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Product Safety Consultant Inc.

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VERIFICATION OF COMPLIANCE

The following mentioned Products have been tested in typical configuration by PSC and were found to comply with the essential requirements of “Council Directive on the Approximation of the Laws of the Member States to Low Voltage Directive (2006/95/EC)”

Equipment:

Type of Product : Network Camera

Model Number : FD8131, FD8131V

Produced by:

Manufacture's Name : VIVOTEK INC.

Manufacture's Address : 6F, No.192, Lien-Cheng Rd., Chung-Ho Dist.,
New Taipei City, 235, Taiwan, R.O.C.

Applied Standards:

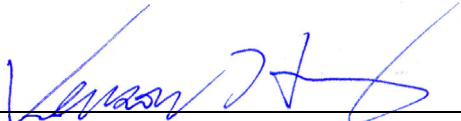
EN60950-1:2006/A11:2009/A1:2010/A12:2011:

Safety of Information Technology Equipment including electrical business equipment.

Manufacture or his authorized representative within EC shall affix the CE Marking to the products if he ensures the product complies with the relevant harmonized standards and draws up a declaration of conformity. The technical report issued by PSC will support you Affix the CE Marking.

Date : July 24, 2012

Report No : 12CE07L032

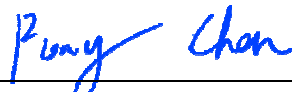

Venson Huang/Engineering Manager

TEST REPORT

Standard applied: EN60950-1:2006/A11:2009/A1:2010/A12:2011
Safety of Information Technology Equipment including
electrical business equipment

Applicant VIVOTEK INC.
Address 6F, No.192, Lien-Cheng Rd., Chung-Ho Dist., New Taipei City, 235,
Taiwan, R.O.C.
Factory VIVOTEK INC.
Address 5F, No.168, Lien-Cheng Rd., Chung-Ho Dist., New Taipei City, 235,
Taiwan, R.O.C.
Equipment..... Network Camera
Equipment mobility..... Movable or stationary equipment (for ceiling mount)
Trademark..... **VIVOTEK**
Model No. FD8131, FD8131V
Rating..... Input:12V dc / 0.20833A (For adaptor) or 50Vdc / 0.06A (For
POE) (Optional)
Output: --
Class of equipment Class III

Complied by:

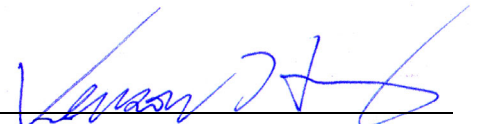


Pony Chen

Date.....:

July 24, 2012

Approved by:



Venson Huang

Date.....:

July 24, 2012

Test Site.....: 6F, No.6, Lane 609, Sec.5 Chung-Hsin Rd., San Chung Dist.,
New Taipei City, Taiwan, R.O.C.

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Operating condition	continuous
Mains supply tolerance (%)	12Vdc, Power Supply from DC Adaptor .or POE (50Vdc)
Tested for IT power systems	N/A
IT testing, phase-phase voltage (V) :	N/A
Mass of equipment (kg).....	Approx. 0.42kg max..
Protection against ingress of water .:	Ordinary for Model: FD8131 IP66 for Model: FD8131V
Number of pages (Report)	47
Number of pages (Attachments).....	See Attachments

Attachments:

- Appendix I – Label
- Appendix II – EuT Photographs
- Appendix III – Instrument list

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.
The test services for PSC are capable of performing services in compliance with the requirements of ISO 17025, EN60950-1:2006+A11:2009+A1:2010+A12:2011 and IEC 60950-1:2005 (2nd Edition); Am 1:2009.

General Comment:

Brief description of the test sample:

1. The subject equipment is a movable or stationary equipment. Consisting of a plastic or metal housing SELV circuits and to be used with an external power adaptor or POE power supply.
2. The equipment provides two input method: DC in and supplied from POE, POE power source is SELV output.
3. The equipment is rated by the manufacturer for use in a maximum ambient temperature of 50 Deg C.
4. Model: FD8131 is Indoor Dome Network Camera.
5. Model: FD8131V is outdoor Dome Network Camera.
6. Model: FD8131V IP test report refer to SGS report No. HC70152/2012, test standard for IEC60523 Edition 2.1:2001-- IP66

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Cl.	Requirement - Test	Result - Remark	Verdict
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1	GENERAL		P
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1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application.	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Except for the insulation material there are no further requirements to the interconnection cable.	P
1.5.6	Capacitors bridging insulation	Class III equipment	N/A
1.5.7	Resistors bridging insulation	No component bridged reinforced or double insulation.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Not connected to IT power systems	N/A
1.5.9	Surge suppressors	No used on primary circuit.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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1.6	Power interface		P
1.6.1	AC power distribution systems	Class III equipment	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking	See below.	P
	Multiple mains supply connections		P
	Rated voltage(s) or voltage range(s) (V)	See page 1	P
	Symbol for nature of supply, for d.c. only	See page 1	P
	Rated frequency or rated frequency range (Hz)		N/A
	Rated current (mA or A)	See page 1	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark	See page 1	P
	Model identification or type reference	See page 1	P
	Symbol for Class II equipment only		N/A
	Other markings and symbols	CE	P
1.7.2	Safety instructions and marking	See below:	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
1.7.4	Supply voltage adjustment		N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The function of indicators and controls is clearly identified.	P
1.7.8.2	Colours	Colors are used and safety is not involved.	P
1.7.8.3	Symbols according to IEC 60417	See General product information - Markings and Instructions	P
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources		N/A
1.7.10	Thermostats and other regulating devices		N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. and then rubbed with cloth soaked with HEXANE for 15 sec. After test, the marking is readable.	P
1.7.12	Removable parts	The required marking is not placed on removable parts.	P
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below.	P
2.1.1.1	Access to energized parts	This equipment is intended to be supplied from SELV with energy below 240VA.	P
	Test by inspection	No energy part can be touched by inspection.	P
	Test with test finger (Figure 2A)	No energy part can be touched by finger.	P
	Test with test pin (Figure 2B)	No energy part can be touched by pin.	P
	Test with test probe (Figure 2C)		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	No parts at hazardous energy level in operator access area.	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	Equipment is supplied from SELV circuit and no generation of hazardous voltage is possible under normal operating conditions for SELV circuit.	P
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds, see abnormal results. (see also appended table 2.2.2)	P
2.2.4	Connection of SELV circuits to other circuits	The EUT only connection to SELV circuit.	P

