

Certificate of Compliance

with European Low Voltage Directive

No. T0905085-715

Type of equipment: 2 Mega-pixel Day and Night Network Camera /
2 Mega-pixel Network Camera

Certificate holder: VIVOTEK INC.

Type designation: IP7160, IP7161

Trademark: **VIVOTEK**

Technical data: Rating (s) : (1) DC 12V, 1.5A (Supplied by adapter only)
(2) DC 12V, 1.5A or DC 48V, 0.4A (Supplied by adapter or PoE)

A sample of the equipment has been tested for CE-marking according to the EC Low Voltage Directive, 2006/95/EC

Standard used for showing compliance with the essential requirements of the directive:

Standard(s):

IEC 60950-1:2001

EN 60950-1:2001

+A11:2004

Test report(s):

T0905085-715

Issued by:

Cerpass

Date(s):

5/Jun/09

The referred test report(s) show that the product fulfills the requirements in the EC Low Voltage Directive for CE marking. On this basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify compliance with the EC Low Voltage Directive.

CE



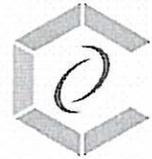
Jackie Lin

Testing Department



Carol Tang

Certification Department



TEST REPORT	
IEC 60950-1 and/or EN 60950-1	
Information technology equipment – Safety –	
Part 1: General requirements	
Report reference No	<T0905085-715>
Tested by (printed name and signature)	Miller Chang 
Approved by (printed name and signature)	Sprewell Chien 
Date of issue	June 5, 2009
Testing Laboratory Name	Cerpass Technology Corp.
Address	9F, No. 200, Gangcian Rd., Neihu District, Taipei City 114, Taiwan
Testing location	Same as above
Applicant's Name	VIVOTEK INC.
Address	6F, No.192, Lien-Cheng Rd., Chung-Ho City, Taipei County, Taiwan, R.O.C.
Test specification	
Standard	IEC 60950-1:2001 EN 60950-1:2001+A11:2004
Test procedure	Service of CE Marking in LVD
Non-standard test method	N/A
Test item description	
	2 Mega-pixel Day and Night Network Camera / 2 Mega-pixel Network Camera
Manufacturer	VIVOTEK INC. 5F, No.168, Lien-Cheng Rd., Chung-Ho City, Taipei County, Taiwan, R.O.C.
Trademark	
Model and/or type reference	IP7160, IP7161
Serial number	Pre-production samples w/o serial numbers
Rating(s)	(1) DC 12V, 1.5A (Supplied by adapter only) (2) DC 12V, 1.5A or DC 48V, 0.4A (Supplied by adapter or PoE)



Copy of marking plate(s):

(Representative)

Network Camera 

Model No:IP7161
MAC:0002D1XXXXXX

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
Pat.6, 930, 709 Made in Taiwan

Network Camera 

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MAC:0002D1XXXXXX

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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards (see appended table 1.5.1).	P
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal controls provided.	N/A
1.5.4	Transformers	No safety isolation transformer in this equipment.	N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	P
1.5.6	Capacitors in primary circuits	Class III equipment.	N/A
1.5.7	Double insulation or reinforced insulation bridged by components	Class III equipment.	N/A
1.5.7.1	General	Ditto.	N/A
1.5.7.2	Bridging capacitors	Ditto.	N/A
1.5.7.3	Bridging resistors	Ditto.	N/A
1.5.7.4	Accessible parts	Ditto.	N/A
1.5.8	Components in equipment for IT power systems	Class III equipment.	N/A

1.6	Power interface		P
1.6.1	AC power distribution systems	Equipment is not directly connected to the AC mains supply.	N/A
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is operated in data-link mode. (see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.6.4	Neutral conductor	Equipment is not directly connected to the AC mains supply.	N/A
1.7	Marking and instructions		P
1.7.1	Power rating	All information is provided on a label except the electrical rating is allowed to not be provided if the equipment is not directly supplied from mains.	P
	Rated voltage(s) or voltage range(s) (V)	Not directly supplied from mains.	N/A
	Symbol for nature of supply, for d.c. only	Not directly supplied from mains.	N/A
	Rated frequency or rated frequency range (Hz) ..	Not directly supplied from mains.	N/A
	Rated current (mA or A)	Not directly supplied from mains.	N/A
	Manufacturer's name or trademark or identification mark	See copy of marking plate	P
	Type/model or type reference	IP7160, IP7161	P
	Symbol for Class II equipment only	Class III equipment.	N/A
	Other symbols	Additional symbols or markings do not give rise to misunderstanding.	P
	Certification marks	No such mark.	N/A
1.7.2	Safety instructions	The user's manual contains information for operation, installation, servicing, transport, storage and technical data. The operation guide is provided to the user.	P
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No adjustment of supply voltage necessary.	N/A
	Methods and means of adjustment; reference to installation instructions	Ditto.	N/A
1.7.5	Power outlets on the equipment	No outlet provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	No such component within the equipment.	N/A
1.7.7	Wiring terminals	See below.	N/A
1.7.7.1	Protective earthing and bonding terminals	Class III equipment.	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	Class III equipment.	N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.7.3	Terminals for d.c. mains supply conductors	Class III equipment.	N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The marking and indication is located that indication of function clearly.	P
1.7.8.2	Colours	No safety relevant controls or indicators.	N/A
1.7.8.3	Symbols according to IEC 60417	No switch used.	N/A
1.7.8.4	Markings using figures	No indicators for different positions.	N/A
1.7.9	Isolation of multiple power sources	Single supply source.	N/A
1.7.10	IT power distribution systems	Class III equipment.	N/A
1.7.11	Thermostats and other regulating devices	No such devices provided.	N/A
1.7.12	Language(s)	User manual and marking label are in English. Versions of other languages will be provided when submitted for national approval.	—
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. 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 removable parts provided.	N/A
1.7.15	Replaceable batteries	No batteries provided.	N/A
	Language(s).....	Ditto.	—
1.7.16	Operator access with a tool	Only SELV inside.	N/A
1.7.17	Equipment for restricted access locations	No restricted access location.	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards <i>The unit is supplied from external adapter or PoE that provides SELV. No risk of electrical shock or energy hazards.</i>		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	See below.	P
	Test by inspection	EUT with SELV circuits. For details see below.	P
	Test with test finger	Ditto.	P



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Test with test pin	Ditto.	P
	Test with test probe	No TNV circuits in this equipment.	N/A
2.1.1.2	Battery compartments	No battery compartments within this equipment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance (mm) through insulation	Ditto.	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area.	P
2.1.1.6	Manual controls	No conductive shaft of operating knob and handle.	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III equipment.	N/A
	Time-constant (s); measured voltage (V)	Ditto.	—
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The unit is not intended to be used in restricted locations.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	Between any conductor of the SELV circuits 42.4 V peak or 60 V d.c. are not exceeded.	P
2.2.3	Voltages under fault conditions (V).....	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71 V peak and 120 V d.c. were not exceed and SELV limits not for longer than 0.2 s.	P
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Class III equipment, which is separated from hazardous voltage by double insulation or reinforced insulation through external power supply source.	N/A
2.2.3.2	Separation by earthed screen (method 2)	Ditto.	N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Ditto.	N/A
2.2.4	Connection of SELV circuits to other circuits.....	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	P



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.3	TNV circuits <i>No TNV circuits within this equipment.</i>		N/A
2.3.1	Limits		N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed		—
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits <i>No such circuit within this equipment.</i>		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured capacitance (µF)		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources <i>The unit is supplied from external adapter or PoE which are complied with the requirement of Limited Power Source.</i>		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA)		—
	Current rating of overcurrent protective device (A)		—



