Low Voltage Directive Report

鼎安科技股份有限公司
SUPERIOR PRODUCT CONSULTION, INC
3F, NO. 10, ALLEY 6, LANE 235, PAO CHIAO RD., HSIEN TIEN, TAIPEI, TAIWAN R. O. C.
台北縣新店市寶橋路235巷6弄10號3F
TEL:886-29174137 FAX:556-2-29184517

TÜV Rheinland Taiwan Ltd.

TÜV

Certificate

of

Appointment

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

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

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

An assessment of the facility was conducted by TÜV Rheinland auditors according to the laboratory qualification requirements of TR with reference to

ISO 17025: 2005

Certificate No. : 10010807-2006 **Valid until : Oct. 4, 2007**

TÜV Rheinland Taiwan Ltd.
Taipei, August 8, 2006

Dipl.-Ing. Andreas Klinker
Certification Body

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV

Attachment to

Certificate

of Appointment
SCOPE OF AUTHORIZATION

for

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

European Standards

EN 60950 EN 60065	EN 60950-1

Basic and International Standards

IEC 60950 IEC 60065	IEC 60950-1

Certificate No. : 10010807-2006

Taipei, August 8, 2006

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

DECLARATION OF CONFORMITY

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

Type of Product ..... : **ETX Board**

Model Designation..... : **ETX-821**

Manufacturer' s Name ..... : **AAEON TECHNOLOGY INC**

Manufacturer' s Address.... : **5TH FL 135 LANE 235 PAO CHIAO RD HSIN-TIEN, TAIPEI TAIWAN**

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

IEC 60950-1, First Edition (2001)

EN 60950-1, First Edition (2001)

Person responsible for making this declaration

Name, Surname .....:

Position/Title .....:

CE

(Place)	(Date)	(Company stamp and signature)

COVER PAGE FOR TEST REPORT

Product:	ETX Board
Model/Type Reference:	ETX-821
Rating(s):	3.3 Vdc and 5 Vdc
Standards:	IEC 60950-1, First Edition
Applicant Name	AAEON TECHNOLOGY INC
Applicant Address:	5TH FL 135 LANE 235 PAO CHIAO RD HSIN-TIEN, TAIPEI TAIWAN
Result:	Pass
This Report includes the following parts, in addition to this cover page:	
	1. Clause Verdicts 2. Critical Components 3. Test Results 4. Enclosures

This is to certify that representative samples of the products covered by this Test Report have been investigated by “Superior Product Consulting, Inc.” in accordance with the above referenced Standards. The products have been found to comply with the requirements.
This report shall not be reproduced, except in full, or with the written approval of “Superior Product Consulting, Inc.”.

Test Report By:

Cus Chen
Engineer

Reviewed By:

Tim Lu
Supervisor

TEST REPORT

(IEC 60950-1, First Edition) Information technology equipment - Safety- Part 1: General Requirements	
Report Reference No..... :	SPCLVD 612035
Compiled by..... :	Cus Chen / Engineer 
Reviewed by ..... :	Tim Lu/ Supervisor 
Date of issue ..... :	January 5, 2007
Testing laboratory name..... :	Superior Product Consulting, Inc.
Testing location ..... :	5F, No. 8, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan
Client name ..... :	AAEON TECHNOLOGY INC
Address ..... :	5TH FL 135 LANE 235 PAO CHIAO RD HSIN-TIEN, TAIPEI TAIWAN
Standards ..... :	IEC 60950-1, First Edition
Test procedure ..... :	QE-19, IEC/EN 60950-1
Non-standard test method..... :	NA
Test item description ..... :	ETX Board
Trademark ..... :	AAEON
Model and/or type reference ..... :	ETX-821
Rating(s) ..... :	3.3 Vdc and 5 Vdc

Particulars: test item vs. test requirements	
Equipment mobility ..... :	Building-in type
Operating condition ..... :	continuous
Mains supply tolerance (%) ..... :	N/A
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment..... :	Class III
Mass of equipment (kg) ..... :	0.29
Protection against ingress of water ..... :	IPX0

Possible test case verdicts:	
-不適用 test case does not apply to the test object ... :	N / A
-符合要求 test object does meet the requirement ..... :	Pass
-不符合要求 test object does not meet the requirement ..... :	Fail

General remarks:

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

GENERAL PRODUCT INFORMATION:	
A1.0	**Report Summary**
A1.1	N/A
B1.0	**Product Description**
B1.1	CPU board with heatsink and installed with one memory module.
C1.0	**Model Differences**
C1.1	N/A
D1.0	**Additional Information**
	The component was submitted and tested for a maximum manufacturer recommended ambient (Tma) of 60°C.

