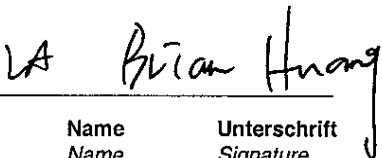
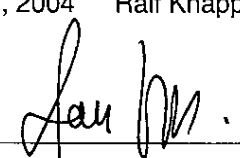
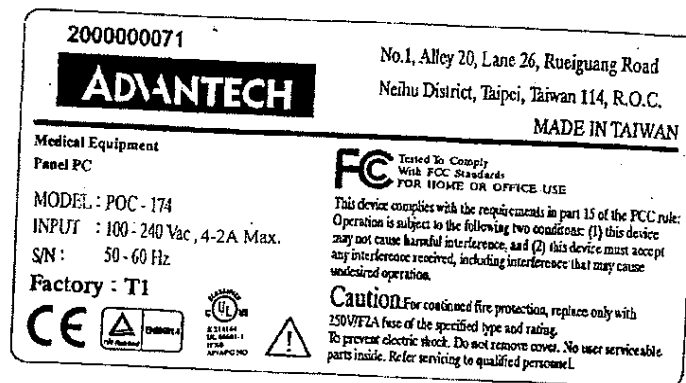


<b>Prüfbericht - Nr.: 10009176 001</b> <i>Test Report No.:</i>			Seite 1 of 62 Page 1 of 62				
<b>Auftraggeber:</b> <i>Client:</i>			<b>Advantech Co., Ltd.</b> 4F, No. 108-3, Ming Chuan Rd., Hsin Tien City, Taipei Hsien 231, Taiwan				
<b>Gegenstand der Prüfung: Panel PC</b> <i>Test item:</i>							
<b>Bezeichnung:</b> <i>Identification:</i>		<b>POC-174xx-xx-xx</b> (x = any alphanumeric character or blank)		<b>Serien-Nr.:</b> <i>Serial No.:</i>			
<b>Wareneingangs-Nr.:</b> <i>Receipt No.:</i>		<b>N/A</b>		<b>Eingangsdatum:</b> <i>Date of receipt:</i>			
<b>Prüfort:</b> <i>Testing location:</i>		<b>SPC INC.</b> 3F, No.10, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan, R.O.C.					
<b>Prüfgrundlage:</b> <i>Test specification:</i>		<b>EN 60601-1: 1990 + A1:1993 + A2:1995 + A13:1996</b>		Geprüft und Genehmigt (Reviewed and approved)			
<b>Prüfergebnis:</b> <i>Test result:</i>		<b>Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage.</b> The a. m. test item passed.		JUL 20. 2004 TÜV Rheinland Group			
<b>Erstellt/compiled by:</b> March 2 <sup>nd</sup> , 2004      Angel Deltchev			<b>kontrolliert/reviewed by:</b> March 3 <sup>rd</sup> , 2004      Ralf Knapp				
							
<b>Datum</b> <i>Date</i>	<b>Name</b> <i>Name</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name</b> <i>Name</i>	<b>Unterschrift</b> <i>Signature</i>		
<b>Sonstiges/Other aspects:</b> Per application letter dated November 21 <sup>st</sup> , 2003, project order: 13044524. TÜV Rheinland T-mark approval. The equipment is not evaluated for the requirements of portable equipment.							
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Abkürzungen:</b>            OK, Pass = entspricht Prüfgrundlage            Fail = entspricht nicht Prüfgrundlage            N/A = nicht anwendbar         </td> <td style="width: 50%; vertical-align: top;"> <b>Abbreviations:</b>            OK, Pass = passed            Fail = failed            N/A = not applicable         </td> </tr> </table>						<b>Abkürzungen:</b> OK, Pass = entspricht Prüfgrundlage Fail = entspricht nicht Prüfgrundlage N/A = nicht anwendbar	<b>Abbreviations:</b> OK, Pass = passed Fail = failed N/A = not applicable
<b>Abkürzungen:</b> OK, Pass = entspricht Prüfgrundlage Fail = entspricht nicht Prüfgrundlage N/A = nicht anwendbar	<b>Abbreviations:</b> OK, Pass = passed Fail = failed N/A = not applicable						
<b>Dieser Prüfbericht bezieht sich nur auf den o.g. Prüfgegenstand und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.							

<b>TEST REPORT</b> <b>IEC 601 -1</b> <b>Medical electrical equipment</b> <b>Part 1: General requirements for safety</b>	
Report reference No. .... :	<10009176 001 >
Compiled by (+ signature) .....	See cover page .....
Reviewed by (+ signature).....	See cover page .....
Approved by (+ signature).....	See cover page .....
Date of issue..... :	March 2 <sup>nd</sup> , 2004
Testing laboratory .....	SPC INC.
Address..... :	3F, No.10, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan, R.O.C.
Testing location..... :	Same as above.
Applicant..... :	Advantech Co., Ltd.
Address..... :	4F, No. 108-3, Ming Chuan Rd., Hsin Tien City, Taipei Hsien 231, Taiwan
Standard .....	EN 60601-1 : 1990 + A1:1993 + A2:1995 + A13:1996
Test Report Form No..... :	I601-1_C/97-04
TRF Originator..... :	Underwriters Laboratories Inc.
Master TRF..... :	dated 97-04
Copyright blank test report..... :	the bodies participating in the Committee of Certification Bodies (CCB). This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator.
Test procedure .....	TÜV Rheinland T-mark approval
Procedure deviation..... :	N/A
Non-standard test method..... :	N/A
Type of test object .....	Panel PC
Trademark .....	ADVANTECH
Model/type reference..... :	POC-174xx-xx-xx (x = any alphanumeric character or blank)
Manufacturer .....	Same as applicant
Address..... :	Refer to page 3.
Rating .....	AC 100-240V, 50-60Hz, 4-2A

Copy of the marking plate:



<b>GENERAL INFORMATION</b>	
Test item particulars (see also clause 5):	
Classification of installation and use .....	: Stationary equipment
Supply connection .....	: AC mains.
Accessories and detachable parts included in the evaluation .....	
	: None.
Options included .....	
	: None.
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	
Abbreviations used in the report:	
- normal condition.....:N.C.	- single fault condition.....:S.F.C.
- operational insulation.....:OP	- basic insulation .....:BI
- basic insulation between parts of opposite polarity.:BOP	- supplementary insulation .....:SI
- double insulation.....:DI	- reinforced insulation.....:RI
<b>General remarks</b>	
This report shall not be reproduced except in full without the written approval of the testing laboratory.	
The test results presented in this report relate only to the item tested.	
"(see remark #)" refers to a remark appended to the report.	
"(see Annex #)" refers to an annex appended to the report.	
Throughout this report a point is used as the decimal separator.	
<b>Comments</b>	
<i>Factories:</i>	
1. Advantech Co., Ltd. 5F, No. 1, Lane 169, Kang-Ning Street, Xi-Zhi City, Taipei Hsien, Taiwan	
2. Advantech Co., Ltd. 3F, No. 10, Lane 130, Ming Chuan Rd., Hsin Tien, Taipei Hsien 231,Taiwan	
3. Superior Co., Ltd. Tiensong Area, Qingxing Town, Dongguan, Guangdong, P.R. China	
4. Advantech Co., Ltd. No. 600, Han-Pu Road, Yu-Shan, Kun-shan, Jiangsu, P.R. China	
5. Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd. No. 7, 6th Street, Shang Di Zone, Haidian District, Beijing, P.R. China	

***Brief description of the test sample:***

The equipment model POC-174xx-xx-xx is a panel PC intended for use with medical electrical equipment.

In the model name "x" can be any alphanumeric character or blank and is used for marketing purposes only.

The maximum specified operational ambient temperature is +40°C.

The equipment employs a built-in type power supply which has been previously CB-scheme approved by Nemko according to IEC 60601-1:1988 + A1 + A2. The certificate number is NO 27244 and CB-scheme report No. is 14871.

**General product information and considerations:****General overview on the system:**

- Panel PC incorporating the LCD panel and computer in one enclosure. The front panel is provided with four buttons and power indicator. All connectors such as serial ports, parallel port, USB ports, PS2 port, joystick port, audio connectors, LAN port and controls for brightness and contrast are located at the back-bottom side of the enclosure.
- There is a stand-by button provided adjacent to the AC inlet.
- The mounting means (optional) of the panel PC are located on its back enclosure.
- The inside of the equipment is considered as operator accessible area for exchanging built-in components as CPU, HDD, FDD, DVD-ROM, memory module, RTC battery
- The DC/AC inverter is provided with a plastic cover covering it completely.
- The built-in speakers are located at both sides of the bottom enclosure.
- The equipment can be connected to VESA mounting kit.
- The weight of the equipment is 12kg.

**The equipment is not evaluated for the requirements of portable equipment.**

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>3</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
3.1	Equipment when transported, stored, installed, operated in normal use and maintained according to the instructions of the manufacturer, causes no safety hazard which could reasonably be foreseen and which is not connected with its intended application in normal condition (N.C.) and in single fault condition (S.F.C.)		<b>P</b>
3.4	An alternative means of construction is used to that detailed in this standard and it can be demonstrated that an equivalent degree of safety is obtained		<b>N</b>

<b>5</b>	<b>CLASSIFICATION</b>		<b>P</b>
5.1	Type of protection against electric shock		<b>P</b>
	Class I equipment	The system is classified as Class I equipment.	<b>P</b>
	Class II equipment		<b>N</b>
	Internally powered equipment		<b>N</b>
5.2	Degree of protection against electric shock		<b>P</b>
	Type B applied part		<b>N</b>
	Type BF applied part		<b>N</b>
	Type CF applied part		<b>N</b>
	Not classified – no applied parts	No applied parts.	<b>P</b>
5.3	Classification according to the degree of protection against ingress of water as detailed in the current edition of IEC 529 (see 6.1.1) .....	Ordinary equipment.	<b>N</b>
5.4	Methods of sterilization or disinfection	Not required.	<b>N</b>
5.5	Equipment not suitable for use in the presence of flammable mixtures	The equipment is not classified as category AP or APG.	<b>N</b>
	Category AP equipment		<b>N</b>
	Category APG equipment		<b>N</b>
5.6	Mode of operation:		<b>P</b>



IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	- continuous operation	Continuous operation.	<b>P</b>
	- short-time operation, specified operation; period .....		<b>N</b>
	- intermittent operation, specified operation; rest period .....		<b>N</b>
	- continuous operation with short-time, stated permissible loading time .....		<b>N</b>
	- continuous operation with intermittent, stated permissible loading/rest time .....		<b>N</b>



IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

## INSULATION DIAGRAM

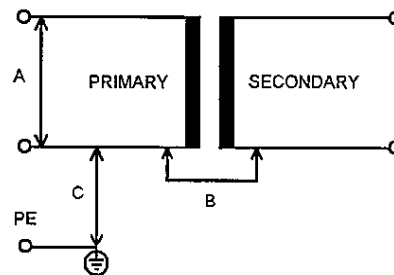


Table: to insulation diagram							P
Area	Insulation type: operational / basic / supplementary / double / reinforced	Reference voltage (V)	Required creepage (mm)	Required clearance (mm)	Measured creepage (mm)	Measured clearance (mm)	Remarks
C	Basic insulation	250	4.0	2.5	4.0	4.0	See note
Notes:							
1. The separation from the mains supply (items A and B and also partly item C on the insulation diagram above) has been evaluated during the approval of the switching power supply. Screws for fixing of the power supply do not impair the distance between primary and metal chassis (earth).							

## INSULATION DIAGRAM CONVENTIONS

Insulation diagram is a graphical representation of equipment insulation barriers, protective impedance and protective earthing. If feasible, use the following conventions to generate the diagram:

1. All isolation barriers are identified by letters between separate parts of diagram, for example separate transformer windings, optical isolators, wire insulation, creepage and clearance distances.
2. Parts connected to earth with large dots are protectively earthed. Other connections to earth are functional
3. Applied parts are extended beyond the equipment enclosure and terminated with an arrow.

