



## *Low Voltage Directive Report*

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**鼎安科技股份有限公司**

**SUPERIOR PRODUCT CONSULTING, INC**

**3F, NO. 10, ALLEY 6, LANE 235, PAO CHIAO  
RD., HSIEN TIEN, TAIPEI, TAIWAN R.O.C.**

**台北縣新店市寶僑路235巷6弄10號3F  
TEL: 886-2-29174137 FAX: 886-2-29184517**

*The test results of this report relate only to the tested sample identified in this report.*  
此份報告之測試結果只適用於報告中所述之那台測試樣機

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Superior Product Consulting, Inc.*

此份報告未經鼎安科技股份有限公司書面同意不得部分複製



TÜV Rheinland Taiwan Ltd.

# Certificate of Appointment

for the applicant:

**Superior Product Consulting, Inc.**  
3F., No. 10, Alley 6, Lane 235, Pao Chiao Rd., Hsin Tien,  
Taipei Hsien 231, Taiwan, R.O.C.

has been authorized to carry out safety tests by order and under supervision  
of TÜV Rheinland. It has successfully demonstrated capability to conduct  
measurement and to process test data according to:

**European and International Safety Standards as listed in the  
Scope of Authorization on the attachment to this certificate**

An assessment of the facility was conducted by TÜV Rheinland auditors according  
to the TÜV Rheinland requirements for "Test Site Approval" with reference to  
ISO 17 025:1999

Certificate No. : 10010807-2004

Date of expiry : July 11, 2005

TÜV Rheinland Taiwan Ltd.  
Taipei, April 12, 2004

Dipl.-Ing. Andreas Klinker  
Certification Body

David Lee  
Lead Auditor



Attachment to

# Certificate

of Appointment  
SCOPE OF AUTHORIZATION  
for

Superior Product Consulting, Inc.  
3F., No. 10, Alley 6, Lane 235, Pao Chiao Rd., Hsin Tien,  
Taipei Hsien 231, Taiwan, R.O.C.

## European Standards

EN 60 950 EN 60 065	EN 60 950-1
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## Basic and International Standards

IEC 60 950 IEC 60 065	IEC 60 950-1
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Certificate No. : 10010807-2004

Taipei, April 12 , 2004

  
David Lee  
Lead Auditor



# QUALIFIED INDEPENDENT LABORATORY

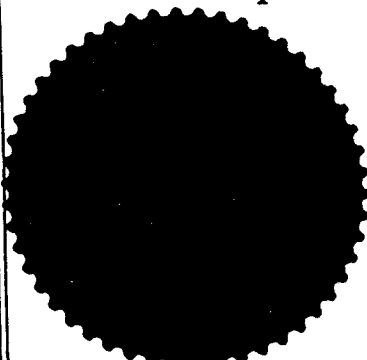
This is to confirm that:

**Superior Product Consulting Inc.**  
(Taipei, TAIWAN)

has in the course of current cooperation projects with Nemko  
shown to be qualified in safety testing of electrical equipment to  
the following standards:

**IEC 60950 / EN 60950**

This statement is also supported by our assessment of the  
laboratory testing equipment, -facilities and -procedures relative  
to the requirements of EN 45001 and ISO/IEC Guide 25.



Jon Ivar Tiedemann  
Head of dept. Data and Electronics

**NEMKO**  
IT and Electronics

## DECLARATION OF CONFORMITY

According to the Low Voltage Directive 73/23/EEC and the  
Amendment Directive 93/68/EEC

Type of Product ..... : **Computer**

Model Designation ..... : **ARK-338XXXXXXXXX. Where the X can be  
any alphanumeric character or blank.**

Manufacturer's Name ..... : **Advantech Co., Ltd.**

Manufacturer's Address.... : **No. 1, Alley 20, Lane 26, Rueiguang Road,  
Neihu District, Taipei, Taiwan.**

Is herewith confirmed to comply with the requirements set out in the  
Council Directive 73/23/EEC for electrical equipment used within  
certain voltage limits and the Amendment Directive 93/68/EEC.  
For the evaluation of the compliance with these Directive, the  
following standard was applied:

IEC 60950-1, First Edition (2001)

EN 60950-1, First Edition (2001)

*Person responsible for making this declaration*

Name, Surname .....:

Position/Title .....:



\_\_\_\_\_  
(Place)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Company stamp and signature)



## **COVER PAGE FOR TEST REPORT**

Product:	Computer
Model/Type Reference:	ARK-338XXXXXXXX. Where the X can be any alphanumeric character or blank.
Rating(s):	12-24 Vdc, 4.5-2.3 A
Standards:	IEC 60950-1 / EN 60950-1, First Edition
Applicant Name	Advantech Co., Ltd.
Applicant Address:	No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei, Taiwan.
Result:	Pass

This Report includes the following parts, in addition to this cover page:

1. Clause Verdicts
2. Critical Components
3. Test Results
4. Enclosures

This is to certify that representative samples of the products covered by this Test Report have been investigated by "Superior Product Consulting, Inc." in accordance with the above referenced Standards. The products have been found to comply with the requirements.

