Test Report

Product Name ：ICPCON CPU with Converter
Model No. ：I-7560, I-7561, I-7563, I-7513, I-7551, I-7017R, I-7017C, I-7018R, SG-3071, SG-3081, PW-3090-24S, PW-3090-12S, PW-3090-5S, PW-3090-5D, PW-3090-15D, I-7188E3D-232, I-7188E5D-485, I-7188E3-232, I-7188E5-485, NS-108

Applicant ：ICP DAS CO., LTD.
Address ：No. 111, Kuangfu N. Rd., Hukou Shiang, Hsinchu, Taiwan 303, R.O.C.

Date of Receipt ：2003/12/23
Date of Test ：2003/12/23
Report No. ：03CH075E

CE

Declaration of Conformity

The following products is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC). The listed standard as below were applied:

The following Equipment:

Product	:	ICPCON CPU with Converter
Trade Name	:	ICP DAS
Model Number	:	I-7560, I-7561, I-7563, I-7513, I-7551, I-7017R, I-7017C, I-7018R, SG-3071, SG-3081, PW-3090-24S, PW-3090-12S, PW-3090-5S, PW-3090-5D, PW-3090-15D, I-7188E3D-232, I-7188E5D-485, I-7188E3-232, I-7188E5-485, NS-108

This product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC).For the evaluation regarding EMC, the following standards were applied:

RFI Emission:

EN55022: 1998+A1:2000 Class A	:	Emission standard
EN 61000-3-2: 2000 Class A	:	Limits for harmonic current emission
EN 61000-3-3:1995+A1:2001	:	Limitation of voltage fluctuation and flicker in low-voltage supply system

Immunity :

EN 55024:1998+A1: 2001	:	Immunity standard

The following importer/manufacturer is responsible for this declaration:

Company Name :

Company Address :

Telephone : Facsimile :

Person is responsible for marking this declaration:

Name (Full Name) Position/ Title

Date Legal Signature

QuieTek Corporation

EMC/Safety Test Laboratory

Accredited by DNV, TUV, Nemko and NVLAP

Date: Dec. 24, 2003
QTK No.: 03CH075E

CE

Statement of Conformity

The certifies that the following designated product

Product	:	ICPCON CPU with Converter
Trade name	:	ICP DAS
Model Number	:	I-7560, I-7561, I-7563, I-7513, I-7551, I-7017R, I-7017C, I-7018R, SG-3071, SG-3081, PW-3090-24S, PW-3090-12S, PW-3090-5S, PW-3090-5D, PW-3090-15D, I-7188E3D-232, I-7188E5D-485, I-7188E3-232, I-7188E5-485, NS-108
Company Name	:	ICP DAS CO., LTD.

This product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC).For the evaluation regarding EMC, the following standards were applied:

RFI Emission:

EN55022: 1998+A1: 2000 Class B : Emission standard

EN 61000-3-2: 2000 Class A : Limits for harmonic current emission

EN 61000-3-3:1995+A1:2001 : Limitation of voltage fluctuation and flicker in low-voltage supply system

Immunity :

EN 55024:1998+A1: 2001 : Immunity standard

TÜV DNV NVLAP NEMKO

TEST LABORATORY

Kevin Wang / Vice President

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logo.

QuieTek Corporation / No.75-1, Wang-Yeh Valley, Yung-Hsing, Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.
Tel: 886-3-5928858, Fax: 886-3-5928859, E-mail: service@quietek.com

Test Report Certification

Test Date : 2003/12/23
Report No. : 03CH075E

QTK QuieTek Corporation

Accredited by TUV, DNV, Nemko and NIST (NVLAP)

Product Name	:	ICPCON CPU with Converter
Applicant	:	ICP DAS CO., LTD.
Address	:	No. 111, Kuangfu N. Rd., Hukou Shiang, Hsinchu, Taiwan 303, R.O.C.
Manufacturer	:	ICP DAS CO., LTD.
Model No.	:	I-7560, I-7561, I-7563, I-7513, I-7551, I-7017R, I-7017C, I-7018R, SG-3071, SG-3081, PW-3090-24S, PW-3090-12S, PW-3090-5S, PW-3090-5D, PW-3090-15D, I-7188E3D-232, I-7188E5D-485, I-7188E3-232, I-7188E5-485, NS-108
Rated Voltage	:	AC 230 V / 50 Hz
Trade Name	:	ICP DAS
Measurement Standard	:	EN 55022:1998+A1:2000 EN 61000-3-2:2000,EN61000-3-3:1995+A1:2001, EN55024:1998+A1:2001
Measurement Procedure	:	EN 55022:1998+A1:2000, EN 61000-3-2:2000, EN 61000-3-3:1995+A1:2001, IEC 61000-4-2:1995, IEC 61000-4-3:1995, IEC 61000-4-4:1995, IEC 61000-4-5:1995, IEC 61000-4-6:1996, IEC 61000-4-8:1993, IEC 61000-4-11:1994
Classification	:	A
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : Joyce Lin (Joyce Lin)

Tested By : Mate Tseng (Mate Tseng)

NVLAP Lab Code : 200347-0

Approved By : (Kevin Wang)

TABLE OF CONTENTS

Reference : Laboratory of License

1. General Information

1.1. EUT Description

Product Name	ICPCON CPU with Converter
Trade Name	ICP DAS
Model No.	I-7560, I-7561, I-7563, I-7513, I-7551, I-7017R, I-7017C, I-7018R, SG-3071, SG-3081, PW-3090-24S, PW-3090-12S, PW-3090-5S, PW-3090-5D, PW-3090-15D, I-7188E3D-232, I-7188E5D-485, I-7188E3-232, I-7188E5-485, NS-108
EUT Voltage	AC 230 V / 50 Hz

Component	
USB Cable	Shielded, 1.2m, a ferrite core bonded.
LAN Cable	Non-Shielded, 1.4m, a ferrite core bonded.

Note:

1. Regarding to the different construction of the EUT, the model number were shown in the table as following:

Model NO.	Description
I-7560	USB to RS-232 Converter
I-7561	USB to RS-232/422/485 Converter
I-7563	USB to 3-channel RS-485 Converter Hub
I-7513	Three-way Isolated RS-485 to 3 port RS-485 Hub
I-7551	Isolated RS-232 to RS-232 Converter
I-7017R	8-channel Analog Input Module (Robust version)
I-7017C	8-channel Current input Module
I-7018R	8-channel Analog Input Module (Robust version)
I-7188E3-232	I-7188E3D-232 without LED display
I-7188E3D-232	Internet communication controller with two RS-232, one RS-485 and one Ethernet
I-7188E5-485	I-7188E5D-485 without LED display
I-7188E5D-485	Internet Communication Controller with one RS-232 , four RS-485 and one Ethernet
SG-3071	Isolated DC Voltage Input, Voltage / Current Output Module
SG-3081	Isolated DC Current Input, Voltage / Current Output Module
PW-3090-24S	Isolated Power Supply Module, Output Power Voltage +24V
PW-3090-12S	Isolated Power Supply Module, Output Power Voltage +12V
PW-3090-5S	Isolated Power Supply Module, Output Power Voltage +5V
PW-3090-15D	Isolated Power Supply Module, Output Power Voltage ±15V
PW-3090-5D	Isolated Power Supply Module, Output Power Voltage ±5V
NS-108	Industrial Ethernet Switch Hub

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
EMC	Normal operation
Final Test Mode	
EMI	Normal operation
EMS	Normal operation