1	**GENERAL**		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950 or relevant component standard	Components which are found to affect safety, comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. See appended table 1.5.1.	Pass
1.5.2	Evaluation and testing of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings or have been evaluated during this approval.	Pass
1.5.3	Thermal controls	No thermal controls provided.	N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors in primary circuits :		N/A
1.5.7	Double insulation or reinforced insulation bridged by components		N/A
1.5.7.1	General		N/A
1.5.7.2	Bridging capacitors		N/A
1.5.7.3	Bridging resistors		N/A
1.5.7.4	Accessible parts		N/A
1.5.8	Components in equipment for IT power systems	To be considered when national approal.	N/A

1.6	**Power interface**		Pass
1.6.1	AC power distribution systems		Pass
1.6.2	Input current		N/A
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A

1.7	**Marking and instructions**		Pass
1.7.1	Power rating		Pass
	Rated voltage(s) or voltage range(s) (V).....:	3.3 Vdc and 5 Vdc	Pass
	Symbol for nature of supply, for d.c. only.....:		Pass
	Rated frequency or rated frequency range (Hz) :	--	Pass

	Rated current (mA or A) .....:	--	Pass
	Manufacturer's name or trademark or identification mark .....:	AAEON	Pass
	Type/model or type reference .....:	ETX-821	Pass
	Symbol for Class II equipment only .....:		N/A
	Other symbols		N/A
	Certification marks .....:	CE Mark	Pass
1.7.2	Safety instructions	Safety instructions in English Other language will be provided when submitted for national approval.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....:		N/A
1.7.5	Power outlets on the equipment .....:	No power outlets.	N/A
1.7.6	Fuse identification .....:		N/A
1.7.7	Wiring terminals		Pass
1.7.7.1	Protective earthing and bonding terminals .....:		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Final product provide 3.3 and 5 V dc	Pass
1.7.8	Controls and indicators		Pass
1.7.8.1	Identification, location and marking.....:	The function of controls affecting safety is obvious regardless of language.	Pass
1.7.8.2	Colours .....:		N/A
1.7.8.3	Symbols according to IEC 60417		N/A
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources.....:		N/A
1.7.10	IT power distribution systems		N/A
1.7.11	Thermostats and other regulating devices		N/A
1.7.12	Language .....:	Reviewed only English markings/instructions .	-
1.7.13	Durability		N/A
1.7.14	Removable parts		N/A
1.7.15	Replaceable batteries	No lithium battery in the equipment.	N/A
	Language .....:		-

1.7.16	Operator access with a tool.....:	This equipment is for buildingin, shall be investigated in the final system assembly.	N/A
1.7.17	Equipment for restricted access locations .....:		N/A

2	**PROTECTION FROM HAZARDS**		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	No hazard in an operator access area.	Pass
2.1.1.1	Access to energized parts	No operator access to energized parts.	Pass
	Test by inspection .....:	The accessibility of hazardous or ELV voltages are prevented with the final system. The inspection with test pin and test finger should therefore be conducted with the approval of the end system.	N/A
	Test with test finger .....:		N/A
	Test with test pin .....:		N/A
	Test with test probe .....:		N/A
2.1.1.2	Battery compartments.....:	No TNV circuit provided.	N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V) ; minimum distance (mm) through insulation.....:		-
2.1.1.4	Access to hazardous Voltage circuit wiring	No internal wiring at hazardous voltages is accessible to an operator.	N/A
2.1.1.5	Energy hazards.....:		N/A
2.1.1.6	Manual controls	No conductive shafts of operating knobs and handles.	N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	T ime-constant (s) ; measured voltage (V).....:		-
2.1.2	Protection in service access areas		Pass
2.1.3	Protection in restricted access locations		N/A

2.2	**SELV circuits**		Pass
2.2.1	General requirements		Pass
2.2.2	Voltages under normal conditions (V).....:	All accessible voltages are less than 42.4 Vpk or 60 V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V).....:	Investigated as an element of the certification of the power supply under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	N/A
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Evaluated as an element of power supply certification.	N/A
2.2.3.2	Separation by earthed screen (method 2)		N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N/A
2.2.4	Connection of SELV circuits to other circuits .....:	The SELV circuits are only connected to other secondary circuits.	Pass

2.3	**TNV circuits**		N/A
2.3.1	Limits		N/A
	Type of TNV circuits.....:		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed .....:		-
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed .....:		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed .....:		-
2.3.5	Test for operating voltages generated externally		N/A

2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) .....:		-
	Measured current (mA) .....:		-

	Measured voltage (V) .....:		-
	Measured capacitance (mF) .....:		-
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	**Limited power sources**		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A) , apparent power (VA): .....:		-
	Current rating of overcurrent protective device (A):		-

2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm2), AWG.....:		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm2), AWG.....:		-
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A).....:	-	N/A
2.6.3.5	Colour of insulation .....:		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A