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Test Report By:


Peter Lai

Reviewed By:

Allen Huang



## TEST REPORT

<b>IEC 60950-1 / EN 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements</b>	
Report Reference No.....	SPCLVD501081
Compiled by.....	Peter Lai
Reviewed by.....	Allen Huang
Date of issue .....	March 10, 2005
Testing laboratory name .....	Superior Product Consulting, Inc.
Testing location .....	3F, No. 10, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan
Client name .....	Advantech Co., Ltd.
Address .....	No. 1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei, Taiwan.
Standards .....	CNS 14336 IEC 60950-1, First Edition
Test procedure .....	IEC/EN 60950-1
Non-standard test method.....	N/A
Test item description .....	Computer
Trademark .....	
Model and/or type reference .....	ARK-338XXXXXXXXX. Where the X can be any alphanumeric character or blank.
Rating(s) .....	12-24 Vdc, 4.5-2.3 A

**Particulars: test item vs. test requirements**

Equipment mobility ..... : Movable  
Operating condition ..... : continuous  
Mains supply tolerance (%) ..... : +10%, -10%  
Tested for IT power systems ..... : No  
IT testing, phase-phase voltage (V) ..... : N/A  
Class of equipment..... : Class III (supplied by SELV).  
Mass of equipment (kg)..... : 2.06  
Protection against ingress of water ..... : IP X0

**Possible test case verdicts:**

- test case does not apply to the test object..... : N/A
- test object does meet the requirement..... : Pass
- test object does not meet the requirement..... : Fail (acceptable only if a corresponding, less stringent national requirement is "Pass")

**General remarks:**

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator





GENERAL PRODUCT INFORMATION:	
A1.0	<b>Report Summary</b>
A1.1	N/A
B1.0	<b>Product Description</b>
B1.1	This product is a computer. It is specified for use in a Tmra of 50°C maximum. The output of the unit satisfies the requirement of limited power source.
C1.0	<b>Model Differences</b>
C1.1	All models are identical, except model designation.
D1.0	<b>Additional Information</b>
D1.1	N/A

1	<b>GENERAL</b>		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950 or relevant component standard	Components which are found to affect safety, comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. See appended table 1.5.1.	Pass
1.5.2	Evaluation and testing of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings or have been evaluated during this approval.	Pass
1.5.3	Thermal controls	No thermal controls provided.	N/A
1.5.4	Transformers	Evaluated during separate certification of power supply.	Pass
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits.....:	Evaluated during separate certification of power supply.	N/A
1.5.7	Double insulation or reinforced insulation bridged by components	Evaluated during separate certification of power supply.	N/A
1.5.7.1	General	Evaluated during separate certification of power supply.	N/A
1.5.7.2	Bridging capacitors		N/A
1.5.7.3	Bridging resistors	No bridging resistors used.	N/A
1.5.7.4	Accessible parts	Evaluated as part of the power supply.	Pass
1.5.8	Components in equipment for IT power systems	Not for use on IT systems.	N/A

1.6	<b>Power interface</b>		Pass
1.6.1	AC power distribution systems	Class III equipment.	N/A
1.6.2	Input current	(see appended table)	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral insulation is provided in the approval power supply.	N/A

1.7	<b>Marking and instructions</b>		Pass
1.7.1	Power rating	See page 2.	Pass

	Rated voltage(s) or voltage range(s) (V).....:	See page 2.	Pass
	Symbol for nature of supply, for d.c. only.....:	Symbol for DC voltage is located on the rating label.	Pass
	Rated frequency or rated frequency range (Hz) :	See page 2.	Pass
	Rated current (mA or A) .....:	See page 2.	Pass
	Manufacturer's name or trademark or identification mark .....	See page 2.	Pass
	Type/model or type reference .....	See page 2.	Pass
	Symbol for Class II equipment only .....	The equipment is regarded as Class III.	N/A
	Other symbols		N/A
	Certification marks .....	UL, c-UL Recognition and CE Mark	Pass
1.7.2	Safety instructions	Safety instruction in English. Other languages will be provided when submitted for national approval.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....		N/A
1.7.5	Power outlets on the equipment .....		N/A
1.7.6	Fuse identification .....	Fuse marking on the approved power supply.	Pass
1.7.7	Wiring terminals	See below.	Pass
1.7.7.1	Protective earthing and bonding terminals .....	Class III product, not connected to protective earth.	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	The equipment is regarded as Class III.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is regarded as Class III.	N/A
1.7.8	Controls and indicators	Safety clearly not involved.	N/A
1.7.8.1	Identification, location and marking.....:	The function of controls affecting safety is obvious regardless of language.	Pass
1.7.8.2	Colours .....	Only functional indicators use colour.	Pass
1.7.8.3	Symbols according to IEC 60417		N/A
1.7.8.4	Markings using figures .....	Figures are not used for indicating different positions of controls.	N/A
1.7.9	Isolation of multiple power sources .....	There is only one connection to SELV only.	N/A
1.7.10	IT power distribution systems	Not intended for use on IT power systems.	N/A

1.7.11	Thermostats and other regulating devices	No thermostats or similar regulating devices.	N/A
1.7.12	Language .....	Reviewed only English markings/instructions.  May be provided in other languages when the equipment will be applied for other national certificated.	-
1.7.13	Durability	All markings provided on UL Recognized Component labels suitable for surface they are applied upon and meet the durability test.	Pass
1.7.14	Removable parts	No removable parts.	N/A
1.7.15	Replaceable batteries	The lithium battery is not located in an Operator Access Area.	Pass
	Language .....		-
1.7.16	Operator access with a tool.....	No operator access areas require the use of a tool.	N/A
1.7.17	Equipment for restricted access locations .....	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

2	<b>PROTECTION FROM HAZARDS</b>		N/A
2.1	Protection from electric shock and energy hazards		N/A
2.1.1	Protection in operator access areas	The equipment is regarded as Class III.	Pass
2.1.1.1	Access to energized parts	The operator has access to bare parts of SELV CIRCUITS.  No operator access to energized parts.	Pass
	Test by inspection .....	The equipment is regarded as Class III.	N/A
	Test with test finger .....	The equipment is regarded as Class III.	N/A
	Test with test pin .....	The equipment is regarded as Class III.	N/A

