Spectrum Research & Testing Lab., Inc. No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan, R.O.C.	**TEST REPORT**	Reference No.: A09042003 Report No.: LVDA09042003 Page:1 of 27 Date: May. 13, 2009

Product Name:	TX: Stretch Fabric Transmitter RX: combi
Model Number:	TX：ZT18，RX：ZW63
Series Model	RX：ZW61、ZW62
Applicant:	ZENTAN TECHNOLOGY CO., LTD. NO.92,HSING-SHENG ROAD,CHIA-LI CHENG,TAINAN HSIEN,TAIWAN.R.O.C.
Date of Receipt:	May. 07, 2009
Finished date of Test:	May. 13, 2009
Applicable Standards:	EN 60950-1:2001+A11:2004

We, Spectrum Research & Testing Laboratory Inc., hereby certify that the sample(s) of the above was tested in our laboratory with positive results according to the above mentioned standard. Details of the results are given in the subsequent pages of this report. The test results in the report apply only to the sample(s) tested by SRT Lab. Meanwhile, this report shall not be reproduced except in full, without the written approval of the laboratory.

Tested By : Rock Huang , Date: 5/13/2009

Approved By : Jet , Date: 5/13/2009

Type of test object ..... :	TX: Stretch Fabric Transmitter RX: combi
Trade mark ..... :	
Model and/or type reference ..... :	TX：ZT18，RX：ZW63
Series model	RX：ZW61、ZW62
Manufacturer ..... :	ZENTAN TECHNOLOGY CO., LTD. NO.92,HSING-SHENG ROAD,CHIA-LI CHENG,TAINAN HSIEN,TAIWAN.R.O.C.
Rating(s) ..... :	ZT18：500uA ZW61、ZW62、ZW63：500uA

Particulars: test item vs. test requirements

Equipment mobility .....:	Movable
Operating condition .....:	Continuous
Mains supply tolerance (%) .....:	DC POWER SUPPLY,battery
Tested for IT power systems .....:	NA
Class of equipment .....:	Class III
Mass of equipment (g).....:	ZT18：19.0+30.5 ZW61：46.0
Protection against ingress of water .:	N/A

Possible test case verdicts:

- test case does not apply to the test object ..... : N(.A.)
- test object does meet the requirement..... : P(ass)
- test object does not meet the requirement..... : F(ail)

Attachments: Photos

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

General descriptions:

Annex A: Photos

Annex B: List of used measuring instruments

The test sample were pre-production sample without series number.

The equipment is considered to operate under the condition of:
Pollution Degree 2: Not sealed, not subject to dust, dirt, condensation.
Class of equipment: Class III equipment

The equipments comply with the following check items as per EN 60950-1 requirements.

Copy of marking plate:

Clause	Requirement - Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		N
1.5.1	Comply with IEC 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety of the relevant IEC component standards. (see appended table 1.5.1)	N
1.5.2	Evaluation and testing of components	Component which are certified to IEC or national standards are used correctly within their rating. Components not cover by IEC standards are tested under the condition present in the equipment.	N
1.5.3	Thermal controls	No thermal control	N
1.5.4	Transformers	No transformer are used for the equipment	N
1.5.5	Interconnecting cables	No interconnection o/p cable to personal computer	N
1.5.6	Capacitors in primary circuits .....:	No X2 capacitors are used for the equipment	N
1.5.7	Double or reinforced insulation bridged by components	No bridging capacitors are used for the equipment	N
1.5.7.1	Bridging capacitors	No bridging capacitors are used for the equipment	N
1.5.7.2	Bridging resistors	No bridging resistors are used for the equipment	N
1.5.7.3	Accessible parts	Class III equipment	N
1.5.8	Components in equipment for IT power systems	Equipment is not directly connected to the AC main supply.	N
1.6	Power interface		P

Clause	Requirement - Test	Result - Remark	Verdict
1.6.1	AC power distribution systems	Equipment is not directly connected to the AC main supply.	N
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		P
1.6.4	Neutral conductor	Equipment is not directly connected to the AC main supply.	N
1.7	Marking and instructions		P
1.7.1	Power rating	See below	P
	Rated voltage(s) or voltage range(s) (V) .....:	3V	P
	Symbol for nature of supply for d.c. .....:	⎓	P
	Rated frequency or frequency range (Hz) .....:		N
	Rated current (A) .....:	ZT18：500uA ZW61、ZW62、ZW63：500uA	P
	Trademark .....:		N
	Model .....:	TX：ZT18，RX：ZW63	P
	Symbol of Class II .....:	Class III	N
	Other symbols .....:		N
	Certification marks .....:	CE Marking	P
1.7.2	Safety instructions	The user's manual contains information for operation installation etc.	P
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N
1.7.4	Supply voltage adjustment .....:	No selector power switch is provided to change the input voltage for user	N
1.7.5	Power outlets on the equipment .....:	No standard power outlet on the equipment.	N
1.7.6	Fuse identification .....:	No fuse used for the equipment.	N
1.7.7	Wiring terminals	Class III equipment, no safety ground for the product See below	N

