



**BUREAU
VERITAS**

Test Report


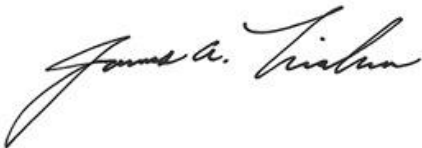
Applicant	Clear Ballot Group, Inc. 2 Oliver Street – Second Floor Boston, MA 02109 USA
Manufacturer	Same as Applicant
Factory	Same as Applicant
Items tested	Vote Visualization System, Model ClearCast
Specifications	CAN/CSA-C22.2 No. 60950-1-07 + Am1 (2011) + Am 2 (2014) and ANSI/UL 60950-1 2 nd Edition + Am 1 (2011) + Am 2 (2014), IEC 60950-1:2005 + Am 1:2009 + Am 2:2013, EN 60950-1: 2006/A2: 2013
Results	As detailed in attached report
Prepared by	 Vincent Sylvester Senior Compliance Engineer
Authorized by	 James A. Linehan Senior Safety Engineer
Issued Date	2018-Nov-29
Conditions of issue	This report is issued subject to the conditions stated in 'Conditions of Testing' section of this report.

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Conditions of Testing

Findings Letter

Mr. Brandon Bell
Clear Ballot Group, Inc.
2 Oliver Street – Second Floor
Boston, MA 02109 USA

Mr. Bell,

The following is a summary of the evaluation of the Vote Visualization System, Model ClearCast, which complies to the requirements of the standards CAN/CSA-C22.2 No. 60950-1-07 + Am1 (2011) + Am 2 (2014) and ANSI/UL 60950-1 2nd Edition + Am 1 (2011) + Am 2 (2014).

If you have any questions feel free to contact me at 978-486-8880.

Sincerely,



Vincent Sylvester
Senior Compliance Engineer
Bureau Veritas Electrical and Electronic Product Services

Tel: +1 978.486.8880

Littleton Distribution Center
One Distribution Center, Suite # 1
Littleton, Massachusetts 01460, USA

Test Report issued under the responsibility of:



TEST REPORT

IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements

Report Number..... : SS2043-1
Date of issue..... : 2018-Nov-29
Total number of pages 83

Applicant's name : **Clear Ballot Group, Inc.**
Address..... : 2 Oliver Street – Second Floor; Boston, MA 02109 USA

Test specification:

Standard : IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure : NRTL
Non-standard test method : N/A

Test Report Form No. : IEC60950_1F
Test Report Form(s) Originator : SGS Fimko Ltd
Master TRF : Dated 2014-02

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... : Vote Visualization System


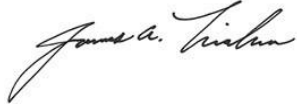
Trade Mark..... :



Manufacturer : Same as Applicant

Model/Type reference : ClearCast

Ratings..... : 120V, 1.6A, 60Hz

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Curtis-Straus, LLC. <u>A wholly owned subsidiary of Bureau Veritas Consumer Products Services</u>
Testing location/ address..... :		Littleton Distribution Center, One Distribution Center Circle, Suite #1, Littleton, MA 01460 USA
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address..... :		
Tested by (name + signature):		Vincent Sylvester 
Approved by (name + signature):		Jim Linehan 
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1:	
Testing location/ address..... :		
Tested by (name + signature):		
Approved by (name + signature):		
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2:	
Testing location/ address..... :		
Tested by (name + signature):		
Witnessed by (name + signature):		
Approved by (name + signature):		
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4:	
Testing location/ address..... :		
Tested by (name + signature):		
Witnessed by (name + signature):		
Approved by (name + signature):		
Supervised by (name + signature):		

General Product Information:

The device is a Vote Visualization System that provides an electronic vote ballot function consisting of a scanner, printer, computer, touchscreen, with battery back-up. It connects to the mains via a single power supply cord that is connected to an internally mounted UL Listed power supply providing SELV outputs to all internal assemblies. All components are mounted within a metal enclosure. Access to internal components are provided via a top door, rear cover and side access panel which are all secured by key-lock. Access beyond these panels or doors are only for qualified service personnel.

Max Ambient Temperature (°C):

33°C

Overall Dimensions: Approx. 362 mm (H) x 356 mm (W) x 254 mm (D)

Weight: 14.1 kg

Conditions of Acceptability:

- 1) Not intended for servicing by the end user
- 2) Not intended to be connected to TNV circuitry
- 3) Not intended to be connected to cable distribution circuitry
- 4) Installation Instructions must be provided which include all of the following information:
 - a. The device shall have instructions stating the plug is the disconnect device and shall be easily accessible after installation
 - b. Battery replacement warning
 - c. Instructions for mounting to the wall

History:

Project Number	Date	Description	Engineer
SS2043-1	2018-Nov-29	Original report.	Vincent Sylvester

Production Line Testing:

Exempt, Power supply is UL Listed.

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Country Deviations (11 Pages)

Attachment 2: Test Equipment used and Measurement Uncertainty (4 Pages)

Attachment 3: Illustrations / Photographs/Schematics (12 Pages)

Attachment 4: Component Certifications (2 Pages)

Conditions of Testing (2 Pages)

Summary of testing**Tests performed (name of test and test clause):****Project O1626:**

1.6.2, Electrical data (normal conditions)

1.7.11, Durability of markings

4.5, Thermal Requirements

4.3.8 Batteries

5.3, Fault Condition Tests

Limited tested was conducted on this device since it is powered by a Listed power unit that is mounted internally to the unit. Although the cord is provided with a strain relief, the cord is provided with a detachable appliance coupler.

Testing location:

Curtis-Straus, LLC.

Littleton Distribution Center, One
Distribution Center Circle, Suite #1,
Littleton, MA 01460 USA

Summary of compliance with National Differences

Countries: AU/NZ, CA, DK, FI, NO, SE, US

List of countries addressed: AU/NZ-Australia/New Zealand (AU/NZ), Canada (CA), Denmark (DK), Finland (FI), Norway (NO), Sweden (SE), and United States of America (US).

Copy of marking plate

NEEDS NEW LABEL with BV FILE LISTING ID# for Final Report



GENERAL INFORMATION	
Test item particulars	
Equipment mobility.....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input checked="" type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location (Component for building-in)
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building-installation (A)	
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	2000 m max.
Altitude of test laboratory (m)	94.2 m
Mass of equipment (kg)	Approx.14.1 kg


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 of receipt of test item : 9/24/2018 (Original report)
Date(s) of performance of test : 9/25 – 11/20 2018
"(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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60076-2:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....: Same as Applicant	
Abbreviations used in the report:	
- normal conditions N.C. - single fault conditions S.F.C - functional insulation OP - basic insulation BI - double insulation DI - supplementary insulation SI - between parts of opposite polarity BOP - reinforced insulation RI	
Indicate used abbreviations (if any)	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		—
1.5	Components		—
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard		P
1.5.2	Evaluation and testing of components	All safety critical components are used within their ratings and either APPROVED to appropriate component standards or complies with the applicable requirements of the standard(s) described on page 4 of this report.” (See appended table 1.5.1).	P
1.5.3	Thermal controls	No temperature controls provided.	N/A
1.5.4	Transformers	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
1.5.5	Interconnecting cables	No interconnecting cables provided as part of the equipment.	N/A
1.5.6	Capacitors bridging insulation	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
1.5.7	Resistors bridging insulation		—
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		—
1.5.9.1	General	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	Power interface		—
1.6.1	AC power distribution systems	TN	P
1.6.2	Input current	See appended table 1.6.2	P
1.6.3	Voltage limit of hand-held equipment	The unit is not hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation.	P

1.7	Marking and instructions		—
1.7.1	Power rating and identification markings	Rating marking readily visible to operator.	P
1.7.1.1	Power rating marking	See copy of marking plate.	P
	Multiple mains supply connections.....:	AC input voltage only.	P
	Rated voltage(s) or voltage range(s) (V)	120	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)	60Hz	P
	Rated current (mA or A)	1.6 A	P
1.7.1.2	Identification markings	Refer to Marking Section.	P
	Manufacturer's name or trade-mark or identification mark		P
	Model identification or type reference	ClearCast	P
	Symbol for Class II equipment only	The equipment is Class I.	N/A
	Other markings and symbols		N/A
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking	Operating / safety instructions made available to user.	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Plug on supply cord is provided as the disconnect device and is noted in the installation instructions.	P
1.7.2.3	Overcurrent protective device	Not permanently installed equipment.	N/A
1.7.2.4	IT power distribution systems	Not intended to be connected to an IT power system.	N/A
1.7.2.5	Operator access with a tool	No use of a tool is specified.	N/A
1.7.2.6	Ozone	Equipment does not produce ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.4	Supply voltage adjustment	The power supply is auto-ranging.	P
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No power outlet is provided	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	No replaceable fuses.	N/A
1.7.7	Wiring terminals		—
1.7.7.1	Protective earthing and bonding terminals	No earthing or bonding terminals required.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	No a.c. mains terminals provided.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains terminals provided.	N/A
1.7.8	Controls and indicators		—
1.7.8.1	Identification, location and marking	No controls affecting safety.	N/A
1.7.8.2	Colours	None used.	N/A
1.7.8.3	Symbols according to IEC 60417.....	None provided.	N/A
1.7.8.4	Markings using figures	None provided.	N/A
1.7.9	Isolation of multiple power sources	Single supply source only.	N/A
1.7.10	Thermostats and other regulating devices	No adjustable thermostats or similar regulating devices.	N/A
1.7.11	Durability	See appended table 1.7.11.	P
1.7.12	Removable parts	Nameplate affixed to interior side of cover which is retained by an Earth bonding strap.	P
1.7.13	Replaceable batteries	Caution statement provided in the instructions for use, service section.	P
	Language(s)		—
1.7.14	Equipment for restricted access locations.....	Equipment not for restricted access locations.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2	PROTECTION FROM HAZARDS		—
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	No operator access areas.	P
2.1.1.1	Access to energized parts		P
	Test by inspection	Visual inspection performed.	P
	Test with test finger (Figure 2A)	Test waived; it is not possible for test finger to enter into the enclosure.	P
	Test with test pin (Figure 2B)	Test waived; it is not possible for test pin to access any components inside the enclosure	P
	Test with test probe (Figure 2C)	No TNV circuits.	N/A
2.1.1.2	Battery compartments	No TNV circuits.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit wiring.	N/A
2.1.1.5	Energy hazards	No energy hazard accessible to operator.	P
2.1.1.6	Manual controls	None provided.	N/A
2.1.1.7	Discharge of capacitors in equipment	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply	No connection to DC mains.	N/A
	a) Capacitor connected to the d.c. mains supply ...:		N/A
	b) Internal battery connected to the d.c. mains supply :		N/A
2.1.1.9	Audio amplifiers	No audio amplifiers.	N/A
2.1.2	Protection in service access areas	Internal power supply is UL Listed and fully enclosed.	P
2.1.3	Protection in restricted access locations	Not for restricted access location.	N/A
2.2	SELV circuits		—
2.2.1	General requirements	SELV limits (at accessible parts) are not exceeded under normal condition and under condition of single fault.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.2	Voltages under normal conditions (V)	Accessible voltages are less than 42.4 V _{peak} or 60 V _{dc} and are classified as SELV.	P
2.2.3	Voltages under fault conditions (V)	Accessible voltages are less than 42.4 V _{peak} or 60 V _{dc} and are classified as SELV.	P
2.2.4	Connection of SELV circuits to other circuits	SELV to SELV only.	P