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
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
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

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2.4	Limited current circuits		N/A
2.4.1	General requirements	No limited current circuit provided.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μ F)		—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A)		—
	Use of integrated circuit (IC) current limiters		—

2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class III equipment.	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 (mm^2), AWG		—

Cl.	Requirement - Test	Result - Remark	Verdict
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)		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, 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	Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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		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		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C)		—
2.9.3	Grade of insulation	Only functional insulation type.	P
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used		—

Cl.	Requirement - Test	Result - Remark	Verdict
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2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See below.	P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	See Test item particulars	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply		N/A
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A

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	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	The cross-sectional area of the wires is adequate and complied with the tests of 4.5.2 and 4.5.3.	P
3.1.2	Protection against mechanical damage	The wireways (including holes) are smooth and free from sharp edges.	P
3.1.3	Securing of internal wiring	No excessive strain on wire and on terminal connections, loosening of terminal connections and damage of conductor insulation.	P
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	Sufficient resilience is provided.	P
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	The clearances and creepages are not reduced below required in 2.10.	P
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		N/A
3.2.1	Means of connection	Class III equipment. No direct connection to mains.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—

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Cl.	Requirement - Test	Result - Remark	Verdict
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), 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
	Diameter or minor dimension 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	Class III equipment. No direct connection to mains.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

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3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement	Class III equipment. No direct connection to mains.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	SELV circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	All connector are input port.	N/A

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4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	EUT is mounting type.	N/A
	Test force (N)		N/A

4.2	Mechanical strength		P
4.2.1	General	No safety relevant damages.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	10N applied to components and parts.	P
4.2.3	Steady force test, 30 N	--	N
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; height (mm)		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)	The unit was subjected to the load test. An additional force of 50N was applied to the unit plus the ceiling-mounting accessory and sustained for 1 min. The unit withstood the load test without damages or breaks.	P
4.2.11	Rotating solid media		N/A
	Test to cover on the door		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N)	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No adjustable controls.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to with standard usual mechanical stress.	P
4.3.5	Connection by plugs and sockets	In operator and service area, mismatch of connectors were prevented by incompatible form or location.	P
4.3.6	Direct plug-in equipment	The equipment is not direct plug-in type.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	The insulation has adequate properties to resist deterioration.	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	See below.	P
4.3.13.1	General	See below.	P

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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	Lasers (including laser diodes) and LEDs	See below:	P
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are considered complied without tests: Indicating lights.	P
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		P
4.4.1	General	The rotating part of the build-in DC motor is protected by the enclosure, which considered no accessible to the user.	P
4.4.2	Protection in operator access areas	For the DC motor located adjacent to Lens compartment was not accessible when tested with test finger.	P
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas	Unintentional contact with the moving parts of the DC motor is unlikely during servicing operation.	P
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
	Not considered to cause pain or injury. a)		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

4.5	Thermal requirements		P
4.5.1	General	No exceeding temperature.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L	(See Annex L)	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat		N/A

4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	(see appended table)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottom, dimensions (mm)	(see appended table)	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks)		—

Cl.	Requirement - Test	Result - Remark	Verdict
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4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	See below.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	See 4.7.2.2.	N/A
4.7.2.2	Parts not requiring a fire enclosure	All components mounted on PCB rated V-1 or better, therefore cover in fire enclosure required.	P
4.7.3	Materials		P
4.7.3.1	General	PCB rated accordingly. See appended table 1.5.1 for details.	P
4.7.3.2	Materials for fire enclosures	V-1 type minimum.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filter provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Class III equipment.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		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
	Supply 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
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—

Cl.	Requirement - Test	Result - Remark	Verdict
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

5.2	Electric strength		N/A
5.2.1	General	Class III equipment	N/A
5.2.2	Test procedure		N/A

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	See below	P
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation	Method c) used, but due to Components are mounted on PCB rated V-1 or better. No basic, supplementary or reinforced insulation inside. no test necessary.	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE		N/A
5.3.7	Simulation of faults	See appended table 5.3.	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See appended table 5.3.	P
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A

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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
	Supply 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		—

Cl.	Requirement - Test	Result - Remark	Verdict
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7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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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)	All materials have suitable flame class, no testing required.	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 (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
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; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
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)		—

Cl.	Requirement - Test	Result - Remark	Verdict
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		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)		P
B.1	General requirements	See below	N/A
	Position	Refer to table 1.5.1	—
	Manufacturer	Refer to table 1.5.1	—
	Type	Refer to table 1.5.1.	—
	Rated values	Refer to table 1.5.1.	—
B.2	Test conditions	The DC motor tested within the equipment, refer to table 1.5.1 for details.	P
B.3	Maximum temperatures	For secondary DC motor, see B.7.	P
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.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		P
B.7.1	General	See below	P
B.7.2	Test procedure	Performed, cheesecloth and tissue paper did not char or flame. See appended table 5.3.	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		P
B.8	Test for motors with capacitors		P
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		—
	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 (see 5.1.4)		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	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	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		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 4.5.2)		P
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		P

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		—
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—

Cl.	Requirement - Test	Result - Remark	Verdict
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 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	ANNEX P, NORMATIVE REFERENCES		—
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Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories		N/A
	b) Maximum continuous voltage		N/A
	c) Pulse current		N/A

R	Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		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

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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
			—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

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Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	Annex CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General		N/A
CC.2	Test program 1		N/A
CC.3	Test program 2		N/A

DD	Annex DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N		N/A
DD.3	Mechanical strength test, 250N, including end stops		N/A
DD.4	Compliance		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
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EE	Annex EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols		N/A
	Information of user instructions, maintenance and/or servicing instructions		N/A
EE.3	Inadvertent reactivation test		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2)		N/A