Clause	Requirement - Test	Result - Remark	Verdict
1.7.7.1	Protective earthing and bonding terminals	Class III equipment, No direct connection to the AC main supply.	N
1.7.7.2	Terminal for a.c. mains supply conductors	Class III equipment, No direct connection to the AC main supply.	N
1.7.8	Controls and indicators	See below	--
1.7.8.1	Identification, location and marking .....:	No switch and other control for the equipment	N
1.7.8.2	Colours .....:	No safety relevant indicator.	N
1.7.8.3	Symbols according to IEC 60417.....:	No power switch for the equipment	N
1.7.8.4	Markings using figures .....:	No indicators for different positions	N
1.7.9	Isolation of multiple power sources .....:	No direct connection to the AC main supply.	N
1.7.10	IT power system	No direct connection to the AC main supply.	N
1.7.11	Thermostats and other regulating devices	No thermostats and similar regulating devices used on the equipment	N
1.7.12	Language .....:	English, Versions of other languages will be provided when submitted for national approval.	P
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth for 15 sec. And then again for 15 sec. With the cloth soaked with HEXANE. After this test there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge.	P
1.7.14	Removable parts	No required marking placed on removable parts.	N
1.7.15	Replaceable batteries		P
	Language .....:	English	P
1.7.16	Operator access with a tool .....:	Only SELV inside	N

Clause	Requirement - Test	Result - Remark	Verdict
1.7.17	Equipment for restricted access locations .....:	Not intended for restricted access locations	N
2	PROTECTION FROM HAZARDS		N
2.1	Protection from electric shock and energy hazards The equipment is supplied from DC power source that provided SELV. Only SELV circuits inside the equipment. No electric shock and energy hazards		N
2.1.1	Protection in OPERATOR access areas	No energy hazard in operator area of this equipment	N
2.1.1.1	Access to energized parts	No energy hazard in access area of this equipment	N
	Test by inspection .....:		N
	Test with test finger .....:		N
	Test with test pin .....:		N
	Test with test probe .....:		N
2.1.1.2	Battery compartments.....:	This equipment is not considered for connection to TNV	N
2.1.1.3	Access to ELV wiring	No hazard voltage wiring in operator access area	N
	Working voltage (V); distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	Insulation of internal wiring are meets the requirements for supplementary insulation	N
2.1.1.5	Energy hazards .....:	No energy hazard in operator area	N
2.1.1.6	Manual controls	No conductive shafts of operating knob, handles, levers connected to parts at hazardous voltage, ELV and TNV circuit	N
2.1.1.7	Discharge of capacitors in the primary circuit	No direct connection to the AC main supply.	N
	Time-constant (s); measured voltage (V) .....:		—
2.1.2	Protection in service access areas	No bare parts at hazardous voltage in the equipment	N

Clause	Requirement - Test	Result - Remark	Verdict
2.1.3	Protection in restricted access locations	It is not intended to be used in restricted access locations	N
2.2	SELV circuits		P
2.2.1	General requirements	See below	--
2.2.2	Voltages under normal conditions (V)..... :	Between any SELV circuit 42.2V peak or 60Vdc are not exceeded	P
2.2.3	Voltages under fault conditions (V)..... :		P
2.2.3.1	Separation by double or reinforced insulation (method 1)	Class III equipment	N
2.2.3.2	Separation by earthed screen (method 2)	Class III equipment	N
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Class III equipment	N
2.2.4	Connection of SELV circuits to other circuits.....	Was considered to complies with the requirement of 2.2.2	P
2.3	TNV circuits No TNV circuit		N
2.3.1	Limits	This equipment is not considered for connection to TNV	N
	Type of TNV circuits..... :	This equipment is not considered for connection to TNV	—
2.3.2	Separation from other circuits and from accessible parts		N
	Insulation employed ..... :		—
2.3.3	Separation from hazardous voltages		N
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits	This equipment is not considered for connection to TNV	N
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		N

Clause	Requirement - Test	Result - Remark	Verdict
2.4.1	General requirements		N
2.4.2	Limit values		N
	Frequency (Hz) .....:		—
	Measured current (mA) .....:		—
	Measured voltage (V).....:		—
	Measured capacitance (μF) .....:		—
2.4.3	Connection of limited current circuits to other circuits		N
2.5	Limited power sources		N
	Inherently limited output		N
	Impedance limited output		N
	Over current protective device limited output		N
	Regulating network limited output under normal operating and single fault condition		N
	Regulating network limited output under normal operating conditions and over current protective device limited output under single fault condition		N
	Output voltage (V), output current (A), apparent power (VA) .....:		—
	Current rating of over current protective device (A)		—
2.6	Provisions for earthing and bonding Class III equipment		N
2.6.1	Protective earthing	Class III equipment, No direct connection to the AC main supply.	N
2.6.2	Functional earthing	Class III equipment, No direct connection to the AC main supply.	N
2.6.3	Protective earthing and protective bonding conductors	Class III equipment, No direct connection to the AC main supply.	N
2.6.3.1	Size of protective earthing conductors	Class III equipment, No direct connection to the AC main supply.	N