1.3. Tested System Details

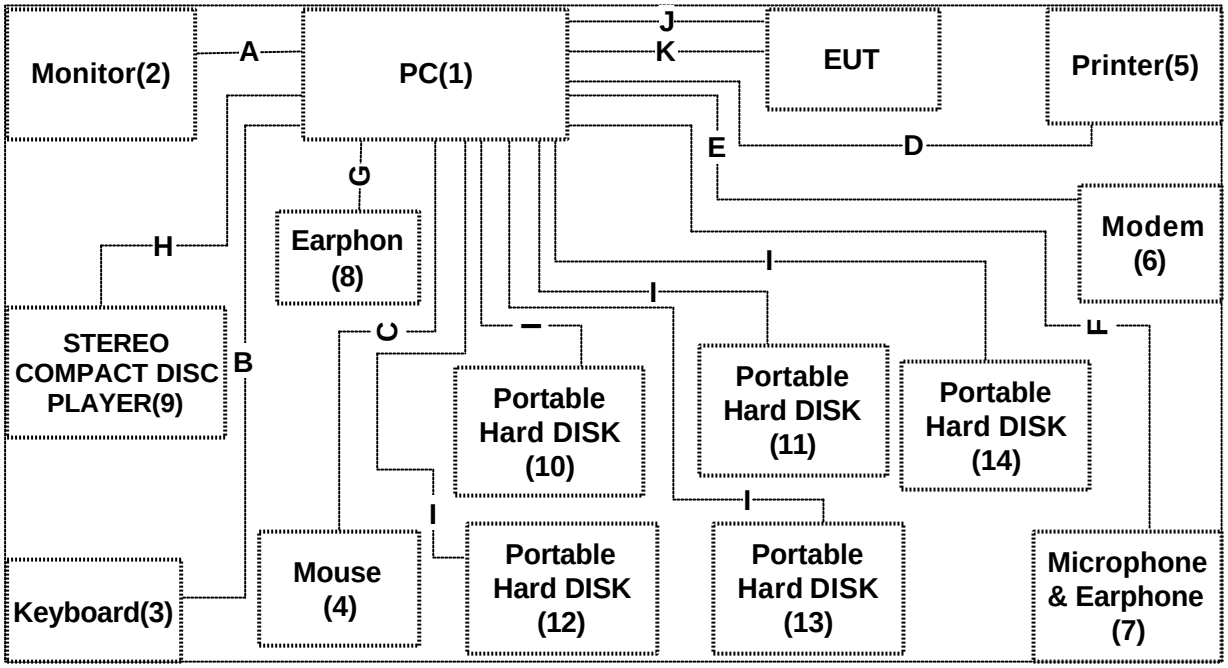
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Test Mode		Normal operation			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	PC	COMPAQ	PD1100	SG30801006	Non-Shielded, 1.8m
2	Monitor	VIEWSNOIC	VCDT21490-1P	ER01502850	Non-Shielded, 1.8m
3	Keyboard	ACER	6311-TW4C/6	N/A	--
4	Mouse	HP	M-S69	FbAB70S5B0S2SSK	--
5	Printer	HP	C2642A	MY75L1D2XN	Non-Shielded, 0.7m
6	Modem	ACEEX	DM-1414	980033034	Non-Shielded, 1.6m
7	Microphone & Earphone	TOKTO	SX-MI	N/A	--
8	Earphone	KOKA	CD-1200	N/A	--
9	STEREO COMPACT DISC PLAYER	MIZDA	CD-11	N/A	--
10	Portable Hard DISK	FUJITSU	MMA2200VB	R129Y19003JC	Non-Shielded, 1.8m
11	Portable Hard DISK	Top Disk Enterprise	Me-910	217974	--
12	Portable Hard DISK	Top Disk Enterprise	Me-910	217975	--
13	Portable Hard DISK	Top Disk Enterprise	Me-910	220948	--
14	Portable Hard DISK	Top Disk Enterprise	Me-910	220949	--

1.4. Configuration of tested System

Test Mode	Normal operation

Connection Diagram



Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.6m, with one ferrite core bonded
B	Keyboard Cable	Shielded, 1.8m
C	Mouse Cable	Shielded, 1.8m
D	Printer Cable	Shielded, 1.2m
E	Modem Cable	Shielded, 1.5m
F	Earphone & Microphone Cable	Non-Shielded, 1.2m
G	Earphone & Microphone Cable	Non-Shielded, 1.2m
H	Walkman Cable	Non-Shielded, 1.6m
I	USB Hard Disk Cable	Shielded, 1.2m, five PCS.
J	LAN Cable	Non-Shielded, 1.4m, with one ferrite core bonded
K	USB Cable	Shielded, 1.2m, with one ferrite core bonded

1.5. EUT Exercise Software

Test Mode	Normal operation
1	Setup the EUT and simulators as shown on 1.3.
2	Turn on the power of all equipment.
3	Boot the PC from Hard Disk.
4	Data will be communicated between computer and EUT.
5	The personal computer monitors ’ will show the transmitting and receiving characteristics when the communication is success.
6	Repeat the above procedure (4) to (5).

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	EN55022 CE	15 - 35	
Humidity (%RH)		25 - 75	
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	EN55022 ISN	15 - 35	
Humidity (%RH)		25 - 75	
Barometric pressure (mbar)		860 - 1060	
Temperature (°C)	EN55022 RE	15 - 35	22
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	EN61000-3-2	15 - 35	
Humidity (%RH)		25 - 75	
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	EN61000-3-3	15 - 35	
Humidity (%RH)		25 - 75	
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC61000-4-11	15 - 35	
Humidity (%RH)		25 - 75	
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC61000-4-2	15 - 35	20
Humidity (%RH)		30 - 60	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC 61000-4-3	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC 61000-4-4	15 - 35	21
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC 61000-4-5	15 - 35	21
Humidity (%RH)		10 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC 61000-4-6	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	IEC 61000-4-8	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description:

September 30, 2003 Accreditation on NVLAP
NVLAP Lab Code: 200347-0
February 23, 1999 Accreditation on DNV
Statement No. : 413-99-LAB11

January 04, 1999 Accreditation on TUV Rheinland
Certificate No.: I9865712-9901

October 08, 2003 Accreditation on Nemko
Certificate No.: ELA 165

Site Name: Quietek Corporation

Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-5928858 / FAX : 886-3-5928859
E-Mail : service@quietek.com

2. Conducted Emission

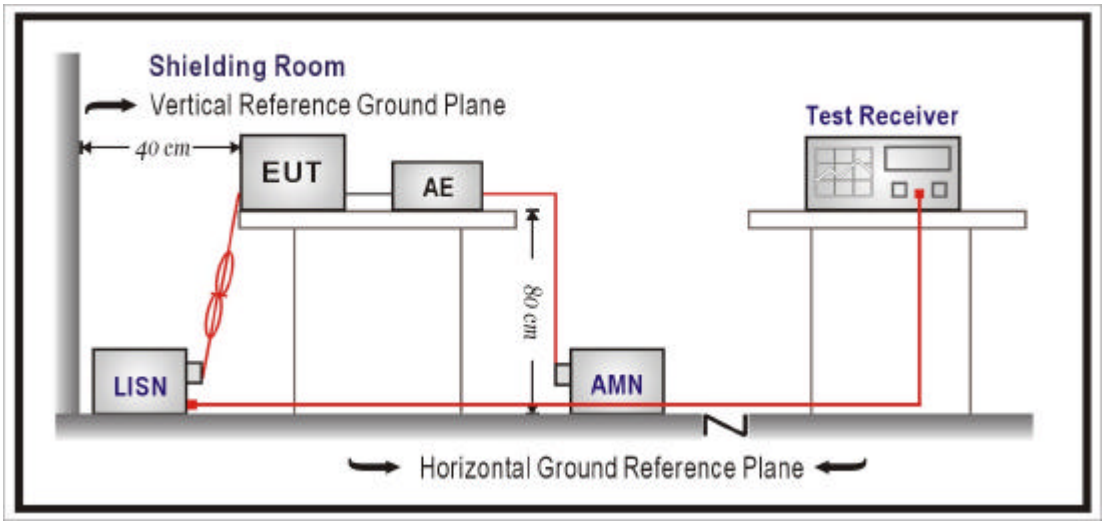
2.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/018	Sep.,2003	
2	Artificial Mains Network	R & S	ENV4200/848411/10	Feb.,2003	Peripherals
3	LISN	R & S	ESH3-Z5/825562/002	Feb.,2003	EUT
4	Pulse Limiter	R & S	ESH3-Z2/357.8810.52	Feb.,2003	
5	No.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

EN 55022 Limits (dBuV)				
Frequency MHz	Class A		Class B	
	QP	AV	QP	AV
0.15 - 0.50	79	66	66-56	56-46
0.50-5.0	73	60	56	46
5.0 - 30	73	60	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to EN 55022: 1998+A1: 2000 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Specification

According to EN 55022: 1998+A1: 2000

2.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR2
Test Condition	Line1	Test Range	0.15~30MHz

Owing to the DC operation of EUT, this test item is not performed.