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹ .	
PCB	Various	Various	V-1 minimum, 105°C minimum.	UL 796	UL	
Top Enclosure – identity and Bottom Enclosure	--	--	Metal, 1.0mm thickness minimum.	--	--	
Enclosure	Various	Various	V-1 minimum, 60°C minimum, 1.0mm thickness. (When used plastic material)	UL 94	UL	
(Alternate)	--	--	Metal, 1.0mm thickness minimum. (When used metal material)	--	--	
Power Adaptor (Optional)	Various	Various	I/P: 100-240V~, 50-60Hz, 0.6A. O/P: DC 12V, 1.5A, Class II. “LPS” type.	IEC/EN 60950-1, UL 60950-1	UL, CE, Intertek	
Infra-red LED	Unity Opto Technology Co Ltd	MIE-534H4C-35H	=850nm max	--	--	
Note(s):						

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
12Vdc	0.174	0.20833	2.088	--	--	Maximum normal load. (For DC adaptor input)	
50Vdc	0.040	0.06	2.011	--	--	Maximum normal load. (For POE input)	
Supplementary information:							

2.2.2	TABLE: Hazardous voltage measurement				P
Transformer	Location	max. Voltage		Voltage Limitation Component	
		V peak	V d.c.		
T1	Pin 4-1	--	57.6	--	
	Pin 2-1	20.8	--	--	
	Pin 3-1	106	--	--	
	Pin 3-1	--	0.3	Q12	
	Pin 6-5	4.59	--	--	
	Pin 7-5	5.69	--	--	
	Pin 8-5	3.37	--	--	
Note(s):					

2.2.3	TABLE: SEL voltage measurement		P
Location	Voltage measured (V)	Comments	
All output connector	0	Q12 short, unit shut down.	
Note(s):			

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) :	a) POE (50Vdc) b) Adaptor (12Vdc)				—	
	Ambient T_{min} (°C) :	--				—	
	Ambient T_{max} (°C) :	--				—	
Maximum measured temperature T of part/at::		T (°C)				Allowed T_{max} (°C)	
Test voltage		a)	b)				
Max. ambient temperature Tma (°C): Note: ambient air during test were Tamb =25.6°C or 25.8°C		50.0	50.0		--		
PWB near U34		69.9	67.8		105		
PWB near U28		69.3	67.6		105		
T1 coil		77.7	64.6		105		
T1 core		76.7	64.2		105		
L94 coil		68.0	67.8		105		
BT1 body		66.3	64.7		85		
L95 body		70.6	66.9		105		
PWB near C18		69.0	66.7		105		
Enclosure inside		56.4	54.7		--		
Enclosure outside		55.3	53.9		95/70		
Supplementary information:							
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C) Insulation class	
Supplementary information:							
1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.							
2. Unit specified with maximum of 50°C ambient temperature and above test data was calculated by original test result of ambient temperature above.							
3. Enclosure outside limit 95°C for plastic enclosure, 70°C for metal enclosure.							

4.6.1, 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	
Front, Rear, Bottom, Right, Left	--	None.	
Supplementary information:			

5.3	TABLE: fault condition tests						P
	ambient temperature (°C) :				See below		—
	model/type of Power Supply :				See table 1.5.1		—
	manufacturer of Power Supply :				See table 1.5.1		—
	rated markings of Power Supply:				See table 1.5.1		—
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
01	T1 pin 6-5	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
02	T1 pin 7-5	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
03	T1 pin 8-5	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
04	T1 pin 2-1	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
05	T1 pin 3-1	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
06	T1 pin 4-1	Short	50Vdc	10 min.	--	--	Unit shutdown, no hazards. No damaged
supplementary information							

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Appendix I - Label



Appendix II - EuT Photographs

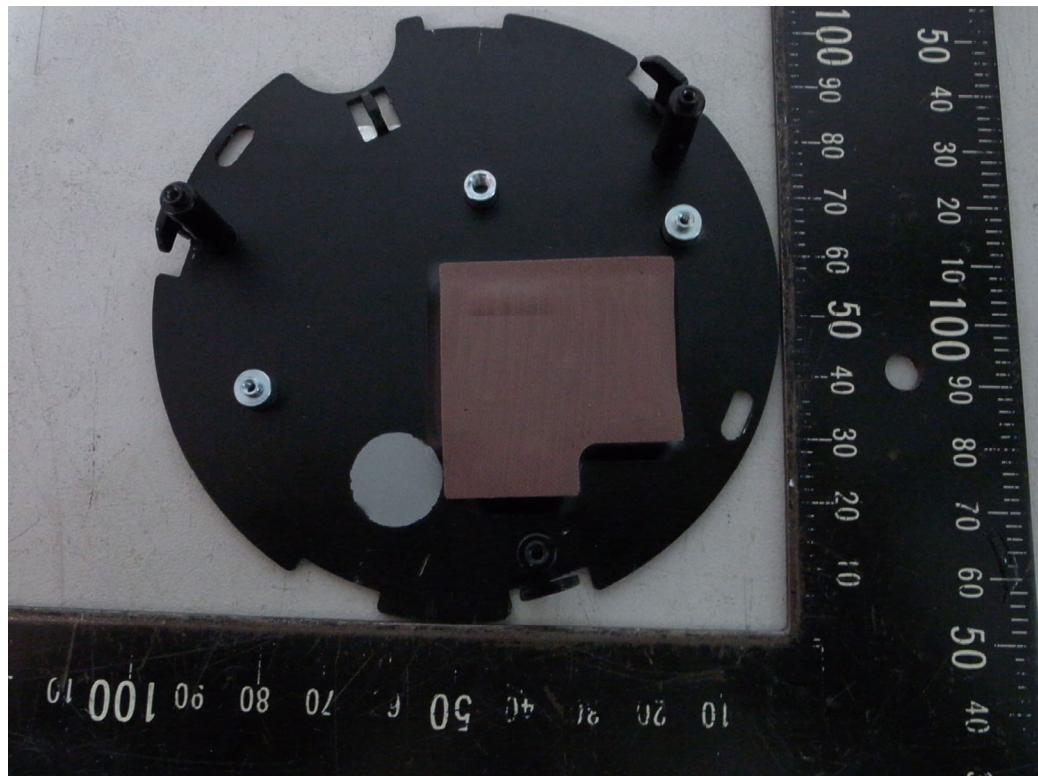
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For Plastic enclosure base cover (Model: FD8131)