Clause	Requirement - Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.2	Size of protective bonding conductors	Class III equipment, No direct connection to the AC main supply.	N
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.3	Rated current (A), type and nominal thread diameter (mm).....:		N
	Resistance (Ω) of earthing conductors and their terminations, test current (A).....:		N
2.6.3.4	Colour of insulation .....:	No Green / Yellow wire	N
2.6.4	Terminals	No protective earthing terminal is provided for the equipment	N
2.6.4.1	Protective earthing and bonding terminals	No protective earthing and bounding terminal is provided for the equipment	N
	Rated current (A), type and nominal thread diameter (mm).....:		—
2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors	No protective earthing and bounding terminal is provided for the equipment	N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment	Class III equipment	N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No protective earthing conductors and protective bonding conductors	N
2.6.5.3	Disconnection of protective earth	Class III equipment, No direct connection to the AC main supply.	N
2.6.5.4	Parts that can be removed by an operator	Class III equipment, No direct connection to the AC main supply.	N
2.6.5.5	Parts removed during servicing	Class III equipment, No direct connection to the AC main supply.	N
2.6.5.6	Corrosion resistance	Class III equipment, No direct connection to the AC main supply.	N

Clause	Requirement - Test	Result - Remark	Verdict
2.6.5.7	Screws for protective bonding	Class III equipment, No direct connection to the AC main supply.	N
2.6.5.8	Reliance on telecommunication network	This equipment is not considered for connection to TNV	N
2.7	Over current and earth fault protection in primary circuits DC power source only		N
2.7.1	Basic requirements		N
	Instructions when protection relies on building installation	No direct connection to the AC main supply.	N
2.7.2	Faults not covered in 5.3		N
2.7.3	Short-circuit backup protection	No direct connection to the AC main supply.	N
2.7.4	Number and location of protective devices .....:		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel .....:	No marking were requested	N
2.8	Safety interlocks No safety interlock		N
2.8.1	General principles		N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Interlocks with moving parts		N
2.8.6	Overriding an interlock		N
2.8.7	Switches and relays in interlock systems		N
2.8.7.1	Contact gaps (mm) .....:		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test (V)		N
2.8.8	Mechanical actuators		N

Clause	Requirement - Test	Result - Remark	Verdict
2.9	Electrical insulation DC power source only No primary circuit inside the equipment		N
2.9.1	Properties of insulating materials	No natural rubber, asbestos or hygroscopic material are used	N
2.9.2	Humidity conditioning	Class III equipment	N
2.9.3	Requirements for insulation		N
2.9.4	Insulation parameters		N
2.9.5	Categories of insulation		N
2.10	Clearances, creepage distances and distances through insulation The equipment is supply from DC power source that provided SELV only		N
2.10.1	General		N
2.10.2	Determination of working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Clearances in primary circuit		N
2.10.3.3	Clearances in secondary circuits		N
2.10.3.4	Measurement of transient levels		N
2.10.4	Creepage distances		N
	CTI tests.....:		—
2.10.5	Solid insulation		N
2.10.5.1	Minimum distance through insulation		N
2.10.5.2	Thin sheet material		N
	Number of layers (pcs).....:		—
	Electric strength test		—
2.10.5.3	Printed boards		N
	Distance through insulation		
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) .....:		---
2.10.5.4	Wound components		N
	Number of layers (pcs).....:		N

Clause	Requirement - Test	Result - Remark	Verdict
	Two wires in contact inside component; angle between 45° and 90°		N
2.10.6	Coated printed boards		N
2.10.6.1	General		N
2.10.6.2	Sample preparation and preliminary inspection		N
2.10.6.3	Thermal cycling		N
2.10.6.4	Thermal ageing (°C).....:		N
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		N
	Electric strength test		—
2.10.7	Enclosed and sealed parts.....:		N
	Temperature $T_1=T_2 = T_{mra} - T_{amb} +10K$ (°C) .....:		N
2.10.8	Spacing filled by insulating compound.....:		N
	Electric strength test		—
2.10.9	Component external terminations		N
2.10.10	Insulation with varying dimensions		N
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and over current protection		N
3.1.2	Protection against mechanical damage	Wire do not touch sharp edges which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring		N
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators	No used	N
3.1.6	Screws for electrical contact pressure	No grounding terminal for the equipment	N
3.1.7	Non-metallic materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	No self tapping screws are used	N
3.1.9	Termination of conductors		N
	10 N pull test		N
3.1.10	Sleeving on wiring	No sleeving are used	N

Clause	Requirement - Test	Result - Remark	Verdict
3.2	Connection to ac or dc mains supplies Class III equipment		N
3.2.1	Means of connection .....:	Equipment is not directly connected to the AC main supply.	N
3.2.2	Multiple supply connections	DC power source only	P
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter (mm) of cable and conduits .....:		—
3.2.4	Appliance inlets	Equipment is not directly connected to the AC main supply.	N
3.2.5	Power supply cords	Equipment is not directly connected to the AC main supply.	N
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards	Equipment is not directly connected to the AC main supply.	N
	D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space	Equipment is not directly connected to the AC main supply.	N
3.3	Wiring terminals for connection of external conductors Class III equipment		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N

