Yealink (XIAMEN) Network Technology Co. LTD.

IP VIDEO PHONE

MODEL: VP530

2 November 2011
Report No.: 11050100-E
(This report supersedes NONE)

EMC Test Report

To: EN 55022:2010, EN 55024:2010,EN 61000-3-2:2006+A1:2009, EN 61000-3-3:2008

SIEMIC, INC.
Accessing global markets

Modifications made to the product : None	
This Test Report is Issued Under the Authority of:	
William Long	Alex Liu
William Long **Compliance Engineer**	**Alex Liu** **Technical Director**

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
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
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 Yealink (XIAMEN) Network Technology Co. LTD. IP Video Phone , against the current Stipulated Standards. The IP Video Phone has demonstrated compliance with the EN 55022:2010, EN 55024:2010, EN 61000-3-2:2006+A1:2009,EN 61000-3-3:2008.

EUT Information

EUT Description		IP Video Phone
Model No		VP530, VP530P, VP-2009P
Serial No		N/A
Input Power		1) AC/DC SWITCHING ADAPTER INPUT: 100-240V AC 50/60Hz 650mA OUTPUT: 5V DC 3A 2) POE supply: 48V DC max 350mA
Classification Per Stipulated Test Standard		Class B Emission Product

Note: The other two models are VP530P and VP-2009P, are identical in circuitry and electrical, mechanical and physical construction; the only difference are the appearance, trade name and model no. for trading purpose.

2 TECHNICAL DETAILS

Purpose	Compliance testing of IP Video Phone with stipulated standards
Applicant / Client	Yealink (XIAMEN) Network Technology Co. LTD.
Applicant Add	4th-5th Floor,South Building,No.63 Wanghai Road,2nd Software Park, Xiamen,China
Laboratory performing the tests	SIEMIC Laboratories 2206 Ringwood Avenue San Jose, CA 95131, USA
Test report reference number	11050100-E
Date EUT received	29 September 2011
Standard applied	EN 55022:2010, EN 55024:2010, EN 61000-3-2:2006+A1:2009,EN 61000-3-3: 2008.
Dates of test (from – to)	10 October - 26 October 2011
No of Units	# 1
Equipment Category	ITE
Trade Name	Yealink
Microprocessor (s)	N/A
RF Operating Frequency (ies)	N/A
Clock/Oscillator Frequency (ies)	N/A
Rated Input Power	1) Adapter: INPUT: 100-240V AC 50/60Hz 650mA OUTPUT: 5V DC 3A 2) POE supply: 48V DC max 350mA
Port/Connectors	AV Port, Power Port, Internet Port, PC Port

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 B Emission Product

Test Results Summary

Emissions			
Test Standard	Description	Product Class	Pass / Fail
EN 55022:2010			
EN 55022:2010	Conducted (Power Port)	See Above	Pass
	Conducted (Telecom port)	See Above	Pass
	Radiated Spurious Emissions	See Above	Pass
EN 61000-3-2:2006+A1:2009	Harmonic Current Emission	See Above	*
EN 61000-3-3:2008	Limit of Voltage Change, Fluctuation & Flicker	See Above	Pass

Immunity			
EN 55024:2010			
Test Standard	Description	Criterion	Pass / Fail
EN 61000-4-2:2008	Electrostatic Discharge Immunity	B	Pass
EN 61000-4-3:2006+A1:2010	Radiated RF Immunity	A	Pass
EN 61000-4-4:2004+A1:2010	Electrical Fast Transient / Burst Immunity	B	Pass
EN 61000-4-5:2006	Voltage Surge Immunity	B	Pass
EN 61000-4-6:2009	Conducted Disturbance Immunity	A	Pass
EN 61000-4-8:2009	Power Frequency Magnetic Field Immunity	A	Pass
EN 61000-4-11:2004	Voltage Dip Immunity	B/C	Pass

Note: "*" According to EN 61000-3-2:2006 + A1:2009 section 7: Equipment with a rated power of 75 W or less, other than lighting equipment, are out included in this standard.

All measurement uncertainty is not taken into consideration for all presented test result.

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 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	25ºC
Relative Humidity	50%
Atmospheric Pressure	1018mbar

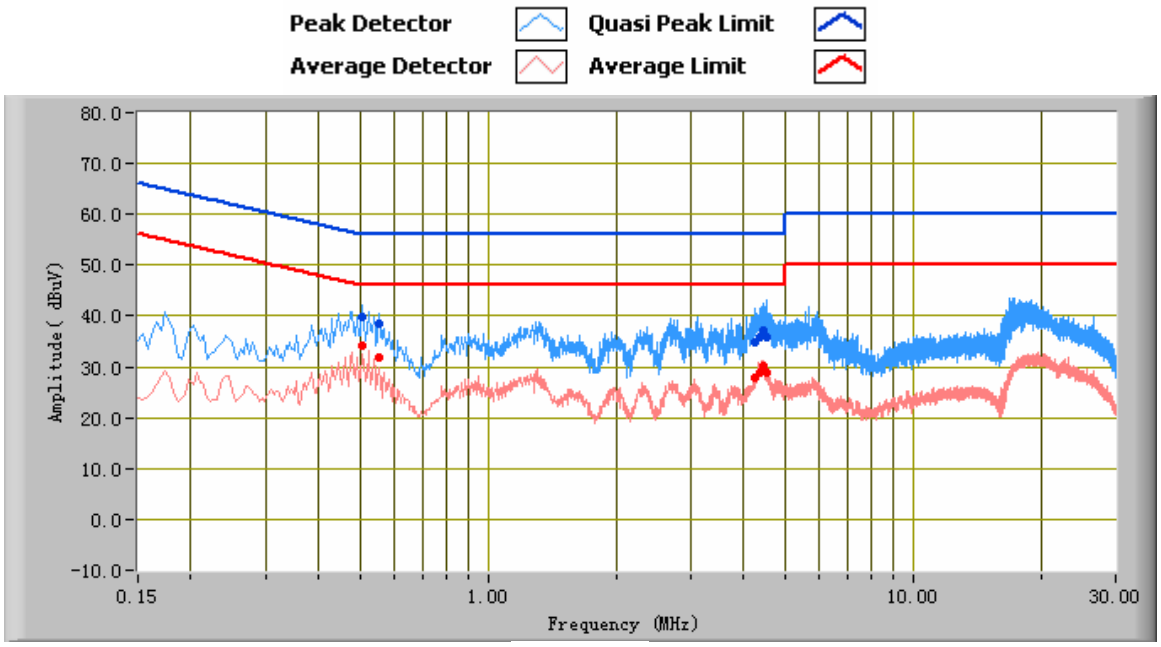
5. Test Date : 11 October 2011
   Tested By : William Long

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

150 kHz to 30 MHz Conducted Emission Test Result

Line

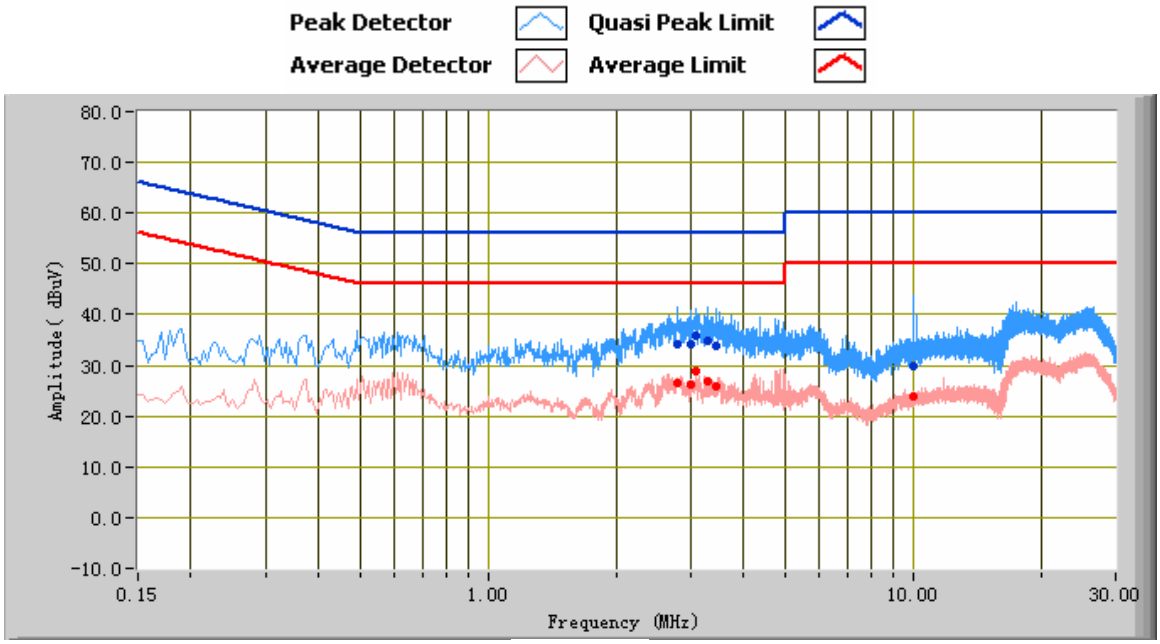


Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
4.52	35.86	56.00	-20.14	28.81	46.00	-17.19	10.42
4.43	37.30	56.00	-18.70	30.02	46.00	-15.98	10.43
0.51	39.76	56.00	-16.24	34.05	46.00	-11.95	10.17
4.36	35.99	56.00	-20.01	28.75	46.00	-17.25	10.45
4.23	34.68	56.00	-21.32	27.70	46.00	-18.30	10.47
0.55	38.43	56.00	-17.57	31.90	46.00	-14.10	10.16

150 kHz to 30 MHz Conducted Emission Test Result

Neutral

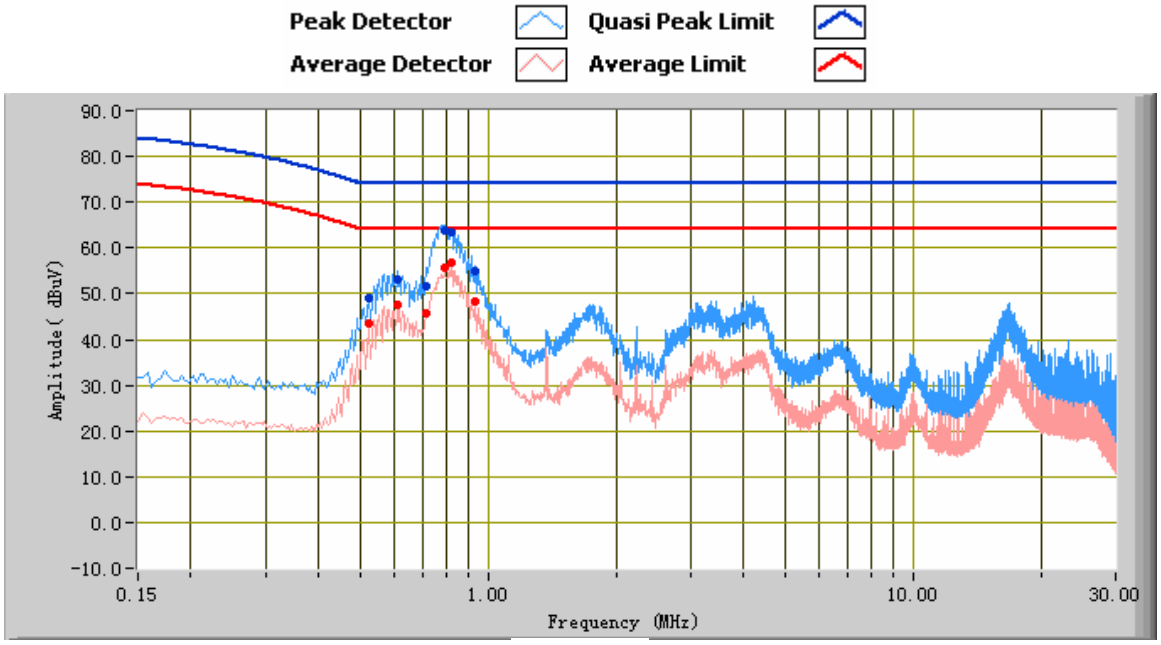


Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
3.29	34.94	56.00	-21.06	26.81	46.00	-19.19	10.29
2.78	34.03	56.00	-21.97	26.61	46.00	-19.39	10.20
3.43	33.88	56.00	-22.12	25.76	46.00	-20.24	10.34
3.09	35.96	56.00	-20.04	28.78	46.00	-17.22	10.23
3.00	34.30	56.00	-21.70	26.33	46.00	-19.67	10.20
10.06	29.73	60.00	-30.27	23.92	50.00	-26.08	10.36