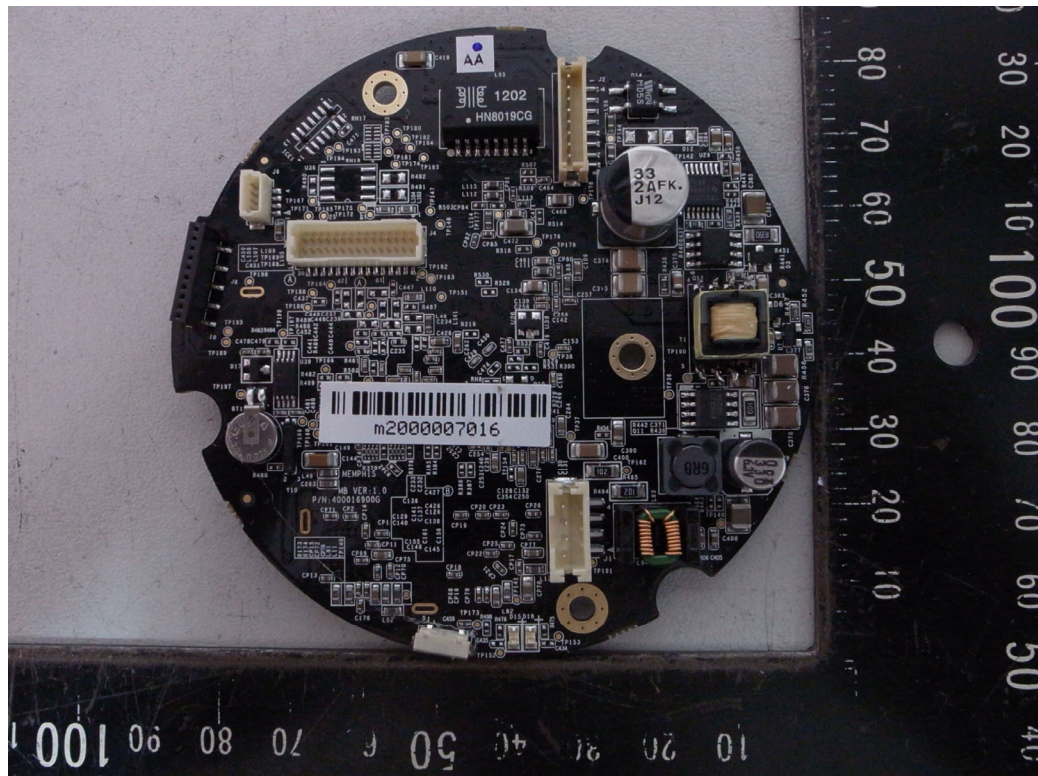
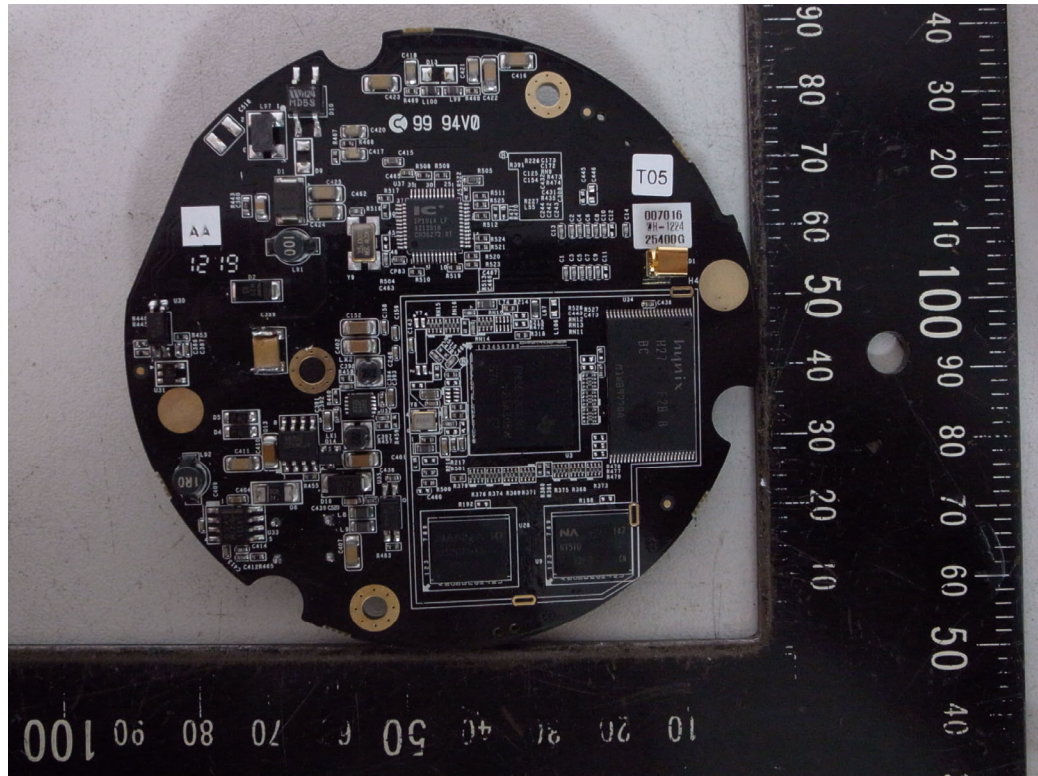


