CERTIFICATION Informs

An Urgent Bulletin from CSA Group

Ref No: I18-027

Audio/Video and Information Communication Technology (ICT) Equipment, No. 3

(Supersedes Informs, Audio/Video and Information Communication Technology (ICT) Equipment No. 1A, Ref No. I15-049)

Existing Certification not affected

Date: August 23, 2018

Apply any time to have your products evaluated

Announcing: Effective Date of Published CSA C22.2 No. 62368-1-14 and ANSI/UL 62368-1-2014: Audio/video, information and communication technology equipment - Part 1: Safety requirements (Bi-national standard, with UL 62368-1)

See Attachment 1 for affected Class Numbers.

To purchase the Standard, visit us at store.csagroup.org

Who is affected?

Manufacturers of audio/video and information communication technology (ICT) equipment.

What do you do?

1. This publication outlines certification revisions that do not affect your currently certified product designs.
2. Please contact CSA technical staff if you have questions or need information concerning this publication and how it applies to you.
3. If you would like to arrange for an evaluation of new products to the revisions, initiate a certification project by contacting our Client Services Centre at 1-866-797-4272. Please supply appropriate supporting documentation*. If testing is needed, we will inform you of the samples required.

*which includes technical information, company name, address, factory locations and CSA file number or master contract number (if assigned), and any other relevant documentation.

Approvals:

Products may be evaluated or re-evaluated to this standard at any time under the appropriate class numbers in Attachment 1.

On December 20, 2020, all new models and alternative constructions of previously certified models shall be evaluated to this standard.

Background and Rationale:

See attachment 2

Major Revisions:

See attachment 3

For questions specific to your file or products contact your CSA Group technical staff associate.
Go to http://www.csagroup.org/services/testing-and-certification/product-listing/ and enter your Master Contract # and the class numbers associated with this Informs to view your certified products.

For technical questions on this Informs

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Visit us at www.csagroup.org where you can click on "Contact Us" for the online phone listing of our Offices and Partners.

ATTACHMENT 1

Affected Class Numbers

Class No:
2211 01, AUDIO AND VIDEO EQUIPMENT - Musical Instruments
2211 51, AUDIO AND VIDEO EQUIPMENT - Musical Instruments
2211 81, AUDIO AND VIDEO EQUIPMENT - Musical Instruments - Certified to US Standards
2221 01, AUDIO AND VIDEO EQUIPMENT - Accessories and Parts for Electronic Equipment
2221 51, AUDIO AND VIDEO EQUIPMENT - Accessories and Parts for Electronic Products
2221 81, AUDIO AND VIDEO EQUIPMENT - Accessories and Parts for Electronic Products-Certified to US Standards
2224 01, AUDIO AND VIDEO EQUIPMENT - Audio Equipment
2224 02, AUDIO AND VIDEO EQUIPMENT - Video Equipment
2224 03, AUDIO AND VIDEO EQUIPMENT - Audio Equipment with Telecommunication Features
2224 04, AUDIO AND VIDEO EQUIPMENT - Video Equipment with Telecommunication Features
2224 30, AUDIO AND VIDEO EQUIPMENT - Components
2224 51, AUDIO AND VIDEO EQUIPMENT - Audio Equipment
2224 52, AUDIO AND VIDEO EQUIPMENT - Video Equipment
2224 81, AUDIO AND VIDEO EQUIPMENT - Audio Equipment - Certified to US Standards
2224 82, AUDIO AND VIDEO EQUIPMENT - Video Equipment - Certified to US Standards
2224 83, AUDIO AND VIDEO EQUIPMENT - Audio Equipment with Telecommunication Features-Certified to US Standards
2224 84, AUDIO AND VIDEO EQUIPMENT - Video Equipment with Telecommunication Features-Certified to US Standards
2224 90, AUDIO AND VIDEO EQUIPMENT - Components - Certified to US Standards
2226 01, AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment
2226 02, AUDIO AND VIDEO EQUIPMENT - Commercial Video Equipment
2226 03, AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment with Telecom Features
2226 04, AUDIO AND VIDEO EQUIPMENT - Commercial Video Equipment with Telecom Features
2226 30, AUDIO AND VIDEO EQUIPMENT - Components - Commercial Audio
2226 32, AUDIO AND VIDEO EQUIPMENT - Components - Commercial Video
2226 51, AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment
2226 52, AUDIO AND VIDEO EQUIPMENT - Commercial Video Equipment
2226 81, AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment - Certified to US Standards
2226 82, AUDIO AND VIDEO EQUIPMENT - Commercial Video Equipment - Certified to US Standards
2226 83, AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment with Telecommunication Features-Certified to US Standards
2226 84, AUDIO AND VIDEO EQUIPMENT - Commercial Video Equipment with Telecommunication Features-Certified to US Standards
2226 90, AUDIO AND VIDEO EQUIPMENT - Components - Commercial Audio - Certified to US Standards
3862 07, INFORMATION TECHNOLOGY EQUIPMENT - Including Electrical Business Equipment
3862 08, INFORMATION TECHNOLOGY EQUIPMENT - Including Electrical Business Equipment - With Telecommunication Equipment
3862 09, INFORMATION TECHNOLOGY EQUIPMENT - Including Electrical Business Equipment - Kits
3862 10, INFORMATION TECHNOLOGY EQUIPMENT - (CAN/CSA-C22.2 No. 60950-00,3rd Edition)
3862 11, INFORMATION TECHNOLOGY EQUIPMENT - (CSA 60950-1-03)
3862 12, INFORMATION TECHNOLOGY EQUIPMENT - Remote Power Feeding (with 60950-21 ed1)
3862 13, INFORMATION TECHNOLOGY EQUIPMENT – (CSA 60950-1-07, Second Edition)
3862 81, INFORMATION TECHNOLOGY EQUIPMENT - Data Processing Equipment - Certified to US Standards
3862 90, INFORMATION TECHNOLOGY EQUIPMENT - (CAN/CSA-C22.2 No.60950-00, 3rd Edition/UL 60950, 3rd Edition, NRTL Program)
3862 91, INFORMATION TECHNOLOGY EQUIPMENT - (UL 60950-1 - First Edition) Certified to US Standards