Test mode 1):	RJ45 Port (with adapter)

150 kHz to 30 MHz Conducted Emission Test Result



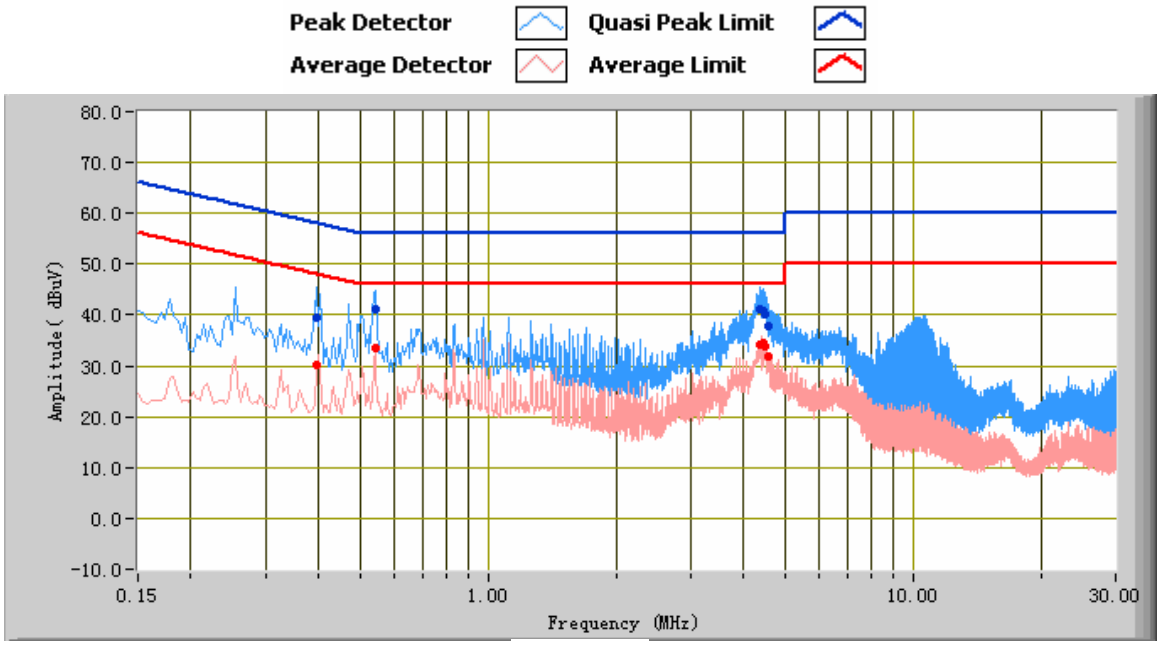
Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
0.79	63.77	74.00	-10.23	55.50	64.00	-8.50	10.16
0.82	63.60	74.00	-10.40	56.78	64.00	-7.22	10.16
0.93	54.77	74.00	-19.23	48.31	64.00	-15.69	10.17
0.72	51.63	74.00	-22.37	45.77	64.00	-18.23	10.13
0.61	52.96	74.00	-21.04	47.53	64.00	-16.47	10.14
0.52	49.02	74.00	-24.98	43.49	64.00	-20.51	10.16

Test mode 1):	**speaker mode (test POE adapter AC port)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

150 kHz to 30 MHz Conducted Emission Test Result

Neutral

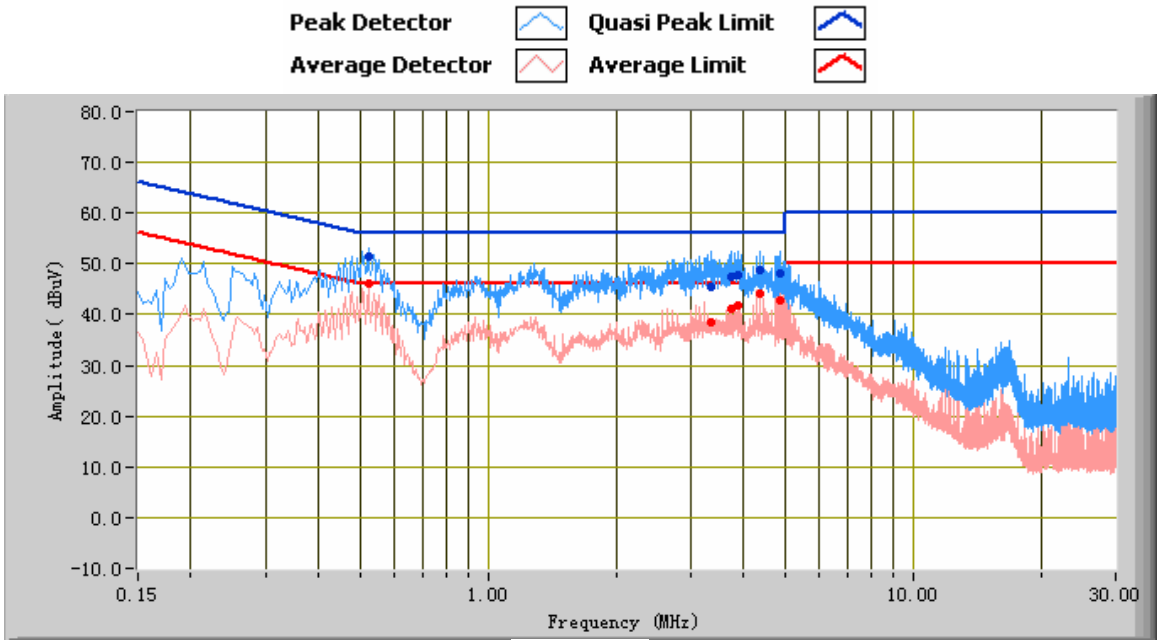


Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
4.36	41.00	56.00	-15.00	34.15	46.00	-11.85	10.45
4.43	40.74	56.00	-15.26	34.53	46.00	-11.47	10.43
0.54	41.17	56.00	-14.83	33.66	46.00	-12.34	10.16
4.50	40.00	56.00	-16.00	33.88	46.00	-12.12	10.42
0.39	39.47	58.01	-18.54	30.03	48.01	-17.99	10.17
4.57	37.92	56.00	-18.08	31.98	46.00	-14.02	10.41

150 kHz to 30 MHz Conducted Emission Test Result

Line

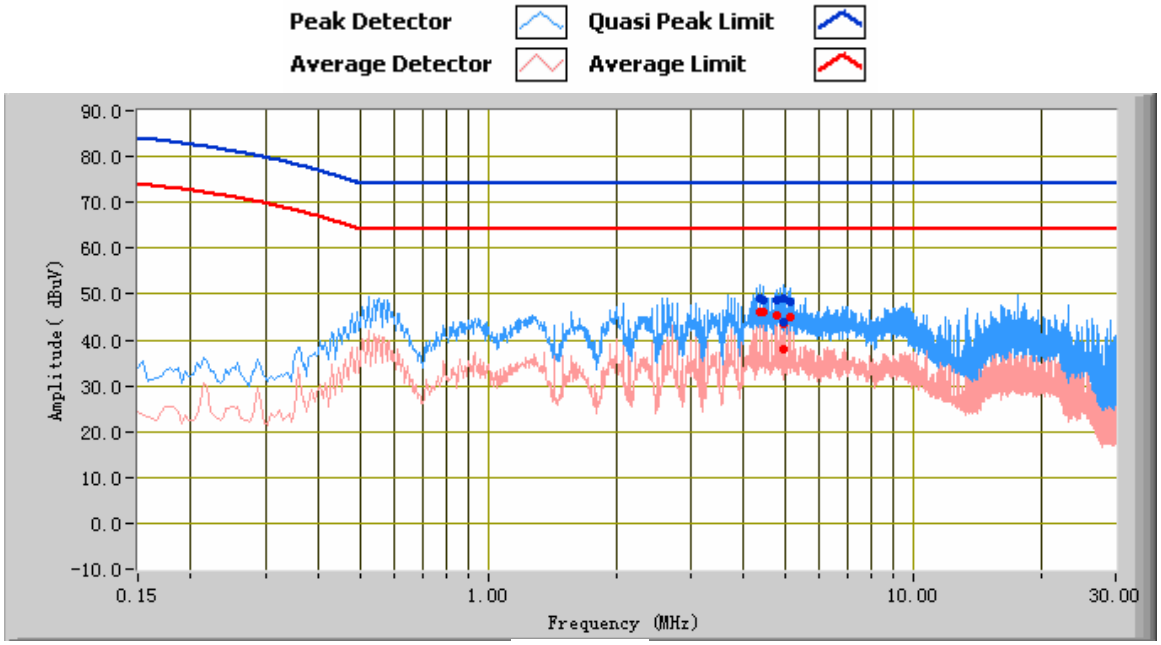


Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
0.52	51.46	56.00	-4.54	45.99	46.00	-0.01	10.16
3.86	47.66	56.00	-8.34	41.81	46.00	-4.19	10.47
3.73	47.48	56.00	-8.52	41.18	46.00	-4.82	10.43
4.37	48.73	56.00	-7.27	44.18	46.00	-1.82	10.44
4.87	48.21	56.00	-7.79	42.84	46.00	-3.16	10.35
3.35	45.30	56.00	-10.70	38.37	46.00	-7.63	10.31

Test mode 1):	RJ45 Port(with POE adapter)

150 kHz to 30 MHz Conducted Emission Test Result



Test Data

Frequency (MHz)	Quasi Peak (dBuV)	Limit (dBuV)	Margin (dB)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Factors (dB)
4.95	48.92	74.00	-25.08	43.32	64.00	-20.68	10.34
4.37	49.18	74.00	-24.82	45.91	64.00	-18.09	10.44
4.95	43.72	74.00	-30.28	37.79	64.00	-26.21	10.34
4.44	48.54	74.00	-25.46	46.01	64.00	-17.99	10.43
5.15	48.33	74.00	-25.67	44.83	64.00	-19.17	10.31
4.80	48.62	74.00	-25.38	45.36	64.00	-18.64	10.37

5.2 Radiated 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 9KHz – 30MHz (QP only @ 3m & 10m) is +6.0dB/-6.0dB (for EUTs < 0.5m X 0.5m X 0.5m).
4. Environmental Conditions

