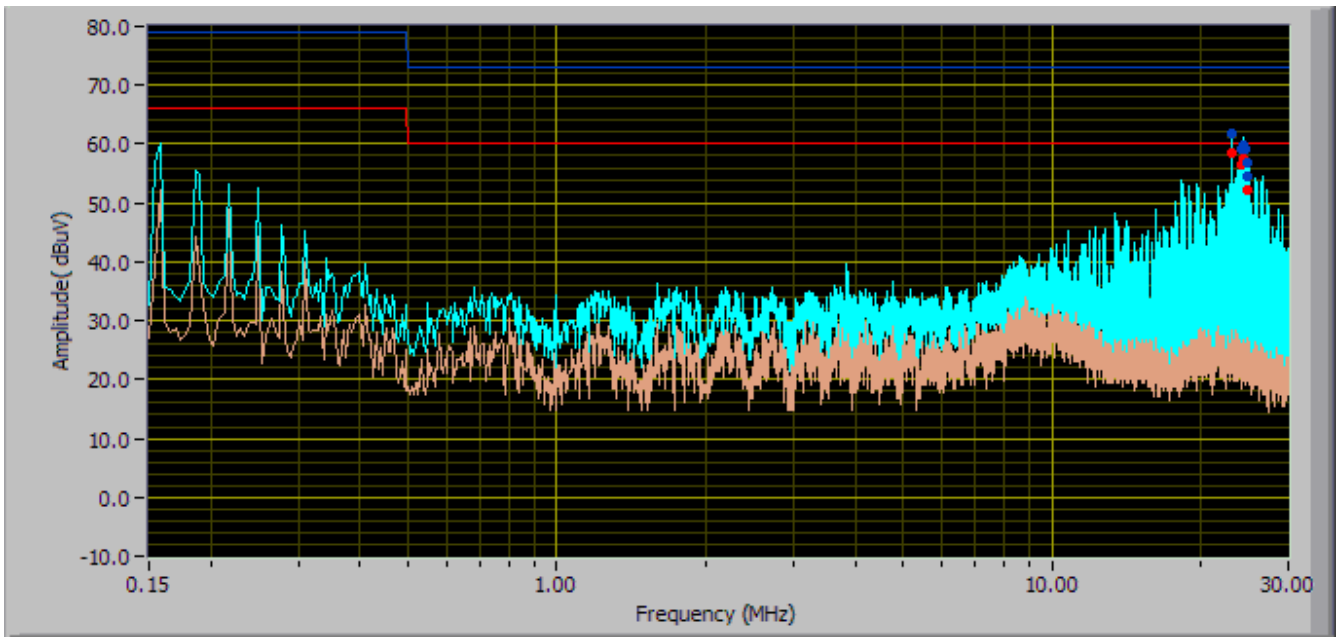
Frequency (MHz)	QP Value (dBμV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class A Limit (dB)	Margin (dB)	Line
23.13	61.93	73.00	-11.07	58.75	60.00	-1.25	Phase
23.06	57.65	73.00	-15.35	54.99	60.00	-5.01	Phase
22.88	60.05	73.00	-12.95	57.37	60.00	-2.63	Phase
23.43	56.55	73.00	-16.45	54.08	60.00	-5.92	Phase
24.35	59.23	73.00	-13.77	56.98	60.00	-3.02	Phase
22.58	59.11	73.00	-13.89	56.27	60.00	-3.73	Phase



Quasi-Peak Limit Average Limit

230VAC, 50Hz Neutral Line@ EUT with Dish antenna

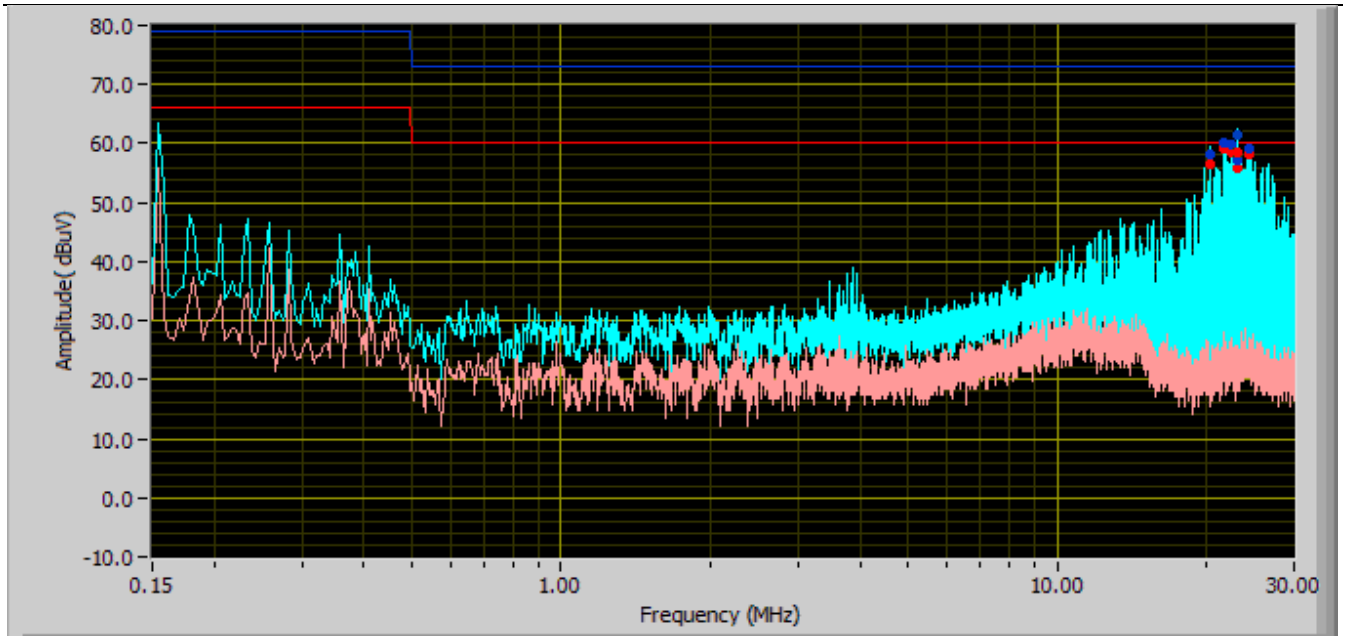
Frequency (MHz)	QP Value (dBμV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class A Limit (dB)	Margin (dB)	Line
23.13	61.49	73.00	-11.51	58.05	60.00	-1.95	Neutral
23.06	57.02	73.00	-15.98	55.90	60.00	-4.10	Neutral
22.46	59.71	73.00	-13.29	58.55	60.00	-1.45	Neutral
21.66	60.31	73.00	-12.69	59.06	60.00	-0.94	Neutral
24.35	59.03	73.00	-13.97	58.18	60.00	-1.82	Neutral
20.26	58.01	73.00	-14.99	56.66	60.00	-3.34	Neutral



Quasi-Peak Limit Average Limit

230VAC, 50Hz Phase Line@ EUT with Sector antenna

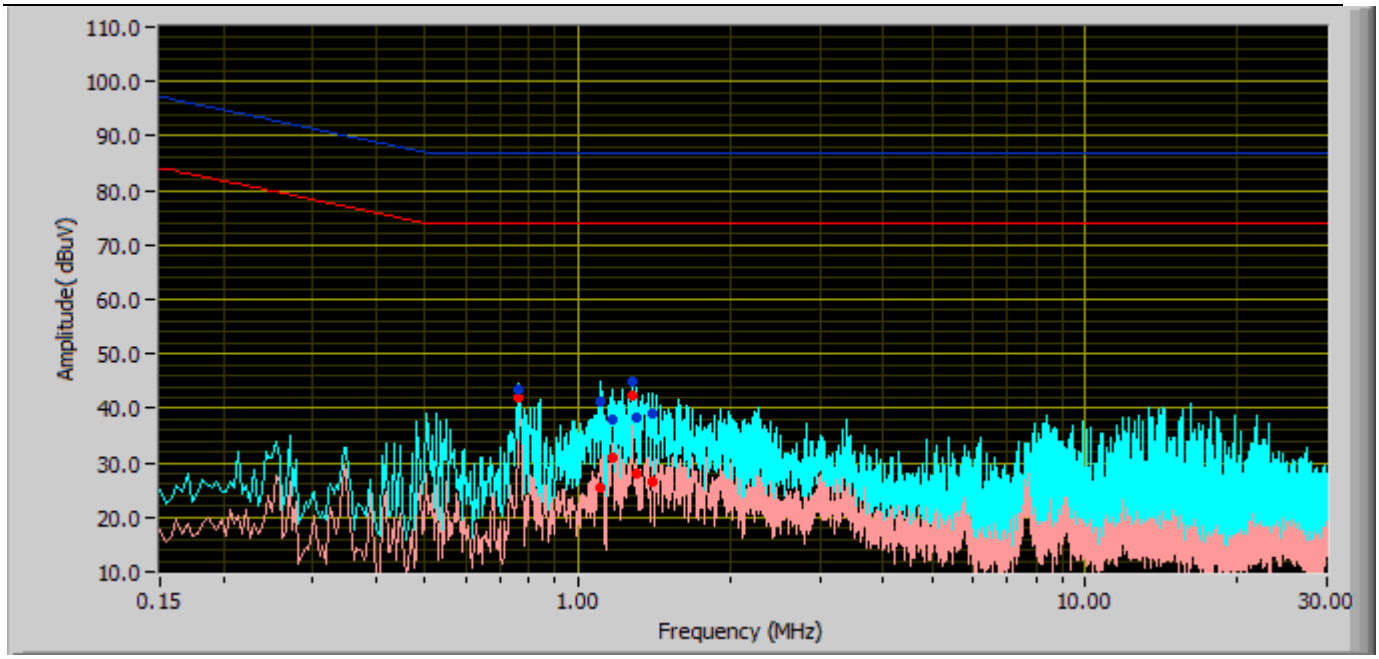
Frequency (MHz)	QP Value (dBμV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class A Limit (dB)	Margin (dB)	Line
24.35	59.71	73.00	-13.29	57.39	60.00	-2.61	Phase
23.13	61.73	73.00	-11.27	58.25	60.00	-1.75	Phase
24.53	59.02	73.00	-13.98	56.73	60.00	-3.27	Phase
24.04	59.09	73.00	-13.91	56.67	60.00	-3.33	Phase
24.90	54.49	73.00	-18.51	52.15	60.00	-7.85	Phase
24.72	56.87	73.00	-16.13	54.55	60.00	-5.45	Phase



Quasi-Peak Limit Average Limit

230VAC, 50Hz Neutral Line@ EUT with Sector antenna

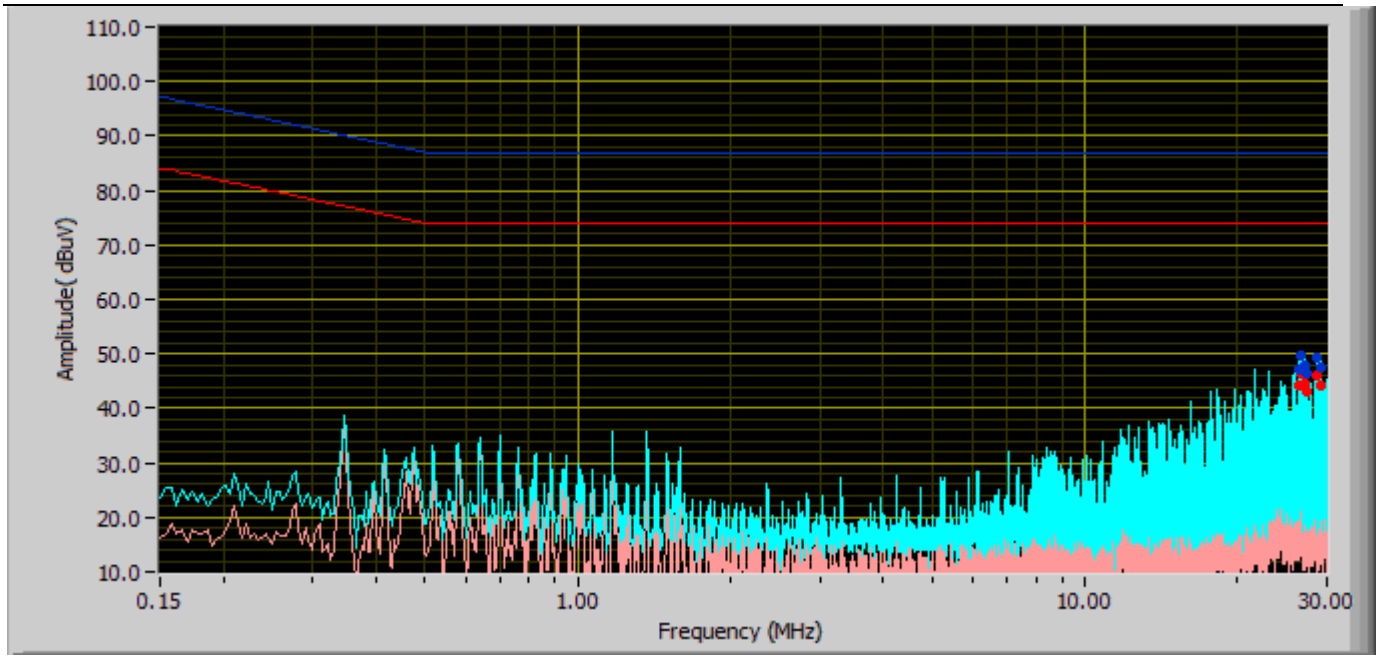
Frequency (MHz)	QP Value (dBµV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBµV)	Class A Limit (dB)	Margin (dB)	Line
23.13	61.49	73.00	-11.51	58.05	60.00	-1.95	Neutral
23.06	57.02	73.00	-15.98	55.90	60.00	-4.10	Neutral
22.46	59.71	73.00	-13.29	58.55	60.00	-1.45	Neutral
21.66	60.31	73.00	-12.69	59.06	60.00	-0.94	Neutral
24.35	59.03	73.00	-13.97	58.18	60.00	-1.82	Neutral
20.26	58.01	73.00	-14.99	56.66	60.00	-3.34	Neutral



Quasi-Peak Limit Average Limit

Signal Line (POE Port)

Frequency (MHz)	QP Value (dBμV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class A Limit (dB)	Margin (dB)	Line
1.28	44.83	87	-42.17	42.50	74	-31.50	POE
1.11	41.12	87	-45.88	25.59	74	-48.41	POE
0.77	43.32	87	-43.68	41.98	74	-32.02	POE
1.30	38.30	87	-48.70	27.85	74	-46.15	POE
1.17	37.78	87	-49.22	31.05	74	-42.95	POE
1.41	38.97	87	-48.03	26.45	74	-47.55	POE



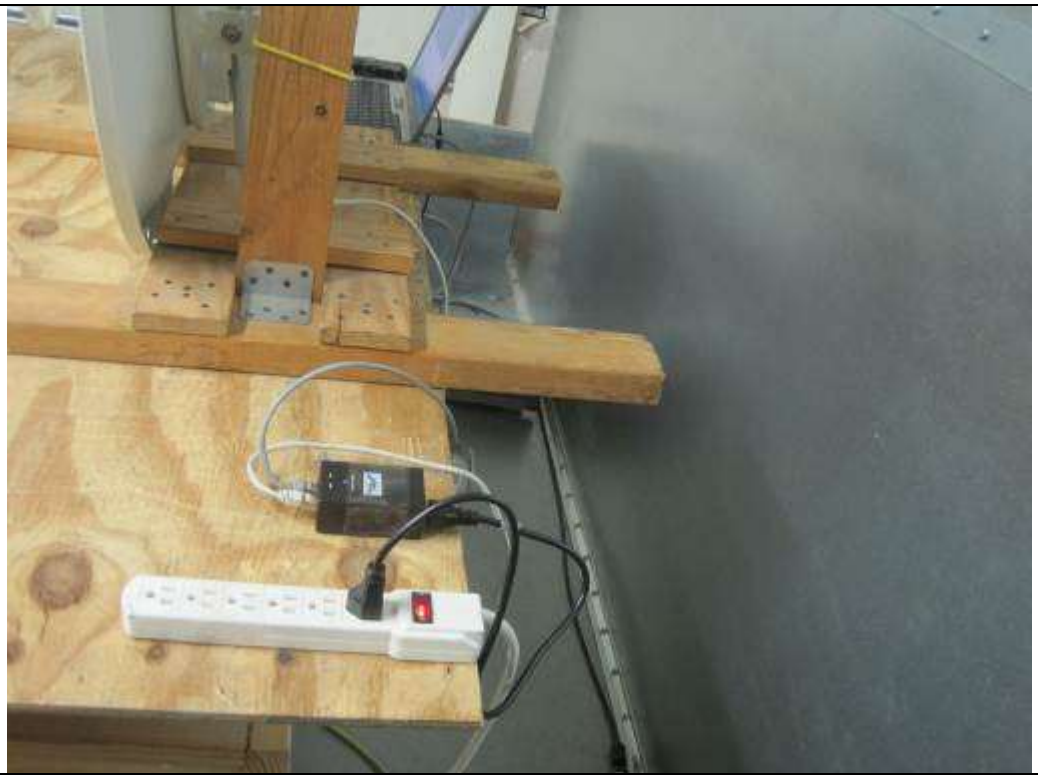
Quasi-Peak Limit Average Limit

Signal Line (Ethernet Port – RJ45)

Frequency (MHz)	QP Value (dBμV)	Class A Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class A Limit (dB)	Margin (dB)	Line
26.61	49.82	87	-37.18	46.48	74	-27.52	Ethernet
26.48	47.29	87	-39.71	44.04	74	-29.96	Ethernet
29.23	47.43	87	-39.57	44.27	74	-29.73	Ethernet
28.68	49.26	87	-37.74	45.96	74	-28.04	Ethernet
27.16	47.88	87	-39.12	44.60	74	-29.40	Ethernet
27.34	46.45	87	-40.55	43.11	74	-30.89	Ethernet