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

6	<b>IDENTIFICATION, MARKING AND DOCUMENTS</b>		<b>P</b>
6.1	Marking on the outside of equipment or equipment parts		<b>P</b>
	c) Markings of the specific power supply affixed	The marking is affixed on the back side of the enclosure.	<b>P</b>
	d) If marking is not practicable due to size or nature of enclosure, information is included in accompanying documents		<b>N</b>
	e) Name and/or trademark of the manufacturer or supplier .....	ADVANTECH trademark.	<b>P</b>
	f) Model or type reference .....	POC-174xx-xx-xx (x = any alphanumeric character or blank)	<b>P</b>
	g) Rated supply voltages or voltage range(s)	100-240Vac	<b>P</b>
	Number of phases .....	Single phase equipment	<b>N</b>
	Type of current .....	AC	<b>P</b>
	h) Rated frequency or rated frequency range(s) (Hz) .....	50-60Hz	<b>N</b>
	j) Rated power input (VA, W or A) .....	4-2A	<b>P</b>
	k) Power output of auxiliary mains socket-outlets	No outlets.	<b>N</b>
	l) Class II symbol	Class I equipment.	<b>N</b>
	Symbol for degree of protection against ingress of water provided .....	IPX0	<b>N</b>
	Symbol for protection against electric shock ...:		<b>N</b>
	If equipment has more than one applied part with different degrees of protection, the relevant symbols are clearly marked on such applied parts, or on or near relevant outlets	No applied parts.	<b>N</b>
	Symbol for protection of defibrillation-proof applied parts	Ditto.	<b>N</b>
	Symbol 14 from Table DI for defibrillation-proof with protection partly in patient cable	Ditto.	<b>N</b>
	m) Mode of operation (if no marking, suitable for continuous operation)	Continuous operation.	<b>N</b>
	n) Types and rating of external accessible fuses:	No externally accessible fuses.	<b>N</b>

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

4. Parts accessible to the operator only are extended outside of the enclosure, but are not terminated with an arrow.
5. Blocks containing the letter "Z" indicate protective impedance.
6. Operational Insulation (OP) - indicates insulation that may be required for function of the equipment, but is not required or relied on for compliance with the requirements of clauses 17, 20 and 57.

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	p) Ratings of external output.....:	No such electrical output.	N
	q) Symbol for physiological effect(s):		N
	- attention, consult accompanying documents	Symbol 14 from table DI is provided on the label.	P
	- non-ionizing radiation, or symbols as adopted by ISO or IEC 417	Not emitted.	N
	r) Anaesthetic-proof symbol: AP or APG.....:	Not AP or APG type.	N
	s) Dangerous voltage symbol	Not generated.	N
	t) Special cooling requirements		N
	u) Limited mechanical stability		N
	v) Protective packing requirement(s)	No special conditions.	N
	- Marking(s) for unpacking safety hazard(s)		N
	- Equipment or accessories supplied sterile, marked as sterile		N
	y) Potential equalization terminal	Not provided.	N
	- Functional earth terminal		N
	z) Removable protective means	No application where removal of the protective means is necessary.	N
	Durability of marking test	See appended table 6.1.	P
6.2	Marking on the inside of equipment or equipment parts		P
	a) Nominal voltage of permanently installed equipment	Not a permanently installed equipment.	N
	b) Maximum power loading for heating elements or holders for heating lamps	No heating elements or lamps.	N
	c) Dangerous voltage symbol	No such voltages generated.	N
	d) Type of battery and mode of insertion	There is a Li-Ion battery located on the built-in motherboard. It is accessible only with a tool and it is placed in a battery holder, which allows only one way of inserting. Warning statement provided in the accompanying documents.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	- Marking referring to accompanying documents used for battery not intended to be changed by the operator		N
	e) Fuses accessible with a tool identified either by type and rating or by a reference to diagram	In approved SPS.	P
	f) Protective earth terminal	Appliance inlet is provided.	N
	g) Functional earth terminal	No provided.	N
	h) Supply neutral conductor in permanently installed equipment (N)	Not a permanently installed equipment.	N
	j) Markings required in 6.2 f), h), k), and l) remain visible after connection and are not affixed to parts which have to be removed	No such marking.	N
	- Markings comply with IEC 445		N
	k) For permanently connected devices the supply connections are clearly marked adjacent to the terminals (or in accompanying documents for small equipment)	Not a permanently installed equipment.	N
	l) Statement for suitable wiring materials at temperatures over 75 °C		N
	n) Capacitors and/or circuit parts marked as required in Sub-clause 15c	See sub-clause 15c.	N
6.3	Marking of controls and instruments		P
	a) Mains switch clearly identified	Only stand-by switch is provided.	N
	- ON and OFF positions marked according to Symbols 15 and 16 of table D1 or indicated by an adjacent indicator light	Compiled.	N
	b) Indication of different positions of control devices and switches	The controls are identified in the accompanying documents.	P
	c) Indication of the direction in which the magnitude of the function changes, or an indicating device	No such controls.	N
	f) The functions of operator controls and indicators are identified	Provided in the accompanying documents.	P
	g) Numeric indications of parameters are in SI units except for units listed in Am. 2		N
6.4	Symbols		P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Used symbols comply with Appendix D or IEC 417 and/or IEC 878 or ISO publications (if applicable)	In accordance with Appendix D.	P
6.5	Colors of the insulation of conductors		P
	a) Protective earth conductor has green/yellow insulation	All protective earth conductors are with green-yellow insulation.	P
	b) All insulations of internal protective earth conductors are green/yellow at least at their terminations	Ditto.	P
	c) Only protective or functional earthing, or potential equalization conductors are green/yellow	Ditto.	P
	d) Color of neutral conductor .....	Ditto.	N
	e) Colors of phase conductor(s) .....	Ditto.	N
	- Compliance with IEC 227 and IEC 245		N
	f) Additional protective earthing in multi-conductor, cords are marked green/yellow at the ends of the additional conductors		N
6.6	Medical gas cylinders and connections		N
	a) In accordance with ISO ISO/R 32		N
	b) Identification of connection point		N
6.7	Indicator lights and push-buttons		P
	a) Red indicator lights used exclusively to indicate a warning of danger and/or a need for urgent action	The indicator for the operation mode is with green or amber colour.	P
	- Yellow used to indicate caution or attention required	Ditto.	P
	- Green used to indicate ready for action	Ditto.	P
	b) Color red used only for push-buttons by which a function is interrupted in case of emergency		N
6.8	ACCOMPANYING DOCUMENTS		P
6.8.1	Equipment accompanied by documents containing at least instructions for use, a technical description and an address to which the user can refer	Provided in the accompanying documents.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Classifications specified in Clause 5 included in both the instructions for use and the technical description	Provided in the accompanying documents section "Specifications".	P
	Markings specified in Sub-clause 6.1 included in the accompanying documents if they have not been permanently affixed to equipment		N
	Warning statements and the explanation of warning symbols provided in the accompanying documents	Provided throughout the accompanying documents.	P
6.8.2	Instructions for use		P
	a) General information provided in instructions for use	Provided in the accompanying documents. See below.	P
	- state the function and intended application of the equipment	Provided in section "Introduction"	P
	- include an explanation of: the function of controls, displays and signals	Provided in section "A Quick Tour of the POC-174"	P
	- the sequence of operation	Provided throughout the accompanying documents.	P
	- the connection and disconnection of detachable parts and accessories	Provided in section "Installation Procedures"	P
	- the replacement of material which is consumed during operation	There is Li-Ion battery that may need to be replaced during the expected lifetime of the equipment. Proper instructions are provided in section "Safety Instructions".	P
	- information regarding potential electromagnetic or other interference and advice regarding avoidance	Provided in the accompanying documents under section "Warnings and Cautions".	P
	- include: indications of recognized accessories, detachable parts and materials, if the use of other parts or materials can degrade minimum safety	None. Suitable information regarding the choice of proper power supply cord is provided in section "Additional Information and Assistance".	P
	- instructions concerning cleaning, preventive inspection and maintenance to be performed including the frequency of such maintenance	Ditto.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	General information provided in instructions:		P
	- information for the safe performance or routine maintenance	Provided in the accompanying documents.	P
	- parts on which preventive inspection and maintenance shall be performed by other persons including the periods to be applied	No such parts.	N
	- explanation of figures, symbols, warning statements and abbreviations on the equipment	All necessary information is provided throughout the accompanying documents.	P
	c) Signal output or signal input parts intended only for connection to specified equipment described	Statement "This equipment shall be interconnected only to IEC60601-1 approved equipment" provided in section "Specifications"	P
	d) Details about acceptable cleaning, disinfection or sterilization methods included	Ditto.	P
	e) Warning statement for mains operated equipment with additional power source	No additional power source.	N
	f) A warning to remove primary batteries if equipment is not likely to be used for some time	No primary batteries.	N
	g) Instructions to ensure safe use and adequate maintenance of rechargeable batteries	No rechargeable batteries.	N
	h) Identification of specified external power supplies or battery chargers necessary to ensure compliance with the requirements of IEC 601-1		N
	j) Identification of any risks associated with the disposal of waste products, residues, etc.	Li-Ion batteries are disposable. Instructions are provided in section "Safety Instructions".	P
	- Advice in minimizing these risks		N
6.8.3	Technical description		P
	a) All characteristics essential for safe operation provided	Provided.	P
	b) Required type and rating of fuses utilized in the mains supply circuit external to permanently installed equipment	No such fuses.	N
	- Instructions for replacement of interchangeable and/or detachable parts which are subject to deterioration during normal use	No such parts.	N



IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Instructions or reference information for repair of equipment parts designated by the manufacturer as repairable provided	There are not particular parts designated as repairable. However, contact information for customer support is provided in section "Additional Information and Assistance" in the accompanying documents.	N
	d) Environmental conditions for transport and storage specified in accompanying documents and marked on packaging	Provided in section "Environment" in the accompanying documents.	P
<b>7</b>	<b>POWER INPUT</b>		<b>P</b>
	Power Input Measurements	Refer to appended table 7.	P
<b>10</b>	<b>ENVIRONMENTAL CONDITIONS</b>		<b>P</b>
10.1	Equipment is capable while packed for transport or storage of being exposed to the conditions stated by the manufacturer	Transportation and storage: Temp. range: -20°C - +50°C R.H.: 10% to 95% Altitude up to 40000ft (12192m) Operating conditions: Temp. range: +10°C - +40°C R.H.: 20% to 90% Altitude up to 6000ft (1829m)	P
10.2.2a	Rated voltage not exceeding 250 V for hand-held equipment	Not a hand-held equipment.	N
	Rated voltage not exceeding 250 V d.c. or single-phase a.c. or 500 V polyphase a.c. for equipment up to 4kVA	Equipment rated 100-240VAC.	P
	Rated voltage not exceeding 500 V for all other equipment		N
	Rated input frequency not more than 1kHz	Equipment rated 50-60Hz.	P
10.2.2b	Internal replaceable electrical power source specified	No internal power source.	N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>14</b>	<b>REQUIREMENTS RELATED TO CLASSIFICATION</b>		<b>P</b>
14.4a	Class I and Class II equipment in addition to basic insulation provided with an additional protection	The equipment is classified as class I and employs basic insulated earthed parts and parts separated from primary by double or reinforced insulation.	<b>P</b>
14.4b	Equipment supplied from external dc source of reverse polarity results in no safety hazard		<b>N</b>
14.5b	Internally powered equipment complies with requirements for Class I or Class II equipment while connected to supply mains, and with requirements for internally powered equipment when not connected		<b>N</b>
14.6c	Applied parts intended for direct cardiac application are of type CF	No applied parts.	<b>N</b>

<b>15</b>	<b>LIMITATION OF VOLTAGE AND/OR ENERGY</b>		<b>N</b>
15b	Voltage measured one sec after disconnection of the mains plug does not exceed 60V	Evaluated during the approval of the power supply unit.	<b>N</b>
15c	For live parts accessible after equipment has been de-energized the residual voltage does not exceed 60 V nor residual energy exceed 2 mJ		<b>N</b>
	Marking provided for manual discharging		<b>N</b>

<b>16</b>	<b>ENCLOSURES AND PROTECTIVE COVERS</b>		<b>P</b>
16a	Equipment enclosed to protect against contact with live parts, and with parts which can become live (finger, pin, hook test)	<p>The inner compartment of the equipment is considered as operator accessible area and the operator is instructed to install certain parts as CPU, FDD, HDD, DVD-ROM, memory module, RTC battery.</p> <p>The test finger and pin can touch only earthed parts (inner metal chassis), which is</p>	<b>P</b>