2.3	TNV circuits		—
2.3.1	Limits	No TNV circuit	N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed.....		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed.....		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		—
2.4.1	General requirements	The device does not contain limited current circuits.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz)		—
	Measured current (mA).....		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μF).....		—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		—
	a) Inherently limited output	No limited power sources.	N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....:		—
	Current rating of overcurrent protective device (A) ..:		—

2.6	Provisions for earthing and bonding		—
2.6.1	Protective earthing	The EUT is not required to be earthed or bonded. The internal power supply is UL Listed and fully enclosure within a plastic enclosure.	N/A
2.6.2	Functional earthing	No functional earthing provided.	N/A
	Use of symbol for functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)		N/A
2.6.3.5	Colour of insulation.....		N/A
2.6.4	Terminals		—
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		—
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	No TNV circuits.	N/A

2.7	Overcurrent and earth fault protection in primary circuits		—
2.7.1	Basic requirements	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
	Instructions when protection relies on building-installation		N/A
2.7.2	Faults not simulated in 5.3.7	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
2.7.5	Protection by several devices	No double pole fusing.	N/A
2.7.6	Warning to service personnel	None required	N/A

2.8	Safety interlocks		—
2.8.1	General principles	No Safety related interlocks.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		—
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.9.2	Humidity conditioning	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
	Relative humidity (%), temperature (°C)	See above.	—
2.9.3	Grade of insulation	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.9.4	Separation from hazardous voltages	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
	Method(s) used		—

2.10	Clearances, creepage distances and distances through insulation		—
2.10.1	General	FI, (see sub cl. 5.3.4 (c); Reinforced insulation is evaluated as part of the separately approved power supply. Details are not part of this investigation.	P
2.10.1.1	Frequency		N/A
2.10.1.2	Pollution degrees	Pollution degree 2.	P
2.10.1.3	Reduced values for functional insulation		N/A
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 as part of the previously certified power supply. Details are not part of this report.	—
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 as part of the previously certified power supply. Details are not part of this report.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.1	General		—
2.10.3.2	Mains transient voltages		—
	a) AC mains supply	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
	b) Earthed d.c. mains supplies	No earthed d.c. mains supplies.	N/A
	c) Unearthed d.c. mains supplies	No unearthed d.c. mains supplies.	N/A
	d) Battery operation	No supplied from a dedicated battery.	N/A
2.10.3.3	Clearances in primary circuits	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.10.3.4	Clearances in secondary circuits	Only functional insulation, clause 5.3.5 c) applies.	P
2.10.3.5	Clearances in circuits having starting pulses	No starting pulses.	N/A
2.10.3.6	Transients from a.c. mains supply	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.10.3.7	Transients from d.c. mains supply	No d.c. mains supply.	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	No TNV or cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels		—
	a) Transients from a mains supply	Tests do not need to be considered.	N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply	No d.c. mains supply.	N/A
	b) Transients from a telecommunication network :		—
2.10.4	Creepage distances	Evaluated as part of the previously certified power supply. Details are not part of this report.	—
2.10.4.1	General	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
2.10.4.2	Material group and comparative tracking index		—
	CTI tests		—
2.10.4.3	Minimum creepage distances	Evaluated as part of the previously certified power supply. Details are not part of this report.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5	Solid insulation	Critical distances evaluated as component of separately certified power supply. Details are not provided as part of this report.	—
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	Evaluated as part of the previously certified power supply. Details are not part of this report.	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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.6	Construction of printed boards	The Basic and Reinforced insulation of the AC power supply was evaluated as part of the certification of the power supply (done separately from this report); The functional insulation provided complies with Method c) of 5.3.4.	—
2.10.6.1	Uncoated printed boards		P
2.10.6.2	Coated printed boards	No 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	Coating not used over terminations to increase effective creepage and clearance distances.	N/A
2.10.8	Tests on coated printed boards and coated components	No coated printed boards or coated components.	N/A
2.10.8.1	Sample preparation and preliminary inspection		—
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	No sealed parts.	N/A
3	WIRING, CONNECTIONS AND SUPPLY		—
3.1	General		—
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wiring is routed and secured away from any potential sources of damage, sharp edges, fans etc.	P
3.1.3	Securing of internal wiring	Internal wiring is routed, supported and or clamped.	P
3.1.4	Insulation of conductors	Certified wiring used.	P
3.1.5	Beads and ceramic insulators	None provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.6	Screws for electrical contact pressure	Screws are not used.	N/A
3.1.7	Insulating materials in electrical connections	No electrical connections relying upon insulating material for adequate contact pressure.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used, machine screws only.	P
3.1.9	Termination of conductors	Verified by inspection.	P
	10 N pull test	Verified by inspection.	P
3.1.10	Sleeving on wiring	Sleeves are not used as supplementary insulation.	N/A

3.2	Connection to a mains supply		—
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	Cord connected.	P
3.2.1.2	Connection to a d.c. mains supply	Not DC mains equipment.	N/A
3.2.2	Multiple supply connections	Single supply connection only.	N/A
3.2.3	Permanently connected equipment	Not permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	No appliance inlets used.	N/A
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		P
	Type	SJT	—
	Rated current (A), cross-sectional area (mm ²), AWG	13A, 16 AWG	—
3.2.5.2	DC power supply cords	Not DC equipment.	N/A
3.2.6	Cord anchorages and strain relief	Not required.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space	Not permanently connected equipment.	N/A

3.3	Wiring terminals for connection of external conductors		—
3.3.1	Wiring terminals	No terminals provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.2	Connection of non-detachable power supply cords	Not provided.	N/A.
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)..... :		—
3.3.5	Wiring terminal sizes		
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		—
3.4.1	General requirement		P
3.4.2	Disconnect devices	None provided in equipment.	N/A
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized in the equipment.	N/A
3.4.5	Switches in flexible cords	Not fitted.	P
3.4.6	Number of poles - single-phase and d.c. equipment	.	N/A
3.4.7	Number of poles - three-phase equipment	Single phase equipment only.	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices	Installation instructions comply with clause 1.7.2.1.	P
3.4.10	Interconnected equipment	Not interconnected equipment.	N/A
3.4.11	Multiple power sources	Single power source only.	N/A

3.5	Interconnection of equipment		—
3.5.1	General requirements	Interconnected equipment meets the requirements of SELV.	N/A
3.5.2	Types of interconnection circuits	SELV only	P
3.5.3	ELV circuits as interconnection circuits	ELV circuits not interconnected.	N/A
3.5.4	Data ports for additional equipment	No data ports.	N/A

4	PHYSICAL REQUIREMENTS		—
4.1	Stability		N/A
	Angle of 10°	Complies by construction.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Test force (N)	Not floor-standing equipment.	N/A
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4.2	Mechanical strength		—
4.2.1	General	No hazardous voltages present within the equipment accept the Listed power supply which has already been evaluated to this requirement.	N/A
	Rack-mounted equipment.	No chassis slides.	N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)	Not hand held equipment.	N/A
4.2.7	Stress relief test	No such parts.	N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified	No such parts.	N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Desk top mounted..	N/A

4.3	Design and construction		—
4.3.1	Edges and corners	No sharp edges or corners.	P
4.3.2	Handles and manual controls; force (N)	Handles are integral to the equipment and comply by construction.	N/A
4.3.3	Adjustable controls	None provided.	N/A
4.3.4	Securing of parts		N/A
4.3.5	Connection by plugs and sockets	No accessible plugs or sockets..	N/A
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment	None provided.	N/A
4.3.8	Batteries		P
	- Overcharging of a rechargeable battery	The battery is UL Recognized it is charged with a maximum of 12V.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Unintentional charging of a non-rechargeable battery	Rechargeable battery used.	N/A
	- Reverse charging of a rechargeable battery	Battery is not user accessible.	N/A
	- Excessive discharging rate for any battery	Battery discharge rate is 9ah, the product load is less than 3.4A.	P
4.3.9	Oil and grease	No exposure.	N/A
4.3.10	Dust, powders, liquids and gases	None employed or produced.	N/A
4.3.11	Containers for liquids or gases	None employed.	N/A
4.3.12	Flammable liquids	None employed.	N/A
	Quantity of liquid (l)		—
	Flash point (°C)		N/A
4.3.13	Radiation		P
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No ionizing radiation produced.	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	No UV radiation to consider.	N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No lamps employed.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	Non-lasers or LEDs employed.	N/A
4.3.13.5.1	Lasers (including laser diodes)	No such part.	N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	Indicating type only.	P
4.3.13.6	Other types	None provided.	N/A