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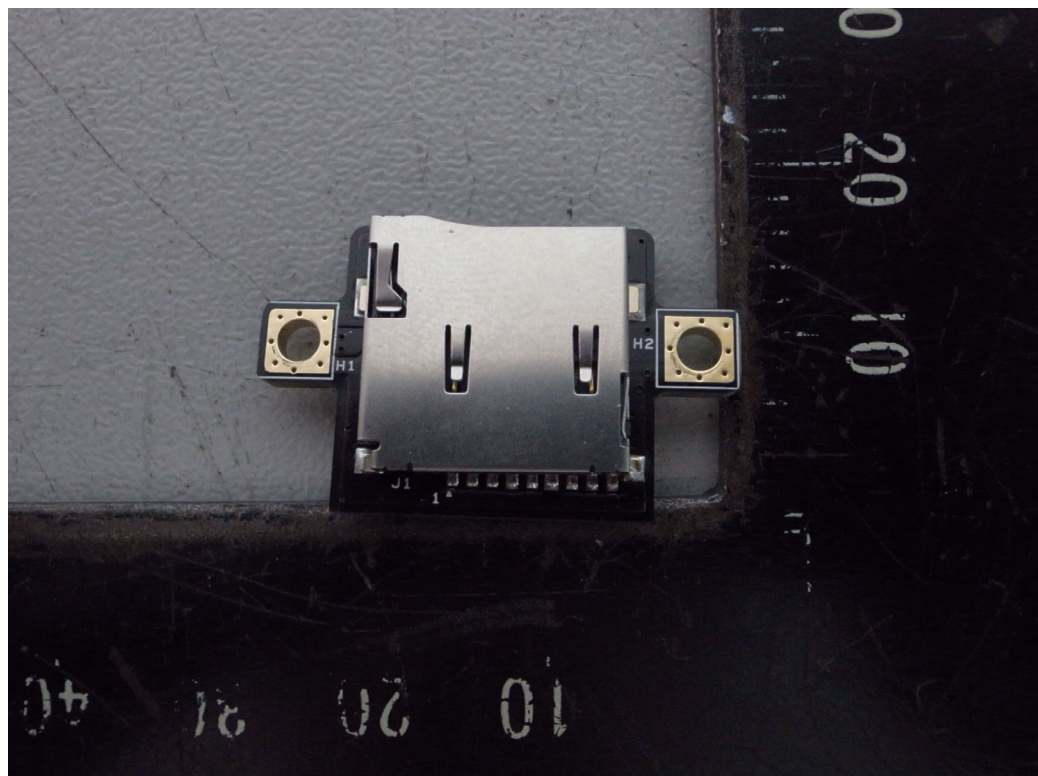
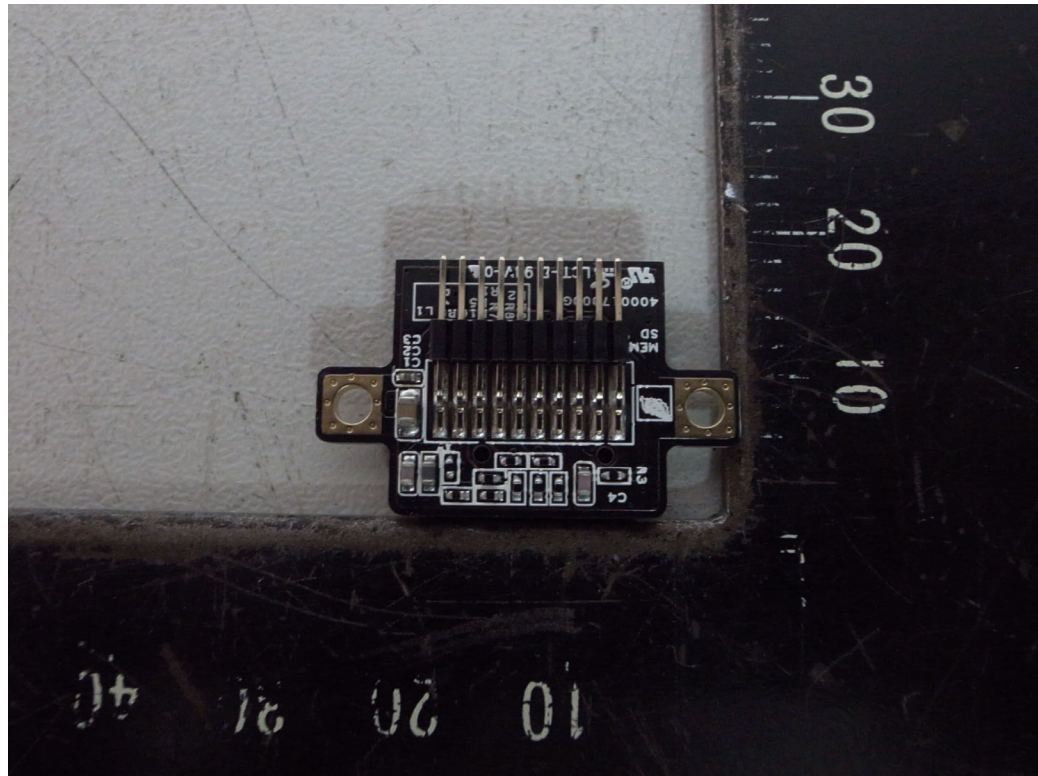


