

**TEST REPORT**  
**IEC 62368-1**  
**Audio/video, information and communication technology equipment**  
**Part 1: Safety requirements**

**Report Number** .....: SCKT201102-10

**Date of issue** .....: July 14th, 2021

**Total number of pages** .....: 89

**Applicant's name** .....: Socket Mobile, Inc.

**Address** .....: 39700 Eureka Drive, Newark, CA 94560, USA

**Test specification:**

**Standard** .....: EN 62368-1:2020 + A11:2020; IEC 62368-1:2018

**Test procedure**.....: TCF for LVD portion of the CE Mark

**Non-standard test method**.....: N/A

**Test Report Form No.**.....: IEC62368\_1C

**Test Report Form(s) Originator**....: UL(US)

**Master TRF** .....: Dated 2019-01-17

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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.

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**Test item description** .....: Barcode Scanner

**Trade Mark**.....: 

**Manufacturer** .....: Same as applicant

**Model/Type reference**.....: S7xx Series, D7xx Series, D600,  
Charging Cradles/docks  
8530-00090xx (White), 8530-00078xx (Black)  
8530-00057xx, 8530-00070xx (Black), 8530-00105xx (White)  
(where x = A-Z, 0-9, " ", "-" or blank, not safety relevant)

**Ratings**.....: DC5V, 1.0A (Optionally Marked)

| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): |                                 |  |
|--|---------------------------------|--|
| <input checked="" type="checkbox"/>  | Testing Laboratory:             | Safety Engineering Laboratory (SEL)  |
| Testing location/ address .....  |                                 | 2370D Qume Drive, San Jose, California 95131 USA   |
| Tested by (name, function, signature) .....  |                                 | Paul A. Carter  |
| Approved by (name, function, signature) ..   |                                 | Lee Ould        |
| <hr/>  |                                 |  |
| <input type="checkbox"/>   | Testing procedure: CTF Stage 1: |  |
| Testing location/ address .....  |                                 |  |
| Tested by (name, function, signature) .....  |                                 |  |
| Approved by (name, function, signature) ..   |                                 |  |
| <hr/>  |                                 |  |
| <input type="checkbox"/>   | Testing procedure: CTF Stage 2: |  |
| Testing location/ address .....  |                                 |  |
| Tested by (name + signature) .....   |                                 |  |
| Witnessed by (name, function, signature) . :   |                                 |  |
| Approved by (name, function, signature) ..   |                                 |  |
| <hr/>  |                                 |  |
| <input type="checkbox"/>   | Testing procedure: CTF Stage 3: |  |
| <input type="checkbox"/>   | Testing procedure: CTF Stage 4: |  |
| Testing location/ address .....  |                                 |  |
| Tested by (name, function, signature) .....  |                                 |  |
| Witnessed by (name, function, signature) . :   |                                 |  |
| Approved by (name, function, signature) ..   |                                 |  |
| Supervised by (name, function, signature) :  |                                 |  |

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

1. National Differences (23 pages)
2. Photographs (31 pages)
3. CDF (See [4.1.2](#) )
4. IEC 60825-1 Test Report Form (16 pages)

**Summary of testing:**

All applicable tests as described in Test Case and Measurement Sections were performed. The product was tested under normal and single fault conditions and found to be compliant with the requirements of this Standard.

The test data was taken from SEL report SCKT160415-01 through SCKT160415-08, which is in accordance with IEC 60950-1. The updated report is SCKT201020-09.

**Tests performed (name of test and test clause):**

**June 25<sup>th</sup>, 2021:** Update CDF to add scan engine SE4107 as an alternate to SE2707 for models S740 and D740. Input test was performed on model S740 to show similarity. No additional testing was necessary. Remove EOL models and previous test data from report for CHS 7xx Series.

**November 2<sup>nd</sup>, 2020:** Update report to add alternate models D745, D755, and alternate scan engine for model D760.

The following tests were repeated on all models.

Input test - B.2.5

The following tests were performed on model D755 which represents the other D7xx models.