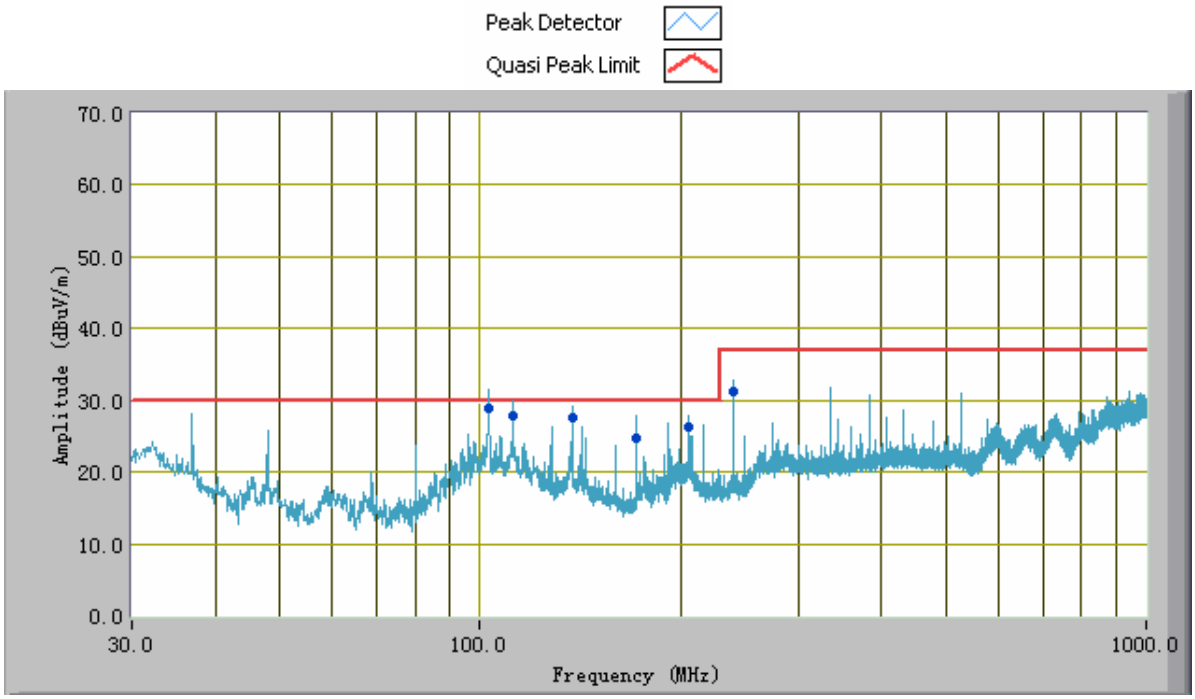
Temperature	25ºC
Relative Humidity	49%
Atmospheric Pressure	1019mbar

5. Test Date : 12 October 2011
   Tested By : William Long

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

30 MHz to 1 GHz Radiated Emission Test Results



Test Data

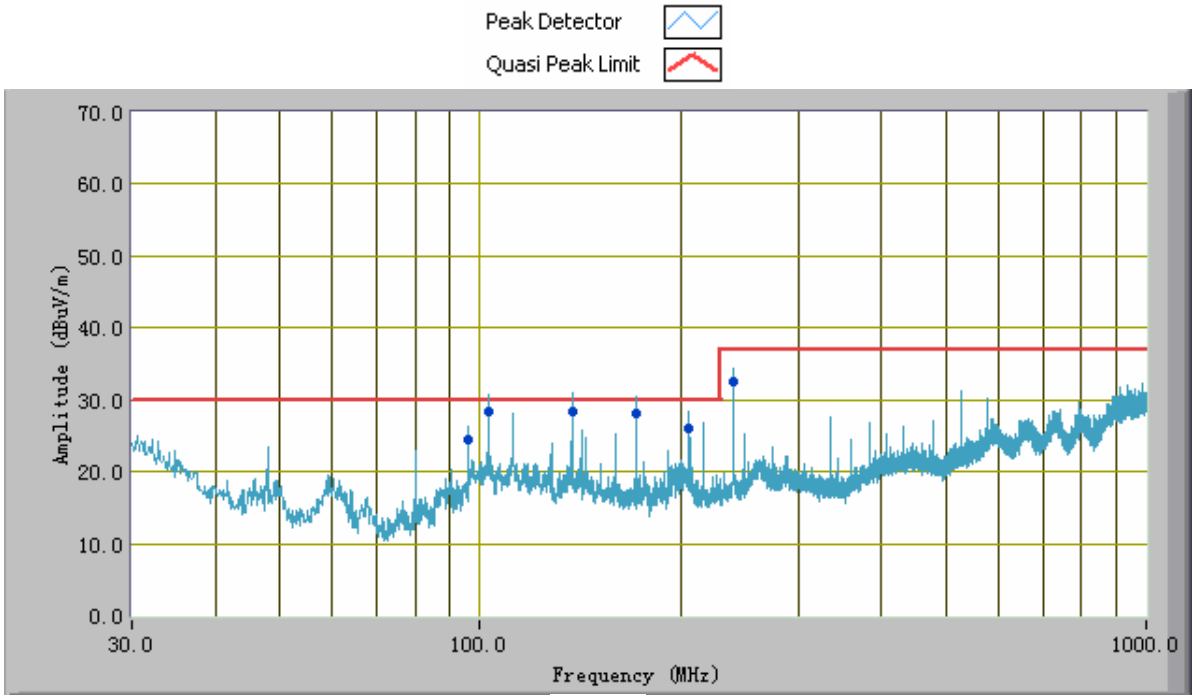
Frequency (MHz)	Quasi Peak (dBuV/m)	Azimuth	Polarity(H /V)	Height (cm)	Factors (dB)	Limit (dBuV/m)	Margin (dB)
103.11	28.99	97.00	V	130.00	-32.46	30.00	-1.01
112.09	27.79	121.00	V	178.00	-30.22	30.00	-2.21
137.43	27.27	176.00	V	116.00	-29.43	30.00	-2.73
171.74	25.06	223.00	V	278.00	-31.27	30.00	-5.94
206.18	26.27	220.00	V	224.00	-31.12	30.00	-3.73
240.00	31.17	172.00	H	212.00	-30.93	37.00	-5.83

Above 1 GHz Radiated Emission Test Results

Polarity(H/V)	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
H	1500.00	45.96	-17.44	28.52	50.00	-21.48	100	112	Ave
H	1300.00	43.21	-17.12	26.09	70.00	-43.91	100	170	PK
V	1250.00	42.09	-15.75	26.34	70.00	-43.66	200	22	PK
H	1220.00	41.22	-15.55	25.67	50.00	-24.33	100	93	Ave
V	1318.75	39.98	-15.18	24.80	70.00	-45.20	200	77	PK
H	1050.00	39.20	-15.17	24.03	50.00	-25.97	100	144	Ave

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

30MHz to 1GHz Radiated Emission Test Results



Test Data

Frequency (MHz)	Quasi Peak (dBuV/m)	Azimuth	Polarity(H /V)	Height (cm)	Factors (dB)	Limit (dBuV/m)	Margin (dB)
103.11	28.88	149.00	V	191.00	-31.40	30.00	-1.12
137.43	28.41	135.00	V	168.00	-31.39	30.00	-1.59
171.86	28.06	165.00	V	213.00	-32.94	30.00	-1.94
95.96	24.45	208.00	V	231.00	-30.59	30.00	-5.55
240.00	32.50	183.00	V	189.00	-32.81	37.00	-4.50
206.18	26.92	177.90	H	197.00	-31.72	37.00	-3.08

Above 1 GHz Radiated Emission Test Results

Polarity(H/V)	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
H	1600.000	46.13	-17.88	28.25	50.00	-21.75	100	125	Ave
V	1350.000	45.11	-17.62	27.39	70.00	-42.61	100	54	PK
H	1300.000	44.56	-15.75	28.81	70.00	-41.19	200	231	PK
H	1219.00	43.91	-15.55	28.36	50.00	-21.64	100	43	Ave
V	1112.00	43.50	-15.18	28.32	70.00	-41.68	200	214	PK
H	1321.00	42.21	-15.10	27.11	50.00	-22.89	100	63	Ave

5.3 Current Harmonic Emission Results

N/A Not applicable:

According to EN 61000-3-2:2006 + A1:2009 section 7: Equipment with a rated power of 75 W or less, other than lighting equipment, are out included in this standard.

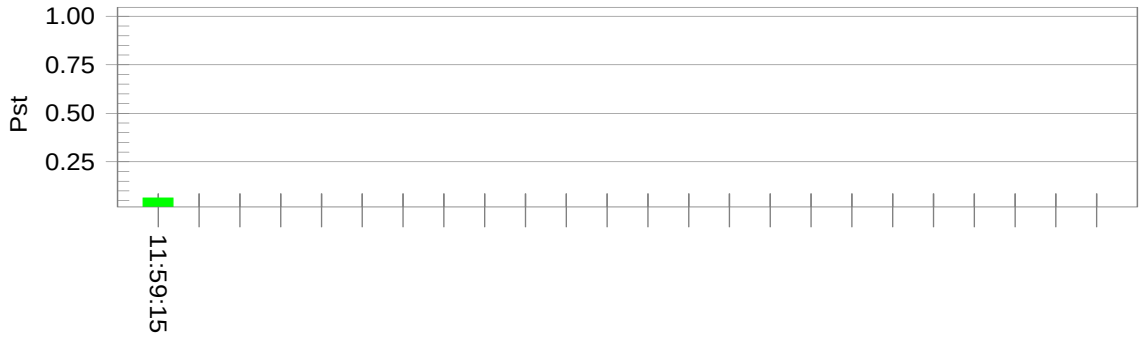
5.4 Voltage Fluctuation and Flicker Results

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

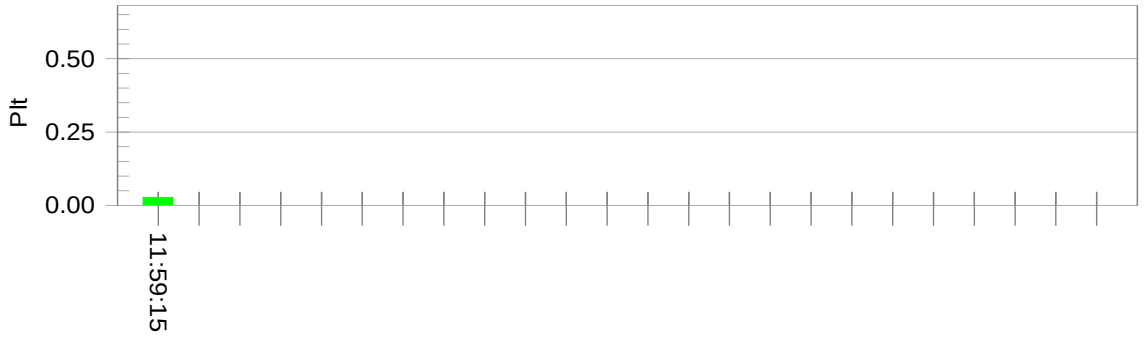
EUT: IP video phone **Tested by: William Long**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2011-10-25 **Start time: 11:48:55** **End time: 11:59:16**
Test duration (min): 10 **Data file name: F-000170.cts_data**
Comment: Pass
Customer: Yealink

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

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.85**			
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):	**0.028**	**Test limit:**	**0.650**	**Pass**

5.5 Electrostatic Discharge Immunity Results

Notes

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions — Temperature: 25°C; Relative Humidity: 49%; 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 : 14 October 2011
   Tested By : William Long

   *the performance criteria A shall apply

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

Table 1: Electrostatic Discharge Immunity (Air Discharge)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Enclosure Slot	A	A	A	A	A	A	-	-
Surface	A	A	A	A	A	A	-	-
Key	A	A	A	A	A	A	-	-
Handset port	A	A	A	A	A	A	-	-
Power port	A	A	A	A	A	A	-	-
LCD Screen	A	A	A	A	A	A	-	-
Camera Lens	A	A	A	A	A	A	-	-
adapter	A	A	A	A	A	A	-	-

Table 2: Electrostatic Discharge Immunity (Direct Contact)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
PC port	A	A	A	A	-	-	-	-
Internet port	A	A	A	A	-	-	-	-
AV port	A	A	A	A	-	-	-	-

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	-	-	-	-
Back Side	A	A	A	A	-	-	-	-
Left Side	A	A	A	A	-	-	-	-
Right Side	A	A	A	A	-	-	-	-

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	-	-	-	-
Back Side	A	A	A	A	-	-	-	-
Left Side	A	A	A	A	-	-	-	-
Right Side	A	A	A	A	-	-	-	-

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

Table 1: Electrostatic Discharge Immunity (Air Discharge)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Enclosure Slot	A	A	A	A	A	A	-	-
Surface	A	A	A	A	A	A	-	-
Key	A	A	A	A	A	A	-	-
Handset port	A	A	A	A	A	A	-	-
Power port	A	A	A	A	A	A	-	-
LCD Screen	A	A	A	A	A	A	-	-
Camera Lens	A	A	A	A	A	A	-	-
adapter	A	A	A	A	A	A	-	-

