

<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment - Safety -</b> <b>Part 1: General requirements</b>	
<b>Report Reference No</b> .....	E234884-A192-IT-2
Date of issue .....	2018-07-24
Total number of pages .....	144
<b>Applicant's name</b> .....	ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD
Address .....	NO.1199 BIN'AN RD. BINJIANG DISTRICT HANGZHOU ZHEJIANG 310053 CHINA
<b>Test specification:</b>	
Standard .....	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure .....	Informative
Non-standard test method .....	N/A
<b>Test Report Form No.</b> .....	IEC60950_1F
Test Report Form originator .....	SGS Fimko Ltd
Master TRF .....	Dated 2014-02
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Test item description .....	DIGITAL VIDEO RECORDER
Trade Mark .....	None
Manufacturer .....	ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD 1199 BIN AN RD CHANGHE ST BINJIANG DISTRICT HANGZHOU ZHEJIANG 310053 CHINA
Model/Type reference .....	1) DH/HCVR2404HG-L-V4/-AF-DVR-II-A/24-4, DH/HCVR2404HG-L-V4/-AF-DVR-II-A/24-4-D, DH/HCVR5432L-V4/-AF-DVR-II-A/32-4, DHI-XVR5432L, DH/HCVR5432L-V4/-AF-DVR-II-A/32-4-D, DH/HCVR3204HG-L-V4/-AF-DVR-II-A/32-4, DH/HCVR3204HG-L-V4/-AF-DVR-II-A/32-4-D, DH/HCVR5424L-V4/-AF-DVR-II-A/24-4, DHI-XVR5424L, DH/HCVR5424L-V4/-AF-DVR-II-A/24-4-D, X24A5L  2) DH/HCVR5832S-V4/-AF-DVR-II-A/32-16, DHI- XVR5832S, DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32- 16, DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32-16-D, DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32-16-D, DH/HCVR2404HG-S-V4/-AF-DVR-II-A/24-16, DH/HCVR2404HG-S-V4/-AF-DVR-II-A/24-16-D, DH/HCVR5824S-V4/-AF-DVR-II-A/24-16, DHI- XVR5824S, DH/HCVR5824S-V4/-AF-DVR-II-A/24-16-D, X28A5S  XVR5432L XVR5832S OEM-HCVR3204HG-S-V4  DH-XVR5832S-X, XVR5832S-X, X58A5S, X58A5S4, X58A5S8, X58A5S12; DH-XVR5432L-X, XVR5432L-X, X54A5L, X54A5L2, X54A5L4, X54A5L8;
Ratings .....	100-240V, 1.9A, 50-60Hz

Testing procedure and testing location:			
	Testing location / address .....	UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China	
	Tested by (name + signature) .....	Jong Lee (Project Handler)	<i>Jong Lee</i>
	Approved by (+ signature) .....	Eric Liu (Reviewer)	<i>Eric L.</i>

### List of Attachments

National Differences (61 pages)  
Enclosures ( pages)

### Summary Of Testing

Unless otherwise indicated, all tests were conducted at UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China.

Tests performed (name of test and test clause)	Testing location / Comments
End Product Reference Page	
General Guidelines	
Input: Single-Phase (1.6.2)	
Limited Power Source Measurements (2.5)	
Lithium Battery Reverse Current Measurement (4.3.8)	Waived Test, the real time clock (RTC) battery is protected by a resistor (2k ohm) and a diode; Vbat=3.3Vdc/ 2k ohm = 1.65mA < 2mA.
Heating (4.5.1, 1.4.12, 1.4.13)	

### Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AR, AT, AU, BE, BG, BY, CA, CH, CN, CS, CZ, DE, DK, EU, FI, FR, GB, GR, HU, IL, IN, IT, JP, KR, MY, NL, NO, NZ, PL, RO, SA, SE, SG, SI, SK, UA, US, ZA

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

**Copy of Marking Plate** - Refer to Enclosure titled Marking Plate for copy.

**Test item particulars :**

Equipment mobility .....	movable
Connection to the mains .....	pluggable A
Operating condition .....	continuous
Access location .....	operator accessible
Over voltage category (OVC) .....	OVC II
Mains supply tolerance (%) or absolute mains supply values .....	+10%, -10%(declared by Manufacture)
Tested for IT power systems .....	No
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	Class I (earthed)
Considered current rating of protective device as part of the building installation (A) .....	20A
Pollution degree (PD) .....	PD 2
IP protection class .....	IP X0
Altitude of operation (m) .....	<=5000m
Altitude of test laboratory (m) .....	<=2000m
Mass of equipment (kg) .....	5.12kg for model DHI-XVR5432L, 7.04kg for model DHI-XVR5832S; 4.76kg for Model DH-XVR5432L-X; (Without HDD)

**Possible test case verdicts:**

- test case does not apply to the test object ..... : N / A
- test object does meet the requirement ..... : P(Pass)
- test object does not meet the requirement ..... : F(Fail)

**Testing:**

Date(s) of receipt of test item .....	2018-07-05
Date(s) of Performance of tests .....	2018-07-12 to 2018-07-17

**General remarks:**

"(see Enclosure #)" refers to additional information appended to the report.  
 "(see appended table)" refers to a table appended to the report.

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

**Name and address of Factory(ies):** Zhejiang Dahua Vision Technology Co Ltd  
 1199 Bin An Rd  
 Changhe St  
 Binjiang District

Hangzhou  
Zhejiang 310053 CHINA

**GENERAL PRODUCT INFORMATION:****Report Summary****Product Description**

The unit is a DIGITAL VIDEO RECORDER, consists of main board, DC Fan, HDD and electronic components mounted on PWB supplied by internal UL approved switching power supply.

**Model Differences**

1) Models DH/HCVR2404HG-L-V4/-AF-DVR-II-A/24-4, DH/HCVR2404HG-L-V4/-AF-DVR-II-A/24-4-D, DH/HCVR5432L-V4/-AF-DVR-II-A/32-4, DHI-XVR5432L, DH/HCVR5432L-V4/-AF-DVR-II-A/32-4-D, DH/HCVR3204HG-L-V4/-AF-DVR-II-A/32-4, DH/HCVR3204HG-L-V4/-AF-DVR-II-A/32-4-D, DH/HCVR5424L-V4/-AF-DVR-II-A/24-4, DHI-XVR5424L, DH/HCVR5424L-V4/-AF-DVR-II-A/24-4-D and X24A5L are similar except for different marketing.

2) Models DH/HCVR5832S-V4/-AF-DVR-II-A/32-16, DHI-XVR5832S, DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32-16, DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32-16-D, DH/HCVR2404HG-S-V4/-AF-DVR-II-A/24-16, DH/HCVR2404HG-S-V4/-AF-DVR-II-A/24-16-D, DH/HCVR5824S-V4/-AF-DVR-II-A/24-16, DHI-XVR5824S, DH/HCVR5824S-V4/-AF-DVR-II-A/24-16-D and X28A5S are similar except for different marketing.

3) Models DHI-XVR5432L and DHI-XVR5832S are similar except for outline of enclosure.

4) Model XVR5432L is identical to the original model DHI-XVR5432L .

5) Model XVR5832S is identical to the original model DHI-XVR5832S.

6) Model OEM-HCVR3204HG-S-V4 is identical to the original model DH/HCVR3204HG-S-V4/-AF-DVR-II-A/32-16.

7) Models DH-XVR5832S-X, XVR5832S-X, X58A5S, X58A5S4, X58A5S8, X58A5S12; are similar to the original Model DHI-XVR5832S, except for mainboard and Model designation.

8) Models DH-XVR5432L-X, XVR5432L-X, X54A5L, X54A5L2, X54A5L4, X54A5L8; are similar to the original Model DHI-XVR5432L, except for mainboard and Model designation.

**Additional Information**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

For project 4787950798:

Add new model names XVR5432L,XVR5832S,OEM-HCVR3204HG-S-V4.

For project 4788477437:

(1) Alternate one mainboard and Add new Model names DH-XVR5832S-X, XVR5832S-X, X58A5S, X58A5S4, X58A5S8, X58A5S12; DH-XVR5432L-X, XVR5432L-X, X54A5L, X54A5L2, X54A5L4, X54A5L8.

(2) Corrected Building-in switching power supply Model name from "DPS-150AB-8 A" to "DPS-150AB-8 XX (X=0-9, A-Z or blank)".

#### Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 55°C
- The means of connection to the mains supply is: Detachable power cord, Pluggable A
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance inlet
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All output connector
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- LEDs provided in the product are considered low power devices: Yes
- 

#### Abbreviations used in the report:

- normal condition .....	N.C.	- single fault condition.....	S.F.C
- operational insulation .....	OP	- basic insulation .....	BI
- basic insulation between parts of opposite polarity:	BOP	- supplementary insulation .....	SI

- double insulation ..... DI      - reinforced insulation ..... RI

Indicate used abbreviations (if any)

1	<b>GENERAL</b>		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950-1 or relevant component standard	See appended table 1.5.1.	Pass
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard. Components, for which no relevant IEC Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Evaluated as part of approved power supply.	N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors bridging insulation	Evaluated as part of approved power supply.	N/A
1.5.7	Resistors bridging 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		N/A
1.5.9	Surge suppressors		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
1.6	<b>Power interface</b>		Pass



1.6.1	AC power distribution systems	AC power distribution systems are classify as TN.	Pass
1.6.2	Input current	The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD. (see appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation.	Pass

1.7	<b>Marking and instructions</b>		Pass
1.7.1	Power rating and identification markings	Rating marking readily visible to operator.	Pass
1.7.1.1	Power rating mark		Pass
	Multiple mains supply connections .....	Redundant power supply used.	Pass
	Rated voltage(s) or voltage range(s) (V) .....	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for nature of supply, for d.c. only .....		N/A
	Rated frequency or rated frequency range (Hz) ....	Refer to the Rating information at the beginning of this Test Report.	Pass
	Rated current (mA or A).....	Refer to the Rating information at the beginning of this Test Report.	Pass
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trademark or identification mark .....	ZHEJIANG DAHUA TECHNOLOGY CO LTD or E234884	Pass
	Model identification or type reference.....	Refer to the Model information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only .....		N/A
	Other markings and symbols .....	Additional symbols may be provided when submitted for National Approval.	Pass
1.7.1.3	Use of graphical symbols		N/A
1.7.2	Safety instructions and marking	Safety instructions in English. Other languages will be provided when submitted for national approval.	Pass
1.7.2.1	General		Pass
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
1.7.4	Supply voltage adjustment..... :		N/A
	Method 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)..... :	Evaluated as part of approved power supply.	N/A
1.7.7	Wiring terminals		Pass
1.7.7.1	Protective earthing and bonding terminals ..... :	Evaluated in power supply.	Pass
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		Pass
1.7.8.1	Identification, location and marking ..... :	The function of controls affecting safety is obvious regardless of language.	Pass
1.7.8.2	Colours..... :	Only functional indicators use color. No indicators with color affect safety.	Pass
1.7.8.3	Symbols according to IEC 60417 ..... :		N/A
1.7.8.4	Markings using figures..... :		N/A
1.7.9	Isolation of multiple power sources ..... :		N/A
1.7.10	Thermostats and other regulating devices ..... :		N/A
1.7.11	Durability	PGDQ2 or PGJ12 UL recognized label was used	Pass
1.7.12	Removable parts	No marking is located on removable part.	Pass
1.7.13	Replaceable batteries ..... :	The required warning is placed in the service manual.	Pass
	Language(s)..... :	Only English language reviewed. May be provided in other languages upon request from the manufacturer.	-
1.7.14	Equipment for restricted access locations ..... :		N/A

2	<b>PROTECTION FROM HAZARDS</b>		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas		Pass
2.1.1.1	Access to energized parts		Pass
	Test by inspection..... :	All accessible circuits are SELV circuits.	Pass
	Test with test finger (Figure 2A) ..... :	The test finger was unable to	Pass

		contact bare hazardous parts, basic insulation, or ELV circuits.	
	Test with test pin (Figure 2B).....:	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe (Figure 2C).....:	No TNV present.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm) .....		-
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring accessible to the user.	Pass
2.1.1.5	Energy hazards.....:	No energy hazardous parts in operator access area.	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	Evaluated in UL recognized switch power supply.	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 mains supply.:		N/A
2.1.1.9	Audio amplifiers .....		N/A
2.1.2	Protection in service access areas	Hazardous bare parts are guarded and unintentional contact with such parts is unlikely during servicing operations involving other parts of the equipment.	Pass
2.1.3	Protection in restricted access locations		N/A

2.2	<b>SELV circuits</b>		Pass
2.2.1	General requirements	SELV levels are maintained after single fault condition.	Pass
2.2.2	Voltages under normal conditions (V) .....	All accessible voltages are less than 42.4 V <sub>p</sub> or 60 V dc and are classified as SELV.	N/A
2.2.3	Voltages under fault conditions (V).....:	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	N/A
2.2.4	Connection of SELV circuits to other circuits.....:	The SELV circuits are not connected to circuits other than protective earth and other SELV circuits.	Pass

2.3	<b>TNV circuits</b>	N/A
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2.4	<b>Limited current circuits</b>	N/A
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2.5	<b>Limited power sources</b>	Pass
	a) Inherently limited output	N/A
	b) Impedance limited output	Pass
	c) Regulating network limited output under normal operating and single fault condition	Pass
	Use of integrated circuit (IC) current limiters .....	-
	d) Overcurrent protective device limited output	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....	See Table 2.5 for details.
	Current rating of overcurrent protective device (A) :	-

2.6	<b>Provisions for earthing and bonding</b>	Pass
2.6.1	Protective earthing	Pass
2.6.2	Functional earthing	N/A
	Use of symbol for functional earthing .....	N/A
2.6.3	Protective earthing and protective bonding conductors	Pass
2.6.3.1	General	Pass
2.6.3.2	Size of protective earthing conductors	Power supply cord earthing conductor complies with Table 3B.
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	18AWG.
2.6.3.3	Size of protective bonding conductors	Evaluated as part of power supply
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	Evaluated as part of power supply
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	-
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (ohm), voltage drop (V), test current (A), duration (min) .....	Test current = 40 A. Test duration: 2 minutes. max.Voltage Drop 0.48V. Test current = 32 A. Test duration: 2 minutes. max.Voltage Drop 0.38V. Resistance 0.012Ω.
2.6.3.5	Colour of insulation .....	Evaluated in UL recognized switch power supply.
2.6.4	Terminals	N/A
2.6.4.1	General	N/A

2.6.4.2	Protective earthing and bonding terminals	Evaluated in UL recognized switch power supply.	N/A
	Rated current (A), type, nominal thread diameter (mm)..... :	Appliance inlet used and the unit meet the test requirement of 2.6.3.3	-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		Pass
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductors.	Pass
2.6.5.3	Disconnection of protective earth		Pass
2.6.5.4	Parts that can be removed by an operator	An appliance coupler was used.	Pass
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	<b>Overcurrent and earth fault protection in primary circuits</b>		Pass
2.7.1	Basic requirements	Protective devices are integrated in the equipment.	Pass
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3.7		Pass
2.7.3	Short-circuit backup protection	Pluggable equipment type A.	Pass
2.7.4	Number and location of protective devices..... :	Evaluated in UL recognized switch power supply. One protective device in the "LIVE" phase	N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

2.8	<b>Safety interlocks</b>		N/A
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2.9	<b>Electrical insulation</b>		Pass
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation.	Pass
2.9.2	Humidity conditioning	Electric strength test was conducted after the humidity treatment.	Pass

	Relative humidity (%), temperature (°C).....:	95%RH, 30 degree C	-
2.9.3	Grade of insulation		Pass
2.9.4	Separation from hazardous voltages		Pass
	Method(s) used.....:	method 1	-

2.10	<b>Clearances, creepage distances and distances through insulation</b>		Pass
2.10.1	General	Pollution degree 2 applicable.	Pass
2.10.1.1	Frequency.....:	Up to 30KHz	Pass
2.10.1.2	Pollution degrees.....:	2	Pass
2.10.1.3	Reduced values for functional insulation		Pass
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	Evaluated in UL recognized switch power supply.	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	Evaluated in UL recognized switch power supply.	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	See 5.3.4	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
	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	Evaluated in UL recognized switch power supply.	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
	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		Pass
2.10.6.1	Uncoated printed boards		Pass
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

3	<b>WIRING, CONNECTIONS AND SUPPLY</b>		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection		Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring		Pass
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltages involved.	Pass
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		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		Pass
	10 N pull test		Pass
3.1.10	Sleeving on wiring		N/A

3.2	<b>Connection to mains supply</b>		Pass
3.2.1	Means of connection	Appliance inlet	Pass
3.2.1.1	Connection to an a.c. mains supply	Provided with appliance inlet for connection of a Detachable Power Supply Cord.	Pass
3.2.1.2	Connection to a d.c. mains supply		N/A



3.2.2	Multiple supply connections		Pass
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....		-
3.2.4	Appliance inlets		Pass
3.2.5	Power supply cords	Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer.	Pass
3.2.5.1	AC power supply cords	Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer.	Pass
	Type .....	See Table 1.5.1 for details.	-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	See Table 1.5.1 for details.	-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance inlet used.	N/A
	Mass of equipment (kg), pull (N) .....		-
	Longitudinal displacement (mm).....		-
3.2.7	Protection against mechanical damage	No parts under this unit likely to damage the power supply cord.	Pass
3.2.8	Cord guards	Appliance inlet used.	N/A
	Diameter of minor dimension D (mm); test mass (g) .....		-
	Radius of curvature of cord (mm) .....		-
3.2.9	Supply wiring space		N/A

3.3	<b>Wiring terminals for connection of external conductors</b>		N/A
-----	---	--	-----

3.4	<b>Disconnection from the mains supply</b>		Pass
3.4.1	General requirement		Pass
3.4.2	Disconnect devices	An appliance coupler used.	Pass
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	The power cord plug or inlet disconnects both poles simultaneously.	Pass
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		Pass

3.5	<b>Interconnection of equipment</b>		Pass
3.5.1	General requirements	This equipment is only considered for connection to SELV.	Pass
3.5.2	Types of interconnection circuits .....	Interconnection circuits are SELV.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		Pass

4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		Pass
	Angle of 10°		Pass
	Test force (N) .....		N/A

4.2	<b>Mechanical strength</b>		Pass
4.2.1	General		Pass
	Rack-mounted equipment		N/A
4.2.2	Steady force test, 10 N	10N were applied to components. No energy or other hazards.	Pass
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazards as a result of the 250N test.	Pass
4.2.5	Impact test	500 g steel sphere ball fall or swing from 1.3 m height onto outer enclosure.	Pass
	Fall test		Pass
	Swing test		N/A
4.2.6	Drop test; height (mm) .....		N/A
4.2.7	Stress relief test	70 degree C, 7hs.	Pass
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified .....		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....		N/A