4.4	Protection against hazardous moving parts		—
4.4.1	General	No hazardous moving parts in device.	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		N/A
4.4.5.1	General		N/A

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

4.5	Thermal requirements		—
4.5.1	General	Thermal requirements met.	P
4.5.2	Temperature tests	See appended table 4.5.	P
	Normal load condition per Annex L	L7 "Other equipment".	—
4.5.3	Temperature limits for materials	See appended table 4.5.	P
4.5.4	Touch temperature limits	See appended table 4.5.	P
4.5.5	Resistance to abnormal heat	Approved AC component used.	P

4.6	Openings in enclosures		—
4.6.1	Top and side openings	No top or side openings.	N/A
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No bottom openings.	N/A
	Construction of the bottom, dimensions (mm) ..		—
4.6.3	Doors or covers in fire enclosures	Door is latched and requires a key for access.	P
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures	Not transportable equipment.	N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings	Not transportable equipment.	N/A
4.6.4.3	Use of metallized parts	Not transportable equipment.	N/A
4.6.5	Adhesives for constructional purposes	No barrier or screens secured by adhesive.	N/A
	Conditioning temperature (°C), time (weeks)		—

4.7	Resistance to fire		—
4.7.1	Reducing the risk of ignition and spread of flame	Conforms with Method 1.	P
	Method 1, selection and application of components wiring and materials	See appended table 1.5.1.	—
	Method 2, application of all of simulated fault condition tests		—
4.7.2	Conditions for a fire enclosure		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2.1	Parts requiring a fire enclosure	Fire enclosure covers all parts.	P
4.7.2.2	Parts not requiring a fire enclosure	Fire Enclosure required.	N/A
4.7.3	Materials		—
4.7.3.1	General	Flammability of material appropriate for application.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure is metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies	No air filters.	N/A
4.7.3.6	Materials used in high-voltage components	Fire enclosure is metal.	P
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		—
5.1	Touch current and protective conductor current		—
5.1.1	General	Evaluated as part of the previously certified power supply. Details are not part of this report.	P
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)		—
5.1.7	Equipment with touch current exceeding 3,5 mA		—
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply	Single supply connection.	N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No TNV circuits.	N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks	No TNV circuits.	N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	Electric strength		—
5.2.1	General	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		—
5.3.1	Protection against overload and abnormal operation	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
5.3.2	Motors	Printer and Scanner provided with stepper motors only.	N/A
5.3.3	Transformers	The equipment uses previously certified power supply (searately evaluated from this report).	P
5.3.4	Functional insulation.....	Complies with Method c.	P
5.3.5	Electromechanical components	None provided.	N/A
5.3.6	Audio amplifiers in ITE	No audio amplifiers.	N/A
5.3.7	Simulation of faults	No fans or ventilation openings.	N/A
5.3.8	Unattended equipment	Not intended for unattended use.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		—
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A
6	CONNECTION TO TELECOMMUNICATION NETWORKS		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No TNV circuits.	N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		—
6.2.1	Separation requirements	No TNV circuits.	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		—
	Max. output current (A)	No TNV circuits.	—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		—
7.1	General	Equipment not connected to a cable distribution system.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		—
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	All relevant parts suitably rated and certified for application, no alternative testing deemed necessary.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.1.1	Samples.....:		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		—
A.2.1	Samples, material.....:	All relevant parts suitably rated and certified for application, no alternative testing deemed necessary.	—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.1	General requirements	Printer and Scanner provided with stepper motors only.	N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		—
	Position	Transformers part of certified power supply.	—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		—
D.1	Measuring instrument	Evaluated as part of the previously certified power supply. Details are not part of this report.	N/A
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		—
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Metal(s) used		—
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K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		—
K.1	Making and breaking capacity	No thermal controls.	N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		—
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		—
M.1	Introduction	No ringing circuits.	N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

N	ANNEX N, IMPULSE TEST GENERATORS (see 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)		—
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		—
	- Preferred climatic categories		N/A
	- Maximum continuous voltage		N/A
	- Combination pulse current		N/A
	Body of the VDR Test according to IEC60695-11-5.....		N/A
	Body of the VDR. Flammability class of material (min V-1).....		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		—
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		—
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		—
		Not for outdoor use.	—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		—
			N/A
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		—
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		—
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		—
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		—
Y.1	Test apparatus	No UV light.	N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		—
CC.1	General	Not used.	N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A
CC.4	Test program 3.....		N/A
CC.5	Compliance.....		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		—
DD.1	General	Not rack-mounted equipment.	N/A
DD.2	Mechanical strength test, variable N.....		N/A
DD.3	Mechanical strength test, 250N, including end stops.....		N/A
DD.4	Compliance.....		N/A
EE	ANNEX EE, Household and home/office document/media shredders		—
EE.1	General	Not a document shredder.	N/A


IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	Information of user instructions, maintenance and/or servicing instructions.....:		N/A
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2)		N/A

1.5.1	TABLE: List of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Enclosure	Clear Ballot Group, Inc.	ClearCast	Painted sheet metal, approximate dimensions 362 mm (H) x 356 mm (W) x 254 mm (D) 1.6mm thick.	UL/CSA 60950-1	Evaluated as part of this test report	
Power Supply Unit	Asian Power Devices Inc.	DA 65C19	100-240Vac, 1.6A, 50-60Hz Input; 19V, 3.42A Output, 65W (LPS).	UL60950-1	UR(E168210)	
UPS Control Board, MiniBox, OpenUPS:						
*PCB	Golder Sum Company	4M1	Rated V-1. 105 °C min.	UL 796	UR (E258608)	
*Connector (J4)	Molex	Mini Fit Jr.	Rated 94V-2 min.	UL 1977	UR (E29179)	
UPS Control Board, MiniBox, OpenUPS (End)						
Sealed Lead Acid Battery	Shenzhen Center Power Technology	CP1290H	Rated 12V, 9Ah, Max discharge current 135A.	UL 1989	UR (MH25860)	
DC-DC Converter	Voita Electronic Technology Co.,Ltd	VT-DD24125	14-40Vdc Input; 12Vdc, 5A Output.	UL/CSA 60950-1	Evaluated as part of this test report	
DC-DC Converter	Voita Electronic Technology Co.,Ltd	VT-DD24195	14-40Vdc Input; 19Vdc, 5A Output.	UL/CSA 60950-1	Evaluated as part of this test report	
Computer	Intel	NUC7CJYH	Rated 12-19 Vdc.	UL/CSA 60950-1	Listed (E210882)	
Power Cord	Any	Any	8FT SJT 16/3 Power Cord, NEMA 5-15P Elbow Plug to IEC 320 C13 Connector. AD8 Connector with grounding wire and 4.3mm Ring Lug.	UL 817	Listed	
Cable CC-1.5-2011 (UPS to Power Brick)						
Cable CC-1.5- 2011	Any	Any	UL-1007, AWM, min. 24 AWG.	UL 758	UR	

*Termination Connectors for Cable CC-1.5-2011	Molex	Mini Fit Jr.	Rated 94V-2 min.	UL 1977	UR (E29179)
Cable CC-1.5-2030 (UPS to Power Button)					
Cable CC-1.5-2030	Any	Any	UL-1007, AWM, min. 24 AWG.	UL 758	UR
*Termination Connectors for Cable CC-1.5-2030	Tyco	MTA Series	Rated 94V-2 min.	UL 1977	UR (E28476)
CC-1.5-2040 (Cable form UPS to Battery)					
Cable CC-1.5-2040	Any	Any	UL-1007, AWM, min. 24 AWG.	UL 758	UR
*Termination Connectors for Cable CC-1.5-2040	Molex	Mini Fit Jr.	Rated 94V-2 min.	UL 1977	UR (E29179)
CC-1.5-2050 (Cable form UPS to Components)					
Cable CC-1.5-2050	Any	Any	UL-1007, AWM, min. 24 AWG.	UL 758	UR
*Termination Connectors for Cable CC-1.5-2050	Molex	Mini Fit Jr.	Rated 94V-2 min.	UL 1977	UR (E29179)
*JST XH 2.5mm – 3 Pin	Japan Solderless Terminal	Any	Rated 94V-2 min.	UL 1977	UR (E60389)
*3 Pin Power DIN	Chi Mei	PA-765A	Body constructed of ABS Plastic Rated 94V-2 min.	UL 94	UR (E56070)
*3 Pin Power DIN	Chang Chun Plastics	PBT-4815	Body constructed of ABS Plastic Rated 94V-2 min.	UL 94	UR (E59481)
Scanner	Laxton	CB -1-1121/1122	Rated 24Vdc.	UL/CSA 60950-1	Evaluated as part of this test report
Scanner consists of the following components:					
1. Enclosure	Any	Any	Metal	UL/CSA 60950-1	Evaluated as part of this test report