Table 2: Electrostatic Discharge Immunity (Direct Contact)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
PC port	A	A	A	A	-	-	-	-
Internet port	A	A	A	A	-	-	-	-
AV port	A	A	A	A	-	-	-	-

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	-	-	-	-
Back Side	A	A	A	A	-	-	-	-
Left Side	A	A	A	A	-	-	-	-
Right Side	A	A	A	A	-	-	-	-

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	-	-	-	-
Back Side	A	A	A	A	-	-	-	-
Left Side	A	A	A	A	-	-	-	-
Right Side	A	A	A	A	-	-	-	-

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 Discharges → Contact Discharges →

Contact Discharges

Air Discharges

Contact Discharges

Air Discharges

5.6 RF Radiated Immunity Results

Notes

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions — Temperature: 26°C; Relative Humidity: 50%; Atmospheric Pressure: 1015mbar
3. Radiated Immunity Details — Frequency Step: 1% of fundamental; Sweep Rate: ≤ 1.5 X 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, test level ranges from 3V/m to 10V/m, is ±0.74V/m.
6. Test Date : 17 October 2011
   Tested By : William Long

   *the performance criteria A shall apply

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

Sides Tested	Frequency Range	Test Severity Level	Result
Front (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Front (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Back (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Back (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Right (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Right (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Left (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Left (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

Sides Tested	Frequency Range	Test Severity Level	Result
Front (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Front (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Back (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Back (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Right (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Right (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Left (H)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass
Left (V)	80MHz – 1GHz	3V/m, 80% AM (1kHz)	Pass

5.7 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 49%; Atmospheric Pressure 1019mbar
3. EFT/B Test Details — Test Duration / Level & Polarity 1 minute
   Measurement Uncertainty
4. 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 ±2kV, is ±1.2%.
5. Test Date :19 October 2011
   Tested By : William Long

   *the performance criteria A shall apply

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Power Input Port	L1	A	A	A	A	-	-	-	-
	L2	A	A	A	A	-	-	-	-
	Earth	-	-	-	-	-	-	-	-
	L1+L2	A	A	A	A	-	-	-	-
	L1+ Earth	-	-	-	-	-	-	-	-
	L2 + Earth	-	-	-	-	-	-	-	-
	L1+L2+Earth	-	-	-	-	-	-	-	-
SIGNAL Port	RJ45 Port	A	A	-	-	-	-	-	-

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Power Input Port	L1	A	A	A	A	-	-	-	-
	L2	A	A	A	A	-	-	-	-
	Earth	-	-	-	-	-	-	-	-
	L1+L2	A	A	A	A	-	-	-	-
	L1+ Earth	-	-	-	-	-	-	-	-
	L2 + Earth	-	-	-	-	-	-	-	-
	L1+L2+Earth	-	-	-	-	-	-	-	-
SIGNAL Port	RJ45 Port	A	A	-	-	-	-	-	-

5.8 Surge Immunity Results

Note:

1. Please refer to the Pass/Fail criteria to interpret the results.
2. Environmental Conditions
   - Temperature: 25°C
   - Relative Humidity: 50%
   - 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: 0º, 90º, 180º and 270º
4. Test Date : 20 October 2011
   Tested By : William Long

   *the performance criteria A shall apply

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

	Test Severity Level	Poll	Path	Pass	Fail
AC power port	0.5kV	±	L-N	A	-
	1.0kV	±	L-N	A	-
	2.0kV	±	L-N, L-PE, N-PE	-	-
	4.0kV	±	L-N, L-PE, N-PE	-	-
	Special	-	-	-	-

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

	Test Severity Level	Poll	Path	Pass	Fail
AC power port	0.5kV	±	L-N	A	-
	1.0kV	±	L-N	A	-
	2.0kV	±	L-N, L-PE, N-PE	-	-
	4.0kV	±	L-N, L-PE, N-PE	-	-
	Special	-	-	-	-

5.9 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: 50%; 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: ≤ 1.5 X 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 : 22 October 2011
Tested By : William Long

5. *the performance criteria A shall apply

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

Test Ports: AC power port

	Test Severity Level	Frequency Range	Modulation	Pass	Fail
AC power port	1 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	3 V	150kHz - 80MHz	80% AM (1kHz)	A	-
	10 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	Special	-	-	-	-

Test Ports: RJ45 port

	Test Severity Level	Frequency Range	Modulation	Pass	Fail
RJ45 port	1 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	3 V	150kHz - 80MHz	80% AM (1kHz)	A	-
	10 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	Special	-	-	-	-

Test mode 1):	**speaker mode (With POE)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

Test Ports: AC power port

	Test Severity Level	Frequency Range	Modulation	Pass	Fail
AC power port	1 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	3 V	150kHz - 80MHz	80% AM (1kHz)	A	-
	10 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	Special	-	-	-	-

Test Ports: RJ45 port

	Test Severity Level	Frequency Range	Modulation	Pass	Fail
RJ45 port	1 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	3 V	150kHz - 80MHz	80% AM (1kHz)	A	-
	10 V	150kHz - 80MHz	80% AM (1kHz)	-	-
	Special	-	-	-	-

5.10 Power Frequency Magnetic Field Immunity Results

Note:

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

Temperature	26ºC
Relative Humidity	49%
Atmospheric Pressure	1015mbar

3. Test Date : 25 October 2011
Tested By : William Long

*the performance criteria A shall apply.

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

	Magnetic Field Strength A/m	X (Horizontal)	Y (Vertical)	Z (Special)	Result
Adapter	1	A	A	A	Pass-
	3	-	-	-	-
	10	-	-	-	-
	Special	-	-	-	-

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

	Magnetic Field Strength A/m	X (Horizontal)	Y (Vertical)	Z (Special)	Result
POE	1	A	A	A	Pass-
	3	-	-	-	-
	10	-	-	-	-
	Special	-	-	-	-

5.11 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%
Atmospheric Pressure	1015mbar

Test Date : 26 October 2011
Tested By : William Long

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

Test Result

Test mode 1):	**speaker mode (With adapter)**
INPUT POWER :	**230Vac/50Hz**

	Duration (Period)	Test Severity Level	Result
Voltage Dip	0.5	>95%	Pass
Voltage Dip	25	30%	Pass
Short Interruptions	250	>95%	Pass

Test mode 1):	**speaker mode (With POE adapter)**
INPUT POWER :	**230Vac/50Hz (output power: 48Vdc)**

	Duration (Period)	Test Severity Level	Result
Voltage Dip	0.5	>95%	Pass
Voltage Dip	25	30%	Pass
Short Interruptions	250	>95%	Pass

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Serial #	Calibration Due
Conducted Emissions			
R&S Receiver	ESPI 3	101216	05/25/2012
LISN	LI-115	241091	05/25/2012
LIMITER	Com-Power	LIT-153	05/25/2012
Radiated Emissions			
R&S Receiver	ESPI 3	101216	05/25/2012
Sunol Sciences, Inc. antenna (30MHz~2GHz)	JB1	A112107	10/03/2012
Broadband Horn Antenna	JXTXLB-10180	J2031081120092	06/25/2012
Pre-Amplifier(0.1~18GHz)	MITEQ	AMF-7D-00101800-30-10P	05/25/2012
HP Pre-amplifier	8447F	1937A01160	05/25/2012
Harmonic Current Emission			
California Instruments	3001 IX	58487	05/25/2012
California Instruments	PACS-1	72634	05/25/2012
Limit of Voltage Change, Fluctuation & Flicker			
California Instruments	3001 IX	58487	05/25/2012
California Instruments	PACS-1	72634	05/25/2012
Electrostatic Discharge Immunity			
ESD Generator	NSG 437	285	09/07/2012
RF Radiated Immunity			
IFR Signal Generator	2023B	202302/820	05/25/2012
AR Power Amplifier	50W1000B	311309	N/A
Sunol Sciences, Inc. antenna (30MHz~2GHz)	JB1	A112107	10/03/2012
Electrical Fast Transient/Burst Immunity			
EFT/B Generator	NSG1025	3178	05/25/2012
Capacitive Coupling Clamp	CDN 125	212 9215	05/25/2012
Surge Immunity			
Surge Generator	PSURGE4010	151048	05/25/2012
Conducted Disturbance Immunity			
IFR Signal Generator	2023B	202302/820	05/25/2012
AR Power Amplifier	75A250	311662	N/A
Com-Power CDN	CDN M3-25	521020	05/25/2012
FCC BCI Injection Probe	F-120-3B	24	N/A
Power Frequency Magnetic Field Immunity			
Power Frequency Magnetic Field Generator	SM-01P	20SL0055	04/25/2012
Voltage Dips Immunity			
California Instruments	3001 IX	58487	05/25/2012
California Instruments	PACS-1	72634	05/25/2012

Annex A.ii. CONDUCTED EMISSIONS TEST DESCRIPTION

The limits of the mains terminal disturbance voltages

Frequency range	Limits (dBuV)[a]	
	Quasi-peak	Average
9KHz to 50KHz	110	-
50KHz to 150KHz	90 to 80[b]	-
150KHz to 0.5MHz	66 to 56[b]	56 to 46[b]
0.5MHz to 5.0MHz	56[c]	46[c]
5.0MHz to 30MHz	60	50

NOTE:
a At the transition frequency, the lower limit applies.
b The limit decreases linearly with the logarithm of the frequency in the ranges 50 kHz to 150 kHz and 150 kHz to 0,5 MHz.
c For electrodeless lamps and luminaires, the limit in the frequency range of 2,51 MHz to 3,0 MHz is 73 dB(⌈V) quasi-peak and 63 dB(⌈V) average.

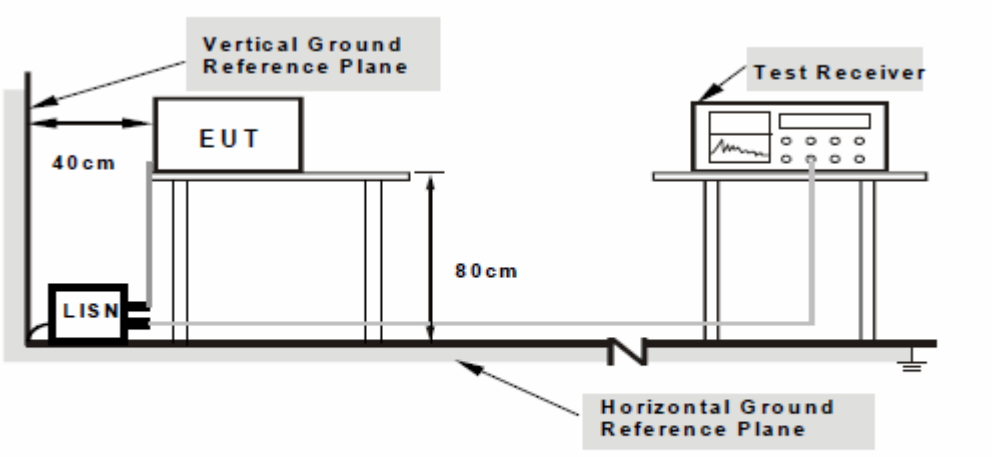
Test Set-up

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 Photographs of the Test Configuration1.

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.



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration1.

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).

Description of Conducted Emission Program

This EMC Measurement software run LabView automation software and offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the common scan range from 150 kHz to 30 MHz; the program will first start a peak and average scan on selectable measurement time and step size. After the program complete the pre-scan, this program will perform the Quasi Peak and Average measurement, based on the pre-scan peak data reduction result.

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

Limits Of Radiated Emissions Measurement

FREQUENCY (MHz)	Quasi-peak limits dB(uV/m)
	At 3m
30 ~ 230	40
230 ~ 300	47

NOTE: At the transition frequency, the lower limit applies.

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.