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

2.6	Provisions for earthing and bonding <i>Class III equipment.</i>		N/A
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A)		—
2.6.3.5	Colour of insulation		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm)		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits <i>Class III equipment.</i>		N/A
2.7.1	Basic requirements		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel.....		N/A
2.8	Safety interlocks <i>No such device within this equipment.</i>		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	Only SELV inside the unit. No electrical shock hazard.	P
2.9.2	Humidity conditioning		N/A
	Humidity (%)		—
	Temperature (°C)		—
2.9.3	Grade of insulation	Functional insulation.	P
2.10	Clearances, creepage distances and distances through insulation <i>Only SELV inside the unit. See also 5.3.4.</i>		P
2.10.1	General	Functional insulation only.	P
2.10.2	Determination of working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.3.2	Clearances in primary circuits		N/A
2.10.3.3	Clearances in secondary circuits		N/A
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances		N/A
	CTI tests		—
2.10.5	Solid insulation		N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material		N/A
	Number of layers (pcs)		—
	Electric strength test		—
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs)		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs)		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.6	Coated printed boards		N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C)		N/A
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test		—
2.10.7	Enclosed and sealed parts		N/A
	Temperature $T_1 = T_2 + T_{ma} - T_{amb} + 10K$ (°C).....		N/A
2.10.8	Spacings filled by insulating compound.....		N/A
	Electric strength test		—
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized. Cross-sectional area of internal wiring is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges or heat sinks, which could damage insulation and cause hazard.	P
3.1.3	Securing of internal wiring	Internal wiring is secured reliable so that loosening of terminal connections is unlikely.	P
3.1.4	Insulation of conductors	Insulation of the conductor is suitable for the application. For insulation material see sub-clause 3.1.1.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	No such screws provided.	N/A
3.1.7	Insulating materials in electrical connections	All connections are metal to metal.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping screws are used.	N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	Break away or pivot on its terminal is unlikely.	P
3.1.10	Sleeving on wiring	No sleeving on wiring used as supplementary insulation.	N/A

3.2	Connection to an a.c. mains supply or a d.c. mains supply <i>Class III equipment. No direct connection to mains supply.</i>		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	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
	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 <i>Class III equipment.</i>		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply <i>Class III equipment. No direct connection to mains supply.</i>		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment and d.c. equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
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	Interconnection circuits of SELV through sec connector.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	This appliance is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position.	P
	Test: force (N).....	Equipment is not a floorstanding unit.	N/A

4.2	Mechanical strength <i>Only SELV inside the unit.</i>		N/A
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	No CRT.	N/A
	Picture tube separately certified	Ditto.	N/A
4.2.9	High pressure lamps	No high pressure lamp.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)		N/A

4.3	Design and construction		P
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.1	Edges and corners	The outer surfaces of the equipment are smooth and rounded.	P
4.3.2	Handles and manual controls; force (N)	No such handle or control.	N/A
4.3.3	Adjustable controls	No such control.	N/A
4.3.4	Securing of parts	Mechanical fixings in such a way designed that they will withstand mechanical stress occurring in normal use.	P
4.3.5	Connection of 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	Not direct plug-in type.	N/A
	Dimensions (mm) of mains plug for direct plug-in :		—
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		—
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No such component provided.	N/A
4.3.9	Oil and grease	Insulation in intended use not considered to be exposed to oil and grease.	N/A
4.3.10	Dust, powders, liquids and gases	EUT in intended use does not produce dust or use powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No such containers provided.	N/A
4.3.12	Flammable liquids.....	No flammable liquids used.	N/A
	Quantity of liquid (l)		N/A
	Flash point (°C).....		N/A
4.3.13	Radiation; type of radiation	No concerned radiation within this equipment.	P
4.3.13.1	General	Ditto.	P
4.3.13.2	Ionizing radiation	No ionizing radiation or flammable liquids present.	N/A
	Measured radiation (pA/kg)	Ditto.	—
	Measured high-voltage (kV)	Ditto.	—
	Measured focus voltage (kV)	Ditto.	—
	CRT markings	Ditto.	—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation.	N/A
	Part, property, retention after test, flammability classification	Ditto.	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	Ditto.	N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.13.5	Laser (including LEDs)	AEL of LED far below the limiting values for LED Class 1.	P
	Laser class	Below Class 1.	—
4.3.13.6	Other types	No such consideration.	N/A
4.4	Protection against hazardous moving parts <i>No hazard moving part within this equipment.</i>		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.5	Thermal requirements		P
4.5.1	Maximum temperatures	See appended table 4.5.1.	P
	Normal load condition per Annex L.....	See appended table 1.6.2.	P
4.5.2	Resistance to abnormal heat	No thermoplastic part at hazardous voltage.	N/A
4.6	Openings in enclosures		P
4.6.1	Top and side openings	There is no opening provided.	P
	Dimensions (mm)	See appended table 4.6.1, 4.6.2.	—
4.6.2	Bottoms of fire enclosures	The equipment is power supplied from the external power adapter or the PoE (Power over Ethernet) interface which is complied with the requirement of Limited Power Source, and fire enclosure is not required.	N/A
	Construction of the bottom	See appended table 4.6.1, 4.6.2.	—
4.6.3	Doors or covers in fire enclosures	No doors or covers provided.	N/A
4.6.4	Openings in transportable equipment	Not a transportable equipment.	N/A
4.6.5	Adhesives for constructional purposes	No such consideration.	N/A
	Conditioning temperature (°C)/time (weeks)	Ditto.	—
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



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Clause	Requirement – Test	Result – Remark	Verdict
	Method 1, selection and application of components wiring and materials	Method 1 used.	P
	Method 2, application of all of simulated fault condition tests	Ditto.	N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	See below.	N/A
4.7.2.2	Parts not requiring a fire enclosure	The appliance with: Supply of components in the secondary circuit by a limited power source adapter. The components are mounted on PCB material of flammability rating V-1 min., the fire enclosure construction is not required.	P
4.7.3	Materials		P
4.7.3.1	General	PCB rated accordingly. For details see table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	See sub-clause 4.7.2.2.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Ditto.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Ditto.	N/A
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

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current <i>Class III equipment without TNV circuit.</i>		N/A
5.1.1	General		N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA) ..		—



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Clause	Requirement – Test	Result – Remark	Verdict
5.1.7	Equipment with touch current exceeding 3.5 mA :		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Test voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
5.2	Electric strength <i>Class III equipment without TNV circuit.</i>		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault condition		P
5.3.1	Protection against overload and abnormal operation	See appended table 5.3.	P
5.3.2	Motors	No motors provided.	N/A
5.3.3	Transformers	No safety isolation transformer in this equipment.	N/A
5.3.4	Functional insulation	Method c) See appended table 5.3.	P
5.3.5	Electromechanical components	No electromechanical components.	N/A
5.3.6	Simulation of faults	See appended table 5.3.	P
5.3.7	Unattended equipment	None of the listed components provided.	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire occurs, no emit molten metal, no hazardous.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS <i>Class III equipment without TNV circuit.</i>		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



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Clause	Requirement – Test	Result – Remark	Verdict
	Test voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions.....		N/A

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

6.3	Protection of the telecommunication wiring system from overheating <i>Not such equipment intended to provide power over telecommunication network.</i>		N/A
	Max. output current (A)		—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS <i>No cable distribution system within this equipment.</i>		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples.....		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	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		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)		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4 and 8		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h).....		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position		—
	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
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V).....		N/A
G.4	Determination of required withstand voltage (V)....		N/A
G.5	Measurement of transient levels (V).....		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		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	EUT is operated according to the operating instructions.	P



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
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	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA).....		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V).....		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		P
Q	ANNEX Q, BIBLIOGRAPHY		P
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
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
V.3	TT power systems		N/A
V.4	IT power systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic 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
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