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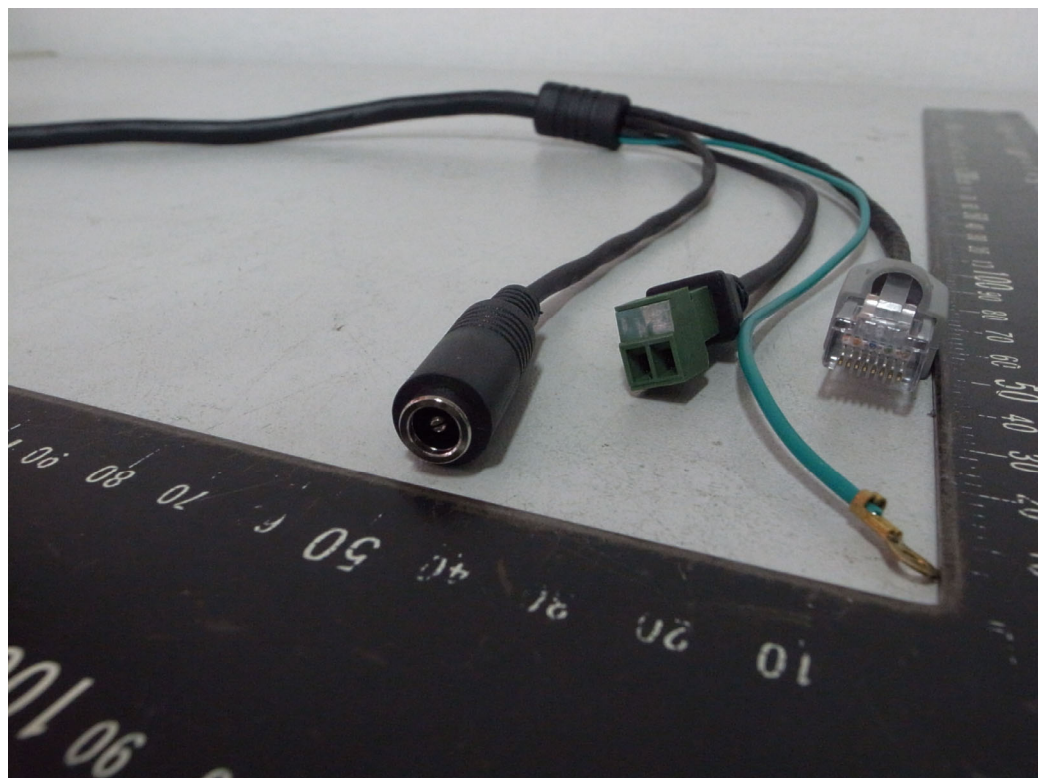
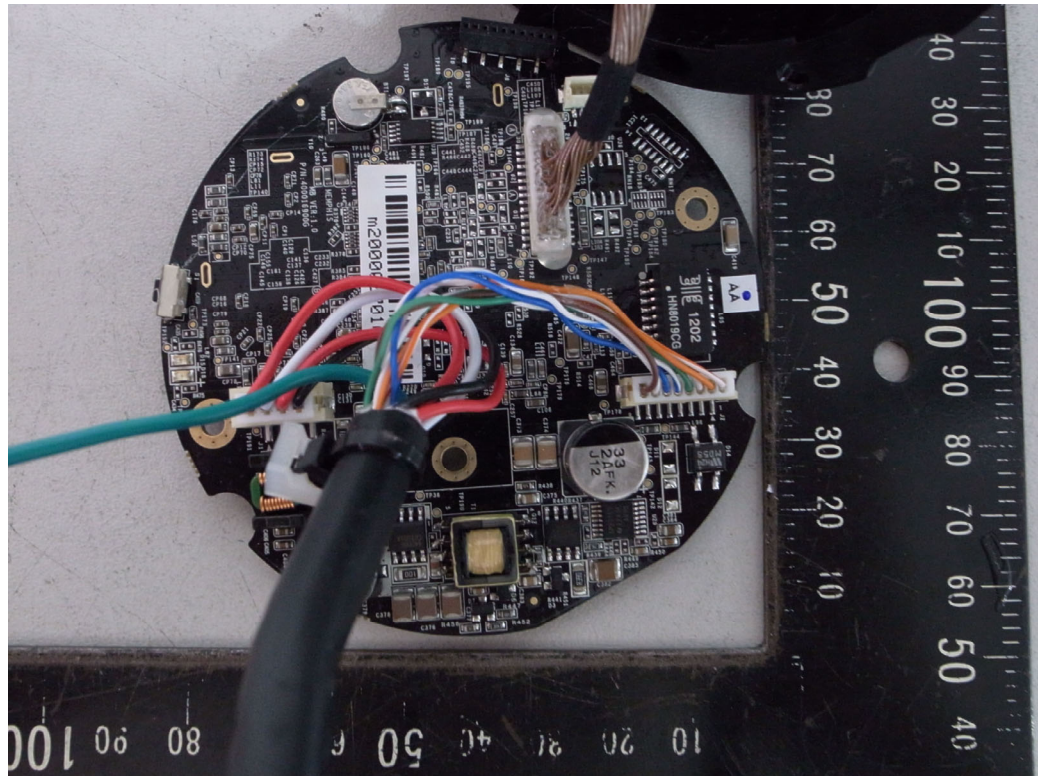
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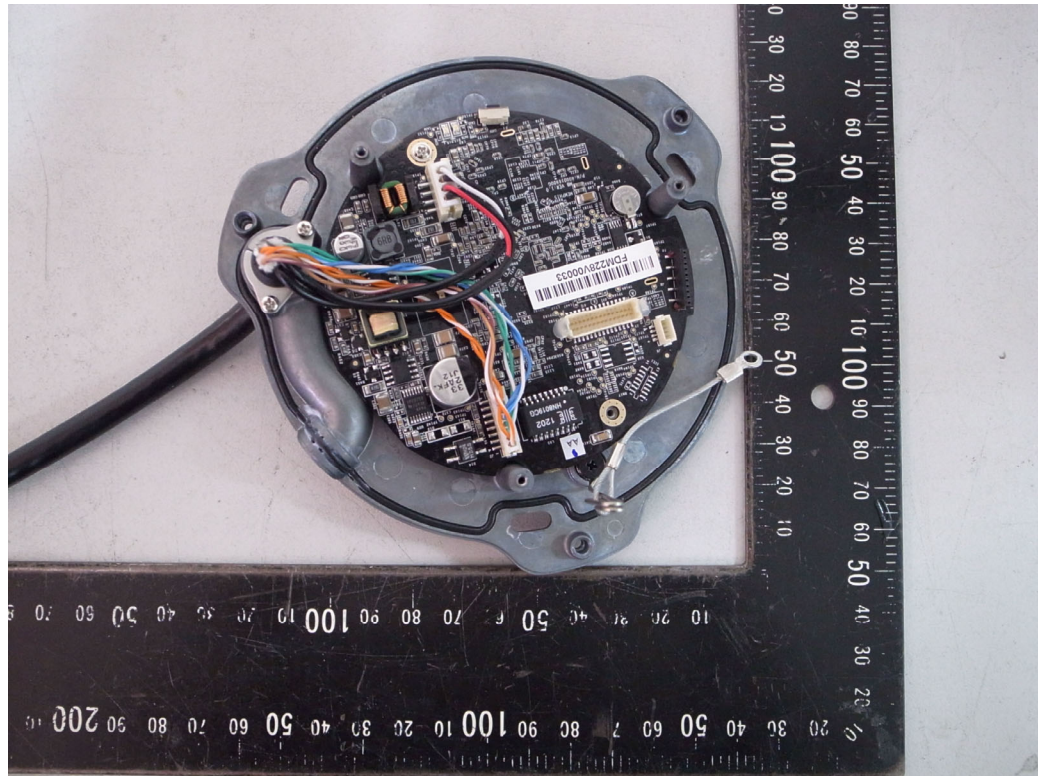
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For metal enclosure base cover (Model: FD8131V)