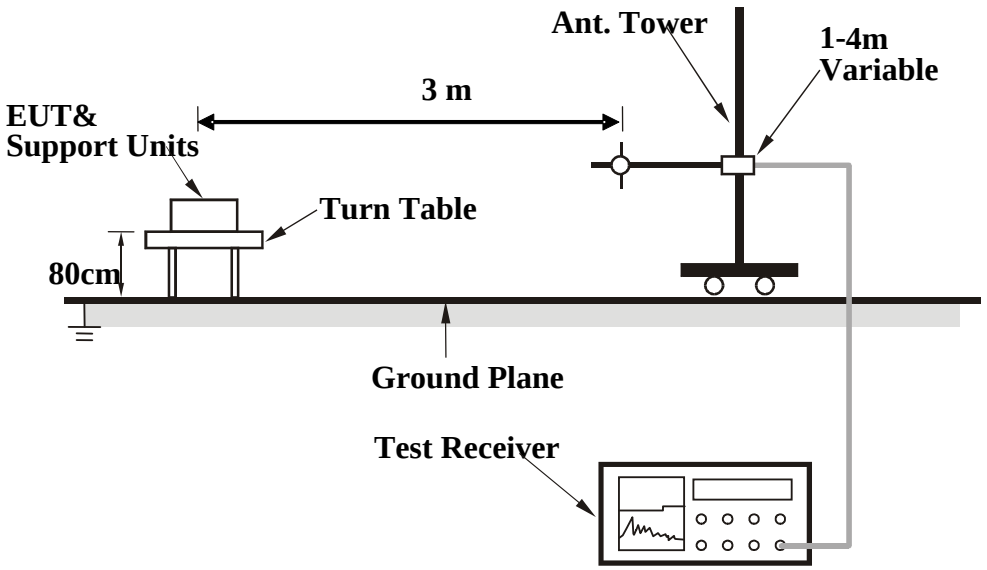
The EUT was placed in the chamber, at a height of about 0.8m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 3m or 10m away from the EUT. Radiated emissions from the EUT were maximised by rotating the turntable manually, changing the antenna polarisation and manipulating the EUT cables while observing the frequency profile on the spectrum analyzer / receiver. 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) or EMC 10m chamber.

Test Set-up

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.

2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.

3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.



Test Method

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

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

Final Radiated Emission Measurement

1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site or EMC 10m chamber. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ◦ to 360 ◦ with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.
5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.

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

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Description of Radiated Emission Program

This EMC Measurement software run LabView automation software and offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the scan on four different antenna heights, 2 antenna polarity, and 360 degrees table rotation. For example, the program was set to run 30 MHz to 1 GHz scan; the program will first start from a meter antenna height and divide the 30 MHz to 1 GHz into 10 separate parts of maximum hold sweeps. Each parts of maximum hold sweep, the program will collect the data from 0 degree to 360 degrees table rotation. After the program complete the 1m scan, the antenna continues to rise to 2m and continue the scan. The step will repeated for all specified antenna height and polarity. This program will perform the Quasi Peak measurement after the signal maximization process and pre-scan routine. The final measurement will be base on the pre-scan data reduction result.

Sample Calculation Example

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. For the limit is employed average value, therefore the peak value can be transferred to average value by subtracting the duty factor. The basic equation with a sample calculation is as follows:

Peak = Reading + Corrected Factor

where

Corr. Factor = Antenna Factor + Cable Factor - Amplifier Gain (if any)

And the average value is

Average = Peak Value + Duty Factor or

Set RBW = 1MHz, VBW = 10Hz.

Note :

If the measured frequencies are fall in the restricted frequency band, the limit employed must be quasi peak value when frequencies are below or equal to 1 GHz. And the measuring instrument is set to quasi peak detector function.

Annex A. iv HARMONIC CURRENT EMISSIONS TEST DESCRIPTION (EN 61000-3-2:2006+A2:2009)

LIMITS OF HARMONICS CURRENT MEASUREMENT

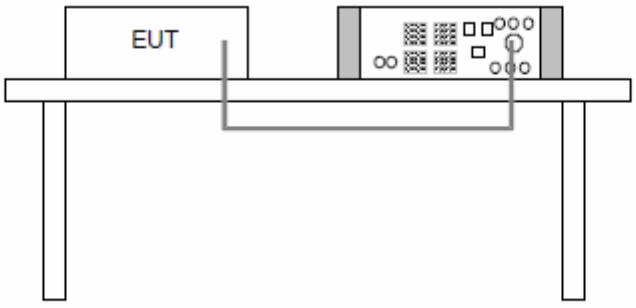
Limits for Class A equipment		Limits for Class D equipment		
Harmonics Order n	Max. permissible harmonics current A	Harmonics Order n	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd harmonics		Odd Harmonics only		
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	13	0.30	0.21
15<=n<=39	0.15x15/n	15<=n<=39	3.85/n	0.15x15/n
Even harmonics				
2	1.08			
4	0.43			
6	0.30			
8<=n<=40	0.23x8/n			

NOTE: 1. Class A and Class D are classified according to item 4.4.3.

2. According to section 7 of EN 61000-3-2, the above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with an active input power up to and including 75 W.

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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.

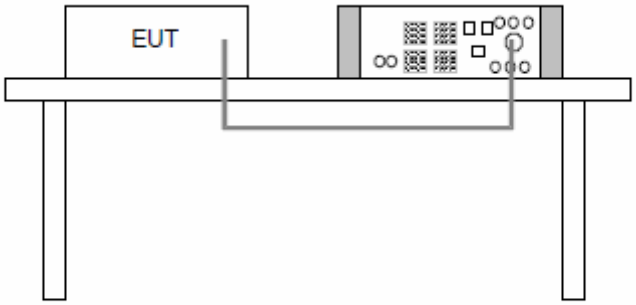
Annex A. v VOLTAGE FLUCTUATIONS AND FLICKERS TEST DESCRIPTION (EN 61000-3-3:2008)

LIMITS OF VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

TEST ITEM	LIMIT	REMARK
P_{st}	1.0	P_{st} means short-term flicker indicator.
P_{lt}	0.65	P_{lt} means long-term flicker indicator.
T_{dt} (ms)	500	T_{dt} means maximum time that dt exceeds 3.3 %.
d_{max} (%)	4%	d_{max} means maximum relative voltage change.
dc (%)	3.3%	dc means relative steady-state voltage change

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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 (IEC 61000-4-2:2008)

Test Set-up

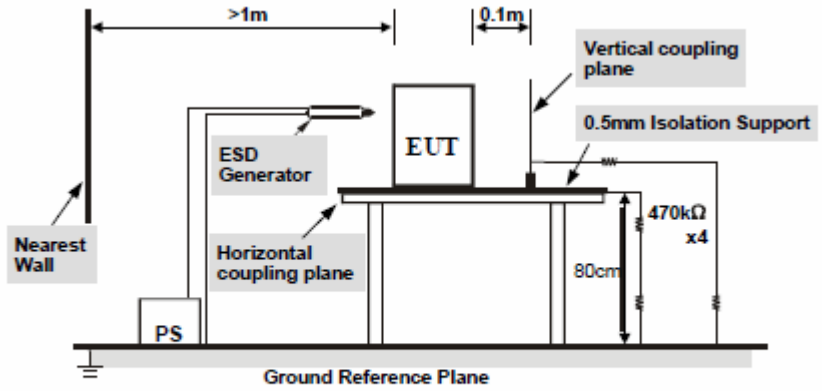
1. The test set-up was in accordance with the standard.

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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.

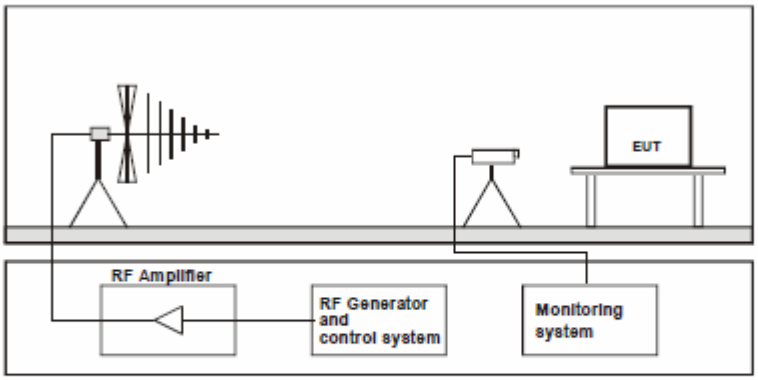
Annex A.vii RF RADIATED IMMUNITY TEST DESCRIPTION (IEC 61000-4-3:2006+A1:2010)

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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 (IEC 61000-4-4:2004+A1:2010)

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.

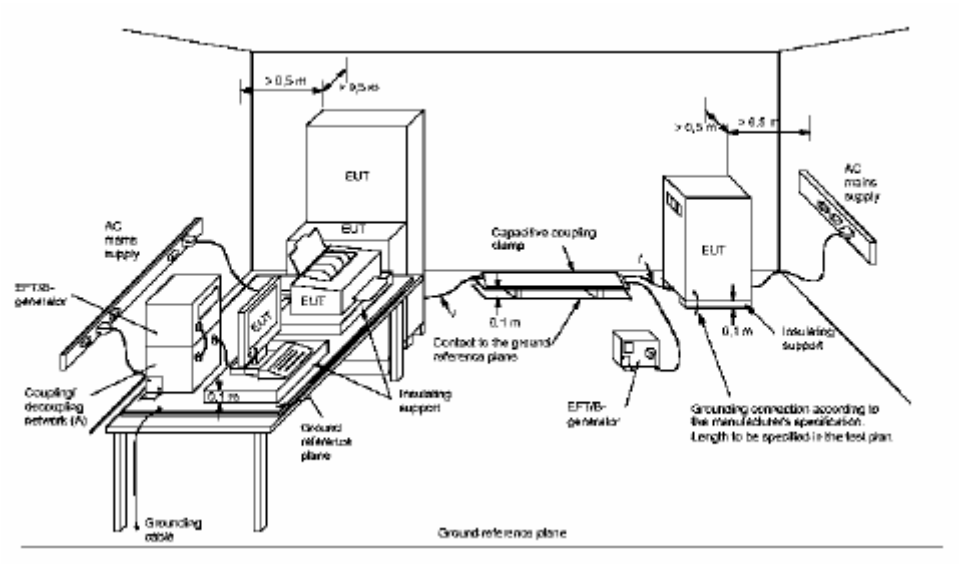
3. The EFT/B generator was placed on top of the ground plane and connected to the protective earth.

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
   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 (IEC 61000-4-5:2005)

Test Set-up

1. The EUT was placed on a 0.8m high, non-conductive table.

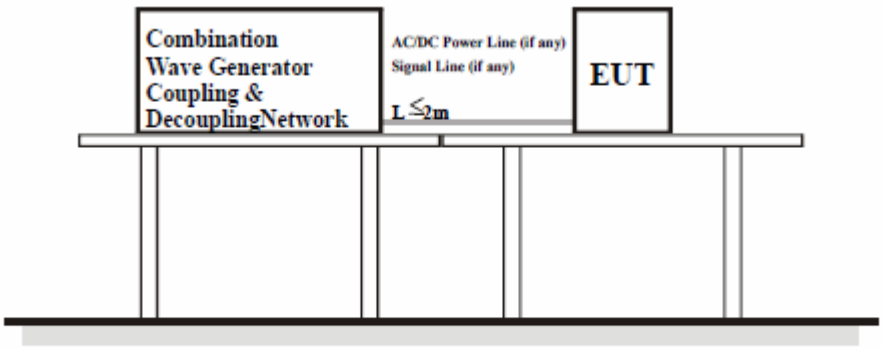
2. The test was performed using a voltage surge generator, mains, and signal line coupling/decoupling networks that were compliant with the standard.

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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 (IEC 61000-4-6:2008)

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.