2. DC Stepper Motor	HT	42BY6H622-04A	24Vdc.	UL/CSA 60950-1	Evaluated as part of this test report
3. *PCB	Kingboard	KB-2150	94V-1 minimum, 105°C.	UL 796	UR (E123995)
Printer	Xiamen Cashino Technology Co., Ltd.	EP-300B	Rated 24Vdc.	UL/CSA 60950-1	Evaluated as part of this test report
Printer Consists of the following components:					
1. *Enclosure	Formosa Chemicals	ANC160	Rated 94HB min., 1.5 mm thick	UL 94	UR (E162823)
2. *PCB	Jiangxi Province Hangyu	HY-8101	94V-1 minimum, 105°C.	UL 796	UR (E359866)
Touch Screen	Elecrow	CBG-EC-V1	Rated 19Vdc.	UL/CSA 60950-1	Evaluated as part of this test report
DC Stepper Motor	Any	Any	12Vdc, 10Ω.	UL/CSA 60950-1	Evaluated as part of this test report
Touchscreen Consists of the following components:					
1. Enclosure	Any	Any	Aluminium.	UL/CSA 60950-1	Evaluated as part of this test report
2. *PCB	Goldenmax International	Any	94V-1 minimum, 105°C.	UL 796	UR (E224772)
Supplementary information:					
<p>¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>Note: (*) In all cases before using a new safety component bearing a Mark(s) of conformity but not listed and identified (all accepted) in the table, the license holder has the responsibility to check that all the technical data of the listed safety component and of the new safety component are identical. The license holder shall provide all the data to any Certification Body requesting this complement of information.</p> <p>Note: (**) Must meet one of the following criteria for acceptance -</p> <ol style="list-style-type: none"> 1) Mark(s) of conformity delivered by a recognized Certification Body 2) National Certificate or type test Certificate delivered by a recognized Certification Body 3) Test report issued by a recognized laboratory or endorsed by a recognized Certification Body 					

1.5.1	TABLE: Opto Electronic Devices	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		

1.6.2	TABLE: Electrical data (in normal conditions) : 50Hz					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	0.74	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.
100	0.71	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.
120	0.63	1.2	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.
127	0.61	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.
240	0.38	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.
253	0.36	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.
264	0.35	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.
Supplementary information: None						
Date: 9/25/18						
Ambient Conditions: 23.9 °C, 42% RH						
						
Tested By:						
Test Equipment Used: 273. 263						

1.6.2	TABLE: Electrical data (in normal conditions) : 60Hz						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
90	0.77	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
100	0.74	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
120	0.63	1.2	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
127	0.59	-	36	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
240	0.36	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
253	0.35	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
264	0.34	-	38	-	-	Scanning Ballot every 30 seconds, Battery Charging.	
Supplementary information: None Date: 9/25/18 Ambient Conditions: 23.9 °C, 42% RH Tested By: Vincent Sylvester Test Equipment Used: 273. 263							

1.7.11	TABLE: Marking Durability				P
Acceptance Criteria:					
After the rubbing tests, the marking shall be legible; it shall not be possible to remove marking plates easily and they shall show no curling.					
Label tested:	Main ratings label, 3M 468MP, 200MP adhesive				
Test Method:	Inspection and rubbing the marking by hand for 15 sec with a piece of cloth soaked with the rubbing agents listed				
Supplementary information: Test conducted with ClearBallot label sample applied to enclosure as intended					
Tested By: Jim Linehan			Date: 11/20/2018		
Ambient Conditions: 23°C, 25%RH					
Test Equipment Used: TI 263, TI 44					

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 C (µF)	Voltage U (V)		Energy E (J)		
supplementary information:					

2.1.1.7	TABLE: Discharge of Capacitors in Equipment					N/A
Voltage: 254	Vac	Frequency: 60	Hz			
Pluggable Type A	<input type="checkbox"/>	Time constant cannot exceed 1 second				
Pluggable Type B	<input type="checkbox"/>	Time constant cannot exceed 10 seconds				
Permanently Connected	<input checked="" type="checkbox"/>	Time constant cannot exceed 10 seconds				
Location From/To	SWITCH	Vi	37% Vi	Time Constant	Ve	
<p><u>Note:</u> Vi - Peak voltage at time of disconnection Ve - Peak voltage at 1 or 10 sec (depends on equipment type)</p>						
<p>Supplementary information:</p> <p>Tested By: _____ Date: _____</p> <p>Ambient Conditions: _____</p> <p>Test Equipment Used: _____</p>						

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	TABLE: Limited power sources					N/A
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
supplementary information:						
Sc=Short circuit, Oc=Open circuit						

2.6.3.4	TABLE: Resistance of Earthing Conductors and Their Terminations	N/A
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Acceptance Criteria :

IEC:

If the circuit rating of the circuit is 16A or less, the test current is 1.5 times the current rating of the circuit for 60s and the resistance calculated shall not exceed 0.1 ohm.

If the current rating of the circuit exceeds 16A, the test current is 2 times the current rating of the circuit for 120s and the voltage drop across the protective bonding shall not exceed 2.5V.

North America:

If the current rating of the circuit is 16A or less, the test current is 2 times the current rating of the circuit for 120s and the resistance calculated shall not exceed 0.1 ohm.

If the current rating of the circuit exceeds 16A, the test current is 2 times the current rating of the circuit (to a maximum 500A) and the voltage drop across the protective bonding shall not exceed 2.5V and the test time is:

Current rating of circuit	Time, minutes
≤ 30	2
>30 and ≤60	4
>60 and ≤100	6
>100 and ≤200	8
>200	10

Protective Current Rating:

Volt Drop Limit:		Resistance Limit:		
V		Ω		
Location From/To	Test Current (A)	Test Time (min)	Voltage Drop (V)	Resistance (Ω)
PE stud to GND stud on access door				
PE stud to drive mounting plate				

Supplementary information:

Tested By: Matthew

Date:

Ambient Conditions:

Test Equipment Used:

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

supplementary information:

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						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:							
Basic/supplementary:							
Reinforced:							
Supplementary information:							

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information:						

4.2.2-4.2.9	TABLE: Mechanical Strength and Stress Relief		N/A
Acceptance Criteria:			
Equipment shall have adequate mechanical strength and shall be so constructed that no hazard is created in the meaning of this standard when subjected to handling as may be expected.			
Clause	Description	Comments	Verdict
4.2.2	Steady force 10N ± 1N on components & parts		
	NA (D3): Wire wrap for SELV & TNV in service access area up to the demarcation point and provided with guards are tested for 2.5N ± 0.25N		
4.2.3	Internal enclosures 30N ± 3N/5 s		
4.2.4	External enclosures 250N ± 10N/5 s		
4.2.5	Vertical Impact test (1300mm Vertical displacement)		
	Pendulum test (1300mm Vertical displacement)		
4.2.6	Drop test (see Note 1)		
4.2.7	Stress Relief test T = 70°C/7 h		
4.2.8	Mechanical strength of cathode ray tubes		
4.2.9	High Pressure Lamps		
Note 1:	750mm ± 10mm	desk top equipment having a mass of 5 Kg or less for use with telephone handset, cord connected hand accessory with an acoustic function, or a handset	
	1000mm ± 10mm	hand-held equipment, direct plug-in equipment or transportable equipment	
Supplementary information:			
Tested By:		Date:	
Ambient Conditions:			
Test Equipment Used:			

4.3.8	TABLE: Batteries	P
Battery category : (Lithium, NiMh, NiCad, Lithium Ion ...)		
Manufacturer : Shenzhen Center Power Technology		
Type / model..... : CP1290H		
Voltage : 12V		
Capacity..... : 9Ah		
Tested and Certified by (incl. Ref. No.) : UL (MH25860)		
Circuit protection diagram: Refer to Attachment.		

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s)	
Close to the battery	
In the servicing instructions	
In the operating instructions	

4.5	TABLE: Thermal requirements				P
Acceptance Criteria: Table 4B for allowed temperature limits					
Operating conditions: Normal			Mounting: Desk		
Voltage: 90 V		Frequency: 60 Hz		Duty Cycle: Continuous	
Rated maximum ambient temperature: 33 °C			Test duration: 2 h 25 min		
Test Method: <input type="checkbox"/> Environmental Chamber <input checked="" type="checkbox"/> Laboratory			X Scaled Temperatures - Ambient (t_a): 33 °C		
Laboratory Environmental Conditions: 23.9 °C, 42% RH					
Part / Location	t_m (°C)	t_c (°C)	t_{max} (°C)	Comments	
Power Supply Enclosure	35.0	44.2	85		
Internal Ambient	30.1	39.3	--		
DC-DC Converter Near Battery Board	31.5	40.7	85		
DC-DC Converter Near Computer	34.4	43.6	85		
Battery Top Near Terminals	28.9	38.1	85		
Battery Board PCB	42.6	51.8	105		
Printer Enclosure (Internal)	30.5	39.7	85		
Computer Enclosure	30.8	40.0	85		
LCD Screen	27.2	36.4	85		
Scanner Enclosure (Internal)	27.4	36.6	85		
External Ambient	23.8	33.0	--		
NOTE - t_m = measured temperature $t_c = t_m$ corrected ($t_m - t_a + 40$ °C or max. RATED ambient) t_{max} = maximum permitted temperature					
Supplementary information: Scanning Ballot every 30 seconds, Battery Charging.					
Tested By: Vincent Sylvester Date: 9/25/2018 Test Equipment Used: 146, 87, 273, 263 Ambient Conditions: 23.9 °C, 42% RH					

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
Allowed impression diameter (mm)		≤ 2 mm		—
Part	Test temperature (°C)	Impression diameter (mm)		
Supplementary information:				

4.7	TABLE: Resistance to fire					N/A
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	

Supplementary information:

5.1	TABLE: touch current measurement			N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
supplementary information:				
Test Equipment:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests (Report SO1626)			N/A
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Functional:				
Basic/supplementary:				
Reinforced:				
Supplementary information:				
Date:				
Ambient Conditions				
Tested By				
Test Equipment Used:				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C)		—
	Power source for EUT: Manufacturer, model/type, output rating		—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Battery Terminals at Management Board	Short	12V	3 seconds	--	--	Battery supply wire opened. No adverse affect.