3. Radiated Emission

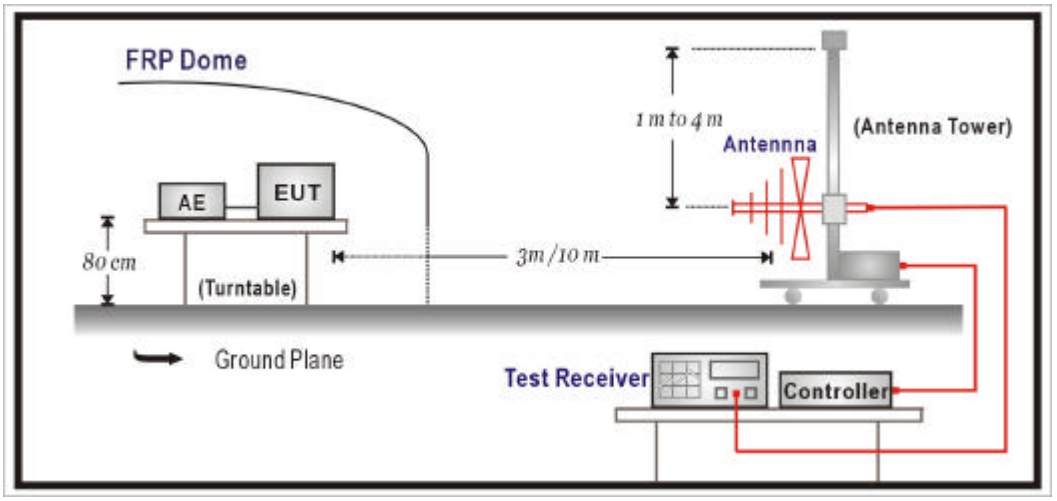
3.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Test Receiver	R & S	ESCS 30 / 836858/023	Jan.,2003
2	X	Spectrum Analyzer	Advantest	R3261C / 81720471	N/A
3	X	Pre-Amplifier	QuieTek	QTK-AMP / AMP1	N/A
4	X	Bilog Antenna	Chase	CBL6112B / 2708	Sep.,2003
5	No.2 OATS				Sep.,2003

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. Mark " X" test instruments are used to measure the final test results.

3.2. Test Setup



3.3. Limits

EN 55022 Limits (dBuV/m)				
Frequency MHz	Class A		Class B	
	Distance (m)	dBuV/m	Distance (m)	dBuV/m
30 – 230	10	40	10	30
230 – 1000	10	47	10	37

Remark: 1. The tighter limit shall apply at the edge between two frequency bands.

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

All cable leaving the table-top EUT for a connection outsidethe test site (for example, mains cable, telephone lines, connections to auxiliary equipment located outside the test area) shall be fitted with ferrite clamps placed on the floor at the point where the cable reached the floor.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to EN 55022: 1998+A1: 2000 on radiated measurement.

Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.

3.5. Test Specification

According to EN 55022: 1998+A1: 2000

3.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	Site2
Test Condition	Horizontal	Test Range	30~1000MHz

	Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal:								
	43.325	1.28	11.49	0.00	7.00	19.77	20.23	40.00
	66.000	1.50	6.16	0.00	11.78	19.44	20.56	40.00
	125.000	2.07	11.84	0.00	9.99	23.90	16.10	40.00
	200.025	2.78	9.30	0.00	9.99	22.07	17.93	40.00
	250.025	3.27	12.61	0.00	9.42	25.30	21.70	47.00
	360.025	4.07	14.70	0.00	4.16	22.93	24.07	47.00
*	500.045	4.79	17.34	0.00	10.15	32.28	14.72	47.00
	625.045	5.44	19.30	0.00	3.54	28.29	18.71	47.00

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	Site2
Test Condition	Vertical	Test Range	30~1000MHz

	Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical:								
	35.050	1.20	14.68	0.00	15.58	31.45	8.55	40.00
	45.050	1.30	9.96	0.00	16.84	28.10	11.90	40.00
	76.000	1.59	7.23	0.00	16.57	25.39	14.61	40.00
	123.900	2.06	11.39	0.00	17.63	31.08	8.92	40.00
*	200.025	2.78	9.07	0.00	21.72	33.58	6.42	40.00
	250.025	3.27	12.26	0.00	10.04	25.57	21.43	47.00
	360.025	4.07	15.48	0.00	6.50	26.04	20.96	47.00
	500.025	4.79	17.14	0.00	6.63	28.56	18.44	47.00
	625.050	5.44	18.50	0.00	3.76	27.71	19.29	47.00

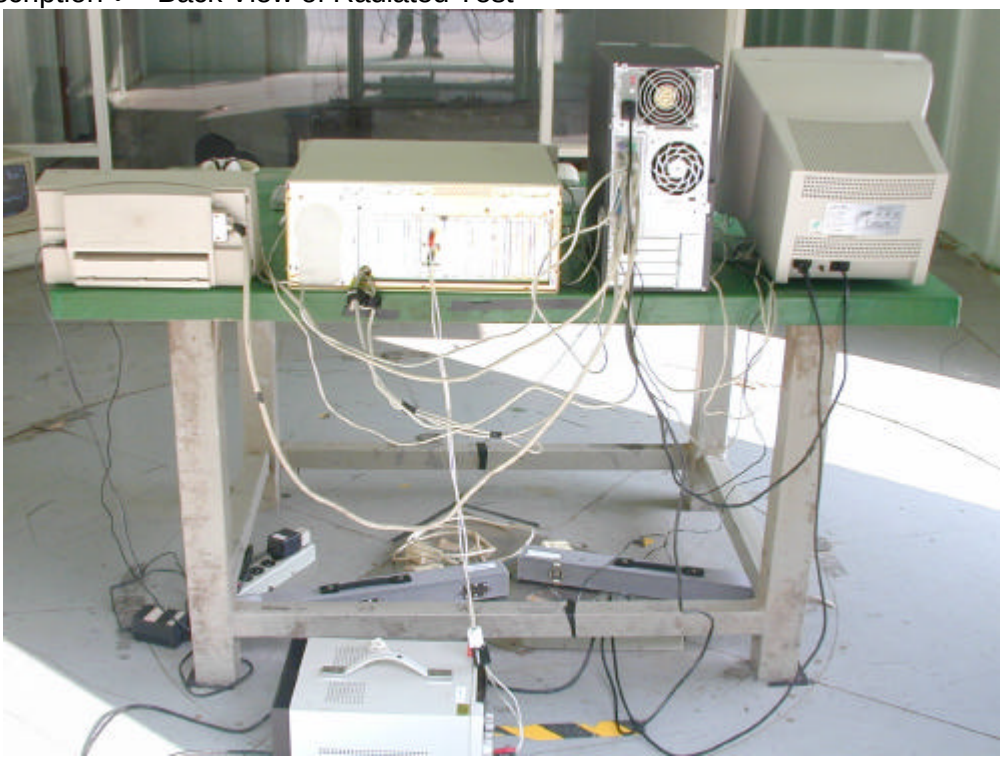
Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss.

3.7. Test Photo

Test Mode ： Normal operation
Description： Front View of Radiated Test

Test Mode ： Normal operation
Description： Back View of Radiated Test



4. Power Harmonics

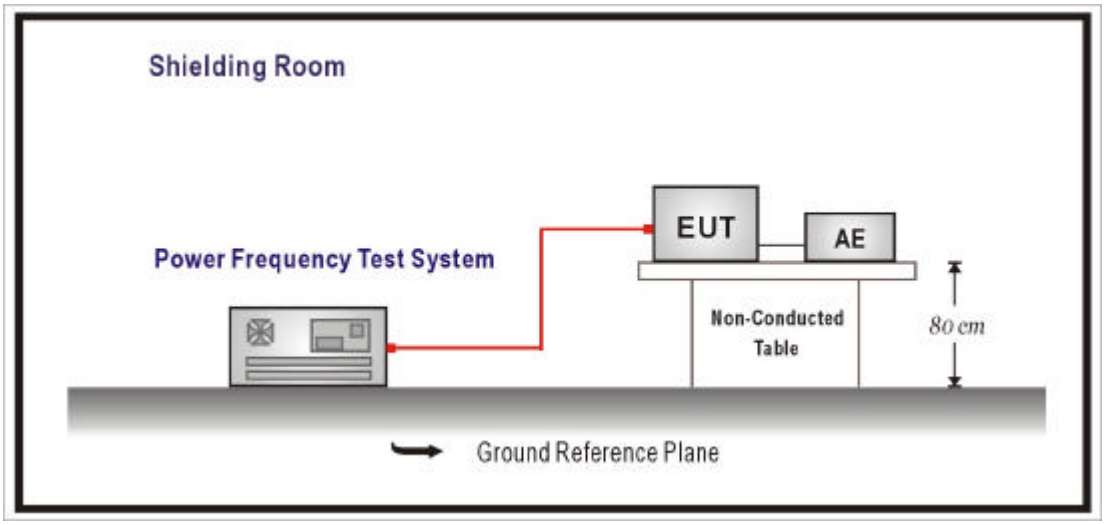
4.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Power Frequency Test System	HAEFELY	PHF-555 / 080 419-29	Apr.,2003
2	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

4.2. Test Setup



4.3. Limits

➢Limits of Class A Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current A	Harmonics Order n	Maximum Permissible harmonic current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8 ≤ n ≤ 40	0.23 * 8/n
11	0.33		
13	0.21		
15 ≤ n ≤ 39	0.15 * 15/n		

➢Limits of Class B Harmonics Currents

For Class B equipment, the harmonic of the input current shall not exceed the maximum permissible values given in table that is the limit of Class A multiplied by a factor of 1.5.