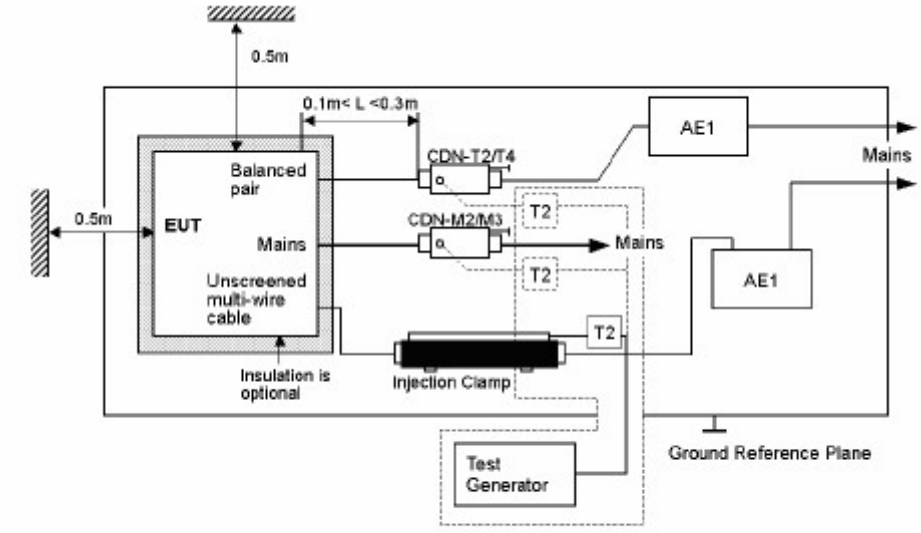
4. The EUT's Cables Under Test (CUT) were cut in order to insert the CDNs into the line. The cable lengths were kept as short as possible to maintain a distance of 0.1m to 0.3m between the EUT and the CDNs.

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.



NOTE: The EUT clearance from any metallic obstacles shall be at least 0.5m.
All non-excited input ports of the CDNs shall be terminated by 50Ω loads.

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: Power Magnetic field METHOD (IEC 61000-4-8:2010)

Calibration Set-up & Method

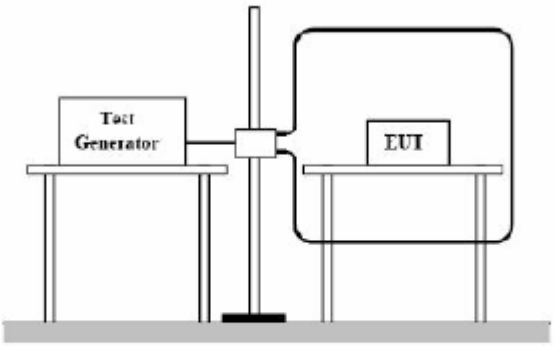
1. A pre-test calibration was necessary in order to determine the signal generator and power amplifier setting to give the desired injected interference level.

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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 (IEC 61000-4-11:2004)

Calibration Set-up & Method

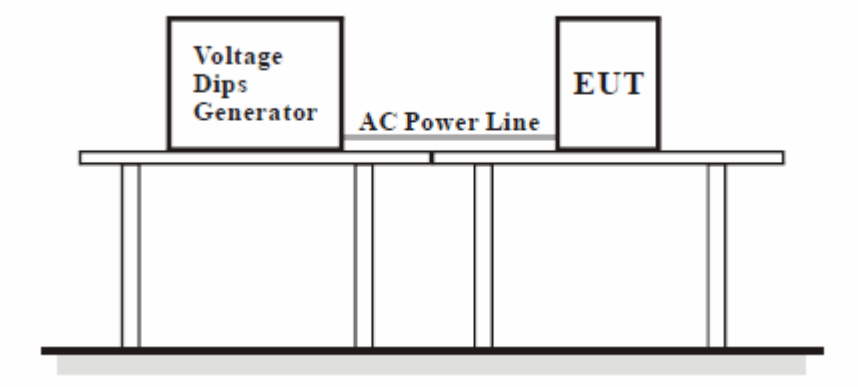
1. The proper severity level shall be selected before performing this testing.