5.1.1.2 Test Set up

Conducted Emission Test Setup @ EUT with Dish antenna



Conducted Emission Test Setup @ EUT with Dish antenna

Conducted Emission Test Setup @ EUT with Sector antenna

Conducted Emission Test Setup @ EUT with Sector antenna

5.1.2 Radiated Spurious Emission Test Results

Note:

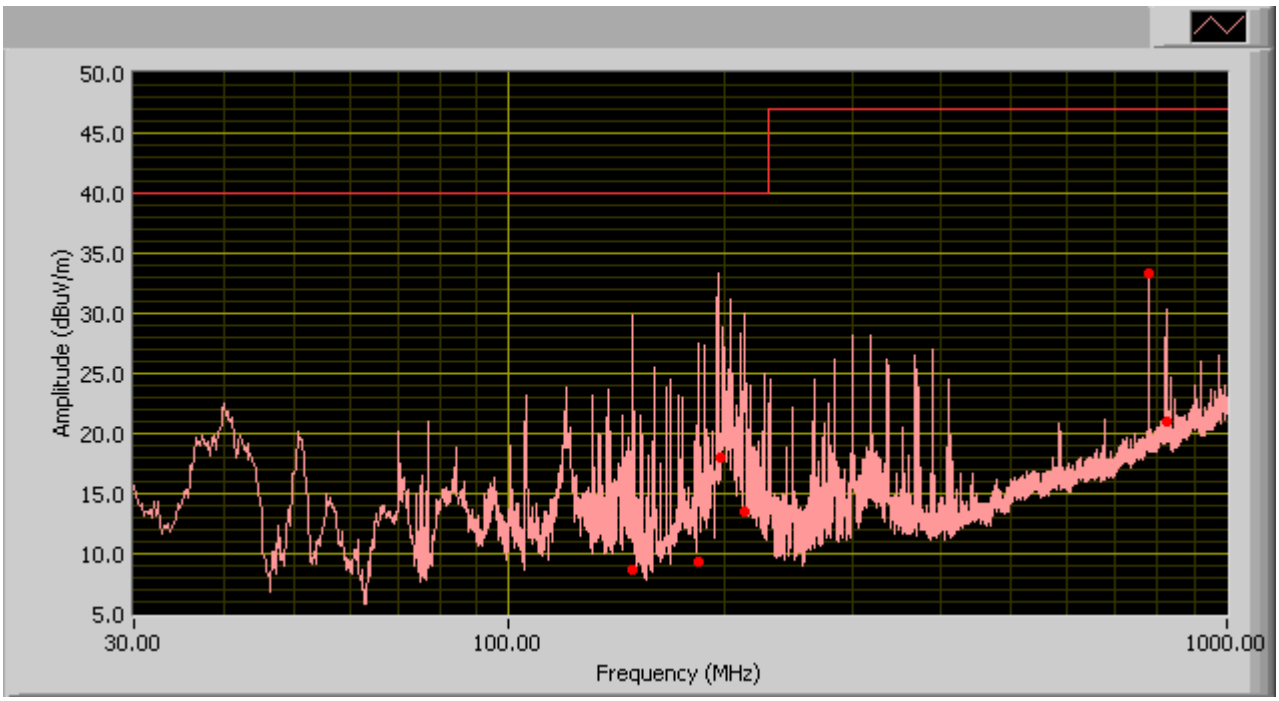
1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular 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 ±6.0dB (for EUTs < 0.5m X 0.5m X 0.5m).
4. Environmental Conditions

Temperature	25°C
Relative Humidity	62%
Atmospheric Pressure	1011mbar

Test date : Oct 21st - Nov 30th, 2011
Tested by : David Zhang

5.1.2.1 Radiated Emission Test Result (7GHz Unit)

Radiated Emissions

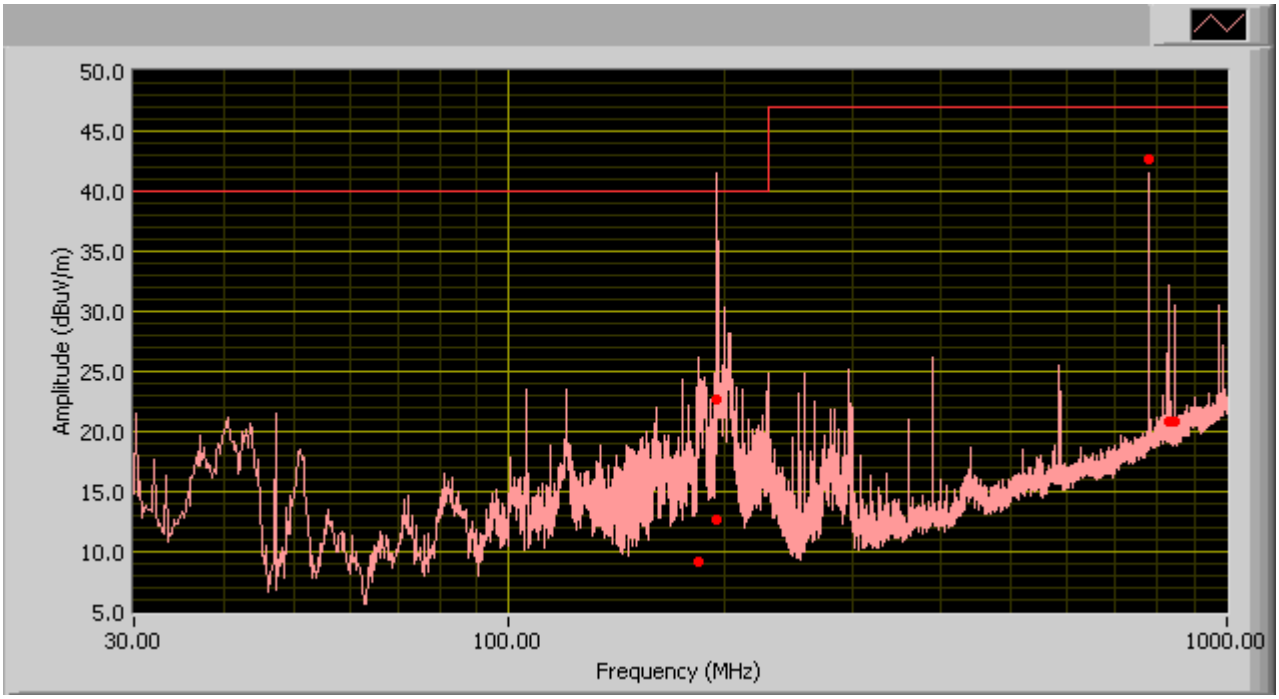


Limit

30MHz ~1000MHz Result @ 3m @ EUT with Dish antenna

Frequency (MHz)	Corrected Quasi-Peak (dBµV/m) @ 3m	Turntable position (deg)	Polarity	Antenna height (cm)	Class A Limit (dBµV/m)	Margin (dB)
196.05	9.73	23.00	V	143.00	40.00	-30.27
779.99	33.39	125.00	V	111.00	47.00	-13.61
212.67	13.44	33.00	V	143.00	40.00	-26.56
148.78	8.60	206.00	V	193.00	40.00	-31.40
822.74	20.97	359.00	V	187.00	47.00	-26.03
183.80	18.29	129.00	V	111.00	40.00	-21.71

Radiated Emissions



Limit

30MHz ~1000MHz Result @ 3m @ EUT with Sector antenna

Frequency (MHz)	Corrected Quasi-Peak (dBµV/m) @ 3m	Turntable position (deg)	Polarity	Antenna height (cm)	Class A Limit (dBµV/m)	Margin (dB)
194.99	12.56	334.00	V	277.00	40.00	-27.44
780.00	42.65	197.00	H	115.00	47.00	-4.35
832.33	20.79	172.00	H	237.00	47.00	-26.21
194.56	22.74	19.00	V	107.00	40.00	-17.26
847.99	20.81	270.00	H	307.00	47.00	-26.19
183.02	9.16	140.00	H	142.00	40.00	-30.84

Radiated Emissions

(Above 1GHz)

Above 1GHz Test Result Result @ 3m @ EUT with Dish antenna

Frequency (GHz)	Final FS @ 3m (dBuV)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Class B Limit @ 3m (dBuV)	Delta (dB)	Detector (pk/avg)
1.062	39.60	0	1.20	V	24.80	1.82	31.99	76	-36.40	Peak
1.062	25.58	0	1.20	V	24.80	1.82	31.99	56	-30.42	Ave
2.729	39.97	0	1.00	V	28.80	2.72	32.08	76	-36.03	Peak
2.729	27.10	0	1.00	V	28.80	2.72	32.08	56	-28.90	Ave
5.090	43.08	4	1.40	H	32.90	4.32	32.55	80	-36.92	Peak
5.090	30.55	4	1.40	H	32.90	4.32	32.55	60	-29.45	Ave
5.639	43.30	4	1.20	V	33.40	4.56	32.48	80	-36.70	Peak
4.659	30.51	4	1.20	V	33.40	4.56	32.48	60	-29.49	Ave

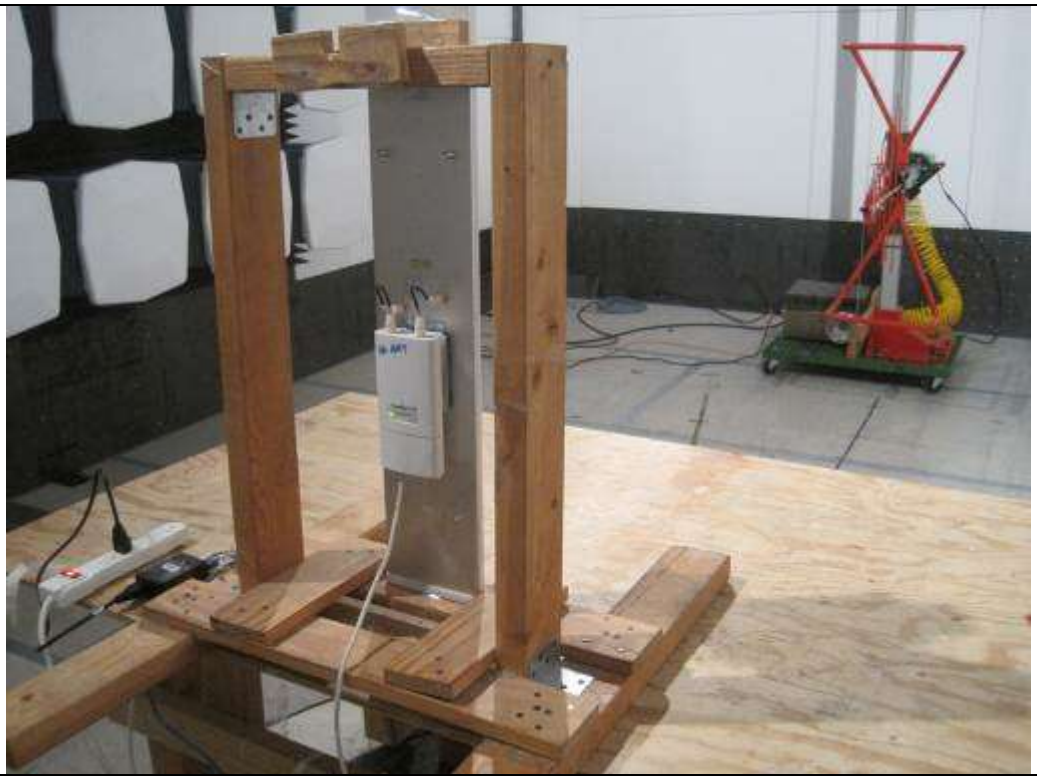
Above 1GHz Test Result @ 3m @ EUT with Sector antenna

Frequency (GHz)	Final FS @ 3m (dBuV)	Direction (degree)	Height (m)	Polarity (H/V)	Antenna Loss (dB)	Cable Loss (dB)	Amplifier (dB)	Class B Limit @ 3m (dBuV)	Delta (dB)	Detector (pk/avg)
1.048	38.00	160	1.0	H	24.8	1.82	31.99	76	-38.00	Peak
1.048	30.68	160	1.0	H	24.8	1.82	31.99	56	-25.32	Ave
4.659	45.01	155	1.5	H	32.2	4.13	32.49	80	-34.99	Peak
4.659	30.84	155	1.5	H	32.2	4.13	32.49	60	-29.16	Ave
2.543	38.49	270	1.0	V	28.8	2.72	32.08	76	-37.51	Peak
2.543	27.00	270	1.0	V	28.8	2.72	32.08	56	-29.00	Ave
4.659	43.33	200	2.0	V	32.2	4.13	32.49	80	-36.67	Peak
4.659	27.01	300	1.0	V	32.2	4.13	32.49	60	-32.99	Ave

Radiated Emission Test Setup (30MHz – 1GHz) @ EUT with Dish antenna –Front

Radiated Emission Test Setup (30MHz – 1GHz) @ EUT with Dish antenna -Rear

Radiated Emission Test Setup (30MHz – 1GHz) @ EUT with Sector antenna –Front



Radiated Emission Test Setup (30MHz – 1GHz) @ EUT with Sector antenna -Rear

Radiated Emission Test Setup (>1GHz) @ EUT with Dish antenna –Front

Radiated Emission Test Setup (>1GHz) @ EUT with Sector antenna -Rear

Radiated Emission Test Setup (>1GHz) @ EUT with Sector antenna –Front

Radiated Emission Test Setup (>1GHz) @ EUT with Sector antenna -Rear

5.1.3 Current Harmonic Emission Results

N/A

5.1.4 Voltage Fluctuation and Flicker Results

California Instruments
San Diego, California

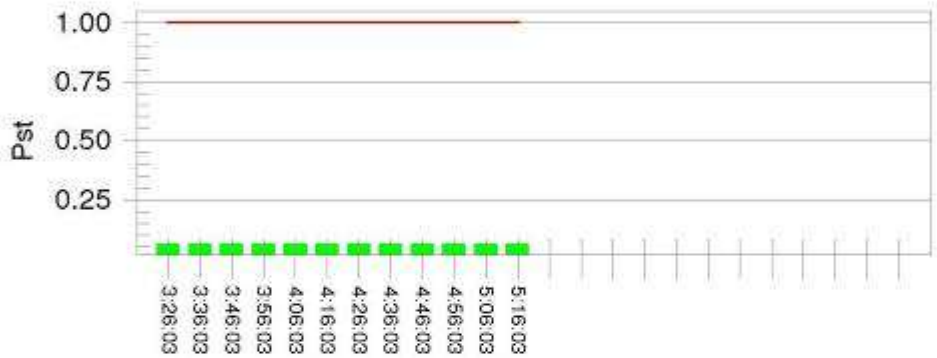
12/2/2011
10:52 AM

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

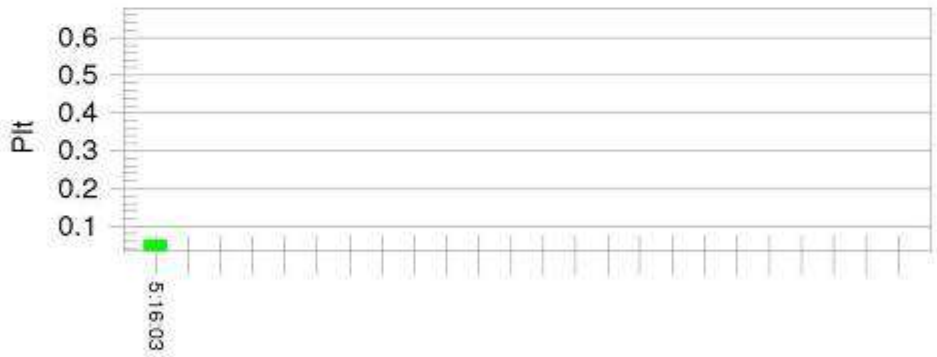
EUT: Rocket M3 **Tested by: David Zhang**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 11/29/2011 **Start time: 3:15:42 AM** **End time: 5:16:04 AM**
Test duration (min): 120 **Data file name: F-000107.cts_data**
Comment: Rocket M3
Customer: UBN

Test Result: Pass **Status: Test Completed**

Pst, and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**230.04**			
Highest dt (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.064**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.064**	**Test limit:**	**0.650**	**Pass**

Flicker Test Setup (>1GHz) @ EUT with Dish antenna –Front

5.1.5 Electrostatic Discharge Immunity Results

Notes

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions

Temperature	26°C
Relative Humidity	60%
Atmospheric Pressure	1019mbar

3. Human Body Model

Storage Capacitor	150pF
Discharge Resistor	330Ω

4. Discharge Details

No. of Discharges / Point, Level & Polarity	10 air discharges 25 contact discharges
Discharge Interval	1 second

5. 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 ±2kV, ±4kV, ± 8kV, is ±7.12%.