	Test with test probe .....	The equipment is regarded as Class III.	N/A
2.1.1.2	Battery compartments .....	Lithium battery used.	Pass
2.1.1.3	Access to ELV wiring	No ELV wiring in operator access area.	N/A
	Working voltage (V) ; minimum distance (mm) through insulation .....		-
2.1.1.4	Access to hazardous Voltage circuit wiring	No hazardous voltage wiring in operator access area.	N/A
2.1.1.5	Energy hazards .....	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.6	Manual controls	No shafts or knobs, etc. at ELV, TNV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	The equipment is regarded as Class III.	N/A
	Time-constant (s) ; measured voltage (V) .....		-
2.1.2	Protection in service access areas	No servicing in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The unit not intended to be used in restricted locations.	N/A

2.2	<b>SELV circuits</b>		Pass
2.2.1	General requirements	See below.	Pass
2.2.2	Voltages under normal conditions (V) .....	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V) .....	Evaluated during separate certification of power supply.	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	The equipment is regarded as Class III.	Pass
2.2.3.2	Separation by earthed screen (method 2)	Not used.	N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Not used.	N/A

2.2.4	Connection of SELV circuits to other circuits .....	<p>SELV circuit and all interconnected circuits separated from primary by Reinforced/Double insulation.</p> <p>The SELV circuit does not exceed the SELV limits under normal and fault conditions.</p> <p>SELV circuits are only connected to other secondary circuits.</p>	Pass
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2.3	<b>TNV circuits</b>		N/A
2.3.1	Limits		N/A
	Type of TNV circuits.....:		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed .....		-
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed .....		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed .....		-
2.3.5	Test for operating voltages generated externally		N/A

2.4	<b>Limited current circuits</b>		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) .....		-
	Measured current (mA) .....		-
	Measured voltage (V) .....		-
	Measured capacitance (mF) .....		-
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	<b>Limited power sources</b>		Pass
	Inherently limited output		N/A

	Impedance limited output	USB port: Normal: Uoc = 4.99V, Isc = 0.85A, 3.58VA. U42 (pin 7-8) short: Uoc = 4.99V, Isc = 5.8A, 18.54VA. R440 short: Uoc = 4.99V, Isc = 0.91A, 3.65VA.  KB/Mouse port: Normal: Uoc = 5.04V, Isc 2.40A, 7.93VA.  VGA port: Normal: Uoc = 5.01V, Isc 2.56A, 8.13VA.  Bacjlinght port: Normal: Uoc = 5.01V, Isc 2.21A, 7.23VA.	Pass
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA) :		-
	Current rating of overcurrent protective device (A) :		-

2.6	<b>Provisions for earthing and bonding</b>		N/A
2.6.1	Protective earthing	The equipment is regarded as Class III.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	cross-sectional area (mm <sup>2</sup> ), AWG.....:		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG :		-
2.6.3.4	Resistance (W) of earthing conductors and their terminations, test current (A).....:		N/A
2.6.3.5	Colour of insulation .....		N/A
2.6.4	Terminals		N/A

2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm) .....		-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	<b>Overcurrent and earth fault protection in primary circuits</b>		N/A
2.7.1	Basic requirements	The equipment is regarded as Class III.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices .....		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel .....		N/A

2.8	<b>Safety interlocks</b>		N/A
2.8.1	General principles	The equipment is regarded as Class III.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A



2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) .....		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	<b>Electrical insulation</b>		N/A
2.9.1	Properties of insulating materials	The equipment is regarded as Class III.	N/A
2.9.2	Humidity conditioning		N/A
	Humidity (%).....		-
	Temperature (°C) .....		-
2.9.3	Grade of insulation		N/A

2.10	<b>Clearances, creepage distances and distances through insulation</b>		N/A
2.10.1	General	The equipment is regarded as Class III.	N/A
2.10.2	Determination of working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Clearances in primary circuit		N/A
2.10.3.3	Clearances in secondary circuits		N/A
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances		N/A
	CTI tests .....		-
2.10.5	Solid insulation		N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material		N/A
	Number of layers (pcs).....		-
	Electric strength test.....		-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A

	Electric strength test for thin sheet insulating material :		-
	Number of layers (pcs).....:		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs).....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90°.....:		N/A
2.10.6	Coated printed boards		N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C) .....		N/A
2.10.6.5	Electric strength test.....:		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test.....:		-
2.10.7	Enclosed and sealed parts .....		N/A
	Temperature T1=T2 = Tma - Tamb +10K (°C) .....		N/A
2.10.8	Spacings filled by insulating compound .....		N/A
	Electric strength test.....:		-
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A

3	<b>WIRING, CONNECTIONS AND SUPPLY</b>		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	All internal wiring used in the distribution of primary power protected against overcurrent and short circuit by suitably rated protective devices.	Pass
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heatsinks which could cause hazard.	Pass

3.1.3	Securing of internal wiring	All wiring is reliably routed or separated and secured.  The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	Pass
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.  All internal wirings are UL Recognized and rated minimum 300 Vac.	Pass
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	Not used.	N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured by soldering.	Pass
	10 N pull test		N/A
3.1.10	Sleeving on wiring	Not used to provide supplementary or reinforced insulation.	N/A

3.2	<b>Connection to an a.c. mains supply or a d.c. mains supply</b>		N/A
3.2.1	Means of connection	The equipment is regarded as Class III.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits.....:		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A

	Type .....		-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....		-
	Longitudinal displacement (mm) .....		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	test mass (g) .....		-
	Radius of curvature of cord (mm) .....		-
3.2.9	Supply wiring space		N/A

3.3	<b>Wiring terminals for connection of external conductors</b>		N/A
3.3.1	Wiring terminals	The equipment is regarded as Class III.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord / cable type, cross-sectional area (mm <sup>2</sup> ) .....		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) .....		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	<b>Disconnection from the mains supply</b>		N/A
3.4.1	General requirement	The equipment is regarded as Class III.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment and d.c. equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A