Clause	Requirement - Test	Result - Remark	Verdict
3.3.3	Screw terminals		N
3.3.4	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		N
3.3.5	Rated current (A), type and nominal thread diameter (mm) ..... :		N
3.3.6	Wiring terminals design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N
3.4	Disconnection from the a.c. mains supply Class III equipment		N
3.4.1	General requirement		N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Single-phase equipment		N
3.4.7	Three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N
3.5	Interconnection of equipment		N
3.5.1	General requirements		N
3.5.2	Types of interconnection circuits		N
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N
4	PHYSICAL REQUIREMENTS		N
4.1	Stability		N
	Angle of 10°	This equipment is of a stable mechanical construction and does not overbalance when tilted to an angle of 10 degrees from its normal upright position	N

Clause	Requirement - Test	Result - Remark	Verdict
	Test: force (N)	Equipment is not a floor standing unit	N
4.2	Mechanical strength As there are no hazardous voltages present in the equipment or Other hazards foreseeable the tests of these clauses were not performed but replaced by a construction reviewed only.		N
4.2.1	General		N
4.2.2	Steady force test, 10 N	10N were applied to the components	N
4.2.3	Steady force test, 30 N	No internal enclosure in the equipment	N
4.2.4	Steady force test, 250 N	250N were applied to the enclosure	N
4.2.5	Impact test		N
4.2.6	Drop test	After the test no damage	P
4.2.7	Stress relief		N
4.2.8	Cathode ray tubes	The equipment does not employ a cathode ray tube	N
	Picture tube separately certified.....:	No picture tube	N
4.2.9	High pressure lamps	No high pressure lamps	N
4.2.10	Wall or ceiling mounted equipment; force (N) ....:	Movable equipment	N
4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners be rounded or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No handles and manual controls are used	N
4.3.3	Adjustable controls	No adjustable controls	N
4.3.4	Securing of parts	Screw is secured to withstand mechanical stress in normal use.	N
4.3.5	Connection of plugs and sockets		N
4.3.6	Direct plug-in equipment	Not direct plug-in type	N
	Torque (Nm).....:		—
4.3.7	Heating elements in earthed equipment	No heating elements	N

Clause	Requirement - Test	Result - Remark	Verdict
4.3.8	Batteries	Caution in the manual	P
4.3.9	Oil and grease	No oil or grease	N
4.3.10	Dust, powders, liquids and gases	Equipment intended use not considered to be exposed to these.	N
4.3.11	Containers for liquids or gases	The equipment does not contain liquids and gases	N
4.3.12	Flammable liquids .....:	No Flammable liquids	N
	Quantity of liquid (l) .....:		N
	Flash point (°C) .....:		N
4.3.13	Radiation; type of radiation .....:	No ionizing radiation	N
	Equipment using lasers	The LED was used for the equipment Power of LED is far below LED class I limit	N
4.4	Protection against hazardous moving parts No moving parts		N
4.4.1	General		N
4.4.2	Protection in operator access areas		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N
4.5	Thermal requirements		P
4.5.1	Temperature rises	See table 4.5	P
4.5.2	Resistance to abnormal heat		N
4.6	Openings in enclosures		N
4.6.1	Top openings	No opening in the top enclosure	N
	Rear opening	No opening in the rear enclosure	—
4.6.2	Bottoms of fire enclosures	No opening in the bottom enclosure	N
	Construction of the bottom.....:		—
4.6.3	Doors or covers in fire enclosures	No fire enclosure	N

Clause	Requirement - Test	Result - Remark	Verdict
4.6.4	Openings in transportable equipment	Equipment is not transportable equipment	N
4.6.5	Adhesives for constructional purposes	No barrier or screen are used	N
	Conditioning temperature/time.....:		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes	P
4.7.2	Conditions for a fire enclosure	No parts required for a fire enclosure.	P
4.7.2.1	Parts requiring a fire enclosure	Following parts required a fire enclosure - components in primary circuit. - components in 2nd.. circuit exceed limit of limited power source. - etc.	N
4.7.2.2	Parts not requiring a fire enclosure	Following parts do not required a fire enclosure - Wiring and cable insulated with PVC, TFE, PTFE.. etc. - Secondary circuit supplied by limited power source.	P
4.7.3	Materials		P
4.7.3.1	General	PCB rated V-1 or better.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure is not required	N
4.7.3.3	Materials for components and other parts outside fire enclosures	Fire enclosure is not required	N
4.7.3.4	Materials for components and other parts inside fire enclosures	PCB rated V-1 or better.	N
4.7.3.5	Materials for air filter assemblies	No air filter assemblies for the equipment	N
4.7.3.6	Materials used in high-voltage components	No high voltage components for the equipment	N
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		N

Clause	Requirement - Test	Result - Remark	Verdict
5.1	Touch current and protective conductor current Class III equipment without TNV circuit		N
5.1.1	General		N
5.1.2	Equipment under test (EUT)		N
5.1.3	Test circuit		N
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
5.1.6	Test measurements		N
	Test voltage (V) .....:		—
	Measured current (Ma) .....:		—
	Max. allowed current (Ma) .....:		—
5.1.7	Equipment with touch current exceeding 3.5 A :	Class III equipment	N
5.1.8	Touch currents to and from telecommunication networks	This equipment is not considered for connection to telecommunication networks	N
5.1.8.1	Limitation of the touch current to a telecommunication network	This equipment is not considered for connection to telecommunication networks	N
	Test voltage (V) .....:		—
	Measured current (Ma) .....:		—
	Max. allowed current (Ma) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks..... :	This equipment is not considered for connection to telecommunication networks	N
5.2	Electric strength Class III equipment		N
5.2.1	General	Class III equipment	N
5.2.2	Test procedure	Class III equipment	N
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation		N
5.3.2	Motors	No motor for the equipment	N