6 Test date : Oct 21st - Nov 30th, 2011
Tested by : David Zhang
*the performance criteria for transient phenomena shall apply

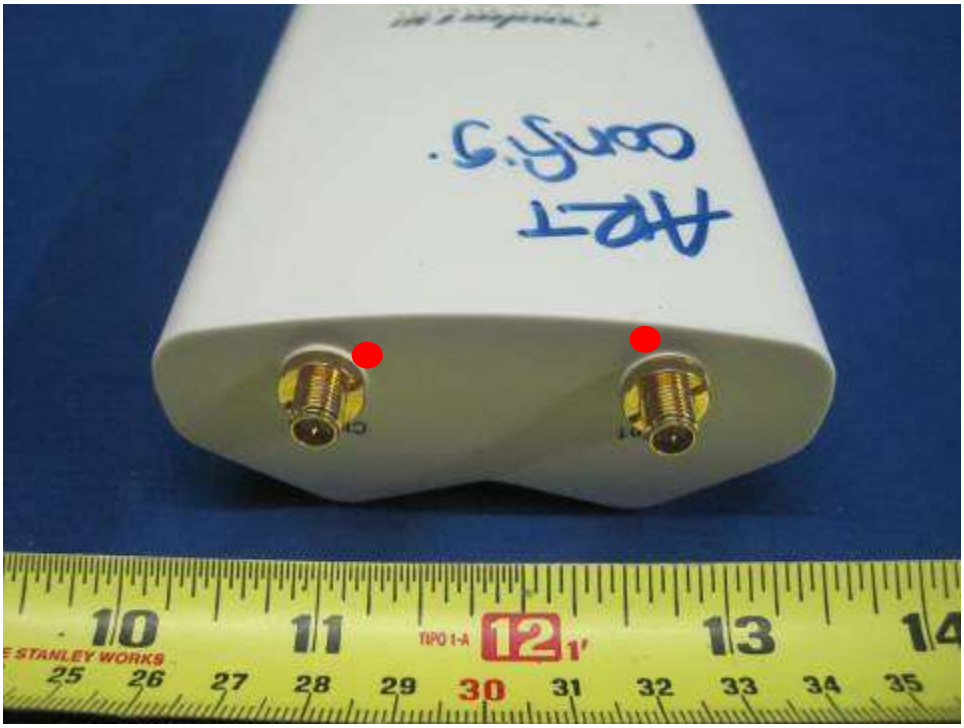
5.1.5.1 Test Result

Discharge Type	Test Severity Level	Results
Air Discharges	±2kV, ±4kV, ± 8kV	Pass
Direct Contact Discharges	±2kV, ±4kV	Pass
Indirect Contact Discharges	±2kV, ±4kV	Pass

Air Charges ● ● Contact Charges

Top View

Bottom View

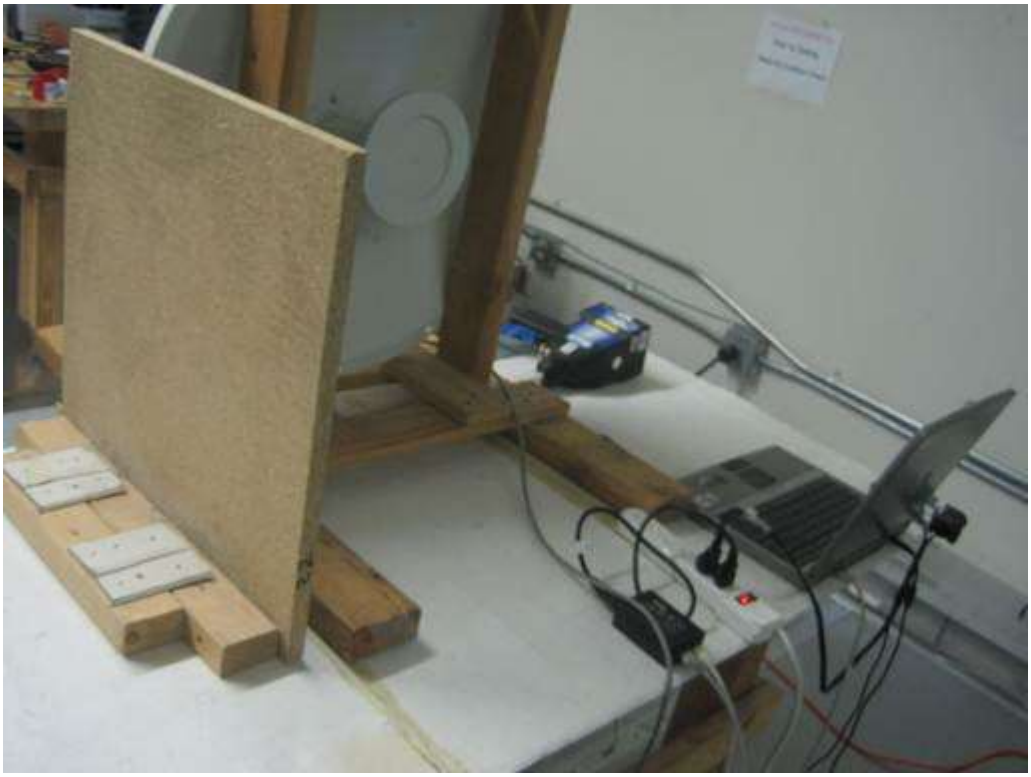


Front View

Rear View

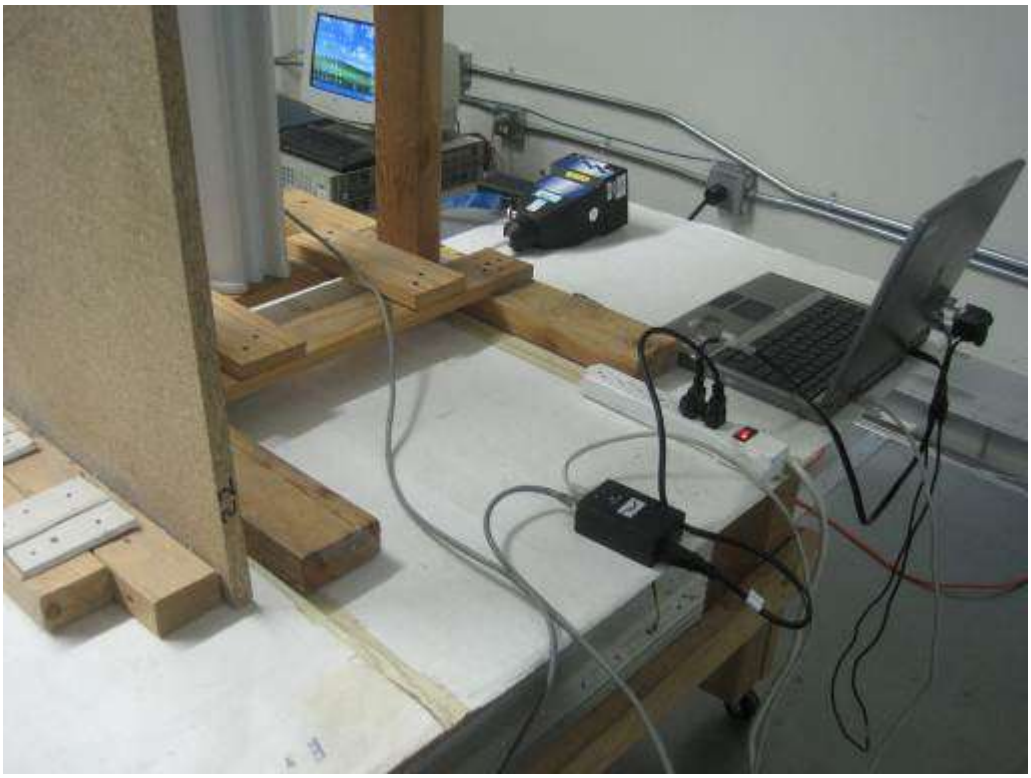
5.1.5.2 Test Setup

ESD Front View @ EUT with Dish antenna - Front



ESD Back View@ EUT with Dish antenna - Rear

ESD Front View @ EUT with Sector antenna - Front



ESD Back View @ EUT with Sector antenna - Rear

5.1.6 RF Radiated Immunity Results

Notes

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions — Temperature: 25°C; Relative Humidity: 60%; Atmospheric Pressure: 1015mbar
3. Radiated Immunity Details — Frequency Step: 1% of fundamental; Sweep Rate: $\leq 1.5 \times 10^{-3}$ decades/s
4. The test was carried out on one surface. The surface selected to face the source of the interference signal is the one anticipated to be the most susceptible.
5. 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 from 80MHz-1GHz & 1.4~2.0GHz, test level ranges from 3V/m to 10V/m, is ±0.74V/m.
6. Test date : Oct 21st - Nov 30th, 2011
   Tested by : David Zhang
   *the performance criteria for continuous phenomena shall apply

5.1.6.1 Test Result

Sides Tested	Frequency Range	Test Severity Level	Result
Front (H)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Front (V)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Right (H)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Right (V)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Left (H)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Left (V)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Back (H)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass
Back (V)	80 MHz – 1 GHz, 1.4 GHz - 2.7 GHz	10V/m, 80% AM (1kHz)	Pass

5.1.6.2 Test Set up

Radiated Immunity Test Setup (<1GHz) @ EUT with Dish antenna

Radiated Immunity Test Setup (>1GHz) @ EUT with Sector antenna

Radiated Immunity Test Setup (<1GHz) @ EUT with Dish antenna

Radiated Immunity Test Setup (>1GHz) @ EUT with Sector antenna

5.1.7 Electrical Fast Transient/Burst Immunity Results

Notes

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions — Temperature: 26°C; Relative Humidity: 60%; Atmospheric Pressure: 1019mbar
3. EFT/B Test Details — Test Duration / Level & Polarity: 1 minute
4. 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, test level ranges from ±0.5kV to ±1kV 10V/m, is ±1.2%.
5. Test date : Oct 21st - Nov 30th, 2011
   Tested by : David Zhang

   *the performance criteria for transient phenomena shall apply

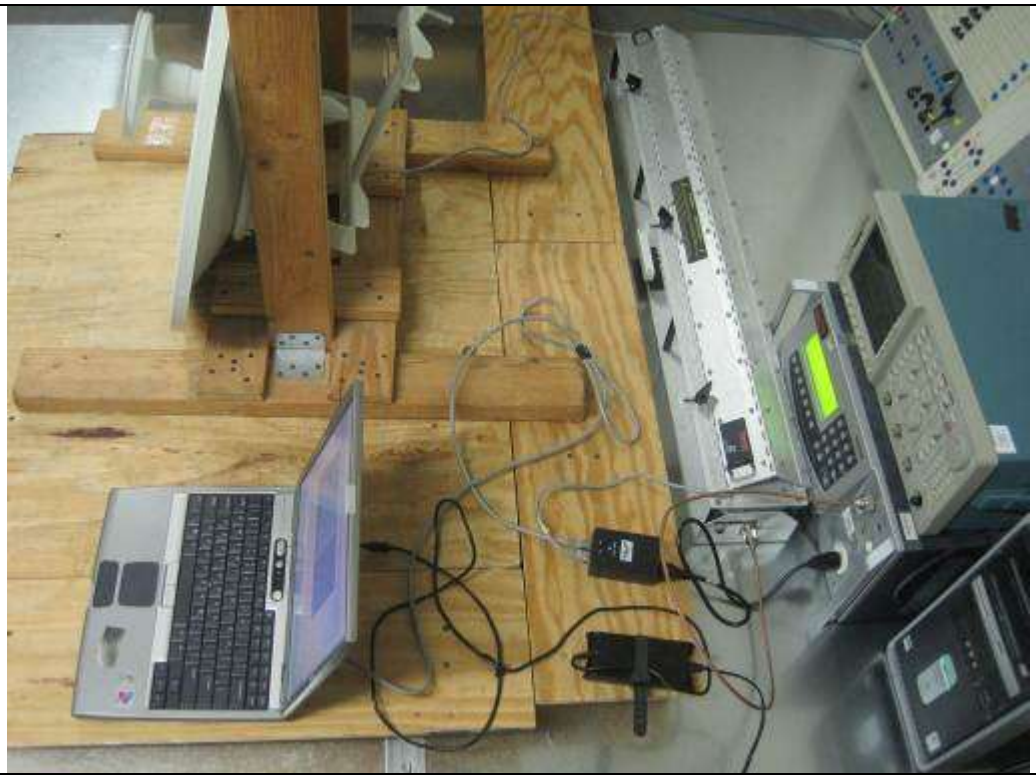
5.1.7.1 Test Result

No. of Test	Voltage	Frequency	Output: Line Coupling (MAINS)	Results
DC POWER INPUT PORT				
1	- 500V	5.0kHz	L1	Pass
2	+500V	5.0kHz	L1	Pass
3	- 500V	5.0kHz	L2	Pass
4	+500V	5.0kHz	L2	Pass
5	- 500V	5.0kHz	PE	N/A
6	+500V	5.0kHz	PE	N/A
7	- 1000V	5.0kHz	L1	Pass
8	+1000V	5.0kHz	L1	Pass
9	- 1000V	5.0kHz	L2	Pass
10	+1000V	5.0kHz	L2	Pass
11	- 1000V	5.0kHz	PE	N/A
12	+1000V	5.0kHz	PE	N/A
CONTROL & SIGNAL LINES				
1	- 250V	5.0kHz	User Ethernet	Pass
2	+250V	5.0kHz	User Ethernet	Pass
3	- 500V	5.0kHz	User Ethernet	Pass
4	+500V	5.0kHz	User Ethernet	Pass
5	- 250V	5.0kHz	PoE Cable	Pass
6	+250V	5.0kHz	PoE Cable	Pass
7	- 500V	5.0kHz	PoE Cable	Pass
8	+500V	5.0kHz	PoE Cable	Pass

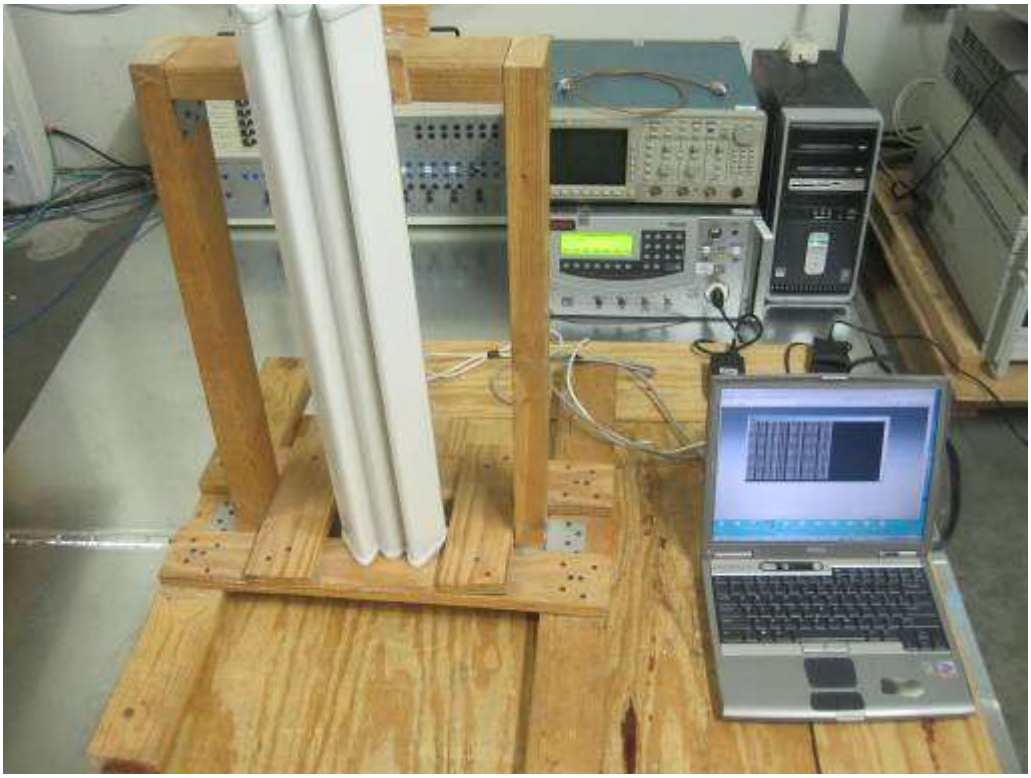
Remarks: Degradation of performance of the EUT occurred when interference voltage was -500V on signal Cable, but they recovered after the testing, so the EUT meets the IEC 61000-4-4 test requirements.