3862 92, INFORMATION TECHNOLOGY EQUIPMENT - Remote Power Feeding (with 60950-21 ed1) - Certified to US Standards
3862 93, INFORMATION TECHNOLOGY EQUIPMENT – UL 60950-1 Second Edition – Certified to U.S. Standards
4871 01, TELECOMMUNICATION EQUIPMENT -
4871 03, TELECOMMUNICATION EQUIPMENT - (CSA 60950-00)
4871 04, TELECOMMUNICATION EQUIPMENT - (CSA 60950-1-03)
4871 06, TELECOMMUNICATION EQUIPMENT – (CSA 60950-1-07, Second Edition)
4871 81, TELECOMMUNICATION EQUIPMENT - Certified to US Standards
4871 83, TELECOMMUNICATION EQUIPMENT - (CSA 60950-00/UL 60950) Third Edition NRTL Program). Certified to US Standards
4871 84, TELECOMMUNICATION EQUIPMENT - (CSA 60950-1-03/UL 60950-1, First Edition NRTL)-Certified to US Standards
4871 86, TELECOMMUNICATION EQUIPMENT– UL 60950-1 – Certified to U.S. Standards
5311 06, POWER SUPPLIES - Component Type (CSA 60950-00)
5311 07, POWER SUPPLIES - Component Type - (CSA 60950-1-03)
5311 11, POWER SUPPLIES – Component Type (CSA 60950-1-07, Second Edition)
5311 86, POWER SUPPLIES - Component type (UL 60950).Certified to US Standards
5311 87, POWER SUPPLIES - Component Type - Certified to US Stds. - (CSA 60950-1-03/UL 60950-1, First Edition, NRTL Program)
5311 91, POWER SUPPLIES – Component Type (UL 60950-1, Second Edition) – Certified to U.S. Standards
9022 01, MUSICAL INSTRUMENTS - Coin-operated
9022 30, MUSICAL INSTRUMENTS - Coin-operated - Component
9022 81, MUSICAL INSTRUMENTS - Coin-operated - Certified to US Standard
9061 01, ELECTRONIC SCALES
9061 81, ELECTRONIC SCALES - Certified to US Standards

ATTACHMENT 2

Background and Rationale

IEC 62368-1 Edition 1 (Audio/video, information and communication technology equipment – Part 1: Safety requirements) was published in January 2010. This is a standard based on the principles of hazard based safety engineering, and is an alternative to IEC 60065 and IEC 60950-1 over a transitional period. The standard was updated to Edition 2 in February 2014. This 2nd Edition consists of significant technical revisions and it cancels and replaces the 1st Edition.