Clause	Requirement - Test	Result - Remark	Verdict
5.3.3	Transformers	No transformer for the equipment	N
5.3.4	Functional insulation		N
5.3.5	Electromechanical components		N
5.3.6	Simulation of faults	See table 5.3	P
5.3.7	Unattended equipment	No thermostats temperature limit and thermal cut-outs for the equipment	N
5.3.8	Compliance criteria for abnormal operating and fault conditions		N
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	This equipment is not considered for connection to telecommunication network	N
	Test voltage (V) .....:		—
	Current in the test circuit (Ma) .....:		—
6.1.2.2	Exclusions.....:	This equipment is not considered for connection to telecommunication network	N
6.2	Protection of equipment users from over voltages on telecommunication networks		N
6.2.1	Separation requirements	This equipment is not considered for connection to telecommunication network	N
6.2.2	Electric strength test procedure	This equipment is not considered for connection to telecommunication network	N
6.2.2.1	Impulse test	This equipment is not considered for connection to telecommunication network	N
6.2.2.2	Steady-state test	This equipment is not considered for connection to telecommunication network	N

Clause	Requirement - Test	Result - Remark	Verdict
6.2.2.3	Compliance criteria	This equipment is not considered for connection to telecommunication network	N
6.3	Protection of telecommunication wiring system from overheating		N
	Max. output current (A) .....:	This equipment is not considered for connection to telecommunication network	—
	Current limiting method.....:	This equipment is not considered for connection to telecommunication network	—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	Protection of cable distribution systems service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment.		N
7.2	Protection of equipment users from overvoltages on the cable distribution system.		N
7.3	Insulation between primary circuits and cable distribution systems.		N
7.3.1	General		N
7.3.2	Voltage surge test		N
7.3.3	Impulse test		N
A	ANNEX , TESTS FOR RESISTANCE TO HEAT AND FIRE		N
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 g, and of stationary equipment (see 4.7.3.2)		N
A.1.1	Samples, material .....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C).....:		N
A.1.3	Mounting of samples.....:		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—

Clause	Requirement - Test	Result - Remark	Verdict
	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.2.1	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
A.2.6	Compliance criteria		N
	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
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.3	High flaming oil test (4.6.2)		N
A.3.1	Mounting of samples		—
A.3.2	Test procedure		—
A.3.3	Compliance criterion		N
B	ANNEX , MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements		N
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—

Clause	Requirement - Test	Result - Remark	Verdict
B.6	Running overload test for DC motors in secondary circuits		N
B.7	Locked-rotor overload test for DC motors in secondary circuits		N
B.7.1	Test procedure	(see appended table 5.3)	N
B.7.2	Alternative test procedure; test time (h).....		N
B.7.3	Electric strength test	(see appended table 5.2)	N
B.8	Test for motors with capacitors	(see appended table 5.3)	N
B.9	Test for three-phase motors	(see appended table 5.3)	N
B.10	Test for series motors		N
	Operating voltage (V) .....:		—
C	ANNEX , TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
	Method of protection .....:		—
C.1	Overload test	(see appended table 5.3)	N
C.2	Insulation	(see appended table 5.2)	N
	Protection from displacement of windings .....:		N
G	ANNEX , ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V).....:		N
G.3	Determination of telecommunication network transient voltage (V).....:		N
G.4	Determination of required withstand voltage (V).:		N
G.5	Measurement of transient levels (V) .....:		N
G.6	Determination of minimum clearances .....:		N
H	ANNEX, IONIZING RADIATION (see 4.3.13)		N

Clause	Requirement - Test	Result - Remark	Verdict
	Ionizing radiation		N
	Measured radiation (Mr/h)		—
	Measured high-voltage (Kv)		—
	Measured focus voltage (Kv)		—
	CRT markings		—
J	ANNEX , TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal used		—
K	ANNEX , THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) .....:		N
K.3	Thermostat endurance test; operating voltage (V) .....:		N
K.4	Temperature limiter endurance; operating voltage (V) .....:		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation	(see appended table 5.3)	N
M	ANNEX , CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (f).....:		—
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
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V).....:		N

Clause	Requirement - Test	Result - Remark	Verdict
U	ANNEX , INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
	Separate test report		N

Clause	Requirement - Test	Result - Remark	Verdict

EN60950-1					
1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Printed wiring board	Various	Various	Min. V-1	UL 94, UL796	E150630
Plastic Enclosure	Various	Various	Min. HB	UL 94	E56070
Battery	Panasonic Corporation	CR2032	3V, 10mA	UL 1642	MH12210
Battery	Panasonic Corporation	CR2025	3V, 10mA	UL 1642	MH12210

1.6.2	TABLE: electrical data (in normal conditions)					--
fuse #	Item	I rated (uA)	U (Vdc)	P (uW)	I (uA)	I fuse (mA)
---	ZT18(127K)	500	3	1161	387	---
---	ZW63	500	3	1446	482	---
	ZW61	500	3	1017	339	