5.1.7.2 Test Setup Photo

EFT Test Setup AC Line @ EUT with Dish antenna



EFT Test Setup Signal Line @ EUT with Dish antenna



EFT Test Setup AC Line @ EUT with Sector antenna

EFT Test Setup Signal Line @ EUT with Sector antenna

5.1.8 Surge Immunity Results

Note:

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions

Temperature	25°C
Relative Humidity	60%
Atmospheric Pressure	1005mbar

3. Surges Test Details

Repetition Rate	At least 1 per minute
Open-Circuit Voltage Waveform	1.2/50 μs
Short-Circuit Current Waveform	8/20 μs
Phase Angels	0°, 90°, 180° and 270°

4 Test date : Oct 21st - Nov 30th, 2011
Tested by : David Zhang

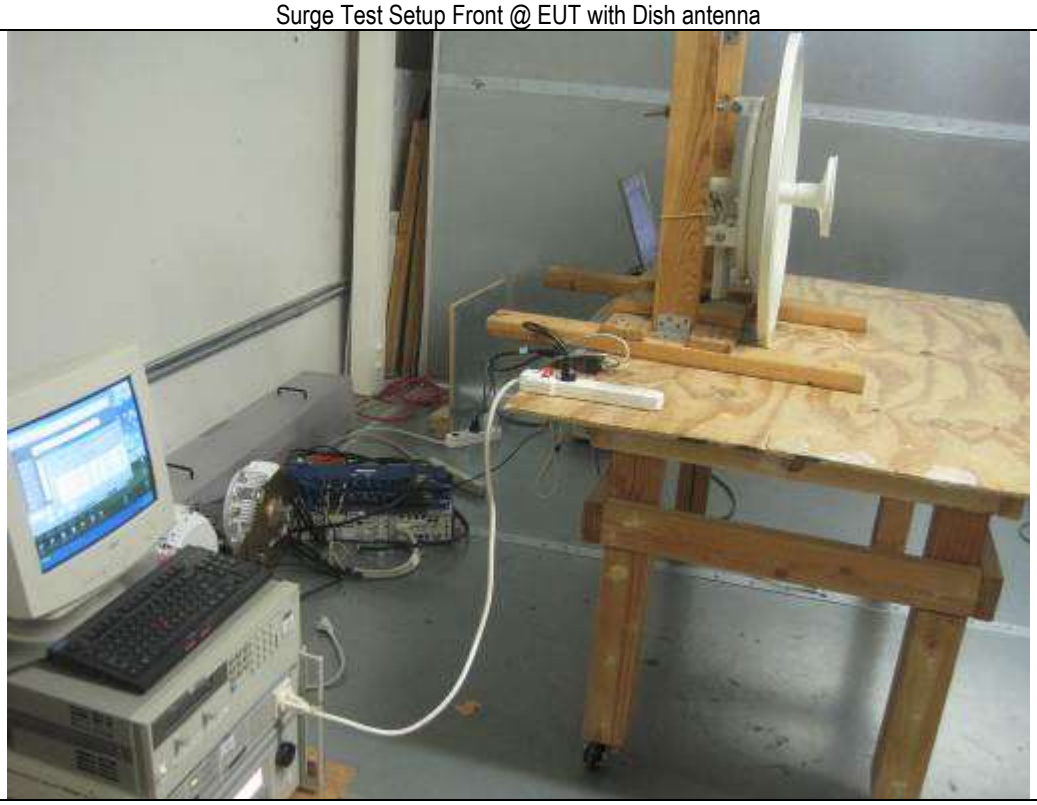
*the performance criteria for continuous phenomena shall apply

5.1.8.1 Test Result

No. of Test	Waveform	Voltage	Output: Line Coupling (MAINS)	Phase Ref.	Phase Angle	Results
DC POWER INPUT PORT						
1	2 Ohm	-1000V	L1/L2	L1	0 degree	N/A
2	2 Ohm	-1000V	L1/L2	L1	90 degree	N/A
3	2 Ohm	-1000V	L1/L2	L1	270 degree	N/A
4	2 Ohm	+1000V	L1/L2	L1	0 degree	N/A
5	2 Ohm	+1000V	L1/L2	L1	90 degree	N/A
6	2 Ohm	+1000V	L1/L2	L1	270 degree	N/A
7	12 Ohm	-2000V	L1/PE	L1	0 degree	N/A
8	12 Ohm	-2000V	L1/PE	L1	90 degree	N/A
9	12 Ohm	-2000V	L1/PE	L1	270 degree	N/A
10	12 Ohm	+2000V	L1/PE	L1	0 degree	N/A
11	12 Ohm	+2000V	L1/PE	L1	90 degree	N/A
12	12 Ohm	+2000V	L1/PE	L1	270 degree	N/A
13	12 Ohm	-2000V	L2/PE	L1	0 degree	N/A
14	12 Ohm	-2000V	L2/PE	L1	90 degree	N/A
15	12 Ohm	-2000V	L2/PE	L1	270 degree	N/A
16	12 Ohm	+2000V	L2/PE	L1	0 degree	N/A
17	12 Ohm	+2000V	L2/PE	L1	90 degree	N/A
18	12 Ohm	+2000V	L2/PE	L1	270 degree	N/A
CONTROL & SIGNAL LINES						
Signal Lines			±0.5kV		Pass	

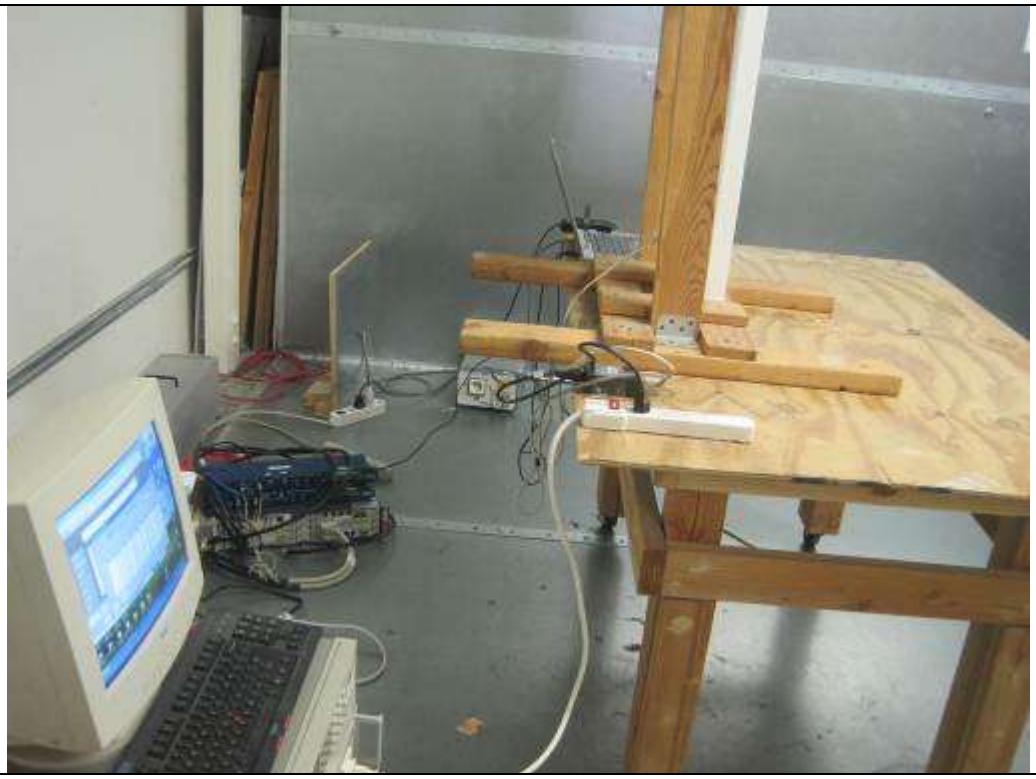
5.1.8.2 Test Setup Photo

Surge Test Setup Front @ EUT with Dish antenna



Surge Test Setup Rear @ EUT with Dish antenna

Surge Test Setup Front@ EUT with Sector antenna



Surge Test Setup Rear @ EUT with Sector antenna

5.1.9 Conducted Disturbance Immunity Results

Note:

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions — Temperature: 25°C; Relative Humidity: 61%; Atmospheric Pressure: 1029mbar
3. Conducted Immunity Details — Frequency Step: 50kHz in the range 150kHz to 5MHz, 1% frequency increment of the momentary frequency in the range 5MHz to 80MHz; Sweep Rate: $\leq 1.5 \times 10^{-3}$ decades/s
4. 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, test level 3Vrms and 10Vrms, frequency raging from 150kHz to 80MHz, is ±1.60dB.

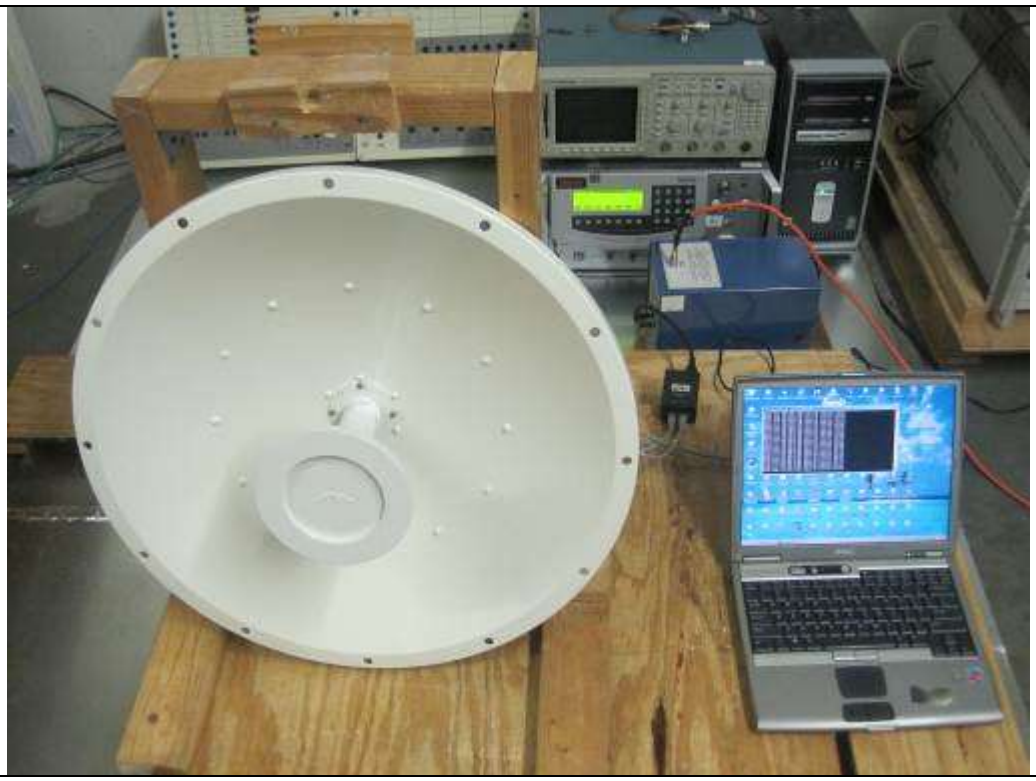
   Test date : Oct 21st - Nov 30th, 2011
   Tested by : David Zhang
5. *the performance criteria for continuous phenomena shall apply

5.1.9.1 Test Result

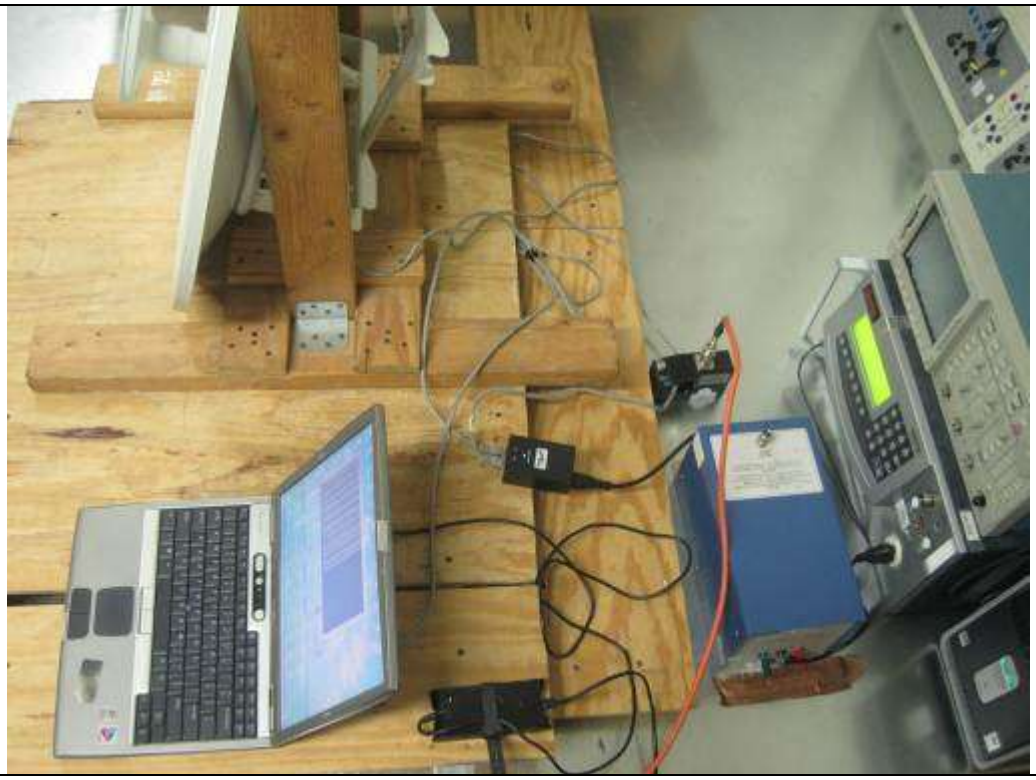
Cable	Frequency Range	Test Severity Level	Result
AC power port	150kHz - 80MHz	10Vrms, 80% AM (1kHz)	Pass
Ethernet Port	150kHz - 80MHz	10Vrms, 80% AM (1kHz)	Pass
PoE Cable	150kHz - 80MHz	10Vrms, 80% AM (1kHz)	Pass

Remarks: No degradation of performance of the equipment under test with occurred during testing

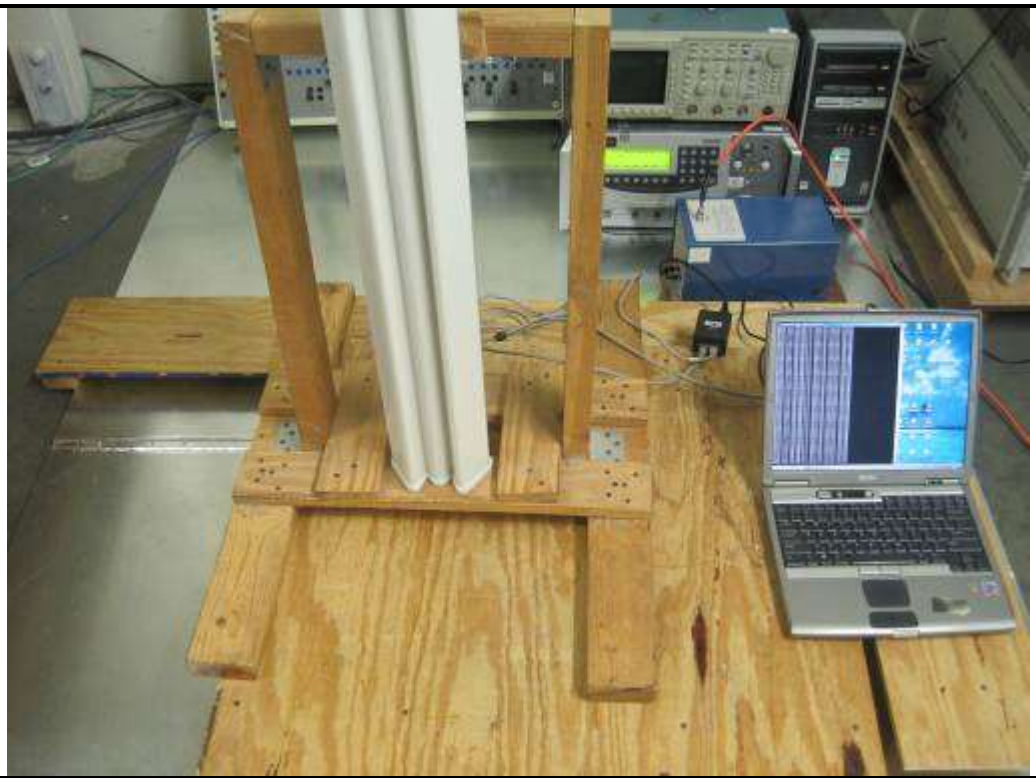
5.1.9.2 Test Set up



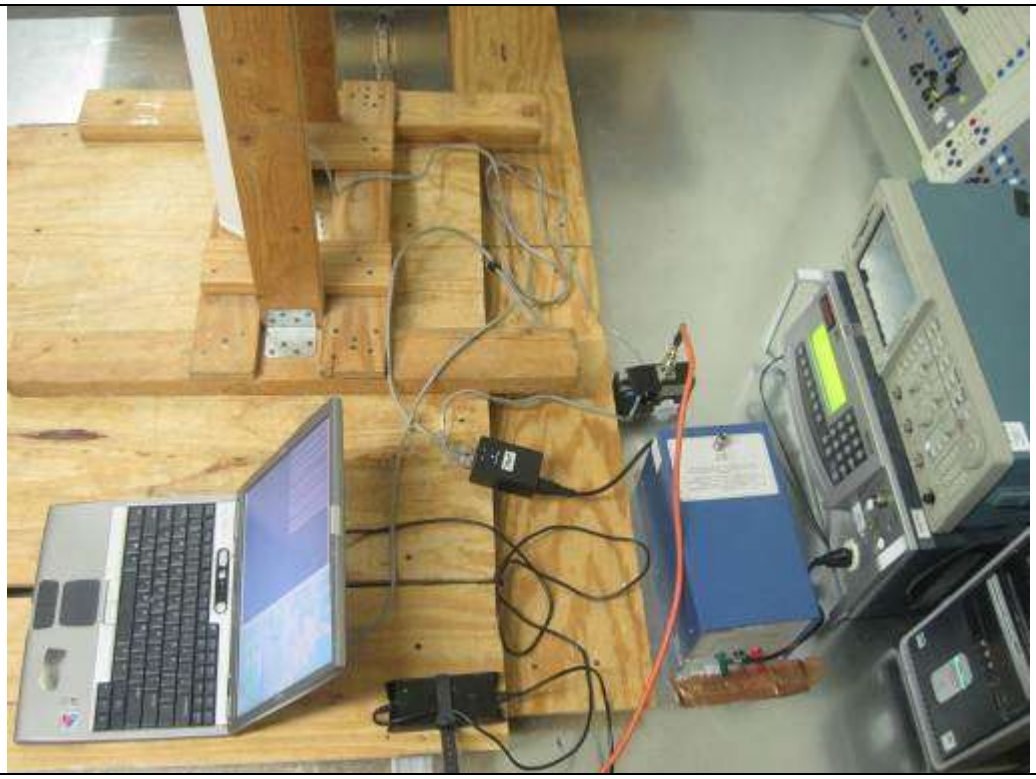
Conducted Immunity Test Setup @ EUT with Dish antenna – AC Power Line



Conducted Immunity Test Setup@ EUT with Dish antenna – Signal Cable



Conducted Immunity Test Setup@ EUT with Sector antenna – AC Line



Conducted Immunity Test Setup @ EUT with Sector antenna – Signal Cable

5.1.10 Voltage Dips And Interruption Immunity Results

Note:

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions

Temperature	25ºC
Relative Humidity	50.5%
Atmospheric Pressure	1015mbar

Test Date : Oct 21st - Nov 30th, 2011
Tested By : David Zhang

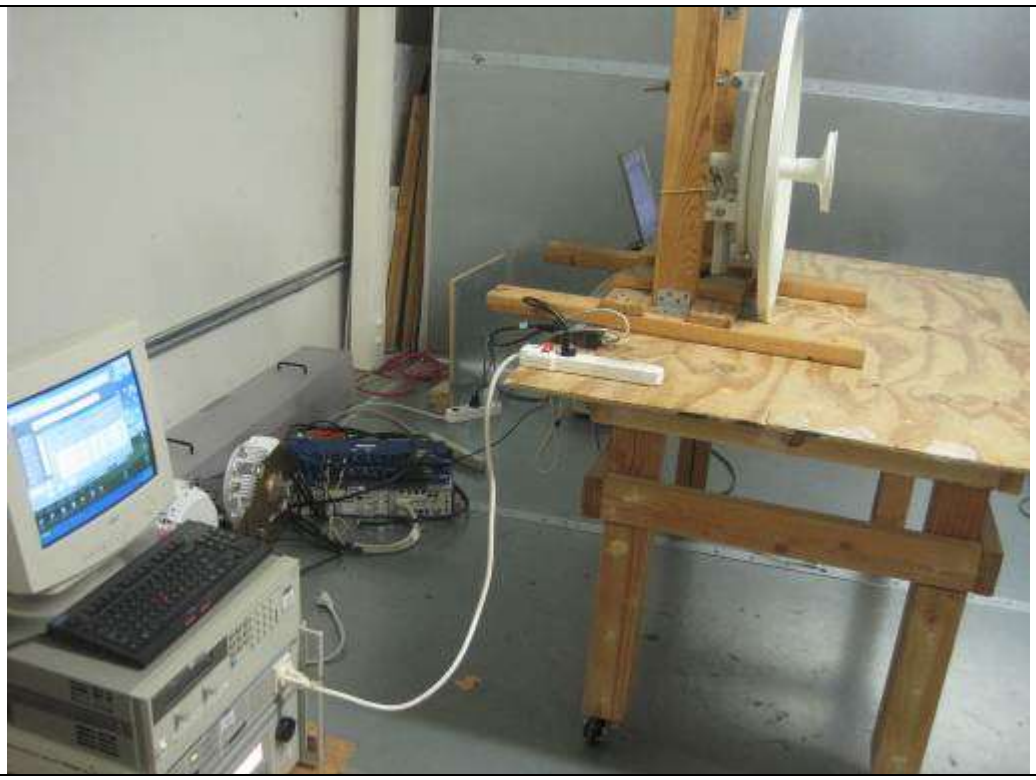
3

*the performance criteria B shall apply for 30%/10ms & 60%/100ms.
Otherwise, Performance criteria C shall apply.