Supplementary information:

Date: 11/6/18
 Ambient Conditions: 23.2 °C, 36% RH
 Tested By: Vincent Sylvester
 Test Equipment Used: 264, 456

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	
supplementary information:								

Insert Standard			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers		N/A
Transformer			

Attachment 1: Country Deviations

Curtis-Straus, LLC.

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ATTACHMENT TO TEST REPORT IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 UNITED STATES OF AMERICA NATIONAL DEVIATIONS Information technology equipment Part 1: Safety requirements	
Differences according to	UL 60950-1, Edition 2, Amendment 2

National Conditions Based on Regulations			
Clause	Requirement + Test	Result - Remark	Verdict
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitor.	N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	Not provided.	N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Single phase conductor.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 shall be marked with the voltage rating and "Class 2" or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.	No such terminals.	N/A

National Conditions Based on Regulations			
Clause	Requirement + Test	Result - Remark	Verdict
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	Not provided.	N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No receptacles provided.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No supply outlets.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	No terminals.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Certified power cord used.	P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Not powered by centralized d.c.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	No such connection.	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 & 12 of the CEC.	Certified power cord used.	P
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No wire binding screws.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		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

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National Conditions Based on Regulations			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No motor control devices.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No disconnect switches provided.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not for computer rooms.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids.	N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No radiation emitting devices.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No combustible media.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	No combustible materials greater than 0.9 m ² .	N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.	Not intended to be used in plenums.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	Does not produce ionizing radiation.	N/A

OTHER NATIONAL DIFFERENCES

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables.	Complies.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, a TNV-2 Circuit or a Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	Does not connect to DC Mains.	N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).	No functional earth.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	Not used.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRTs.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	Handles are an integral part of the metal enclosure. Complies by construction.	P
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.	Battery is Certified.	P
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV connection.	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV.	N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex 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 pressure requirements.		N/A

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013 CANADA NATIONAL DIFFERENCES	
Information technology equipment – Safety – Part 1: General requirements	
Differences according to	CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014
Attachment Form No.	CA_ND_IEC60950_1F
Attachment Originator	CSA
Master Attachment	Date (2015-05)
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1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitor.	N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A:		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/NEC are required to have special construction features and identification markings.	Not provided.	N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Single phase conductor.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	No such terminals.	N/A

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2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	Not provided.	N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	Not provided.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No supply outlets provided.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	No terminals provided.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Certified power cord used.	P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Not connected to a centralized d.c. source.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	No such connection.	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.	Certified power cord used.	P
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0		N/A

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3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No wire binding screws.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for US/Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		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
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No motor control devices.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No disconnect switches.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not for computer rooms.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids.	N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No combustible media.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	No combustible material measuring greater than 0.9 m ² .	N/A
	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.	Not intended to be used in plenums.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	Does not produce ionizing radiation.	N/A

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OTHER DIFFERENCES			
The following key national differences are based on requirements other than national regulatory requirements.			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	See safety component list	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	Does not connect to DC Mains.	N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).	No functional earthing.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	No protective bonding.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRTs.	N/A

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4.3.2	Equipment with handles is required to comply with special loading tests.	Handles are an integral part of the metal enclosure. Complies by construction.	P
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.	Battery is Certified.	P
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV.	N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV.	N/A
Annex 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 pressure requirements.	No TNV.	N/A

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Attachment 2: Test Equipment Used and Measurement Uncertainty

- A) Test Equipment Used
- B) Measurement Uncertainty

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Part A: Test Instrument Used**PRODUCT SAFETY TEST INSTRUMENTS REFERENCE LIST**

Equipment Number	Equipment	Manufacturer Model Number	Range Used	Serial # CS Asset #	Equipment Category / Cal Date Cal Due
44	Petroleum Spirit / Hexane	Fisher Scientific H306-1 Lot# 165552	N/A	N/A 719	Category I 10/31/21
87	Thermocouple Bank	Fluke 2645A	30 gauge wire	CSTB03 711	Category II 5/1/18 5/1/19
146	Datalogger	Fluke 2625A	0°C to + 200°C	9351018 1364	Category I 4/27/18 4/27/19
263	Thermohygrometer	TLX HTC-1	0°C to + 30°C, 10% to 70% RH	N/A 2048	Category I 3/20/18 3/20/19
273	Power Supply	Assoc. Power Tech. 5040	4kVA	4040071 2137	Category I 8/15/18 8/15/19
456	Digi-Sense StopWatch	Cole-Parmer 94460-28	seconds/ 24hr	181010717 2554	Category I 2/7/18 2/7/20
264	Thermohygrometer	HDE HTC-1	0°C to + 30°C, 10% to 70% RH	N/A 2057	Category II 3/23/18 3/23/19

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Part B: Measurement Uncertainty Table

Test Equipment #	Equipment Type	Manufacturer / Model	Range Used	Instrument Accuracy	CTL DS 251B Required Accuracy (+/-)	MU	Guide 115 Procedure	Notes
Notes:								
1) For "any range" worst case 251B values are used. "Any range" means within the capabilities of the instrument.								
2) Type K premium thermocouples shall be used								
3) Worst case 251B accuracy value used across multiple ranges.								
indicates that Guide 115 Procedure 1 may be required.								
2	DMM	Fluke 175	Any Range	Resistance: +/-1.0% Voltage: 1.5% Current: +/-1.5% Frequency: +/-0.01%	3% 1.50% 1.50% 0.20%	n/a n/a n/a n/a	2 2 2 2	1 1 1 1
3	DMM	Tenma 72-2040	Any Range	Resistance: +/-1.0% Voltage: +/-1.5% Current: +/-1.5% Frequency: +/-0.02%	3% 1.50% 1.50% 0.20%	n/a n/a n/a n/a	2 2 2 2	1 1 1 1
4	DMM	Tenma 72-2040	Any Range	Resistance: +/-1.0% Voltage: +/-1.5% Current: +/-1.5% Frequency: +/-0.02%	3% 1.50% 1.50% 0.20%	n/a n/a n/a n/a	2 2 2 2	1 1 1 1
5	DMM	Fluke 79III	Any Range	Resistance: +/-1.0% Voltage: 1.5% Current: +/-1.5% Frequency: +/-0.01%	3% 1.50% 1.50% 0.20%	n/a n/a n/a n/a	2 2 2 2	1 1 1 1
12	Datalogger (Reference)	Fluke 2625A	0°C to + 200°C	Temperature: +/- 1.16°C	2°C	n/a	2	2, 3
15	Oscilloscope	Tektronics TDS340	Any Range	Voltage: +/-2% Frequency: +/-0.02%	1.50% 0.20%	6.25% 0.32%	1 2	3
18	Force Gauge w/various fingers	ED&D APFI 1000N	0-300N	Force: +/-0.5%	6%	n/a	2	
23	Power Analyzer (Reference)	EL Control NANOVIP	30-100Hz	Voltage: +/- 0.5% Current: +/-0.5% Frequency: +/- 0.05%	1.50% 1.50% 0.20%	n/a n/a n/a	2 2 2	
39	DMM	Fluke 79 III	Any Range	Resistance: +/-1.0% Voltage: 1.5% Current: +/-1.5% Frequency: +/-0.01%	3% 1.50% 1.50% 0.20%	n/a n/a n/a n/a	2 2 2 2	1 1 1 1
41	Torque wrench	CDI 751LDIN	0 - 75 in lbs	Torque: +/- 4% of indicated value, from 20-100% of full scale.	10%	n/a	2	
71	Angle Meter	ED&D AM-1	Any Range	Angle: +/-1°	1°	n/a	2	1
72	Insulation Resistance Tester	AVO Megger BM80/2	Any Range	50V range: +/-2% 100V range: +/-2% 250V range: +/-2% 500V range: +/-2% 1000V range: +/-2% 1-50V resistance: +/-2% (Other ranges) Resistance: +/-1%	3%	n/a	2	1
73	High Voltage Probe	Fluke 80K-6	1 - 6kV pK <1kHz	DC to 500 Hz: +/-1% 500Hz to 1kHz: +/-2% Above 1kHz: Output reading falls. (Typically, -30% at 10kHz)	3% 3%	n/a n/a	2 2	
100	Dial Caliper	CEN-TECH 40926	0-150 mm	Linear dimension: +/-0.02mm	0.05mm	n/a	2	3

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Measurement Uncertainty List (continued)