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
		connected to protective earth. There are not areas on the equipment where the test hook can be inserted besides around the output connectors. However, no live parts become accessible after applying pull force of 20N for 10 seconds.	
	Insertion or removal of lamps - protection against contact with live parts provided		N
16b	Opening in a top cover positioned that accessibility of live parts by a test rod is prevented	The equipment does not have top or side openings. There are numerous openings on the top-back and bottom side of the equipment having diameter of Ø3.6mm. No live parts become accessible when the metal rod is applied. Additionally the output wires of SPS are provided with bushing, which prevents access to live parts in the SPS.	P
16c	Conductive parts accessible after the removal of handles, knobs, levers		P
	- have a resistance of not more than 0.2 $\Omega$	All metal parts are connected to protective earth with resistance to earth below 0.1 $\Omega$	P
	- separated from live parts by one of the means described in Sub-clause 17g	All non-earthed parts are separated from live parts as required in 17g.	P
	Parts with voltage exceeding 25V a.c. or 60V d.c. which cannot be disconnected by external mains switch or plug protected against contact		N
16e	Removable enclosures protecting against contact with live parts		P
	- Removal possible only with the aid of a tool	The earth connection is provided in the approved SPS. Earth connections can be removed only with the aid of a tool.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	- Use of automatic device making parts not live when the enclosure is opened or removed	Not applicable.	N
	- Exception 16e applied to the following parts .:	Not applicable.	N
16f	Openings for the adjustment of controls using a tool. The tool not able to touch basic insulation or any live parts	The controls can be adjusted without the use of a tool.	N

<b>17</b>	<b>SEPARATION</b>		<b>P</b>
17a	Separation method of the applied part from live parts:		N
	1) basic insulation: applied part earthed		N
	2) by protectively earthed conductive part (e.g. screen)		N
	3) by separate earthed intermediate circuit limiting leakage current to applied part in event of insulation failure		N
	4) by double or reinforced insulation		N
	5) by protective impedances limiting current to applied part		N
	- Additional leakage current test in single fault conditions		N
17c	There is no conductive connection between applied parts and accessible conductive parts which are not protectively earthed		N
17d	Supplementary insulation between hand-held flexible shafts and motor shafts (Class I)		N
17g	Separation method of accessible parts other than applied parts from live parts:		P
	1) basic insulation: accessible part earthed	In the approved SPS.	P
	2) by protectively earthed conductive part (e.g. screen)		N
	3) by separate earthed intermediate circuit limiting leakage current to enclosure in event of insulation failure		N
	4) by double or reinforced insulation	In the approved SPS.	P
	5) by protective impedances limiting current to accessible part		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	- Additional leakage current test in single fault conditions	The output of the built-in DC/AC inverter is considered as hazardous live. Compliance of the requirements with the standard is evaluated by measurement of the leakage current from the output of the DC/AC inverter to earth other parts of the enclosure. For test results refer to appended table 19.	P
17h	Arrangements used to isolate defibrillation-proof applied parts so designed that:		N
	- no hazardous electrical energies appear during a discharge of a cardiac defibrillator		N
	- after exposure to the defibrillation voltage, the equipment continues to perform its intended function		N

18	<b>PROTECTIVE EARTHING, FUNCTIONAL EARTHING AND POTENTIAL EQUALIZATION</b>		P
18a	Accessible parts of Class I equipment separated from live parts by basic insulation connected to the protective earth terminal	The approved SPS is provided with metal enclosure. Evaluation of the requirements of this sub-clause has therefore evaluated during its approval. The inner metal chassis of the equipment is reliably connected to metal chassis of the SPS.	P
18b	Protective earth terminals suitable for connection to the protective earth conductor	Approved source of appliance inlet is provided on the built-in SPS.	P
18e	Potential equalization conductor		N
	- Readily accessible		N
	- Accidental disconnection prevented in normal use		N
	- Conductor detachable without the use of a tool		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

	- Power supply cord does not incorporate a potential equalization conductor		N
	- Connection means marked with Symbol 9, Table DI		N
18f	For equipment without power supply cord, impedance between protective earth terminal and accessible metal part $\leq 0.1 \Omega$		N
	- For equipment with an appliance inlet, impedance between protective earth contact and any accessible metal part $\leq 0.1 \Omega$	Refer to appended table 18.	P
	- For equipment with a non-detachable power supply cord, impedance between protective earth pin in mains plug and accessible metal part $\leq 0.2 \Omega$		N
18g	If the impedance of protective earth connections other than in Cl. 18 f) exceeds $0.1 \Omega$ , the allowable value of the enclosure leakage current is not exceeded in single fault condition		N
18k	Functional earth terminal not used to provide protective earthing		N
18l	Class II equipment with isolated internal screens		N
	- insulation of screens and all internal wiring connected to them is double insulation or reinforced insulation		N
	- functional earth terminal clearly marked		N
	- explanation of functional earth terminal provided in the accompanying documents		N

19	<b>CONTINUOUS LEAKAGE CURRENTS AND PATIENT AUXILIARY CURRENTS</b>		P
19.1b	Leakage currents	See below.	P
	- earth leakage current	Refer to appended table 19.	P
	- enclosure leakage current	Ditto.	P
	- patient leakage current	No patient circuits.	N
	- patient auxiliary current	Ditto.	N

20	<b>DIELECTRIC STRENGTH</b>	P
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IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

	Overall compliance with Clause 20	Refer to appended table 20.	<b>P</b>
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<b>21</b>	<b>MECHANICAL STRENGTH</b>		<b>P</b>
21a	Sufficient rigidity of an enclosure tested by: force of 45 N	Applied and passed. Only one enclosure material is used.	<b>P</b>
21b	Sufficient strength of an enclosure tested by: impact hammer	Ditto.	<b>P</b>
21c	On portable equipment carrying handles or grips withstand the requirements of the loading test		<b>N</b>
21.3	No damage to parts of patient support and/or immobilization system after the loading test		<b>N</b>
21.5	Hand held equipment or equipment parts are safe after drop test	Not a hand-held equipment.	<b>N</b>
21.6	Portable and mobile equipment is able to withstand rough handling		<b>N</b>

<b>22</b>	<b>MOVING PARTS</b>		<b>P</b>
22.2a	Moving parts of a transportable equipment are provided with guards which form an integral part of the equipment		<b>N</b>
22.2b	Moving parts of a stationary equipment are provided with similar guards as above, unless it is evident that equivalent protection is separately provided during installation	There are DC fans provided in the approved SPS and for cooling the CPU. However, the DC fans are not considered as hazardous moving part due to their size.	<b>P</b>
22.3	Cords (ropes), chains and bands are provided with guides to prevent them from running off or from jumping out of their guiding devices		<b>N</b>
	Guides or other safeguards are removable only with a tool		<b>N</b>
22.4	Dangerous movements of equipment parts, which may cause physical injury to the patient, are possible only by the continuous activation by the operator		<b>N</b>
22.6	Parts of equipment subject to mechanical wear are accessible for inspection		<b>N</b>

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
22.7	Means provided for emergency switching of an electrically produced mechanical movement which could cause a safety hazard		N
	The means for emergency switching is readily identifiable and accessible and does not introduce a further safety hazard		N
	Devices for emergency stopping able to break the full load current of the relevant circuit, taking into account possible stalled motor currents		N
	Means for stopping of movements operate as a result of one single action		N
<b>23</b>	<b>SURFACES, CORNERS AND EDGES</b>		<b>P</b>
	Rough surfaces, sharp corners and edges which may cause injury or damage avoided or covered	The enclosure edges are smooth and cannot cause an injury.	P
<b>24</b>	<b>STABILITY IN NORMAL USE</b> (see appended table 24)		<b>N</b>
24.1	Equipment does not overbalance during normal use when tilted through an angle of 10°	Stationary equipment intended to be fixed in its intended position by the user.	N
24.3	Equipment overbalances when tilted through an angle of 10°		N
	- does not overbalance when tilted through an angle of 5° in any position excluding transport		N
	- carry a warning notice stating that transport should only be undertaken in a certain position		N
	- in the position specified for transport does not overbalance when tilted to an angle of 10°		N
24.6a	Equipment or its parts with a mass of more than 20 kg is provided with:		N
	- suitable handling devices (grips etc.), or		N
	- instructions for lifting and handling during assembly		N
24.6b	b) On portable equipment with a mass of more than 20 kg carrying handle(s) is (are) so situated that equipment may be carried by 2 or more persons		N



IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

<b>25</b>	<b>EXPULSED PARTS</b>		<b>N</b>
25.1	Protective means are provided where expelled parts of the equipment could be a hazard		<b>N</b>
25.2	Display vacuum tubes with a face dimension exceeding 16 cm are provided with adequate protection against implosion		<b>N</b>

<b>28</b>	<b>SUSPENDED MASSES</b>		<b>N</b>
28.3	Suspension system with safety device		<b>N</b>
	Safety device provided where the integrity of a suspension depends on parts which may have hidden defects, or on parts having safety factors not complying with Sub-clause 28.4		<b>N</b>
	Safety device has safety factors complying with Sub-clause 28.4.2		<b>N</b>
	Clear indication to the operator that the safety device has been activated after failure of suspension means		<b>N</b>
28.4	Suspension systems of metal without safety devices		<b>N</b>
	1) Total load does not exceed the safe working load		<b>N</b>
	2) Safety factors not less than 4 where it is unlikely that supporting characteristics will be impaired		<b>N</b>
	3) Safety factors not less than 8 where impairment is expected		<b>N</b>
	4) Safety factors multiplied by 1.5 for metal having an elongation at break of less than 5%		<b>N</b>
	5) Sheaves, sprockets, band wheels and guides so constructed that the safety factors maintained till replacement		<b>N</b>

<b>29</b>	<b>X-RADIATION</b>		<b>N</b>
29.2	EQUIPMENT not intended to produce X-radiation produces an exposure $\leq 130 \text{ nC/kg}$ (0.5 mR)		<b>N</b>

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>36</b>	<b>ELECTROMAGNETIC COMPATIBILITY</b>		<b>P</b>
	Equipment complies with IEC 601-1-2	Equipment in compliance with IEC 60601-1-2	<b>P</b>
<b>37</b>	<b>COMMON REQUIREMENTS FOR CATEGORY AP AND CATEGORY APG EQUIPMENT</b>		<b>N</b>
	Requirements for category AP and APG equipment (Cl. 37 - 41)	Equipment not classified as category AP and APG.	<b>N</b>
<b>42</b>	<b>EXCESSIVE TEMPERATURES</b>		<b>P</b>
42.1	Equipment does not attain temperatures exceeding the values given in Table Xa over the range of ambient temperatures per Clause 10.2.1	Refer to appended table 42.	<b>P</b>
42.2	Equipment does not attain temperatures exceeding the values given in Table Xb at 25°C ambient	Ditto.	<b>P</b>
42.3	Applied parts not intended to supply heat have surface temperatures not exceeding 41°C		<b>N</b>
42.5	Guards to prevent contact with hot surfaces removable only with a tool		<b>N</b>
<b>43</b>	<b>FIRE PREVENTION</b>		<b>P</b>
	Strength and rigidity necessary to avoid a fire hazard	Refer to clause 21	<b>P</b>
<b>44</b>	<b>OVERFLOW, SPILLAGE, LEAKAGE, HUMIDITY, INGRESS OF LIQUIDS, CLEANING, STERILIZATION AND DISINFECTION</b>		<b>P</b>
44.2	Equipment contain a liquid reservoir:		<b>N</b>
	- the equipment is electrically safe after 15% overfill steadily over a period of 1 min		<b>N</b>
	- transportable equipment is electrically safe after additionally having been tilted through an angle of 15° in the least favorable direction(s) (if necessary with refilling)		<b>N</b>

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
44.3	Electrical properties of the equipment do not change in connection of spillage test (200 ml of water)		N
44.4	Liquid which might escape in a single fault condition does not wet parts which may cause a safety hazard		N
44.5	Equipment sufficiently protected against the effects of humidity		P
44.6	Enclosures designed to give a protection against harmful ingress of water classified according to IEC Publication 529		N
44.7	Equipment capable of withstanding cleaning, sterilization or disinfection without deterioration of safety provisions		P