Verdict of this test considered as **PASS**.

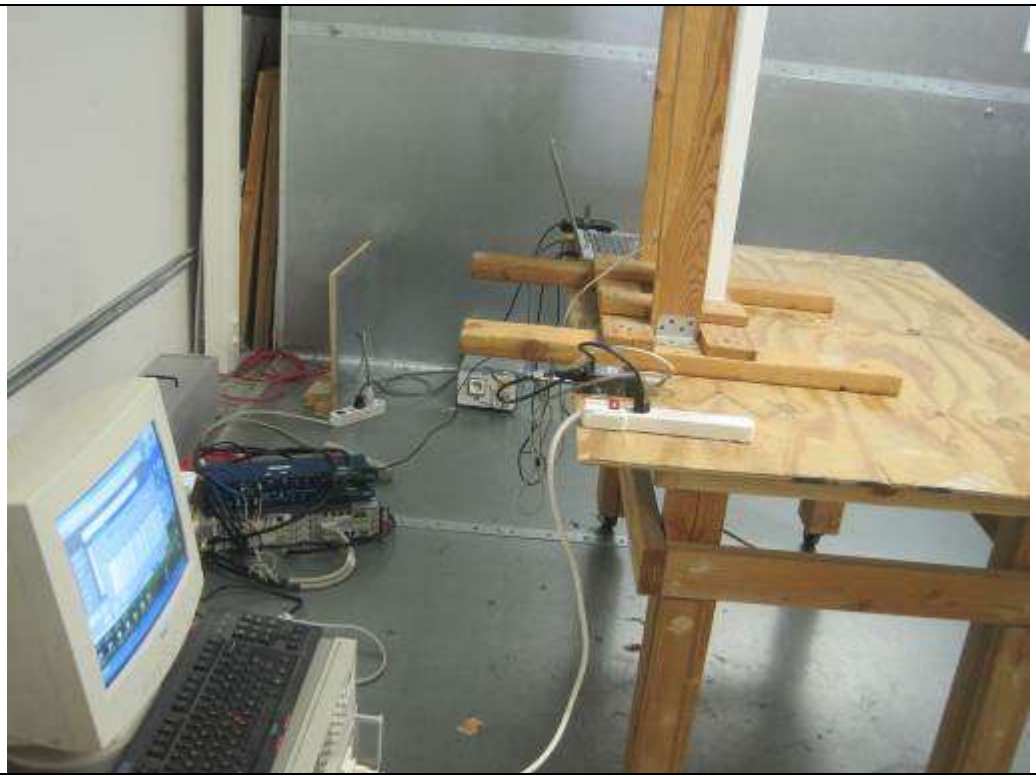
No. of Test	Test Level	Phase Angle	Duration Value	Duration	Test	Results
1	70% Dip	0 degree	0.50	Cycle	3	Pass
	80% Dip	0 degree	0.50	Cycle	3	Pass
	40% Dip	0 degree	0.50	Cycle	3	Pass
	0% Short	0 degree	0.50	Cycle	3	Pass
	0% Open	0 degree	0.50	Cycle	3	Pass
2	70% Dip	180 degree	0.50	Cycle	3	Pass
	80% Dip	180 degree	0.50	Cycle	3	Pass
	40% Dip	180 degree	0.50	Cycle	3	Pass
	0% Short	180 degree	0.50	Cycle	3	Pass
	0% Open	180 degree	0.50	Cycle	3	Pass
3	40% Dip	0 degree	5.00	Cycle	3	Pass
	70% Dip	0 degree	5.00	Cycle	3	Pass
	80% Dip	0 degree	5.00	Cycle	3	Pass
	0% Short	0 degree	5.00	Cycle	3	Pass
	0% Open	0 degree	5.00	Cycle	3	Pass
4	40% Dip	0 degree	50.00	Cycle	3	Pass
	70% Dip	0 degree	50.00	Cycle	3	Pass
	80% Dip	0 degree	50.00	Cycle	3	Pass
	0% Short	0 degree	50.00	Cycle	3	Pass
	0% Open	0 degree	50.00	Cycle	3	Pass
5	0% Short	0 degree	250.00	Cycle	3	Pass
	80% Dip	0 degree	250.00	Cycle	3	Pass
	70% Dip	0 degree	250.00	Cycle	3	Pass
	40% Dip	0 degree	250.00	Cycle	3	Pass
	0% Open	0 degree	250.00	Cycle	3	Pass
6	80% Dip	0 degree	250.00	Cycle	3	Pass
	70% Dip	0 degree	250.00	Cycle	3	Pass
	40% Dip	0 degree	250.00	Cycle	3	Pass
	0% Short	0 degree	250.00	Cycle	3	Pass
	0% Open	0 degree	250.00	Cycle	3	Pass

Dips Test Setup @ EUT with Dish antenna - Front



Surge Test Setup @ EUT with Dish antenna - Rear

Surge Test Setup @ EUT with Sector antenna - Front



Surge Test Setup @ EUT with Sector antenna - Rear

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Serial #	Calibration Due
Conducted Emissions			
R & S Receiver	ESIB 40	100179	04/25/2012
R&S LISN	ESH2-Z5	861741/013	05/18/2012
CHASE LISN	MN2050B	1018	05/18/2012
Sekonic Hygro Hermograph	ST-50	HE01-000092	06/04/2012
Radiated Emissions			
R & S Receiver	ESIB 40	100179	05/19/2012
Sunol Sciences, Inc. antenna (30MHz~2GHz)	JB1	A030702	06/01/2012
3 Meters SAC	3M	N/A	10/13/2012
10 Meters OATS	10M	N/A	06/17/2012
Sekonic Hygro Hermograph	ST-50	HE01-000092	06/04/2012
Test Equity Environment Chamber	1007H	61201	06/01/2012
Permitted Freq Range			
R & S Receiver	ESIB 40	100179	05/19/2012
TestEquity Environment Chamber	1007H	61201	06/01/2012
Electrostatic Discharge Immunity			
HAEFELY ESD Tester	PESD1600	H 907726	05/19/2012
RF Radiated Immunity			
High Power Solid State Amplifier (80MHz~1000MHz)	CMC150	M631-0408	Functional verification
Medium Power Solid State Amplifier (0.8~4.2GHz)	S41-25	M629-0408	Functional verification
Synthesized Signal Generator (0.1 - 6000 MHz)	8665B-008	3744A01304	05/17/2012
ETS Bilog Antenna	3141	1203	Functional verification
Double Ridged Waveguide Horn Antenna (1-18GHz)	3115	10SL0060	Functional verification
Electrical Fast Transient/Burst Immunity			
EMCPRO-PLUS Immunity Test System	EMCPRO PLUS	0802203	05/19/2012
Surge Immunity			
EMCPRO-PLUS Immunity Test System	EMCPRO PLUS	0802203	05/19/2012
Conducted Disturbance Immunity			
IFI Power Amplifier (80~1000MHz)	CMC150	M631-0408	Functional verification
HP Signal Generator	8564E	3626A00557	05/17/2012
FISCHER BCI Injection Probe	F-120-3B	FISCHER BCI Injection Probe	05/17/2012
COM-POWER CDN	CDN M3-25	COM-POWER CDN	05/18/2012
COM-POWER CDN	CDN M2-25	COM-POWER CDN	05/18/2012
Voltage Dips Immunity			
EMCPRO-PLUS Immunity Test System	EMCPRO PLUS	0802203	05/19/2012

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 50Ω/50μH 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 μV = 47.96 dBμV

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

Q-P reading obtained directly from EMI Receiver = 40.00 dBμV
(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 1GHz (for FCC tests, until the 5th harmonic for operating frequencies ≥ 108MHz), 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 as shown in Annex B.

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

1. The EUT was switched on and allowed to warm up to its normal operating condition.

2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:

   a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
   b. The EUT was then rotated to the direction that gave the maximum emission.
   c. Finally, the antenna height was adjusted to the height that gave the maximum emission.

3. A Quasi-peak measurement was then made for that frequency point.

4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.

5. The frequency range covered was from 30MHz to 1GHz (for FCC tests, until the 5th harmonic for operating frequencies ≥ 108MHz), using the Biconical antenna for frequencies from 30MHz to 230MHz, Log-periodical antenna for frequencies from 230MHz to 1GHz, and the Horn antenna above 1GHz.

Sample Calculation Example

At 300 MHz limit = 200 μV/m = 46.00 dBμV/m

Log-periodic antenna factor & cable loss at 300 MHz = 18.50 dB

Q-P reading obtained directly from EMI Receiver = 40.00 dBμV/m
(Calibrated level including antenna factors & cable losses)

Therefore, Q-P margin = 46.00 – 40.00 = 6.00 i.e. **6 dB below limit**

Annex A. iv HARMONIC CURRENT EMISSIONS TEST DESCRIPTION (EN 61000-3-2:2006)

Test Set-up

1. The EUT was placed on a 0.8m high, non-conductive table.
2. The test was performed using harmonic current measuring equipment that was compliant with the standard.
3. The harmonic current measuring equipment was connected to the EUT AC power cord.

Test Method

1. The power supply to EUT was switched on and allowed to warm up to its normal operating condition.
2. The harmonic current measuring equipment was set to 230 Vac with 50 Hz.
3. The EUT was observed during, and checked after the test to determine the result.

Annex A. v VOLTAGE FLUCTUATIONS AND FLICKERS TEST DESCRIPTION (EN 61000-3-3:2008)

Test Set-up

1. The EUT was placed on a 0.8m high, non-conductive table.
2. The test was performed using a voltage fluctuations and flickers measuring equipment that were compliant with the standard.
3. The voltage fluctuations and flickers measuring equipment were connected to the EUT AC power cord.

Test Method

1. The power supply to EUT was switched on and allowed to warm up to its normal operating condition.
2. The voltage fluctuations and flickers measuring equipment was set to 230 Vac with 50 Hz.
3. The EUT was observed during, and checked after the test to determine the result.

Annex A. vi ELECTROSTATIC DISCHARGE IMMUNITY TEST DESCRIPTION (EN 61000-4-2:2009)

Test Set-up

1. The test set-up was in accordance with the standard.

2. The electrostatic discharge (ESD) gun was loaded with the correct charging / discharge network specified by the standard.

3. A 0.8m high, non-metallic table, with a Horizontal Coupling Plane (HCP) placed on the tabletop, was used as a test bench. The EUT and supporting equipment were placed on the test bench, isolated from the HCP by a thin insulating sheet (0.5mm thick).

4. The HCP was grounded to the ground plane via two 470 k "bleed" resistors at each end of the ground cable.

5. A Vertical Coupling Plane (VCP) was also used during the test. The VCP was also grounded to the ground plane in a similar manner as the HCP.

Test Method

1. Direct Air & Contact Discharges

   Applications of direct air and contact discharges to the discharge points specified by the customer were carried out in the following manner:

   a. The EUT was switched on and allowed to warm up to its normal operating condition.
   b. The test discharge points are shown in the ESD Test Points Section of Annex B.
   c. For air discharges, the charged rounded electrode was positioned at a distance away from the test point and moved towards the EUT at a steady rate until a discharge was made or until the electrode touched the EUT, whichever occurs first.
   d. For contact discharges, the pointed electrode was applied directly to the test point, in contact with the conductive surface of the EUT. The discharges were then made with the electrode in contact with the EUT.
   e. The required number of positive and negative discharges was applied at each test point; with a one second interval between discharges.
   f. The EUT was monitored during the test in accordance with the Pass / Fail criteria declared by the customer.

2. Indirect Coupling Plane Discharges

   Indirect applications of discharges using the HCP & VCP were performed on the sides of the EUT in the following manner:

   a. The EUT was switched on and allowed to warm up to its normal operating condition.
   b. The discharges to the HCP / VCP were made 0.1m away from one side of the EUT.
   c. The required numbers of positive and negative discharges were applied at each test point; with a one second interval between discharges.
   d. The EUT was monitored during the test in accordance with the Pass / Fail criteria declared by the customer.
   e. The test was then repeated on the remaining necessary sides of the EUT.

Annex A.vii RF RADIATED IMMUNITY TEST DESCRIPTION (EN 61000-4-3:2006)

Test Set-up

1. The EUT was set up inside a semi-anechoic chamber in accordance with the standard.
2. The EUT was placed on top of a 0.8m high, non-metallic table in a typical configuration.
3. An isotropic field probe was placed adjacent to the EUT.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The EUT was exercised and monitored in the manner specified by the customer.
3. All test instruments were PC controlled, via their IEEE 488.2 bus interfaces, and the test conducted in the following manner:
   a. The testing frequencies were swept over the required frequency range, with a step frequency equal to 1% of fundamental. The sweep rate was 1.0×10^{-3} decades/s.
   b. For each frequency tested, the signal generator output level was adjusted automatically until the unmodulated field strength registered by the field monitor reached the desired level. This level was held constant for the specified dwell time.
4. The EUT was continuously monitored during the test in accordance with the Pass / Fail criteria declared by the customer.
5. The test was done in both horizontal and vertical antenna polarizations, and for all necessary sides of the EUT.

Annex A.viii ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST DESCRIPTION (EN 61000-4-4:2004)

Test Set-up

1. The test set-up was in accordance with the standard.

2. The test was performed using an EFT/B generator and capacitive coupling clamp that were compliant with the standard.

3. The EFT/B generator was placed on top of the ground plane and connected to the protective earth.

4. D.C./A.C. Power Line Test

   a. The EUT was placed on top of a 0.8m high, non-metallic table, and placed at least 0.5m away from the walls of the room and other conductive surfaces.
   b. The required power was supplied to the EUT via direct connection to the EFT/B generator.

5. I/O Signal & Control Line Test

   a. Insulating supports were used to ensure that the EUT and its cables were 0.1m above the metallic ground plane.
   b. The capacitive coupling clamp was placed on top (and in contact with) the metallic ground plane.
   c. The Cable Under Test (CUT) was sandwiched between the plates of the capacitive coupling clamp. All other cables were kept as far away from the capacitive coupling clamp as possible, where possible, perpendicularly orientated with respect to the CUT.
   d. The EFT/B generator output was connected to the capacitive coupling clamp.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.

2. D.C./A.C. Power Line Test

   a. The EFT/B test system has a built-in coupling/decoupling network which couples the generated EFT bursts into the EUT power supply lines connected to it.
   b. The EFT bursts were coupled to the selected lines (one at a time) of the EUT for the necessary test duration.

3. I/O Signal & Control Line Test

   a. The interference impulses were capacitively coupled to the EUT's signal cables for the necessary test duration.

4. The EUT was monitored during the test in accordance with the Pass / Fail criteria declared by the customer.

5. The test was performed with EFT bursts in the positive and negative polarities and repeated on all necessary lines.

Annex A.ix VOLTAGE SURGE IMMUNITY TEST DESCRIPTION (EN 61000-4-5:2006)

Test Set-up

1. The EUT was placed on a 0.8m high, non-conductive table.
2. The test was performed using a voltage surge generator, mains, and signal line coupling/decoupling networks that were compliant with the standard.
3. The voltage surge generator and coupling/decoupling networks were connected to the same protective earth.
4. The test level was set with the surge generator's HV output open-circuited.
5. For testing of the mains line, the mains coupling/decoupling network was inserted into the line. The voltage surge generator HV output cables were connected to the mains coupling/decoupling network, which has the necessary resistor/capacitor configurations (as required by the standard) built-in. The settings on the mains coupling/decoupling network were selected to give the required resistor/capacitor configuration as follows:
   a. An 18μF capacitor in series with the output of the generator for differential (line-to-line) mode testing.
   b. A 10 Ohm resistor and 9μF capacitor in series with the output of the generator for common (line-to-ground) mode testing
6. For testing of the signal lines, the signal line coupling/decoupling network was inserted into the line. The voltage surge generator HV output cables were connected to the signal line coupling/decoupling network, which has the necessary resistor/capacitor/gas arrestor configurations (as required by the standard) built-in. The settings on this network were selected to give the required resistor/capacitor/gas arrestor configuration as reflected in the standard.