101	Ground Bond Tester	QuadTech Guardian 1050	Any Range	Resistance: +/-1.0%	3%	n/a	2	1
				Current: +/-1.5%	1.50%	n/a	2	1
				Frequency: +/-0.1%	0.20%	n/a	2	1
114	Digital Scale (Reference)	Sartorius TE2101	20 - 2100 g	+/-0.2g (1% @ 20g)	1%	n/a	2	3
122	Stop Watch	Cole-Parmer 94460-55	Seconds	Timer: +/-8 sec per day (0.01%)	1%	n/a	2	
123	12x Eye Piece	Edmund Optics NT30-055 NT30-323	0 - 27mm	+/-0.005in. (0.13mm)	0.1mm	+0.6 / -0.19 mm	1	
124	Digital Caliper (Reference)	Mitutoyo CD-6"CSX	0 - 6"	+/-0.02%	0.50%	n/a	2	3
134	Datalogger	Fluke 2625A	0°C to + 200°C	Temperature: +/- 1.16°C	2°C	n/a	2	2, 3
135	Power Analyzer	Extech 380801	50/60Hz	Power: +/- 0.9% reading	3%	n/a	2	
				Voltage: +/-0.5%	1.50%	n/a	2	
				Current: +/- 0.5% reading	1.50%	n/a	2	
136	Thermometer	Fluke 53II	100 - 700 °C K Type T-probe	Temperature: 0.05% +/-0.3°C)	3%	n/a	2	2, 3
145	Power Analyzer	Extech 380803	50/60Hz	Power: +/-0.9% reading + 5 digits	3%	n/a	2	
				Voltage: +/-0.5% reading + 5 digits	1.50%	n/a	2	
				Current: +/- 0.5 reading + 5 digits	1.50%	n/a	2	
146	Datalogger	Fluke 2625A	0°C to + 200°C	Temperature: +/- 1.16°C	2°C	n/a	2	2,3
147	Datalogger	Fluke 2625A	0°C to + 200°C	Temperature: +/- 1.16°C	2°C	n/a	2	2, 3
149	Digital Temp / Humidity Meter	Control Company 35519-044	0°C to 50°C, 25% to 95% RH	Temperature: ±1°C from 0 to 40°C, ±2°C ends of range Humidity: ±2% mid-range and ±4% elsewhere	2°C 6% RH	n/a n/a	2 2	
157	Timer/ Stopwatch	Cole-Parmer 94460-04	Seconds	Timer: ±8.64 sec/day (0.01%)	1%	n/a	2	
158	Timer/ Stopwatch	Cole-Parmer 94460-04	Seconds	Timer: ±8.64 sec/day (0.01%)	1%	n/a	2	
160	Digital Torque Screwdriver	Imada DI-5N-RL10	0 - 10 N-m	Torque: +/-0.5%	10%	n/a	2	
162	Scale	Pelouze 4040UL-88	4- 400 lbs (9 - 181 kg)	+/-0.5 lb. (+/-0.2kg)	5%	6.67%	1	
169	Electrical Safety Analyzer	Associated Research 08104	50/60Hz	Leakage Current 1.5% + 3 counts	3.50%	2.55%	1	
				Frequency: +/-0.1%	0.20%	n/a	2	3
				Ground Bond: 3% + 3mohm	5%	3.27	1	
				Current: +/-1.0% of reading	1.50%	n/a	2	3
173	Line Leakage Tester	Associated Research 620L	Any Range	Leakage Current RMS: +/- 2.0%	3.50%	n/a	2	3
				Leakage Current Peak: +/- 2.0%	3.50%	n/a	2	3
175	Pressure /Vacuum Transducer Module	Fluke PV350	up to 350 PSI	Pressure: +/-1% (+/-0.3PSI) up to 350PSI	5%	n/a	2	
			Any Range	Vacuum: +/-1.0% (+/-0.5Hg)	5%	n/a	2	
191	Digital Hygrometer / Thermometer (Reference)	Cole Parmer 03313-65	- 40°C to +104°C, 10% to 95% RH	Temperature: +/-0.2°C	2°C	n/a	2	3
				Humidity: +/-1.5%RH	6% RH	n/a	2	
200	Datalogger	Agilent 34970A	0°C to + 200°C	Temperature: +/- 1.16°C	2%	n/a	2	2, 3
201	Leakage Current Meter	Simpson 228	0 - 10 mA	Current: +/-2%	3.50%	n/a	2	
221	Oscilloscope	Tektronix MSO2024B	Any Range	Voltage: +/-2%	1.50%	6.25%	1	
				Frequency: +/-0.02%	0.20%	0.32%	2	

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Attachment 3: Illustrations / Photographs

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**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Front, Top Side View**

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**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Front, Top Side View (Display Opened)**

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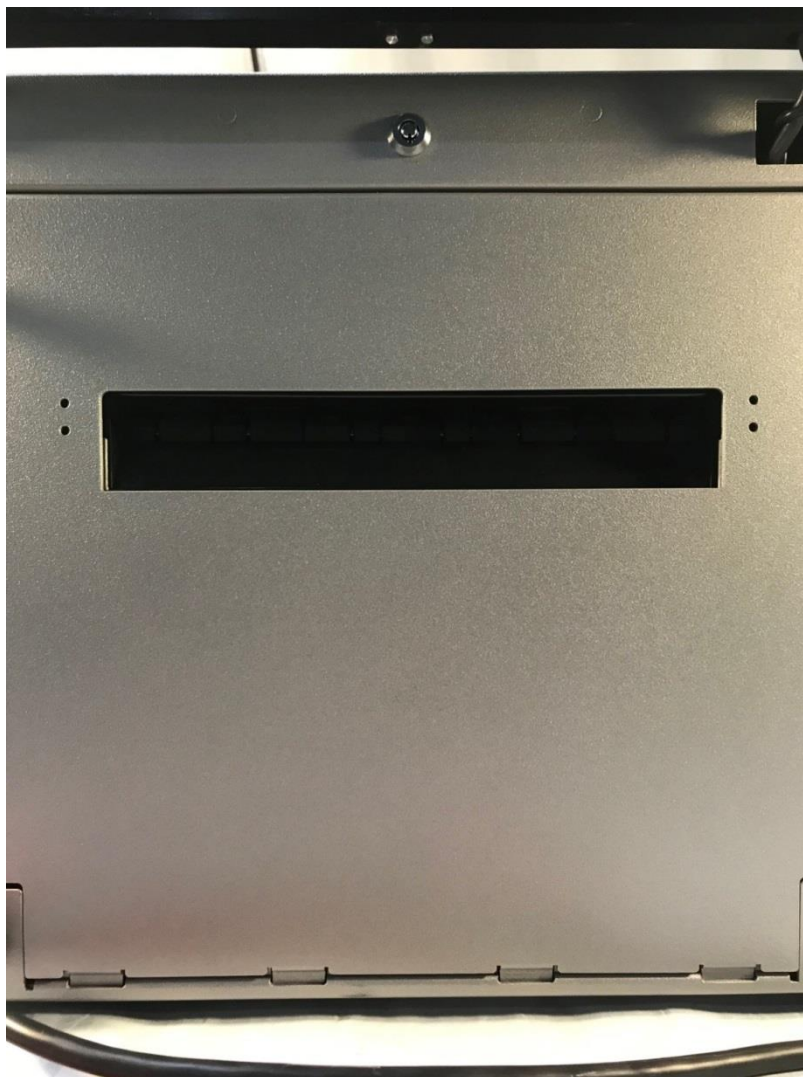


**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Rear, Top Side View (Display Opened)**

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**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Closeup of Ballot Output**

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**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Bottom View**

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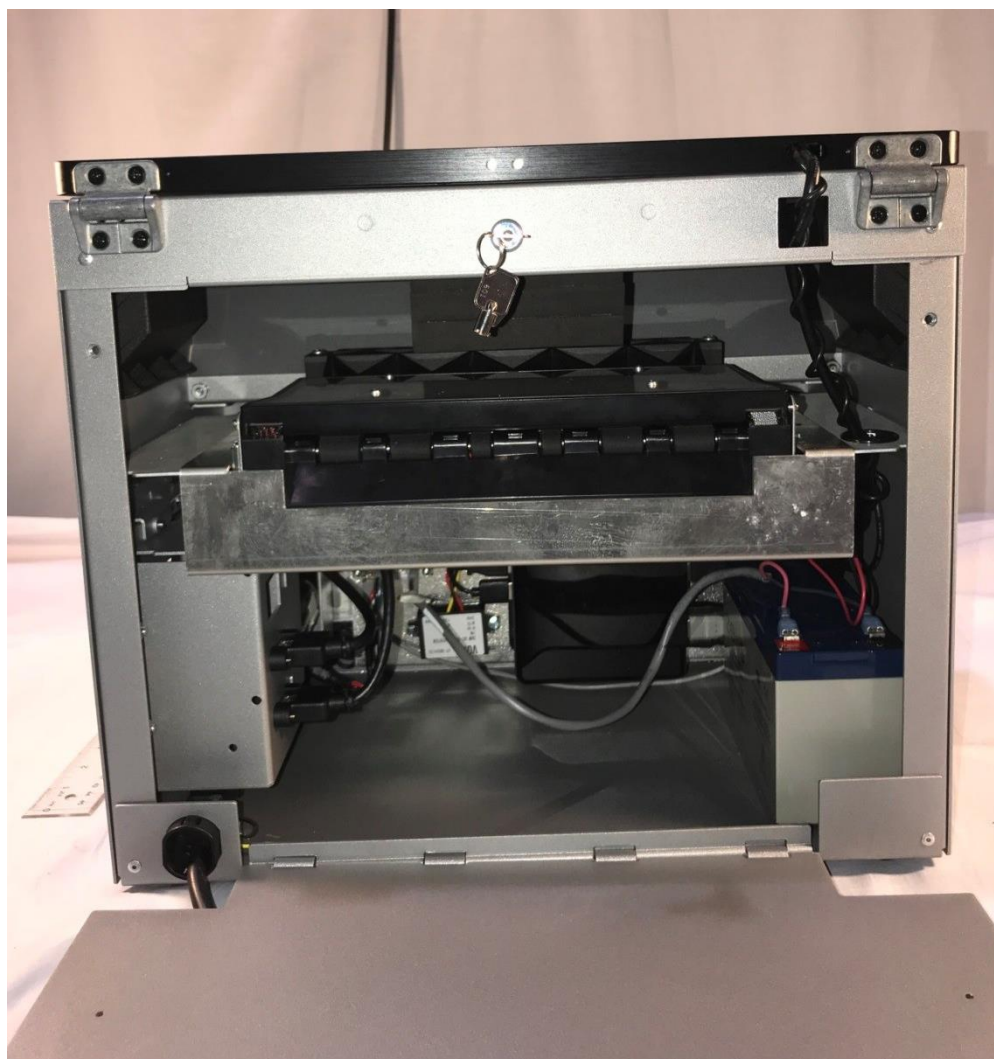