➢Limits of Class C Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current Expressed as a percentage of the input current at the fundamental frequency %
2	2
3	30．?*
5	10
7	7
9	5
11 ≤ n ≤ 39 (odd harmonics only)	3
∗? is the circuit power factor	

➢Limits of Class D Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current per watt mA/W	Maximum Permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
11 ≤ n ≤ 39 (odd harmonics only)	3.85/n	See limit of Class A

4.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

4.5. Test Specification

According to EN 61000-3-2: 2000

4.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	Power Harmonics	Test Range	

Owing to the DC operation of EUT, this test item is not performed.

5. Voltage Fluctuation and Flicker

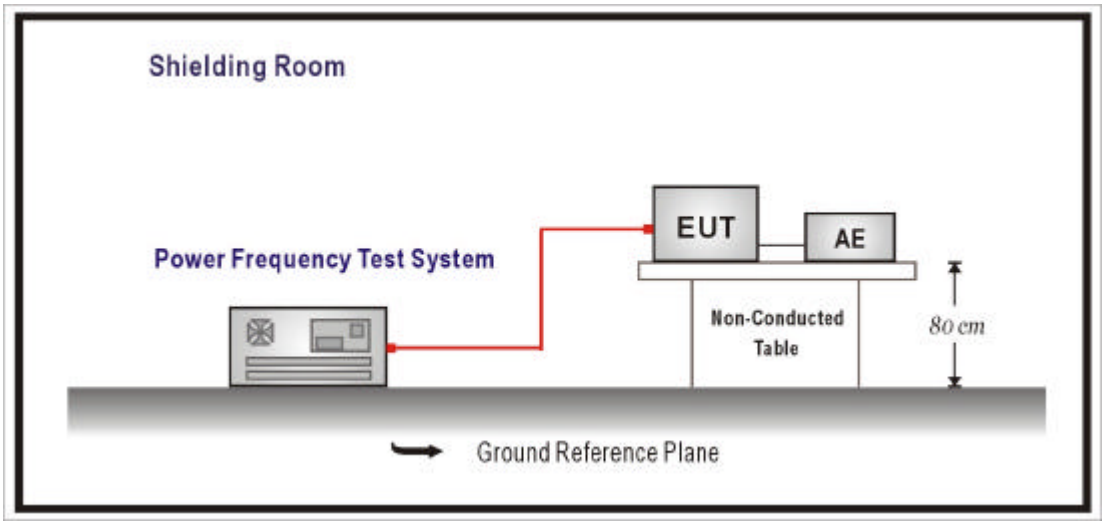
5.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Power Frequency Test System	HAEFELY	PHF-555 / 080 419-29	Apr.,2003
2	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

5.2. Test Setup



5.3. Limits

The following limits apply:

- the value of P_{st} shall not be greater than 1.0;
- the value of P_{1t} shall not be greater than 0.65;
- the value of d(t) during a voltage change shall not exceed 3.3 % for more than 500 ms;
- the relative steady-state voltage change, d_c, shall not exceed 3.3 %;
- the maximum relative voltage change, d_{max}, shall not exceed;

a) 4 % without additional conditions;

b) 6 % for equipment which is:

- switched manually, or
- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

NOTE The cycling frequency will be further limited by the P_{st} and P_{1t} limit. For example: a d_{max} of 6% producing a rectangular voltage change characteristic twice per hour will give a P_{1t} of about 0.65.

c) 7 % for equipment which is:

- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

P_{st} and P_{1t} requirements shall not be applied to voltage changes caused by manual switching.

5.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

5.5. Test Specification

According to EN 61000-3-3:1995+A1:2001

5.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	Flicker	Test Range	

Owing to the DC operation of EUT, this test item is not performed.

6. Electrostatic Discharge (ESD)

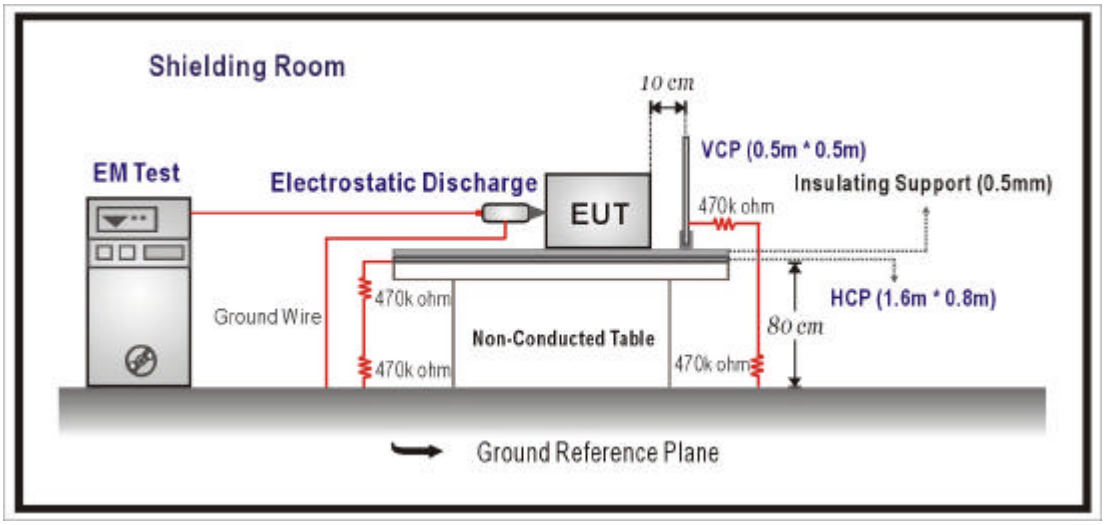
6.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	EM TEST	EM	UCS 500-M / UCS500M4	Jan.,2003
2	Electrostatic Discharge	EM	P18 / 1198-34	Jan.,2003
3	Horizontal Coupling Plane(HCP)	QuieTek	HCP AL50	N/A
4	Vertical Coupling Plane(VCP)	QuieTek	VCP AL50	N/A
5	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

6.2. Test Setup



6.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Electrostatic Discharge	kV(Charge Voltage)	±8 Air Discharge ±4 Contact Discharge	B

6.4. Test Procedure

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

6.5. Test Specification

According to IEC 61000-4-2: 1995

6.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	ESD	Test Range	

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	A	Pass
	10	-8kV	B	A	Pass
Contact Discharge	10	+4kV	B	A	Pass
	10	-4kV	B	A	Pass
Indirect Discharge	50	+4kV	B	A	Pass
(HCP)	50	-4kV	B	A	Pass
Indirect Discharge	50	+4kV	B	A	Pass
(VCP Front)	50	-4kV	B	A	Pass
Indirect Discharge	50	+4kV	B	A	Pass
(VCP Left)	50	-4kV	B	A	Pass
Indirect Discharge	50	+4kV	B	A	Pass
(VCP Back)	50	-4kV	B	A	Pass
Indirect Discharge	50	+4kV	B	A	Pass
(VCP Right)	50	-4kV	B	A	Pass

NR: No Requirement

☒ Meet criteria A: Operate as intended during and after the test

☐ Meet criteria B: Operate as intended after the test

☐ Meet criteria C: Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at ____ kV.

☒ No false alarms or other malfunctions were observed during or after the test.

Remark:

The Contact discharges were applied-at least total 200 discharges at a minimum of four test points.