Test Method

1. The power supply to EUT was switched on and allowed to warm up to its normal operating condition.
2. The surge generator phase shifter was set to 90° (for positive surges) or 270° (for negative surges).
3. The correct open-circuit test level was set with the surge generator disconnected from the coupling network.
4. The output of the generator was then reconnected back to the coupling network.
5. Five discharges, generated by the voltage surge generator, were made on each relevant line, for each polarity, at each test level, with the relevant discharge interval.
6. The EUT was observed during, and checked after the test to determine the result.

Annex A.x. CONDUCTED DISTURBANCE IMMUNITY TEST DESCRIPTION: CDN INJECTION METHOD (EN 61000-4-6:2009)

Calibration Set-up & Method

1. A pre-test calibration was necessary in order to determine the signal generator and power amplifier setting to give the desired injected interference level.

2. The relevant CDN was placed on a Ground Reference Plane (GRP), with the base of the CDN in electrical contact with it.

3. The auxiliary equipment end of the CDN was terminated with a 150Ω load, while the EUT end of the CDN was connected to a spectrum analyzer via a 150Ω/50Ω adapter. The injection port of the CDN was connected to the output of the power amplifier supplying the interference signal.

4. With a fixed amplifier gain setting, the output power level from the power amplifier to the spectrum analyzer was adjusted, via a signal generator connected to the RF input of the power amplifier, to achieve the desired test level at the spectrum analyzer over the required frequency range.

Test Set-up

1. The EUT and auxiliary equipment were placed on top of the GRP and isolated from it by a 0.1m thick insulating support as shown in Annex B.

2. The test system includes a RF signal generator, a power amplifier, attenuators, a spectrum analyzer and various types of Coupling and Decoupling Networks (CDNs).
3.
4. The EUT's Cables Under Test (CUT) were cut in order to insert the CDNs into the line. The cable lengths were kept as short as possible to maintain a distance of 0.1m to 0.3m between the EUT and the CDNs.
5.
6. The interconnecting cables between the EUT, CDNs and auxiliary equipment were kept at a height of 3cm to 5cm above the GRP.
7.
8. The CDNs were placed on the GRP, in direct electrical contact with it.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.

2. The interfering signal was swept from 150 kHz to 80MHz, with a step frequency equal to 1% of fundamental. The sweep rate was $\leq 1.5 \times 10^{-3}$ decades/s.

3. The output power level from the power amplifier to the CDN was adjusted through the signal generator so that the incident power reached the same level as that established during calibration. Once the incident power to the CDN reached the calibrated level, the 80% AM 1 kHz AF was switched on for the specified dwell time.

4. The EUT was continuously monitored during the test in accordance with the PASS/FAIL criteria declared by the customer.

Annex A.xi. CONDUCTED DISTURBANCE IMMUNITY TEST DESCRIPTION: CURRENT INJECTION METHOD (EN 61000-4-6:2009)

Calibration Set-up & Method

1. A pre-test calibration was necessary in order to determine the signal generator and power amplifier setting to give the desired injected interference level.

2. The calibration test jig was placed on a Ground Reference Plane (GRP), making direct contact with it. One end of the calibration test jig was connected to a spectrum analyzer via a 100Ω feed through while the other end was terminated by a 150Ω termination. The Bulk Current Injection (BCI) probe was connected to the RF output of a power amplifier, and then installed within the calibration jig.

3. With a fixed amplifier gain setting, the output power level from the power amplifier to the BCI probe was adjusted via a signal generator connected to the RF input of the power amplifier, to achieve the desired test level at the spectrum analyzer, over the required frequency range.

Test Set-up

1. The EUT and auxiliary equipment were placed on top of the GRP and isolated from it by a 0.1m thick insulating support as shown in Annex B.

2. The Test system includes a RF signal generator, a power amplifier, attenuators, a spectrum analyzer, an injection probe and a monitoring probe.

3. The BCI probe was clamped to the Cable Under Test (CUT). The distance between the BCI probe and the EUT was maintained at 0.1m to 0.3m.

4. The interconnecting cables between the EUT, BCI probe, and auxiliary equipment were kept at a height of 3cm to 5cm above the GRP.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.

2. The interfering signal was swept from 150 kHz to 80MHz, with a step frequency equal to 1% of fundamental. The sweep rate was $\leq 1.5 \times 10^{-3}$ decades/s.

3. The output power level from the power amplifier to the current probe was adjusted through the signal generator so that the incident power reached the same level as that established during calibration. Once the incident power to the current probe reached the calibrated level, the 80% AM 1 kHz AF was switched on for the specified dwell time.

4. The EUT was continuously monitored during the test in accordance with the PASS/FAIL criteria declared by the customer.

Annex A.xii VOLTAGE DIPS AND INTERRUPTIONS TEST DESCRIPTION (EN 61000-4-11:1994+A1: 2001)

Calibration Set-up & Method

1. The proper severity level shall be selected before performing this testing.

2. SIEMIC Work Instruction on this test must be referenced for the table of the Summary of Test Levels.

Test Set-up

1. The EUT and auxiliary equipment were placed isolated support.

2. Select the standards and follow work instructions of operations.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The EUT shall continue to work as normal during the testing

Annex B EUT PHOTOGRAPHS

Annex B.i. Photograph 1: EUT External Photo

EUT - Front View

EUT – Rear View

EUT - Top View

EUT - Bottom View

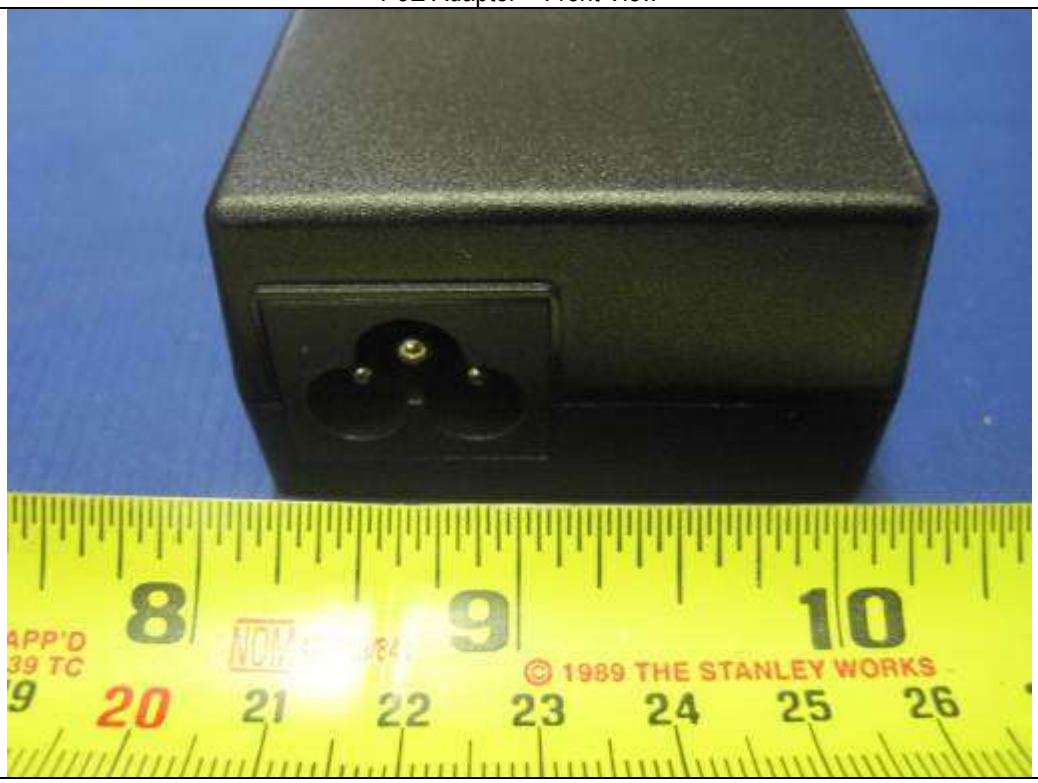
EUT - Right View

EUT - Left View

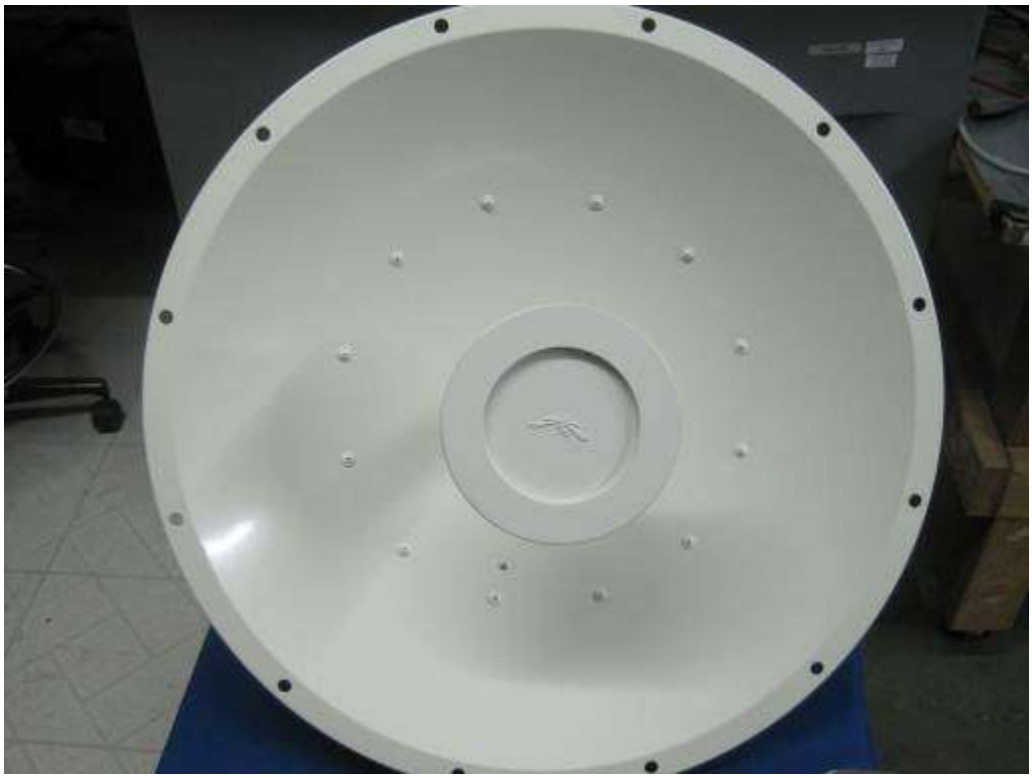
PoE Adapter – Top View

PoE Adapter - Bottom View

PoE Adapter – Front View



PoE Adapter - Rear View



Dish Antenna - Front View

Dish Antenna - Back View

Sector Antenna - Top View

Sector Antenna - Bottom View

Annex B.ii. Photograph 2: EUT Internal Photo

N/A

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

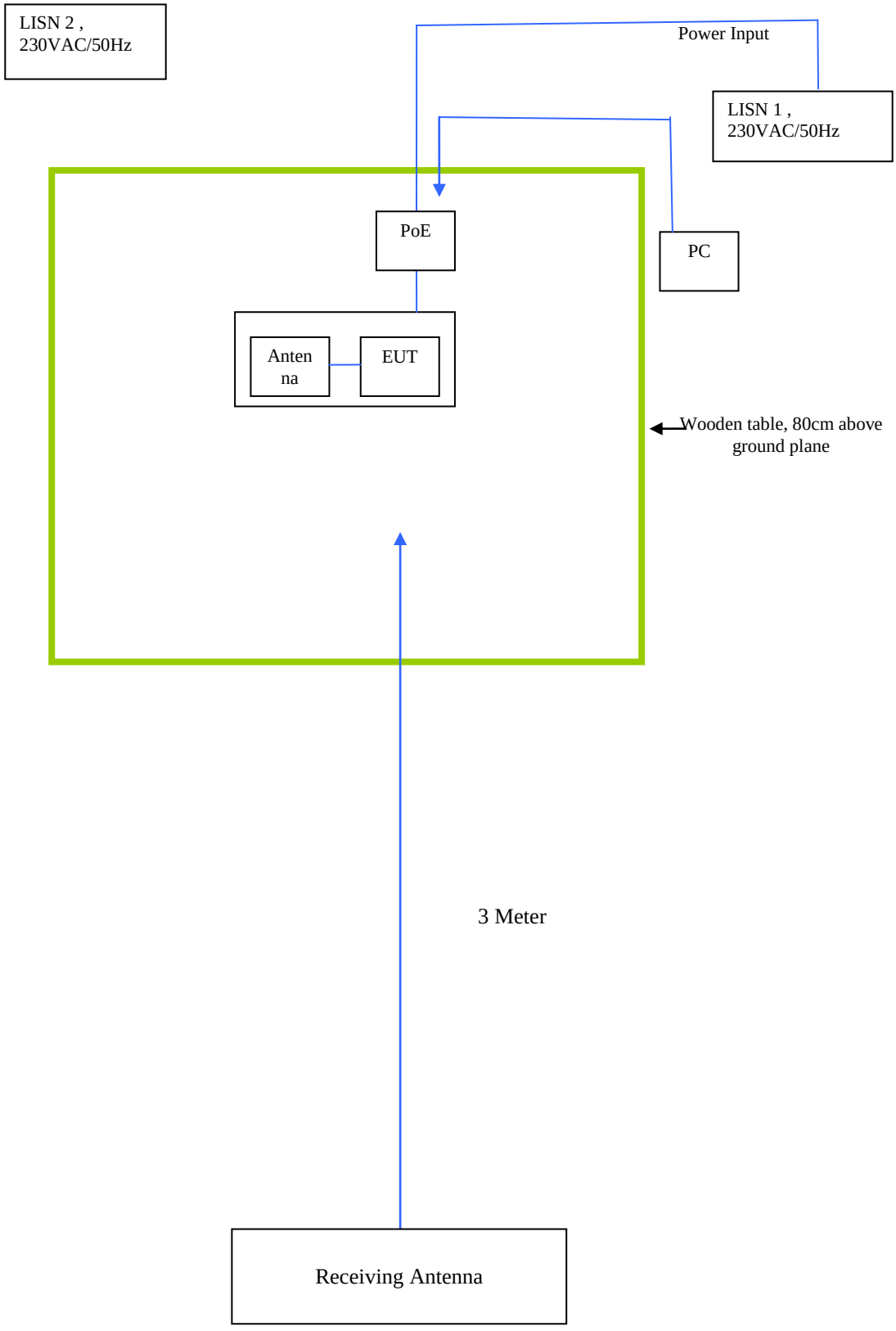
TEST CONDITIONS

Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

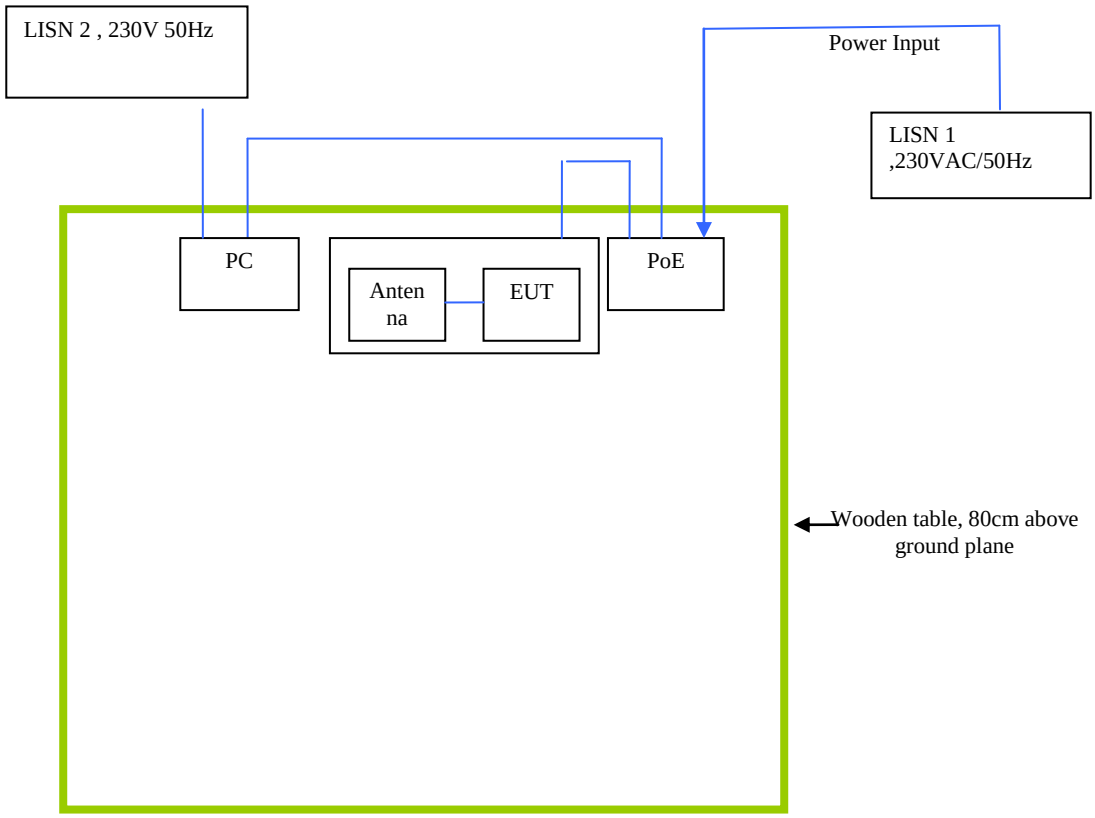
The following is a description of supporting equipment and details of cables used with the EUT.

Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
2* PC Laptop / DELL	Latitude D600	Shielded RJ45 Cable , 2 meter (From PC to ODU)
AirMax TDMA BaseStation	Rocket M3	Shielded RF Cable,20cm
AirMax TDMA BaseStation	Rocket M3	Shielded RF Cable,20cm
BER Tester	HP/3784A	3784A, E1 Cable (RJ45) , 2m
Variable Attenuator	NARDA/4799	RF Cable, 30cm
Variable Attenuator	Agilent/H281A	RF Cable, 30cm
Coupler	CMT/971722-072	Waveguide

Block Configuration Diagram for Radiated Emission



Block Configuration Diagram for Conducted Emission



Annex C.ii. EUT OPERATING CONDITIONS

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

Test	Description Of Operation
Emissions Testing	The EUT was working normally.
Others Testing	The EUT was working normally.

Annex C.iii. PASS / FAIL CRITERIA & MONITORING METHODS

For compliance to the immunity requirements of the Directive, the EUT must comply with the correct Performance Criteria (Continuous, Transient phenomena) stipulated in the relevant standard.

Performance Criteria A (Continuous phenomena) – the equipment should continue as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment id used as intended.

Performance Criteria B (Transient phenomena) – After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level mat be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or store data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment id used as intended.

Please refer to the standard for the full Performance Criteria description.

Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

Annex E SIEMIC ACCREDITATION

SIEMIC ACCREDITATION DETAILS: A2LA 17025 & ISO Guide 65 : 2742.01 , 2742.2

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Accredited Laboratory

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SIEMIC LABORATORIES

San Jose, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 23rd day of November 2010.

President & CEO
For the Accreditation Council
Certificate Number 2742.01
Valid to September 30, 2012

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

"World Class Accreditation"

The American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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ELECTRICAL

Valid to: September 30, 2012 Certificate Number: 2742.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following EMC, Product Safety, Radio and Telecommunication tests:

Test Description:	Test Method:
EN & IEC – Emissions & Immunity	IEC/CISPR 11; IEC/CISPR 12; EN 55011; IEC/CISPR 22; EN 55022; IEC/CISPR 20; EN 55020; EN 61000-6-1; EN 61000-6-2; EN 61000-6-3; EN 61000-6-4; EN 61204-3; EN 61326, EN 61326-1; EN 61000-3-2; EN 61000-3-3; EN 50081-1, EN 50081-2; EN 50082-1; IEC 61000-4-2; EN 61000-4-2; IEC 61000-4-3 *(limited up to 2.7 GHz and 3V/m)*; EN 61000-4-3; *(limited up to 2.7 GHz and 3V/m);* IEC 61000-4-4; EN 61000-4-4; IEC 61000-4-5; EN 61000-4-5; IEC 61000-4-6; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-8; IEC 61000-4-11; EN 61000-4-11; IEC/CISPR 24; EN 55024; EN 50412-2-1; EN 50083-2; EN 50090-2-2; EN 50091-2; EN 50130-4; EN 50130-4 +A12; IEC 60601-1-2; EN 12184; EN 55015; EN 61547; CISPR 16-1-4
Korea – Emissions & Immunity	KCC Notice 2009-27, Nov. 5, 2009; RRA Announce 2009-9, Dec. 21, 2009; KN 22:2007-12; KCC Notice 2009-27, Nov. 5, 2009; RRA Notice 2009-10, Dec. 21, 2009; KN 24:2008-5; KN 61000-4-2:2008-5; KN 61000-4-3:2008-5; KN 61000-4-4:2008-5; KN 61000-4-5:2008-5; KN 61000-4-6:2008-5; KN 61000-4-8:2008-5; KN 61000-4-11:2008-5; RRL Notice 2008-3; RRL Notice 2008-4; RRL Notice 2005-131; RRL Notice 2007-99; RRL Notice 2007-101; RRL Notice 2008-4; RRA Notice No 2008-11(2008.12.16); RRA Notice No 2008-12(2008.12.16); KN 60601-1-2; KCC Notice 2009-27; KN 301 489-1(2008-05); KN 301 489-7(2008-05); KN 301 489-17(2008-05); KN 301 489-24(2008-05); KN 16-1-1(2008-05); KN 16-1-2(2008-05); KN 16-1-3(2008-05); KN 16-1-4(2008-05); KN 16-1-5(2008-05); KN 16-2-1(2008-05); KN 16-2-2(2008-05); KN 16-2-3(2008-05); KN 16-2-4(2008-05)

US / FCC - Emissions	SAE J1113-11, SAE J1113-12; SAE J1113-41; SAE J1113-4; SAE J1113-13; FCC Method 47 CFR Part 18, FCC Report and Order ET Docket 98-153 (FCC 02-48); FCC Method 47 CFR Parts15, including Subpart G, using FCC Order 04-425 ANSI C63.4(2009); ANSI C63.10(2009); ANSI C63.4:2003 ANSI C63.4(2003) with FCC Method 47 CFR Part 11; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart E; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart C; ANSI C63.4(2003) and DA 02-2138; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart B
Canada – Emissions	ICES-001; ICES-002; ICES-003 Issue 4; ICES-003 Issue 4 (2004); ICES-006 Issue 1
Vietnam – Emission & Immunity	TCN 68-193:2003; TCN 68-196:2001; TCVN 7189:2002
Australia / New Zealand – Emissions and Immunity	AS/NZS 1044; AS/NZS 4251.1; AS/NZS 4251.2; AS/NZS CISPR 22; AS/NZS 3548; AS/NZS 2279.3; AS/NZS 61000-3-3; AS/NZS CISPR 11; AS/NZS CISPR 24; AS/NZS 61000.6.3; AS/NZS 61000.6.4; AS/NZS CISPR 14.1; AS/NZS 61000.3.2
Japan – Emissions	JEITA IT-3001; VCCI-V-3:2010.4 (up to 6 GHz)
China – Emissions	GB9254; GB17625.1
Taiwan – Emissions	CNS 13438 (up to 6 GHz); CNS 13783-1; CNS 13803; CNS 13439
Singapore – Emissions & Immunity	IDA TS EMC; CISPR 22; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6
FCC – Unlicensed Radio A1 to A4	A1: 47 CFR Parts 11 (Emergency Alert System (EAS)), 15 (Radio Frequency Devices) and 18 (Industrial, Scientific, and Medical Equipment); FCC OST/MP-5(1986); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009) A2: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009) A3: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.17:2006; ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005 A4: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005
FCC – Licensed Radio B1 to B4	B1: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 24 (Personal Communications Services), 25 (Satellite Communications), and 27 (Miscellaneous Wireless Communications Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard; IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005

FCC – Licensed Radio (continued) B1 to B4	B2: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), 90 (Private Land Mobile Radio Services), 95 (Personal Radio Services), and 97 (Amateur Radio Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard B3: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 80 (Stations in the Maritime Services) , 87 (Aviation Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard B4: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 27 (Broadband Radio Services (BRS) and Educational Broadband Services (EBS)), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), and 101 (Fixed Microwave Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard
Canada – Radio	RSS 102; RSS 111; RSS 112; RSS 117; RSS 118; RSS 119; RSS 123; RSS 125; RSS 127; RSS 128; RSS 129; RSS 131; RSS 132; RSS 133; RSS 134; RSS 135; RSS 136; RSS 137; RSS 138; RSS 139; RSS 141; RSS 142; RSS 170; RSS 181; RSS 182; RSS 188; RSS 191; RSS 192; RSS 193; RSS 194; RSS 195; RSS 196; RSS 197; RSS 198; RSS 199; RSS 210; RSS 220; RSS 213; RSS 215; RSS 243; RSS 287; RSS 310; RSS Gen
CE – Radio	EN 301 502; EN 301 511; EN 301 526; EN 301 681; EN 301 721; EN 301 751; EN 301 753; EN 301 783-2; EN 301 796; EN 301 797; EN 301 840-2; EN 301 843-1; EN 301 843-4; EN 301 843-5; EN 301 893; EN 301 908-01; EN 301 908-02; EN 301 908-03; EN 301 908-04; EN 301 908-05; EN 301 908-06; EN 301 908-07; EN 301 908-08; EN 301 908-09; EN 301 908-10; EN 301 908-11; EN 301 929-2; EN 301 997-2; EN 302 018-2; EN 302 054-2; EN 302 064-2; EN 302 066-2; EN 302 077-2; EN 302 186; EN 302 195-2; EN 302 217-3; EN 302 245-2; EN 302 288-2; EN 302 291-2; EN 302 296; EN 302 297; EN 302 326-2; EN 302 326-3; EN 302 340; EN 302 372-2; EN 302 426; EN 302 454-2; EN 302 502; EN 302 510-2;
	EN 302 217-4-2; EN 300 224-1; EN 300 279; EN 300 339; EN 300 385; EN 301 839-2; EN 301 843-6; EN 302 017-2; EN 302 208-2; EN 302 217-2-2; ETS 300 329; ETS 300 445; ETS 300 446; ETS 300 683; ETS 300 826; ETS EN 300 328; ETSI EN 300 086-2; EN 302217-1; EN 302217-2-1; EN 302217-4-1; EN 302288-1; EN 302908-12; EN 302326-1; EN 301929-1; EN 301997-1; EN 300224-2; EN 301839-1; EN 301843-1; EN 301843-2; EN 301843-3; EN 301843-4; EN 301843-5; EN 302017-1; EN 302208-1; EN 300086-1; EN 300113-1; EN 300224-1; EN 300341-1; EN 302291-1; EN 302500-1; EN 302500-2; ETSI EN 300 113-2; ETSI EN 300 197; ETSI EN 300 198; ETSI EN 300 219-1; ETSI EN 300 219-2; ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 220-3; ETSI EN 300 224-2; ETSI EN 300 296-1; ETSI EN 300 296-2; ETSI EN 300 328-1; ETSI EN 300 328-2; ETSI EN 300 330; ETSI EN 300 330-1; ETSI EN 300 330-2;

CE – Radio (conitnued)	ETSI EN 300 341-2; ETSI EN 300 373-1; ETSI EN 300 373-2; ETSI EN 300 373-3; ETSI EN 300 390-1; ETSI EN 300 390-2; ETSI EN 300 422-1; ETSI EN 300 422-2; ETSI EN 300 431; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 300 454-1; ETSI EN 300 454-2; ETSI EN 300 718-2; ETSI EN 301 021; ETSI EN 301 166-1; ETSI EN 301 166-2; ETSI EN 301 178-2; ETSI EN 301 213-1; ETSI EN 301 213-2; ETSI EN 301 213-3; ETSI EN 301 213-4; ETSI EN 301 213-5; ETSI EN 301 357-1; ETSI EN 301 357-2; ETSI EN 301 390; ETSI EN 301 459; ETSI EN 301 489-01*(excluding section 9.6)*; ETSI EN 301 489-02; ETSI EN 301 489-03; ETSI EN 301 489-04; ETSI EN 301 489-05; ETSI EN 301 489-06; ETSI EN 301 489-07; ETSI EN 301 489-08; ETSI EN 301 489-09; ETSI EN 301 489-10; ETSI EN 301 489-11; ETSI EN 301 489-12; ETSI EN 301 489-13; ETSI EN 301 489-14; ETSI EN 301 489-15; ETSI EN 301 489-16; ETSI EN 301 489-17; ETSI EN 301 489-18; ETSI EN 301 489-19; ETSI EN 301 489-20; ETSI EN 301 489-22; ETSI EN 301 489-23; ETSI EN 301 489-24; ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-32; IEC 60945
IDA – Radio	IDA TS 3G-BS; IDA TS 3G-MT; IDA TS AR; IDA TS CT-CTS; IDA TS GMPCS; IDA TS GSM-BS; IDA TS GSM-MT; IDA TS LMR; IDA TS RPG; IDA TS SRD; IDA TS UWB; IDA TS WBA
Vietnam – Radio	TCN 68-242:2006; TCN 68-243:2006; TCN 68-246:2006
Korea – Radio	KCC Notice 2009-13; KCC Notice 2008-26; RRL Notice 2008-2; RRL Notice 2005-105; RRL Notice 2008-17; RRL Notice 2005-127; RRL Notice 2005-24; RRL Notice 2005-25; RRL Notice 2005-179; RRL Notice 2008-10; RRL Notice 2007-49; RRL Notice 2007-20; RRL Notice 2007-11; RRL Notice 2007-80; RRL Notice 2004-68; KCC Notice 2009-36, Dec. 8, 2009; RRL Notice 2009-6, October 15, 2009; KCC Notice 2010-1; KCC Notice 2010-12; KCC Notice 2010-13
Taiwan – Radio	LP0002; PLMN07; PLMN01; PLMN08
Australia - New Zealand – Radio	AS 2772.2; AS/NZS 4281; AS/NZS 4268; AS/NZS 4280.1; AS/NZS 4583; AS/NZS 4280.2; AS/NZS 4281; AS/NZS 4295; AS/NZS 4582; AS/NZS 4769.1; AS/NZS 4769.2; AS/NZS 4770; AS/NZS 4771
Hong Kong – Radio	HKTA 1002; HKTA 1007; HKTA 1008; HKTA 1010; HKTA 1015; HKTA 1016; HKTA 1020; HKTA 1022; HKTA 1026; HKTA 1027; HKTA 1029; HKTA 1030; HKTA 1031; HKTA 1032; HKTA 1033; HKTA 1034; HKTA 1035; HKTA 1036; HKTA 1037; HKTA 1039; HKTA 1041; HKTA 1042; HKTA 1043; HKTA 1044; HKTA 1046; HKTA 1047; HKTA 1048; HKTA 1049; HKTA 1051; HKTA1052; HKTA1053; HKTA 1054; HKTA 1055

FCC Telephone Terminal Equipment Scope C1	ANSI/TIA-968-A:03; ANSI/TIA-968-A-1:03; ANSI/TIA-968-A-2:04; ANSI/TIA-968-A-3:05; ANSI/TIA-968-A-4:07; ANSI/TIA-968-A-5:07; TIA-968-B; FCC Rule Part 68; 47 CFR Part 68.316; 47 CFR Part 68.317; ANSI/TIA/EIA-464-C; TIA-810-B; T1.TRQ6 (2002); TCB-31-B (1998); TIA-470.110-C; TIA-810-B; TIA-920
Canada – Telecom	CS-03 Part V Issue 9:2009 Amendment 1; CS-03 Part VIII Issue 9:2009 Amendment 4; CS-03 Part I Issue 9:2006 Amendment 3; CS-03 Part II Issue 9:2004; CS-03 Part III Issue 9:2004; CS-03 Part V Issue 9:2004 ; CS-03 Part VI Issue 9:2004; CS-03 Part VII Issue 9:2006 Amendment 3; CS-03 Part VIII Issue 9:2007 Amendment 3; CS-03 Issue 9:04 + A2(06) + A3(06)
Europe – Telecom	TBR 2: 01-1997; TBR 004 Ed.1.95 + A1 (97); TBR 1; TBR 3; TBR 12:A1 01-1996; TBR 013 ed.1; TBR 024 ed.1; TBR 25; TBR 38 ed.1; ETSI ES 203 021-05 ; ETSI ES 203 021-2 ; ETSI ES 021-3; TBR 021; ETSI EG 201 121; ETSI EN 301 437; ETSI TS 101 270-1; ITU-T Recommendation Q.920; ITU-T Recommendation Q.920 – Amendment 1; ITU-T Recommendation Q.921; ITU-T Recommendation Q.921 – Amendment 1; ITU-T Recommendation Q.931; ITU-T Recommendation Q.931 – Amendment 1; Erratum 1 (02/2003) ITU-T Recommendation Q.931 (05/1998); ISDN User Network Interface Layer 3 Specification for Basic Call Control; ITU-T Recommendation P.300
Australia –Telecom Australia – Telecom	AS/CA S003.1:2010; AS/CA S003.2:2010; AS/CA S003.3:2010; AS/CA S004:2010; AS/ACIF S006:2008; AS/ACIF S041.1:2009 AS/ACIF S041.2:2009; AS/ACIF S041.3:2009; AS/ACIF S042.1:2008; AS/ACIF S043.2:2008; AS/ACIF S043.3:2008; 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 ACIF S042.1
New Zealand – Telecom	PTC200:2006; PTC200 Issue No.2:97 + A1(980); PTC220; PTC273:2007; TNA 115; TNA 117
Singapore – Telecom	IDA TS ADSL, Issue 1, Rev. 1 (April 2006); IDA TS DLCN, Issue 1 (July 2005); IDA TS ISDN BA, Issue 1 (July 2005); IDA TS ISDN PRA, Issue 1 (July 2005); IDA TS ISDN 3 (Oct. 2000); IDA TS-PSTN, Issue 1 (March 2007); IDA TS ACLIP 07
Hong Kong – Telecom	HKTA 2011; HKTA 2012; HKTA 2013; HKTA 2014; HKTA 2015; HKTA 2017; HKTA 2018; HKTA 2019; HKTA 2022; HKTA 2023; HKTA 2024; HKTA 2026; HKTA 2027; HKTA 2028; HKTA 2029; HKTA 2030; HKTA 2031; HKTA 2032; HKTA 2033