<b>45</b>	<b>PRESSURE VESSELS AND PARTS SUBJECT TO PRESSURE</b>		<b>N</b>
45.2	Pressure vessel with pressure volume greater than 200 kPa x l and pressure greater than 50 kPa withstand the hydraulic test pressure		N
45.3	Maximum pressure does not exceed the maximum permissible working pressure for individual parts		N
45.7	Unless excessive pressure can not occur, pressure-relief device provided		N
45.7a	Pressure-relief device connected as close as possible to the pressure vessel		N
45.7b	Readily accessible for inspection		N
45.7c	Not capable of being adjusted or rendered inoperative without a tool		N
45.7d	Discharge opening located that the released material is not directed towards person		N
45.7e	Discharge opening located that operation will not deposit material which may cause a safety hazard		N
45.7f	Adequate discharge capacity to ensure pressure does not exceed the maximum permissible working pressure		N
45.7g	No shut-off valve between a pressure-relief device and the parts intended to be protected		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
45.7h	Minimum number of cycles of operation: 100.000		N
<b>48</b>	<b>BIOCOMPATIBILITY</b>		<b>N</b>
	Parts of equipment and accessories intended to come into contact with biological tissues, cells or body fluids are evaluated in accordance with ISO 10993-1	No applied parts.	N
<b>49</b>	<b>INTERRUPTION OF THE POWER SUPPLY</b>		<b>P</b>
49.1	Thermal cut-outs and over-current releases with automatic resetting not used if they may cause a safety hazard	Not such components provided.	N
49.2	Interruption and restoration of power supply does not result in a safety hazard other than interruption of intended function	The equipment is a computer system (point-of-care) not intended for use with live supporting equipment.	P
49.3	Means are provided for removal of mechanical constraints on patient in case of a supply mains failure		N
<b>51</b>	<b>PROTECTION AGAINST HAZARDOUS OUTPUT</b>		<b>N</b>
51.4	Equipment furnishing both low-intensity and high-intensity outputs provided with means minimizing possibility of a high intensity output being selected accidentally	No such outputs.	N
<b>52</b>	<b>ABNORMAL OPERATION AND FAULT CONDITIONS</b>		<b>P</b>
52.1	Equipment is so designed and manufactured that even in single fault condition no safety hazard as described under 52.4 exists (see 3.1 and Cl. 13)	See below.	P
	The safety of equipment incorporating programmable electronic systems is checked by applying IEC 601-1-4	Incorporated software not relevant for the safety concept of the EUT.	N
52.5.2	Failure of thermostats presents no safety hazards	No thermostat used.	N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
52.5.3	Short-circuiting of either part of double insulation presents no safety hazard	Tested accordingly during the approval of the built-in SPS.	P
52.5.5	Impairment of cooling: temperatures not exceeding 1.7 times the values of Clause 42 minus 17.5°C	Refer to appended table 52.	P
52.5.6	Locking of moving parts presents no safety hazard	The built-in sources of DC fan are approved components.	P
52.5.7	Interruption and short-circuiting of motor capacitors presents no safety hazard	No such components used.	N
52.5.8	Duration of motors locked rotor test in compliance with Cl. 52.5.8		N
52.5.9	Failure of one component at a time presents no safety hazard	Tested accordingly for the approved SPS. For the outputs of the DC/AC inverter, refer to appended table 19.	P
52.5.10	Overload of heating elements presents no safety hazard	No heating elements.	N
	f) Motors intended to be remotely controlled, automatically controlled, or liable to be operated continuously provided with running overload protection	No motors incorporated.	N
	h) Equipment with three-phase motors can safely operate with one phase disconnected		N

<b>56</b>	<b>COMPONENTS AND GENERAL ASSEMBLY</b>		<b>P</b>
	List of critical components	Refer to appended table 56.	P
56.1b	Ratings of components not in conflict with the conditions of use in equipment	All components rated accordingly.	P
	Ratings of mains components are identified	Refer to appended table 56.	P
56.1d	Components, movements of which could result in a safety hazard mounted securely	Evaluated during the approval of the built-in SPS.	N
56.1f	Conductors and connectors secured and/or insulated to prevent accidental detachment resulting in a safety hazard	Ditto.	N
56.3a	Connectors provide separation required by Sub-clause 17g		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Plugs for connection of patient circuit leads can not be connected to other outlets on the same equipment		N
	Medical gas connections not interchangeable	No such connections.	N
56.3b	Accessible metal parts can not become live when detachable interconnection cord between different parts of equipment is loosened or broken	No such cord.	N
56.3c	Leads with conductive connection to a patient are constructed such that no conductive connection remote from the patient can contact earth or hazardous voltages.		N
56.4	Connections of capacitors <i>In the approved built-in switching power supply.</i>		N
	Not connected between live parts and non-protectively earthed accessible parts		N
	If connected between mains part and protectively earthed metal parts comply with: IEC Publication 384-14		N
	Enclosure of capacitors connected to mains part and providing only basic insulation, is not secured to non-protectively earthed metal parts		N
	Capacitors or other spark-suppression devices are not connected between contacts of thermal cut-outs	No such components used.	N
56.5	Protective devices which cause disconnection from the supply mains by producing a short-circuit not provided in equipment	No such devices used.	P
56.6	Temperature and overload control devices		N
	a) Thermal cut-outs which have to be reset by a soldering not fitted in equipment		N
	Thermal safety devices provided where necessary to prevent operating temperatures exceeding the limits		N
	Independent non-self-resetting thermal cut-out provided where a failure of a thermostat could constitute a safety hazard		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Audible warning provided where the loss of function caused by operation of a thermal cut-out presents a safety hazard		N
	Self-resetting thermal cut-outs and self-resetting over-current releases operated 200 times		N
	Non-self resetting over-current releases operated 10 times		N
56.6b	Thermostats with varying temperature settings clearly indicated		N
	Operating temperature of thermal cut-outs indicated		N
56.7	Batteries		P
	a) Battery compartments:		P
	- adequately ventilated	The battery provided is coin-type non-rechargeable Li-Ion battery.	N
	- accidentally short-circuiting is prevented	Prevented by the motherboard design.	P
	b) Incorrect polarity of connection prevented	Prevented by the design of the battery holder.	P
56.8	Indicators - unless indication provided by other means (from the normal operation position), indicator lights are used (color see 6.7):		P
	- to indicate that equipment is energized	Provided on the front enclosure of the equipment.	P
	- to indicate the operation of non-luminous heaters if a safety hazard could result		N
	- to indicate when output exists if a safety hazard could result		N
	- charging mode indicator provided		N
56.10	Actuating parts of controls	See below.	P
56.10b	Actuating parts are adequately secured to prevent them from working loose during normal use	No actuating parts the movement of which may cause hazards.	P
	Controls are secured to prevent the movement relative to scale marking (safety related only)		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Detachable indicating devices are prevented from incorrect connection without the use of tool		P
56.10c	Stops are provided on rotating controls:		N
	- to prevent an unexpected change from maximum to minimum or vice versa where this could produce a safety hazard		N
	- to prevent damage to wiring		N
56.11	Cord-connected hand-held and foot-operated control devices		N
	a) Contain voltages not exceeding 25 V a.c. or 60 V d.c. and isolated from the mains part by Cl. 17g		N
	b) Hand-held control devices comply with the requirement and test of Sub-clause 21.5		N
	- Foot-operated control devices designed to support the weight of an adult human being		N
	c) Devices not change their setting when inadvertently placed		N
	d) Foot-operated control devices are at least IPX 1		N
	- For surgical use, electrical switching parts are IPX 8		N
	e) Adequate strain relief at the cord entry provided		N

57	<b>MAINS PARTS, COMPONENTS AND LAYOUT</b>		P
57.1	Isolation from supply mains		P
	a) Equipment provides means to isolate its circuits electrically from the supply mains on all poles simultaneously	Evaluated during the approval of the built-in SPS.	P
	Means for isolation incorporated in equipment or, if external, specified in the accompanying documents	Ditto.	N
	d) Switches used to comply with Sub-clause 57.1a comply with the creepage distances and air clearances as specified in IEC Publication 328	Ditto.	N



IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	f) Mains switches not incorporated in a power supply cord		P
	h) Appliance couplers and flexible cords with mains plugs provide compliance with Sub-clause 57.1a	See 57.1 a)	P
	m) Fuses and semiconductor devices not used as isolating devices	Not used.	P
57.2	Mains connectors and appliance inlets		P
	e) Auxiliary mains socket-outlets on non-permanently installed equipment of a type that cannot accept a mains plug	No socket outlets.	N
	g) Unless functional earth needs to be provided, Class I appliance inlet is not used in Class II equipment	Class I equipment.	P
57.3	Power supply cords		N
	a) Not more than one connection to a particular supply mains	Not provided.	N
	If alternative supply allowed, no safety hazards when more than one connection is made simultaneously		N
	The mains plug has only one power supply cord		N
	Non-permanently connected equipment provided with power supply cord or appliance inlet		N
	b) Power supply cords sufficiently robust to comply with the requirements of IEC 227, designation 53 and IEC 245, designation 53		N
	Polyvinyl chloride insulated power supply cords not used for equipment having external metal parts with a temperature exceeding 75°C		N
	c) Nominal cross-sectional area of conductors of power supply cords not less than in Table XV	Suitable information for choosing appropriate power cord is provided in the accompanying documents.	N
	d) Stranded conductors not soldered if fixed by any clamping means		N
57.4	Connection of power supply cords		N
57.4a	Cord anchorages		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment provided with power supply cords has cord anchorages such that the conductors are relieved from strain, including twisting		N
	Tying the cord into a knot or tying the ends with string not used		N
	Cord anchorages made of insulating material or metal insulated from unearthed accessible metal parts by supplementary insulation		N
	Cord anchorages made of metal provided with an insulating lining		N
	Clamping screws do not bear directly on the cord insulation		N
	Screws associated with cable replacement are not used to secure other components		N
	Conductors of the power supply cord arranged that the protective earth conductor is not subject to strain as long as the phase conductors are in contact with their terminals		N
57.4b	Power supply cord protected against excessive bending		N
57.4c	Adequate space inside equipment to allow the supply cable conductors to be introduced and connected		N
57.5	Mains terminal devices and wiring of mains part		N
	Mains connected equipment other than those with a detachable supply cord provided with mains terminals, where connections are made with screws, nuts or equally effective methods		N
	If a conductor breaks away, barriers are provided such that creepage distances and air clearances cannot be reduced		N
	Screws and nuts which clamp external conductors not serve to fix any other component		N
	b) Terminals closely grouped with any protective earth terminal		N
	Mains terminal devices accessible only with use of a tool		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Mains terminal devices located or shielded that, should a wire of a stranded conductor escape when the conductors are fitted, there is no risk of accidental contact		N
	c) Internal wiring not subjected to stress when the means for clamping the conductors are tightened or loosened		N
	d) Cord terminals not require special preparation of the conductor		N
57.6	Mains fuses and overcurrent releases		N
	Fuses or over-current releases provided accordingly for Class I and Class II	Provided in the approved SPS.	N
	Current rating of mains fuses and over-current releases such that they reliably carry the normal operating current	Ditto.	N
	Protective earth conductor not fused		N
	Neutral conductor not fused for permanently installed equipment	Not a permanently installed equipment.	N
57.8	Wiring of the mains part		N
	a) Individual conductor in the mains part with insulation not at least electrically equivalent to that of the individual conductors of flexible supply cords complying with IEC 227 or 245, treated as bare conductor		N
	b) Cross-sectional area of conductors up to protective device not less than the minimum required for the power supply cord		N
	Cross-sectional area of other wiring and the sizes of tracks on printed wiring circuits sufficient to prevent any fire hazard		N
57.9	Mains supply transformers <i>Mains supply transformers provided in the approved switching power supply.</i>		N
57.9.1	Overheating		N
	External to the transformer protective devices connected in such a way that failure of any component cannot render the protective devices inoperative		N
57.9.1a	Short-circuit of secondary windings not caused excessive temperature		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
57.9.1b	Overload of secondary windings not caused excessive temperature		N
57.9.2	The dielectric strength of the electrical insulation of a mains supply transformer such that it passes tests		N
57.9.4	Construction		N
	a) Separation of primary and secondary windings		N
	- separate bobbins or formers		N
	- one bobbin with insulating partition		N
	- one bobbin with concentric windings and having copper screen with a thickness of not less than 0.13 mm		N
	- concentrically wound on one bobbin with windings separated by double insulation		N
	c) Means provided to prevent displacement of end turns		N
	d) Insulated overlap of not less than 3 mm if a protective earthed screen has only one turn		N
	e) Insulation between the primary and secondary in transformers with double insulation		N
	- 1 insulation layer with thickness of at least 1 mm		N
	- at least 2 insulation layers with a total thickness of at least 0.3 mm		N
	- three layers provided that each combination of two layers can withstand the dielectric strength test for reinforced insulation		N
	g) Exit of the wires of toroidal transformers provided with double sleeving complying with requirements for double insulation and having total thickness at least 0.3 mm extending at least 20 mm outside the winding		N
57.10	Creepage distances and air clearances		P
	a) Values: compliance with at least the values of Table XVI	All safety separations are provided in the approved switching power supply.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Creepage distances for slot insulation of motors at least 50% of the specified values		N
	b) Minimum creepage distances and air clearances in the mains part between parts of opposite polarity not required if short-circuiting does not produce a safety hazard		N
	c) Creepage distances or clearances of at least 4 mm are maintained between defibrillation-proof applied parts and other parts	No such parts.	N