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 AND TEST SETUP PHOTOGRAPHS

Annex B.i. Photograph 1: EUT Photos

Photo #1 EUT-Front View

Photo #2 EUT-Rear View

Photo #3 EUT-Front View

Photo #4 EUT-Back View

Photo #5 EUT-Front View of adapter

Photo #6 EUT-Rear View of adapter

Annex B.ii. Photograph 2: EUT Internal Photo

Photo #1 EUT-Uncovered View

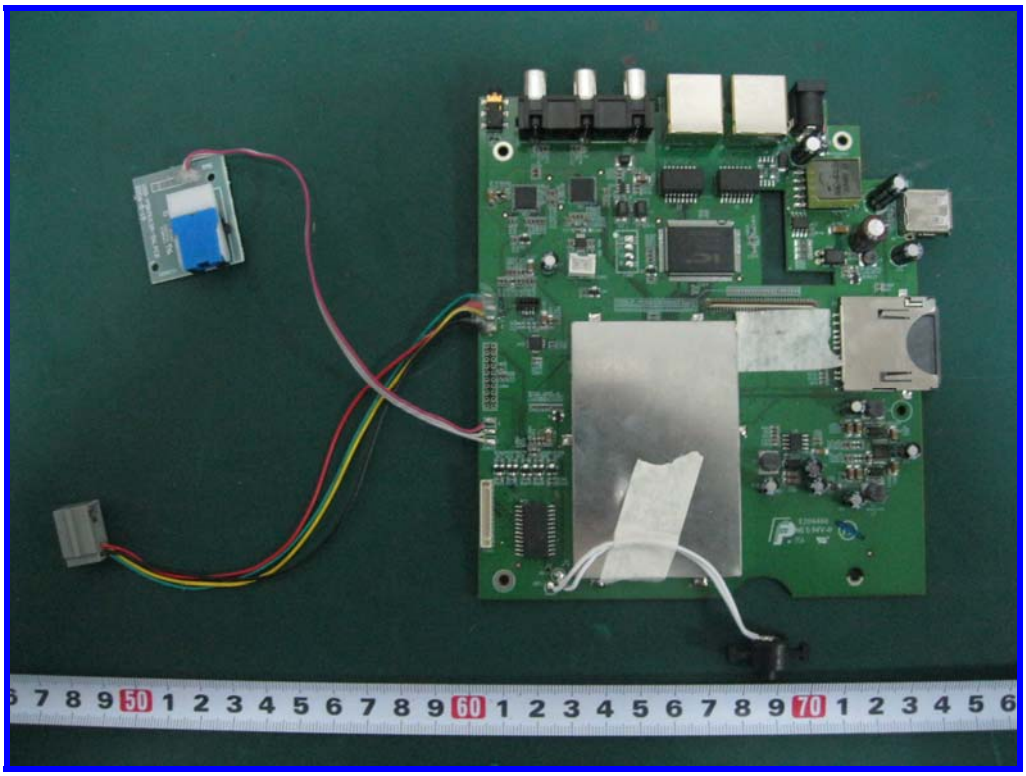


Photo #2 EUT-Front View of Main PCB

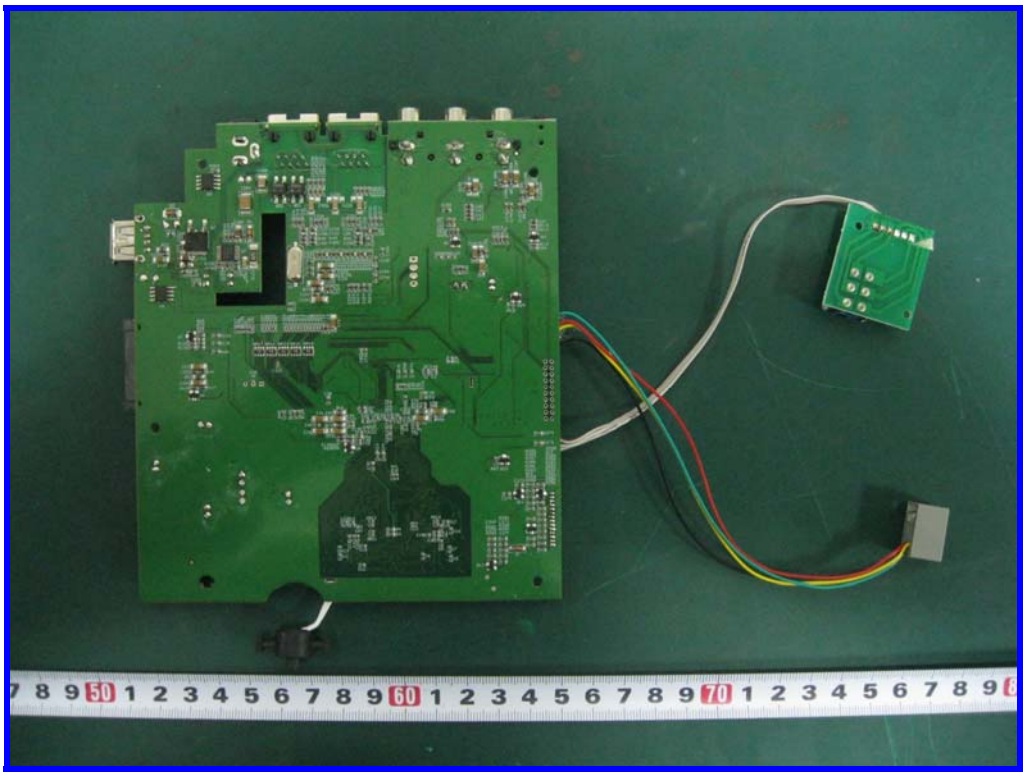


Photo #3 EUT-Rear View of Main PCB

Photo #4 EUT-Front View of Receiver

Photo #5 EUT-Rear View of Receiver

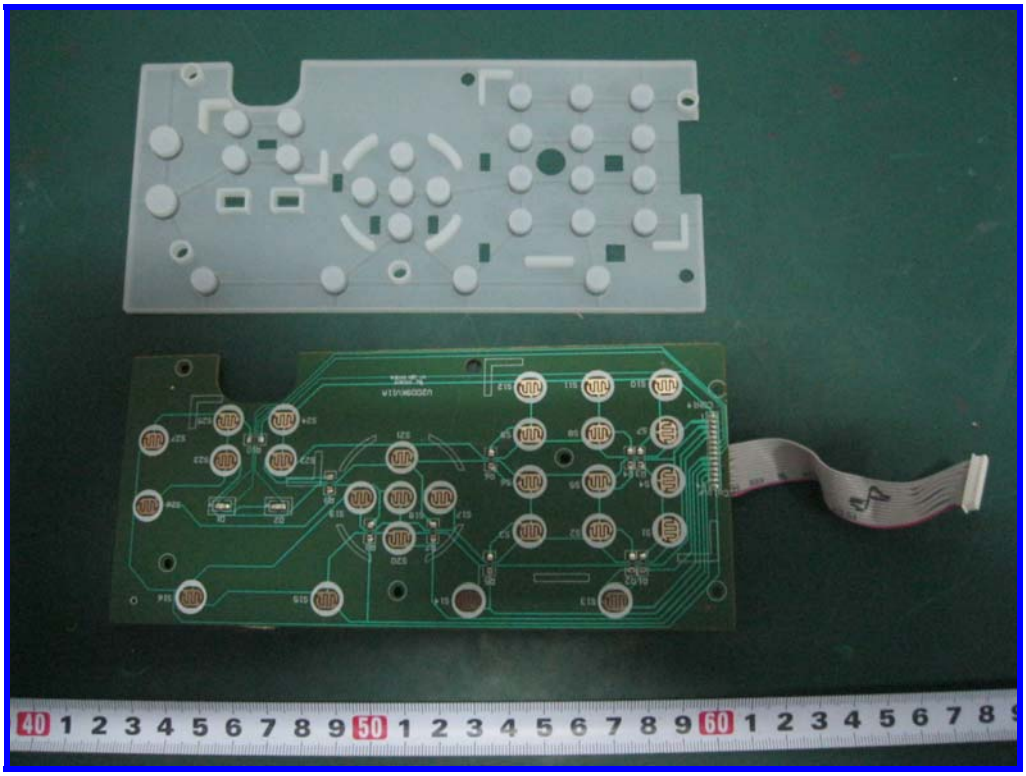


Photo #6 EUT-Front View of Keyboard

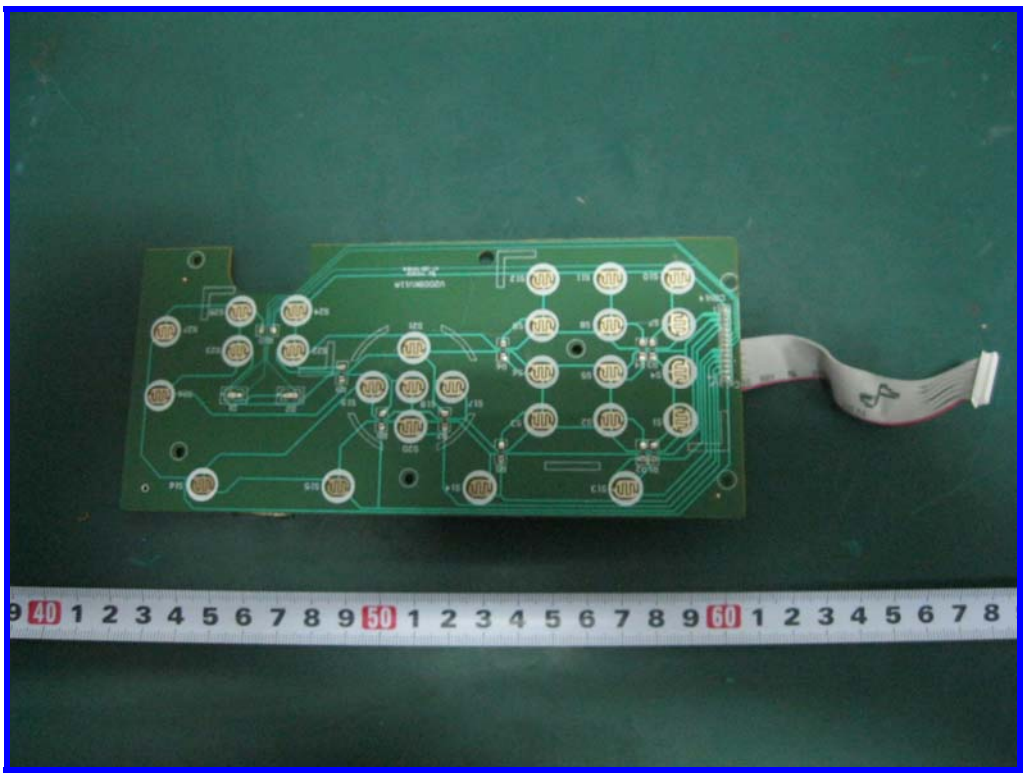


Photo #7 EUT-Rear Front of Keyboard

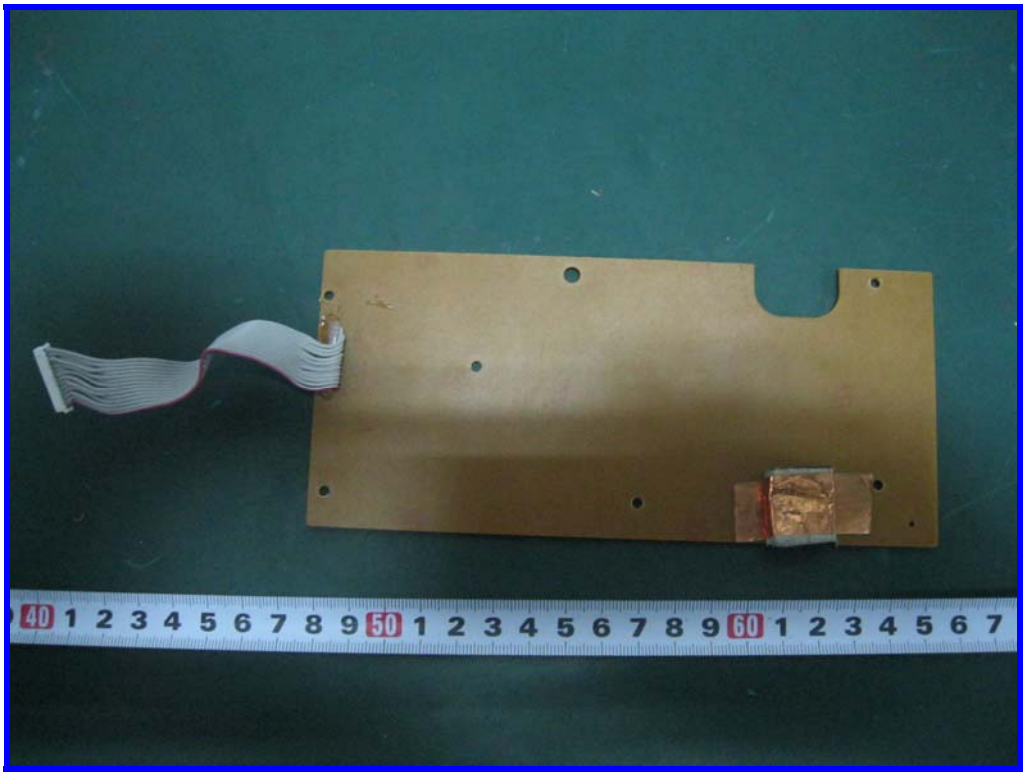


Photo #8 EUT-Rear View of Keyboard

Photo #9 EUT- Top View of display PCB

Photo #10 EUT-Front View of display PCB

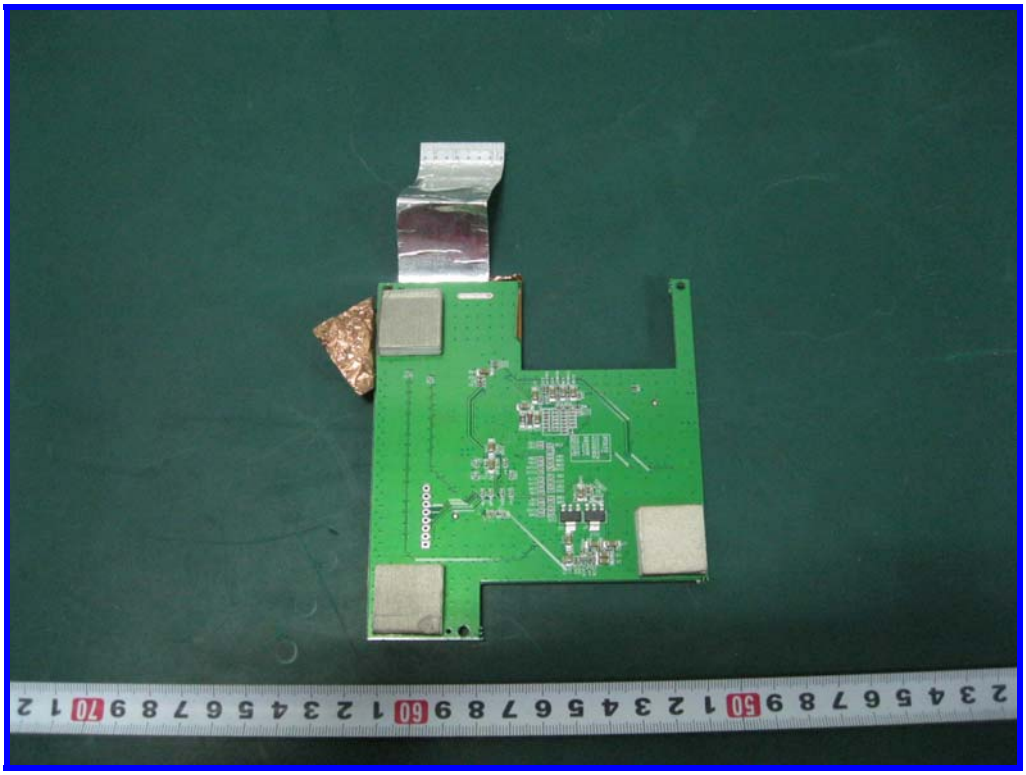


Photo #11 EUT-Front View of PCB

Photo #12 EUT-Rear View of PCB

Photo #13 EUT-Front View of display

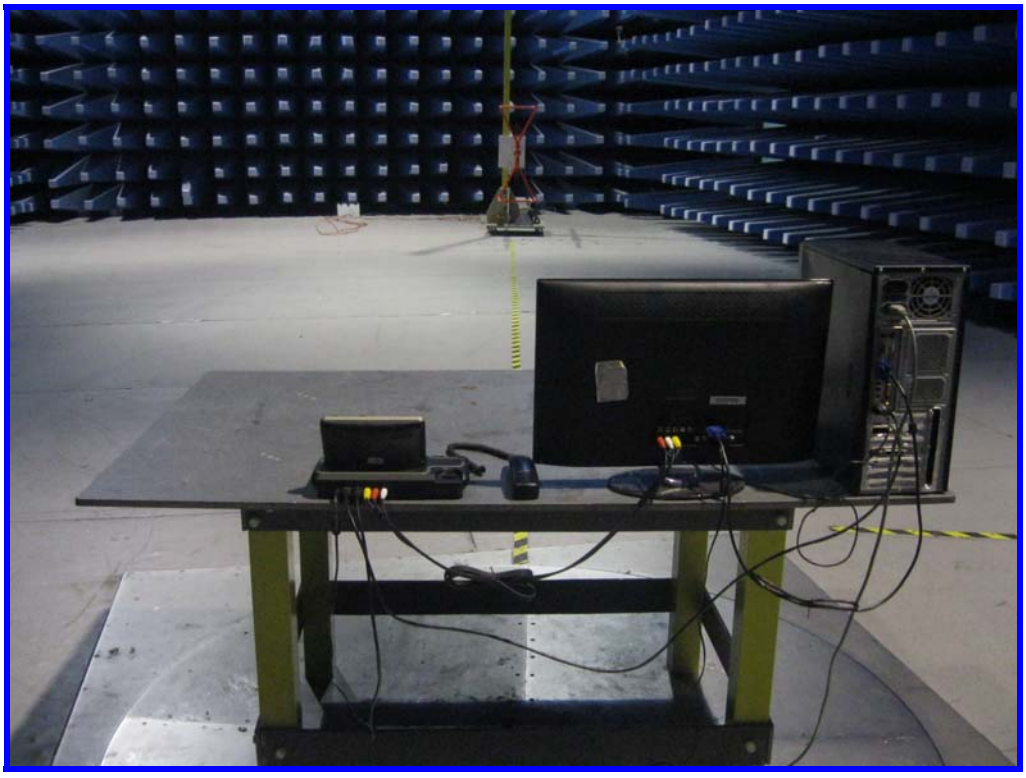
Photo #14 EUT-Rear View of display

Annex B.iii. Photograph 3: Test setup Photos

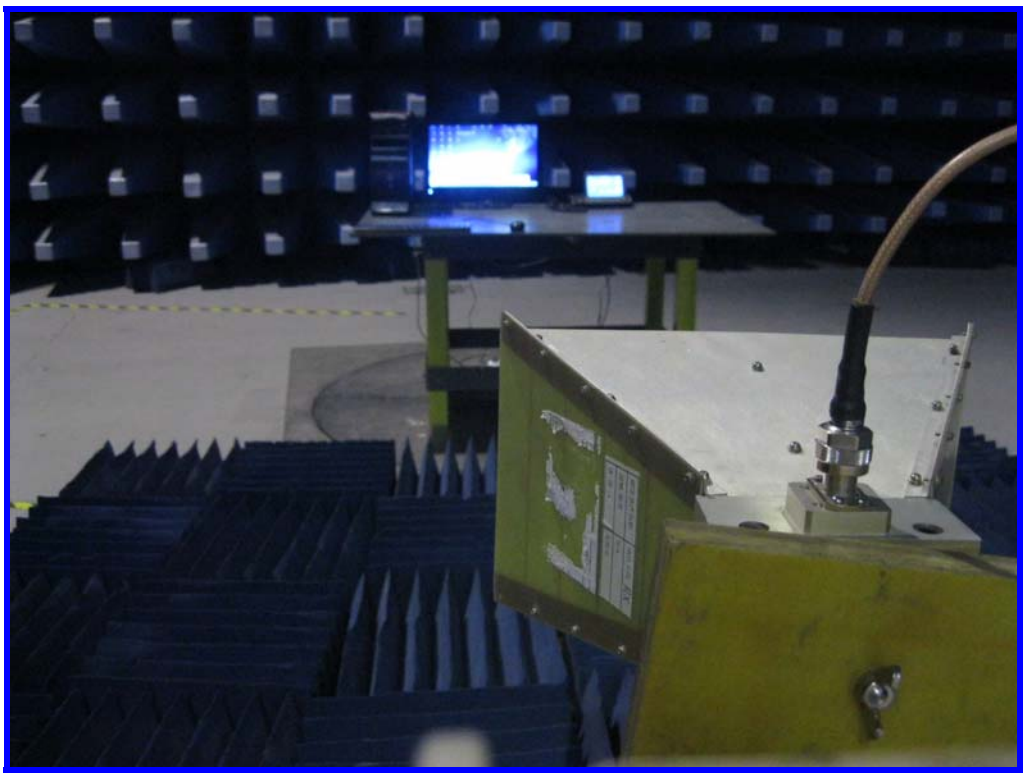
Conducted Emission Test Setup front View