6.7. Test Photo

Test Mode ： Normal operation
Description： ESD Test Setup

7. Radiated Susceptibility (RS)

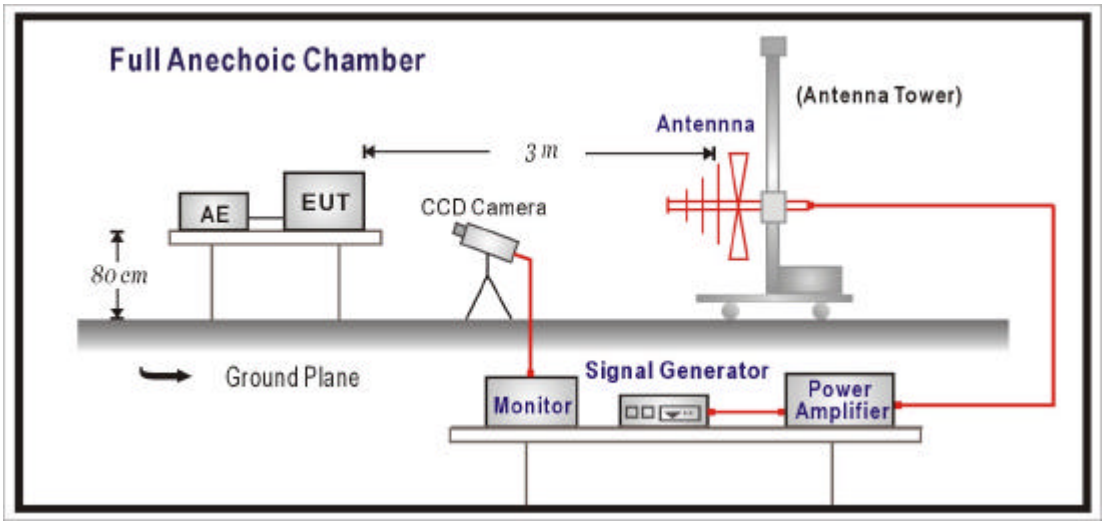
7.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Signal Generator	R & S	SYM02 / 825454/029	Jan.,2003
2	Power Amplifier	A & R	100W10000M7 / A285000010	N/A
3	RF Power Amplifier	OPHIRRF	5022F / 1075	N/A
4	Bilog Antenna	Chase	CBL6112B / 2452	Sep.,2003
5	Power Meter	R & S	NRVD / 100219	Sep.,2003
6	Directional Coupler	A & R	DC6180 / 22735	Feb.,2003
7	No.4 EMC Fully Chamber			Jul.,2003

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Radio-Frequency	MHz	80-1000	A
	Electromagnetic Field	V/m(Un-modulated, rms)	3	
	Amplitude Modulated	% AM (1kHz)	80	

7.4. Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.

Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.

In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	80MHz - 1000MHz
4 Dwell Time	3 Seconds
5. Frequency step size Δf :	1%
6. The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

7.5. Test Specification

According to IEC 61000-4-3: 1995

7.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	Chamber4
Test Condition	RS	Test Range	80~1000

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	0	H	3	A	A	Pass
80-1000	0	V	3	A	A	Pass
80-1000	90	H	3	A	A	Pass
80-1000	90	V	3	A	A	Pass
80-1000	180	H	3	A	A	Pass
80-1000	180	V	3	A	A	Pass
80-1000	270	H	3	A	A	Pass
80-1000	270	V	3	A	A	Pass

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

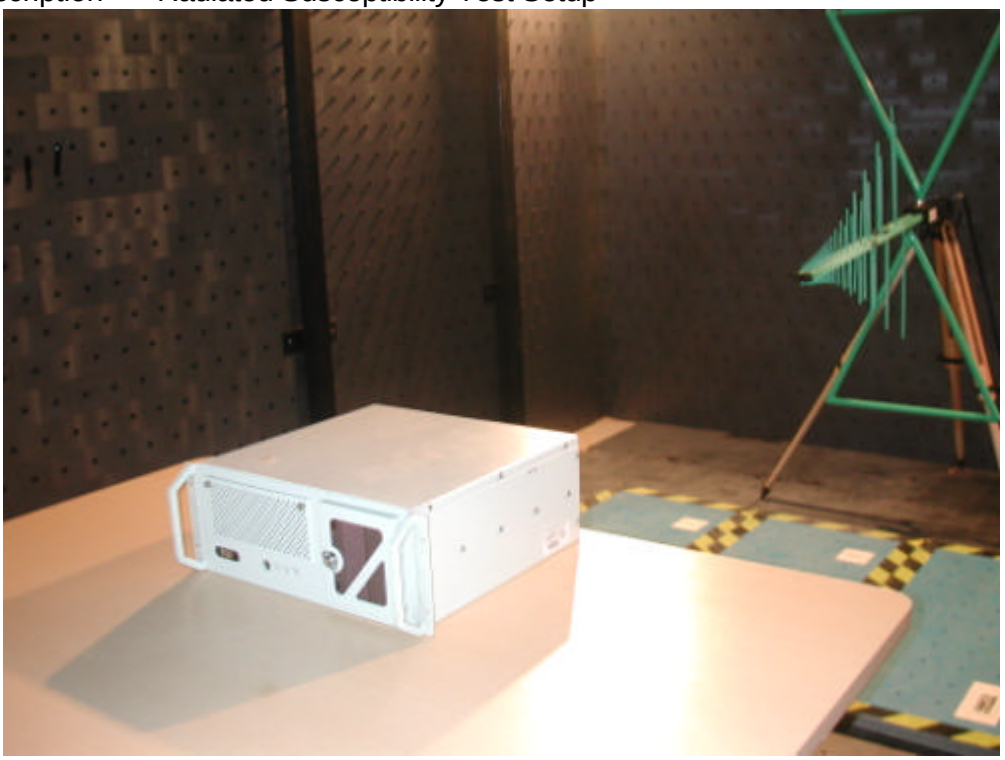
☐ Meet criteria C : Loss/Error of function

☐ Additional Information

- ☐ EUT stopped operation and could / could not be reset by operator at _____ V/m at frequency MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

7.7. Test Photo

Test Mode ： Normal operation
Description： Radiated Susceptibility Test Setup



8. Electrical Fast Transient/Burst (EFT/B)

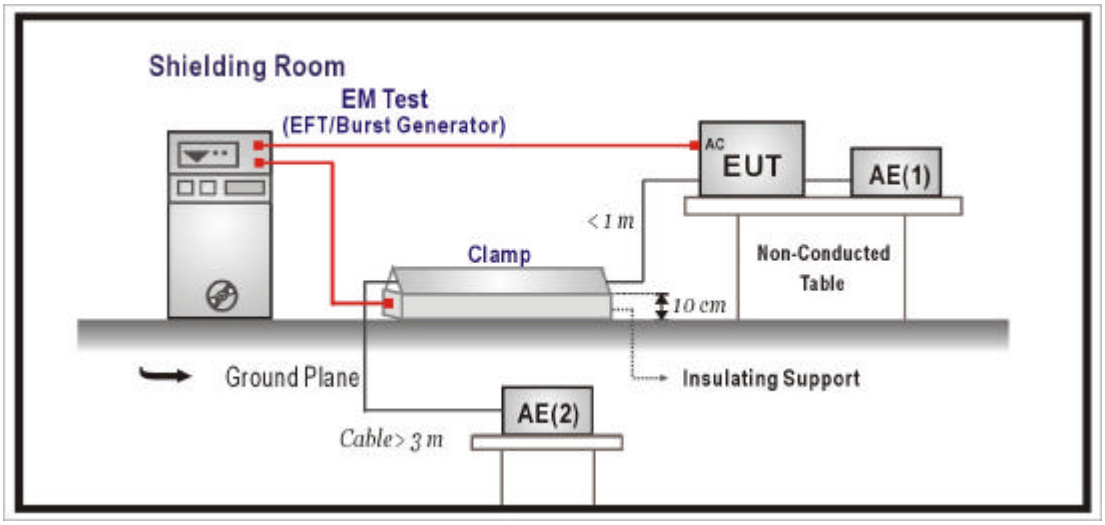
8.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	EM TEST	EM	UCS 500-M / UCS500M4	Jan.,2003
2	Clamp	HAEFELY	093 506.1 / 083 593-23	Jan.,2003
3	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports				
	Fast Transients Common	kV (Peak)	±0.5	B
	Mode	Tr/Th ns	5/50	
		Rep. Frequency kHz	5	
Input DC Power Ports				
	Fast Transients Common	kV (Peak)	±0.5	B
	Mode	Tr/Th ns	5/50	
		Rep. Frequency kHz	5	
Input AC Power Ports				
	Fast Transients Common	kV (Peak)	±1	B
	Mode	Tr/Th ns	5/50	
		Rep. Frequency kHz	5	

8.4. Test Procedure

The EUT and load are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides.