58	<b>PROTECTIVE EARTHING - TERMINALS AND CONNECTIONS</b> <i>Evaluated for the approved switching power supply.</i>		P
58.1	Clamping means of the protective earth terminal		N
	Not be able to loosen without the aid of a tool		N
	Screws for internal earth connections are covered or protected against loosening from outside		N
58.7	Earth pin of the appliance inlet regarded as the protective earth terminal	Approved SPS with appliance inlet provided.	N
58.8	The protective earth terminal not used for the mechanical connection or the fixing of any component not related to earthing		N
58.9	Where the protective earth connections are made via a plug or socket device the protective earth connection is made before and interrupted after the supply connections during connection and interrupting		N

59	<b>CONSTRUCTION AND LAYOUT</b>		P
59.1	Internal wiring		P
	a) Cables and wiring protected against contact with a moving part	The internal wiring routed away from the rotating blades of internal fans. Additionally where appropriate metal guards are provided to prevent internal wires from contact with the rotating parts.	P

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Wiring having basic insulation only protected by additional fixed sleeving	Internal wiring with basic insulation in contact only with earthed metal parts.	P
	Components are not likely to be damaged in the normal assembly or replacement of covers		P
	b) Movable leads are not bent around a radius of less than five times the outer diameter of the lead		N
	c) Insulating sleeving adequately secured		P
	If the sheath of a flexible cable or cord is used as supplementary insulation it complies with requirements of IEC 227 and IEC 245 and dielectric test		N
	Conductors subjected to temperatures exceeding 70°C have an insulation of heat-resistant material	All internal wiring is suitable rated.	P
	d) Aluminum wires of less than 16 mm <sup>2</sup> cross-section not used	Not used.	P
	f) Connecting cords between equipment parts considered as belonging to the equipment		N
59.2	Insulation		P
	b) Mechanical strength and resistance to heat and fires retained by all types of insulation	Evaluated during the approval of the built-in switching power supply.	P
	c) Insulation not likely to be impaired by deposition of dirt or by dust resulting from wear of parts	No such parts.	N
	Parts of rubber resistant to ageing		N
59.3	Excessive current and voltage protection		N
	Internal electrical power source provided with device for protection against fire hazard	No such source.	N
	Fuse elements replaceable without opening the enclosure fully enclosed in a fuseholder		N
	Protective devices between an isolated applied part and the body of the equipment do not operate below 500 V r.m.s.		N
59.4	Oil containers		N
	Oil containers adequately sealed		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict
	Container allow for the expansion of the oil		N
	Oil containers in mobile equipment sealed to prevent the loss of oil during transport		N
	Partially sealed oil-filled equipment or equipment parts provided with means for checking the oil level		N

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

6.1	TABLE: marking durability		P
Marking tested		Remarks	
Product rating label		Markings are rubbed by hand, without undue pressure, first for 15 s with a cloth rag soaked with distilled water, then for 15 s with a cloth rag soaked with methylated spirit at ambient temperature and then for 15 s with a cloth rag soaked with isopropyl alcohol.	
Supplementary information:			

7	TABLE: power input					P
Operating condition	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Remarks	
Maximum normal load	90	50	2.1	186	Load of the SPS $\approx$ 70% of the maximum load of the SPS during its approval.	
Ditto.	100	50	1.9	185		
Ditto.	240	50	0.8	178		
Ditto.	264	50	0.7	177		
Ditto.	90	60	2.1	186		
Ditto.	100	60	1.9	184		
Ditto.	240	60	0.8	178		
Ditto.	264	60	0.7	177		
Supplementary information: Maximum normal load defined as full white pattern for the LCD display, all built-in drives (see table 56.1) continuous accessing and USB ports loaded at their maximum rated value (2.5W).						

15b	TABLE: residual voltage in attachment plug										N
Voltage measured between:	Measurements [ V ]										Remarks
	1	2	3	4	5	6	7	8	9	10	



IEC 601 + Am. 1 & 2					
Clause	Requirement + Test			Result - Remark	Verdict

Supplementary information: Evaluated during the approval of the built-in switching power supply.										

15c	TABLE: residual voltage or energy in capacitors					N
Capacitor and its location		Residual voltage (V)	Time after disconnection (s)	Capacitance value (μF)	Residual energy (mJ)	Remarks
Supplementary information:						

17h1	TABLE: defibrillation-proof applied parts					N
Test Condition: Fig. 50 or 51	Accessible part of measurement:	Applied part with test voltage	Test voltage polarity	Measured voltage between Y1 and Y2 (mV)	Remarks	
Supplementary information:						

17h2	TABLE: defibrillation-proof recovery time				N
Applied part with test voltage	Test voltage polarity	Recovery time from accompanying documents (s)	Measured recovery time (s)	Remarks	
Supplementary information:					

18	TABLE: protective earthing				P
Test location	Test current (A)	Measured voltage (V)	Resistance (mΩ)	Remarks	
Earth pin of the AC inlet to inner metal chassis	25	0.85	34		

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

around SPS			
Ditto.	40	1.25	31

Supplementary information:

19	TABLE: leakage current				P
Type of leakage current and test condition (including single faults)		Supply voltage (V)	Supply frequency (Hz)	Measured max. value (mA)	Remarks
Before humidity conditioning					
EN; NC (limit = 0.1mA)		264	60	0.02	S1 = 1 or 0; S5 = 0 or 1; S7 = 1
EN; SFC (limit = 0.1mA)		264	60	0.02	S1 = 1 or 0; S5 = 0 or 1; S7 = 1
EN, SFC (limit = 0.5mA)		264	60	0.17	S1 = 1 or 0; S5 = 0 or 1; S7 = 0
After humidity conditioning					
EN; NC (limit = 0.1mA)		264	60	0.02	S1 = 1 or 0; S5 = 0 or 1; S7 = 1
EN; SFC (limit = 0.1mA)		264	60	0.02	S1 = 1 or 0; S5 = 0 or 1; S7 = 1
EN, SFC (limit = 0.5mA)		264	60	0.17	S1 = 1 or 0; S5 = 0 or 1; S7 = 0
(Record at least maximum measured value for each test required by Clause 19 and the specific conditions of the test circuit and equipment).					
Supplementary information: The test was performed for the DC/AC inverter under normal and single fault condition for evaluation of compliance according to sub-clause 17g) The following locations have been tested: CN2 (2 – 4), CN2 (2 – earth), CN2 (4 – earth), T1 (10 – earth). In all cases the DC/AC inverter shutdown. The following single faults were evaluated: D1 s-c, R9 s-c, R2 s-c, R5 s-c, L1 s-c, R17 s-c, C2 s-c, Q9 s-c. "s-c" stands for short circuit. The earth leakage currents have been evaluated for all appropriate positions of S1, S5 and S7 during the approval of the switching power supply.					
Abbreviations used:					
ER - Earth leakage current EN - Enclosure leakage current P - Patient leakage current PM - Patient leakage current with mains on the applied parts PA -Patient auxiliary current			A - After humidity conditioning B - Before humidity conditioning 1 - Switch closed or set to normal polarity 0 - Switch open or set to reversed polarity NC - Normal condition		

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

Fig. 15 - refers to Fig. 15 in IEC601-1 MD - Measuring device	SFC - Single fault condition
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20	TABLE: dielectric strength				P
Insulation under test (area from insulation diagram)	Insulation type: (OP-operational/ BI-basic / SI-supplementary / DI-double / RI-reinforced)	Reference voltage (Va.c.)	Test voltage (Va.c.)	Remarks	
<u>Before humidity conditioning</u>					
A - b	BI	250	1500	No breakdown	
A - a2	RI	533 <sup>1)</sup>	5132	No breakdown	
<u>After humidity conditioning</u>					
A - b	BI	250	1500	No breakdown	
A - a2	RI	533 <sup>1)</sup>	5132	No breakdown	
Supplementary information:					
1) Tested during the approval of the built-in SPS. However, repeated as above with working voltages as measured during the approval of the SPS. The working voltages measured in the SPS as used in the EUT do not exceed this value.					

21	TABLE: mechanical strength		P
Part under test	Test (impact, drop, force, handle, rough handling, mobile)	Remarks	
Plastic enclosure	Force of 45N applied over surface of 625mm <sup>2</sup>	No damages	
Ditto.	Impact with 0.5J	No damages.	
Supplementary information: The equipment was also tested with a force of 334N (four times its weight) applied at the top-side of EUT in order to evaluate the strength of the enclosure when mounted on VESA kit.			

24	TABLE: - stability		N
Part under test	Test condition	Remarks	

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information: Equipment intended for fixed installation.

29	TABLE: X - radiation			N
Part under test		Test condition	Measured radiation (mR)	Remarks
Supplementary information:				

42	TABLE: normal temperature			P
Supply voltage .....:		A. 90V-10%/60Hz B. 240V + 10%/50Hz	Test Condition: Condition A (see appended table 7.1)	
Ambient temperature : 27°C				
Measuring location		Measured temperature [°C]		Remarks (allowed Tmax [°C])
		A.	B.	
For the built-in switching power supply (see note 2)				
EL1 coil		71	58	117
EL2 coil		61	57	117
T1 coil		71	71	107
T2 coil		57	57	107
L1 coil		72	65	117
For the built-in DC/AC inverter				
L2 coil		80	77	92
T2 coil		84	82	92
For the built-in components other than SPS and DC/AC inverter				
PCB near CPU		42	42	117
PCB near U29		43	43	117
HDD body		36	36	47
FDD body		36	36	47

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

DVD-ROM body	38	38	47
Enclosure inside	36	36	72
Enclosure outside	33	33	72
LCD panel	41	42	72
Ambient temperature	27	27	--

## Supplementary information:

The maximum specified ambient temperature is 40°C.

The lowest ambient temperature during the test is 27°C.

The maximum absolute temperatures Tmax (in °C) are calculated as follows:

Winding components (with safety insulation):

- Class B  $\rightarrow T_{max} = 130 - 10^* - (40-27) = 107$

Capacitors or components having:

- maximum temperature of 105°C  $\rightarrow T_{max} = 105 - (40-27) = 92$
- maximum temperature of 130°C  $\rightarrow T_{max} = 130 - (40-27) = 117$

Accessible parts which are held by the operator short period:

- maximum temperature of 60°C  $\rightarrow T_{max} = 60 - (40-27) = 47$
- maximum temperature of 85°C  $\rightarrow T_{max} = 85 - (40-27) = 72$

## Notes:

- 1) An asterisk indicates a mark which refer to IEC 60950: 1991/A4 sub-clause 5.1 condition A "If temperature rises of windings are determined by thermocouples, these figure are reduced by 10 K except in case of motors."
- 2) The output load of the built-in SPS as used within the EUT is approximately 70% of its maximum normal load evaluated during its approval. Only some components were therefore measured in order to evaluate the heating of the power supply with its current load. The temperatures measured are steady regardless the supply voltage and do not exceed the their levels as measured during the approval of the SPS. The sources of optical isolators are located on a separate PCB board at the side of T2. It is unlikely that their approved temperature will be exceeded.

44	TABLE: overflow, spillage, leakage, humidity, ingress of liquids, cleaning, sterilization, disinfection		P
Test type and condition		Part under test	Remarks
Humidity treatment at 40°C, 93% R.H. for 120 hours		Entire equipment.	No hazards.