3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	<b>Interconnection of equipment</b>		Pass
3.5.1	General requirements	See below.	Pass
3.5.2	Types of interconnection circuits.....:	Interconnection circuits of SELV through the output connectors.	Pass
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A

4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		N/A
	Angle of 10°	Equipment for Moveable.	N/A
	force (N) .....		N/A

4.2	<b>Mechanical strength</b>		Pass
4.2.1	General	See below.	Pass
4.2.2	Steady force test, 10 N	Applied to components other than those serving as an enclosure.	Pass
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazards as a result of the 250 N test. Applied to the outer enclosure.	Pass
4.2.5	Impact test	Applied to the enclosure.	Pass
	Fall test		Pass
	Swing test		N/A
4.2.6	Drop test	Unit is not hand-held, direct plug-in, or transportable.	N/A
4.2.7	Stress relief test	Enclosure is metal.	N/A
4.2.8	Cathode ray tubes	No CRT.	N/A
	Picture tube separately certified.....:		N/A
4.2.9	High pressure lamps	None.	N/A

4.2.10	Wall or ceiling mounted equipment; force (N).....:	Not considered for such mounting.	N/A
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4.3	Design and construction		Pass
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	Pass
4.3.2	Handles and manual controls; force (N) .....	None.	N/A
4.3.3	Adjustable controls	The equipment does not have a voltage selector.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections and parts expected to withstand usual mechanical stress.	Pass
4.3.5	Connection of plugs and sockets	No misconnection of internal connectors possible.	N/A
4.3.6	Direct plug-in equipment	Equipment is not direct plug-in type.	N/A
	Dimensions (mm) of mains plug for direct plug-in..:		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) .....		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	Lithium battery used.	Pass
4.3.9	Oil and grease	Equipment in intended use not considered to be exposed to oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Ditto.	N/A
4.3.11	Containers for liquids or gases	No container for liquids or gases provided.	N/A
4.3.12	Flammable liquids .....		N/A
	Quantity of liquid (l) .....		N/A
	Flash point (°C) .....		N/A
4.3.13	Radiation; type of radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg).....:		-
	Measured high-voltage (kV) .....		-
	Measured focus voltage (kV) .....		-
	CRT markings .....		-

4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification .....		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....		N/A
4.3.13.5	Laser (including LEDs)		N/A
	Laser class .....		-
4.3.13.6	Other types .....		N/A

4.4	<b>Protection against hazardous moving parts</b>		N/A
4.4.1	General	Equipment does not have any hazardous moving parts.  The equipment is regarded as Class III.	N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

4.5	<b>Thermal requirements</b>		Pass
4.5.1	Maximum temperatures	The equipment and its component parts did not attain excessive temperatures during normal operation. Refer to table 4.5.1.	Pass
	L Normal load condition per Annex L.....		N/A
4.5.2	Resistance to abnormal heat		N/A

4.6	<b>Openings in enclosures</b>		Pass
4.6.1	Top and side openings	Foreign objects entering the enclosure will not contact bare parts at hazardous voltage or energy. (No hazardous parts within 5°projection).	N/A
	Dimensions (mm) .....		-
4.6.2	Bottoms of fire enclosures	No openings.	N/A
	Construction of the bottom .....		-
4.6.3	Doors or covers in fire enclosures	The equipment does not have any doors or covers.	N/A

4.6.4	Openings in transportable equipment		N/A
4.6.5	Adhesives for constructional purposes	Adhesives not used for securement of internal barriers or screens.	N/A
	Conditioning temperature (°C) /time (weeks) .....		-

4.7	<b>Resistance to fire</b>		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	With having the following components: - wiring - integrated circuit - Lithium Battery - Hard Disk - Power Switch The fire enclosure is required.	Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts.	Pass
4.7.2.2	Parts not requiring a fire enclosure	Fire enclosure is required.	N/A
4.7.3	Materials		Pass
4.7.3.1	General	The source of PCB refer to appended table 1.5.1.	Pass
4.7.3.2	Materials for fire enclosures	The fire enclosure is metal.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Fire enclosure covers all parts.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better.  Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).	Pass



4.7.3.5	Materials for air filter assemblies	No air-filter assemblies provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A

5	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		
5.1	Touch current and protective conductor current		N/A
5.1.1	General	The equipment is regarded as Class III.	N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V) .....		-
	Measured touch current (mA) .....		-
	Max. allowed touch current (mA) .....		-
	Measured protective conductor current (mA) .....		-
	Max. allowed protective conductor current (mA) .....		-
5.1.7	Equipment with touch current exceeding 3.5 mA .:		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		-
	Test voltage (V) .....		-
	Measured touch current (mA) .....		-
	Max. allowed touch current (mA) .....		N/A
5.1.8.2	Summation of touch currents from telecommunication networks.....:		N/A

5.2	<b>Electric strength</b>		N/A
5.2.1	General	The equipment is regarded as Class III.	N/A

5.2.2	Test procedure		N/A
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5.3	<b>Abnormal operating and fault conditions</b>		Pass
5.3.1	Protection against overload and abnormal operation	The equipment is regarded as Class III.	Pass
5.3.2	Motors	None provided.	N/A
5.3.3	Transformers	The equipment does not have any isolation transformers.	N/A
5.3.4	Functional insulation .....	Functional insulation complies with the requirements (a), (b), or (c).	Pass
5.3.5	Electromechanical components	No electromechanical components provided.	N/A
5.3.6	Simulation of faults	No other components where failure could adversely affect SUPPLEMENTARY or FUNCTIONAL INSULATION.	N/A
5.3.7	Unattended equipment	Neither thermostat or temperature limiter nor thermal cut-out provided.	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions		N/A

6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V) .....		-
	Current in the test circuit (mA) .....		-
6.1.2.2	Exclusions .....		N/A

6.2	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
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	Max. output current (A) .....		-
	Current limiting method .....		-