For Signal Ports and Telecommunication Ports:

The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 1min.

For Input DC and AC Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the EFT interference signal.

Each of the Line and Neutral conductors is impressed with burst noise for 1 min.

The length of power cord between the coupling device and the EUT shall be 1m.

8.5. Test Specification

According to IEC 61000-4-4: 1995

8.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	EFT/B	Test Range	

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L	±	1kV	60	Direct	B	A	Pass
N	±	1kV	60	Direct	B	A	Pass
L+N	±	1kV	60	Direct	B	A	Pass

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test.

8.7. Test Photo

Test Mode ： Normal operation
Description： EFT/B Test Setup

9. Surge

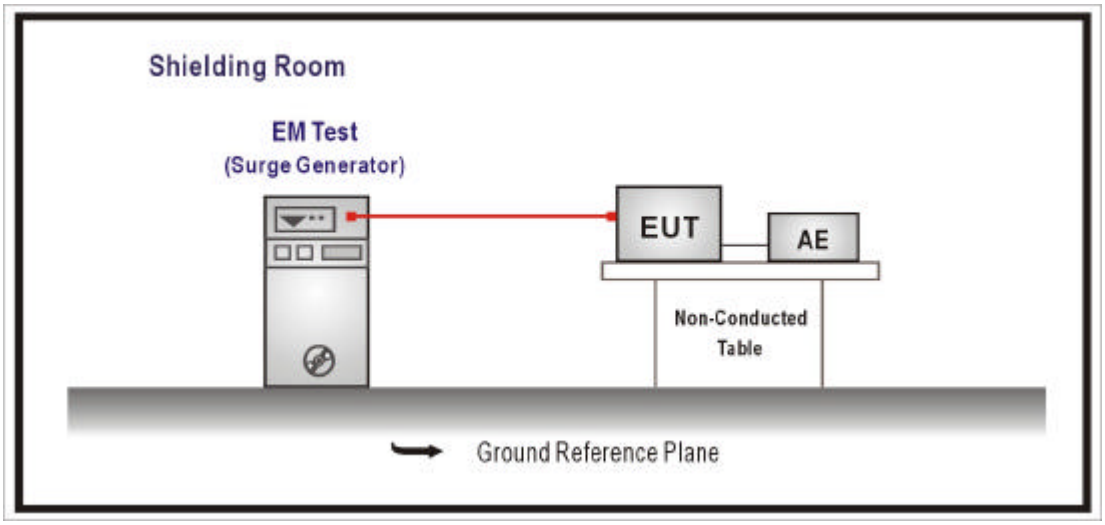
9.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	EM TEST	EM	UCS 500-M / UCS500M4	Jan.,2003
2	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports(See 1) and 2))				
	Surges	Tr/Th us	1.2/50 (8/20)	B
	Line to Ground	kV	± 1	
Input DC Power Ports				
	Surges	Tr/Th us	1.2/50 (8/20)	B
	Line to Ground	kV	± 0.5	
AC Input and AC Output Power Ports				
	Surges	Tr/Th us	1.2/50 (8/20)	B
	Line to Line	kV	± 1	
	Line to Ground	kV	± 2	

Notes:

1) Applicable only to ports which according to the manufacturer's may directly to outdoor cables.

2) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no immunity test shall be required.

9.4. Test Procedure

The EUT and its load are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The length of power cord between the coupling device and the EUT shall be 2m or less.

For Input and Output AC Power or DC Input and DC Output Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the Surge interference signal.

The surge noise shall be applied synchronized to the voltage phase at 0^0, 90^0, 180^0, 270^0 and the peak value of the a.c. voltage wave. (Positive and negative)

Each of Line-Earth and Line-Line is impressed with a sequence of five surge voltages with interval of 1 min.

9.5. Test Specification

According to IEC 61000-4-5: 1995

9.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	Surge	Test Range	

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	90	1kV	60	Direct	B	A	Pass
L-N	±	90	1kV	60	Direct	B	A	Pass
L-N	±	180	1kV	60	Direct	B	A	Pass
L-N	±	270	1kV	60	Direct	B	A	Pass

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test.

9.7. Test Photo

Test Mode ： Normal operation
Description： SURGE Test Setup

10. Conducted Susceptibility (CS)

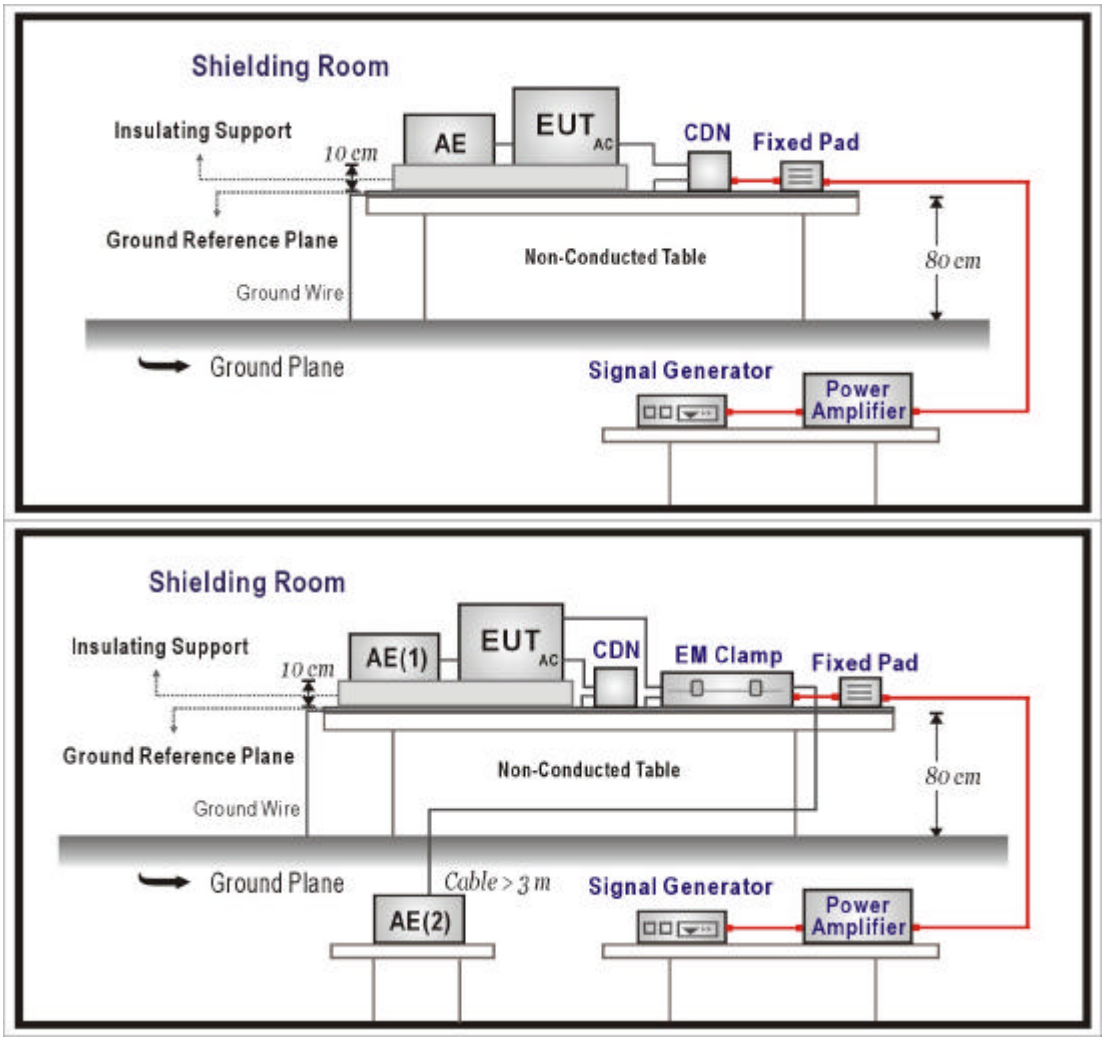
10.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Signal Generator	R & S	SYM01 / 10065	Jan.,2003
2	Power Amplifier	A & R	150A220 / 23076	N/A
3	Power Meter	HP	EPM-4418A / GB37482040	Feb.,2003
4	Power Sensor	Agilent	8482A / MY41091031	Aug.,2003
5	Directional Coupler	A & R	DC2600 / 23325	Feb.,2003
6	CDN	Lüthi	CDN L-801 M1 / 2047	Jun.,2003
7	CDN	Lüthi	CDN L-801 M2/M3 / 2043	Jun.,2003
8	FIXED PAD	TRILITHIC	HFP-525-3/6-NF/NF / N/A	N/A
9	EM Clamp	Lüthi	EM101 / 3552C	Apr.,2003
10	No.5 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

10.2. Test Setup



10.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports				
	Radio-Frequency	MHz	0.15-80	A
	Continuous Conducted	V (rms, Un-modulated)	3	
		% AM (1kHz)	80	
Input DC Power Ports				
	Radio-Frequency	MHz	0.15-80	A
	Continuous Conducted	V (rms, Un-modulated)	3	
		% AM (1kHz)	80	
Input AC Power Ports				
	Radio-Frequency Continuous Conducted	MHz	0.15-80	A
		V (rms, Un-modulated)	3	
		% AM (1kHz)	80	

10.4. Test Procedure

The EUT are placed on a table that is 0.8 meter height, and a Ground reference plane on the table, EUT are placed upon table and use a 10cm insulation between the EUT and Ground reference plane.