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:		

45	TABLE: hydrostatic pressure and pressure-relief device cycling test			N
Test type and condition		Part under test	Test pressure	Remarks
Supplementary information:				

52	TABLE: abnormal operation		P
Test type, condition and clause reference	Observed results	Remarks	
Ventilation openings covered	Normal operation. The temperatures on the components do not significantly differ from those measured under normal condition.	No safety hazards.	
CPU fan locked	Ditto.	Ditto.	
D7 short circuit	Li-Ion battery abnormal charge. Charge current = 3mA.	Ditto.	
R421 short circuit	Li-Ion battery abnormal charge. Charge current = 0mA.	Ditto.	
Supplementary information: Test voltage for all tests 240V/60Hz			

56.1	TABLE: lists of critical component parts					P
Object/part No	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
PCB	--	--	V-1 or better, 105°C min.	UL94	UL	
Enclosure material	Chi Mei	PA-765A	V-1 or better , 80°C min.	UL 94	UL	
LCD Panel	AU Optronics Couporation	M170EN07	TFT type, SVGA 17 inch	--	--	
HDD Drive (Optional)	Fujitsu	MHT2020AT	5Vdc, 0.55A max.	EN 60950	TÜV, UL	

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test		Result - Remark		Verdict
FDD Drive (Optional)	NEC	FD3238T	5Vdc, 1.5A max.	EN 60950	TÜV, UL
CD / DVD-ROM / CD-RW Drive (Optional)	Quanta Storage Inc.	SCR-242	5Vdc, 1.5A, Class 1 Laser Product	EN 60950	TÜV, UL
	Toshiba Corp	XM-7004Bxx, XM-1902Bxx	5Vdc, 1.5A, Class 1 Laser Product	EN 60950	TÜV, UL
	Quanta Storage Inc	SDR-XXXX	5Vdc, 1.8A max., Class 1 Laser Product	EN 60950	TÜV, UL
	Matsushita	SR-8175-C, SR-8176-C	5Vdc, 1.8A max., Class 1 Laser Product	EN 60950	TÜV, UL
Lithium Battery	Toshiba	CR2032	3 V, max. Abnormal Charging Current 10mA	UL 1642	UL
	Rayovac	BR2032	3 V, max. Abnormal Charging Current 4 mA	UL 1642	UL
	Sony	CR2032	3 V, max. Abnormal Charging Current 10 mA	UL 1642	UL
	Vic-Dawn Enterprise Co Ltd	CR2032	3 V, max. Abnormal Charging Current 10 mA	UL 1642	UL
	Mitsubishi Electric Corp	CR2032	3 V, max. Abnormal Charging Current 10 mA	UL 1642	UL
	Matsushita	CR2032	3 V, max. Abnormal Charging Current 5 mA	UL 1642	UL
System Fan	ADDA	AD0612MB-	12V, 0.13A,	EN 60950	TUV, UL

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test		Result - Remark		Verdict
		G76	12.0 CFM		
	ADDA	AD0612LB-G76	12V, 0.11A, 11.7 CFM	EN 60950	TUV, UL
Inverter	Lecerf Technology Co., Ltd	LV-1701LC-A	I/P: 12V, 1.8A, Output: 680Vrms, 13mA.	--	--
- Transformer (T1, T2)	Lecerf Technology Co., Ltd	X08-C-1	105°C	--	--
Polyswitch (L6)(for VGA connector)	Polytronics	SMD0805P02 0T(+)	9Vdc, 0.2A, (Ih), 0.5A (It)	IEC 60730-1	UL, TUV
Polyswitch (FS5) (for PS2 connector)	Tyco Corp. (Raychem)	miniSMDC110	8 Vdc, 1.1 A	IEC 60730-1	UL, TUV
Power Supply	FSP Group Inc	FSP180-50MP	Input: 100-240Vac, 4A, 50-60Hz. DC Output: +3.3V/16.8A, +5V/12A, +12V/12A, +5Vsb/2.0A, -12V/0.8A	--	CB
1. Enclosure	--	--	Metal, thick 0.6 mm	--	--
2. PCB	--	--	Min. V-0, min. 130°C	UL 94	UL
3. Appliance Inlet	Hua Feng	HF-301	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E164798)
	Rong Feng	SS-7B, SS-120	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E102641)
	Supercom	SC-9	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E152973)
	Inalways	0711, 0707-1, 0707	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E94191) VDE
	Singatron	AC-008A	10A, 250V	IEC 60320-1 /	VDE / UL



IEC 601 + Am. 1 & 2					
Clause	Requirement + Test		Result - Remark		Verdict
				UL498	(E67635)
	Rich Bay	R-301SN, R-301	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E128780)
	Kautt & Bux KG	SFF330	10A, 250V	IEC 60320-1	VDE
	Solteam	ST-01	10A, 250V	IEC 60320-1 / UL498	VDE / UL (E200241)
4. Y-capacitors (CY1, CY2, EC2, EC3) (Optional)	Matsushita	NS-A, RS, TS, ECQ-UV	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E62674)
(CY1, CY2: secured on inlet) (EC2, EC3: loc. on E-board)	Murata	KC, KH	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E37921)
	Pan Overseas	AC, AH	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E146544)
	Sam Hwa	SC	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E97754)
	Welson	KL	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E104572)
	TDK	CS, CD	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E37861)
	Rifa	PHE 289M, PHE 271Y	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E100117)
	Samsung [Netron]	AD, AA	Max. 220pF, Min. 400Vac	IEC 60384-14 2ed. [UL1414]	VDE [UL (E87113)]
	Iskra	KNB2520	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E103619)
	Siemens [Epcos]	B81122 series	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. [UL1414]	VDE [UL (E97863)]
	Success	SE, SF, SB	Max. 220pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E114280)
5. X-capacitors (CX) (Optional) (Secured on inlet)	Pilkor	PCX2 335M	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E165646)

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test		Result - Remark		Verdict
	Taishing	MPX	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E64032)
	Matsushita	ECQ-UL	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E62674)
	Iskra	KNB1530, KNB1560, KNB1520	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414 IEC 60384-14 2ed.	VDE / UL (E145156) VDE
	Roederstein (ERO)	F1772	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E76297)
	Okaya	RE, LE, PA series	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E78644)
	UTX [Dong Guan Qi Shi Sin Yu]	HQX	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. [UL1414]	VDE [UL (E2241300)]
	Nitsuko	CFKC	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E84015)
	Teapo	XG-VP, XG-VS	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E81959)
	Thomson	QX	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed.	VDE
	Chiefcon	CKX	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E209251)
	Rifa	PHE 830M, PHE 840M	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E73869)
	Siemens [Epcos]	B81130	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. [UL1414]	VDE [UL (E97863)]
	Farad	FXK	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E178496)
	Hua Jung	MKP	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E149075)
	Philips	PCX2 335	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed.	VDE
	Cheng Tung	CTX	Max. 0.68µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E193049)
6. Fuse (EF1, EF2)	Conquer	MST	T4A, 250V	IEC 60127-3 / UL248	VDE / UL (E82636)
	Wickmann-	392	T4A, 250V	IEC 60127-3 /	VDE /

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test			Result - Remark	Verdict
	Werke			UL248	UL(E67006)
7. X-capacitor (EC1) (Optional) (Loc. on E-board)	Pilkor	PCX2 335M	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E165646)
	Taishing	MPX	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E64032)
	Matsushita	ECQ-UL	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E62674)
	Iskra	KNB1530, KNB1560, KNB1520	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414 IEC 60384-14 2ed.	VDE / UL (E145156) VDE
	Roederstein (ERO)	F1772	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E76297)
	Okaya	RE, LE, PA series	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E78644)
	UTX [Dong Guan Qi Shi Sin Yu]	HQX	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. [UL1414]	VDE [UL (E2241300)]
	Nitsuko	CFKC	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E84015)
	Teapo	XG-VP, XG-VS	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E81959)
	Thomson	QX	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed.	VDE
	Chiefcon	CKX	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E209251)
	Rifa	PHE 830M, PHE 840M	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E73869)
	Siemens [Epcos]	B81130	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. [UL1414]	VDE [UL (E97863)]
	Farad	FXK	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E178496)
	Hua Jung	MKP	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E149075)
	Philips	PCX2 335	Max. 0.1µF, Min. 250V	IEC 60384-14 2ed.	VDE

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test		Result - Remark		Verdict
	Cheng Tung	CTX	Max. 0.1 $\mu$ F, Min. 250V	IEC 60384-14 2ed. / UL1414	VDE / UL (E193049)
8. Bleeder Resistor (ER10) (Loc. on E-board)	--	--	560 k $\Omega$ , 1/4W Loc. after fuse	--	--
9. Bleeder Resistor (RX) (Secured on inlet)	Tai	RD	560 k $\Omega$ , 1/4W Loc. before fuse	IEC 60065	N
10. Y-capacitors (C3, C4) (Optional)	Matsushita	NS-A, RS, TS, ECQ-UV	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E62674)
	Murata	KC, KH	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E37921)
	Pan Overseas	AC, AH	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E146544)
	Sam Hwa	SC	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E97754)
	Welson	KL	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E104572)
	TDK	CS, CD	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E37861)
	Rifa	PHE 289M, PHE 271Y	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E100117)
	Samsung [Netron]	AD, AA	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. [UL1414]	VDE [UL (E87113)]
	Iskra	KNB2520	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E103619)
	Siemens [Epcos]	B81122 series	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. [UL1414]	VDE [UL (E97863)]
	Success	SE, SF, SB	Max. 470pF, Min. 250Vac	IEC 60384-14 2ed. / UL1414	VDE / UL (E114280)
11. Storage capacitor (C7)	--	--	120 $\mu$ F, 450V, min. 105°C	--	--
12. Photo coupler (IC3, EU5,	Toshiba	TLP732	dti = 0.4 mm	IEC 60950	FI

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test			Result - Remark	Verdict
EU6)					
(EU5, EU6: on C-board)	Vishay	CNR 21	dti > 2 mm	VDE 0884 IEC 60950 UL1577	VDE FI UL(E76222)
	Fairchild	H11....	dti > 0.5 mm	VDE 0884 IEC 60950 UL1577	VDE FI UL(E90700)
13. Choke (EL1, EL2) (Optional) (Loc. on E-board)	SPI	8LM00376	130°C	--	--
14. Choke (L1) (Optional)	SPI	8LM00258	130°C	--	--
15. Choke (L6) (Optional)	SPI	8LM00257	130°C	--	--
16. Choke (L8) (Optional)	SPI	8LM00375	130°C	--	--
17. Choke (L12) (Optional)	SPI	8LA00057	130°C	--	--
18. Transformer (T1)	SPI	8TG00107	Class B	Applicable part according IEC 60601-1 and IEC 60085	Accepted by TÜV
19. Transformer (T2)	SPI	8TC00164	Class B	Applicable part according IEC 60601-1 and IEC 60085	Accepted by TÜV
20. Varistor (M1) (Optional)	Centra	CNR-07D471K	300Vac, 385Vdc	UL1449	UL (E150709)
	Song Long	07D471K, SAS-471KD07	300Vac, 385Vdc	UL1449	UL (E171541)
	Matsushita	V7241U	300Vac, 385Vdc	UL1449	UL (E86821)
	Thinking	TVR07471	300Vac, 385Vdc	UL1449	UL (E173642)
	Joyin	JVR07N471K	300Vac, 385Vdc	UL1449	UL (E153360)

IEC 601 + Am. 1 & 2					
Clause	Requirement + Test			Result - Remark	Verdict
	Ceramate	GNR07D471K	300Vac, 385Vdc	UL1449	UL (E166389)
	Uppermost	V07K300	300Vac, 385Vdc	UL1449	UL (E105157)
	Epcos	S07K150	300Vac, 385Vdc	UL1449	UL (E97877)
	Maida	Z151-03	300Vac, 385Vdc	UL1449	UL (E86730)
	AVX	VF07M10241K	300Vac, 385Vdc	UL1449	UL (E84108)
21. DC fan	Sunonwealth	KDE1204PKBX	12Vdc, 0.13A, 10.8CFM	IEC 60950 / UL507	TUV / UL (E77551)
	Protechnic / Rotechnic	MGA4012ZB- A20	12Vdc, 0.22A, 11.09CFM	IEC 60950 / UL507	TUV / UL (E187236)
1) an asterisk indicates a mark which assures the agreed level of surveillance					

56.10	TABLE: actuating parts and controls		N
Part under test		Torque applied	Remarks
Supplementary information:			

56.11b	TABLE: foot operated control devices-loading		N
Part under test		Observed results	Remarks
Supplementary information:			

57.4	TABLE: cord anchorages				N
Cord under test		Mass of equipment	Pull	Torque	Remarks
					Verdict

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

57.4b	TABLE: cord bending			N
Cord under test	Test mass	Measured curvature	Remarks	

Supplementary information:

57.9.1a	TABLE: transformer short circuit					N
Winding under test	Protection	Measured temperatures (°C)			Test duration	Remarks
		Primary	Secondary	Ambient		

Supplementary information: Tested during the approval of the SPS. Unit shutdown.

57.9.1b	TABLE: overload						N
Winding under test	Protection	Measured temperatures (°C)			Test duration	Test current or thermal cut-out temp.	Remarks
		Primary	Secondary	Ambient			

Supplementary information: Tested during the approval of the SPS. The measured temperatures are far below the limits.

57.9.2	TABLE: transformer dielectric strength				N
Transformer under test	Test voltage applied to	Test voltage (V)	Test frequency (Hz)	Remarks	
Supplementary information: Tested during the approval of the SPS.					