7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

A	<b>Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples .....		-
	Wall thickness (mm) .....		-
A.1.2	Conditioning of samples; temperature (°C) .....		N/A
A.1.3	Mounting of samples .....		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....		-
	Sample 2 burning time (s) .....		-
	Sample 3 burning time (s) .....		-

A.2	<b>Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)</b>		N/A
A.2.1	Samples, material .....		-
	Wall thickness (mm) .....		-
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....		-
	Sample 2 burning time (s) .....		-

	Sample 3 burning time (s) .....		-
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s) .....		-
	Sample 2 burning time (s) .....		-
	Sample 3 burning time (s) .....		-

A.3	<b>Hot flaming oil test (see 4.6.2)</b>		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	<b>Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2)</b>		N/A
B.1	General requirements		N/A
	Position .....		-
	Manufacturer .....		-
	Type .....		-
	Rated values .....		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....		-
	Electric strength test: test voltage (V) .....		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h) .....		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		-

C	<b>Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N/A
	Position .....		-
	Manufacturer .....		-
	Type .....		-

	Rated values .....		-
	Method of protection .....		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings .....		N/A

D	<b>Annex D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS</b>		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	<b>Annex E, TEMPERATURE RISE OF A WINDING</b>		N/A
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F	<b>Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)</b>		Pass
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G	<b>Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V): .....		N/A
G.4	Determination of required withstand voltage (V) ..:		N/A
G.5	Measurement of transient levels (V) .....		N/A
G.6	Determination of minimum clearances .....		N/A

H	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
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J	<b>Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N/A
	Metal used.....		-

K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)</b>		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A

K.4	Temperature limiter endurance; operating voltage (V) .....		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

L	<b>Annex L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)</b>		N/A
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		N/A

M	<b>Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N/A
M.1	Introduction		N/A
M.2	A Method A		N/A
M.3	B Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....		-
M.3.1.2	Voltage (V) .....		-
M.3.1.3	Cadence; time (s), voltage (V) .....		-
M.3.1.4	Single fault current (mA) .....		-
M.3.2	Tripping device and monitoring voltage .....		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....		N/A

N	<b>Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)</b>		N/A
N.1	ITU- T ITU-T impulse test generators		N/A
N.2	CNS 14408 (IEC 60065) impulse test generator		N/A

P	<b>Annex P, NORMATIVE REFERENCES</b>		Pass
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Q	<b>Annex Q, BIBLIOGRAPHY</b>		Pass
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R	<b>Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	<b>Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	<b>Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
	.....:		-

U	<b>Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N/A
	.....:		-



1.5.1	<b>TABLE: list of critical components</b>					Pass
Object/part No.	Manufacturer/trademark	type/model	technical data	Marks of Conformity	Standard	
Enclosure	Various	Various	Metal, painted, overall approximately 239 by 137 by 69 mm, 1 mm thickness.	--	--	
All PCBs	Various	Various	Minimum V-1, minimum 105 degree C.	UL	--	
RTC Battery (BAT1)	Rayovac Corp	BR1632	Maximum abnormal Charging Current 4 mA. Reverse current protection by series circuit of diode D11 and resistor (R390, rated 1k ohm)	UL	UL1642	
Alternate	Matsushita Electric Industrial Co Ltd. Panasonic Corp Of North America	BR1632	Same as above	UL	UL1642	
Connectors (optional)	Various	Various	SELV. Maximum provided with seven RS-232 ports; four LAN ports; one VGA port; one USB port; one CF/card port, one LVDS port; one Keyboard/Mouse port and DC connector.	--	--	
HDD Drive (Optional)	Various	Various	5Vdc/0.55A max.	UL	UL60950	
Power Switch	Various	Various	Minimum 125 V, minimum 1 A.	UL	UL1054	
DC Terminal Block	Switchlab Inc	T35, T36	16A, 300V	UL	UL 1059	



Polyswitch (FS2) (KB/Mouse and VGA ports)	Polytronics Technology	SMD2920P150TS	DC 33V max., 3A	UL	UL 1434
Alternate (Backlight port)	Polytronics Technology	SMD0805P050TS	DC 6V max., 1A	UL	UL 1434

1.6.2		TABLE: electrical data (in normal conditions)					Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status	
--	--	10.2	16	1553	1553	Maximum Normal Load, Test on model: ARK-3380	
--	4.5	12	16	1310	1310	Maximum Normal Load, Test on model: ARK-3380	
--	2.3	24	16	685	685	Maximum Normal Load, Test on model: ARK-3380	
--	--	28.8	17	581	581	Maximum Normal Load, Test on model: ARK-3380	
--	--	10.2	16	1553	1553	Maximum Normal Load, Test on model: ARK-3380	
--	4.5	12	16	1310	1310	Maximum Normal Load, Test on model: ARK-3380	
--	2.3	24	16	685	685	Maximum Normal Load, Test on model: ARK-3380	
--	--	28.8	17	581	581	Maximum Normal Load, Test on model: ARK-3380	
supplementary information:							
--							

2.10.3 and 2.10.4		TABLE: clearance and creepage distance measurements					N/A
clearance cl and creepage distance dcr at/of:		Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
supplementary information:							
--							



2.10.5	<b>TABLE: distance through insulation measurements</b>				N/A
distance through insulation di at/of:		Up (V)	test voltage (V)	required di (mm)	di (mm)
supplementary information:					