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Clause	Requirement – Test	Result – Remark	Verdict
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)			P
General	C: Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.6 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2	Deleted.	P
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Class III equipment.	N/A
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	No such switch.	N/A
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Class III equipment.	N/A
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:	Class III equipment.	N/A
	FI: "Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"	Ditto.	N/A
	NO: "Apparatet må tilkoples jordet stikkontakt"	Ditto.	N/A
	SE: "Apparaten skall anslutas till jordat uttag"	Ditto.	N/A
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the	Ditto.	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."		
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	No socket-outlets.	N/A
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	Ditto.	N/A
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23 rd October 1992, Article 3, 3 rd paragraph, 2 nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10 th January 1996, article 2, 4 th paragraph item 2): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	Shall be evaluated when submitted to national approval	N/A
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	No batteries provided.	N/A
	A (DE, Regulation on protection against hazards by X-ray, of 8 th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by	This national difference was deleted by all of EN 60950-1	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	<p>the manufacturer or importer.</p> <p>c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <ol style="list-style-type: none"> 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that <ol style="list-style-type: none"> i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. <p>d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <ol style="list-style-type: none"> 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT. 		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Class III equipment and no earth connection.	N/A
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	No TNV circuit.	N/A
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Ditto.	N/A
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	Class III equipment.	N/A
2.7.1	<p>C: Replace the subclause as follows:</p> <p><i>Basic requirements</i></p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p>	Ditto.	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	<p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Class III equipment.	N/A
2.7.2	C: Void.	Class III equipment.	N/A
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Class III equipment.	N/A
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	Class III equipment.	N/A
3.2.1.1	<p>S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A</p>	Class III equipment. No direct connection to mains supply.	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	<p>S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	Ditto.	N/A
	<p>S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Ditto.	N/A
	<p>S (GB): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Ditto.	N/A



IEC 60950-1 / EN 60950-1									
Clause	Requirement – Test	Result – Remark	Verdict						
	S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adapters for Domestic Use) Regulations 1997.	Ditto.	N/A						
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Ditto.	N/A						
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: <table style="margin-left: 40px;"> <tr> <td>Up to and including 6</td> <td style="text-align: right;">0,75¹⁾</td> </tr> <tr> <td>Over 6 up to and including 10</td> <td style="text-align: right;">(0,75)²⁾ 1,0</td> </tr> <tr> <td>Over 10 up to and including 16</td> <td style="text-align: right;">(1,0)³⁾ 1,5</td> </tr> </table> In the Conditions applicable to Table 3B delete the words "in some countries" in condition ¹⁾ . In Note 1, applicable to Table 3B, delete the second sentence.	Up to and including 6	0,75 ¹⁾	Over 6 up to and including 10	(0,75) ²⁾ 1,0	Over 10 up to and including 16	(1,0) ³⁾ 1,5	Class III equipment. No direct connection to mains supply.	N/A
Up to and including 6	0,75 ¹⁾								
Over 6 up to and including 10	(0,75) ²⁾ 1,0								
Over 10 up to and including 16	(1,0) ³⁾ 1,5								
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Class III equipment. No direct connection to mains supply.	N/A						
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 " Delete the fifth line: conductor sizes for 13 to 16 A.	Class III equipment. No direct connection to mains supply.	N/A						
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.	Class III equipment. No direct connection to mains supply.	N/A						
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	Not direct plug-in equipment.	N/A						



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	S (IE): DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	Ditto.	N/A
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	No such consideration.	N/A
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTING TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all	Class III equipment and only SELV circuit within this equipment.	N/A



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.	Ditto.	N/A
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Ditto.	N/A
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	Annex G not applied for.	N/A
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μ Sv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.	No CRT used.	N/A
Annex P	C: Replace the text of this annex by: See annex ZA.	Replaced.	P
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		P



IEC 60950-1 / EN 60950-1																																																																																							
Clause	Requirement – Test	Result – Remark	Verdict																																																																																				
Annex ZA	<p>C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS</p> <p>This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).</p> <p>NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.</p> <table> <tr><td>—</td><td>IEC 60050-151</td></tr> <tr><td>—</td><td>IEC 60050-195</td></tr> <tr><td>EN 60065:1998 + corr. June 1999</td><td>IEC 60065 (mod):1998</td></tr> <tr><td>EN 60073:1996</td><td>IEC 60073:1996</td></tr> <tr><td>HD 566 S1:1990</td><td>IEC 60085:1984</td></tr> <tr><td>HD 214 S2:1980</td><td>IEC 60112:1979</td></tr> <tr><td>HD 611.4.1.S1:1992</td><td>IEC 60216-4-1:1990</td></tr> <tr><td>HD 21¹⁾ Series</td><td>IEC 60227 (mod) Series</td></tr> <tr><td>HD 22²⁾ Series</td><td>IEC 60245 (mod) Series</td></tr> <tr><td>EN 60309 Series</td><td>IEC 60309 Series</td></tr> <tr><td>EN 60317-43:1997</td><td>IEC 60317-43:1997</td></tr> <tr><td>EN 60320 Series</td><td>IEC 60320 (mod) Series</td></tr> <tr><td>HD 384.3 S2:1995</td><td>IEC 60364-3 (mod):1993</td></tr> <tr><td>HD 384.4.41 S2:1996</td><td>IEC 60364-4-41 (mod):1992³⁾</td></tr> <tr><td>EN 132400:1994⁴⁾</td><td>IEC 60384-14:1993</td></tr> <tr><td>+ A2:1998 + A3:1998 + A4:2001</td><td></td></tr> <tr><td>EN 60417-1</td><td>IEC 60417-1</td></tr> <tr><td>HD 625.1 S1:1996 + corr. Nov. 1996</td><td>IEC 60664-1 (mod):1992</td></tr> <tr><td>EN 60695-2-2:1994</td><td>IEC 60695-2-2:1991</td></tr> <tr><td>EN 60695-2-11:2001</td><td>IEC 60695-2-11:2000</td></tr> <tr><td>—</td><td>IEC 60695-2-20:1995</td></tr> <tr><td>—</td><td>IEC 60695-10-2:1995</td></tr> <tr><td>—</td><td>IEC 60695-11-3:2000</td></tr> <tr><td>—</td><td>IEC 60695-11-4:2000</td></tr> <tr><td>EN 60695-11-10:1999</td><td>IEC 60695-11-10:1999</td></tr> <tr><td>EN 60695-11-20:1999</td><td>IEC 60695-11-20:1999</td></tr> <tr><td>EN 60730-1:2000</td><td>IEC 60730-1:1999 (mod)</td></tr> <tr><td>EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997</td><td>IEC 60825-1:1993</td></tr> <tr><td>EN 60825-2:2000</td><td>IEC 60825-2:2000</td></tr> <tr><td>—</td><td>IEC 60825-9:1999</td></tr> <tr><td>EN 60851-3:1996</td><td>IEC 60851-3:1996</td></tr> <tr><td>EN 60851-5:1996</td><td>IEC 60825-5:1996</td></tr> <tr><td>EN 60851-6:1996</td><td>IEC 60851-6:1996</td></tr> <tr><td>—</td><td>IEC 60885-1:1987</td></tr> <tr><td>EN 60990:1999</td><td>IEC 60990:1999</td></tr> <tr><td>—</td><td>IEC 61058-1:2000</td></tr> <tr><td>EN 61965:2001</td><td>IEC 61965:2000</td></tr> <tr><td>EN ISO 178:1996</td><td>ISO 178:1993</td></tr> <tr><td>EN ISO 179 Series</td><td>ISO 179 Series</td></tr> <tr><td>EN ISO 180:2000</td><td>ISO 180:1993</td></tr> <tr><td>—</td><td>ISO 261:1998</td></tr> <tr><td>—</td><td>ISO 262:1998</td></tr> </table>	—	IEC 60050-151	—	IEC 60050-195	EN 60065:1998 + corr. June 1999	IEC 60065 (mod):1998	EN 60073:1996	IEC 60073:1996	HD 566 S1:1990	IEC 60085:1984	HD 214 S2:1980	IEC 60112:1979	HD 611.4.1.S1:1992	IEC 60216-4-1:1990	HD 21 ¹⁾ Series	IEC 60227 (mod) Series	HD 22 ²⁾ Series	IEC 60245 (mod) Series	EN 60309 Series	IEC 60309 Series	EN 60317-43:1997	IEC 60317-43:1997	EN 60320 Series	IEC 60320 (mod) Series	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 ³⁾	EN 132400:1994 ⁴⁾	IEC 60384-14:1993	+ A2:1998 + A3:1998 + A4:2001		EN 60417-1	IEC 60417-1	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	EN 60695-2-2:1994	IEC 60695-2-2:1991	EN 60695-2-11:2001	IEC 60695-2-11:2000	—	IEC 60695-2-20:1995	—	IEC 60695-10-2:1995	—	IEC 60695-11-3:2000	—	IEC 60695-11-4:2000	EN 60695-11-10:1999	IEC 60695-11-10:1999	EN 60695-11-20:1999	IEC 60695-11-20:1999	EN 60730-1:2000	IEC 60730-1:1999 (mod)	EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993	EN 60825-2:2000	IEC 60825-2:2000	—	IEC 60825-9:1999	EN 60851-3:1996	IEC 60851-3:1996	EN 60851-5:1996	IEC 60825-5:1996	EN 60851-6:1996	IEC 60851-6:1996	—	IEC 60885-1:1987	EN 60990:1999	IEC 60990:1999	—	IEC 61058-1:2000	EN 61965:2001	IEC 61965:2000	EN ISO 178:1996	ISO 178:1993	EN ISO 179 Series	ISO 179 Series	EN ISO 180:2000	ISO 180:1993	—	ISO 261:1998	—	ISO 262:1998		P
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	EN ISO 527 Series —	ISO 527 Series ISO 386:1984	
	EN ISO 4892 Series —	ISO 4892 Series ISO 7000:1989	
	EN ISO 8256:1996 —	ISO 8256:1990 ISO 9772:1994	
	EN ISO 9773:1998 — —	ISO 9773:1998 ITU-T:1988 Recommendation K.17 ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		