4.5	TABLE: temperature rise measurements		P
	test voltage (V)	3V	—
	T (°C)	--	—
Normal		T (℃)	allowed T (℃)
ZT18(127K) and ZW61			
1.U1 body (ZW61)		41.1	90
2.CR2025 body (ZW61)		41.1	70
3.Enclosure metal inside near CR2025		41.2	85
4.Enclosure metal outside near CR2025		41.2	85
5.PCB near U1 (ZT18)		40.3	90
6.coil body (ZT18)		40.3	90
7.CR2032 body (ZT18)		40.5	70
8.Enclosure plastic outside near CR2032 (ZT18)		40.1	85
9.Enclosure plastic outside near CR2032 (ZT18)		40.4	85
10.Ambient		40.0	--
Note(s)：			

Clause	Requirement - Test	Result - Remark	Verdict
5.3	TABLE: fault condition tests		P
	ambient temperature (°C)		—
	model/type of power supply		—
	Manufacturer of power supply		—
	rated markings of power supply		—

component No.	Fault	test voltage (V)	test time	fuse No.	current (mA)	result
CR2032	“+” to “-“ s-c	3	10sec	--	351.07	no hazards
CR2025	“+” to “-“ s-c	3	10sec	--	149.34	no hazards
supplementary information						
Note(s)：s-c=short-circuited						

SRT Lab Safety Department Instrument List

	NO	Instrument Name	Range Used/Description	Last Calibration Date	Due Calibration Date	Model	Serial Number	BRAND
☐	1	AC Power Source	81V~286V, 47Hz~63Hz, 0~35A	2008/7/2	2009/7/1	AFC-5KB	F100030002	APC
☐	2	AC Power Source	81V~286V, 47Hz~63Hz, 0~35A	2008/7/2	2009/7/1	AFC-11005	F103110013	APC
☐	3	AC Power Source	81V~286V, 47Hz~63Hz, 0~35A	2008/7/2	2009/7/1	APC-2KBB	F100030030	APC
☐	4	AC Power Source	81V~286V, 47Hz~63Hz, 0~15A	2008/7/2	2009/7/1	AFC-11002	F103110012	APC
☐	5	DC Power Supply	DC 30V, 15~25A	2008/7/29	2009/7/28	SPS-250A	250010851	LOKO
☐	6	Dual Tracking DC Power Supply	DC 30V,6A	2009/4/17	2010/4/16	SPS 3000	A603687	SHENG 1
☐	7	Electronic Load	connect with 4pcs 3321(1~50V,0.5~40A, 300W)	2009/5/5	2010/5/4	3301A	90701A026	PRODIGIT
☐	8	Smart Electronic Load	connect with 4pcs 63030(1V~60V,1A~40A, 300W)	2009/3/12	2010/3/11	6304	63042468	Chroma
☐	9	DC Electronic Load	DC 1V~256V,0.5A~10A,250W	2009/4/3	2010/4/2	63025	63010461	Chroma
☐	10	DC Electronic Load	DC 1V~64V,0.5A~60A,300W	2008/10/13	2009/10/12	6301	63010218	Chroma
☐	11	Oscilloscope	2 Channels Bandwidth <=100MHz, Vertical Gain 2mV~5V, Sweep Time Base 5ns~5s	2009/4/17	2010/4/16	54645A	US39151317	HP
☐	12	Oscilloscope Probe	2.5kV DC+pkAC,10MΩ, 100:1, 250MHz	2007/6/20	2009/6/18	P5100	--	TEKTRONIX
☐	13	High Voltage Probe	30kV,1000:1	2008/6/25	2009/6/24	P6015A	B010153	TEKTRONIX
☐	14	Leakage Current Tester	DC 0.3mA~10mA, AC 0.3mA~10mA	2009/5/7	2010/5/6	228	20929	SIMPSON
☐	15	Leakage Current Tester	AC 150V~300V, AC 0.3mA~10mA	2009/5/7	2010/5/6	229-2	20440	SIMPSON
☐	16	Dielectric Analyzer	AC 1kV~5kV, DC 1kV~5kV, AC cut off 0.5mA~10mA, DC cut off 500uA~9999uA, Insulation Resistance Test Voltage 500V~1kV, Insulation Resistance 10MΩ ~1GΩ, Timer <=60s	2009/5/7	2010/5/6	7410	E220121	EXTECH
☐	17	Grounding Continuity Tester	AC 0~60A, Resistance 13~103mΩ, Timer 60s/120s	2009/5/6	2010/5/5	7316	1370020	EXTECH