4.3	<b>Design and construction</b>		Pass
4.3.1	Edges and corners	All edges and corners are	Pass

		judged to be sufficiently well rounded so as not to constitute a hazard.	
4.3.2	Handles and manual controls; force (N) .....		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatsink tubing are used.	Pass
4.3.5	Connection by plugs and sockets	IEC 60083 or IEC 60320 type connectors not used for SELV circuits.	Pass
4.3.6	Direct plug-in equipment		N/A
	Torque.....		N/A
	Compliance with the relevant mains plug standard:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		Pass
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		Pass
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids .....		N/A
	Quantity of liquid (l) .....		N/A
	Flash point (°C) .....		N/A
4.3.13	Radiation		Pass
4.3.13.1	General		Pass
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	This product contains only visible indicator LEDs (Class 1) operating in the range of	Pass

		400 - 700 nm wavelength. No IEC60825-1 evaluation was deemed necessary. Additional review may be required at the discretion of the accepting NCB.	
4.3.13.5.1	Lasers (including laser diodes)		Pass
	Laser class.....:	(For indicator LEDs, see above statement.)	-
4.3.13.5.2	Light emitting diodes (LEDs)		Pass
4.3.13.6	Other types .....		N/A

4.4	<b>Protection against hazardous moving parts</b>		Pass
4.4.1	General		N/A
4.4.2	Protection in operator access areas .....		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations .....		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		Pass
4.4.5.1	General		Pass
	Not considered to cause pain or injury. a) .....	Fan is not considered to cause pain or injury.	Pass
	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	<b>Thermal requirements</b>		Pass
4.5.1	General		Pass
4.5.2	Temperature tests	(see appended table 4.5)	Pass
	Normal load condition per Annex L .....	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	-
4.5.3	Temperature limits for materials		Pass
4.5.4	Touch temperature limits		Pass
4.5.5	Resistance to abnormal heat.....		N/A

4.6	<b>Openings in enclosures</b>		Pass
4.6.1	Top and side openings	Foreign objects entering the enclosure will not contact bare parts at hazardous voltage or energy. (No hazardous parts within 5 degree projection).	Pass
	Dimensions (mm).....:	See table 1.5.1 for detail information	-
4.6.2	Bottoms of fire enclosures	No openings within the 5 degree projection of internal components requiring a fire enclosure.	Pass
	Construction of the bottom, dimensions (mm).....:	See appended table 1.5.1.	-
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) .....		-

4.7	<b>Resistance to fire</b>		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts except as noted in 4.7.2.2.	Pass
4.7.2.2	Parts not requiring a fire enclosure	Plugs and connectors forming part of a power supply cord or interconnecting cable.	Pass
4.7.3	Materials		Pass
4.7.3.1	General		Pass
4.7.3.2	Materials for fire enclosures	The fire enclosure is metal.	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures	Connectors are made of materials of Class V-2 minimum. Decorative parts and parts outside of the fire	Pass

		enclosure are made of minimum HB material.	
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).	Pass
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

5	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		Pass
5.1	Touch current and protective conductor current		Pass
5.1.1	General		Pass
5.1.2	Configuration of equipment under test (EUT)		Pass
5.1.2.1	Single connection to an a.c. mains supply		Pass
5.1.2.2	Redundant multiple connections to an a.c. mains supply		Pass
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Single phase equipment intended only for connection to star TN system.	Pass
5.1.4	Application of measuring instrument	Tested using D.1 measuring instrument.	Pass
5.1.5	Test procedure		Pass
5.1.6	Test measurements	The touch current was measured from primary to enclosure and secondary output.	Pass
	Supply voltage (V) .....	264 Vac, 60 Hz	-
	Measured touch current (mA) .....	see table 5.1 for details	-
	Max. allowed touch current (mA) .....	0.25 mA for plastic enclosure; 3.5 mA for earth	-
	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		N/A

	distribution system		
	Supply voltage (V) .....		-
	Measured touch current (mA) .....		-
	Max. allowed touch current (mA) .....		-
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	<b>Electric strength</b>		Pass
5.2.1	General	(see appended table 5.2)	Pass
5.2.2	Test procedure		Pass

5.3	<b>Abnormal operating and fault conditions</b>		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors	Approved fan was used.	N/A
5.3.3	Transformers	Evaluated in UL recognized switch power supply.	N/A
5.3.4	Functional insulation .....	Functional insulation complies with method (c).	Pass
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)	Pass
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal or deformation was noted during the tests.	Pass
5.3.9.1	During the tests		Pass
5.3.9.2	After the tests		Pass

6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N/A
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6.2	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
-----	--	--	-----

6.3	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
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7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
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A	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
B	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N/A
C	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N/A
D	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		Pass
D.1	Measuring instrument		Pass
D.2	Alternative measuring instrument		N/A
E	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N/A
F	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		N/A
G	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
H	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
J	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N/A
K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N/A
L	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		Pass
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		Pass



M	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>	N/A
N	<b>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)</b>	N/A
P	<b>ANNEX P, NORMATIVE REFERENCES</b>	Pass
Q	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>	N/A
R	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>	N/A
S	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>	N/A
T	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>	N/A
U	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>	N/A
V	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>	N/A
W	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>	N/A
X	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>	N/A
Y	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>	N/A
Z	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>	Pass
AA	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>	N/A
BB	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>	N/A

CC	<b>ANNEX CC, EVALUATION OF INTEGRATED CIRCUIT (IC) CURRENT LIMITERS</b>	N/A
DD	<b>ANNEX DD, REQUIREMENTS FOR THE MOUNTING MEANS OF RACK-MOUNTED EQUIPMENT</b>	N/A
EE	<b>ANNEX EE, HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS</b>	N/A

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (Edition or year)	mark(s) of conformity <sup>1)</sup>	
01. Metal Enclosure	--	--	Metal, minimum 1.0mm thickness, see enclosure 4-01, 4-04 for details.	--	--, --	
02. Plastic Enclosure	NINGBO LG YONGXING CHEMICAL CO LTD	FR-500	V-0 or better, minimum 2.0mm thickness, 60 degree C, see enclosure 4-01, 4-04 for details.	UL 94, UL 746	UL, --	
03. Building-in switching power supply	DELTA ELECTRONICS INC	DPS-150AB-8XX (X=0-9, A-Z or blank)	I/P: 100-240V~, 4A, 50-60Hz, O/P: +12Vdc, 12.5A max., 150W. Ambient: 55 degree C, Class I	UL 60950-1 2nd Edition	UL, --	
04. H.D.D (Optional) (Four provided)	Interchangeable	Interchangeable	12Vdc, maximum 0.75A / 5Vdc, maximum 0.75A	UL 60950-1	UL, --	
05. DC Fan on mainboard (One provided)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	MF40101V2-C01C-A99	12Vdc, 43mA, minimum 5.1CFM	UL 507	UL, --	
06. DC Fan for model DHI-XVR5432L (One provided)	ADDA CORP	AD0612LX-D90	12Vdc, 0.14A, Minimum 15.329CFM	UL 507	UL, --	

07. DC Fan for model DHI-XVR5832S (One provided)	ADDA CORP	AD0812LX-A70GL	12Vdc, 0.12A, Minimum 24.12CFM	UL 507	UL, --
08. Heat sink	--	--	Aluminum, see enclosure 4-05 for details.	--	--, --
09. RTC Battery	HITACHI MAXELL LTD	CR2032	3Vdc, maximum abnormal charging current 10mA, protected by R522 and D4.	UL 1642	UL, --
10. Polyswitch (For USB ports used)	POLYTRONICS TECHNOLOGY CORP	SMD1812P20 0TF	8Vdc, Ih= 2.0A, It=3.5A, CA=1(115), 2, 3, 4, #	UL 1434	UL, --
11. Polyswitch (For Alarm port 12Vdc, 1A used)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-MSM150/24	24Vdc, Ih= 1.5A, It=3.0A, CA=1(111), 2, 3, 4, #	UL 1434	UL, --
13. Insulating Tubing / Sleeving (Optional)	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1 or FT-1, 105 degree C, 60V	UL 1441	UL, --
14. RJ-45 connector	Interchangeable	Interchangeable	RJ-45	UL 498, UL 1977,	UL, --
14a. RJ-45 connector (Alternate)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated V-2 minimum.	UL 94, UL 746C	UL, --
15. Other connectors	Interchangeable	Interchangeable	Metal/Plastic	UL 498, UL 1977,	UL, --
15a. Other connectors	Interchangeable	Interchangeable	Copper alloy pins housed	UL 94, UL 746C	UL, --

(Alternate)			in bodies of plastic rated V-2 minimum.		
16. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Minimum 80 degree C, 30V, maximum 3.05m long, jacketed, marked "VW-1" or "FT-1" or "FT-4".	UL 758	UL, --
17. Internal Wiring	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1, 80 degree C, 60V	UL 758	UL, --
18. Label	Interchangeable	Interchangeable	Minimum 70 degree C, suitable for affixed material.	UL 969	UL, --
19. PWB	Interchangeable	Interchangeable	V-1 or better, minimum 105 degree C	UL 796	UL, --
20. Main board (for Model DH-XVR5432L-X)	--	--	SELV board	--	--, --
20-1. RTC battery	CHANGZHOU JINTAN CHAOCHUANG BATTERY CO LTD	CR1220	Max Abnormal Charging Current:2mA; Max Abnormal Charging Voltage, 12Vdc	UL 1642	UL (MH10136), --
20-1a. RTC battery (Alternate)	GUANGDONG TIANQIU ELECTRONICS TECHNOLOG	CR1220	Max Abnormal Charging Current: 2.5mA; Max	UL 1642	UL (MH48705), --

	Y CO LTD		Abnormal Charging Voltage, 3.5Vdc		
20-1b. RTC battery (Alternate)	SHENZHEN GAONENGDA BATTERY CO LTD	CR1220	Max Abnormal Charging Current:10mA ; Max Abnormal Charging Voltage, 3.5Vdc	UL 1642	UL (MH30114), --
20-1-1. RTC battery protect devices	--	--	Provided with resistance 2K (R8) ohm and diode (D1) for reverse charging protection.	--	--, --
20-2. PWB	Interchangeable	Interchangeable	V-1 or better, minimum 105 degree C	UL 796	UL, --
20-3. Heat sink	--	--	Aluminum, see enclosure ID 3-88 and 3-89.	--	--, --
21. DC Fan (for DH-XVR5432L-X) (One provided)	ADDA CORP	AD0612LX-D90	12Vdc, 0.14A, Minimum 15.329CFM	UL 507	UL, --

Supplementary information:

<sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.

1.5.1	<b>TABLE: Opto Electronic Devices</b>			N/A
Manufacturer				
Type				
Separately tested				
Bridging insulation				
External creepage distance				
Internal creepage distance				
Distance through insulation				
Tested under the following conditions				
Input				
Output				
supplementary information:				
Additional devices may be described in Enclosure - Miscellaneous				

1.6.2	TABLE: Electrical data (in normal conditions)						Pass
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	condition/status	
Model DHI-XVR5432L	--	--	--	--	--	--	
90Vac/50Hz	1.32	--	117.79	F1	1.32	Maximum normal load	
90Vac/60Hz	1.33	--	117.92	F1	1.33	Maximum normal load	
100Vac/50Hz	1.18	1.9	116.82	F1	1.18	Maximum normal load	
100Vac/60Hz	1.19	1.9	117.70	F1	1.19	Maximum normal load	
240Vac/50Hz	0.50	1.9	114.52	F1	0.50	Maximum normal load	
240Vac/60Hz	0.51	1.9	115.44	F1	0.51	Maximum normal load	
264Vac/ 50Hz	0.47	--	114.24	F1	0.47	Maximum normal load	
264Vac/ 60Hz	0.48	--	115.25	F1	0.48	Maximum normal load	
Model DHI-XVR5832S	--	--	--	--	--	--	
90Vac/50Hz	1.34	--	120.1	F1	1.34	Maximum normal load	
90Vac/60Hz	1.33	--	119.13	F1	1.33	Maximum normal load	
100Vac/50Hz	1.21	1.9	119.6	F1	1.21	Maximum normal load	
100Vac/60Hz	1.19	1.9	118.9	F1	1.19	Maximum normal load	
240Vac/50Hz	0.52	1.9	116.9	F1	0.52	Maximum normal load	
240Vac/60Hz	0.52	1.9	115.7	F1	0.52	Maximum normal load	
264Vac/ 50Hz	0.47	--	115.6	F1	0.47	Maximum normal load	
264Vac/ 60Hz	0.48	--	115.3	F1	0.48	Maximum normal load	
Model DH-XVR5432L-X	--	--	--	--	--	Alternate mainboard	
90Vac/50Hz	0.71	--	63.62	F1	0.71	Maximum normal load	
90Vac/60Hz	0.72	--	63.40	F1	0.72	Maximum normal load	
100Vac/50Hz	0.63	1.9	61.49	F1	0.63	Maximum normal load	
100Vac/60Hz	0.64	1.9	62.88	F1	0.64	Maximum normal load	
240Vac/50Hz	0.30	1.9	61.22	F1	0.30	Maximum normal load	
240Vac/60Hz	0.31	1.9	62.34	F1	0.31	Maximum normal load	
264Vac/ 50Hz	0.29	--	62.04	F1	0.29	Maximum normal load	
264Vac/ 60Hz	0.30	--	62.24	F1	0.30	Maximum normal load	

2.1.1.5 c) 1)	TABLE: max. V, A, VA test					N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)		
supplementary information:						



2.1.1.5 c) 2)	TABLE: stored energy			N/A
Capacitance ( F )		Voltage U (V)	Energy E (J)	
supplementary information:				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits				N/A
Component (measured between)		max. voltage (V) (normal operation)		Voltage limiting components	
		V peak	V d.c.		
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)			
supplementary information:					

2.5	<b>TABLE: Limited power sources</b>				Pass
Circuit output tested:			See below		
Note: Measured Uoc (V) with all load circuits disconnected:			See below		
Components	Sample No.	Uoc (V)	Isc (A)		VA
			Meas.	Limit	Meas. Limit

Test with model DHI-XVR5432L	--	--	--	--	--	--
USB(2.0) port	817167	5.00	3.41	8	11.75	100
USB(3.0) port	817167	4.97	3.15	8	10.95	100
Audio in	817167	0	0	8	0	100
Audio out	817167	0	0	8	0	100
Video in	817167	0	0	8	0	100
Video out	817167	0	0	8	0	100
MIC in	817167	2.96	0	8	0	100
MIC out	817167	0	0	8	0	100
Alarm port	817167	12.34	2.28	8	23.26	100
RS232	817167	0	0	8	0	100
VGA	817167	0	0	8	0	100
RJ45	817167	0	0	8	0	100
eSATA	817167	0	0	8	0	100
HDMI	817167	0	0	8	0	100
Test with model DHI-XVR5832S	--	--	--	--	--	--
USB(2.0) port	817168	4.99	3.47	8	11.34	100
USB(3.0) port	817168	4.97	2.24	8	11.31	100
Audio in	817168	0	0	8	0	100
Audio out	817168	0	0	8	0	100
Video in	817168	0	0	8	0	100
Video out	817168	0	0	8	0	100
MIC in	817168	2.98	0	8	0	100
MIC out	817168	0	0	8	0	100
Alarm port	817168	12.39	2.35	8	23.72	100
RS232	817168	0	0	8	0	100
VGA	817168	0	0	8	0	100
RJ45	817168	0	0	8	0	100
eSATA	817168	0	0	8	0	100
HDMI	817168	0	0	8	0	100
Test with Model DH-XVR5432L-X, Alternate mainboard	--	--	--	--	--	--
USB 2.0 (Front)	1687464	5.0Vdc	2.98	8	10.43	100
USB 3.0 (Rear)	1687464	5.0Vdc	3.00	8	11.10	100

eSATA	1687464	0	0	8	0	100
VGA (J34)	1687464	0	0	8	0	100
HDMI (J20)1	1687464	5.0Vdc	0.37	8	1.02	100
HDMI (J20)2	1687464	5.0Vdc	0.37	8	1.06	100
RJ45 LAN	1687464	0	0	8	0	100
ALARM port	1687464	12.2Vdc	2.20	8	23.76	100
Audit out	1687464	0	0	8	0	100
Video out	1687464	0	0	8	0	100
MIC out	1687464	0	0	8	0	100
supplementary information:						
Sc=short circuit, Oc-Open circuit						

2.10.2	TABLE: working voltage measurement				N/A
Location		RMS voltage (V)	Peak voltage (V)	Comments	
supplementary information:					

2.10.3 and 2.10.4	<b>TABLE: Clearance and creepage distance measurements</b>						N/A
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
-		-	-	-	-	-	-
Functional:							
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
-		-	-	-	-	-	-
Basic/supplementary:							
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
-		-	-	-	-	-	-
Reinforced:							
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
-		-	-	-	-	-	-
supplementary information:							
- All clearances and creepages were evaluated during power supply approval.							

2.10.5	<b>TABLE: Distance through insulation measurements</b>					N/A
Distance through insulation (DTI) at/of:	Upeak (V)	Urms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
supplementary information:						

4.3.8	TABLE: Batteries								Pass	
The tests of 4.3.8 are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position						-				
		Non-rechargeable batteries		Rechargeable batteries						
		Discharging		Unintentional charging	Charging		Discharging		Reversed charging	
		Meas. current	Manuf. specs.		Meas. current	Manuf. specs.	Meas. current	Manuf. specs.	Meas. current	Manuf. specs.