1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹ .	
Metal Enclosure	--	--	1.6mm thick min.	--	--	
PCB	--	--	V-1 or better, Min. 105°C	UL 796	UL	
Note(s):						
1. An asterisk indicates a mark that assures the agreed level of surveillance.						

1.6.2	TABLE: electrical data (in normal conditions)						P
Fuse #	I rated (A)	U (V)	P (W)	I (A)	I fuse (A)	Condition/status	
For model IP7161							
--	1.5	DC 12V	6.24	0.52	--	Maximum normal load.	
--	0.4	DC 48V	5.28	0.11	--	Maximum normal load.	
For model IP7160							
--	1.5	DC 12V	5.55	0.37	--	Maximum normal load.	
--	0.4	DC 48V	3.84	0.08	--	Maximum normal load.	
Note(s):							

2.1.1.5	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Note(s):					

2.1.1.7	TABLE: discharge test			N/A
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
Note(s):				

2.2.2	TABLE: Hazardous voltage measurement			N/A
Transformer	Location	max. Voltage		Voltage Limitation Component
		V peak	V d.c.	
Note(s):				



2.2.3	TABLE: SEL voltage measurement			N/A
Location		Voltage measured (V)	Comments	
Note(s):				

2.4.2	TABLE: limited current circuit measurement					N/A
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
Note(s):						

2.5	TABLE: limited power source measurement			N/A
		Limits	Measured	Verdict
current (in A)		8		
apparent power (in VA)		5 x Uoc =		
Note(s):				

2.6.3.3	TABLE: ground continue test		N/A
Location		Resistance measured (mΩ)	Comments
Note(s):			

2.10.2	Table: working voltage measurement			N/A
Location		RMS voltage (V)	Peak voltage (V)	Comments
Note(s):				

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					N/A	
Clearance cl and creepage distance dcr at/of:		U p (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Note(s):							

2.10.5	TABLE: distance through insulation measurements				N/A
Distance through insulation di at/of:		U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)



Note(s):

4.5	TABLE: Thermal requirements						P	
	Supply voltage (V)	See below.				—		
	Ambient T _{min} (°C)	--				—		
	Ambient T _{max} (°C)	--				—		
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)		
		Measured	Shifted					
Test voltage		Supplied by power supply (12Vdc)	Supplied by PoE (48Vdc)		--			
For model IP7161								
L41 Coil		73.8	79.2		105			
C41 Body		75.3	82.1		105			
T11 Coil		73.1	99.9		105			
C8 Body		72.9	93.7		105			
BT1 Body		75.9	82.2		105			
PCB near U3		66.6	68.8		105			
Metal enclosure outside near T11		60.3	62.1		70			
Tamb		23.0	22.9		--			
Tma		50.0	50.0		--			
Temperature T of winding:		t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
Note:								
1. The temperatures were measured under worst normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.								
2. The user's manual defines the Tma at 50°C. Therefore the maximum permitted temperature are recalculated for the worst Tamb at 50°C.								

4.5.2	TABLE: ball pressure test of thermoplastic parts			N/A
	allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Note(s):				

4.6.1, 4.6.2	Table: enclosure openings		P
Location	Size (mm)	Comments	
Top side	--	No opening provided.	



Front / Rear side	--	No opening provided.
Left / Right side	--	No opening provided.
Bottom side	--	No opening provided.
Note(s):		

4.7	Table: resistance to fire			P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class
Enclosure	--	--	Min. 1.6mm	Metal
PCB	--	--	--	Min. V-1
Note(s):				

5.1.6	TABLE: touch current measurement			N/A
Condition	L → terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments
Note(s):				

5.2	TABLE: electric strength tests and impulse tests		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Note(s):			

5.3	TABLE: fault condition tests						P
	ambient temperature (°C)					25°C if no otherwise specified.	—
	model/type of power supply					--	—
	manufacturer of power supply					--	—
	rated markings of power supply					--	—
No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
1	D21 Pin1-3	s-c	DC 12	30 min	--	--	Unit operate normally. No damage, no hazardous.
2	L170	s-c	DC 12	30 min	--	--	Unit operate normally. No damage, no hazardous.
Note(s): In fault column: s-c=short-circuited.							

C.2	Safety isolation transformer	N/A
Construction details:		



Transformer part name:		
Manufacturer:		
Type:		
Recurring peak voltage		
Required clearance for reinforced insulation (from table 2H and 2J)		
Effective voltage rms		
Required creepage distance for reinforced insulation (from table 2L)		
Measured min. creepage distance		
Location	inside (mm)	outside (mm)
Measured min. clearances		
Location	inside (mm)	outside (mm)
Construction:		
Pin numbers		
Prim.		
Sec.		
Bobbin		
Material		
Thickness		
Electric strength test		
With	V a.c. after humidity treatment	