CAN/CSA C22.2 No. 62368-1-12 and ANSI/UL 62368-1-2012 was published in February 2012 which is a Canada/US bi-national standard harmonized with IEC 62368-1 Edition 1.

CAN/CSA C22.2 No. 62368-1-14 and ANSI/UL 62368-1-2014 was published in December 2014 which is a Canada/US bi-national standard harmonized with IEC 62368-1 Edition 2.

This standard has been reviewed by the CSA Subcommittee on Safety of Electronic Equipment within the field of Audio/Video, Information, and Communication Technology, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

It is one in a series of Standards issued by CSA Group under Part II of the Canadian Electrical Code.

This standard has also been approved as a National Standard of Canada by the Standards Council of Canada and approved by the American National Standards Institute as an American National Standard.

ATTACHMENT 3

Major Revisions

CSA C22.2 No. 62368-1-14 was published in 2014. As mentioned in previous CSA Certification Inform, Ref. No. I15-049, the transition period is about 5 years. The effective date assigned is December 20, 2020. Current certified products may continue to be produced with the CSA mark, if changes are made after December 20, 2020, the products should be upgraded to CSA C22.2 No. 62368-1-14.

The expiry date for CSA C22.2 No. 60950-1, UL 60950-1, CSA C22.2 No. 60065 and UL 60065 has not yet been established, and will be established in the future.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are national differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Declared National Differences against IEC 62368-1 Edition 2:

Clause and Sub-clause	National Differences
1DV.1	Battery backup systems that are not an integral part of stationary equipment, such as provided in separate cabinets, are subject to the appropriate standard for battery backup systems, such as UL 1973, Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications.
1DV.2	For equipment intended for outdoor installation, additional requirements for Information and communication technology equipment are covered by CSA/UL 60950-22 and for Audio/video equipment are covered by the relevant requirements in CSA C22.2 No. 60065 or UL 60065.
1DV.3.1	Standard is applicable to equipment designed to be installed in accordance with the Canadian Electrical Code, Part I, C22.1-12; Canadian Electrical Code, Part II, General Requirements, CAN/CSA C22.2 No. 0-10; the National Electrical Code, NFPA 70-2014; and the National Electrical Safety Code, IEEE C2-2012.
1DV.3.2	For equipment designed to be installed in accordance with Article 645 of the National Electrical Code, NFPA 70-2014, and the Standard for the Protection of Information Technology Equipment, NFPA 75-2013, identification by a marking or instruction [see Annex DVK (Annex DVA, Clause 1)] is required.
1DV.3.3	Additional regulatory requirements that apply to this equipment per Annex DVA, as applicable.
1DV.4.1	Additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities per Annex DVB.
1DV.4.2	This standard includes additional requirements for equipment intended for mounting under kitchen cabinets. See Annex DVC.