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

2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices .....:		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel .....:		N/A

2.8	**Safety interlocks**		N/A
2.8.1	General principles	Equipment has not safety interlocks.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) .....:		N/A

2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	**Electrical insulation**		N/A
2.9.1	Properties of insulating materials		N/A
2.9.2	Humidity conditioning		N/A
	Humidity (%).....:		-
	Temperature (°C) .....:		-
2.9.3	Grade of insulation		N/A

2.10	**Clearances, creepage distances and distances through insulation**		N/A
2.10.1	General		N/A
2.10.2	Determination of working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Clearances in primary circuit		N/A
2.10.3.3	Clearances in secondary circuits		N/A
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances		N/A
	CTI tests.....:		-
2.10.5	Solid insulation		N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material		N/A
	Number of layers (pcs).....:		-
	Electric strength test.....:		-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material :		-
	Number of layers (pcs).....:		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs).....:		N/A

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

3	**WIRING, CONNECTIONS AND SUPPLY**		N/A
3.1	General		N/A
3.1.1	Current rating and overcurrent protection		N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

3.2	**Connection to an a.c. mains supply or a d.c. mains supply**		Pass
3.2.1	Means of connection	The unit is on final product	Pass
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply	3.3 and 5 V dc	N/A

3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits.....:		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	ype.....:		-
	Rated current (A), cross-sectional area (mm2), AWG.....:		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N).....:		-
	Longitudinal displacement (mm).....:		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g) .....:		-
	Radius of curvature of cord (mm) .....:		-
3.2.9	Supply wiring space		N/A

3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord / cable type, cross-sectional area (mm2).....:		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) .....:		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices	On final product	N/A
3.4.3	Permanently connected equipment		N/A

3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment and d.c. equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices	On final product	N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	**Interconnection of equipment**		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits.....:	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

4	**PHYSICAL REQUIREMENTS**		N/A
4.1	Stability		N/A
	Angle of 10°		N/A
	Test: force (N) .....:		N/A

4.2	**Mechanical strength**		N/A
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified.....:		N/A
4.2.9	High pressure lamps		N/A

4.2.10	Wall or ceiling mounted equipment; force (N).....:		N/A

4.3	**Design and construction**		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N) .....:		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress.	Pass
4.3.5	Connection of plugs and sockets		N/A
4.3.6	Direct plug-in equipment		N/A
	Dimensions (mm) of mains plug for direct plug-in..:		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) .....:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation; type of radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg).....:		-
	Measured high-voltage (kV).....:		-
	Measured focus voltage (kV) .....:		-
	CRT markings .....:		-
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		N/A

4.3.13.5	Laser (including LEDs)		N/A
	Laser class .....:		-
4.3.13.6	Other types .....:		N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

4.5	**Thermal requirements**		Pass
4.5.1	Maximum temperatures	Installed on PC case with mother board and let PC run program keep CPU board busy.	Pass
	Normal load condition per Annex L.....:		N/A
4.5.2	Resistance to abnormal heat	See table 4.5.2 for details.	Pass

4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings		N/A
	Dimensions (mm) .....:		-
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom .....:		-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C) /time (weeks) .....:		-

4.7	**Resistance to fire**		N/A
4.7.1	Reducing the risk of ignition and spread of flame		N/A
	Method 1, selection and application of components wiring and materials		N/A
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		N/A

4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		N/A
4.7.3.1	General		N/A
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		N/A
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		N/A
5.1	Touch current and protective conductor current		N/A
5.1.1	General	.	N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V).....:		-
	Measured touch current (mA) .....:		-
	Max. allowed touch current (mA) .....:		-
	Measured protective conductor current (mA) .....:		-
	Max. allowed protective conductor current (mA) .....:		-
5.1.7	Equipment with touch current exceeding 3.5 mA .:		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No TNV circuit connection.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	No such connections.	N/A
	Test voltage (V) .....:		-
	Measured touch current (mA) .....:		-

	Max. allowed touch current (mA) .....:		-
5.1.8.2	Summation of touch currents from telecommunication networks.....:	No TNV circuit connection.	N/A

5.2	**Electric strength**		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A

5.3	**Abnormal operating and fault conditions**		N/A
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation .....:		N/A
5.3.5	Electromechanical components		N/A
5.3.6	Simulation of faults		N/A
5.3.7	Unattended equipment		N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions		N/A

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

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

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

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

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

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

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

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

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

C	**Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position.....:	Evaluated as an element of the power supply certification.	-
	Manufacturer .....:		-
	Type .....:		-
	Rated values .....:		-
	Method of protection .....:		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings .....:		N/A