Result	
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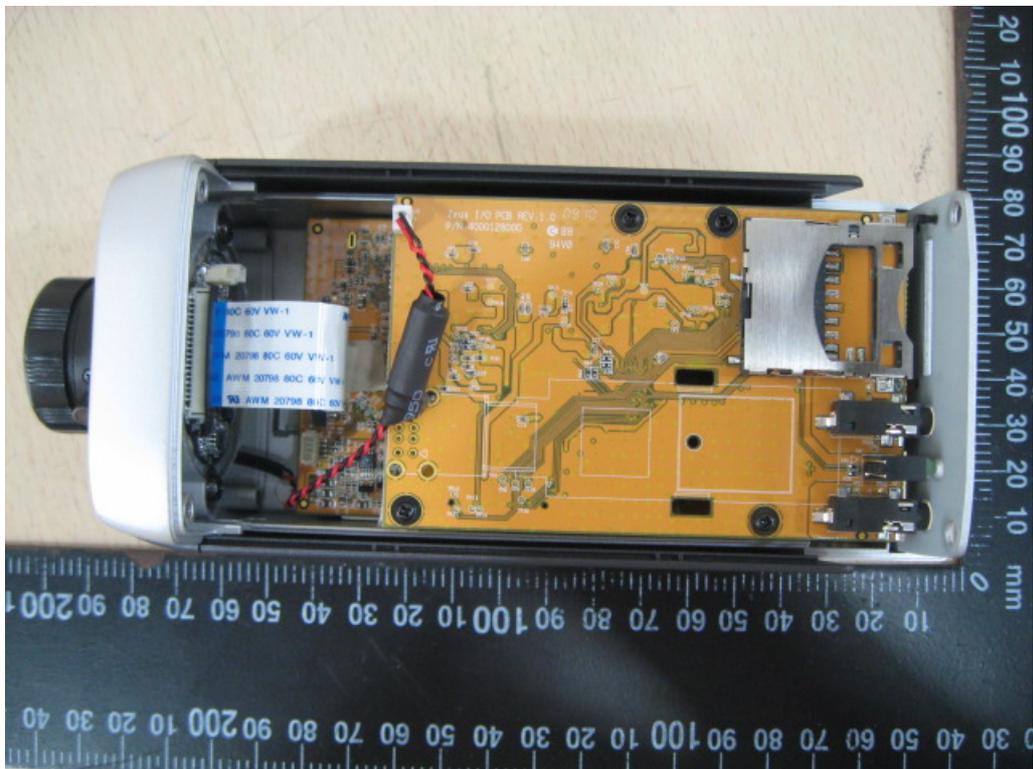
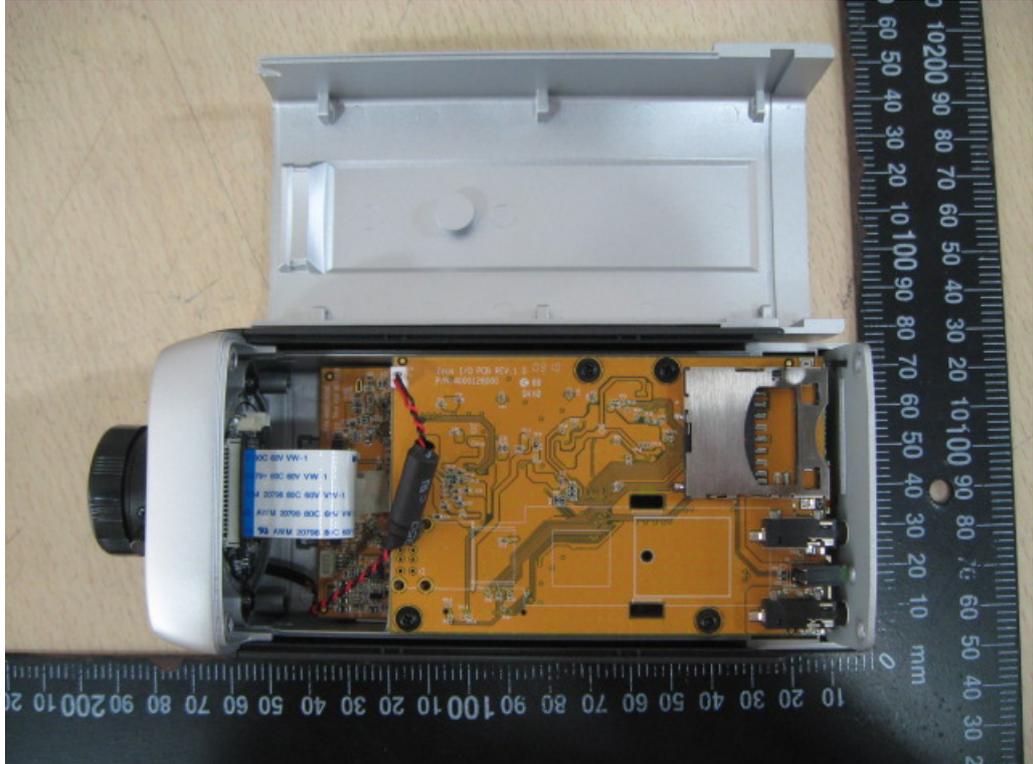