IEC 601 + Am. 1 & 2			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: additional tests			P
Clause	Test type and condition	Remarks and observed results	Verdict
2.11 of IEC 60950:1991/A4	<p>Limited power source measurement according to the requirements of IEC 60950:1991/A4. The test is performed for the PS2, USB and VGA ports.</p> <p>Compliance with the requirements is ensured by the usage of PTC devices provided in the power lines of those ports.</p>	<p>U<sub>oc</sub> = 5.05V (for PS2)  U<sub>oc</sub> = 5.15V (for USB)  U<sub>oc</sub> = 5.04V (for VGA)  I<sub>sc</sub> = 1.65A (for PS2)  I<sub>sc</sub> = 0.88A (for USB)  I<sub>sc</sub> = 0.97A (for VGA)  Max. VA = 6.14, limit = 25.25VA (for PS2)  Max. VA = 3.95, limit = 25.75VA (for USB)  Max. VA = 4.03, limit = 25.20VA (for VGA)  Max. VA = 6.14 (for PS2)  Max. VA = 3.95 (for USB)  Max. VA = 4.03 (for VGA)</p>	Pass



**SUMMARY OF CONTENTS:**

The equipment has been tested according to standard IEC 60601-1: 1988 + A1 + A2/ EN 60601-1: 1990 + A1 + A2 + A13.

All applicable tests according to the above specified standard(s) have been carried out.

These tests fulfill the requirements of standard EN45001.

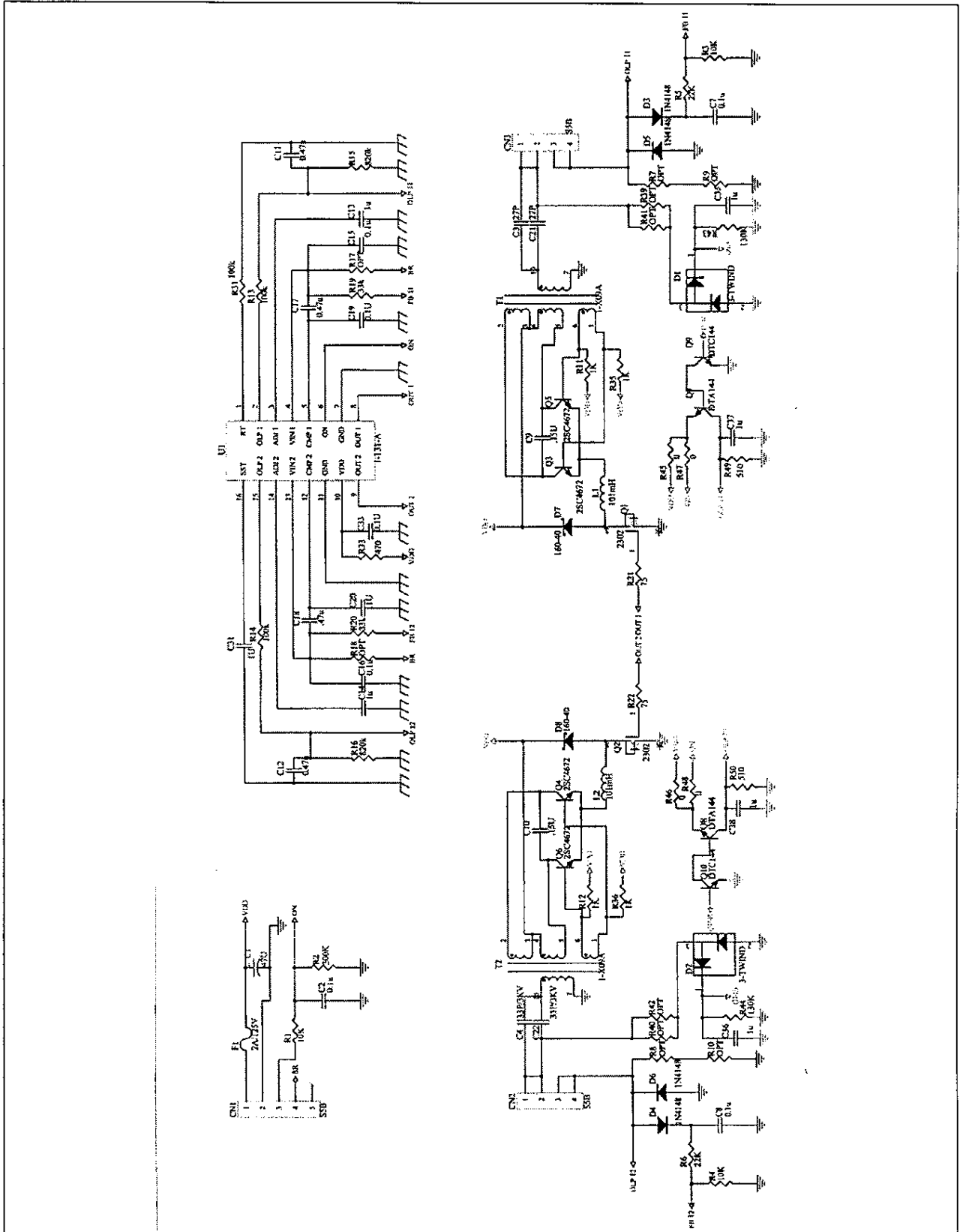
This test report comprises 56 pages of Test Report (including this page), the following Attachments and a two-page questionnaire:

Attachment #	Description	Pages
1	Circuit diagram for the DC/AC inverter	57
2	PCB layout for the DC/AC inverter	58-60

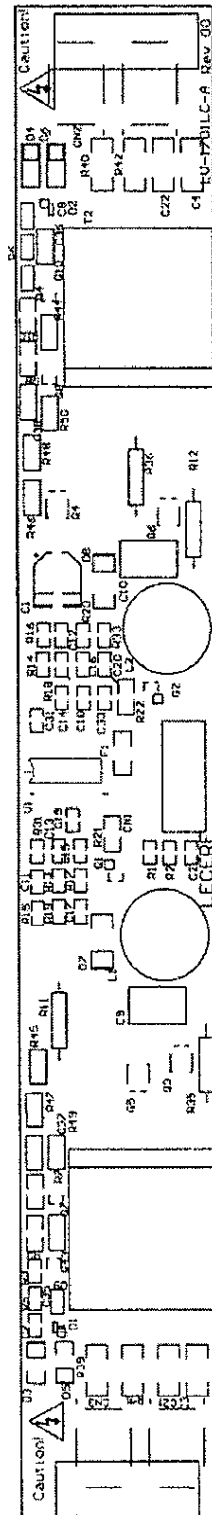
**Note:**

Attachments may include Schematics, Components information, Component test Reports, Particular Standard test Reports, Standard test Reports, Information from accompanying documents and similar.

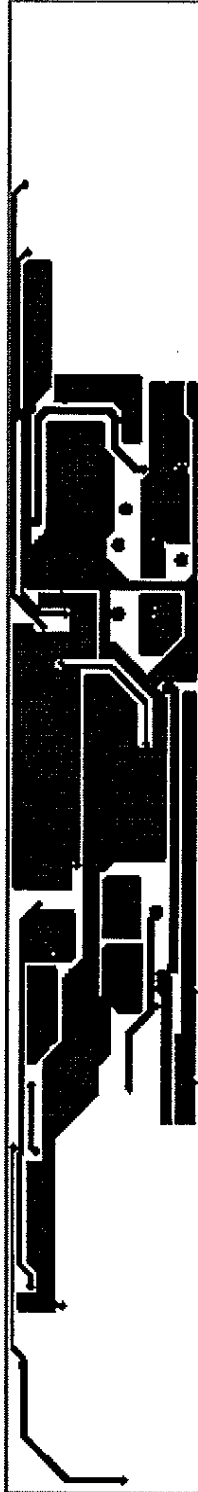
Attachment 1



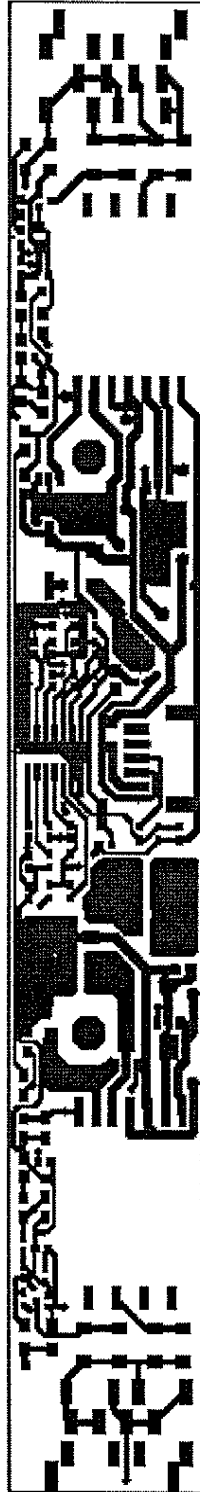
Attachment 2



Attachment 2



Attachment 2



**Questionnaire: Acceptability of second- and manufacturer laboratories.**

(This questionnaire has to be filled out in case the laboratory has no accreditation according EN 45 001/2)

Name of inspector: Angel Deltchev

Reference (report-no.): <10009176 001>

Questions (excerpt from QSA 3.105.12):

1. Is there an evidence for the qualification of the staff who is are charge of testing?  
- Yes
2. Is the special competence of the staff sufficient for the testing purpose?  
- Yes
3. Is there a training program for the staff and the leading personal?  
- Yes
4. Is the laboratory equipped with all instruments for testing and measuring?  
- Yes
5. Are the test rooms applied with all equipment needed for testing and are these ready for operation?  
- Yes
6. Is the necessary cleanliness and neatness kept?  
- Yes
7. Is all equipment under regular maintenance and are the maintenance periods and extend defined in a written form?  
- Yes
8. Are all used test and measurement instruments registered?  
- Yes, see measurement equipment list.

File of all test and measurement instrument:

- See measurement equipment list.

Which data is included in the file?

- See measurement equipment list.

9. Are all test and measurement instruments calibrated and adjusted in a sufficient way?  
- Yes, see measurement equipment list.

Are periods for calibration and adjustment defined (lists, QA-support)?

- See measurement equipment list.

Are adjustment and calibration recorded (marking of the equipment, registration in lists)?

- See measurement equipment list.

Is the adjustment and calibration done with gauges equipment?

- Yes

Is it guaranteed that overstressed, wrong handled or defective equipment is put out of service, marked and if necessary stored at certain locations until repair?

- Yes

Is there a procedure to check the impact on previous tests caused by defective equipment?

- Yes

Are there instructions for the handling of defective measurement instruments? (Measures also regarding the tested materials?)

- Yes

Are calibration and adjustment also handled by other institutions (equipment manufacturers)?

- Yes, by ITRI or ETC.

10. Is the mother equipment only used for adjustment/calibration and is it stored sufficiently?

- Yes

11. Does the test laboratory take part in comparison tests with other test laboratories in case there is no trace to a standard unit, in order to prove the accuracy of test results?

- Yes

12. Where are mother equipment calibrated?

- ETC or ITRI.

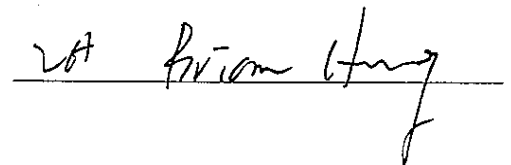
13. Which standard units and master equipment are provided in the test laboratory, is the traceability to national or international standard units guaranteed?

- Yes

Place, date

The inspector's signature

Taipei, Feb. 26, 2004



Applied For Safety Inspection

Company/Test Institute: Superior Product Consulting, Inc.

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

Person responsible for

Maintenance &amp; Calibration: Terry wang/ Team Leader

Division/Department: Test Lab.