4.5	<b>TABLE: temperature rise measurements</b>						Pass
	test voltage (V) .....	See below	See below	--	--	--	—
	t1 (°C) .....	--	--	--	--	--	—
	t2 (°C) .....	--	--	--	--	--	—
maximum temperature T of part/at:		T (°C)					allowed Tmax (°C)
Test on model: ARK-3380		I/P: 10.2Vdc	I/P: 28.8Vdc	--	--	--	--
--		Measured under ambient/Computed per Tma	Measured under ambient/Computed per Tma	--	--	--	--
1. L1 choke		40/65	45/69	--	--	--	105
2. L2 choke		52/77	52/76	--	--	--	105
3. L3 choke		41/66	43/67	--	--	--	105
4. L4 choke		40/65	43/67	--	--	--	105
5. C17 body		39/64	42/66	--	--	--	85
6. C2 body		39/64	42/66	--	--	--	85
7. PWB near HS1		47/72	48/72	--	--	--	105
8. HDD body		39/64	42/66	--	--	--	70
9. Metal chassis outside		37/62	37/61	--	--	--	70
10. Room Ambient air/Tma		25/50	26/50	--	--	--	--
Test duration (Time)		2 hrs 54 mins	2 hrs 4 mins	--	--	--	--
temperature T of winding:			R <sub>1</sub> (Ω)	R <sub>2</sub> (Ω)	T (°C)	allowed Tmax (°C)	insulation class
--			--	--	--	--	--



supplementary information:
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4.5.2	TABLE: ball pressure test of thermoplastics			N/A
	allowed impression diameter (mm)..... :	<2		—
part		test temperature (°C)	impression diameter (mm)	
supplementary information:				
--				

4.7	TABLE: resistance to fire				N/A
part		manufacturer of material	type of material	thickness(mm)	flammability class
supplementary information:					

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests			N/A
test voltage applied between:		test voltage (V) a.c./d.c.	breakdown Yes / No	
supplementary information:				
--				

5.3	<b>TABLE: fault condition tests</b>						Pass
	ambient temperature (°C).....				25		—
	model/type of power supply .....				See page 2		—
	manufacturer of power supply.....				See page 2		—
	rated markings of power supply .....				See page 2		—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
model: ARK-3382, used with I/O board: PCM-250	--	--	--	--	--	--	
Connector Com 1 (RS-232) (Pin 3)	Overload	-6.03	1 hr	F1	0.025	NB, NC, NT.	
Connector Com 1 (RS-232) (Pin 4)	Overload	-6.03	1 hr	F1	0.028	NB, NC, NT.	
Connector Com 1 (RS-232) (Pin 7)	Overload	-6.03	1 hr	F1	0.026	NB, NC, NT.	
Connector KB/mouse (Pin 4)	Overload	5.03	1 hr	F1	1.441	NB, NC, NT.	
Connector VGA (Pin 9)	Overload	5.01	1 hr	F1	1.430	NB, NC, NT.	
Connector VGA (Pin 13)	Overload	4.5	1 hr	F1	0.050	NB, NC, NT.	
Connector VGA (Pin 14)	Overload	4.97	1 hr	F1	0.054	NB, NC, NT.	
Connector USB (Pin 4)	Overload	5.01	1 hr	F1	0.9	NB, NC, NT.	
Connector Com 2 (RS-232) (Pin 3)	Overload	6.02	1 hr	F1	0.025	NB, NC, NT.	
Connector Com 2 (RS-232) (Pin 4)	Overload	6.02	1 hr	F1	0.025	NB, NC, NT.	
Connector Com 2 (RS-232) (Pin 7)	Overload	6.02	1 hr	F1	0.025	NB, NC, NT.	

7)						
Connector Backlight (RS-232) (Pin 1)	Overload	5.01	1 hr	F1	2.210	NB, NC, NT.
model: ARK-3380, used with I/O board: PCM-254	--	--	--	--	--	--
Connector Com 1 (RS-232) (Pin 3)	Overload	-6.02	1 hr	F1	0.025	NB, NC, NT.
Connector Com 1 (RS-232) (Pin 4)	Overload	-6.02	1 hr	F1	0.024	NB, NC, NT.
Connector Com 1 (RS-232) (Pin 7)	Overload	-6.02	1 hr	F1	0.024	NB, NC, NT.
Connector CRT(VGA) (Pin 9)	Overload	5	1 hr	F1	1.521	NB, NC, NT.
Connector CRT(VGA) (Pin 14)	Overload	5.01	1 hr	F1	0.054	NB, NC, NT.
Connector USB (Pin 4)	Overload	5	1 hr	F1	0.900	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 3)	Overload	-5.96	1 hr	F1	0.025	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 4)	Overload	-5.96	1 hr	F1	0.024	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 7)	Overload	-5.96	1 hr	F1	0.027	NB, NC, NT.
Connector Backlight (Pin 1)	Overload	5	1 hr	F1	1.602	NB, NC, NT.
Connector Backlight (Pin 5)	Overload	11.88	1 hr	F1	1.276	NB, NC, NT.
Connector KB/mouse	Overload	5	1 hr	F1	1.721	NB, NC, NT.

(Pin 4)						
model: ARK-3381, used with I/O board: PCM-253	--	--	--	--	--	--
Connector Com 1 (RS-232) (Pin 3)	Overload	-6.01	1 hr	F1	0.027	NB, NC, NT.
Connector Com 1 (RS-232) (Pin 4)	Overload	-6.01	1 hr	F1	0.026	NB, NC, NT.
Connector Com 1 (RS-232) (Pin 7)	Overload	-6.01	1 hr	F1	0.022	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 3)	Overload	-5.95	1 hr	F1	0.025	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 4)	Overload	-5.95	1 hr	F1	0.022	NB, NC, NT.
Connector Com 2 (RS-232) (Pin 7)	Overload	-5.95	1 hr	F1	0.023	NB, NC, NT.
Connector VGA (Pin 11)	Overload	5.01	1 hr	F1	1.610	NB, NC, NT.
Connector VGA (Pin 14)	Overload	4.97	1 hr	F1	0.053	NB, NC, NT.
Connector USB(Pin 4)	Overload	5.01	1 hr	F1	0.810	NB, NC, NT.
Connector Backlight (Pin 1)	Overload	5.01	1 hr	F1	1.276	NB, NC, NT.
Connector Backlight (Pin 2)	Overload	5.01	1 hr	F1	0.033	NB, NC, NT.
Connector Backlight (Pin 5)	Overload	11.88	1 hr	F1	1.684	NB, NC, NT.
Connector KB/mouse (Pin 4)	Overload	5	1 hr	F1	1.187	NB, NC, NT.
supplementary information:						



Comment key: IP - Internal protection operated (list component). CD - Components damaged. NB - No indication of dielectric breakdown. NC - Cheesecloth remained intact. NT - Tissue paper remained intact.