Photo(s), Model IP7160



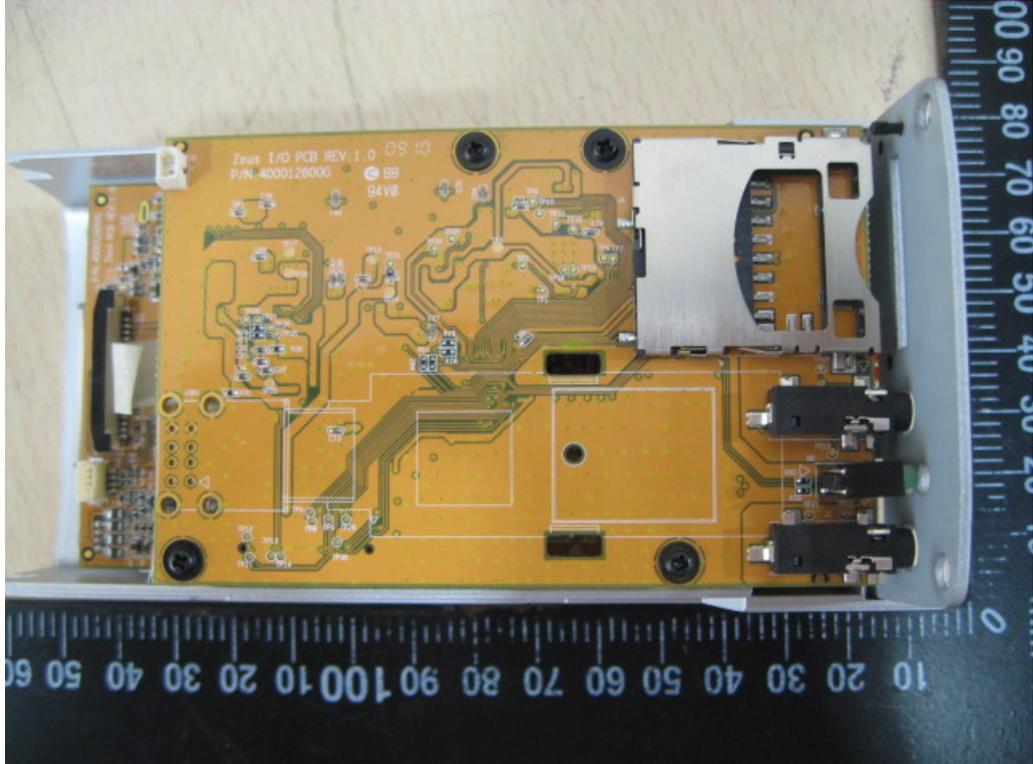


Photo(s), Model IP7160



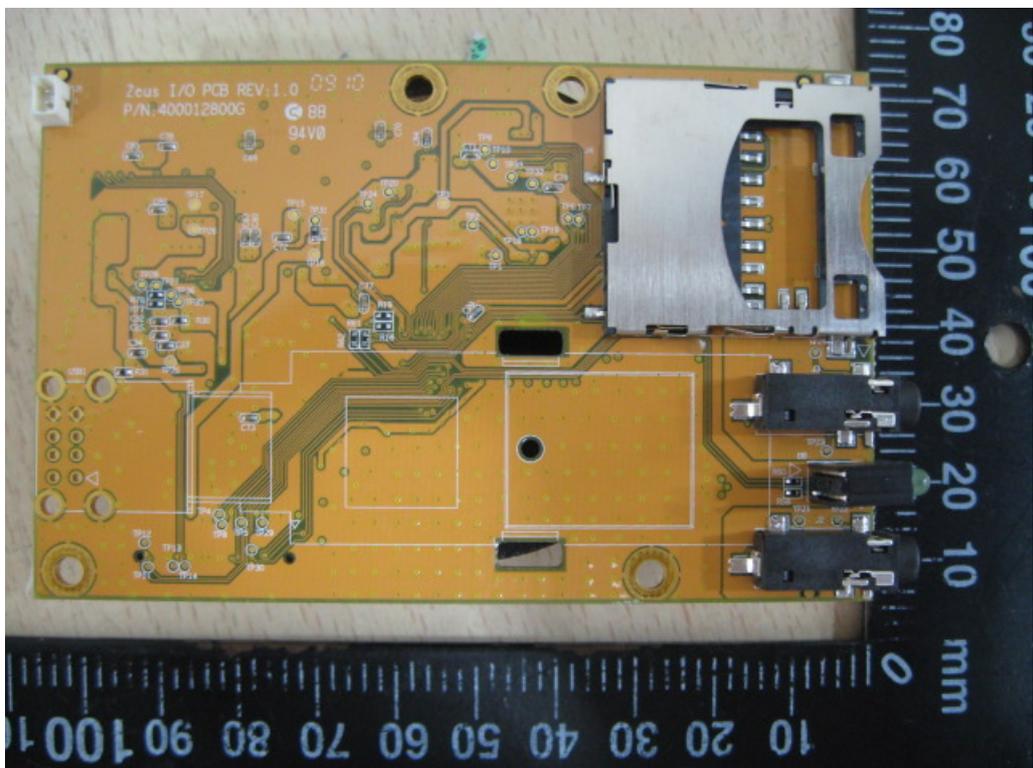
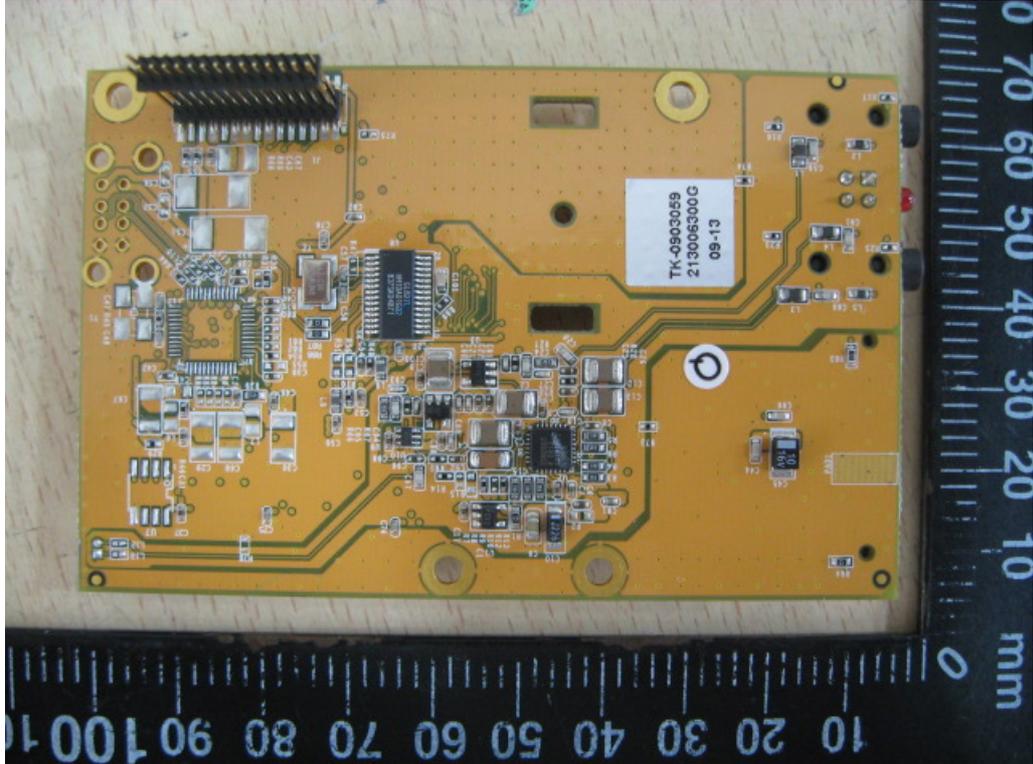