Clause and Sub-clause	National Differences
1DV.4.3	This standard does not apply to equipment having Remote Feeding Telecommunication (RFT) circuits. Equipment having RFT circuits is covered by CSA/UL 60950-21.
1DV.4.4	Additional requirements may apply to large data storage equipment. Refer to CSA/UL 60950-23.
1DV.4.5	Does not cover Modular Data Centers (MDCs) but only the information and communication technology equipment contained within.
1DV.5.1	Power Distribution Equipment and Sub-Assemblies
1DV.5.1.1	Power distribution sub-assemblies connected to a mains used to distribute power entirely within a system of equipment, such as power distribution units (PDUs), cord-connected power strips, shelves with multiple power outlets (receptacles) etc., and intended to be installed in system racks, cabinets, home entertainment centers, etc. are covered by this standard
1DV.5.1.2	For equipment covered by this standard that incorporates components and sub-assemblies that perform a power distribution and control function covered by other standards, such as panelboards, load transfer equipment, or uninterruptible power systems utilized in power conditioners and computer power centers, this standard only may be used for investigation of safety for those aspects not covered by the other standards.
1DV.5.1.3	This standard also does not apply to stand-alone equipment used for distribution of mains power that is covered by individual power distribution equipment standards.
1DV.5.1.4	Based on the specific function, the following requirements are applicable to the stand-alone distribution equipment, or apply additionally to power distribution sub-assemblies and components of equipment covered by this standard, as described in 1DV.5.1.2 and 1DV.5.1.3: – For Industrial Control Equipment, see CSA C22.2 No. 14 and UL 508. – For Panelboards, see CSA C22.2 No. 29 and UL 67. – For Switchboards, see CSA C22.2 No 244 and UL 891. – For Transfer Switch Equipment, see CSA C22.2 No 178.1 and UL 1008. – For Uninterruptible Power Systems, see CSA C22.2 No. 107.3 and UL 1778. – For Power Distribution Centers for Communications Equipment, see UL Subject 1801. – Other forms of power distribution units for general applications, such as, • Relocatable Power Taps, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords, and UL 1363, Relocatable Power Taps. • Cord connected Surge Protective Devices, CSA Technical Information Letter No. A-24, Interim Certification Requirements for AC Line Connected Wiring Devices with Varistors, and UL 1449, Surge Protective Devices. • Furniture Power Distribution Units, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords and UL 962A, Furniture Power Distribution Units.
3.3.1.2DV D2	For additional information regarding low voltage d.c. mains (centralized d.c. power systems) equipment, refer to Annex DVD. This standard covers high voltage d.c. mains up to 600 Vdc.
3.3.1.3DV.1	New definition: telecommunication network – metallically terminated transmission medium intended for communication between equipment that may be located in separate buildings, excluding: – the mains system for supply, transmission and distribution of electrical power, if used as a telecommunication transmission medium; – cable distribution systems;

Clause and Sub-clause	National Differences
	– ES1 circuits connecting units of audio/video, information and communication technology equipment.
4.1.1DV.1 D2	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVE are required in addition to or as a replacement for the requirements in this standard. Components complying with these standards are considered acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.
4.1.1DV.2 DC	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVG are acceptable as an alternative to requirements as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.
4.1.2DV DC	In the U.S. and Canada, some UL/CSA component standards may be used as alternatives to referenced IEC standards for the purposes of North America certifications or surveillance programs. Components and subassemblies that comply with the standards referenced in Annex DVF are acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.
4.1.16DV.1	Mains connections
4.1.16DV.1.1 DE, 4.1.16DV.1.2 DR	Requirements for Mains Supply Cords for Pluggable (Cord Connected) Equipment (Canadian and U.S. regulatory-based requirements) - Annex G.7 and G.7ADV
4.1.16DV.1.3 D2, 4.1.16DV.1.4 DR	Requirements for Permanently Connected Equipment. (Canadian and U.S. regulatory-based requirements) – Annex DVH
4.1.17DV.1	External interconnecting cable and wiring
4.1.17DV.1.1	General External interconnecting cable and wiring are investigated to the requirements of 6.5 and either 4.1.17DV.1.2 or 4.1.17DV.1.3, as appropriate. – External interconnecting cable and wiring 3,05 m or less may be investigated as part of the equipment (system) to the requirements of this standard. See 4.1.17DV.1.2. – External interconnect cable and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70, and are subject to associated requirements. See 4.1.17DV.1.3. – External interconnect cable longer than 3,05 m designed to carry audio and/or video signals only, and that is not specified by the manufacturer to be routed inside the building structure (e.g., walls, ceilings, etc.), is subject to the applicable requirements of 4.1.17DV.1.2. For purposes of 4.1.17DV.1.2, it is assumed such cables are connected to PS1 circuits. Alternatively, detachable external interconnecting cable and wiring (with terminations) may be excluded from the equipment evaluation if specified by the manufacturer.
4.1.17DV.1.2	Equipment (system) interconnecting cable and wiring The following requirements apply to detachable and non-detachable external interconnecting cable and wiring investigated as part of the equipment (system). – The length of the external interconnecting cable or wiring shall not exceed 3,05 m; – For external interconnecting cable and wiring connected to PS2 and PS3 circuits, see 6.5 for fire (flammability) considerations; – There are no fire (flammability) considerations for external interconnecting cable and wiring specified by the manufacturer for connection to circuits that are PS1.