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

E	**Annex E, TEMPERATURE RISE OF A WINDING**	N/A

F	**Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)**	N/A

G	**Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V):.....:		N/A
G.4	Determination of required withstand voltage (V) ..:		N/A
G.5	Measurement of transient levels (V) .....:		N/A
G.6	Determination of minimum clearances .....:		N/A

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**	N/A

J	**Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal used.....:		-

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

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

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

N	**Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A

N.2	IEC60065 impulse test generator		N/A

P	**Annex P, NORMATIVE REFERENCES**	Pass

Q	**Annex Q, BIBLIOGRAPHY**	Pass

R	**Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

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

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

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

1.5.1	**TABLE: list of critical components**				Pass
Object/part No.	Manufacturer/ trademark	type/model	technical data	Marks of Conformity	Standard
CPU	Various	Various	Rated Max. 1.5 GHz	--	--
PCB	Various	Various	V-1 or better, minimum 105C.	--	--
Heatsink	Various	Various	Aluminum, overall 115 by 95 by 10.5 mm thick	--	--

4.5	**TABLE: temperature rise measurements**					Pass
	test voltage (V)	3.3 V and 5 V DC	--	--	--	—
	t1 (°C).....	--	--	--	--	—
	t2 (°C).....	--	--	--	--	—
maximum temperature T of part/at:		T (°C)				allowed Tmax (°C)
PCB near U3		56/97	--	--	--	105
PCB near U46		48/89	--	--	--	105
PCB near U1		57/98	--	--	--	105
L5 core		57/98	--	--	--	105
Ambient/Tma		19/60	--	--	--	--
Test Duration: (hr: min)		1 : 17	--	--	--	--
temperature T of winding:		R_1 (Ω)	R_2 (Ω)	T (°C)	allowed Tmax (°C)	insulation class
--		--	--	--	--	--

supplementary information:
Maximun Normal load: installed in PC case with mother board and let PC run program keep CPU board busy.

Enclosure

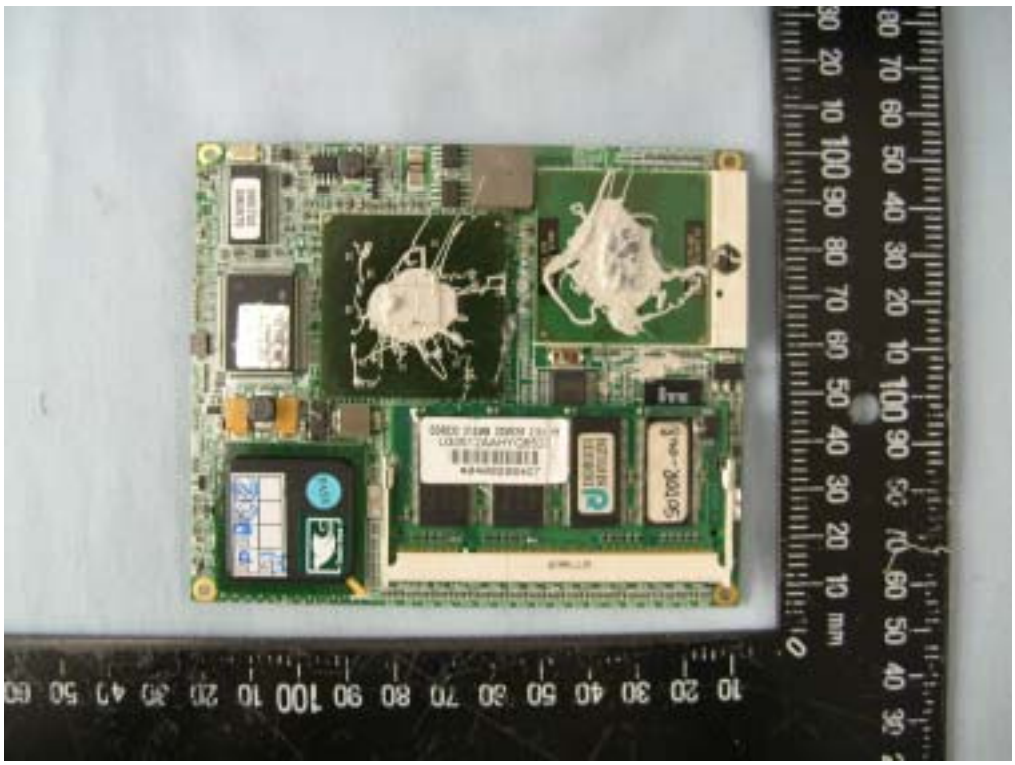
Photographs

(Total 3 Pages including this Cover Page)

敘述
Model ETX-821 - Top component have Heatsink
Model ETX-821 - Top component
Model ETX-821 - Bottom component

Model ETX-821 - Top component have Heatsink

Model ETX-821 - Top component



Model ETX-821 - Bottom component