Photo(s), Model IP7160



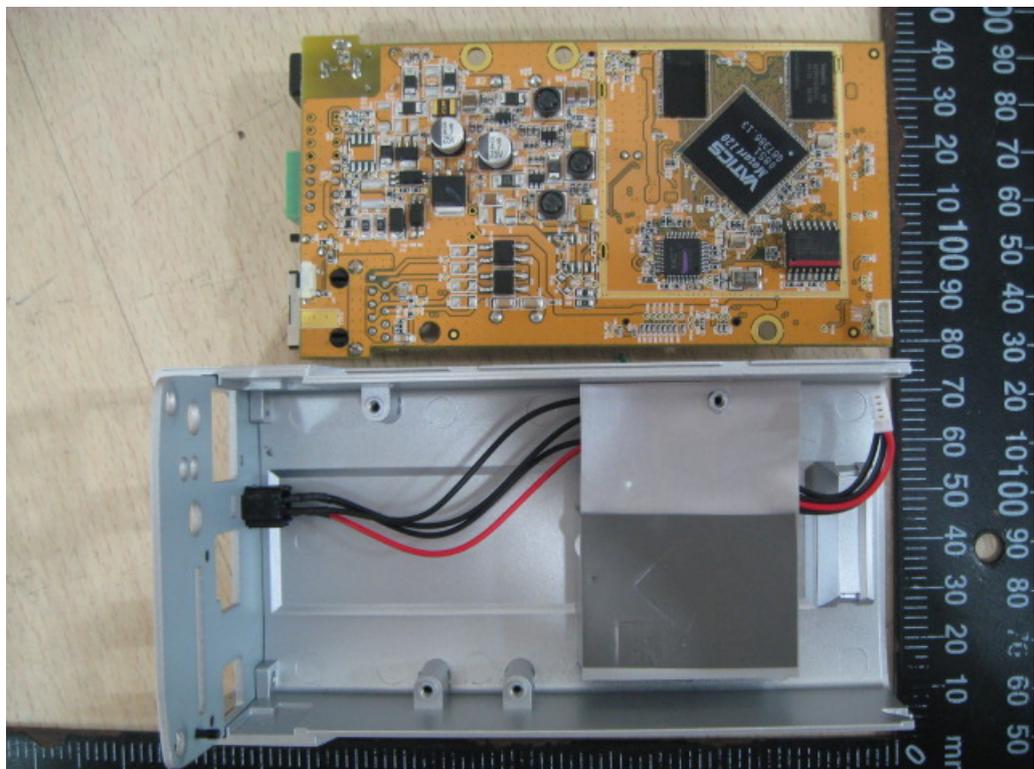


Photo(s), Model IP7160



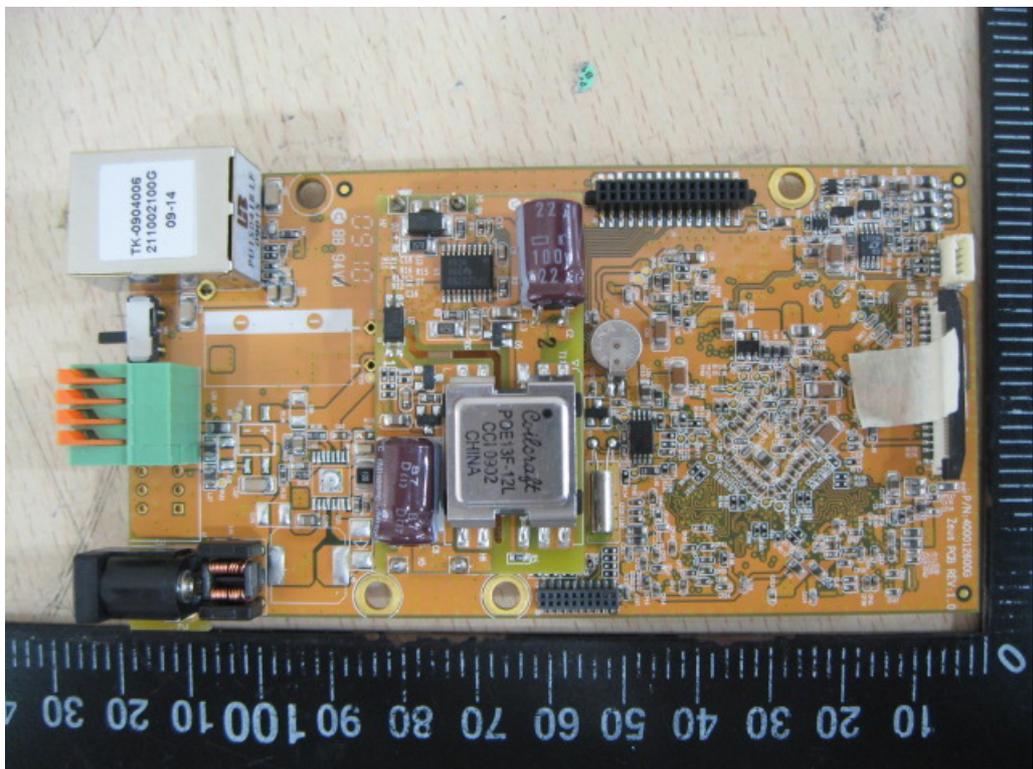
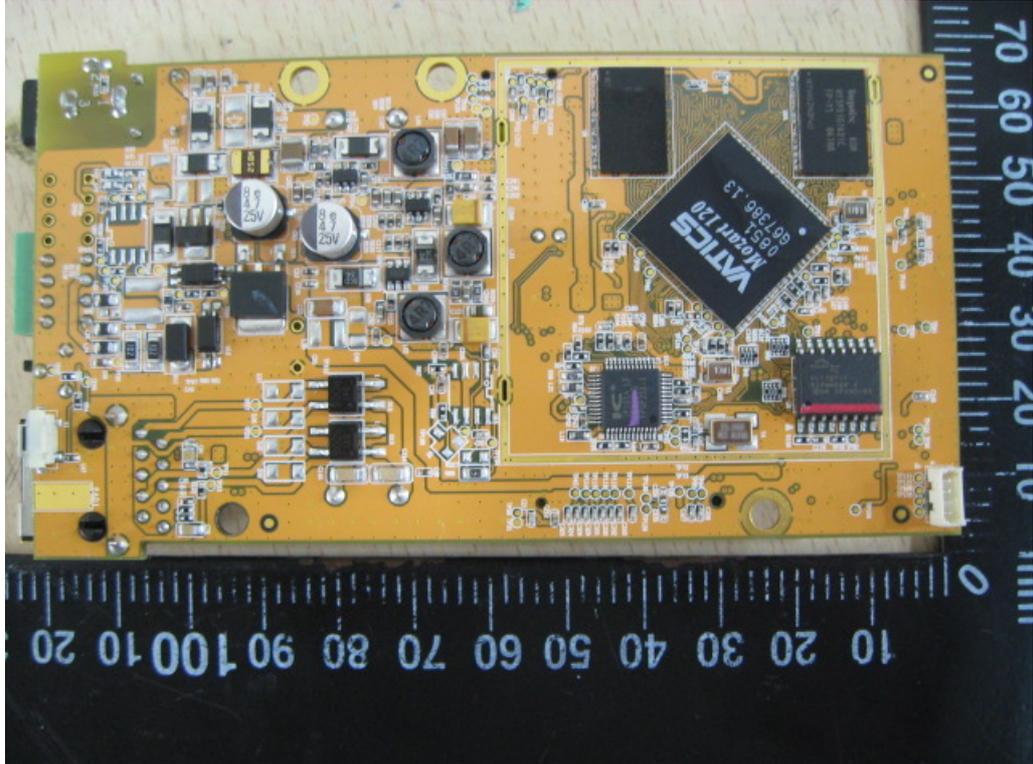