For Signal Ports and Telecommunication Ports

The disturbance signal is through a coupling and decoupling networks (CDN) or EM-clamp device couples to the signal and Telecommunication lines of the EUT.

For Input DC and AC Power Ports

The EUT is connected to the power mains through a coupling and decoupling networks for power supply lines. And directly couples the disturbances signal into EUT.

Used CDN-M2 for two wires or CDN-M3 for three wires.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	130dBuV(3V) Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	0.15MHz – 80MHz
4 Dwell Time	3 Seconds
5. Frequency step size Δf :	1%
6. The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

10.5. Test Specification

According to IEC 61000-4-6: 1996

10.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR4
Test Condition	CS	Test Range	0.15~80

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	AC IN	A	A	PASS

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at _____ dBuV(V) at frequency _____MHz.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

10.7. Test Photo

Test Mode ： Normal operation
Description： Conducted Susceptibility Test Setup

11. Power Frequency Magnetic Field

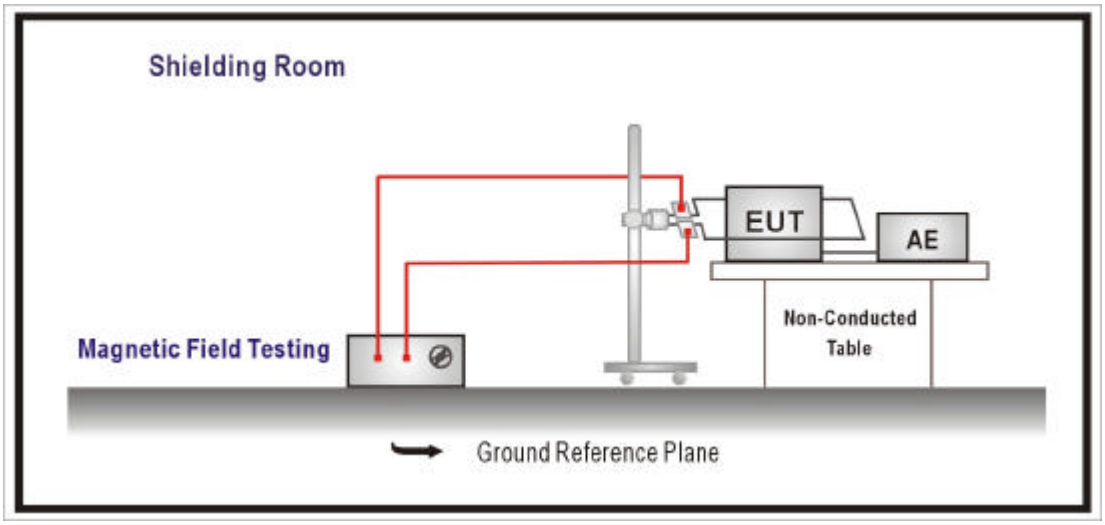
11.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Magnetic Field Testing	HAEFELY	MAG100 / 080 938-05	May,2003
2	Triaxial ELF Magnetic Field Meter	F.B.BELL	4090 / 9852	Apr.,2003
3	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

11.2. Test Setup



11.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Power-Frequency Magnetic Field	Hz A/m (r.m.s.)	50 1	A

11.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured at least 1m*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic Field shall be applied 10minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations).

11.5. Test Specification

According to IEC 61000-4-8: 1993

11.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	PMag	Test Range	

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	1	A	A	PASS

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at _____ A/m.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

11.7. Test Photo

Test Mode ： Normal operation
Description： Power Frequency Magnetic Field Test Setup

12. Voltage Dips and Interruption

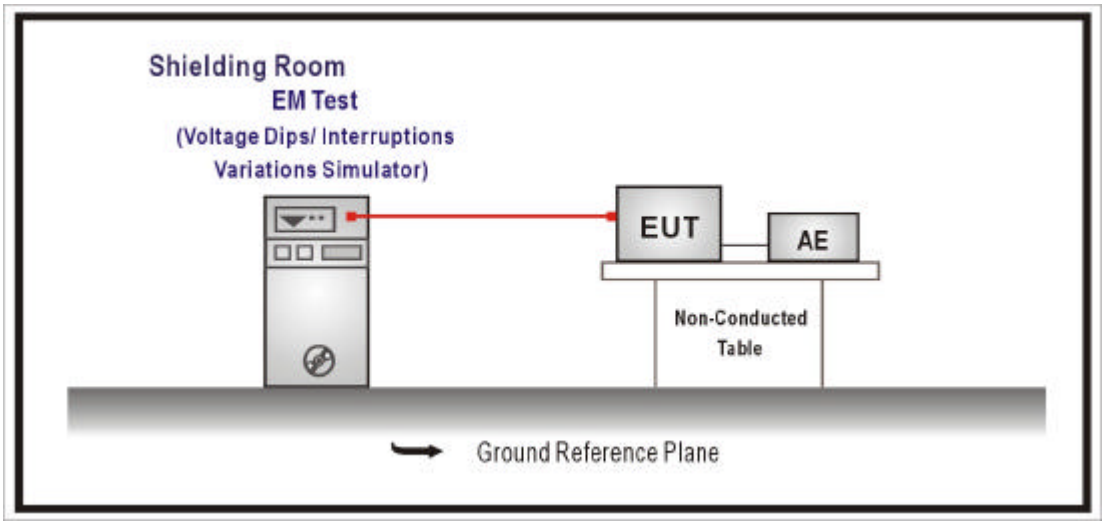
12.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	EM TEST	EM	UCS 500-M / UCS500M4	Jan.,2003
2	No.1 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

12.2. Test Setup



12.3. Limits

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Input AC Power Ports				
	Voltage Dips	% Reduction	30	C
		Period	25	
		% Reduction	>95	B
		Period	0.5	
	Voltage Interruptions	% Reduction	> 95	C
		Period	250	

12.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured 1m*1m min. And 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips/ Interruptions test:

The selection of test voltage is based on the rated power range. If the operation range is large than 20% of lower power range, both end of specified voltage shall be tested. Otherwise, the typical voltage specification is selected as test voltage.

The EUT is connected to the power mains through a coupling device that directly couples to the Voltage Dips and Interruption Generator.

The EUT shall be tested for 30% voltage dip of supplied voltage and duration 25 Periods,

for 95% voltage dip of supplied voltage and duration 0.5 Periods with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and duration 250 Periods with a sequence of three voltage interruptions with intervals of 10 seconds.

Voltage phase shifting are shall occur at 0^0, 45^0, 90^0 ,135^0 ,180^0 ,225^0, 270^0 ,315^0 of the voltage.

12.5. Test Specification

According to IEC 61000-4-11: 1994

12.6. Test Result

Product	ICPCON CPU with Converter		
Test Mode	Normal operation		
Date of Test	2003/12/23	Test Site	SR1
Test Condition	Dip	Test Range	

Owing to the DC operation of EUT, this test item is not performed.

Attachement

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

Reference : Laboratory of License

Nemko

Nemko Laboratory Authorisation

Aut. No.: ELA 165

EMC Laboratory: **QuieTek Corporation**
No. 75-2, Wang-Yeh Valley,
Yung-Hsing, Chiung-Lin, Hsin-Chu,
Hsin-Chu County, Taiwan R.O.C.