SRT Lab Safety Department Instrument List

	NO	Instrument Name	Range Used/Description	Last Calibration Date	Due Calibration Date	Model	Serial Number	BRAND
☐	18	Current Test Box	C1=0.022uF,Cs=0.22uF,R1=10kΩ,Rs=1.5kΩ,Rb=500Ω	2008/5/26	2009/5/25	--	--	SRTLab
☐	19	Tape Mesure	2M	2009/3/11	2010/3/10	--	S0002	--
☐	20	Digital Power Meter	30V~264V, 0.5A~20A, 10W~1000W, 47Hz~63Hz	2008/7/24	2009/7/23	CP-320A	680183	IDRC
☐	21	Digitizing Power Meter	30V~264V, 0.5A~20A, 10W~1000W, 47Hz~63Hz	2008/8/2	2009/8/1	4010A	034010026	PRODIGIT
☐	22	Digital Power Meter	30V~264V, 0.5A~20A, 10W~1000W, 47Hz~63Hz	2008/12/31	2009/12/30	4010A	34010036	PRODIGIT
☐	23	Digital Multimeter	DC 20mV~900V, AC 20mV~1kV, DC 1mA~9A, 1mA~9A, 100Ω~10MΩ	2009/3/12	2010/3/11	1303	--	TOPWARD
☐	24	Digital Multimeter	DC 20mV~900V, AC 20mV~1kV, DC 1mA~9A, 1mA~9A, 100Ω~10MΩ	2008/5/20	2009/5/19	1302	957644	TOPWARD
■	25	Digital Multimeter	DC 40mV~900V, AC 40mV~900V, DC 40uA~9A, AC 40uA~9A, 100Ω~10MΩ	2008/12/9	2009/12/8	187	8395014	FLUKE
☐	26	Digital Multimeter	DC 40mV~900V, AC 40mV~900V, DC 40uA~9A, AC 40uA~9A, 100Ω~10MΩ	2008/11/29	2009/11/28	187	84170214	FLUKE
☐	27	Function Generator	Frequency 10Hz~10MHz, Distortion 60Hz~100kHz, Frequency Response 20Hz~100kHz, Attenuator -30dB	2009/3/11	2010/3/10	8140	717578	TOPWARD
☐	28	Function Generator	Frequency 10Hz~10MHz, Distortion 60Hz~100kHz, Frequency Response 20Hz~100kHz, Attenuator -30dB	2008/5/21	2009/5/20	8110	721305	TOPWARD
☐	29	Hybrid Recorder	30CH,J(0℃~200℃)	2008/5/19	2009/5/18	DR231-00-34-ID	27D330755	YOKOGAWA
☐	30	Hybrid Recorder	30CH,J(0℃~200℃)	2008/11/27	2009/11/26	DR231-00-34-ID	27CB21042	YOKOGAWA
☐	31	Hybrid Recorder	20CH type J(0℃~200℃)	2009/4/2	2010/4/1	DR130	--	YOKOGAWA
■	32	Hybrid Recorder	12CH,J(0℃~200℃)	2008/7/29	2009/7/28	4370	27C832563	YOKOGAWA

SRT Lab Safety Department Instrument List

	NO	Instrument Name	Range Used/Description	Last Calibration Date	Due Calibration Date	Model	Serial Number	BRAND
☐	33	Hybrid Recorder	30CH,J(0℃~200℃)	2009/4/29	2010/4/28	DR240	12V631791	YOKOGAWA
■	34	Weighing Scale	0~15kg	2008/5/20	2009/5/19	AWH	H2B0133	EXCELL
☐	35	Digital Caliper	0~150mm	2008/12/30	2009/12/29	CD-6"CS	0352878	MITUTOYO
☐	36	Stopwatch	Full Range	2009/3/11	2010/3/10	CT-500	--	CATIGA
☐	37	Handy Push-Pull Gauge	0-30kg(0-300N)	2008/12/10	2009/12/9	NK-300	901259	ALGOL
☐	38	Impact Hammer	0.2/0.35/0.5/0.7/1J(焦耳)	2008/5/20	2009/5/19	F22.5	9906221.1	PTL
☐	39	Springt Hammer	2J(焦耳)	2007/5/14	2009/5/12	SI2026	602D0003	SAFQ
☐	40	Thermo-Hygro Graph	Temperature 20℃~30℃, Humidity 15%~75%%	2008/5/5	2009/5/4	20A	8125	TOP
☐	41	Milli-Ohm Meter	20mΩ~20kΩ	2009/3/12	2010/3/11	GOM-801G	E820109	GOODWILL
☐	42	Antenna Tester	PAL	2009/4/20	2011/4/19	TCP-1	--	ASIA QTECH
☐	43	Antenna Tester	NTSC(ψa=9.576mm,ψ b(min)=8.05mm,ψ c=2.438mm,ψ h=12mm,d(min)=9.1mm,e(min)=7.112mm,f=0.8mm,g=40mm,j=43mm,ψ k(min)=0.3mm)	2009/4/20	2011/4/19	TCP-TW	--	ASIA QTECH
☐	44	Test Finger(joints) (probe B)	Dimension 20mm~180mm Angle 14°~90° Radius 2mm~4mm	2009/3/31	2011/3/30	P10.14	9906221.4	PTL
☐	45	Test Finger 8.6mm (PROBE	diameter=8.6mm	2007/10/8	2009/10/6	WZ-1	--	ANGUI
☐	46	Test Finger 5.6mm (PROBE	diameter=5.6mm	2007/10/8	2009/10/6	WZ-2	--	ANGUI
☐	47	Temperature Room	Temperature 10℃~150℃, R.H. 10%~98%	2008/10/24	2009/10/23	THS-D4H+-150	1801	KSON
☐	48	Impulse Tester for TNV	-7kV~7kV	2007/5/24	2009/5/22	10x700-7	430296	ASIA QTECH
☐	49	Angle Meter	0~90°	2009/4/28	2010/4/27	AM-01	0601	ASIA QTECH
☐	50	Steel Ball	500g, diameter 5 cm	2009/3/31	2011/3/30	AWH	F24100063	ED&D
☐	51	Ball-Pressure Apparatus	Radius 2.5mm Weight 20N	2009/4/1	2011/3/31	TPP-01	--	ED&D
☐	52	Test Pin (PROBE 13)	3Φ	2007/6/20	2009/6/18	TTP-02	--	ED&D
☐	53	Stability Test Board	10°	NCR	NCR	--	--	--
☐	54	Surge Tester	AC 10kV, 60sec(Test 50 times)	2007/5/14	2009/5/12	T3-05	38/07	TESTING
☐	55	500VA Electrical Safety Compliance Analyzer	insulation resistance 1MΩ ~9999MΩ /DC100V~1kV/0.5sec~999.9 sec/0sec=continued test/charge 0~3.500uA。AC withstand voltage 5kVAC/100mA,DC withstand voltage 6kVDC/9999uA	2008/5/23	2009/5/22	7451	1310248	EXTECH
☐	56	Pink Noise Generator	flat frequency response 22.4Hz~22.4kHz	2008/6/25	2009/6/24	NG8280	148	FRIBORG
☐	57	Weighing Scale	0~150kg	2008/7/24	2009/7/23	FSB930	F07300159	EXCELL
☐	58	Torque Screw Driver	0.6kgf.cm~3kgf.cm	2009/5/6	2010/5/5	3LTDK	03E030	KANON
☐	59	Test Pin 2.5mm (PROBE C)	ψ=2.5+0.05,-0mm, rigid test rod=100±0.2mm, sphere=35 ±0.2mm	2009/3/31	2011/3/30	TRP-1	--	ASIA QTECH