LPS measurements - Q.1 -

Steady Force Tests - T.2, T.5 -

Impact Test - T.6 -

Battery Tests - Annex M

Thermal Tests - B.2.6

Single Fault Condition Tests – B.4

The following tests were conducted under previous evaluations per 60950 and no additional testing was deemed necessary for 62368 evaluation.

| Test                              | 60950 Clause | 62368 Clause               |
|-----------------------------------|--------------|----------------------------|
| Input Test                        | 1.6.2        | B.2.5                      |
| Limited Power Source Measurements | 2.5          | Q.1                        |
| Steady Force Tests                | 4.2.2-4.2.4  | T.2, T.5                   |
| Impact Test                       | 4.2.5        | T.6                        |
| Drop Tests                        | 4.2.6        | T.7                        |
| Battery Tests                     | 4.3.8        | Annex M                    |
| Thermal Requirements              | 4.5.1        | 5.4.1.4, 9.3, B.1.5, B.2.6 |

**Testing location:**

Safety Engineering Laboratory (SEL)  
2370D Qume Drive, San Jose, California 95131 USA

|  |        |          |  |
|--|--------|----------|--|
| Abnormal operation and Single Fault Condition Tests  | 5.3    | B.3, B.4 |  |
| Label durability   | 1.7.11 | F.3.9    |  |
| Humidity conditioning  | 2.9.2  | 5.4.8    |  |
| <p>Tests were performed at 23°C and linearly calculated to the manufacturers specified Tma of 50°C</p>   |        |          |  |
| <p><b>Summary of compliance with National Differences (List of countries addressed):</b><br/> EU Group Differences, EU Special National Conditions, UK, DK, FI, SE, NO, IR, FR, DE<br/> Explanation of used codes: DE = Germany, FI = Finland, FR = France, IR = Ireland, NO = Norway, SE = Sweden, UK = United Kingdom</p> <p><input checked="" type="checkbox"/> <b>The product fulfils the requirements of EN 62368-1:2020 + A11 and IEC 62368-1:2018</b></p> |        |          |  |