Max. current during normal condition	-	-	0	-	-	-	-	-	-
Max. current during fault condition (R253 shorted)	-	-	0	-	-	-	-	-	-
Max. current during fault condition (D44 pin 1 to pin3 shorted)	-	-	0	-	-	-	-	-	-
Model DH-XVR5432 L-X, Alternate mainboard	--	--	Waived Test, the real time clock (RTC) battery is protected by a resistor (2k ohm) and a diode; Vbat=3.3Vdc/ 2k ohm = 1.65mA < 2mA.	--	--	--	--	--	--
Test results:								Verdict	
- Chemical leaks					--			Pass	
- Explosion of the battery					--			Pass	
- Emission of flame or expulsion of molten metal					--			Pass	
- Electric strength tests of equipment after completion of tests					--			Pass	
supplementary information:									
--									

4.3.8	<b>TABLE: Batteries</b>			Pass
Battery category (lithium, NiMh, NiCad, lithium ion, etc.)	Lithium			
Manufacturer	See table 1.5.1			
Type / model	Ditto			
Voltage	Ditto			
Capacity (mAh)	Ditto			
Tested and Certified by (incl. Ref. No.)	Ditto			
Circuit protection diagram (Refer to indicated supplement of Enclosure - Miscellaneous)	Protected by a resistor and a diode.			
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)				
Location of replaceable battery				
Language(s)				
Close to the battery				
In the servicing instructions				
In the operating instructions				
In the operating instructions				
supplementary information:				
Additional devices may be described in Enclosure - Miscellaneous				

4.5	<b>TABLE: thermal requirements</b>						Pass
	Supply voltage (V):	99Vac/50Hz	99Vac/50Hz	264Vac/50Hz	264Vac/50Hz	--	---
	Ambient Tmin ( C):	--	--	--	--	--	---
	Ambient Tmax ( C):	See below	See below	See below	See below	--	---

Maximum measured temperature T of part/at:	T ( C) #1	T ( C) #2	T ( C) #3	T ( C) #4	T ( C) #5	Allowed Tmax ( C)
Model DHI-XVR5432L	--	--	--	--	--	--
AC Inlet (Power supply)	34.4	66.9	35.3	67.7	--	70
CX2 near FL1 (Power supply)	48.6	81.1	45.2	77.6	--	100
FL1 coil (Power supply)	49.1	81.6	44.9	77.3	--	130
FL2 coil (Power supply)	56.7	89.2	44.8	77.2	--	130
PWB under BD1 (Power supply)	59.1	91.6	44.8	77.2	--	130
CY7 body near HS1 (Power supply)	31.9	64.4	31.4	63.8	--	100
T501 coil (Power supply)	51.1	83.6	50.6	83.0	--	110
T501 core (Power supply)	44.2	76.7	43.4	75.8	--	110
PCB under U22 (Main board)	45.8	78.3	45.9	78.3	--	105
PCB under T1 (Main board)	30.7	63.2	29.6	62.0	--	105
BT1 body (Main board)	30.1	62.6	29.8	62.2	--	105
PCB under U52 (Main board)	44.6	77.1	43.7	76.1	--	105
PCB under U11 (Main board)	47.4	79.9	46.6	79.0	--	105
PCB under U19 (Main board)	43.3	75.8	43.4	75.8	--	105
Internal plastic enclosure	24.4	56.9	23.7	56.1	--	105
External plastic enclosure	23.6	56.1	23.7	56.1	--	95
Metal enclosure near Power supply	28.0	60.5	27.2	59.6	--	70
Ambient	22.5	55.0	22.6	55.0	--	--
Model DHI-XVR5832S	--	--	--	--	--	--
AC Inlet (Power supply)	33.2	64.4	32.7	64.0	--	70
CX2 near FL1 (Power supply)	48.2	79.4	44.1	75.4	--	100
FL1 coil (Power supply)	50.2	81.4	45.3	76.6	--	130
FL2 coil (Power supply)	59.5	90.7	43.9	75.2	--	130
PWB under BD1 (Power supply)	58.8	90.0	43.0	74.3	--	130
CY7 body near HS1 (Power supply)	32.8	64.0	31.9	63.2	--	100
T501 coil (Power supply)	51.2	82.4	50.9	82.2	--	110
T501 core (Power supply)	45.0	76.2	44.3	75.6	--	110
PCB under U22 (Main board)	47.2	78.4	46.6	77.9	--	105
PCB under T1 (Main board)	36.2	67.4	35.6	66.9	--	105
BT1 body (Main board)	27.6	58.8	27.2	58.5	--	105
PCB under U52 (Main board)	45.4	76.6	45.1	76.4	--	105
PCB under U11 (Main board)	47.1	78.3	46.6	77.9	--	105
PCB under U19 (Main board)	41.3	72.5	40.7	72.0	--	105
Internal plastic enclosure	24.3	55.5	24.1	55.4	--	105

External plastic enclosure				24.0	55.2	23.9	55.2	--	95
Metal enclosure near Power supply				26.6	57.8	26.2	57.5	--	70
Ambient				23.8	55.0	23.7	55.0	--	--
Test with Model DH-XVR5432L-X, Alternate mainboard				90 Vac / 60Hz, Measured	90 Vac / 60Hz, Shifted to Tma	264 Vac / 60Hz, Measured	264 Vac / 60Hz, Shifted to Tma	--	--
PWB near J5 (Mainboard)				30.7	61.9	30.8	61.8	--	105
PWB near U27 (Mainboard)				42.9	74.1	42.9	73.9	--	105
PWB near Heatsink between U18 and U19 (Mainboard)				42.6	73.8	42.4	73.4	--	105
BT1 battery body (Mainboard)				41.7	72.9	41.0	72.0	--	100
PWB near L7 (Mainboard)				47.3	78.5	47.1	78.1	--	105
Metal enclosure outside near Power Supply				29.5	60.7	29.6	60.6	--	70
Plastic enclosure (Front) inside near USB				25.2	56.4	26.6	57.6	--	--
Plastic enclosure (Front) outside near USB				24.0	55.2	25.7	56.7	--	95
Ambient				23.8	55	24.0	55	--	--
temperature T of winding:	t1 ( C )	R1 (Ohm)	t2 ( C )	R2 (ohm)	T ( C )	Allowed Tmax ( C )		Insulation class	
--	--	--	--	--	--	--		--	
supplementary information:									
Comments: - Continuous operation, until steady conditions were established. - The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in subclause 1.6.2 and at voltages as described in sub-clause 1.4.5. - With maximum ambient temperature specified as 55 degree C, Therefore the maximum permitted temperature rises are calculated as follows: Winding Components: - Transformer T501, Class B->Tmax:=120- 10=110 degree C. Touch temperature limits per Table 4C. The others per their RTI or MOT.									

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
	allowed impression diameter (mm) :		less than or equal to 2.0	---
part			test temperature ( C )	impression diameter (mm)
supplementary information:				



4.7	<b>TABLE: Resistance to fire</b>					Pass
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
-	-	-	-	-		
supplementary information:						
Please see critical component table 1.5.1 for detail information.						

5.1	TABLE: touch current measurement			Pass
Measured between	Measured (mA)	Limit (mA)	Comments/conditions	
Test with model DHI-XVR5432L	--	--	--	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – N; Pri S. – on	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – R; Pri S. – on	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – N; Pri S. – on	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – R; Pri S. – on	
SELV earthed terminal	0.28	3.5	"e" – O; P1 – N; Pri S. – on	
SELV earthed terminal	0.28	3.5	"e" – O; P1 – R; Pri S. – on	
Metal enclosure	0.28	3.5	"e" – O; P1 – N; Pri S. – on	
Metal enclosure	0.28	3.5	"e" – O; P1 – R; Pri S. – on	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – N; Pri S. – off	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – R; Pri S. – off	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – N; Pri S. – off	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – R; Pri S. – off	
SELV earthed terminal	0.44	3.5	"e" – O; P1 – N; Pri S. – off	
SELV earthed terminal	0.12	3.5	"e" – O; P1 – R; Pri S. – off	
Metal enclosure	0.44	3.5	"e" – O; P1 – N; Pri S. – off	
Metal enclosure	0.12	3.5	"e" – O; P1 – R; Pri S. – off	
Test with model DHI-XVR5832S	--	--	--	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – N; Pri S. – on	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – R; Pri S. – on	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – N; Pri S. – on	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – R; Pri S. – on	
SELV earthed terminal	0.18	3.5	"e" – O; P1 – N; Pri S. – on	
SELV earthed terminal	0.18	3.5	"e" – O; P1 – R; Pri S. – on	
Metal enclosure	0.18	3.5	"e" – O; P1 – N; Pri S. – on	
Metal enclosure	0.18	3.5	"e" – O; P1 – R; Pri S. – on	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – N; Pri S. – off	
Plastic enclosure wrap with metal foil	0	0.25	"e" – C; P1 – R; Pri S. – off	
SELV non-earthed terminal	0	0.25	"e" – C; P1 – N; Pri S. – off	

SELV non-earthed terminal	0	0.25	"e" – C; P1 – R; Pri S. – off
SELV earthed terminal	0.3	3.5	"e" – O; P1 – N; Pri S. – off
SELV earthed terminal	0.06	3.5	"e" – O; P1 – R; Pri S. – off
Metal enclosure	0.3	3.5	"e" – O; P1 – N; Pri S. – off
Metal enclosure	0.06	3.5	"e" – O; P1 – R; Pri S. – off
supplementary information:			
--			

5.2	<b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b>			Pass
Test voltage applied between		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
-		-	-	-
Functional:				
Test voltage applied between		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
-		-	-	-
Basic/supplementary:				
Test voltage applied between		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
L/N to Metal enclosure		AC	1640	NO
L/N to earthed terminal		AC	1640	NO
Reinforced:				
Test voltage applied between		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
L/N to non-earthed terminal		DC	4242	NO
L/N to Plastic enclosure wrap with metal foil		AC	3000	NO
supplementary information:				
-All electrical strength tests duration last at least 60 seconds. -All applied test voltages for electric strength (in Table 5B) are based on the original report of power supply. - Unit: Electrical strength test is conducted while the equipment is still in a well-heated condition immediately following the test in 4.5.1.				

5.3	<b>TABLE: Fault conditions tests</b>		Pass
	Ambient temperature ( C )	See below	---
	Power source for EUT: Manufacturer, model/type, output rating	-	---

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Test with model DHI-XVR5432L	--	--	--	--	--	--
Openings	Blocked	240Vac/60 Hz	1h53m in	F1	0.597	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. FL1 coil (Power supply): 67.7degree C, at ambient 24.9degree C 2. T501 coil (Power supply): 78.8degree C, at ambient 24.9degree C
Mainboard Fan	Locked	240Vac/60 Hz	1h10m in	F1	0.591	Unit under normal operation NB,NT,NC The maximum temperature of key components1. PCB under U1 1. FL1 coil (Main board): 60.0degree C, at ambient 23.4degree C 2. T501 coil (Power supply): 55.4degree C, at ambient 23.4degree C
System fan	Locked	240Vac/60 Hz	48min	F1	0.592	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. PCB under U52 (Main board): 54.5degree C, at ambient 23.8degree C 2. PCB under U11 (Main board): 52.6degree C, at ambient 23.8degree C
Power supply Fan	Locked	240Vac/60 Hz	50min	F1	0.595	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. FL2 coil (Power supply):49.5degree C, at ambient 24.7degree C 2. PWB under BD1 (Power supply): 55.9degree C, at ambient 24.7degree C
Test with model DHI-XVR5832S	--	--	--	--	--	--
Openings	Blocked	240Vac/60 Hz	1h23m in	F1	0.558	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. T501 coil (Power supply) :70.2degree C, at ambient

						24.4degree C 2. PCB under U11 (Main board): 64.9degree C, at ambient 24.4degree C
Mainboard Fan	Locked	240Vac/60 Hz	1h9min	F1	0.553	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. PCB under U22 (Main board) :59.5degree C, at ambient 25.4degree C 2. PCB under U11 (Main board): 65.5degree C, at ambient 25.4degree C
System fan	Locked	240Vac/60 Hz	44min	F1	0.551	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. PCB under U52 (Main board) :58.1degree C, at ambient 23.8degree C 2. PCB under U11 (Main board): 54.4degree C, at ambient 23.8degree C
Power supply Fan	Locked	240Vac/60 Hz	1h1min	F1	0.554	Unit under normal operation NB,NT,NC The maximum temperature of key components 1. T501 coil (Power supply) :70.3degree C, at ambient 23.7degree C 2. T501 core (Power supply): 67.9degree C, at ambient 23.7degree C

C.2	TABLE: transformers							N/A
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)		Required distance thr. insul. (2.10.5)
Loc.	Tested insulation				Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
Transformer type number				Enclosure - Miscellaneous ID				
supplementary information:								

## **Enclosure**

### **National Differences**

**Argentina**

**Australia / New Zealand**

**Austria\*\***

**Belarus\***

**Belgium\*\***

**Bulgaria\*\***

**China**

**Czech Republic\*\***

**Denmark**

**Finland**

**France\*\***

**Germany**

**Greece\*\***

**Group**

**Hungary\*\***

**India\***

**Israel**

**Italy\*\***

**Japan**

**Korea**

**Malaysia\***

**Netherlands\*\***

**Norway**

**Poland\*\***

**Romania\*\***

**Saudi Arabia\***

**Serbia\*\***

**Singapore\***

**Slovakia\*\***

**Slovenia\*\***

**South Africa\***

**Sweden**

**Switzerland**

**USA / Canada**

**Ukraine\***

**United Kingdom**

\* No National Differences  
Declared

\*\* Only Group Differences

<b>Argentina - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	Argentina has national differences declared to 60950-1:2005 + A1:2009.		Pass
1.5.2	Certified plug according to IRAM 2063 (two prong) or IRAM 2073 (three prong) are used in accordance with their ratings		N/A
1.7.2	Operating/safety instructions made available to the user in Spanish. Product information appears on the product.		N/A
3.2	Plugs shall be in conformity with IRAM 2063 Standard for Class II and IRAM 2073 Standard for Class I appliances (Resolution 524/98)		N/A
4.3.6	Adapters/Transformers provided with integrated plugs shall be provided with blades which shall meet the geometry of IRAM 2063 standard for Class II appliances or IRAM 2073 standard for Class I appliances (Resolution 524/98)		N/A
General	Household power supply sources are 220 V a.c., 50 Hz		N/A

<b>Australia / New Zealand - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	Australia has national differences declared for 60950-1:2005 (below).		Pass
1.2.12.201	<p><b>Addition: POTENTIAL IGNITION SOURCE</b></p> <p>Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15VA.</p> <p>Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards.</p> <p>Note 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION</p>		N/A



	SOURCE. Note 202: This definition is from AS/NZS 60065:2003												
1.5.1	Add to the end of the first paragraph and in note 1 after the word “standard”; "or the relevant Australian / New Zealand Standard".		N/A										
1.5.2	Add the following to the end of the first and third dash items: 'or the relevant Australian/New Zealand Standard'.		N/A										
3.2.5.1	<div>Replace the first four rows for Table 3B with the following: Sizes of Conductors</div> <div>-----</div> <table><thead><tr><th>Rated Current of Equipment (A)</th><th>Nominal cross-sectional area (mm²)</th></tr></thead><tbody><tr><td>0.2 ≤ 3</td><td>0.5 1)</td></tr><tr><td>3 ≤ 7.5</td><td>0.75</td></tr><tr><td>7.5 ≤ 10</td><td>(0.75) 2) 1.00</td></tr><tr><td>10 ≤ 16</td><td>(1,0) 3) 1.5</td></tr></tbody></table> <div>-----</div> <div>-----</div> <div>Replace footnote 1) with the following: 1) This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord or cord guard, enters the appliance, and the entry to the plug, does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see S/NZS 3191).</div> <div>Delete Note 1.</div>	Rated Current of Equipment (A)	Nominal cross-sectional area (mm²)	0.2 ≤ 3	0.5 1)	3 ≤ 7.5	0.75	7.5 ≤ 10	(0.75) 2) 1.00	10 ≤ 16	(1,0) 3) 1.5		N/A
Rated Current of Equipment (A)	Nominal cross-sectional area (mm²)												
0.2 ≤ 3	0.5 1)												
3 ≤ 7.5	0.75												
7.5 ≤ 10	(0.75) 2) 1.00												
10 ≤ 16	(1,0) 3) 1.5												
4.1.201	<div>Addition: Display devices used for television purposes</div> <div>Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television received, specified in AS/NZS 60065.</div>		N/A										

4.3.6	Replace the third paragraph: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.3.13.5	Add the following to the end of the first paragraph: "or AS/NZS 2211.1"		N/A
4.7	Add after the clause: For alternative resistance to fire tests, refer to Clause 4.7.201		N/A
4.7.201.1	<p>Addition: Resistance to fire - Alternative tests</p> <p>General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following:</p> <p>(a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>(b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"><li>- small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li><li>- small electrical components, such as capacitors with a volume not exceeding 1,750 mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</li></ul> <p>NOTE In considering how to minimize</p>		N/A

	<p>propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		
4.7.201.2	<p>Addition: Testing of non-metallic materials</p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p>		N/A
4.7.201.3	<p>Addition: Testing of insulating materials</p> <p>Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3mm of the connection.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p>		N/A

	<p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p> <p>Clause of AS/NZS 60695.11.5      Change</p> <p>9 Test procedure</p> <p>9.2 Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. Replace the second paragraph with: The duration of application of the test flame shall be 30s + 1s.</p> <p>9.3 Replace with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.</p> <p>11 Evaluation of test results Replace with: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</p> <p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part.</p>		
4.7.201.4	<p>Addition: Testing in the event of non-extinguishing material - If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish</p>		N/A

	<p>within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 2 - If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 3 - Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		
4.7.201.5	<p>Addition: Testing of printed boards - The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.</p> <p>The test is not carried out if the</p> <ul style="list-style-type: none"><li>- Printed board does not carry any POTENTIAL IGNITION SOURCE;</li><li>- Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less</li></ul>		N/A

	<p>than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or</p> <p>- Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</p> <p>Compliance shall be determined using the smallest thickness of the material.</p> <p>NOTE – Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia (not in New Zealand) only, compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A
6.2.2.1	For Australia only, delete the first paragraph including the note and replace with the following: In Australia only(not in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of Annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, $U_c$ is:		N/A

	<p>(i) for 6.2.1a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment and</p> <p>(ii) for 6.2.1b) and 6.2.1c): 1.5 kV.</p> <p>NOTE 201 - The 7 kV impulse is to simulate lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 202 - The value of 2.5 kV for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>		
6.2.2.2	<p>For Australia only, delete the second paragraph including the Note and replace with the following: In Australia (not New Zealand), the a.c. test voltage is:</p> <p>(i) for 6.2.1a) 3 kV; and</p> <p>(ii) for 6.2.1b) and 6.2.1c) 1.5 kV</p> <p>NOTE 201 - Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 202 - The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		N/A
7.3	<p>Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunication purposes.</p>		N/A
P	<p>Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets</p>		N/A

China - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	China has national differences declared for 60950-1:2005 (below).		Pass

1.1.2	Revised third dashed paragraph to read: equipment intended to be used in vehicles, on board ships or aircraft, in tropical countries, or at altitudes greater than 5000m;		N/A
1.4.5	Amend the second paragraph and the two following dash paragraphs as: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer, in which case the tolerance shall be taken as the wider value.		N/A
1.4.12.1	<p>Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater.</p> <p>Add note 1: for equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater.</p> <p>Add note 2: for equipment is to be operated at 2000m-5000m above sea level, its temperature test conditions and temperature limits are considered.</p>		N/A
1.5.2	Add a note behind the first dashed paragraph. Note: A component used shall comply with related requirements corresponding altitude of 5000m.		N/A
1.7	Add a paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.		N/A
1.7.1	Amend dashed paragraph at the fifth paragraph : The RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED		N/A