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Appendix III - Instrument list

項次	原始編號	儀器編號	儀器設備名稱(中文)	儀器設備名稱(英文)	廠牌	型號	校驗類別	校驗週期	校正日期	下次校正日期	校正機構	通報編號	下次到期月	規格	解析度
Item	No	Serial No.	Equipment Name	Instrument	Manufacturer	Model	Category	Calibration Cycle	Last Calibration Date	Calibration Due Date	Calibration Org	Report No.	Next Due Month	Range	Resolution
1	SPSC001	9311033	直流電表	DCA METER	SEW	ST-2000	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OC1-2411198M04L	04/2013	30A	0.1-0.2
2	SPSC002	931112/12	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	50A	0.1-0.2
3	SPSC003	93113/13	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	50A	0.1-0.2
4	SPSC004	940025/20	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	30A	0.1-0.2
5	SPSC005	940026/21	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	50A	0.1-0.2
6	SPSC006	9311/07	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	30A	0.1-0.2
7	SPSC007	9311/14	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	50A	0.1-0.2
8	SPSC008	368069	數位式功率表	Digital Power Meter	Idac	GP-310	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OC1-2411198M04L	03/2013	DCV 100V, ACV 75V, DC 0A, AC 0A, 10A	5.12
9	SPSC009	586514/25	三用電表	MULTIMETER	FLUKE	45	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	DCV 600V, ACV 600V, DC 0A, AC 0A, 10A, 10A	3.12
10	SPSC010	754707/97	三用電表	MULTIMETER	FLUKE	77	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OC1-2411198M04L	04/2013	DCV 600V, ACV 600V, DC 0A, AC 0A, 10A, 10A	3.12
11	SPSC011	12V0202/9	溫度記錄器	TEMP RECORDER - 1"	Yokogawa	DR-240	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OC1-2411198M04L	04/2013	40ohm, 0-200	6.12
12	SPSC012	MY410191/21	溫度記錄器	TEMP RECORDER - 2"	Agilent	34970A	外校	1年	07/03/2012	07/03/2013	宇正(0742)	OC1-2411198M04L	07/2013	40ohm, 0-200	6.12
13	SPSC013	MY4406/079	溫度記錄器	TEMP RECORDER - 3"	Agilent	34970A	外校	1年	05/24/2012	05/24/2013	宇正(0742)	OC1-2411198M04L	05/2013	40ohm, 0-200	6.12
14	SPSC014	4557	介電強度測試器	HIGH-POT	ASSOCIATED RESEARCH	4045A1	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OC1-2411198M04L	04/2013	ACVDC/SKV	100V/ACDC
15	SPSC015	20562	漏電流測試器	LEAKAGE CURRENT	SIMPSON	228	外校	1年	05/10/2012	05/10/2013	宇正(0742)	OC1-2411198M04L	05/2013	AC 300V, AC 10A, DC 10mA	---
16	SPSC016	18020	電力分析儀	WattHarmonic	Exatron Network Plus	---	外校	1年	09/09/2011	09/09/2012	宇正(0742)	OC1-2411198M04L	09/2012	ACV 520V, AC 100A, 60W, 14Hz	---
17	SPSC017	04810/LT	微電阻計	MilIohm Meter	Timex	TM-8088	外校	1年	09/29/2011	09/27/2012	宇正(0742)	OC1-2411198M04L	09/2012	20m / 200m / 2 / 20 / 200 / 2K / 20K	0.01m / 0.1m / 0.01 / 0.01 / 0.001K / 0.01K
18	SPSC018	EK01010/01	可程式溫度溼度模擬	Chamber	HOLINK	HTH-2SP-CH	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OC1-2411198M04L	12/2012	40 - +119 20%-98% RH	0.1 / 0.1% RH
19	SPSC019	16348	推張力計	PULL-PLUGH	CHATILLON	DRP-25kg	外校	1年	07/03/2012	07/03/2013	宇正(0742)	OC1-2411198M04L	07/2013	25kg	---
20	SPSC020	SPSC020	計時器	Timer	TH Horses	TH410	外校	1年	07/11/2012	07/11/2013	工研院(016)	107023261-1-1-8	07/2013	60sec-24hrs	1sec
21	SPSC021	20805	球壓測試器	Ball Pressure Test	ED&D	BPT-01	外校	3年	02/06/2012	02/05/2015	宇正(0742)	OC1-2411198M04L	02/2015	20N, R 2.5mm	---
22	SPSC022	20806	測試手指	Test Finger Probs	ED&D	TFP-01	外校	1年	06/05/2012	06/05/2013	宇正(2399)	OC1-2411198M04L	06/2013	---	---
23	SPSC023	---	測徑計	Test pin	原標	---	外校	3年	02/06/2012	02/05/2015	宇正(2399)	OC1-2411198M04L	02/2015	---	---
24	SPSC024	3054/08	數位式游標卡尺	Caliper	Mitutoyo	500-198	外校	1年	06/04/2012	06/04/2013	宇正(0742)	OC1-2411198M04L	06/2013	150mm	0.01mm
25	SPSC025	OC1-90120013	角度規	Angle Finder	Level	---	外校	3年	12/10/2010	12/09/2012	宇正(0742)	OC1-2411198M04L	12/2013	90°	1°
26	SPSC026	MUY04139	電子秤	Weight Meter	JenLung	MUY-150	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OC1-2411198M04L	12/2012	150kg	0.01kg
27	SPSC027	---	鐵球	STEEL BALL	---	---	外校	3年	02/17/2012	02/16/2015	宇正(2399)	OC1-2411198M04L	02/2015	0.5kg	---