Conducted Emission Test Setup Side View

Radiated Emission Test Setup Front View (30M – 1G)



Radiated Emission Test Setup Rear View (30M – 1G)



Radiated Emission Test Setup Rear View (1G above)

Harmonic & Flicker & VDI Test Setup Front View

ESD Immunity Test Setup Front View

Radiated Immunity Test Setup Front View

Surge Immunity Test Setup Front View

EFT Immunity Test Setup Front View

Conducted Immunity Power Port Test Setup Front View

Voltage Dips Test Setup Front View

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

EUT TEST CONDITIONS

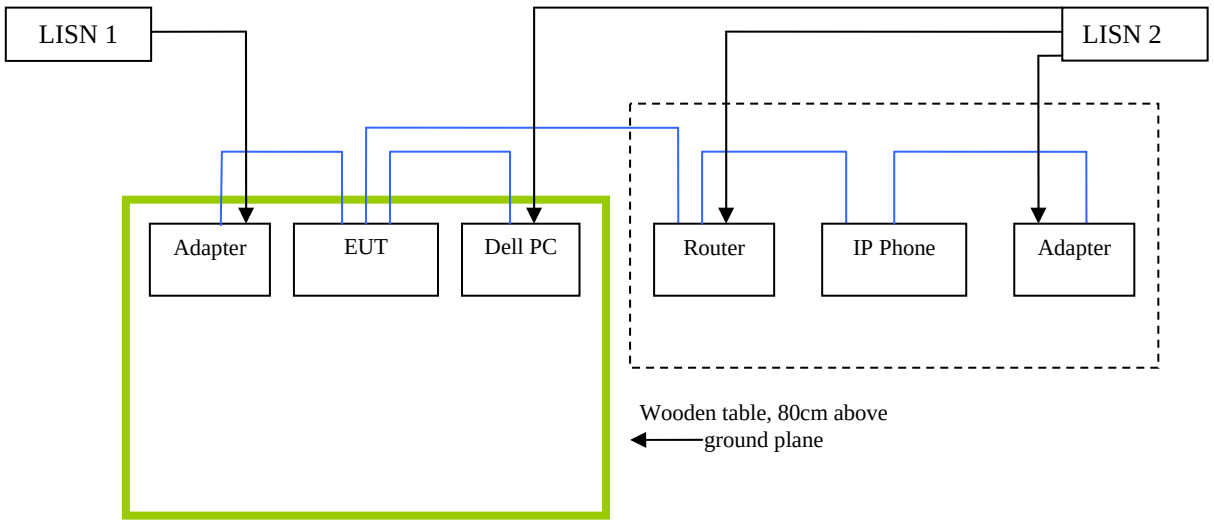
Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

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

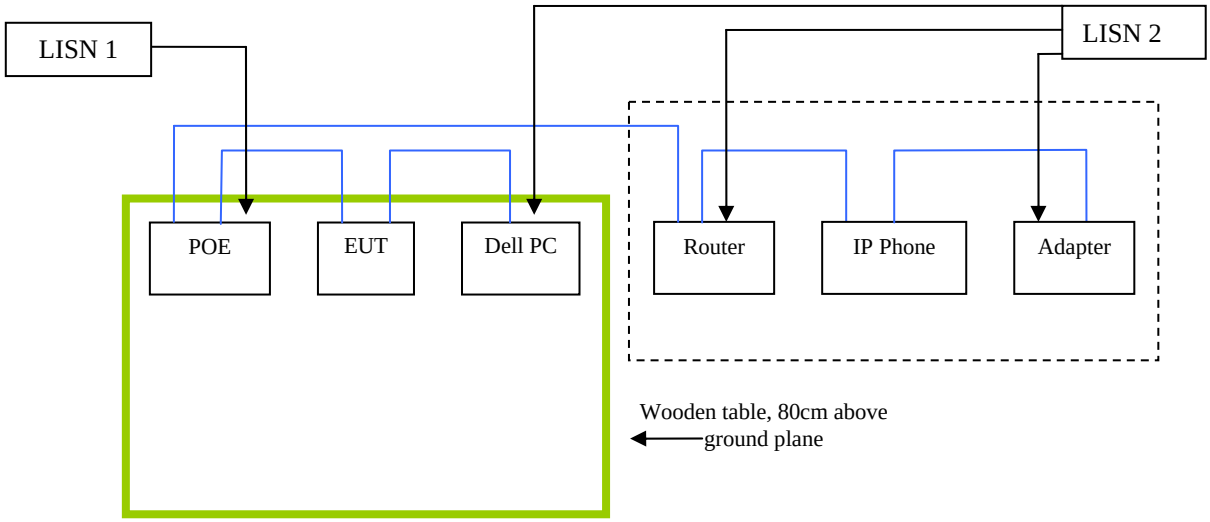
Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
Dell PC	ST2220LB	2.5m,VGA cable 2.5m,AV cable
Dell Keyboard	SK-8115	1.8m, Signal Line
Dell Mouse	OXN967	1.8m, Signal Line
IP Phone	VP530	1.8M RJ45 Line
POE adapter	GREAT-45	1.5M AC POWER LINE
Router	AR1220V	10M RJ45 Line
Adapter	OH-1018A0503000U-VDE	1.5M Power Line

Configuration of Test Setup

AC Power: (Adapter)



AC Power: (POE)



Annex C.ii. DESCRIPTION OF TEST MODES

For Radiated Emission, the EUT was pre-tested under following conditions, test mode 1 is found to be the worst for the final test.

TEST MODE	TEST CONDITION
1)	230Vac/50Hz, LAN 100Mbps, speaker mode
2)	230Vac/50Hz, LAN 100Mbps, headset mode (earphone)
3)	230Vac/50Hz, LAN 100Mbps, handset mode (EUT)
4)	230Vac/50Hz, LAN 10Mbps, speaker mode
5)	120Vac/60Hz, LAN 100Mbps, speaker mode

Test results are presented in the report as below:

TEST RESULTS	TEST CONDITION
For emission test	
1)	LAN 100Mbps, speaker mode
For Harmonics, Flicker, ESD, EFT, Surge, Magnetic and Dip Tests	
A)	Handset mode
RS and CS Tests	
A)	Handset mode
B)	Headset mode
C)	Speaker mode

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 (A, B or C) stipulated in the relevant standard.

Performance Criteria A – 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 – 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.

Performance Criteria C – Loss of function is allowed, provided the function is self-recoverable, or can be operation of the control by the user in accordance with the manufacturer's instruction.

Function, and/or information stored in non-volatile memory, or protested by a battery, shall not be lost.

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

Annex D. User Manual, Block Diagram, Circuit Diagram

Please see attachment

Annex E. SIEMIC ACCREDITATION CERTIFICATES

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

ilac-MRA

A2LA The American Association for Laboratory Accreditation
World Class Accreditation

Accredited Laboratory

A2LA has accredited

SIEMIC LABORATORIES

San Jose, CA

for technical competence in the field of

Electrical Testing

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

The American Association for Laboratory Accreditation
"World Class Accreditation"

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

SIEMIC LABORATORIES [1]
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www.siemic.com

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)

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FCC – Emissions	ANSI C63.17:2006; 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; ANSI C63.4(2009); ANSI C63.10(2009); FCC Method 47 CFR Part 18, FCC OST/MP-5(1986); FCC Report and Order ET Docket 98-153 (FCC 02-48); FCC Method 47 CFR Part 15, Subpart G, using FCC Order 04-425; FCC Method 47 CFR Parts 11 (Emergency Alert System (EAS)), 15 (Radio Frequency Devices) and 18 (Industrial, Scientific, and Medical Equipment); SAE J1113-11, SAE J1113-12; SAE J1113-41; SAE J1113-4; SAE J1113-13
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 – Radio TIA/EIA 603-C with 47 CFR Part 2	Maritime and Aviation Radio Services in 47 CFR Parts 80 and 87; Personal Mobile Radio Services in 47 CFR Parts 22 (cellular), 24, 25, 26, and 27; Personal Mobile Radio Services in 47 CFR Part 22 (cellular) and Part 24 – [limited to TX conducted and radiated power and RX - TX radiated spurious emissions]; General Mobile Radio Services in 47 CFR Parts 22 (non-cellular), 74, 90, 95, and 97; General Mobile Radio Services in 47 CFR Part 90; Microwave Radio Services in 47 CFR Parts 21, 27, 74, and 101
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; 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
USA – Telecom	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	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

Australia – Telecom	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 2017; HKTA 2018; HKTA 2022; 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 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) and OFTA Hong Kong requirements.

Presented this 23rd day of November 2010.

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

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*

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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

SIEMIC ACREDITATION DETAILS: FCC Test Site Registration No. **986914**

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

April 19, 2011

Registration Number: 986914

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

Attention: Leslie Bai,

Re: Measurement facility located at 2-1 Longcang Avenue, Nanjing, China
Anechoic chamber (3 meters) and 3&10 meter OATS
Date of Renewal: April 19, 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 ACREDITATION DETAILS: Industry of Canada CAB ID : US0160

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

March 4, 2009

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

Dear Mr. Bai:

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

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

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

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov 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 ACREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842B

Industry Canada Industrie Canada

January 25, 2011

OUR FILE: 46405-4842
Submission No: 145222

Siemic Nanjing (China) Laboratories
2-1 Longcang Avenue
Yuhua Economic & Technology Dev. Park, Nanjing
China

Attention: Leslie Bai

Dear Sir/Madame:

The Bureau has received your application for the registration of a 3/10m OATS. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought (Site# 4842B-2). 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;

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

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 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 three 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_rr00052e.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
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 ACREDITATION DETAILS: FCC DOC CAB Recognition : US1109

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

August 28, 2008

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

Attention: Leslie Bai

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

Dear Sir or Madam:

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

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

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

Sincerely,

George Tannahill

George Tannahill
Electronics Engineer

SIEMIC ACREDITATION DETAILS: Australia CAB ID : US0160

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

November 20, 2008

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

Dear Mr. Bai:

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

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

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar, at (301) 975-5521 or ramona.saar@nist.gov 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: Taiwan BSMI CAB Accreditation No. SL2-IN-E-1130R

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

May 3, 2006

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

Dear Mr. Bai:

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

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

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

Sincerely,

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

cc: Jogindar Dhillon

NIST

SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160

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

November 25, 2008

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

Dear Mr. Bai:

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

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

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

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

Sincerely,

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

Enclosure

cc: Ramona Saar

NIST

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 podar ejercer dicho acuerdo.

Aprovecho este escrito para mencionarle que nuestro intermediario gestor será la empresa Isatel 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.

Cuitlahuac 71
Hipódromo Condesa
06100 México, D.F.
Tel. 5264-0308 con 12 líneas
Fax 5264 0308
www.canieti.org

SIEMIC ACCREDITATION DETAILS: OFTA CAB from NIST: US0160

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

December 8, 2008

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

Dear Mr. Bai:

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

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

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

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

Sincerely,

David F. Alderman

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

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACREDITATION DETAILS: Australia ACMA CAB ID: US0160

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

November 20, 2008

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

Dear Mr. Bai:

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

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