	<p>VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured.</p> <p>And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz</p>		
1.7.2.1	<p>Add requirements of warning for equipment intended to be used at altitude not exceeding 2000m or at non-tropical climate regions:</p> <p>For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used at altitude not exceeding 2000m."</p> <p>For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used in not-tropical climate regions."</p> <p>If only the symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>		N/A
2.7.1	<p>Amended the first paragraph as:</p> <p>Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3.</p>		N/A
2.9	<p>Humidity conditioning</p> <p>This section applies for equipment to be operated at tropical climatic conditions, humidity conditioning dealt with tropical climatic conditions. For equipment not to</p>		N/A

	be operated at tropical climatic conditions, its humidity conditioning complies with rules of CTL 624/07.		
2.9.2	<p>First section of Clause 2.9.2 amended as two sections:</p> <p>Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature <math>40\pm 2^{\circ}\text{C}</math> and a relative humidity of <math>(93\pm 3)\%</math>. During this conditioning the component or subassembly is not energized.</p> <p>For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of <math>(93\pm 3)\%</math>. The temperature of the air, at all places where samples can be located, is maintained within <math>2^{\circ}\text{C}</math> of any convenient value between <math>20^{\circ}\text{C}</math> and <math>30^{\circ}\text{C}</math> such that condensation does not occur.</p> <p>Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered.</p> <p>Add note: For equipment to be operated at 2000m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.</p>		N/A
2.10.3.1	<p>Amend the third paragraph of Clause 2.10.3.1 to be:</p> <p>These requirements apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at more than 2000m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000m above sea level, the minimum CLEARANCE shall be multiplied by the</p>		N/A

	factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.		
2.10.3.3	Add "(applicable for altitude up to 2000m)" in header of Table 2K, 2L and 2M.		N/A
2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K, 2L and 2M.		N/A
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment operated at 2000m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1 (IEC 60664-1). For equipment to be operated at more than 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.		N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.		N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.		N/A
E	Amend last section: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. Add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.		N/A
G.6	Change the second section of Clause G.6		N/A

	to be: For equipment to be operated at 2000m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.		
BB	Amended as: The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		N/A
DD	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m. DD.2 Climate warning label Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.		N/A
EE	Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.		N/A
Other	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U		N/A
Other	The principles of quoting and referring to		N/A

	<p>other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows:</p> <ul style="list-style-type: none"><li>- If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;</li><li>- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted;</li><li>- If the date of the national standard or industry standard is not given, the latest edition of the standard applies;</li><li>- The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard.</li></ul> <p>When quoting several chapters or clauses of the international standard, the principles of quotation are as follows:</p> <ul style="list-style-type: none"><li>- If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;</li><li>- If there is national standard or industry</li></ul>		
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	standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1:2005.		
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<b>Denmark - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
1.2.4.1	In Denmark, certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2.1	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: : "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		N/A
1.7.5	In Denmark, 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.		N/A
1.7.5	For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (Heavy Current Regulations, Section 107-2-D1)		N/A
3.2.1.1	Supply cord of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to		N/A

	<p>the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contact 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>		
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<b>Finland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.3	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	Touch current measurement results		N/A

	<p>exceeding 3,5 mA r.m.s are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>- STATIONARY PLUGGABLE EQUIPMENT TYPE A that:</li> <li>(1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>(2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>(3) is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> <li>- STATIONARY PLUGGABLE EQUIPMENT TYPE B</li> <li>- STATIONARY PERMANENTLY CONNECTED EQUIPMENT</li> </ul>		
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>Alternatively for components, 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</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and</li> <li>- is subject to ROUTINE TESTING for</li> </ul>		N/A



	<p>electric strength during manufacturing, using a test voltage of 1,5 kV.</p> <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994 (EN 60384-14:2005), subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"><li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li><li>- the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14];</li><li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14].</li></ul>		
6.1.2.2	<p>The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, 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 center, 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.</p>		N/A
7.2	<p>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.</p>		N/A

<b>Germany - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
1.7.2.1	If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.	Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer.	N/A

<b>Group - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	Group Differences also includes the requirements in A11:2009 and A12:2011		Pass
1.3	A12:2011 - In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1	Add the following NOTE Z1: The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		N/A
1.7.2.1	Delete NOTE Z1 and the addition for Portable Sound System Add the following Zx clauses and annex to the existing standard and amendments		N/A
2.7.1	Replace the subclause as follows: Basic requirements 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): 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; 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		N/A

	<p>devices in the building installation; 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. 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>		
2.7.2	Void		Pass
3.2.3	Delete the NOTE and conduit sizes in parentheses in Table 3A		N/A
3.2.5.1	<p>Add the following Note: NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD.</p> <p>In Table 3B, replace the first four lines by the following: Up to and including 6 0.75 a) Over 6 up to and including 10 0.75 b) 1.0 Over 10 up to and including 16 1.0 c) 1.5</p> <p>In the conditions applicable to table 3B, delete the words "in some countries" in condition a). In Note 1, applicable Table 3B, to delete the second sentence.</p>		N/A
3.3.4	<p>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 1.5 to 2.5 1.5 to by 4"</p> <p>Delete the fifth line: conductor sizes for 13</p>		N/A

	to 16A.		
4.3.13.6	Replace the existing NOTE by the following: NOTE Z1 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 and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation). Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
H	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 $\mu$ 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.		N/A
Zx	Protection against excessive sound pressure from personal music players		N/A
Zx.1	General - This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.  A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use.		N/A

	<p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"><li>- while the personal music player is connected to an external amplifier; or</li><li>- while the headphones or earphones are not used.</li></ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"><li>- hearing aid equipment and professional equipment;</li></ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"><li>- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</li></ul> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the</p>		
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	limits of EN 71-1 apply.		
Zx.2	<p>Equipment Requirements - No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> <li>- equipment provided as a package (personal music player with its listening device), where the acoustic output <math>L_{Aeq,T}</math> is <math>\leq 85</math> dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and</li> <li>- a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1.</li> </ul> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level <math>L_{Aeq,T}</math> is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"> <li>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</li> <li>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</li> <li>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</li> </ul> <p>NOTE 2 Examples of means include visual</p>		N/A

	<p>or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as</p>		
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	long as the average sound level of the song is not above the basic limit of 85 dBA.		
Zx.3	<p>Warning - The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>- the symbol of Figure 1 (IEC 60417-6044) with a minimum height of 5 mm; and</li> <li>- the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."</li> </ul> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level</p>		N/A
Zx.4	Requirements for Listening devices (headphones and earphones)		N/A
Zx.4.1	<p>Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A
Zx.4.2	<p>Wired listening devices with digital input</p> <p>With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate,</p>		N/A



	including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).  NOTE An example of a wired listening device with digital input is a USB headphone.		
Zx.4.3	Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be $\leq 100$ dBA.  NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
Zx.5	Measurement Methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.  NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

Israel - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Israel has national differences declared for 60950-1:2005, Am 1:2009 (below).		Pass
1.6.1	Add Note: This clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.		N/A

1.7	Add: Sub-clause 1.7.201 shall be added at the beginning of the clause.		N/A
1.7.2.1	Add: All the instructions and warnings related to safety shall also be written in the Hebrew language.		N/A
1.7.201	<p>The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition, the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed.</p> <ol style="list-style-type: none"> <li>1) name of the apparatus and its commercial designation;</li> <li>2) Manufacturer's name and address. If the apparatus is imported, the importer's name and address;</li> <li>3) Manufacturer's registered trademark, if any;</li> <li>4) Name of the model and serial number, if any;</li> <li>5) country of manufacturer</li> </ol>		N/A
2.9.4	<p>Add: Seven means of protection against electrocution are permitted according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991. The seven are</p> <ol style="list-style-type: none"> <li>1) TN-S or TN-C-S</li> <li>2) TT</li> <li>3) IT</li> <li>4) Isolated Transformer</li> <li>5) Safety extra low voltage (SELV or ELV)</li> <li>6) Residual current circuit breaker (30 ma = 1delta)</li> <li>7) reinforced insulation; double insulation (Class II)</li> </ol>		N/A
2.201	Add: Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus		N/A

	with the relevant requirements specified in the appropriate part of the standard series SI 961, shall be checked. The apparatus shall meet the requirements in the appropriate part of the standard series SI 961. If there are components of the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this standard.		
3.2.1.1	Add after the note: The feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.		N/A
3.2.1.2	Add: At the end of the first paragraph add the following note: At the time of issue of the standard, there is no Israel Standard for connection accessories to d.c.		N/A

<b>Japan - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	NCBs are issuing and recognizing to 60950-1:2005, Am 1:2009. Japan has declared differences to 60950-1:2001 (see below.)		Pass
1.2.4.1	Addition of the following note: Note: Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.		N/A
1.2.4.3A	Addition of new clause Class 0I Equipment: Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing externally an earth terminal or a lead wire for earthing in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. NOTE – Class 0I equipment may have a part constructed with Double Insulation or		N/A

	Reinforced Insulation.		
1.3.2	<p>Add after the first paragraph:</p> <p>Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p> <p>Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p>		N/A
1.5.1	<p>Replace the first paragraph with:</p> <p>Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards in case there is no applicable JIS component standard is available. However, a component that falls within the scope of METI Ministerial ordinance No. 85 is properly used in accordance with its marked ratings, requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set mating with appliance inlet complying with the standard sheet of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1.</p>		N/A
1.5.1	<p>Replace note 1 with:</p> <p>Note 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.</p>		N/A
1.5.2	<p>Replace the first sentence in the first dashed paragraph with the following:</p> <p>A component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated</p>		N/A

	to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating.		
1.5.2	Add the following note after the first dashed paragraph: Note 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A.		N/A
1.5.2	Replace first sentence in the third dashed paragraph with the following: Where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment.		N/A
1.5.6	In this sub-clause, add “JIS C 5101-14:1998 or” before the reference number, IEC 60384-14:1993.		N/A
1.5.7.2	In this sub-clause, add “JIS C 5101-14:1998 or” before the reference number, IEC 60384-14:1993.		N/A
1.5.8	In the first paragraph, add “JIS C 5101-14:1998 or” before the reference number, IEC 60384-14:1993.		N/A
1.7.1	Replace fifth dashed paragraph with the following: manufacturer’s or responsible company’s name or trade-mark or identification mark		N/A
1.7.5	In the second paragraph, add “or JIS C 8303:2007” after the reference number, IEC/TR 60083:1997”.		N/A
1.7.5A	Add the following new clause after 1.7.5: Appliance Coupler If appliance coupler according to IEC60320-1, C.14(rated current: 10A)is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the user instruction.		N/A

	“ Use only designated cord set attached in this equipment”		
1.7.12	Replace first sentence with the following: Instructions and equipment marking related to safety shall be in Japanese.		N/A
1.7.17A	<p>Add the following new clause. after 1.7.17:</p> <p>Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body:</p> <p>“Provide an earthing connection”</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>“Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p>		N/A
2.1.1.1	In item b) of this sub-clause, replace “IEC 60083” with “JIS C 8303:2007 or Article 1 of the Ministerial Ordinance (No. 85:1962)”		N/A
2.6.3.2	Add the following after 1st paragraph: This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.		N/A
2.6.4.2	<p>Replace 1st paragraph with the following: Equipment required to have protective earthing shall have a main protective earthing terminal.</p> <p>For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.</p>		N/A
2.6.5.4	Replace 1st sentence with the following: Protective earthing connections of CLASS		N/A

	I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:		
2.6.5.8A	Add the following new clause. after 2.6.5.8A: Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.		N/A
2.10.3.1	In this sub-clause, replace IEC 60664-1 with JIS C 0664:2003.		N/A
2.10.3.2	In the second paragraph, replace IEC 60664-1 with JIS C 0664:2003.		N/A
3.2.3	Add the following after Table 3A: Table 3A applies when cables complying JIS C 3662 or JIS C 3663 are used. In case of other cables, cable entries shall be so designed that a conduit suitable for the cable used can be fitted.		N/A
3.2.5.1	Add the following to the last of first dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.		N/A
3.2.5.1	Add the following to the last of second dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.		N/A
3.2.5.1	Delete 1) in Table 3B.		N/A
3.3.4	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 or JIS C 3663, terminals shall be suitable for the size of the intended cables.		N/A

3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of Class 0I equipment.		N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.		N/A
4.3.13.5	Replace the first paragraph with the following:  Except as permitted below, equipment shall be classified and labelled according to JIS C 6802:2005, and JIS C 6803:2006 or IEC 60825-2:2000, as applicable.  Replace IEC 60825-1 in the second and the last paragraph with JIS C 6802:2005.		N/A
4.5	Add the following NOTE to Table 4B, 3): NOTE: In case no data for the material is available, Appendix 4, 1. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances (Commerce and Distribution Policy Group No. 3:2008/06/19) may apply.		N/A
5.1.3	Add a note after the first paragraph as follows: Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.		N/A
5.1.6	Replace Table 5A as shown in J60950-1.		N/A
6	Replace IEC 60664-1 in NOTE 4 with JIS C 0664.		N/A
7	Replace IEC 60664-1 in NOTE 3 with JIS C 0664:2003.		N/A
7.2	Add the following after the paragraph: However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to		N/A



	<p>a CABLE DISTRIBUTION SYSTEM if all of the following apply:</p> <ul style="list-style-type: none"> <li>– the circuit under consideration is a TNV-1 CIRCUIT; and</li> <li>– the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and</li> <li>– the screen of the coaxial cable is intended to be connected to earth in the building installation.</li> </ul>		
JA	<p>Add new Annex JA:</p> <p>Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.</p>		N/A
JA.1	<p>Add: Markings and instructions</p> <p>The symbol (JIS S 0101:2000, 6.2.4) (exclamation point in yellow triangle) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible;</p> <ul style="list-style-type: none"> <li>- that use by an infants/children may cause a hazard of injury etc.;</li> <li>- that a hand can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- that clothing can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- that hairs can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.</li> </ul>		N/A
JA.2	<p>Add: Inadvertent Reactivation</p> <p>Any safety interlock that can be operated</p>		N/A

	<p>by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard.</p> <p>Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1</p>		
JA.3	<p>Add: Disconnection from the mains supply: Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p>		N/A
JA.3	<p>Add: If two-position switch, the positions for "ON" and "OFF" shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for "OFF" shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection</p>		N/A
JA.4	<p>Add: Protection against hazardous moving parts:</p> <p>Any warning shall not be used instead of the structure for preventing access to hazardous moving parts.</p> <p>Document shredding machines shall comply with the following requirements.</p> <p>Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended . Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Insert the wedge-probe, Figure JA.2, into</p>		N/A

	<p>the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p> <p>Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.</p> <p>Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.</p>		
W.1	<p>Replace second and third sentence in the first paragraph with the following: This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.</p>		N/A

<b>Korea - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	Korea has national differences declared for 60950-1:2005, Am 1:2009 (below).		Pass
1.5.101	Plugs for the connection of the apparatus to the mains supply shall comply with the Korean requirement (KSC 8305)		N/A
8	EMC - The apparatus shall comply with the relevant CISPR standards		N/A

<b>Norway - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
General	Norway has national differences declared for 60950-1:2005, Am 1:2009 (below).		Pass
1.2.13.14	For requirements see 1.7.2.1 and 7.3.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the		N/A

	requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be: "Apparatet må tilkoples jordet stikkontakt"		N/A
1.7.2.1	In Norway, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing - and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard.		N/A

	<p>Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> <p>NOTE: In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):          "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplede utstyr - og er tilkoplede et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet."</p>		
2.2.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.3.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	<p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment:</p> <p>- STATIONARY PLUGGABLE EQUIPMENT TYPE A that:</p> <p>(1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</p> <p>(2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</p> <p>(3) is provided with instructions for the installation of that conductor by a SERVICE PERSON;</p>		N/A

	<ul style="list-style-type: none"> <li>- STATIONARY PLUGGABLE EQUIPMENT TYPE B</li> <li>- STATIONARY PERMANENTLY CONNECTED EQUIPMENT</li> </ul>		
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>Alternatively for components, 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</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 123400 [EN 60384-14:2005], may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as</li> </ul>		N/A

	defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]		
6.1.2.2	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.		N/A
7.2	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.		N/A
7.3	Refer to EN 60728-11:2005 for installation conditions		N/A
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A

<b>Sweden - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
1.2.13.14	For requirements see 1.7.2.1 and 7.3.		N/A
1.5.1	(Ordinance (1990:944)) Add NOTE: Switches containing mercury are not permitted.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must		N/A

	withstand the resistor test in 1.5.7.2.		
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be: "Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1	In Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing - and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." NOTE: In Norway, due to regulation for installations of cable distribution systems,		N/A



	<p>and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."</p>		
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	<p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment:</p> <p>STATIONARY PLUGGABLE EQUIPMENT TYPE A that:</p> <p>(1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</p> <p>(2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</p> <p>(3) is provided with instructions for the installation of that conductor by a SERVICE PERSON;</p> <p>- STATIONARY PLUGGABLE TYPE B</p> <p>- STATIONARY PERMANENTLY CONNECTED EQUIPMENT</p>		N/A
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <p>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</p>		N/A

	<p>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</p> <p>Alternatively for components, 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</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14];</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]</li> </ul>		
6.1.2.2	The exclusions are applicable for		N/A

	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.		
7.2	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.		N/A
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A

Switzerland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Includes update from 60950-1:2005, AC:2011		Pass
1.5.1	Ordinance on environmentally hazardous substances SR 814.81, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury. Switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.13	Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15, Batteries - Annex 2.15 of SR 814.81 applies for batteries containing cadmium and mercury. Note: Ordinance relating to environmentally hazardous substances, SR 814.013 of 1986-06-09 is no longer in force and superseded by SR 814.81 of 2009-02-01 (ChemRRV).		N/A
3.2.1.1	Supply cords of portable electrical appliances having a rated current not exceeding 10 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets:  - SEV 6533-2:2009, Plug type 11, L+N,		N/A

	<p>250 V, 10 A</p> <ul style="list-style-type: none"> <li>- SEV 6534-2:2009, Plug type 12, L+N+PE, 250 V, 10 A</li> <li>- SEV 6532-2:2009, Plug type 15, 3P+N+PE, 250/400 V, 10 A</li> </ul> <p>Supply cords of portable electrical appliances having a rated current not exceeding 16 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets:</p> <ul style="list-style-type: none"> <li>- SEV 5933-2:2009, Plug type 21, L+N, 250 V, 16 A</li> <li>- SEV 5934-2:2009, Plug type 23, L+N+PE, 250 V, 16 A</li> <li>- SEV 5932-2:2009, Plug type 25, 3P+N+PE, 230/400 V, 16 A</li> </ul> <p>NOTE: 16 A plugs are not often used in Swiss domestic installation systems.</p>		
3.2.4	Requirements according to this annex 3.2.1.1 apply.		N/A

<b>USA / Canada - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013</b>			
1.1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		Pass
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A

1.4.14	For PLUGGABLE EQUIPMENT TYPE A, the protection in the installation is assumed to be 20 A.		Pass
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		Pass
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		Pass
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment		N/A

	intended for use on a supply system with an earthed neutral and more than one phase conductor.		
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A

2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A
2.6.3.3	For PLUGGABLE EQUIPMENT TYPE A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		Pass
2.6.3.3	The first column on Table 2D requirement: "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		Pass
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.12	Multi-layer winding wire subject to UL		N/A

	component wire requirements in addition to 2.10.5.12 and Annex U.		
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.	All wiring combinations are suitable for their intended application.	Pass
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		Pass
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		Pass
3.2.1	Permitted use for flexible cords and plugs.		Pass
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		Pass
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing.		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A