Scope of Authorization: **All standards for EMC and radio transmission that are listed on the accompanying page.**

Nemko has assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA -10. During the visit by the Nemko representative it was found that the Laboratory is capable of performing tests within the Scope of the Authorisation.

Accordingly, Nemko will normally accept test results from the laboratory on a partial or complete basis for certification of the products.

In order to maintain the Authorisation, the information given in the pertinent NLA-10 must be carefully followed. Nemko is to be promptly notified about any changes in the situation at the Laboratory, which may affect the basis for this Authorisation. The Authorisation may be withdrawn at any time if the conditions are no longer considered to be fulfilled.

The Authorisation is valid through 31. December 2005.

Oslo, 2003-10-08

For Nemko AS:

Jon Fredrik Mo

Jon Fredrik Mo, Nemko ELA Co-ordinator

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Nemko

Scope of authorisation

Generic and product-family standards

UPS – Uninterruptable power supplies EN 50091-2:1995 (doc=exp)	*ISM equipment, emission* EN 55011:1998 + A1 :99 (doc=exp) + A2:2002 (doc=1.10.05) CISPR 11:97 + A1 :99 + A2 :02	*Broadcast receivers – emission* EN 55013 :2001 (doc=1.9.04) CISPR 13 :2001 (mod) EN 55013:1990 + A12:1994 + A13:1996 + A14 :1999 (doc=exp) CISPR 13:1975 + A1:1983 mod.
Household appliances – emission EN 55014-1 :2000 (doc=1.8.03) + A1 :2001 (doc=1.10.04) + A2 :2002 (doc=1.10.05) CISPR 14-1 :2000 + A1 :2001 + A2 :2002 EN 55014-1:1993 + A1:1997 + A2 :1999 (doc=exp) CISPR 14:1993 + A1:1996 + A2 :1998	*Household appliances - immunity* EN 55014-2:1997 (doc=exp) + A1:2001 (doc=1.12.04) CISPR 14-2:1997 + A1 :2001	*Electrical lighting – emission* EN 55015 :2000 (doc=1.8.03) + A1 :2001 (doc=1.12.04) + A2 :2002 (doc=1.10.05) CISPR 15 :2000 + A1 :2000 + A2 :2002 EN 55015:1996 + A1:97 + A2 :99 (doc=exp) CISPR 15:96 + A1:97 + A2 :98
ITE - emission EN 55022:1998 + A1:2000 (doc=1.8.03) + A2:2002 (doc=not harmonised yet) CISPR 22:1997 + A1:2000 + A2:2002 EN 55022:1994 + A1:1995 + A2:1997 (doc=exp) CISPR 22:1993 + A1:1995 + A2:1996	*ITE – Immunity* EN 55024:1998 (doc=exp) + A1 :2001 (doc=1.10.04) + A2 :2002 (doc=not harmonised yet) CISPR 24:1997 + A1 :2001 + A2 :2002	*Harmonics* EN 61000-3-2 :2000 (doc=1.1.04) IEC 61000-3-2 :2000 (mod) + A1 :2001 EN 61000-3-2:1995 + A1:1998 + A2:1998 (doc=exp) + A14 :2000 (doc=1.1.04) IEC 61000-3-2:1995 + A1:1997 + A2:1998
Flicker EN 61000-3-3 :1995 (doc=exp) + A1 :2001 (doc=1.5.04) IEC 61000-3-3 :1994 + A1 :2001	*Generic immunity - light* EN 61000-6-1:2001 (doc=1.7.04) IEC 61000-6-1:1997 (mod) EN 50082-1 :1997 (doc=exp)	*Generic immunity – Industrial* EN 61000-6-2:2001 (doc=1.7.04) IEC 61000-6-2:1999 (mod) EN 61000-6-2:1999 (doc=exp) IEC 61000-6-2:1999
Generic emission – light EN 61000-6-3 :2001 (doc=1.7.04) IEC 61000-6-3 :1996 (mod) EN 50081-1:1992 (doc=exp)	*Generic emission - Industry* EN 61000-6-4 :2001 (doc=1.7.04) IEC 61000-6-4:1997 (mod) EN 50081-2:1993 (doc=exp)	*Laboratory equipment* EN 61326 :1997 + A1 :98 (doc=exp) + A2 :01 (doc=1.4.04) IEC 61326 :1997 + A1 :98 + A2 :00
Electrical lighting – Immunity EN 61547 :1995 (doc=exp) + A1 :2000 (doc=1.11.03) IEC 61547 :1995 + A1 :2000	*Professional AV – emission* EN 55103-1:1996 (doc=exp)	*Professional AV - Immunity* EN 55103-2:1996 (doc=exp)
Alarm systems – Immunity EN 50130-4:1995 + A1:98 +A2:03		

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EMC		
Broadcast receives - immunity EN 55020:2002 (doc=1.4.05) CISPR 20:2002 A1:2002 to CISPR 20:2002 (not harm) *EN 55020:1994 + A11:96 + A12 :99 + A13 :99 + A14 :99 (doc=exp)*		

R&TTE		
Generic Art. 3.1.b EN 300 339 :1998 (doc=exp)	*SRD 25 – 1000 MHz, Art. 3.2* EN 300 220-1 V1.2.1 - V1.3.1 EN 300 220-2 V1.2.1 - V 1.3.1 EN 300 220-3 V1.1.1	*Spread spectrum 2,4 GHz, Art 3.2* EN 300 328-2 V.1.2.1 EN 300 328-2 V.1.1.1 EN 300 328-1V.1.3.1 EN 300 328-1 V1.2.2 EN 300 328 V.1.4.1 ETS 300 328:1996 + A1:97
EN 300 440-1 V1.3.1 EN 300 440-2 V1.1.1	ETS 300 683 :1997 EN 301 489-01 V1.2.1 - V1.4.1 EN 301 489-03 V1.2.1 – V1.4.1 EN 301 489-17 V1.1.1 – V 1.2.1	ETS 300 683 :1997 EN 301 489-03 :2000 EN 301 489-17 :2000
EN 301 489-07 :2000 (doc=exp) EN 301 489-01:2000 V.1.2.1 (doc=exp) EN 301 489-01 V.1.3.1 (doc=exp)	EN 301 489-09 V.1.1.1 (doc=exp) EN 301 489-01 V.1.2.1 (doc=exp) EN 301 489-01 V.1.3.1 (doc=exp) EN 301 489.-09 V.1.2.1 (dos=01.08.05) EN 301 489-01:2000 V.1.2.1 (doc=exp) EN 301 489-01 V.1.3.1 (doc=exp)	EN 301 489-19 V.1.1.1 (doc=exp) EN 301 489-01:2000 V.1.2.1 (doc=exp) EN 301 489-01 V.1.3.1 (doc=30.06.03)

[illegible]		
Collateral EMC standard for Medical Devices EN 60601-1-2:1993 (doc=exp) IEC 60601-1-2:1993 EN 60601-1-2:2001 (doc=1.11.2004) IEC 60601-1-2:2001		

EN 61000-4-2:1995 + A1:98 + A2:01 IEC 61000-4-2:1995 + A1:98 + A2:00 (EN 60801-1:1993 IEC 801.2:1991 IEC 801.2:1984)	EN 61000-4-3:2002 + A1:02 IEC 61000-4-3:2002 + A1:02 EN 61000-4-3:1996 + A1:98 + A 2 :01 IEC 61000-4-3:1995 + A1:98 + A2 :00 (IEC 801.3:1984 ENV 50140:1993 + ENV 50204:1995)	EN 61000-4-4:1995+ A1:01 + A 2 :01 IEC 61000-4-4:1995+ A1:00 + A 2 :01 (IEC 801.4:1990)
EN 61000-4-5:1995 + A1:01 IEC 61000-4-5:1995 + A1:00 (ENV 50142:1994)	EN 61000-4-6:1996 + A1:01 IEC 61000-4-6:1996 + A1:00 (ENV 50141:1993)	EN 61000-4-8:1993 + A1 :01 IEC 61000-4-8:1993 + A1 :00
EN 61000-4-11:1994 + A1 :01 IEC 61000-4-11:1994 + A1 :00	CISPR 16-1 :1999 + A1 :02 CISPR 16-2 :1996 + A1:99+A2:02 CISPR 16-3 :2000 + A1 :2002 CISPR 16-4 :2002	EN 55020:2002 CISPR 20:2002 EN 55020:1994 + A11:96 + A12 :99 + A13 :99 + A14 :99
ANSI C63.4		