## **Enclosure**

### **Measuring and Test Instruments**

(Total 4 Pages including this Cover Page)

Description
Equipment list part 1
Equipment list part 2
Equipment list part 3





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**Measuring and Test Instruments**

Applied For Safety Inspection

company/Test Institute: Superior Product Consulting, Inc.

Address of Test Site: 3FI., No. 10, Alley 6, Lane 235, Pao Chiao Road, Hsin Tien City, Taipei, Taiwan, R.O.C.

Person responsible for

Maintenance & Calibration : Terry wang/ Team Leader

Division/Department : Test Lab.

Date and Signature : TERRY WANG/ *Terry Wang*

Reviewer: ALLEN HUANG/ *Allen Huang*

Item	Kind of Instrument Precision Class SPC Property No.	Manufacturer	Model Serial No.	Range Used & Function	Calibrated until
1	AC Power Meter SPC029	YOKOGAWA	2433 68LD0039	20A 600V	22, JUN. 2005 23, JUN. 2004
2	AC Power Meter SPC009	YOKOGAWA	2433 61LD0248	20A 600V	22, JUN. 2005 23, JUN. 2004
4	LEAKAGE CURRENT METER SPC103	SIMPSON	228 20433	0-10mA	13, APR. 2005 14, APR. 2004
5	PUSH/PULL SCALE SPC004	IMADA	FB-30 207330	30KG	23, JUN. 2005 24, JUN. 2004
8	DC ELECTRONIC LOAD SPC069	PRODIGIT	3301A 80201A011	60V/60A	04, MAR. 2005 05, MAR. 2004
9	CALIPER SPC019	MITUTOYO	500-321 7217225	150mm	09, FEB. 2005 10, FEB. 2004
12	TEMP. RECORDER SPC033	YOKOGAWA	UR180 42YS0028	-200°C TO 400°C	13, JUN. 2005 14, JUN. 2004
13	TEMP. RECORDER SPC099	FLUKE	52 4795005	-200°C TO 760°C	29, JUL. 2005 30, JUL. 2004
14	DIGITIZING OSCILLOSCOPE SPC047	TEKTRONIX	TDS410 B010359	150MHz 100MS/s	06, JAN. 2006 07, JAN. 2005
15	DUAL DISPLAY MULTIMETER SPC018	FLUKE	45 5120082	750Vac 10A	09, FEB. 2005 10, FEB. 2004
16	HIGH VOLTAGE PROBE SPC104	FLUKE	80K-40 72940016	40KVpk	22, SEP. 2005 23, SEP. 2004
17	THERMO-HYGROMETER SPC067	ISUZU	3-3122 80660571	-15°C - +40°C 0-100% RH	22, JUN. 2005 23, JUN. 2004
18	DC ELECTRONIC LOAD SPC028	PRODIGIT	3301 205010035	60V/60A 250V/10A	30, APR. 2005 01, MAY. 2004
19	DC ELECTRONIC LOAD SPC035	PRODIGIT	3301 210010074	60V/60A 250V/10A	30, APR. 2005 01, MAY. 2004
21	DC ELECTRONIC LOAD SPC057	PRODIGIT	3321 607020098	60V/60A	06, AUG. 2005 07, AUG. 2004
22	DC ELECTRONIC LOAD SPC089	PRODIGIT	3321 607020097	60V/60A	28, JUL. 2005 29, JUL. 2004
23	DIGITIZING POWER METER SPC059	PRODIGIT	4011 964011133	600V/20A	25, JUL. 2005 26, JUL. 2004
24	STOP WATCH SPC068	CASIO	HS-3 209Q05	0 S-10 HOURS	16, SEP. 2005 17, SEP. 2004
25	DIGITIZING MUTIMETER SPC060	GOOD WILL	GDM-8055 6040254	750Vac 2A 20MΩ	22, JUN. 2005 23, JUN. 2004