**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Printer with Locked Access Panel Opened**

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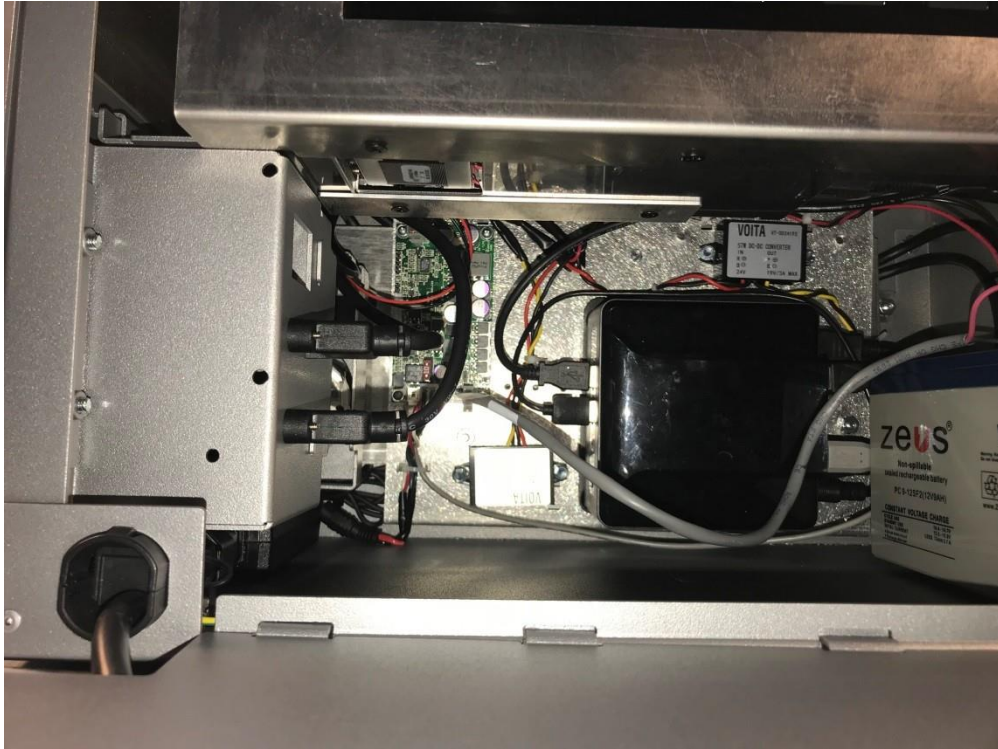


**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Internal View with Rear Locked Door Opened**

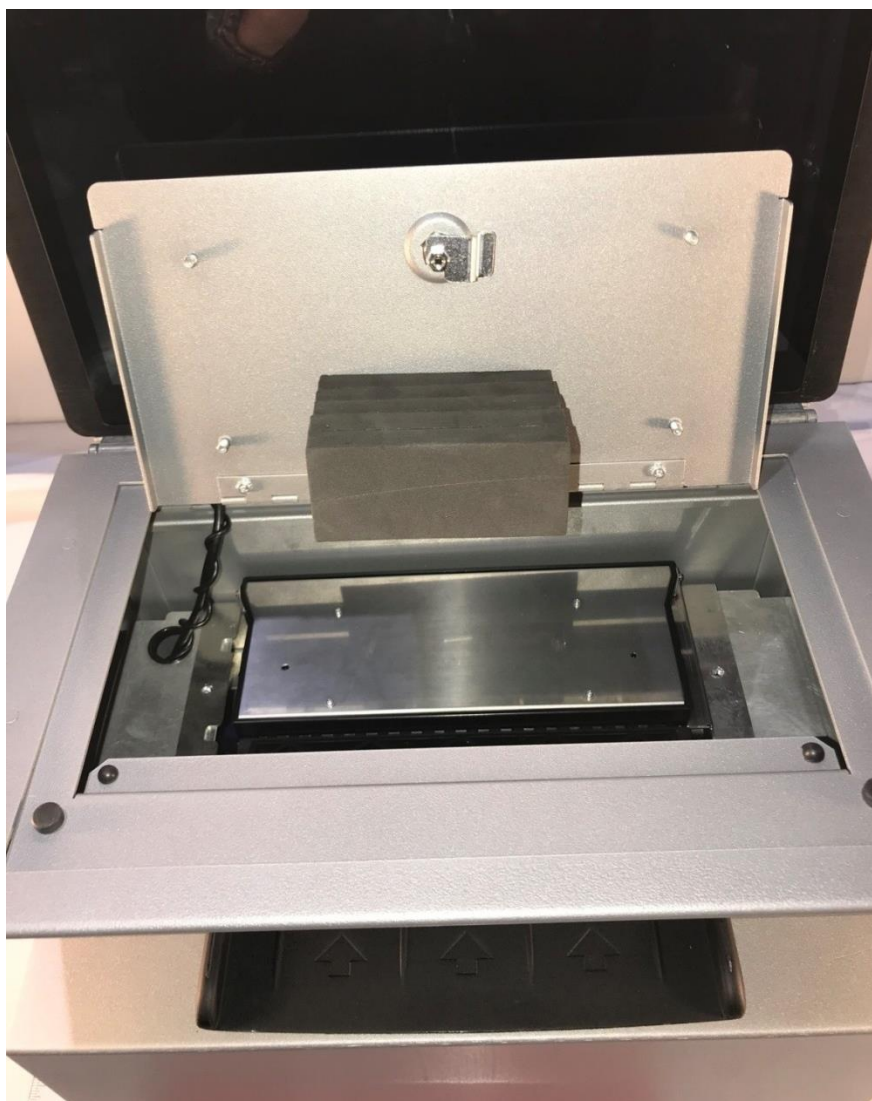
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**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Closeup of Internal View**



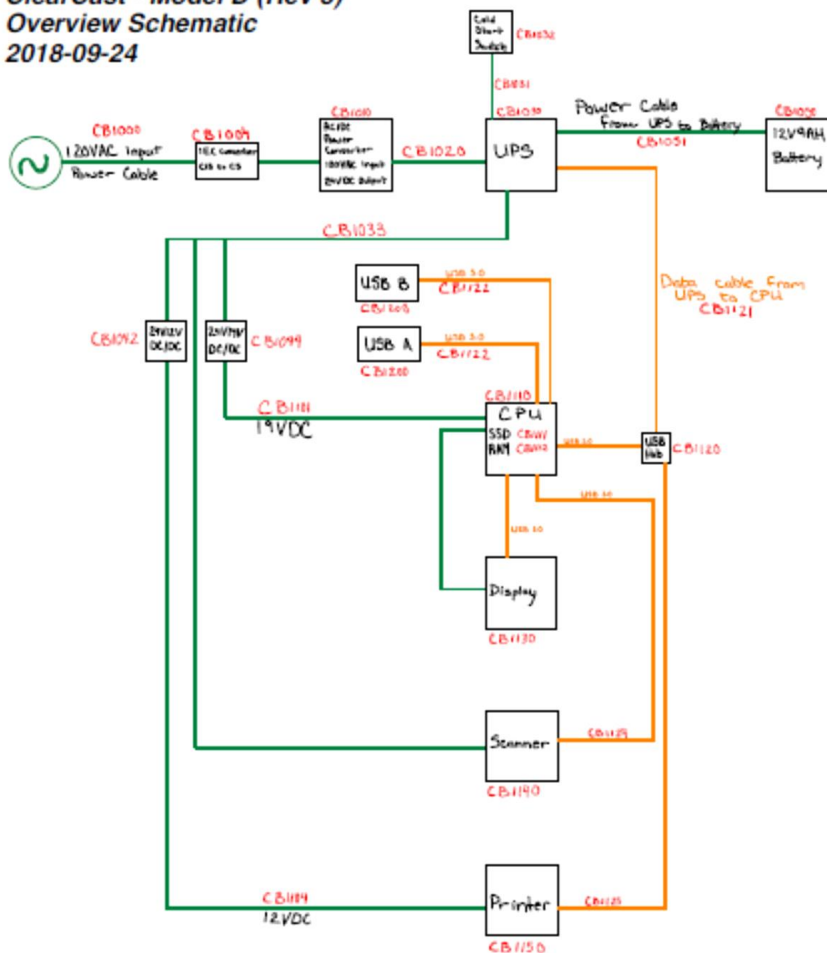
**SS2043 Clear Ballot Group, Inc.
Vote Visualization System, Model ClearCast
Internal View with Top Locked Access Panel Opened**

Curtis-Straus, LLC.