3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm <sup>2</sup> ) and not less than 150 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.  Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.  Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		Pass
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		Pass
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		Pass
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low		N/A

	voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm <sup>2</sup> ) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.5	First column of Table 3E revised to require "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A

3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5.1	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m <sup>3</sup> of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums		N/A

	provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.9 m <sup>2</sup> or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.		Pass
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		N/A
5.3.7	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into		N/A

	equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A
NAD	Acoustic pressure from an ear piece less than 140 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets and insert earphones, for long duration disturbances.		N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic		N/A

	pressure requirements.		
EE.5	UL articulated accessibility probe (Fig. EE.3) required for assessing accessibility to document/media shredders, instead of Figure 2A test finger.		N/A

United Kingdom - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
3.2.1.1	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 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.  NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer.	N/A
3.2.5.1	A power supply cord with conductor of 1.25 mm <sup>2</sup> is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	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 <sup>2</sup> to 1.5 mm <sup>2</sup> nominal cross-sectional area.		N/A
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 and		N/A

	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.		
4.3.6	Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

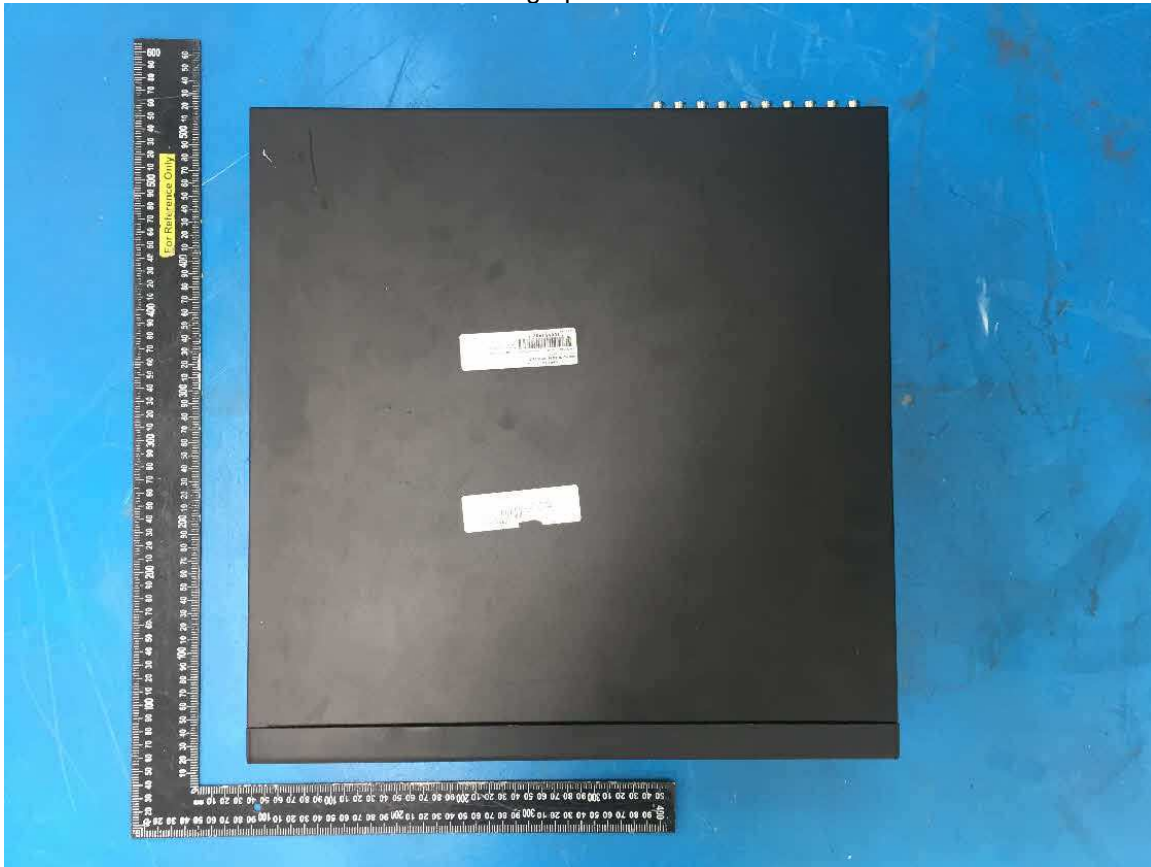
## Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Overall view 1 - Model DHI-XVR5832S
Photographs	3-02	Overall view 2 - Model DHI-XVR5832S
Photographs	3-03	Overall view 3 - Model DHI-XVR5832S
Photographs	3-04	Overall view 4 - Model DHI-XVR5832S
Photographs	3-05	Overall view 5 - Model DHI-XVR5832S
Photographs	3-06	Overall view 6 - Model DHI-XVR5832S
Photographs	3-07	Internal view 1 - Model DHI-XVR5832S
Photographs	3-08	Internal view 2 - Model DHI-XVR5832S
Photographs	3-09	Internal view 3 - Model DHI-XVR5832S
Photographs	3-10	Internal view 4 - Model DHI-XVR5832S
Photographs	3-11	Internal view 5 - Model DHI-XVR5832S
Photographs	3-12	Power supply
Photographs	3-13	Power supply
Photographs	3-14	DC fan - Model DHI-XVR5832S
Photographs	3-15	DC fan - Model DHI-XVR5832S
Photographs	3-75	Overall view 1 - Model DHI-XVR5432L
Photographs	3-76	Overall view 2 - Model DHI-XVR5432L
Photographs	3-77	Overall view 3 - Model DHI-XVR5432L
Photographs	3-78	Overall view 4 - Model DHI-XVR5432L
Photographs	3-79	Overall view 5 - Model DHI-XVR5432L
Photographs	3-80	Internal view 1 - Model DHI-XVR5432L
Photographs	3-81	Internal view 2 - Model DHI-XVR5432L
Photographs	3-82	Internal view 3 - Model DHI-XVR5432L
Photographs	3-83	Internal view 4 - Model DHI-XVR5432L
Photographs	3-84	Internal view 5 - Model DHI-XVR5432L
Photographs	3-85	DC fan - Model DHI-XVR5432L
Photographs	3-86	DC fan - Model DHI-XVR5432L
Photographs	3-87	Internal view 1 - Model DH-XVR5432L-X, Alternate mainboard
Photographs	3-88	Internal view 2 - Model DH-XVR5432L-X, Alternate mainboard
Photographs	3-89	Internal view 3 - Model DH-XVR5432L-X, Alternate mainboard
Photographs	3-90	Internal view 4 - Model DH-XVR5432L-X, Alternate mainboard
Photographs	3-91	Internal view 5 - Model DH-XVR5432L-X, Alternate mainboard
Diagrams	4-01	Enclosure spec - Model DHI-XVR5832S
Diagrams	4-04	Enclosure spec - Model DHI-XVR5432L
Diagrams	4-05	Heat sink
Schematics + PWB		

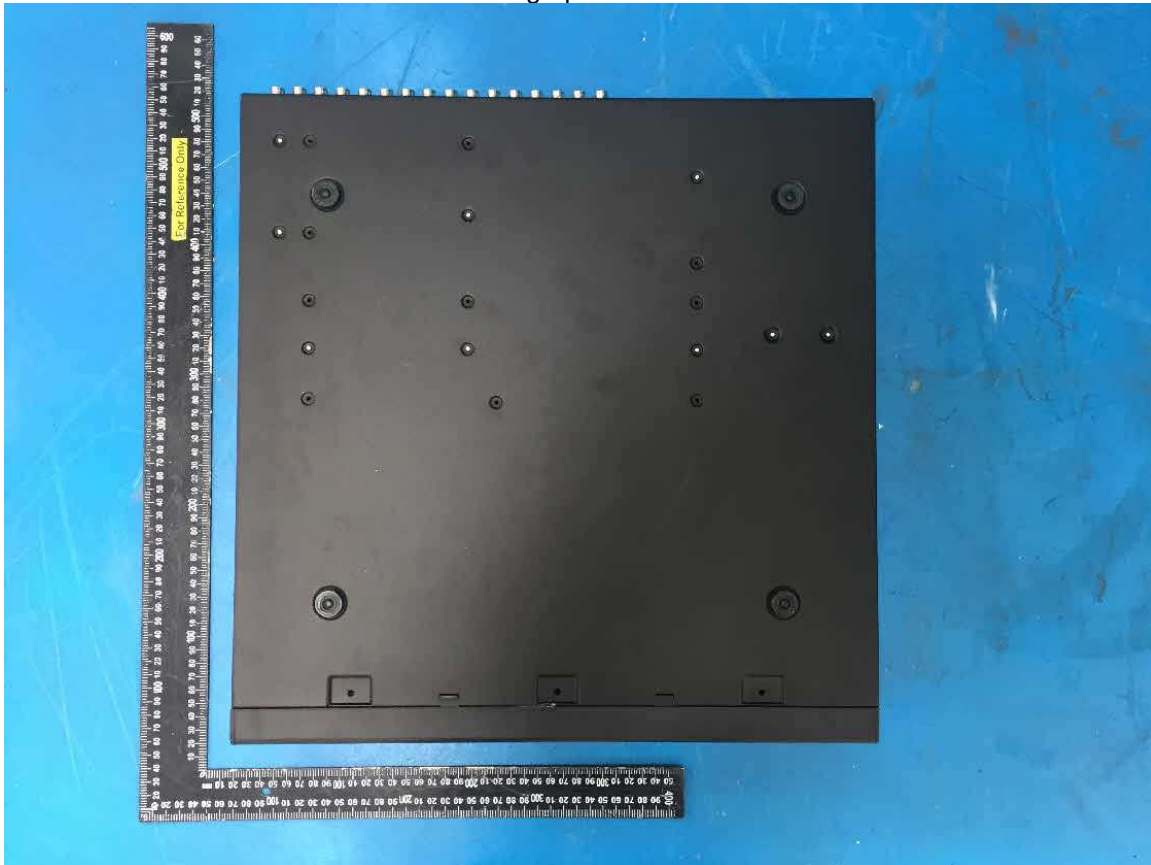


Miscellaneous		
Licenses		
Marking Plate	13-01	Label DHI-XVR5432L
Marking Plate	13-02	Label DHI-XVR5832S
Marking Plate	13-03	Label DH-XVR5432L-X

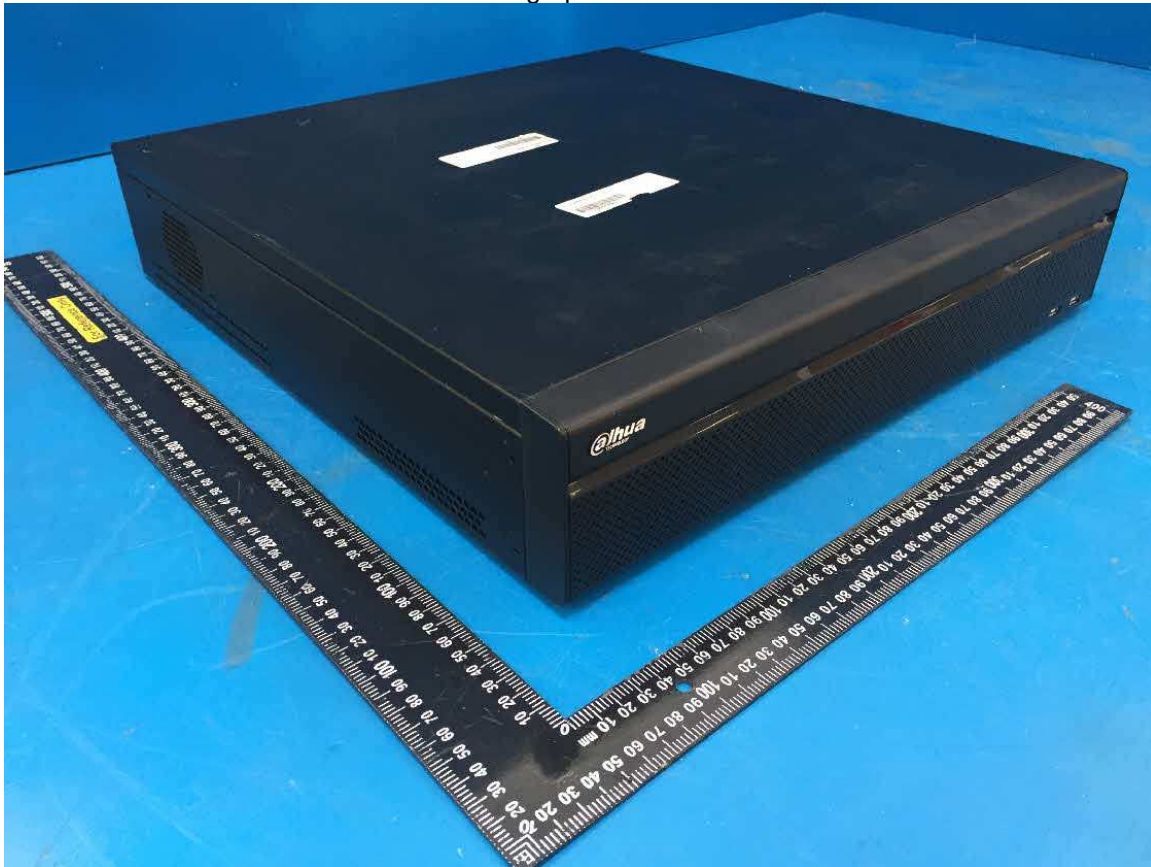
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Photographs ID 3-02



Photographs ID 3-03



Photographs ID 3-04



Photographs ID 3-05

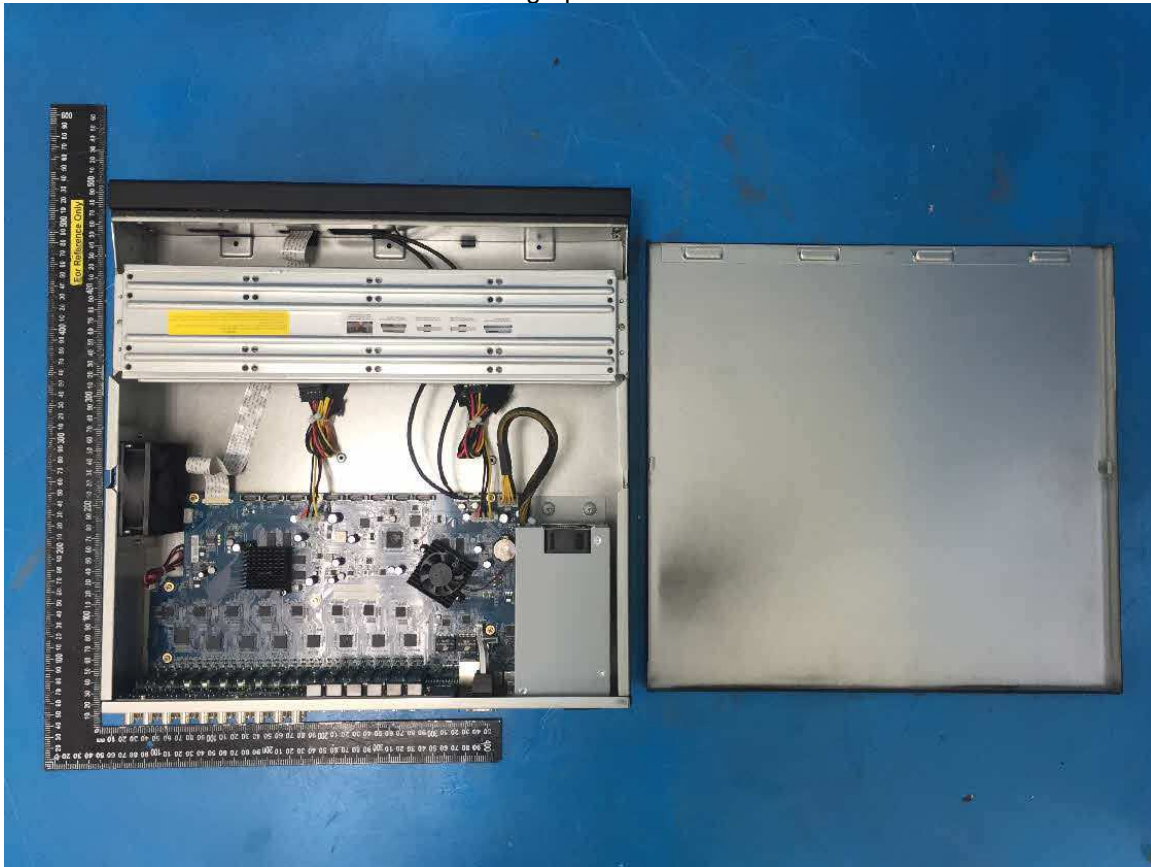




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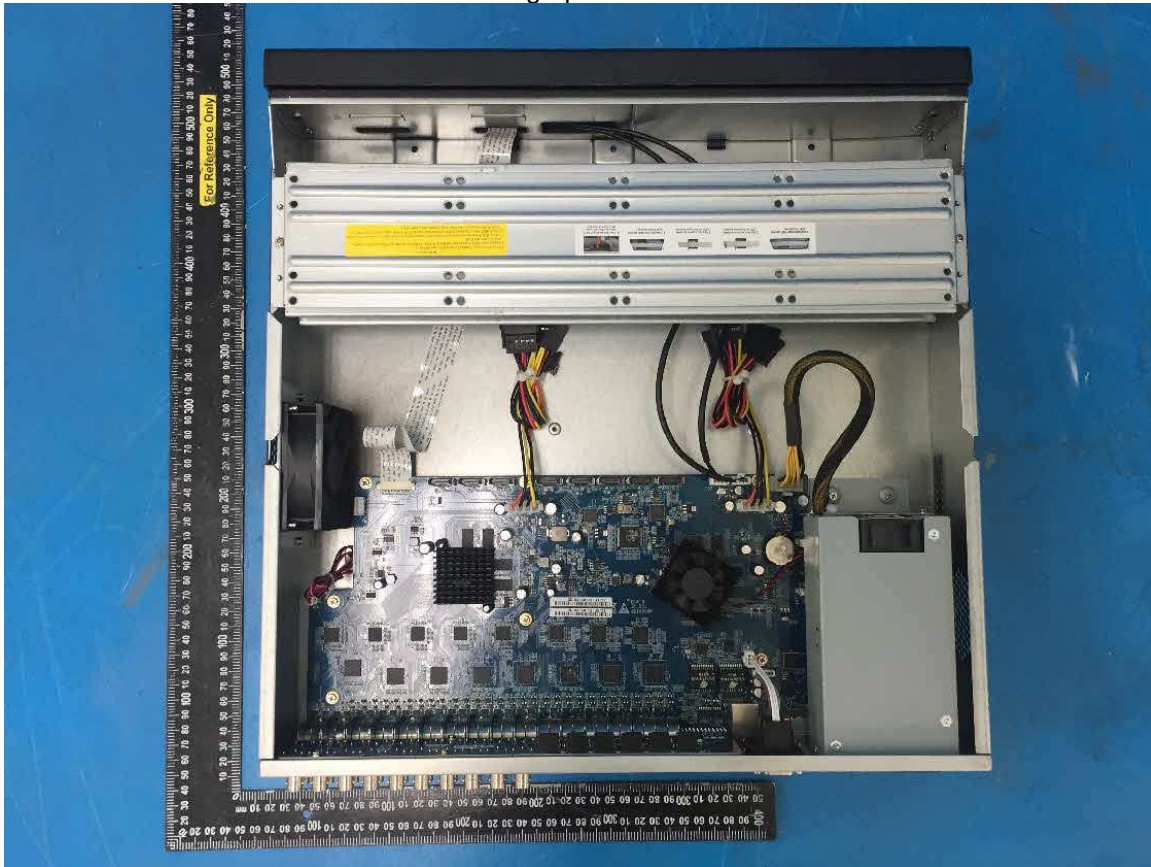