Photo(s), Model IP7160





Photo(s), Model IP7160



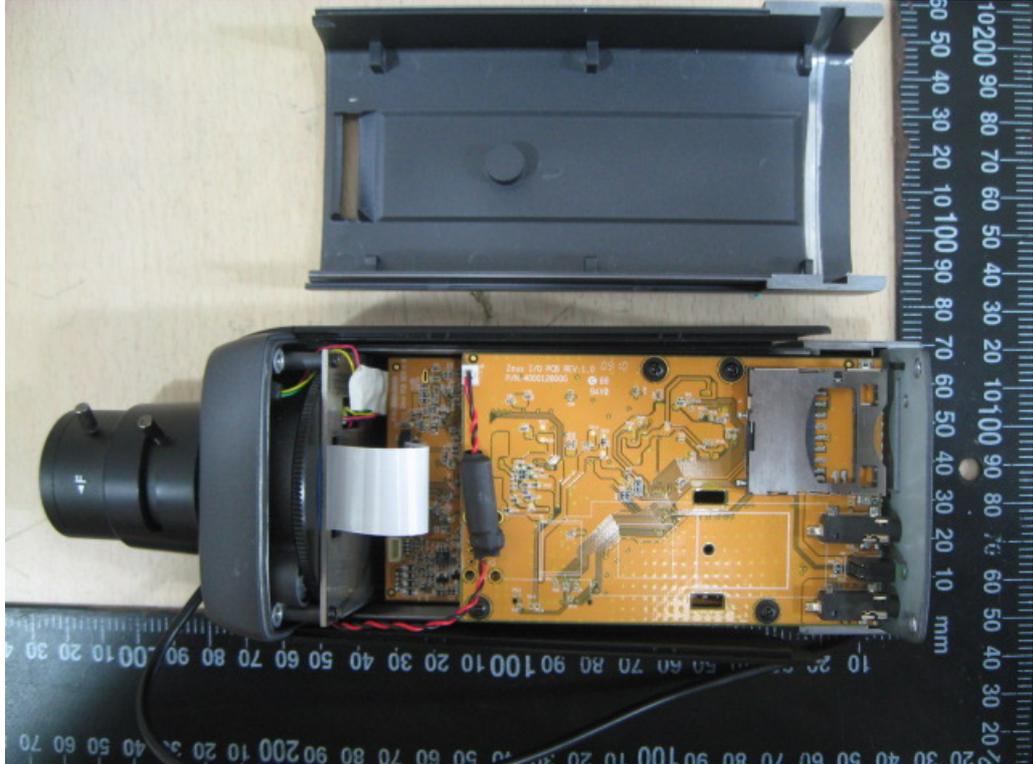


Photo(s), Model IP7161



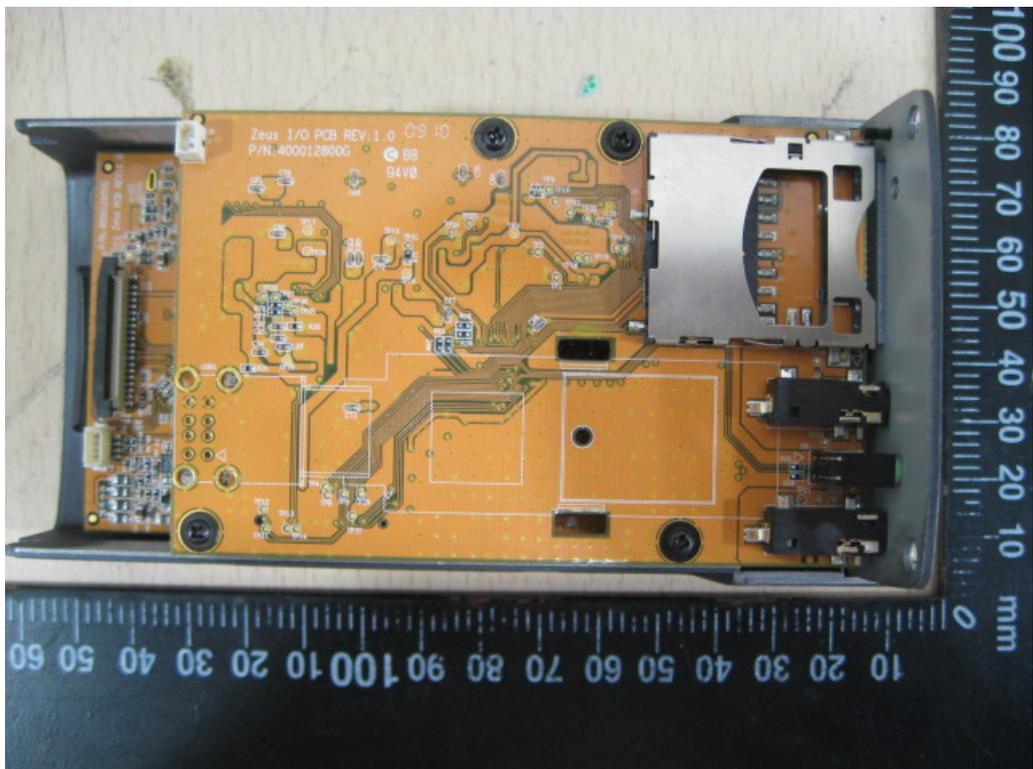


Photo(s), Model IP7161



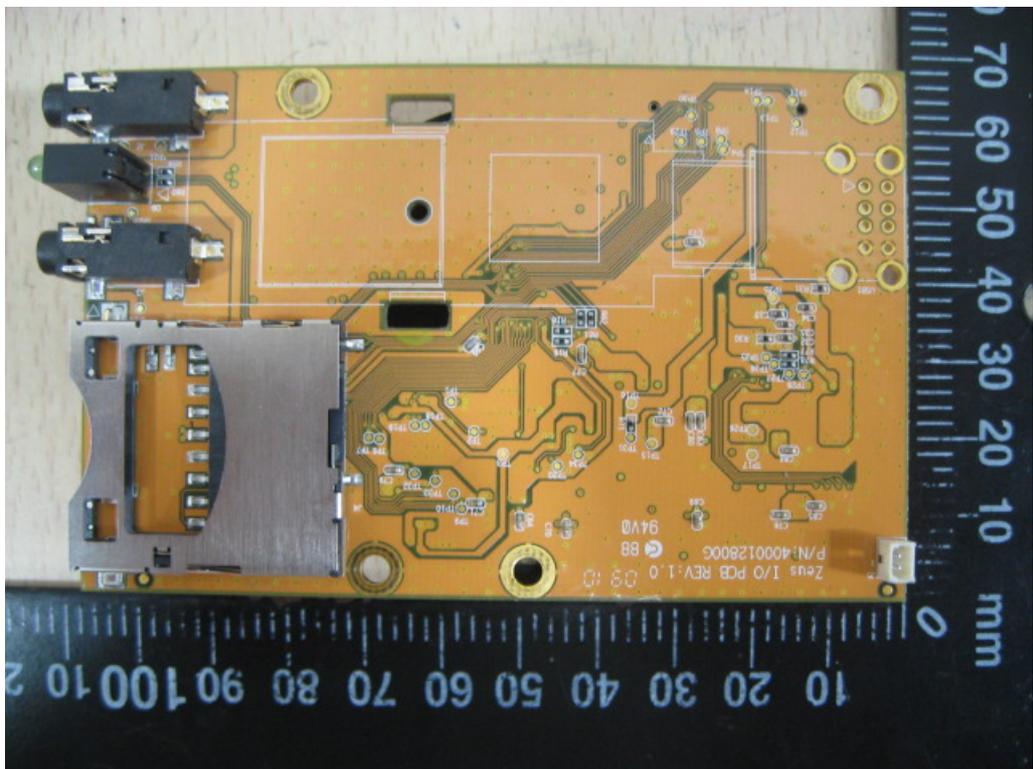
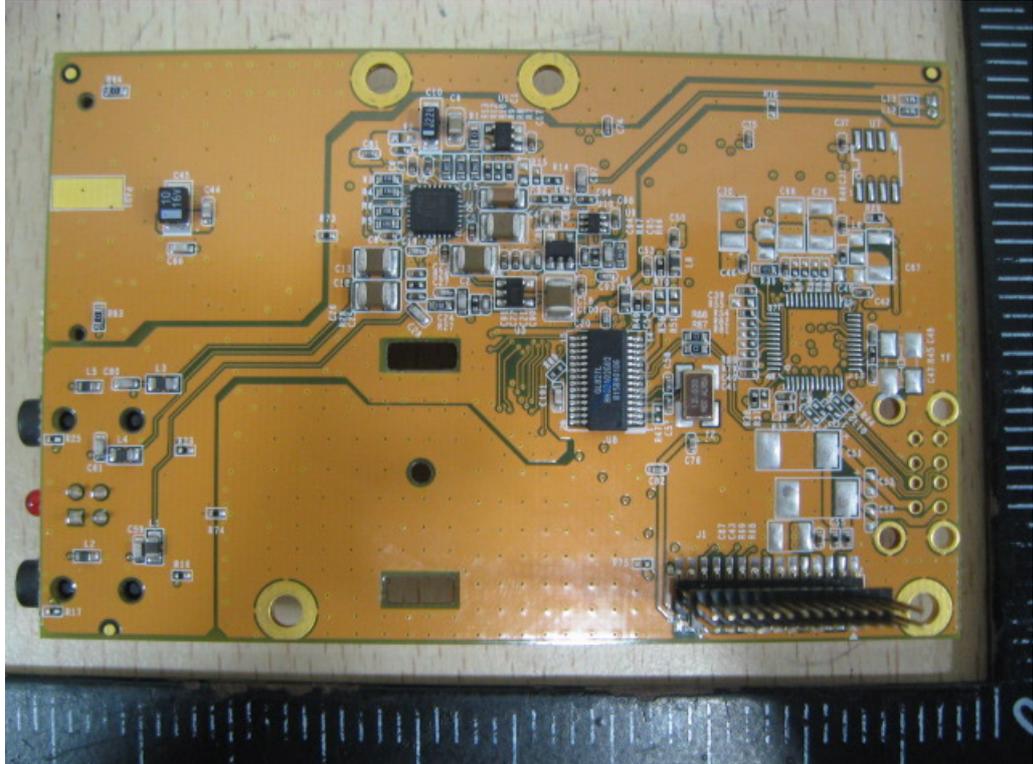


Photo(s), Model IP7161



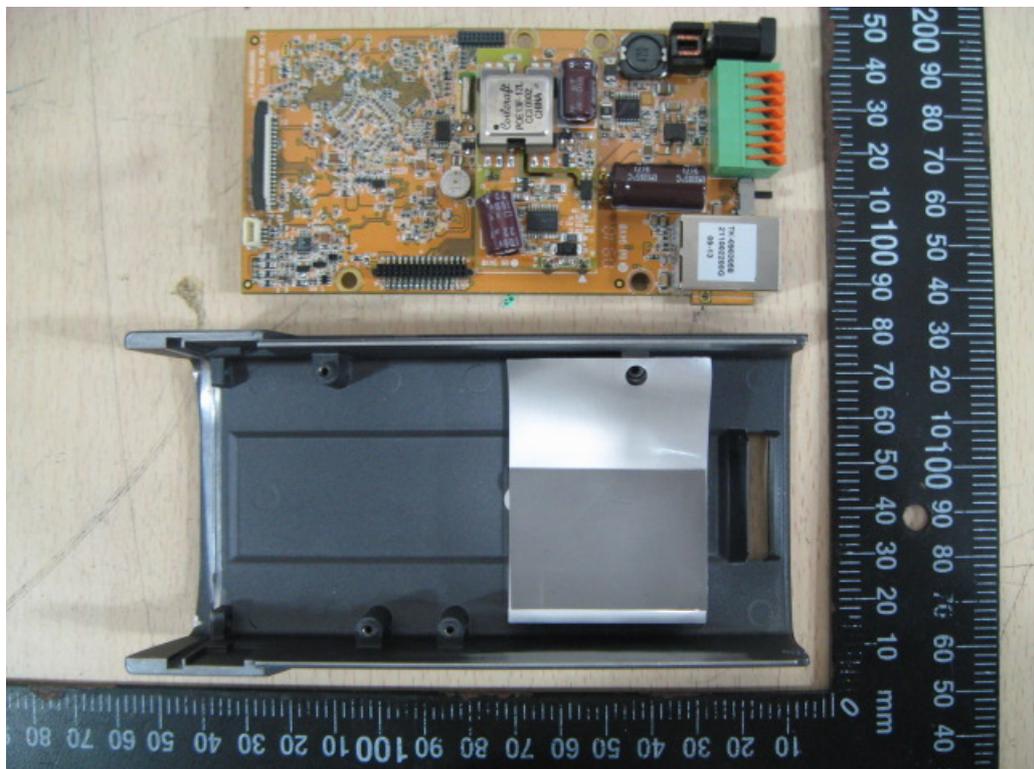


Photo(s), Model IP7161





Photo(s), Model IP7161





Photo(s), Model IP7161