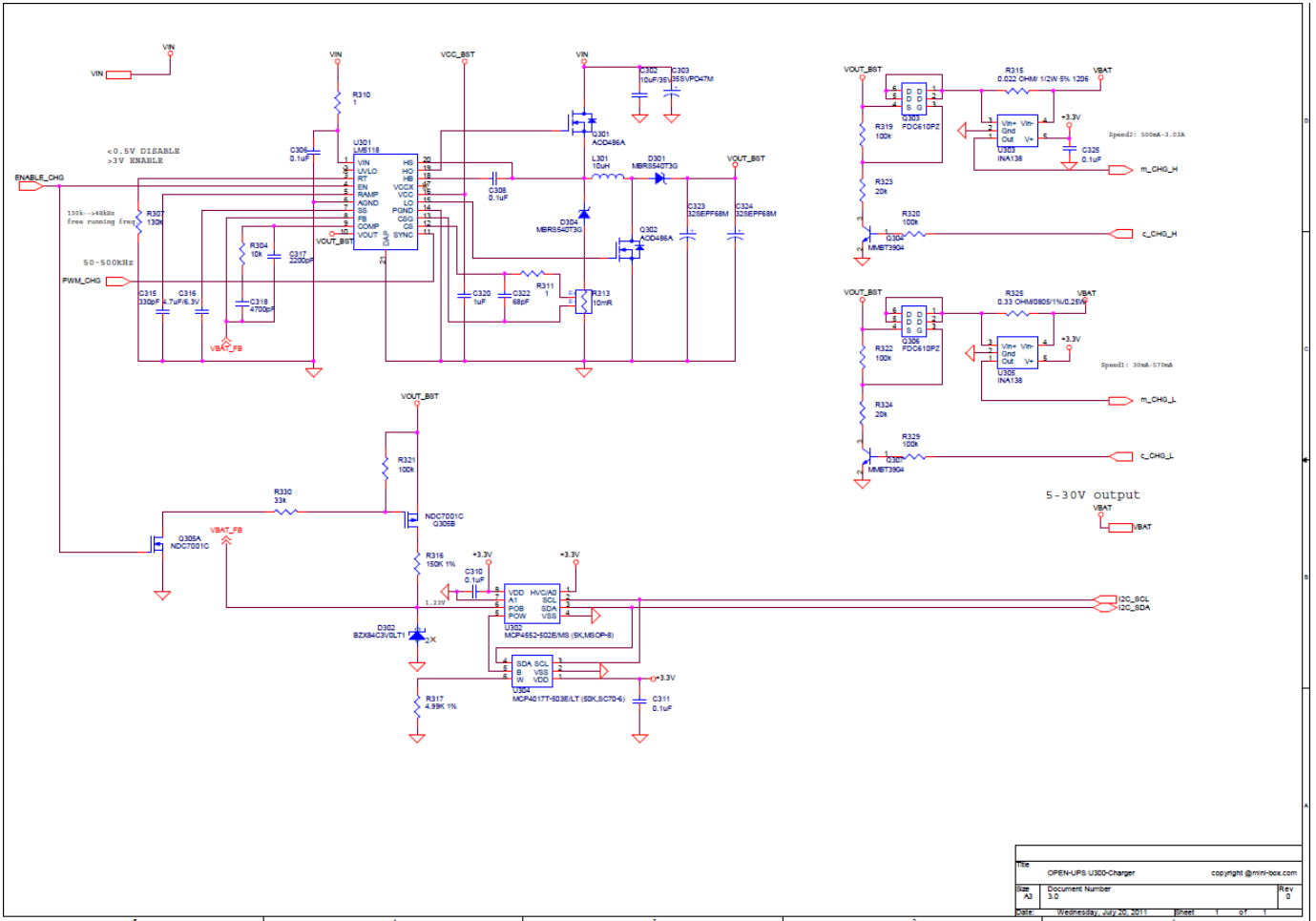
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ClearCast - Model D (Rev 3)
Overview Schematic
2018-09-24



Overview Schematic



Battery Charging Circuitry

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Attachment 4: Component Certificates

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ASIAN POWER DEVICES INC

E168210

No 5 Lane 83 Long-Shou St
 Taoyuan District
 Taoyuan City, 33058 TAIWAN

AC adapter, Model(s) DA-120A20, DA-120B19, DA-150D19

AC adapter, Model(s) DA-16C19XXXXX (Where X can be 0-9, A-Z, "-" or blank to denote marketing purpose)

AC adapter, Model(s) DA-180C19, DA-180D19, DA-24B19, DA-30E12XXXXX@, DA-30P12XXXXX \$, DA-36M12XXXXX \$, DA-36V12, DA-40A16, DA-40A19XXXXX(f12), DA-40B19XXXXX(f12), DA-40D12, DA-40E12, DA-42I12, DA-42L12XXXXX \$, DA-48M24, LD1197001xxxx(X5)

AC adapter, Model(s) DA-48P12XXXX, DA-48T12XXXX(X=A-Z,1-9, "-" or blank), DA-36A12

AC adapter, Model(s) DA-50C12, DA-60X12

AC adapter, Model(s) DA-65A19XXXX (X=A-Z,1-9, "-" or blank), DA-65C19XXXX (X=A-Z,1-9, "-" or blank), NB-65B19

AC adapter, Model(s) DA-90F19, DA-90G19, DA-90H19, M235B, NB-65B19, R360-761(a234), 272000(a234)

AC ADAPTER, Model(s) WA-08D05FU, WA-08D05R

AC Adapter, Model(s) WA-12M12FUXXXX, WA-12M12RXXXX (X=A-Z,1-9, "-" or blank)

AC adapter, Model(s) WA-13B48FU, WA-13B48R, WA-15G05FU, WA-15G05R, WA-15I05FU, WA-15I05R

AC adapter, Model(s) WA-15I05FUXXXX, WA-15I05RXXXX (f12)

AC adapter, Model(s) WA-16E19FU, WA-20E05Rxxxxx (f6), WA-24A24FU, WA-24A24R, WA-24C19FU

AC adapter, Model(s) WA-24Q12FUXXXX(+), WA-24Q12RXXXX(+)(X=A-Z,1-9, "-" or blank)

AC adapter, Model(s) WA-30J12FUXXXX, WA-30J12RXXXX(f12)

Power Supply

INTEL CORPORATION

E210882

2200 MISSION COLLEGE BLVD
 SANTA CLARA, CA 95054-1537 USA

Accessory, Intel® Compute Card, Model(s) xCD1x128MKx (a)

Intel® Compute Card (@ is superscript), Model(s) xCD1x64GKx(b), CD1C32GK

Intel® Compute Card Dock, Model(s) xDK132EPJx (a)

Intel® Compute Stick, Model(s) xSTCK1xFCx (b), xSTK1xSCx (b), xSTK2xCCx (b)

Intel® NUC, Model(s) NUC8CY, xNUC8xCYx (A26), NUC8HN(A26), NUC8HV(A26), xD34010WYKx(a), xD54250WYKx(a), xDC3217BYx(a), xDC3217IYx(a), xDC3217IYRx(a), xDC53427HYx(a), xDC73537SYx(a), xDCCP847DYx(a), xDE3815TYKx, xDN2820FYKx, xNUC4xMYHx, xNUC5xGYHx (a), xNUC5xMYHx, xNUC5xPYHx (a), xNUC5xRYHx, xNUC5xRYKx, xNUC6xAYx (a), xNUC6xKYKx(b), xNUC6xSYHx, xNUC6xSYKx, xNUC7xBNHx (a), xNUC7xBNKx (a), xNUC7xDNHx (a), xNUC7xDNKx (a), xNUC7xJYx (a), xNUC8xBEHx (a), xNUC8xBEKx (a), xNUC8xHNx(A26), xNUC8xHVx(A26)

Responsive Retail Sensor, Model(s) H1000, H3000, H4000

(a) - where x may be a combination of alphanumeric characters, none or blank

(A26) - where x can be a combination of alphanumeric characters or blank

(b) - where x may be a combination of alphanumeric characters or blank

Last Updated on 2018-08-21

Computer

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ACCREDITED
 Testing Cert. No. 1627-01

Conditions Of Testing

[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation], and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("Client"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "Conditions"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("Test Report") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "**BUREAU VERITAS**," "**BUREAU VERITAS CONSUMER PRODUCTS SERVICES**," "**BVCPS**," "**MTL**," "**ACTS**," "**MTL-ACTS**" and "**CURTIS-STRAUS**" (collectively, the "Marks") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only were such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that

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claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.

13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.

14. EXCEPT AS MAY OTHERWISE BE EXPRESSLY AGREED TO IN WRITING BY THE COMPANY AND NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN OR IN ANY TEST REPORT, NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, IS MADE.

15. (A) IN NO EVENT WHATSOEVER SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE TEST REPORT OR THE SERVICES PROVIDED BY THE COMPANY HEREUNDER, INCLUDING WITHOUT LIMITATION LOSS OF OR DAMAGE TO PROPERTY; LOSS OF INCOME, PROFIT OR USE; OR ANY CLAIMS OR DEMANDS MADE AGAINST CLIENT OR ANY OTHER PERSON BY ANY THIRD PARTY IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE SERVICES PROVIDED BY THE COMPANY HEREUNDER.

(B) NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN, AND IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO CLIENT AND THE COMPANY ASSOCIATED WITH THE TESTING SERVICES CONTEMPLATED HEREBY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT UNDER NO CIRCUMSTANCES WHATSOEVER SHALL THE LIABILITY OF THE COMPANY TO CLIENT OR ANY THIRD PARTY IN RESPECT OF ANY CLAIM FOR LOSS, DAMAGE OR EXPENSE, OF WHATSOEVER NATURE OR MAGNITUDE, AND HOWSOEVER ARISING, EXCEED AN AMOUNT EQUAL TO FIVE (5) TIMES THE AMOUNT OF THE FEES PAID TO THE COMPANY FOR THE SPECIFIC SERVICES WHICH GAVE RISE TO SUCH CLAIM OR U.S.\$10,000, WHICHEVER IS THE LESSER AMOUNT.

16. The Company shall not be liable for any loss or damage resulting from any delay or failure in performance of its obligations hereunder resulting directly or indirectly from any event of force majeure or any event outside the control of the Company. If any such event occurs, the Company may immediately cancel or suspend its performance hereunder without incurring any liability whatsoever to Client.

17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder. The complete list of the Approved Subcontractors Curtis-Straus may use to delegate the performance of work can be provided upon request.

Rev.160009121(2)_#684340 v14CS

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