**Note:** 儀器送校驗前請先確認「QE01-L02 供應商評估紀錄表」是否有此供應商評估紀錄，並確認符合需求，若無則進行供應商評估動作。



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Item	Kind of Instrument Precision Class SPC Property No.	Manufacturer	Model Serial No.	Range Used &Function	Calibrated until
27	POWER ANALYSER SPC063	AVPOWER	PA2100 621-0597	650Vrms 20A	13, APR. 2005 14, APR. 2004
28	DC ELECTRONIC LOAD SPC066	PRODIGIT	3301A 70601A022	60V/60A 250V/10A	25, AUG. 2005 26, AUG. 2004
29	TEST FINGER SPC039	UL	SM471 S002	UL60950-1 FIG. 19	21, MAR. 2008 22, MAR. 2004
30	BALL PRESSURE SPC041	UL	S1598 S004	UL60950-1 FIG. 21	21, MAR. 2008 22, MAR. 2004
31	IMPACT BALL ----	UL	---- S003	50mm 500g	21, MAR. 2008 22, MAR. 2004
32	TEST PIN SPC040	UL	S2962 S001	UL60950-1 FIG. 20	21, MAR. 2008 22, MAR. 2004
33	DC ELECTRONIC LOAD SPC077	PRODIGIT	3301A 80701A043	60V/60A	25, AUG. 2005 26, AUG. 2004
34	DC ELECTRONIC LOAD SPC079	PRODIGIT	3301A 80701A042	60V/60A	27, AUG. 2005 28, AUG. 2004
35	DC ELECTRONIC LOAD SPC080	PRODIGIT	3302A 808020375	60V/30A	06, AUG. 2005 07, AUG. 2004
36	DC ELECTRONIC LOAD SPC081	PRODIGIT	3302 808020378	60V/30A	06, AUG. 2005 07, AUG. 2004
37	DC ELECTRONIC LOAD SPC078	ZENTECH	2600R 809055	60V/60A 300V/10A	27, AUG. 2005 28, AUG. 2004
38	TEMP. RECORDER SPC082	YOKOGAWA	UR1800 4370GE038	-200°C TO 400	11, FEB. 2005 12, FEB. 2004
39	TEMP. RECORDER SPC083	YOKOGAWA	UR1800 4370GE037	-200°C TO 400	06, JAN. 2006 07, JAN. 2005
40	TEMP. RECORDER SPC090	YOKOGAWA	UR1800 4370GE046	-200°C TO 400	06, JAN. 2006 07, JAN. 2005
41	DC ELECTRONIC LOAD SPC091	PRODIGIT	3302A 811020578	60V/30A	06, OCT. 2005 07, OCT. 2004
42	DC ELECTRONIC LOAD SPC088	PRODIGIT	3302A 811020580	60V/30A	06, OCT. 2005 07, OCT. 2004
43	DC ELECTRONIC LOAD SPC098	PRODIGIT	3301A 80901A045	60V/60A	10, NOV. 2005 11, NOV. 2004
44	TEST FINGER SPC070	UL	FIGURE 19 2346	UL60950-1 FIG. 19	21, MAR. 2008 22, MAR. 2004
45	DC ELECTRONIC LOAD SPC092	PRODIGIT	3301A 80901A046	60V/60A	06, OCT. 2005 07, OCT. 2004
46	DIGITIZING OSCILLOSCOPE SPC093	TEKTRONIX	TDS360 B019983	200MHz 1GS/s	27, AUG. 2005 28, AUG. 2004
48	HI-POT TESTER SPC095	ZENTECH	ZT9072A 809549	10mA 5KV	01, JUL. 2005 30, JUN. 2004
49	GROUNDING TESTER SPC096	ZENTECH	ZT9570 807786	12V 40A	25, NOV. 2005 26, NOV. 2004
50	LEAKAGE CURRENT METER SPC097	SIMPSON	228 20988	0-10mA	07, OCT. 2005 08, OCT. 2004
51	DIGITIZING POWER METER SPC094	PRODIGIT	4011 984011034	600V/20A	10, FEB. 2005 11, FEB. 2004
52	CALIPER SPC084	MITUTOYO	CD-6"CS 0305386	150mm	05, NOV. 2005 06, NOV. 2004
53	TEMP. RECORDER SPC072	YOKOGAWA	UR1800 4370GC179	-200°C TO 400	10, NOV. 2005 11, NOV. 2004

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Item	Kind of Instrument Precision Class SPC Property No.	Manufacturer	Model Serial No.	Range Used & Function	Calibrated until
54	AC POWER METER SPC101	YOKOGAWA	2433 68LD0040	20A 600V	06, JAN. 2006 07, JAN. 2005
56	TEMP. RECORDER SPC104	YOKOGAWA	UR1800 12W732059	-200°C TO 400	11, FEB. 2005 12, FEB. 2004
57	TEMP. RECORDER SPC106	FLUKE	52 73990047	-200°C TO 760°C	04, MAR. 2005 05, MAR. 2004
58	DIGITIZING POWER METER SPC107	CHYNG HONG	CP-350 355952	500V/50A	05, MAR. 2005 06, MAR. 2004
59	DIGITIZING POWER METER SPC105	CHYNG HONG	CP-350 355953	500V/50A	05, MAR. 2005 06, MAR. 2004
60	TEMP./HUMIDITY CHAMBER SPC005	KAOTIEH	KT-7005-A 72867	25°C to 40°C 93%R.H. to 95%R.H.	20, OCT. 2005 21, OCT. 2004
61	DC ELECTRONIC LOAD SPC111	PRODIGIT	3301A-01 30901A025	60V/60A	20, DEC. 2005 21, DEC. 2004
62	TEMP. RECORDER SPC112	YOKOGAWA	DA100-23-1D 27D125487	-200°C TO 400	03, NOV. 2005 04, NOV. 2004
63	TNV TEST PRODE SPC113	D.M.S	TTP 63	UL60950-1 FIG.2B	03, JUN. 2008 04, JUN. 2004
64	ROD PRESSURE SPC114	D.M.S	----- 64	UL1310	03, JUN. 2008 04, JUN. 2004
65	TOUCH CURREN TEST BOARD -----	SPC	----- 65	UL60065 ANNEX D	16, DEC. 2005 17, DEC. 2004
66	L.C.C. TEST BOX -----	QTECH	950-2K-95009 66	UL60950-1 CLAUSE2.4	23, JUN. 2005 24, DEC. 2004
67	L.C.C. TEST BOARD -----	SPC	----- 67	UL60950-1 CLAUSE2.4	23, JUN. 2005 26, DEC. 2004
68	ELECTRONIC SCALE SPC116	JADEVER	LPWN-1530 408230T1327	3KG	17, JAN. 2006 18, JAN. 2005
69	DC/AC CURRENT CLAMP METER SPC115	PROVA	11 04400427	30A 400V	17, JAN. 2006 18, JAN. 2005
70	LEAKAGE CURRENT METER	EXTECH	7611	0-6mA	24, JAN. 2006
*	SPC117		1330410		25, JAN. 2005

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