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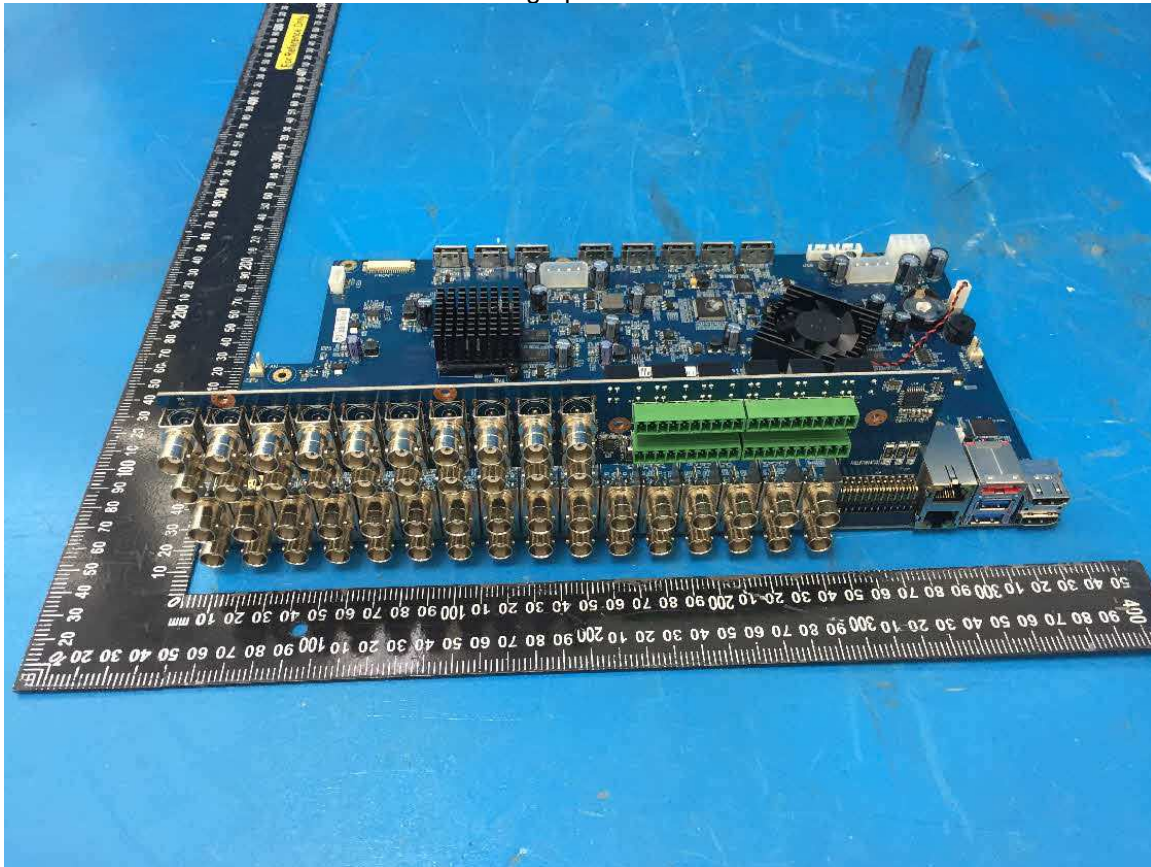




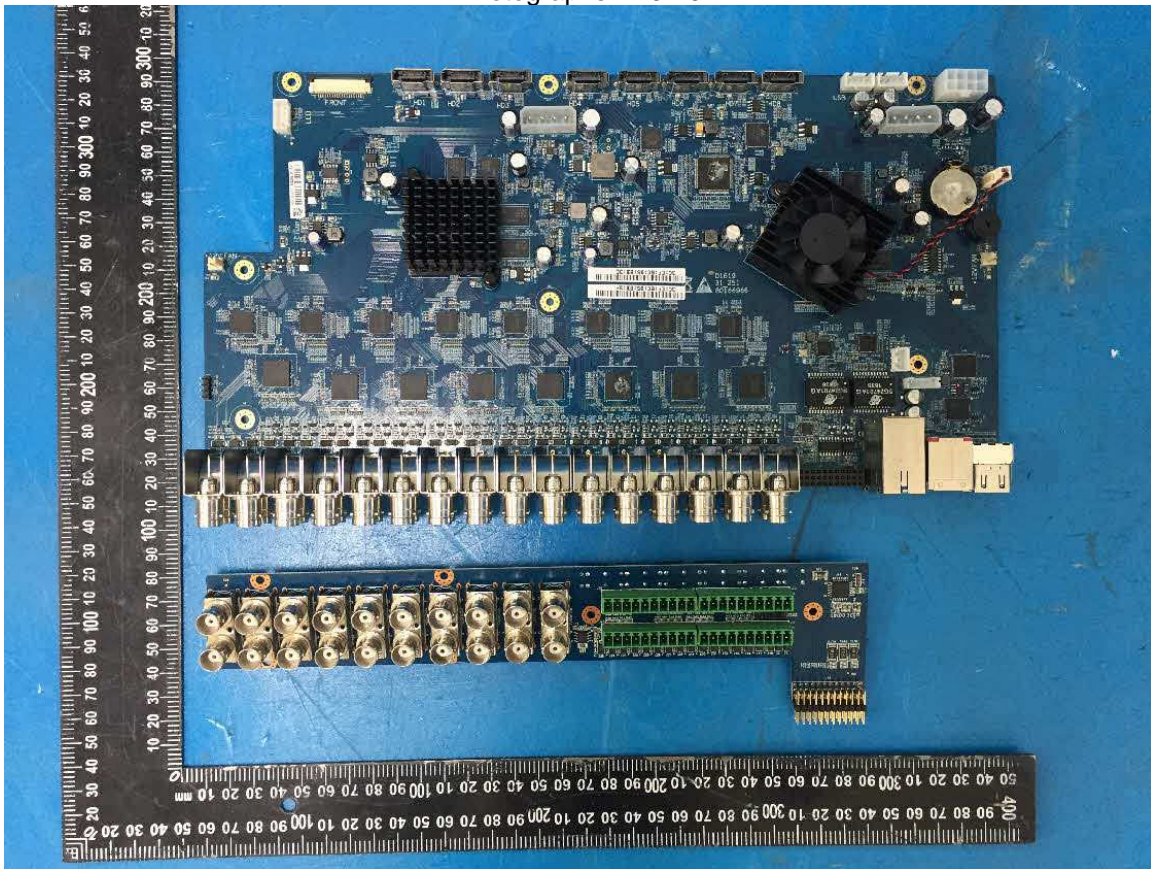
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Photographs ID 3-09



Photographs ID 3-10

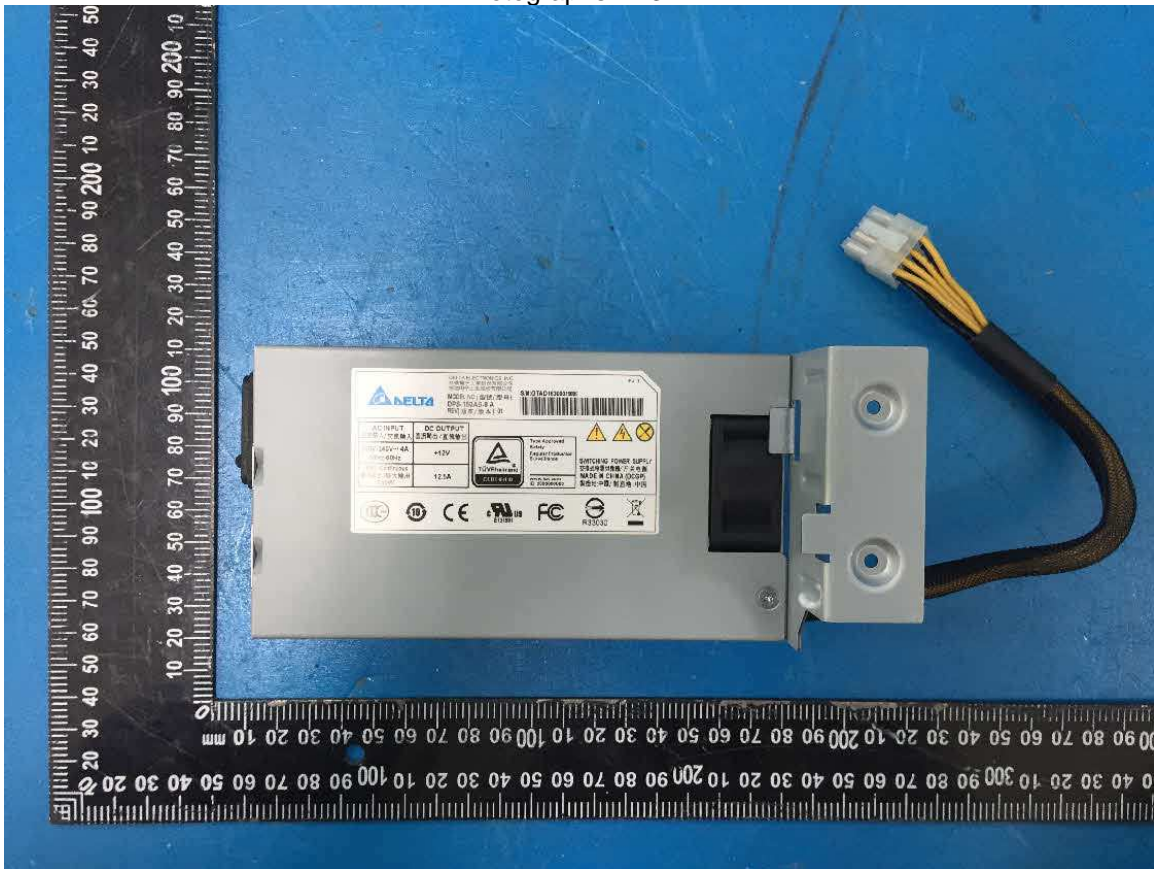




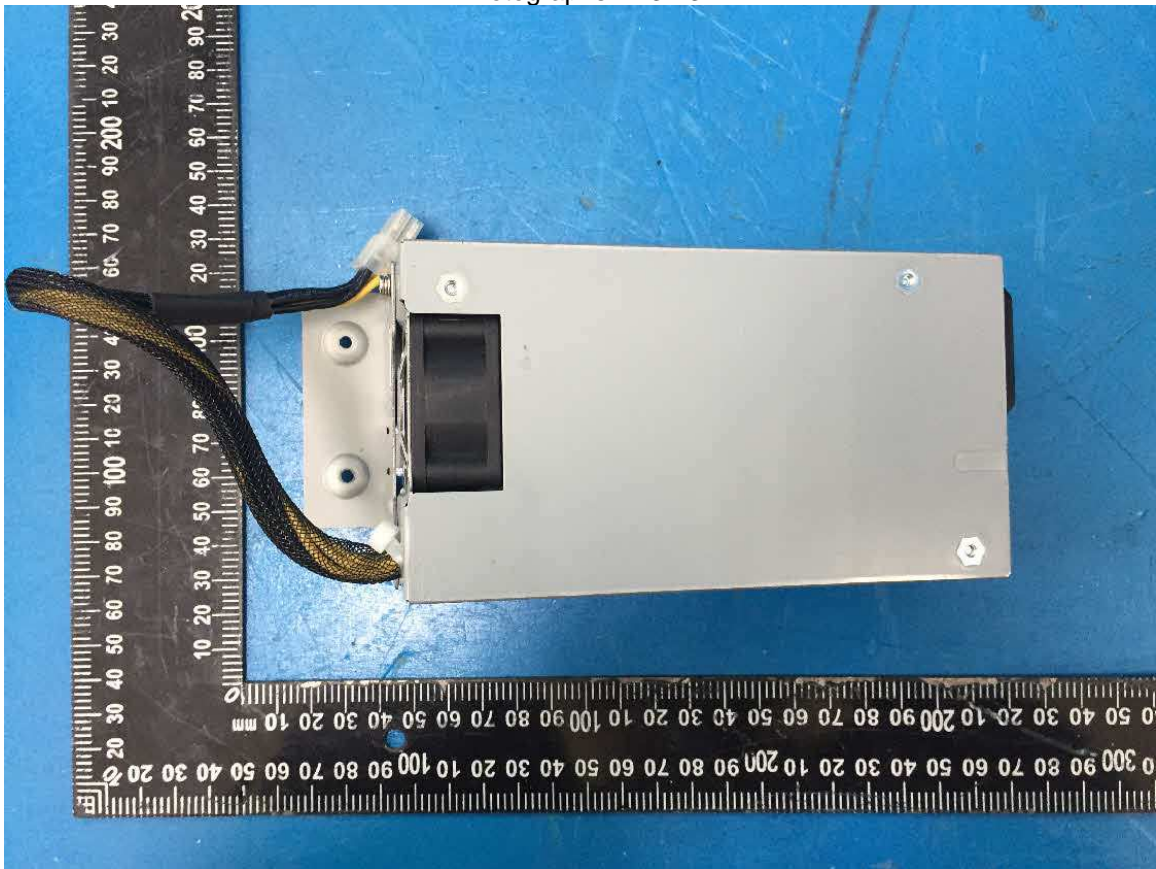
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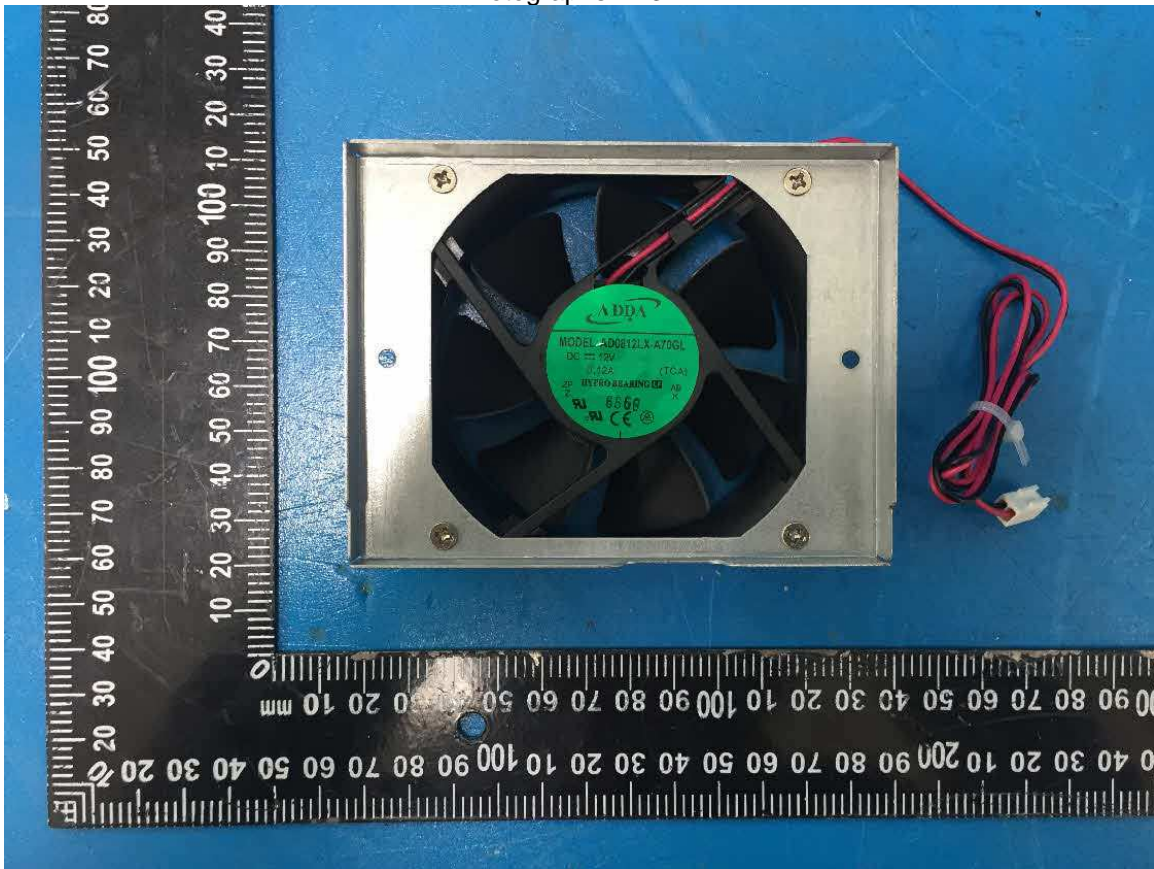


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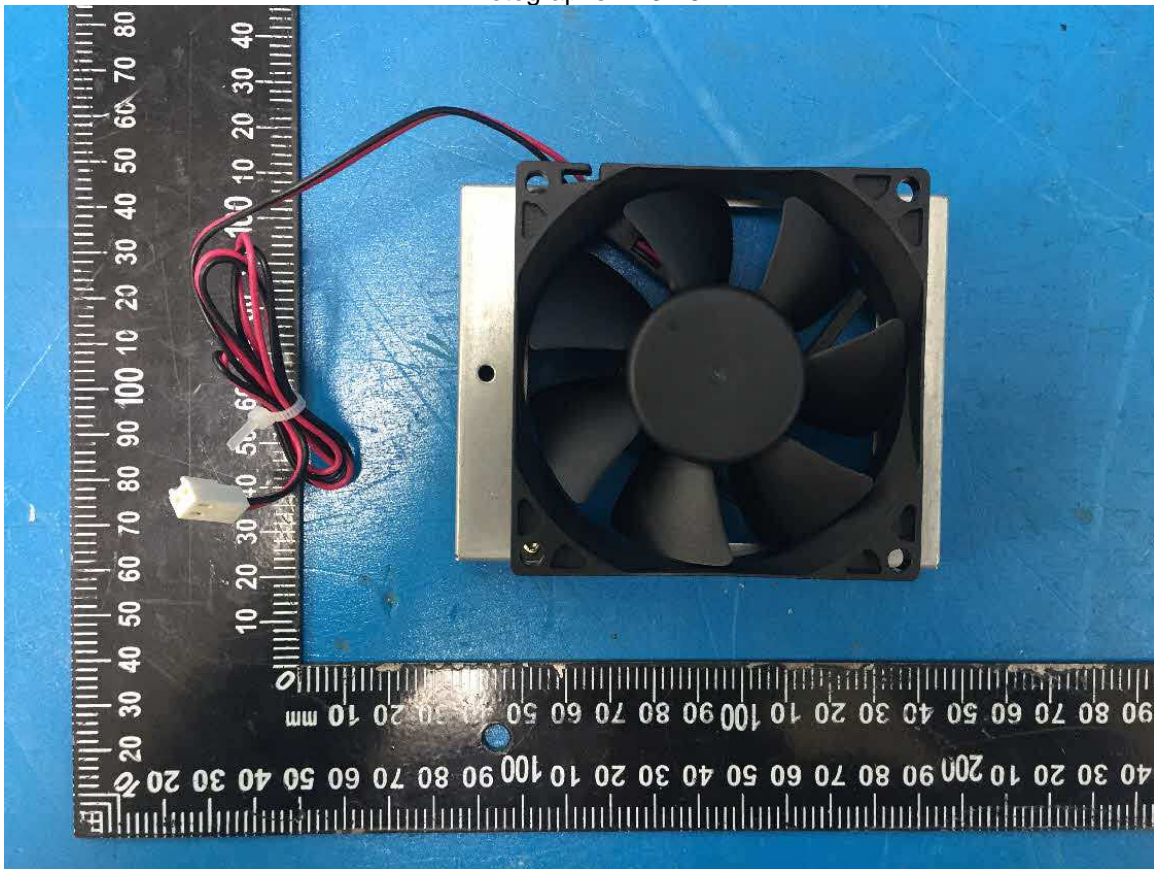