Date and Signature: Terry WangReviewer: 1/8/04

DATE: JAN, 08, 2004

REV: A

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. 2004 23, JUN. 2003
2	AC Power Meter SPC009	YOKOGAWA	2433 61LD0248	20A 600V	22, JUN. 2004 23, JUN. 2003
4	LEAKAGE CURRENT METER SPC103	SIMPSON	228 20433	0-100mA	13, APR. 2004 14, APR. 2003
5	PUSH/PULL SCALE SPC004	IMADA	FB-30 207330	30KG	23, JUN. 2004 24, JUN. 2003
8	DC ELECTRONIC LOAD SPC069	PRODIGIT	3301A 80201A011	60V/60A	04, MAR. 2004 05, MAR. 2003
9	CALIPER SPC019	MITUTOYO	500-321 7217225	150mm	10, FEB. 2004 11, FEB. 2003
10	TEMP. RECORDER SPC014	YOKOGAWA	UR180 48YP0718	-200°C TO 400°C	08, OCT. 2004 09, OCT. 2003
11	TEMP. RECORDER SPC012	YOKOGAWA	UR180 48YP0719	-200°C TO 400°C	11, NOV. 2004 12, NOV. 2003
12	TEMP. RECORDER SPC033	YOKOGAWA	UR180 42YS0028	-200°C TO 400°C	13, AUG. 2004 14, AUG. 2003
13	TEMP. RECORDER SPC099	FLUKE	52 4795005	-200°C TO 760°C	24, JUL. 2004 25, JUL. 2003
14	DIGITIZING OSCILLOSCOPE SPC047	TEKTRONIX	TDS410 B010359	150MHz 100MS/s	08, JAN. 2005 08, JAN. 2004
15	DUAL DISPLAY MULTIMETER SPC018	FLUKE	45 5120082	750Vac 10A	10, FEB. 2004 11, FEB. 2003
17	THERMO-HYGROMETER SPC067	ISUZU	3-3122 80660571	-15°C - +40°C 0-100% RH	22, JUN. 2004 23, JUN. 2003
18	DC ELECTRONIC LOAD SPC028	PRODIGIT	3301 205010035	60V/60A 250V/10A	01, MAY. 2004 02, MAY. 2003
19	DC ELECTRONIC LOAD SPC035	PRODIGIT	3301 210010074	60V/60A 250V/10A	01, MAY. 2004 02, MAY. 2003
20	AC/DC CURRENT PROBE SPC047	TEKTRONIX	A622 06-14-94	70Arms 100Apk	01, MAY. 2004 02, MAY. 2003
21	DC ELECTRONIC LOAD SPC057	PRODIGIT	3321 607020098	60V/60A	25, AUG. 2004 26, AUG. 2003
22	DC ELECTRONIC LOAD SPC089	PRODIGIT	3321 607020097	60V/60A	23, JUL. 2004 24, JUL. 2003
23	DIGITIZING POWER METER SPC059	PRODIGIT	4011 964011133	600V/20A	25, JUL. 2004 26, JUL. 2003
24	STOP WATCH SPC068	CASIO	HS-3 209Q05	0 S-10 HOURS	16, SEP. 2004 17, SEP. 2003
25	DIGITIZING MUTIMETER SPC060	GOOD WILL	GDM-8055 6040254	750Vac 2A 20MΩ	22, JUN. 2004 23, JUN. 2003
27	POWER ANALYSER SPC063	AVPOWER	PA2100 621-0597	650Vrms 20A	10, APR. 2004 11, APR. 2003
28	DC ELECTRONIC LOAD SPC066	PRODIGIT	3301A 70601A022	60V/60A 250V/10A	25, AUG. 2004 26, AUG. 2003

Note: 儀器送校驗前請先確認「QE-01-Table-02 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.

File E 214164 Project SPC PROJECT NO 31163



Item	Kind of Instrument Precision Class SPC Property No.	Manufacturer	Model Serial No.	Range Used &Function	Calibrated until
29	TEST FINGER SPC039	UL	SM471	UL1950	21, MAR. 2004
			S002	FIG. 19	22, MAR. 2002
30	BALL PRESSURE SPC041	UL	S1598	UL1950	21, MAR. 2004
			S004	FIG. 21	22, MAR. 2002
31	IMPACT BALL ----	UL	----	50mm	21, MAR. 2004
			S003	500g	22, MAR. 2002
32	TEST PIN SPC040	UL	S2962	UL1950	21, MAR. 2004
			S001	FIG. 20	22, MAR. 2002
33	DC ELECTRONIC LOAD SPC077	PRODIGIT	3301A	60V/60A	25, AUG. 2004
			80701A043		26, AUG. 2003
34	DC ELECTRONIC LOAD SPC079	PRODIGIT	3301A	60V/60A	27, AUG. 2004
			80701A042	--	28, AUG. 2003
35	DC ELECTRONIC LOAD SPC080	PRODIGIT	3302A	60V/30A	21, AUG. 2004
			808020375		22, AUG. 2003
36	DC ELECTRONIC LOAD SPC081	PRODIGIT	3302	60V/30A	21, AUG. 2004
			808020378		22, AUG. 2003
37	DC ELECTRONIC LOAD SPC078	ZENTECH	2600R	60V/60A	21, AUG. 2004
			809055	300V/10A	22, AUG. 2003
38	TEMP. RECORDER SPC082	YOKOGAWA	UR1800	-200°C TO 400	11, FEB. 2004
			4370GE038		12, FEB. 2003
39	TEMP. RECORDER SPC083	YOKOGAWA	UR1800	-200°C TO 400	08, JAN. 2005
			4370GE037		08, JAN. 2004
40	TEMP. RECORDER SPC090	YOKOGAWA	UR1800	-200°C TO 400	08, JAN. 2005
			4370GE046		08, JAN. 2004
41	DC ELECTRONIC LOAD SPC091	PRODIGIT	3302A	60V/30A	07, OCT. 2004
			811020578		08, OCT. 2003
42	DC ELECTRONIC LOAD SPC088	PRODIGIT	3302A	60V/30A	07, OCT. 2004
			811020580		08, OCT. 2003
43	DC ELECTRONIC LOAD SPC098	PRODIGIT	3301A	60V/60A	11, NOV. 2004
			80901A045		12, NOV. 2003
44	TEST FINGER SPC070	UL	FIGURE 19	UL1950	21, MAR. 2004
			2346	FIG. 19	22, MAR. 2002
45	DC ELECTRONIC LOAD SPC092	PRODIGIT	3301A	60V/60A	07, OCT. 2004
			80901A046		08, OCT. 2003
46	DIGITIZING OSCILLOSCOPE SPC093	TEKTRONIX	TDS360	200MHz	27, AUG. 2004
			B019983	1GS/s	28, AUG. 2003
47	DUAL DISPLAY MULTIMETER SPC094	FLUKE	45	750Vac	08, JAN. 2005
			7079032	10A	08, JAN. 2004
48	HI-POT TESTER SPC095	ZENTECH	ZT9072A	10mA	27, AUG. 2004
			809549	5KV	28, AUG. 2003
49	GROUNDING TESTER SPC096	ZENTECH	ZT9570	12V	27, NOV. 2004
			807786	40A	28, NOV. 2003
50	LEAKAGE CURRENT METER SPC097	SIMPSON	228	0-100mA	08, OCT. 2004
			20988		09, OCT. 2003
51	DIGITIZING POWER METER SPC094	PRODIGIT	4011	600V/20A	11, FEB. 2004
			984011034		12, FEB. 2003
52	CALIPER SPC084	MITUTOYO	CD-6"CS	150mm	11, NOV. 2004
			0305366		12, NOV. 2003
53	TEMP. RECORDER SPC072	YOKOGAWA	UR1800	-200°C TO 400	11, NOV. 2004
			4370GC179		12, NOV. 2003
54	AC POWER METER SPC101	YOKOGAWA	2433	20A	08, JAN. 2005
			68LD0040	600V	08, JAN. 2004
56	TEMP. RECORDER SPC104	YOKOGAWA	UR1800	-200°C TO 400	11, FEB. 2004
			12W732059		12, FEB. 2003
57	TEMP. RECORDER SPC106	FLUKE	52	-200°C TO 760°C	06, MAR. 2004
			73990047		07, MAR. 2003
58	DIGITIZING POWER METER SPC107	CHYNG HONG	CP-350	500V/50A	09, MAR. 2004
			355952		10, MAR. 2003
59	DIGITIZING POWER METER SPC105	CHYNG HONG	CP-350	500V/50A	09, MAR. 2004
			355953		10, MAR. 2003
60	Temperature/Humidity Test Chamber SPC005	KAOTIEH	KT-7005-A	25°C to 40°C	26, OCT. 2004
			72867	93%R.H. to 95%R.H.	27, OCT. 2003

Note: 儀器送校驗前請先確認「QE-01-Table-02 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。

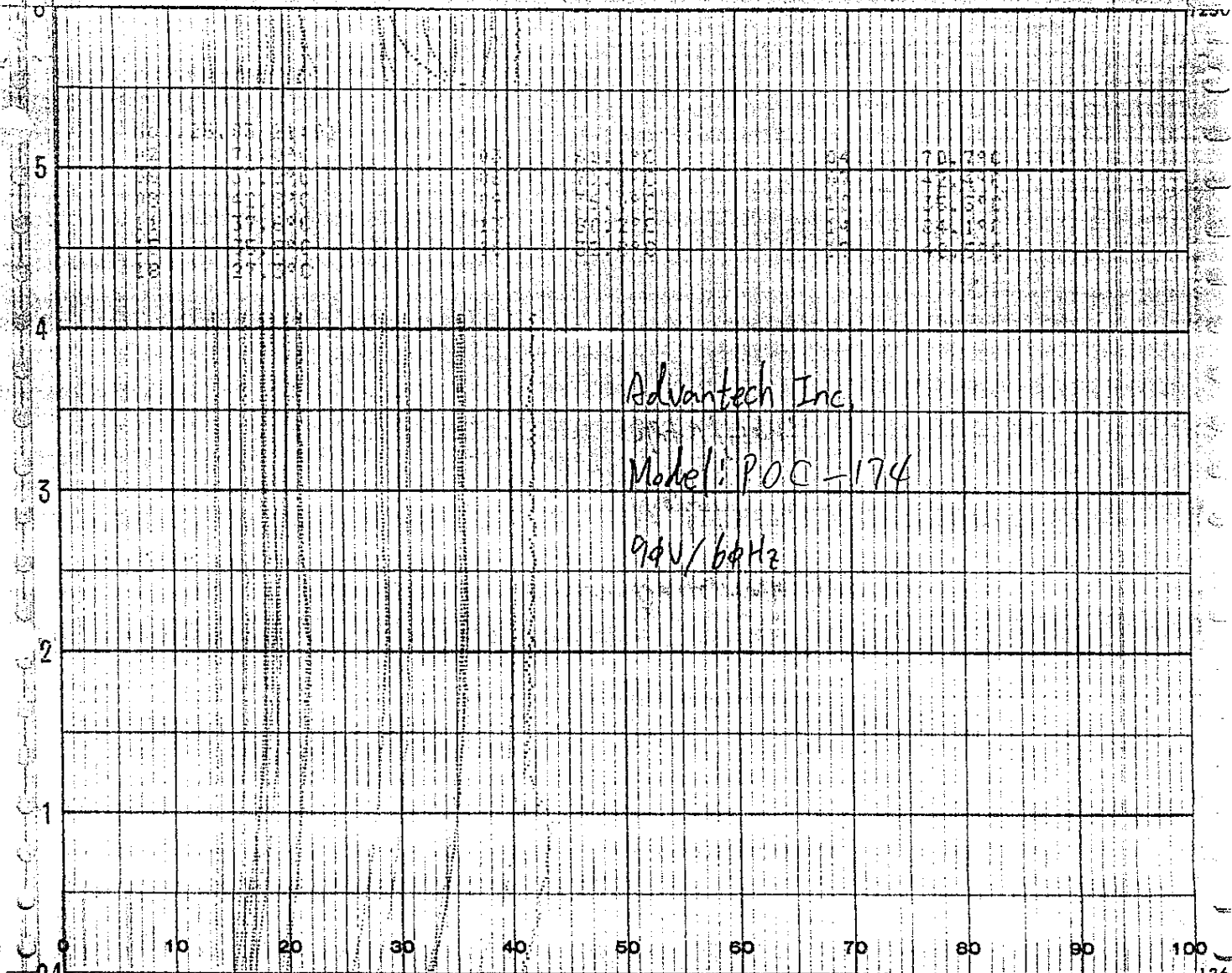
File E 214164 Project

SPC PROJECT NO 31163

File: E 180881  
 Project: 03SC10025  
 SPC PROJECT NO.: 31163  
 Sample #: 1

Tested by (signature) Joe Wang  
 Tested by (print) Joe Wang  
 Test date 11/25/03

Instrument Code / Range: 18, 24, 44, 41, 59



SUPERIOR PRODUCT CONSULTING, INC.

Page 15 of     

File: E 180881

Tested by (signature) Joe Wang

Project: 03SC10025

Tested by (print) Joe Wang

SPC PROJECT NO.: 31163

Test date 11/25/03

Sample #: 1

Instrument Code / Range: 18, 24, 40, 41, 59

Geprüft und Genehmigt  
(Reviewed and approved)

JUL 20 2004

TÜV Rheinland Group

*Reinhold Hune*

CHART NO. 895TK109-111 (A1.1)

KOMPAKTE AIRDRYER

Advantech Inc.

Model: POC-174

264V/50Hz