Clause and Sub-clause	National Differences
	– External interconnecting cable and wiring intended to be connected to an ES3 or PS3 circuit require a jacket for mechanical protection in accordance with Table G.7ADV.2, or equivalent; – Detachable external interconnecting cable and wiring (with terminations) intended to be connected to a PS2, PS3, ES2 or ES3 circuit and furnished as part of the equipment shall be either marked, or similarly identified in the installation instructions with (a) the name, trademark or trade name of the organization that is responsible for the equipment, and (b) the organization's identifying number or equivalent designation for the cable. See Annex DVK. – The marking may be applied on the cable and wiring at any location – This marking is not required to comply with the test for permanence of markings, F.3.9 Optical fiber interconnecting cables 3,05 m or less are not subject to the above requirements
4.1.17DV.1.3	External interconnecting cable and wiring considered part of the building installation. External interconnecting cables and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70. See Annex DVA(Annex Q entry).
4.6.2DV D2	Additional examples of compliance: - wire-wrap terminals used for the connection of ES1 and ES2 that are: • provided on equipment that forms part of the telecommunication network, up to and including the demarcation point, and are located in service access areas only. (This equipment is generally considered Central Office Equipment, although it may be deployed elsewhere in similarly controlled environments.) and • provided with a guard or cover that prevents unintentional contact during normal operation. are tested with a steady force of 2,5 N ± 0,25 N.
4.8.3DV D2	If screws or similar fasteners are used to secure the door/cover providing access to the battery compartment, the fasteners shall be captive to ensure that they remain with the door/cover. This does not apply to side panel doors on larger devices which are necessary for the functioning of the equipment and which are not likely to be discarded or left off the equipment
4.8.4.5DV D2	0,5 J impact test deleted.
4.8.5DV.1 D2	Replace 30 N battery compartment door/cover test with 45 N
4.8.5DV.2 D2	Additional compliance criteria replaced with: - the battery compartment door/cover shall not open; and - the battery shall not become accessible.
5.4.4.1DV D1	For printed boards, see Clause G.13 For antenna terminals, see Clause 5.4.5 For solid insulation on internal and external wiring, see Clause G.6. Additionally, for internal wiring accessible to an ordinary person, see Clause 5.4.6.
5.6.3DV.1 DR to 5.6.3DV.3 DR	Protective earthing conductors shall comply with the minimum conductor sizes in Table G.5, except as required by • Table G.7ADV.1 for cord connected equipment; or • Annex DVH for permanently connected equipment.
5.6.4.1DV DR	Minimum conductor size alternative compliance to Table G.5 or Table G.7ADV.1 as applicable , or Table 31 Minimum protective bonding conductor size of copper conductors