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Photographs ID 3-15





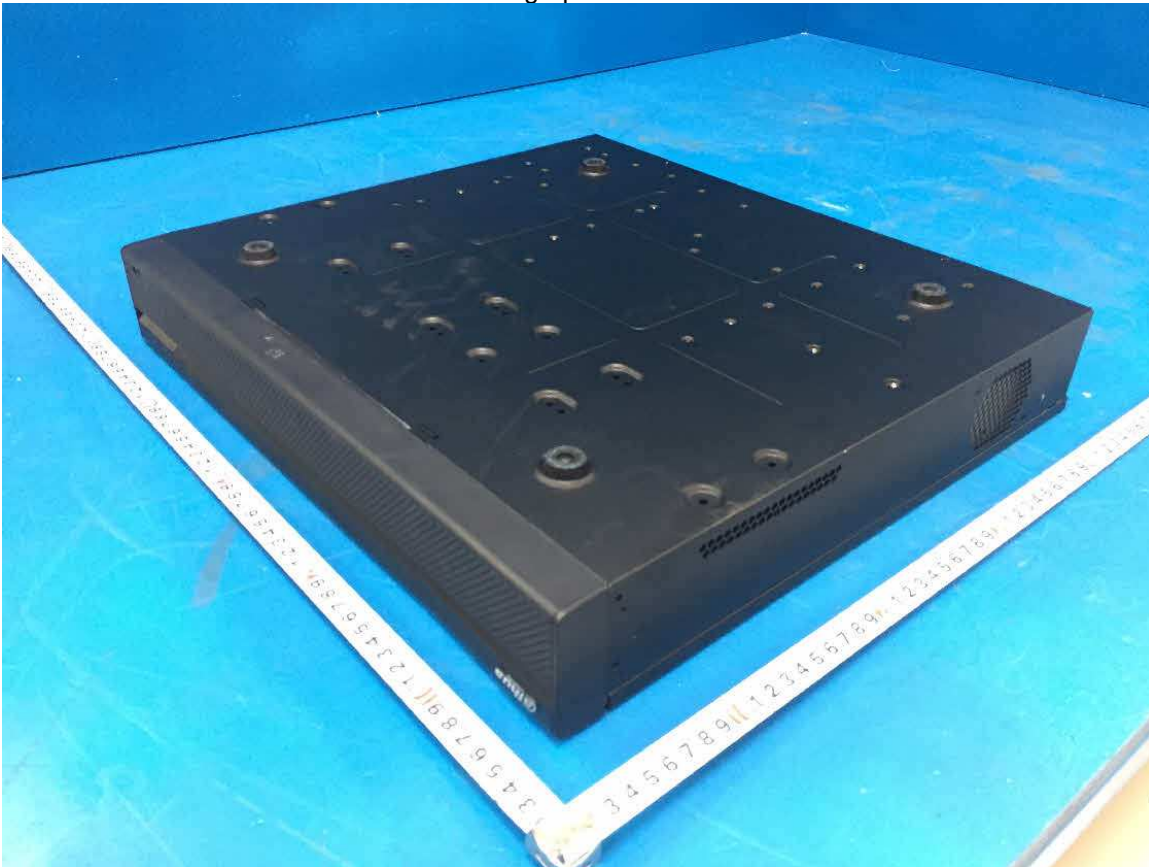
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Photographs ID 3-76



Photographs ID 3-77



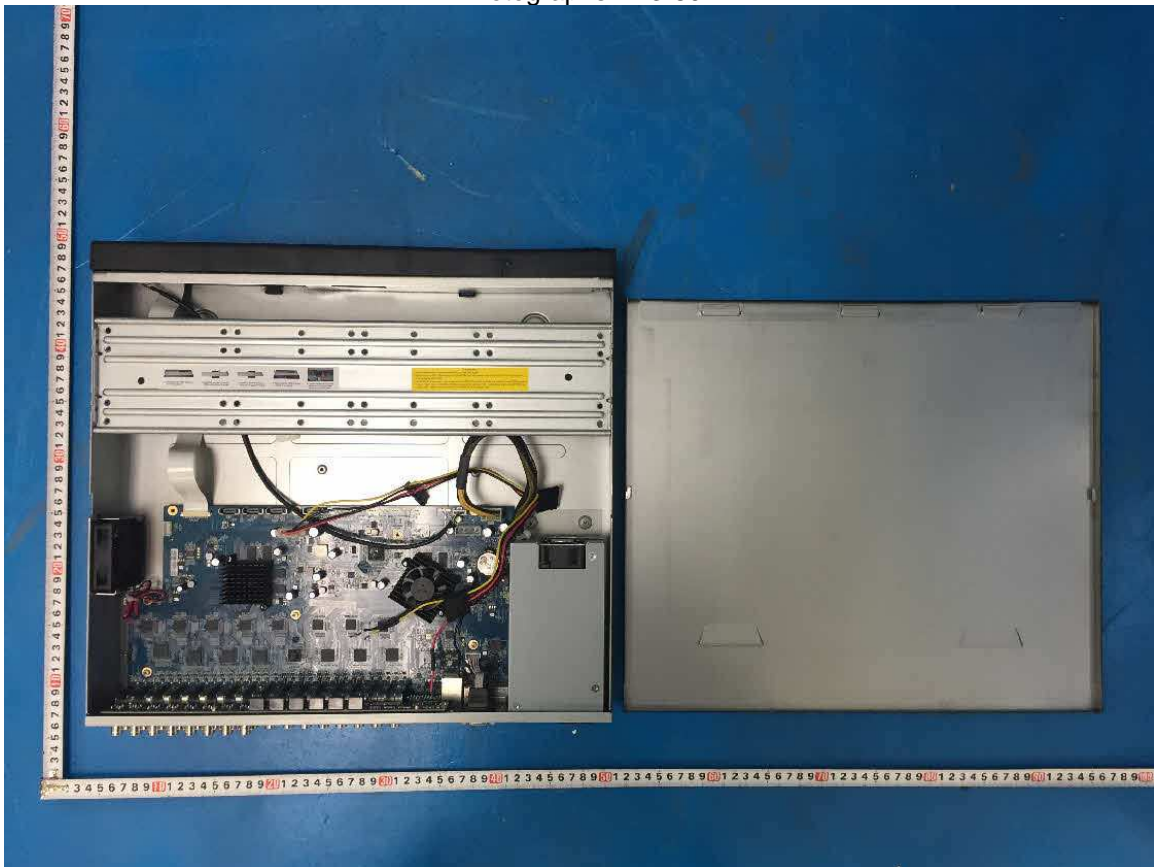
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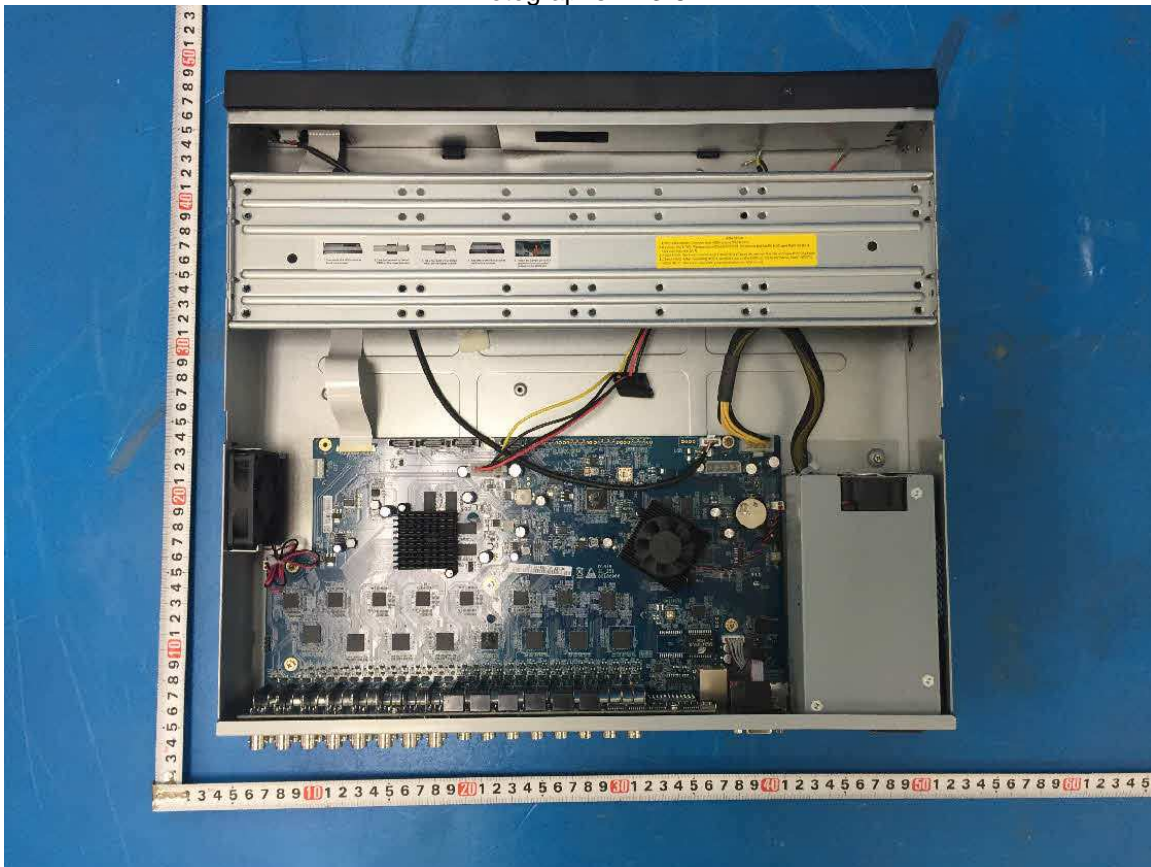


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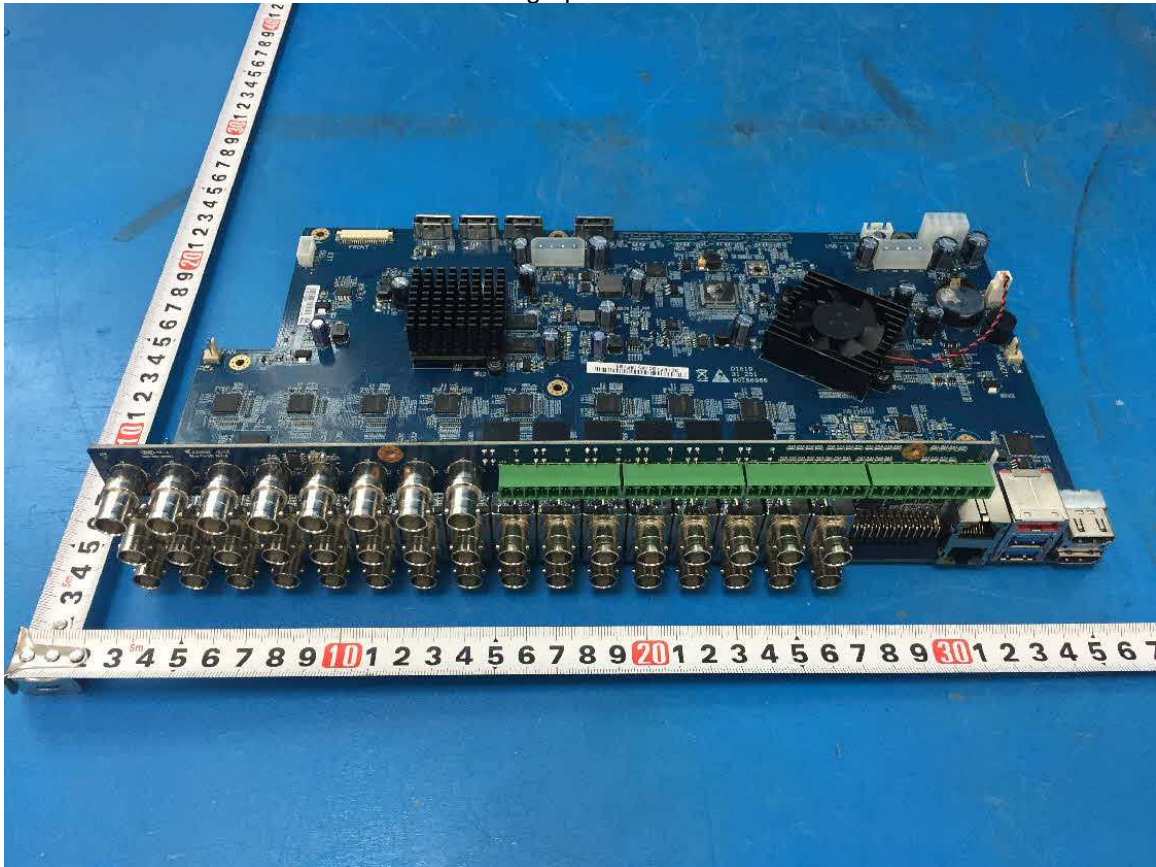




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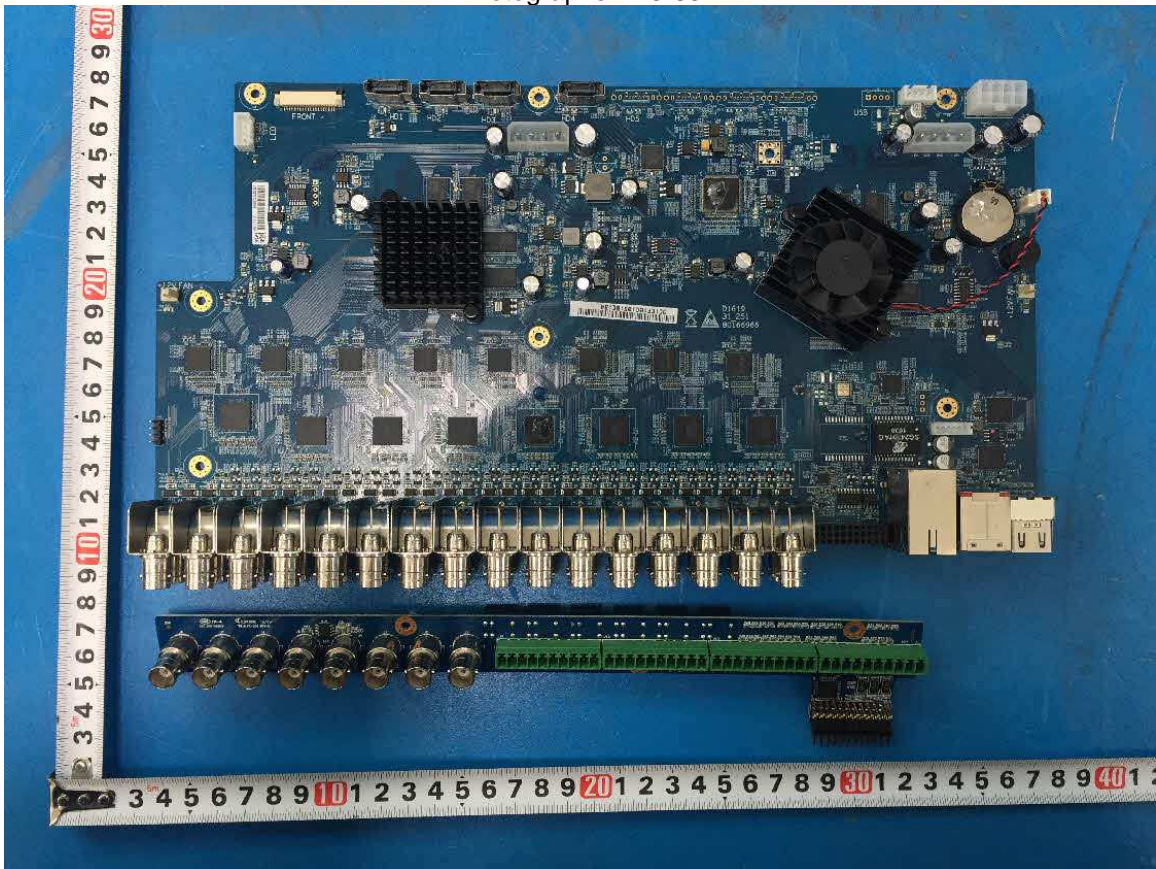