SRT Lab Safety Department Instrument List

	NO	Instrument Name	Range Used/Description	Last Calibration Date	Due Calibration Date	Model	Serial Number	BRAND
☐	60	Test Pin 1.0mm (PROBE D)	ψ1.0+0.05,-0mm, rigid test wire=100±0.2mm, sphere=35±0.2mm	2009/3/31	2011/3/30	TRP-2	--	ASIA QTECH
☐	61	Test Pin	4.0mm	2009/3/31	2011/3/30	HLP-1	--	ASIA QTECH
☐	62	Test Hook	1mm~180mm, 90°	2007/6/20	2009/6/18	TH-01	--	ED&D
☐	63	Test Finger (PROBE 11)	20mm	2007/5/29	2009/5/27	UFP-01	--	ED&D
☐	64	High Frequency Vibration Testing System	10Hz~60Hz, 1.0mm_{p-p} 4.0 $mm_{p-p,}$ 30Hz~2000Hz, 10g_{rms}/20g_{rms}	2009/4/6	2010/4/5	KD-9363EM-2000F2K50N250	Q111099229	King-Design
☐	65	Impulse Tester fo Mains	-7kV~7kV	2007/5/24	2009/5/22	MegaPulse 1.2x50-7	430297	COMPLIANCE WEST
☐	66	Hi-Pot Fixture	100g, ψ=5mm±0.1mm	2009/4/20	2011/4/19	HPA-1	--	ASIA QTECH
☐	67	Voltage Regulator	AC 80V~300V, 1A~20A, 50/6	NCR	NCR	AP-220	--	ALLPOWER
☐	68	Oven	RT~200℃	2007/10/24	2008/10/22	PT-6A	H20071022	PINTE
☐	69	HardWood	--	NCR	NCR	HARDWOOD	--	
☐	70	Safety Test Probe kit		2009/4/1	2011/3/31			ERGONOMICS
☐	71	Socket-Outlet Torque Teste	Weight 1N, Length 40mm~290mm	2009/4/28	2010/4/27	65-DPI	--	CTT
☐	72	Digital Clamp Meter	DC 10V~590V, AC 10V~590V, DC 1A~900A, AC 1A~900A, 10Ω~1kΩ	2009/5/8	2011/5/7	Fluke-337	1565146	FLUKE
☐	73	Temperature Room	Temperature -40℃~180℃, R.H. 10%~98%	2008/7/1	2009/6/30	HS-D4C-180-LN	3324	KSON
☐	74	Temperature Room	Temperature -20℃~180℃, R.H. 10%~98%	2008/7/1	2009/6/30	THS-A2C-180	2922	KSON
☐	75	Digital Caliper	0~150mm	2008/11/27	2009/11/26	CD-6"CS	0352884	MITUTOYO
☐	76	Load-Elec. Dummy Load	--	2009/3/16	2010/3/15	210090041	--	L2TLOA002
☐	77	Fixture-Ele. Load	--	NCR	NCR	A631002	--	Chroma
☐	78	Laser Power Meter	connect with OPHIR PD300-SH optical sensor. Meter Range:2nW-30mW Sensor Range:wavelength<=1060nm	2008/7/29	2010/7/28	1Z01500	71162	OPHIR
☐	79	Oscilloscope Probe	DC 400V,pkAC 600V,10MΩ, 100MHz, 10:1	2008/4/30	2009/4/29	HP9100	--	PINTEK