Clause and Sub-clause	National Differences
5.6.4.4DV DR	Protective bonding conductor sizes alternative compliance to Table G.7ADV.1 in addition to Table 31 or Table G.5
Table 32 DV DR	Include alternative conductor size compliance with Table G.7ADV.1 in the first column heading for protective conductor terminals.
5.6.6.1 DV DR	Protective bonding conductors that meet the minimum conductor sizes in Table G.5 or Table G.7ADV.1 as applicable, throughout their length and whose terminals all meet the minimum sizes in Table 32 are considered to comply without test.
5.7.6.2DV DE	Clause title modified to read “Prospective touch voltage and touch current to external circuits”
5.7.7DV.1 D2	Clause 5.7.7 to apply to stationary pluggable equipment type A or pluggable equipment type B
5.7.7DV.2 D2	Summation of touch currents not exceeding the limits of ES2 exception per Clause 5.7.7(a)(1)
5.7.7DV.3 D2	Clause 5.7.7(a)(2) replaced with: Such equipment shall comply with Clause 5.7.5. The value of S(I_1) shall be added to the measured protective conductor current to determine compliance with the 5 % input current limit per phase specified in Clause 5.7.5.
5.7.7.1DV D2	Limitation of touch current due to ringing signals <u>5.7.7.1DV.1 Limitation of touch current due to ringing signals</u> Equipment containing input telecommunication network leads over which ringing voltages are applied to the equipment shall be tested using the circuit of Figure 5.7.7.1DV.1 for mains-connected equipment or Figure 5.7.7.1DV.2 for other equipment. For any position of the selector switches, the total touch current including consideration of 5.7.7 shall not exceed the relevant limits for ES2 specified in Table 4, unless the equipment complies with 5.7.7(a) with the protective conductor current due to ringing signal taken into account. An EUT that receives ringing voltages on up to three telecommunication network connection ports shall have simulated ringing applied to each network connection. For four or more ports receiving ringing, simulated ringing shall be applied to three ports and an additional 3 % (rounding down) of the remaining ports. Compliance is checked by the following tests, which are conducted using the measuring network described in IEC 60990, Figure 4. Simulated ringing at 120 V, 50 to 60 Hz, shall be applied to ringing input telecommunication network leads, either one lead at a time or connected together. Other telecommunication network leads shall be left disconnected. Equipment shall be evaluated in each operating state, including ground start. The general test methods of 5.7 shall apply, checking touch current for all positions of switches S1, S2, and S3 in Figure 5.7.7.1DV.1. In case the total touch current exceeds the ES2 limits, the protective conductor current is measured using the test set up of Figure 5.7.7.1DV.1 or Figure 5.7.7.1DV.2 with the measuring instrument replaced with an ammeter having negligible impedance.
6.5.1DV.1 DC	Add the following text to the end of the second, third and fourth paragraphs: or the insulation of the conductor or cable assembly shall be rated VW-1 or FT-1.
6.5.1DV.2 D2	Add the following after the third paragraph: PS3 wiring outside a fire enclosure shall comply with single fault testing in B.4. Alternatively, the following constructions are considered to comply:

Clause and Sub-clause	National Differences
	– conductors provided with overcurrent protection in accordance with Article 240 of the National Electrical Code, NFPA 70, and the Canadian Electrical Code, Part I, C22.1, Section 14; – internal conductors supplied by a power source that is limited to the output voltage and current values specified in Table Q.1 or is limited to the output voltage values and provided with an overcurrent protective device with a rated current value as specified in Table Q.2; – interconnecting cables supplied by a limited power source (see Q.1); – a 20-A protective device used with any size wire in the primary.
6.7DV.1	Safeguards against electrically-caused fire due to overvoltage from power line crosses
6.7DV.1.1	Equipment with external circuits intended for connection to a telecommunication network that uses outside cable subject to overvoltage from power line failures shall comply with Annex DVI.
10.6.1DV D2	For telecommunication-network connected equipment, see Annex DVJ.
F.1DV DR	F.1DV.1 See Annex DVK for U.S. and Canadian markings and instructions.
F.3.3.9DV.1	Equipment with output terminals Output terminals provided for supply of other equipment except mains supply shall be marked with the nominal output voltage and frequency, and, in addition, the maximum output current or power, unless the terminals are marked with the type references of the equipment which are permitted to be connected. When intended to be installed or interconnected in the field by a skilled person, the Class of wiring shall be marked adjacent to the terminals.
G.4.3DV D2	Delete the 2nd sentence reference to “banana plug” of the EXAMPLE.
G.7.2DV DR	In the second paragraph, replace the reference to Table G.4 with a reference to Table G.7ADV.1.
G.7ADV DR	Additional requirements: Power supply cords – detachable and non-detachable
G.7ADV.1	General Flexible cords and plugs are permitted for movable equipment, hand-held equipment, stationary equipment and transportable equipment, and for fixed equipment where the fastening means and mechanical connections of the equipment are designed to permit removal for maintenance and repair.
G.7ADV.2	Methods of connection Flexible cords shall be provided with an attachment plug for connection to the branch circuit.
G.7ADV.3	Sizing and ratings The attachment plug configuration shall be one that is rated not less than 125 percent of the current rating of the equipment. Power supply cords shall have conductors with cross-sectional areas sufficient for the rated current of the equipment. Conductors shall be sized based on the requirements in the National Electrical Code (NEC), NFPA 70, and the Canadian Electrical Code, Part I, C22.1. Table G.7ADV.1 provides allowable ampacity for flexible cords and cables based on Table 400.5(a)(1) of the NEC. See Table 400.5(a)(2) of the NEC for ampacity information on portable power cables. For equipment with a rated current up to and including 2 A, 20 AWG is acceptable provided that the mains plug is provided with a 2 A fuse maximum and the equipment is not provided with a socket outlet.
G.7ADV.4	Serviceability