Vietnam – Telecom	TCN 68-188:2000; TCN 68-193:2003; TCN 68-196:2001; TCN 68-143:2003; TCN 68-192:2003; TCN 68-189:2000; TCN 68-221:2004; TCN 68-222:2004; TCN 68-245:2004; TCN 68-223:2004
Korea – Telecom	RRA Notice 2009-38, Sep. 11, 2009; RRA Notice 2009-7 (including attachments 1, 3, 5 ,6); Presidential Decree 21098, RRL Notice 2007-30; RRL Notice 2008-10 (attachments 1, 3, 5, 6); RRL Notice 2009-25; RRL Notice 2008-59
China – Telecom	YD/T 514-1:98; YD/T 1277.1-2003; GB/T 17904.1-1999; GB/T 17904.2-1999; GB/T 17154.1-1997; GB/T 17154.2-1997; YD/T1091-2000; YD/T1006-1999; GB/T 17789-1999
Taiwan – Telecom	PSTN01:03; ADSL01:08; ID0002; IS6100: 93
Japan – Telecom	JATE Blue Book, Green Book; Ministerial Ordinance of the Ministry of Posts and Telecommunications No. 31 of April 1, 1985 (last amended on March 22 2004); Ordinance Concerning Technical Conditions Compliance Approval etc. of Terminal Equipment
South Africa – Telecom	DPT-TE-001; TE-002; TE-003; TE-004; TE-005; TE-006; TE-007; TE-008; TE-009; TE-010; TE-012 (telephone interface); TE-013 (telephone interface); TE-014; TE-015; TE-018; SWS-001; SWS-002; SWS-003; SWS-004; SWS-005; SWS-006; SWS-007; SWS-008; SWS-009; SWS-010
Israel – Telecom	Israel MoC Spe. 23/96
Mexico – Telecom	NOM-151-SCT1-1999; NOM-152-SCT1-1999
Argentina – Telecom	CNC-ST2-44-01
Brazil – Telecom	Resolution 392-2005
International Telecom Union	ITU-T-G.703:01; ITU-T-G.823:93; ITU-T G.824; ITU-T G.825; ITU-T-G.991.2; ITU-T-G.992.1; ITU-T-G.992.3; ITU-T-G.992.5; ITU-T-G.993.1
Product Safety	IEC 60950-1; EN 60950-1; UL 60950-1; IEC 60601-1-1; CAN/CSA 22.2 NO. 60950-1-03; SS-EN 60950-1; AS/NZ 60950-1, *(voltage surge testing up to 6kV, excluding Annex A and H)*; CNS 14336, CNS 14408; GB4943; President Notice 20664; RRL Notice 2008-10 (attachment 4); RRA Notice 2009-7 (attachment 4); TCN 68-190:2003; SABS IEC 60950; IEC/EN 61558; IEC/EN 61558-2-7; EN 62115; IEC 60215; EN 60958; EN 60598; IEC 215 (1987) + A1 (1992) + A2 (1994)
Japan - Radio	ARIB STD-T81; ARIB STD-T66; RCR STD-1; RCR STD-29; ARIB STD-T94 Fascicle 1; ARIB STD-T90; ARIB STD-T89; RCR STD-33

SAR & HAC	IEEE P1528:2003 + Ad1; IEEE 1528A:2005; FCC OET Bulletin 65 Supplement C; FCC OET Bulletin 65; ANSI C95; ANSI C63.19; FCC 47 CFR 20.19; H46-2/99-273E; EN 50360; EN 50361; IEC62209-1; IEC 62209-2; EN 50371; EN 50383; EN 50357; EN 50364; RRL 2008-18; RRL 2008-16; KCC 2009-27; RRL 2004-67; CNS 14958-1; CNS 14959; NZS 2772.1; NZS 6609.2; Resolution N 533
Japan – Notification No. 88 of MIC 2004	
Table No 13	CB Radio
Table No 21	Cordless Telephone
Table Nos 22-1 thru 22-17	Low Power Radio Equipment
Table No 36	Low Power Security System
Table No 43	Low Power Data Communication in the 2.4 GHz Band
Table No 44	Low Power Data Communication in the 2.4 GHz Band
Table No 45	Low Power Data Communication in the 5.2, 5.3, 5.6 GHz Bands
Table No 46	Low Power Data Communication in the 25 and 27 GHz Bands
Table No 47	Base Station for 5 GHz Band Wireless Access System
Table No 47	Base Station for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones, low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low power type)
Table No 50	Digital Cordless Telephone
Table No 50	PHS Base Station
Table No 50	PHS Land Mobile Station
Table No 50	PHS Relay Station
Table No 50	PHS Test Station
Table No 64	Mobile Station for Dedicated Short Range Communication Systems
Table No 64	Base Station for Dedicated Short Range Communication Systems
Table No 64	Test Station for Dedicated Short Range Communication Systems
Table No 70	UWB (Ultra Wide Band) Radio System

[1]Note: This accreditation covers testing performed at the laboratory listed above and the OATS located at 44366 South Grimmer Blvd., Fremont CA 94538. At this site "Radiated Emissions" are tested at a measurement distance of 10m.

[*]Limitations for listed standards are indicated by italics and Scope excludes protocol sections of applicable standards.

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Product Certification Body

A2LA has accredited

SIEMIC LABORATORIES

San Jose, CA

for technical competence as a

Product Certification Body

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC Guide 65:1996 *General requirements for bodies operating product certification systems*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system for a Telecommunications Certification Body (TCB) meeting FCC (U.S.), IDA (Singapore), IC (Canada), OFTA (Hong Kong), and Japan (MIC) requirements.

Presented this 23rd day of November 2010.

President & CEO
For the Accreditation Council
Certificate Number 2742.01
Valid to September 30, 2012
Revised December 16, 2010

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

"World Class Accreditation"

The American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 65:1996

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

PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2012 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), Singapore (IDA) and Hong Kong (OFTA) 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, released July 22, 2010 detailing scopes, roles and responsibilities. http://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=44683&switch=P*

Industry Canada - (IC)	
Radio	Scope 1-Licence-Exempt Radio Frequency Devices; Scope 2-Licensed Personal Mobile Radio Services; Scope 3-Licensed General Mobile & Fixed Radio Services; Scope 4-Licensed Maritime & Aviation Radio Services; Scope 5-Licensed Fixed Microwave Radio Services;

**Please refer to Industry Canada (IC) website at: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09888.html*

IDA – Singapore	
Line Terminal Equipment	All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2009, Annex 2
Radio-Communication Equipment	All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2009, 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/MRARecScheme.pdf*

5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

OFTA – Hong Kong

Radio Equipment	HKTA 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1015, 1016, 1019, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055

**Please refer to the Office of the Telecommunications Authority's website at:*
http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-10xx.html

Fixed Network Equipment	HKTA 2001, 2005, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2040, 2041, 2102, 2103, 2104, 2108, 2201, 2202, 2203, 2204

**Please refer to the Office of the Telecommunications Authority's website at:*
http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-2xxx.html

MIC – Japan

Terminal Equipment	Scope A1 - Terminal Equipment for the Purpose of Calls
Radio Equipment	Scope B1 - Unlicensed Station (all classes of equipment)

SIEMIC ACCREDITATION DETAILS: FCC Test Site Registration No. 783147

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

June 08, 2011

Registration Number: 783147

SIEMIC Laboratories
2206 Ringwood Avenue,
San Jose, CA 95131

Attention: Leslie Bai, Director of Certification

Re: Measurement facility located at San Jose
Anechoic chamber (3 meters)
Date of Renewal: June 08, 2011

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

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

Sincerely,

Phyllis Parrish
Industry Analyst

SIEMIC ACCREDITATION DETAILS: Industry of Canada CAB ID : US0160

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

March 4, 2009

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

Dear Mr. Bai:

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

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

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

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

Sincerely,

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

Enclosure

cc: CAB Program Manager

NIST

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

Industry Canada Industrie Canada

May 27, 2010

OUR FILE: 46405-4842
Submission No: 140856

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

Attention: Snell Leong

Dear Sir/Madame:

The Bureau has received your application for the renewal of a 3m 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 **(4842A-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: **4842A**

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 or later shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 metre OATS or 3 metre 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,

Dalwinder Gill

Dalwinder Gill
For: Wireless Laboratory Manager
Certification and Engineering Bureau
3701 Carling Ave., Building 94
P.O. Box 11490, Station "H"
Ottawa, Ontario K2H 8S2
Email: dalwinder.gill@ic.gc.ca
Tel. No. (613) 998-8363
Fax No. (613) 990-4752

SIEMIC ACCREDITATION 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

George Tannahill
Electronics Engineer

SIEMIC ACCREDITATION 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 if you have questions.

Sincerely,

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

NIST

SIEMIC ACCREDITATION DETAILS: Korea CAB ID: US0160

방송통신위원회 전파연구소 Radio Research Agency

Radio Research Agency

KOREA COMMUNICATIONS COMMISSION
REPUBLIC OF KOREA
1, Wonhyoro-3ga, Yongsan-gu, Seoul, 140-848, Korea

Tel: +82 2 710 6610
Fax: +82 2 710 6619
Homepage : www.rra.go.kr

KCC/RRA

14th Jan, 2011

Radio Research Agency
Korea Communications Commission
#1, Wonhyoro-3ga, Yongsan-gu
Seoul Korea 140-848
(Tel) 82-2-710-6610, (Fax) 82-2-710-6619
Jan 14th, 2011

Mr. David F. Alderman
Group Leader, Standards Coordination and Conformity Group
National Institute of Standards and Technology
100 Bureau Drive, Stop 2100
Gaithersburg, Maryland 20899-2100, USA

Dear Mr. David F. Alderman:

This is to confirm the recognition by Radio Research Agency of

SIEMIC, Inc. (US0160)

as an accredited Conformity Assessment Body (CAB) under the terms of Phase I of the APEC TEL MRA. The scope for which this laboratory has been recognized is given below.

Coverage	Standards	Date of Recognition
Current Scope	EMI : KCC Notice 2008-39, RRL Notice 2008-3 and KN22 EMS : KCC Notice 2008-38, RRL Notice 2008-4, KN24, KN 61000 -4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11 Radio : RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-11, RRL Notice 2007-80, RRL Notice 2004-68 Telecom : President Notice 20664, RRL Notice 2007-30, 2008-7(1,3,4,5,6)	Jan 14th, 2011
Updated Scope	SAR : RRA Notice 2008-16, RRA Notice 2008-18, KCC Notice 2009-27	

This recognition is contingent upon the maintenance of this CAB's accreditation status and is limited to the standards listed above.
If you have any inquiries about this recognition, please contact to Certification Division of Radio Research Agency with above address and telephone numbers.

Best Regards,

Ahn, Kun-Young
Director Certification Division

Enclosure

cc: Ramona Saar – NIST,
JungMin Park - RRA

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

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

May 3, 2006

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

Dear Mr. Bai:

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

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

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

Sincerely,

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

cc: Jogindar Dhillon

NIST

SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160

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

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:	SIEMIC, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Current Scope:	LP0002, PSTN01, ADSL01, ID0002, IS6100 and CNS 14336
Additional Scope:	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,

David F. Alderman

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

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACCREDITATION DETAILS: Vietnam CAB ID: US0160

BỘ THÔNG TIN VÀ TRUYỀN THÔNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 65 /QĐ-BTTTT

Hà Nội, ngày 19 tháng 01 năm 2011

QUYẾT ĐỊNH
Về việc Thừa nhận Phòng đo kiểm

BỘ TRƯỞNG BỘ THÔNG TIN VÀ TRUYỀN THÔNG

Căn cứ Nghị định số 187/2007/NĐ-CP ngày 25/12/2007 của Chính phủ quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Thông tin và Truyền thông;

Căn cứ Quyết định số 172/2003/QĐ-BBCVT ngày 29/10/2003 của Bộ trưởng Bộ Bưu chính, Viễn thông (nay là Bộ Thông tin và Truyền thông) quy định về việc thừa nhận các Phòng đo kiểm đã được các Bên tham gia Thoả thuận thừa nhận lẫn nhau về đánh giá hợp chuẩn thiết bị viễn thông với Việt Nam chỉ định;

Theo đề nghị của Vụ trưởng Vụ Khoa học và Công nghệ,

QUYẾT ĐỊNH:

Điều 1. Thừa nhận phòng đo kiểm:

SIEMIC, INC. – US0160

Địa chỉ: 2206 Ringwood Avenue, San Jose, CA 95131 USA

(đã được Viện tiêu chuẩn và công nghệ quốc gia Hoa Kỳ (NIST) chỉ định và đề nghị thừa nhận) đáp ứng đầy đủ các yêu cầu về việc thừa nhận Phòng đo kiểm đã được Bên tham gia Thoả thuận thừa nhận lẫn nhau về đánh giá hợp chuẩn thiết bị viễn thông với Việt Nam chỉ định theo Quyết định số 172/2003/QĐ-BBCVT với phạm vi thừa nhận kèm theo Quyết định này.

Điều 2. Phòng đo kiểm có tên tại Điều 1 có các quyền lợi và nghĩa vụ theo quy định tại Quyết định số 172/2003/QĐ-BBCVT.

Điều 3. Phòng đo kiểm có tên tại Điều 1 và các cơ quan, tổ chức có liên quan chịu trách nhiệm thi hành Quyết định này.

Điều 4. Quyết định này có hiệu lực đến ngày 30/09/2012./.

KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thành Hưng

Nơi nhận:
- Như Điều 3;
- Bộ trưởng (để b/c);
- Trung tâm Thông tin (để đăng website);
- Lưu: VT, KHCN.

SIEMIC ACCREDITATION DETAILS: Mexico NOM Recognition

CANIETI

CAMARA NACIONAL DE LA INDUSTRIA ELECTRONICA, DE TELECOMUNICACIONES E INFORMATICA

Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

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

En contestación a su escrito de fecha 5 de septiembre del año en curso, le comento que estamos muy interesados en su intención de firmar un Acuerdo de Reconocimiento Mutuo, para lo cual adjunto a este escrito encontrara el Acuerdo en idioma ingles y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si 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 intermediario gestor será la empresa Isabel 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 gestoría de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.

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

Atentamente:

Ing. Faustino Gómez González
Gerente Técnico del Laboratorio de
CANIETI.

Culiacán 71
Hipódromo Condesa
06100 México, D.F.
Tel: 5264-0909 con 12 líneas
Fax 5264-0488
www.canieti.org

SIEMIC ACCREDITATION DETAILS: Hong Kong OFTA CAB ID : US0160

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

December 8, 2008

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

Dear Mr. Bai:

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

CAB Name:	SIEMIC, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, California 95131 USA
Identification No.:	US0160
Recognized Scope:	**Radio:** HKTA 1002, 1007, 1008, 1010, 1015, 1016, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1039, 1041, 1042, 1043, 1044, 1046, 1047, 1048, 1049, 1051 **Telecom:** HKTA 2011, 2012, 2013, 2014, 2017, 2018, 2022, 2024, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033

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

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

Sincerely,

David F. Alderman

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

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACCREDITATION DETAILS: Australia ACMA CAB ID: US0160

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

November 20, 2008

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

Dear Mr. Bai:

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

CAB Name:	Siemic, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Recognized Scope:	EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771 Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar, at (301) 975-5521 or ramona.saar@nist.gov if you have questions.

Sincerely,

David F. Alderman

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

Enclosure

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

NIST

SIEMIC ACCREDITATION DETAILS: Australia NATA Recognition

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

November 4, 2008

Under Australian government legislation, the Australian Communications and Media Authority (ACMA) has determined the National Association of Testing Authorities, Australia (NATA) as an accreditation body as per Section 409(1) of the Telecommunications Act 1997 (Cth). Pursuant to Section 409(2) of the Telecommunications Act 1997 (Cth), I am pleased to advise that your laboratory has been determined as a Recognised Testing Authority (RTA).

This determination has been made on the basis of your accreditation by A2LA accreditation no. 2742.01 and the Mutual Recognition Agreement between NATA and A2LA. It is effective from 11 July 2008. RTA status applies only to the following standards and is contingent upon their continued inclusion in your laboratory's scope of accreditation.

AS/ACIF S002, AS/ACIF S003, AS/ACIF S004,
AS/ACIF S006, AS/ACIF S016, AS/ACIF S031,
AS/ACIF S038, AS/ACIF S041 and
AS/ACIF S043.2

As an RTA, your laboratory has the following obligations:
1. the laboratory shall continue to meet all of the accreditation criteria of A2LA;
2. the authorised representative of the laboratory shall notify NATA of changes to the staff or operations of the laboratory which would affect the performance of the tests for which the laboratory has been determined;
3. compliance of equipment shall be reported on test reports bearing the A2LA logo/endorsement.

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

Please note that AS/ACIF S040 and New Zealand standards do not form part of the RTA scheme.

Your RTA listing will appear on the NATA website shortly.

Kind Regards

Chris Norton,
Senior Scientific Officer
Measurement Science and Technology
National Association of Testing Authorities (NATA)
71-73 Flemington Road
North Melbourne Vic 3051
Australia
Ph: +61 3 9329 1633 Fx: +61 3 9326 5148
E-Mail: Christopher.Norton@nata.asn.au
Internet: www.nata.asn.au

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

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories
<Member No. 3081 >

Facility: SIEMIC Laboratories
(Radiation 3 meter site)

Location of Facility:
2206 Ringwood Ave , San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: R-3083

Date of Registration: October 01 , 2010

This Certificate is valid until September 30 , 2012

VCCI Council

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

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories
<Member No. 3081 >

Facility: SIEMIC Laboratories
(Main Ports Conducted Interference Measurement)

Location of Facility:
2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: C-3421
Date of Registration: October 01 , 2010
This Certificate is valid until September 30 , 2012

VCCI Council

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

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories

<Member No. 3081 >

Facility: SIEMIC Laboratories

(Telecominication Ports Conducted Disturbance Measurement)

Location of Facility:

2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: T-1597

Date of Registration: October 01 , 2010

This Certificate is valid until September 30 , 2012

VCCI Council