28	SPSC028	9791525	光功率計	Electronic Instruments	Advantest	TQ8210	外校	3年	02/20/2012	02/19/2015	羅敏(047)	OC1-2411198M04L	02/2015	1000W	---
29	SPSC029	---	溼度溼度計	Thermometer & Hygrometer	TES	1366	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OC1-2411198M04L	04/2013	1-99%RH, 20-60	0.1%, 0.1°
30	SPSC030	931116	交流電表	ACA METER	SEW	ST-2000	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OC1-2411198M04L	12/2012	50A	0.1-1.02
31	SPSC031	BT30048	疊層器	FREQUENCY CONVERTER	BOARO-TECH	BFA-100-10	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OC1-2411198M04L	12/2012	AC110/220V, 50/60Hz	---
32	SPSC032	48X/E0282	溫度記錄器	TEMP RECORDER - 4"	YOKOGAWA	UR-1000	外校	1年	01/10/2012	01/09/2013	宇正(0742)	OC1-2411198M04L	01/2013	60Hz, 50 - +100	0.1°
33	SPSC033	48X/E0281	溫度記錄器	TEMP RECORDER - 5"	YOKOGAWA	UR-1000	外校	1年	01/10/2012	01/09/2013	宇正(0742)	OC1-2411198M04L	01/2013	10Hz - 100 Hz, 振幅 0.35mm	0.05mm
34	SPSC034	2597	慣性式振動測試機械	Vibration	Vibration Source	VS-5000L	外校	1年	02/06/2012	02/05/2013	宇正(0742)	OC1-2411198M04L	02/2013	10-95%RH, 20-60	0.1mm
35	SPSC035	100217927	溼度溼度計	Humidity Temp. Meter	TES	TES-1361C	外校	1年	09/10/2010	09/27/2012	宇正(0742)	OC1-2411198M04L	09/2012	10mm, 15mm, 20mm, 25mm	0.1%, 0.1°
36	SPSC036	122	刻度放大鏡	Comparator	FineScale	---	外校	3年	09/10/2010	09/09/2013	宇正(0742)	OC1-2411198M04L	09/2013	0 - 860	0.001mm
37	SPSC037	46189328	分厘卡	Micrometer	Mitutoyo	ZRS-2	外校	1年	02/06/2012	02/05/2015	宇正(0742)	OC1-2411198M04L	02/2015	0.25mm	+
38	SPSC038	2008010512	燃熱機裝置	Glow-wire	---	---	外校	1年	06/04/2012	06/04/2013	宇正(0742)	OC1-2411198M04L	06/2013	0 - 860	+
39	SPSC039	NPSC003	示波器	Digital Oscilloscope	Agilent	9564C	外校	1年	07/25/2012	07/25/2013	工研院(016)	107023261-2-1-8	07/2013	垂直 2m~5V(DIV), 水準 0~5V(DIV)	水準 ±0.1%
40	SPSC040	MY44012593	溫度記錄器	TEMP RECORDER - 6"	Agilent	34970A	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OC1-2411198M04L	03/2013	40ohm, 0-200	6.12
41	SPSC041	SPSC041	捲尺	Equipment	Tajima	3.5M	外校	3年	09/17/2011	06/16/2014	羅敏(0008)	AD0129	06/2014	10359CM	---
42	SPSC042	1420129	超線組抗測試器	Megohm Meter	Etech	8205	外校	1年	02/06/2012	02/05/2013	宇正(0742)	OC1-2411198M04L	02/2013	1000Vdc, 1-G Ohm	---
43	SPSC043	1320101	直流測量分析儀	Hi-Pot	Etech	7462	外校	1年	05/24/2012	05/24/2013	宇正(0742)	OC1-2411198M04L	05/2013	12k Vdc, 5000A	---
44	SPSC044	---	測試鉤	Test Hook	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OC1-2411198M04L	06/2014	---	---
45	SPSC045	080W/19B2	本生燈測試儀	---	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OC1-2411198M04L	06/2014	---	---
46	SPSC046	---	測試棒	Test probe	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OC1-2411198M04L	06/2014	---	---
47	SPSC047	---	針燈試驗機	Needle Pen Tester	Omga	TT-136	外校	3年	07/14/2011	07/13/2014	宇正(0742)	OC1-2411198M04L	07/2014	---	---
48	SPSC048	---	熱電偶(1.5μ)	Thermocouple	Pogitil	3302C	外校	1年	09/10/2011	08/10/2013	宇正(0742)	OC1-2411198M04L	08/2013	CHA +80V/90, 250V CHB +80V/6A, 50V	---
49	SPSC049	1120C2300	電子式功率表	Electronic Load	Pogitil	3302C	外校	1年	08/10/2011	07/25/2013	宇正(0742)	OC1-2411198M04L	07/2013	ACV 230V, AC 10A, 1500W, 50-60Hz	---
50	SPSC048	91F420805	數位式功率表	Power Meter	YOKOGAWA	WT-210	外校	1年	07/25/2012	07/25/2013	宇正(0742)	OC1-2411198M04L	07/2013	1, 150, 300 k	---
51	SPSC049	1003007/36	照度計	Luxmeter	TES	V330A	外校	3年	04/07/2011	04/06/2014	羅敏(1805)	11402039	04/2014	30Hz-148MHz	---
52	SPSC050	2807007	訊號產生器	Signal producer	ASTRO	V6-869	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OC1-2411198M04L	03/2013	5V-P-P, 4Hz-900MHz	---
53	SPSC051	LO42497	TV訊號產生器	TV signal producer	PHILIPS	PM5618	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OC1-2411198M04L	03/2013	Flat Frequency Response 200dBV	---
54	SPSC052	2011	粉塵計/噪聲產生器	Pink Noise Generator	Fibrog	NS9280	外校	1年	05/12/2012	05/21/2013	宇正(0742)	OC1-2411198M04L	05/2013	---	---
55	SPSC053	100402325	風速計	Air meter	TES	1340	外校	1年	06/04/2012	06/04/2013	宇正(0742)	OC1-2411198M04L	06/2013	0.5m/s, 1.0m/s, 3.0m/s	---