Clause and Sub-clause	National Differences
	Power supply cords and cord sets shall incorporate flexible cords suitable for the particular application or shall be of a type at least as serviceable for the particular application. Table G.7ADV.2 lists common applications and associated suitable cord types.
G.7ADV.5.1	Minimum length The minimum length of a power supply cord shall be 1,5 m unless it is intended for a special installation, such as dedicated equipment intended to be mounted near a mains socket-outlet. For equipment provided with an external power supply, the minimum length of the power supply cord shall be 0,5 m, provided that the total length of the conductive path from the receptacle to the equipment is 1,5 m or greater.
G.7ADV.5.2	Maximum length For equipment intended for installation in ITE Rooms, the length of a power supply cord shall not exceed 4,5 m. For other intended installations, see Table G.7ADV.2.
H.2DV D2	item a: Continuous ringing signals shall: • be located only in areas where a skilled person has access during servicing; • be so located and guarded that unintentional contact with such parts is unlikely during servicing by a skilled person, or be provided with a marking to warn a skilled person of the presence of continuous ringing signals; and • not become accessible to an ordinary person under single fault conditions.
H.4DV.1	Other telecommunication signals: Telecommunication signaling systems (e.g., some message waiting systems) using voltages or current, or both, greater than those specified in 5.2.1.1 and 5.2.1.2 shall be permitted if they comply with the following: – continuous signal: For a signal of duration greater than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than 7.1 mA peak a.c., or 30 mA d.c., or the limit shown in Figure H.4DV.1 for combinations of a.c. and d.c., when measured in accordance with 5.7. – intermittent signal: For a signal of duration less than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than the limit specified in Figure H.4DV.2. The signal shall be followed by a quiet interval of at least 1 s before the next intermittent signal. During the quiet interval, either the voltage is less than 56,6 V d.c., or the current measured is less than 0,5 mA.
M.2.1DV DC	Battery packs with sealed secondary cells and batteries (other than button) containing alkaline or other non-acid electrolyte and used in stationary equipment shall comply with either IEC 62133, UL 2054 or UL 1973. Additionally, such battery packs that rely on solid-state circuits and software controls as safeguards shall comply with either the requirements in UL 1973 for System Safety Analysis (5.7) and Protective Circuit and Controls (5.8), or similar requirements in an appropriate standard for electronic safety-related controls that are suitable for investigation of such protection of secondary cells and batteries.
P.4.1DV DE	Additional text added to correct for editing error: For metalized coatings, clearances and creepage distances for pollution degree 3 shall be maintained instead of the tests of P.4.2DV.1.
P.4.2DV DE	Added test requirements text from Clause P.5 as new Clause P.4.2DV DE to correct for editing error.

Clause and Sub-clause	National Differences
P.5DV DE	Clause P.5 relocated to P.4.1 and P.4.2
U.1DV D1	Added the following text: The outer enclosure housing a CRT shall have no opening that exceeds 130 mm2 unless the minor dimension of the opening is 10 mm or less.
Table W.3DV DE	Modify Table W.3 by replacing the entry for 1.2.8.14 in the first column with the following to correct a typographical error: TNV-3 CIRCUIT TNV ClRCUIT – whose normal operating voltages exceed the limits for an SELV circuit under normal operating conditions; and – on which overvoltages from telecommunication networks and cable distribution systems are possible
Annex DVA	(normative) Canadian and U.S. regulatory-based requirements
Annex DVB	(normative) Equipment used in health care facilities
Annex DVC	(normative) Under kitchen cabinet equipment
Annex DVD	(informative) D.C. powered equipment and centralized d.c. power systems (DC mains)
Annex DVE	(normative) UL and CSA component requirements (mandatory)
Annex DVF	(normative) UL and CSA component requirements (alternative to IEC standards)
Annex DVG	(normative) UL and CSA component requirements (alternative)
Annex DVH	(normative) Permanently connected equipment – mains connections
Annex DVI	(normative) Safeguards against electrically-caused fire due to overvoltage from power line crosses
Annex DVJ	(normative) Acoustic tests for telecommunications equipment
Annex DVK	(normative) Canadian and U.S. marking and instructions