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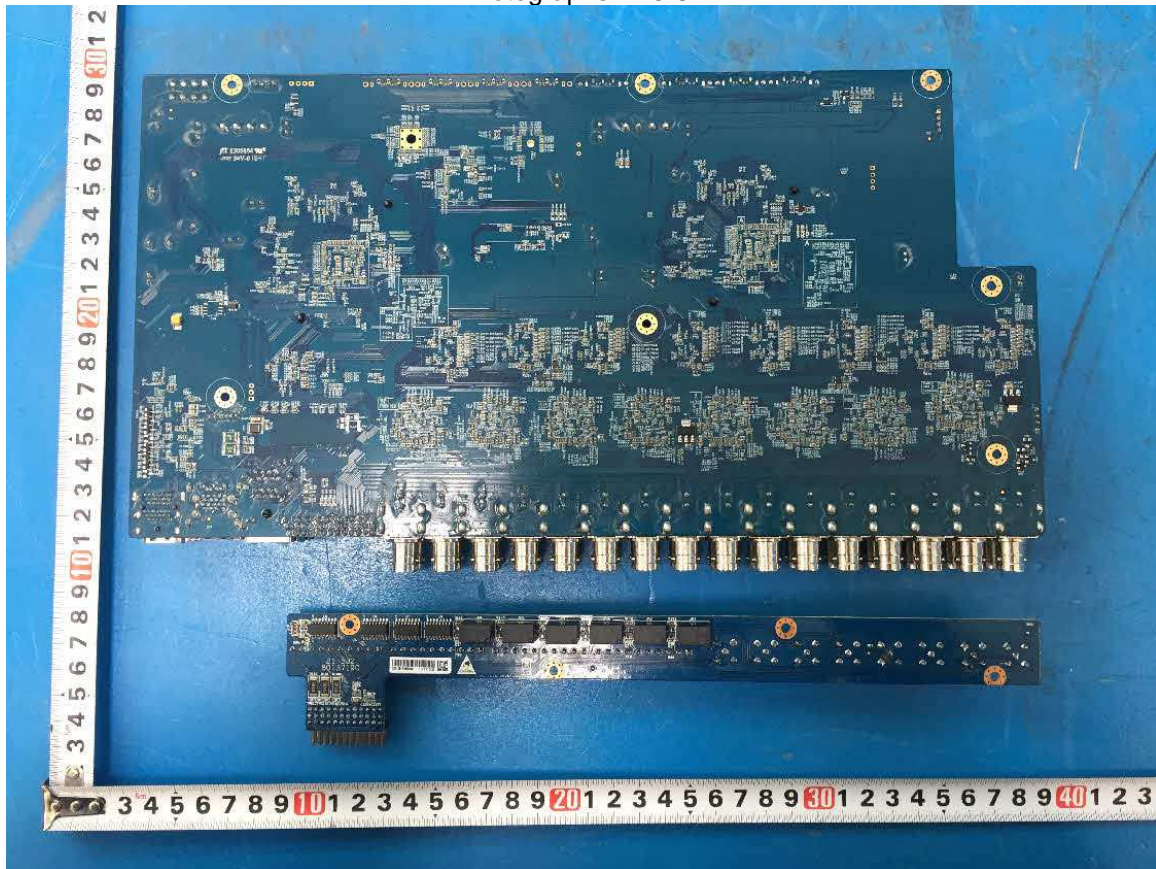




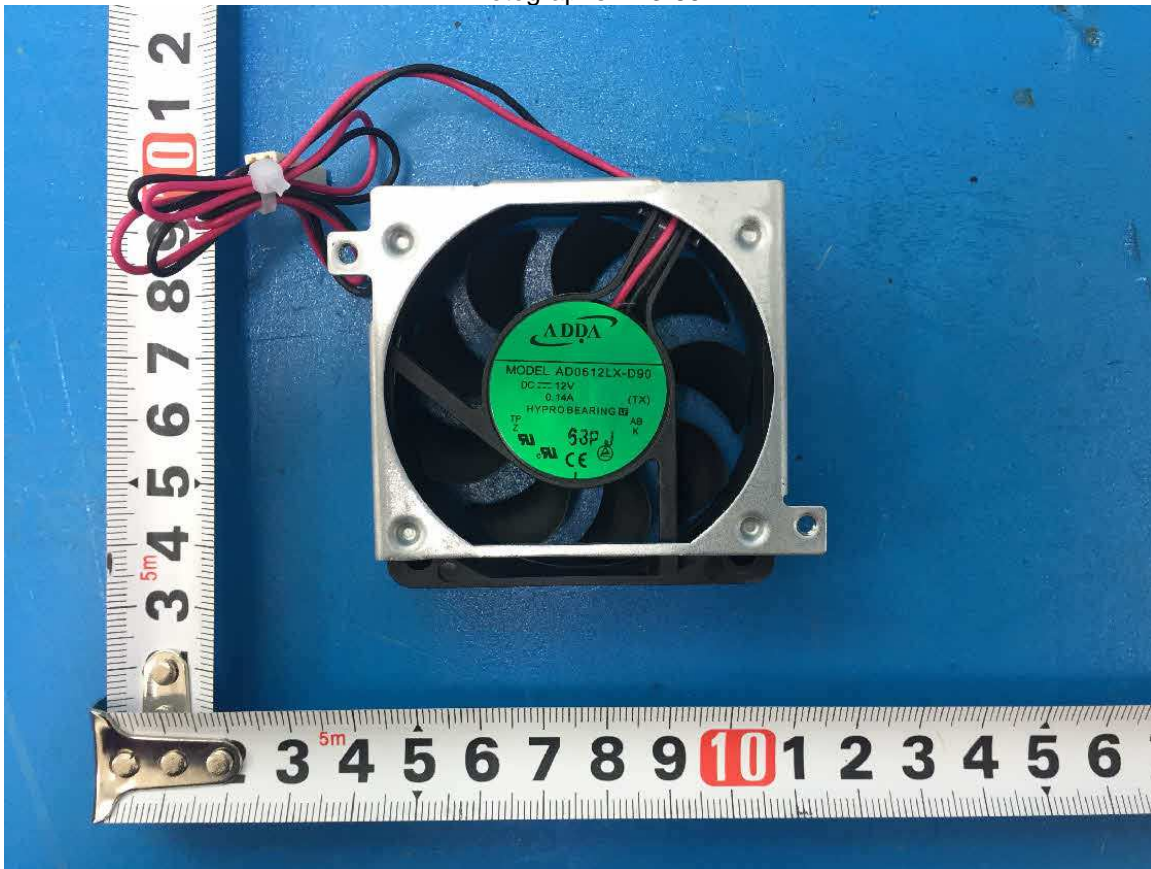
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Photographs ID 3-84

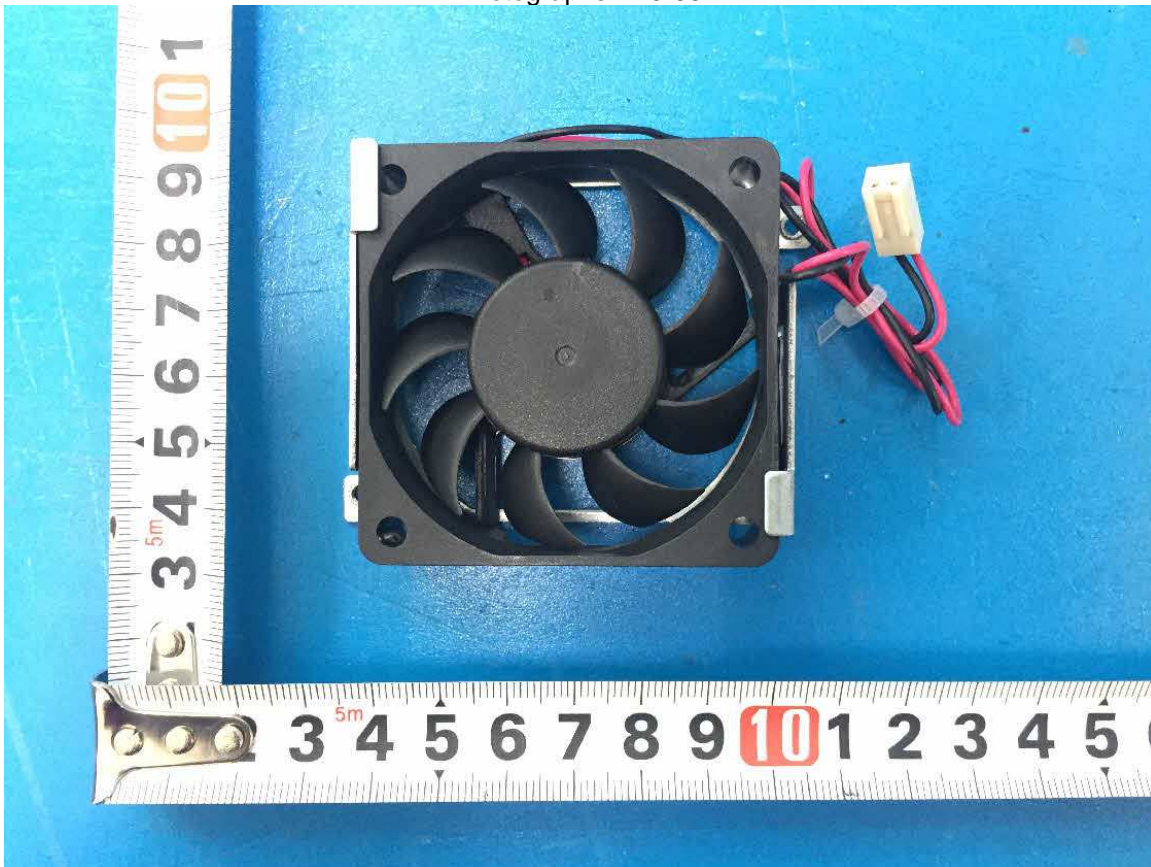


Photographs ID 3-85





Photographs ID 3-86



Photographs ID 3-87

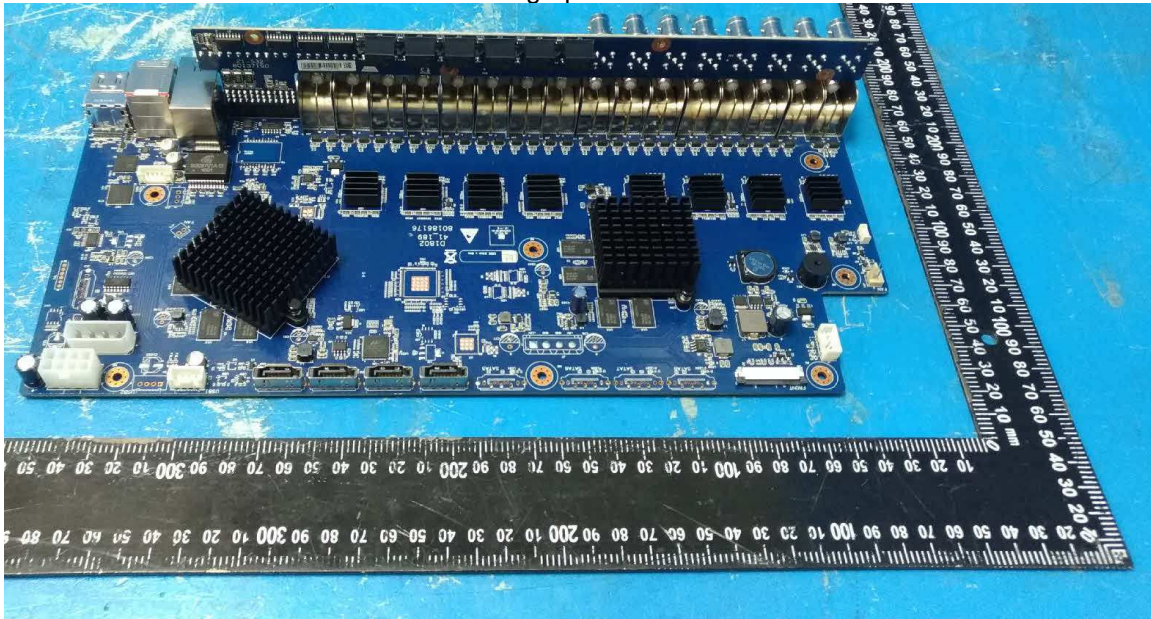


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Photographs ID 3-89

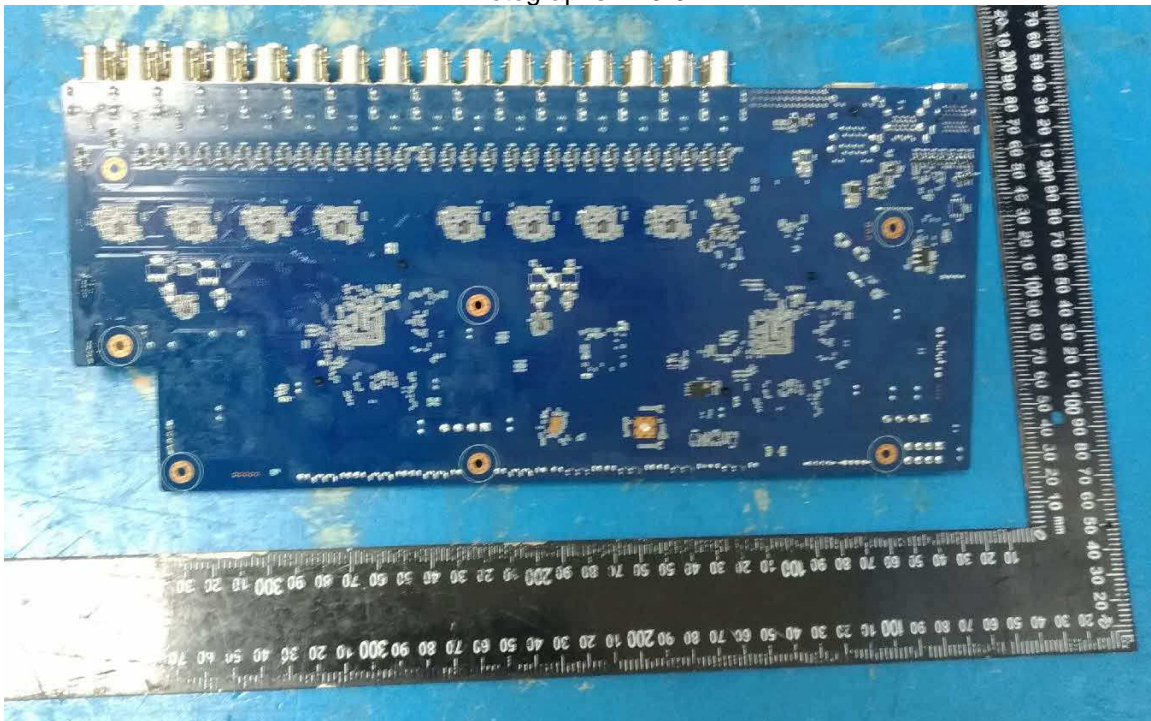


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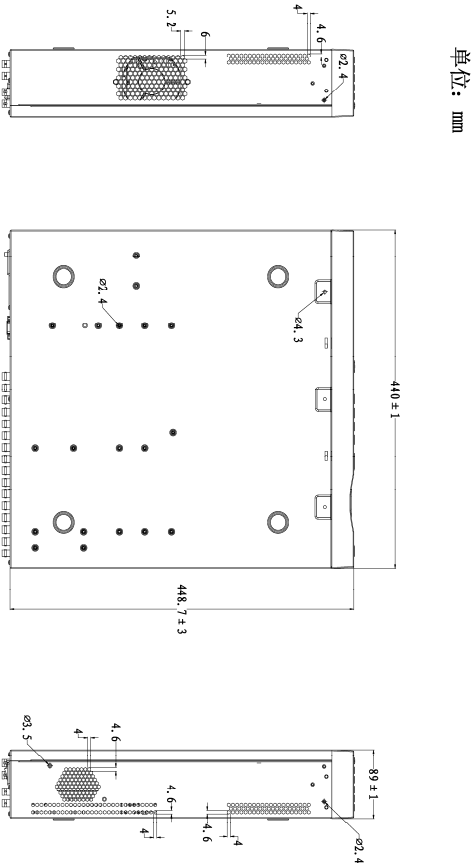




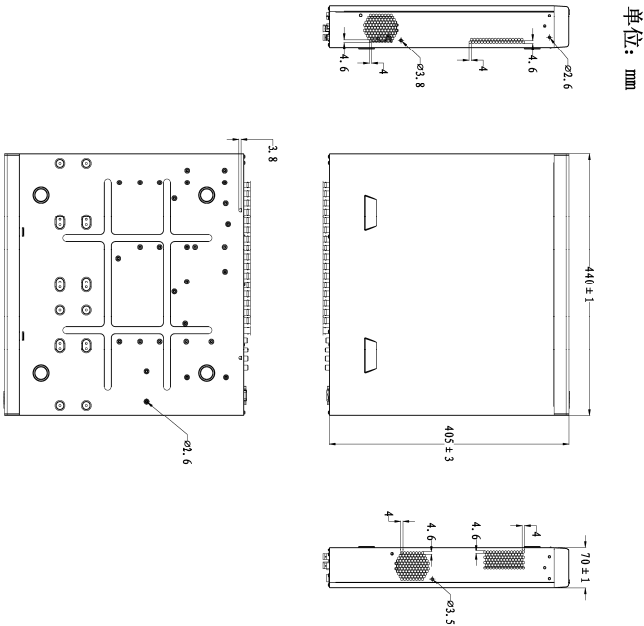
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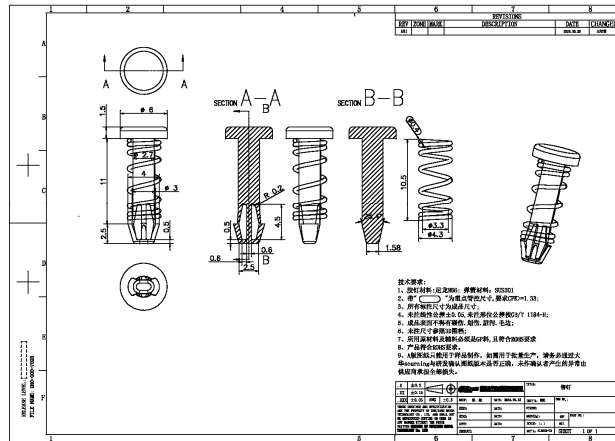
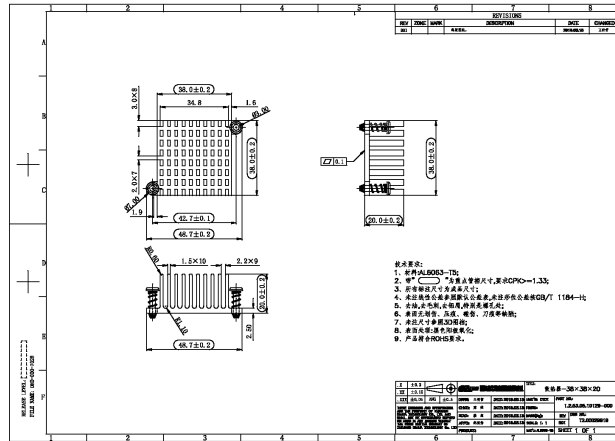
Diagrams ID 4-01



Diagrams ID 4-04



Diagrams ID 4-05



## Marking Plate ID 13-01

DIGITAL VIDEO RECORDER



DHI-XVR5432L

100-240V ~, 1.9A, 50-60Hz

P/N: 1.0.01.01.11839



S/N: 2L008F201P00001



MADE IN CHINA



ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

## Marking Plate ID 13-02

DIGITAL VIDEO RECORDER



DHI-XVR5832S

100-240V ~, 1.9A, 50-60Hz

P/N: 1.0.01.01.11842



S/N: 2K0279D01P00001



MADE IN CHINA



ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

Marking Plate ID 13-03

DIGITAL VIDEO RECORDER

DH-XVR5432L-X

100-240V ~ , 1.9A, 50-60Hz

P/N: 1.0.01.01.13322



S/N: 4D0126EYAG00001

MADE IN CHINA

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.

No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