**Copy of marking plate:**

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

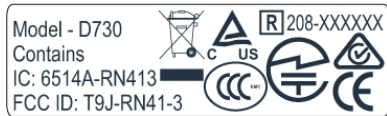
**D7xx Series Product Labels**



**D6xx Series Product Label**



**Model D730 only**



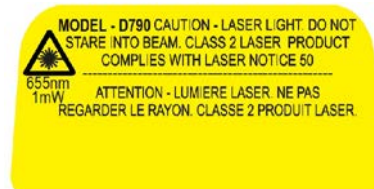
**S7xx Series:**



**S730 only: Laser Warning Label**



**D790 only; Laser Warning Label**



|   |  |  |  |
|---|--|--|--|
| <b>Test item particulars:</b>                               |  |  |  |
| <b>Product group</b> .....                                  | <input checked="" type="checkbox"/> end product          | <input type="checkbox"/> built-in component      |  |
| <b>Classification of use by</b> .....                       | <input checked="" type="checkbox"/> Ordinary person      | <input type="checkbox"/> Children likely present |  |
|   | <input checked="" type="checkbox"/> Instructed person    |  |  |
|   | <input checked="" type="checkbox"/> Skilled person       |  |  |
| <b>Supply connection</b> .....                              | <input type="checkbox"/> AC mains                        | <input type="checkbox"/> DC mains                |  |
|   | <input checked="" type="checkbox"/> not mains connected: |  |  |
|   | <input checked="" type="checkbox"/> ES1                  | <input type="checkbox"/> ES2                     | <input type="checkbox"/> ES3                   |
| <b>Supply tolerance</b> .....                               | <input type="checkbox"/> +10%/-10%                       |  |  |
|   | <input type="checkbox"/> +20%/-15%                       |  |  |
|   | <input checked="" type="checkbox"/> +20% / -20%          |  |  |
|   | <input type="checkbox"/> None                            |  |  |
| <b>Supply connection – type</b> .....                       | <input type="checkbox"/> pluggable equipment type A –    |  |  |
|   | <input type="checkbox"/> non-detachable supply cord      |  |  |
|   | <input type="checkbox"/> appliance coupler               |  |  |
|   | <input type="checkbox"/> direct plug-in                  |  |  |
|   | <input type="checkbox"/> pluggable equipment type B -    |  |  |
|   | <input type="checkbox"/> non-detachable supply cord      |  |  |
|   | <input type="checkbox"/> appliance coupler               |  |  |
|   | <input type="checkbox"/> permanent connection            |  |  |
|   | <input checked="" type="checkbox"/> mating connector     | <input type="checkbox"/> other:                  |  |
| <b>Considered current rating of protective device</b> ..... | <input type="checkbox"/> 20 A; (16A for the EU),         |  |  |
|   | Location:  | <input type="checkbox"/> building                | <input type="checkbox"/> equipment             |
|   | <input checked="" type="checkbox"/> N/A                  |  |  |
| <b>Equipment mobility</b> .....                             | <input type="checkbox"/> movable                         | <input checked="" type="checkbox"/> hand-held    | <input type="checkbox"/> transportable         |
|   | <input type="checkbox"/> direct plug-in                  | <input type="checkbox"/> stationary              | <input type="checkbox"/> for building-in       |
|   | <input type="checkbox"/> wall/ceiling-mounted            | <input type="checkbox"/> SRME/rack-mounted       |  |
|   | <input type="checkbox"/> other:                          |  |  |
| <b>Overvoltage category (OVC)</b> .....                     | <input checked="" type="checkbox"/> OVC I                | <input type="checkbox"/> OVC II                  | <input type="checkbox"/> OVC III               |
|   | <input type="checkbox"/> OVC IV                          | <input type="checkbox"/> other:                  |  |
| <b>Class of equipment</b> .....                             | <input type="checkbox"/> Class I                         | <input type="checkbox"/> Class II                | <input checked="" type="checkbox"/> Class III  |
|   | <input type="checkbox"/> Not classified                  | <input type="checkbox"/>                         |  |
| <b>Special installation location</b> .....                  | <input checked="" type="checkbox"/> N/A                  | <input type="checkbox"/> restricted access area  |  |
|   | <input type="checkbox"/> outdoor location                | <input type="checkbox"/>                         |  |
| <b>Pollution degree (PD)</b> .....                          | <input type="checkbox"/> PD 1                            | <input checked="" type="checkbox"/> PD 2         | <input type="checkbox"/> PD 3                  |
| <b>Manufacturer's specified T<sub>ma</sub></b> .....        | 50 °C  | <input type="checkbox"/> Outdoor: minimum        | °C   |
| <b>IP protection class</b> .....                            | <input checked="" type="checkbox"/> IPX0                 | <input type="checkbox"/> IP__                    |  |
| <b>Power systems</b> .....                                  | <input type="checkbox"/> TN                              | <input type="checkbox"/> TT                      | <input type="checkbox"/> IT - V <sub>L-L</sub> |
|   | <input checked="" type="checkbox"/> not AC mains         |  |  |
| <b>Altitude during operation (m)</b> .....                  | <input type="checkbox"/> 2000 m or less                  | <input checked="" type="checkbox"/> 3000 m       |  |
| <b>Altitude of test laboratory (m)</b> .....                | <input checked="" type="checkbox"/> 2000 m or less       | <input type="checkbox"/> m                       |  |
| <b>Mass of equipment (kg)</b> .....                         | 0.162kg (max)  |  |  |

|   |   |
|---|---|
| <b>Possible test case verdicts:</b>   |   |
| - 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)  |   |
| <b>Testing:</b>   |   |
| Date of receipt of test item .....: June 2 <sup>nd</sup> , 2021   |   |
| Date (s) of performance of tests .....: June 21 <sup>st</sup> - 25 <sup>th</sup> , 2021   |   |
| <b>General remarks:</b>   |   |
| "(See Enclosure #)" refers to additional information appended to the report.<br>"(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.   |   |
| <b>Manufacturer's Declaration per sub-clause 4.2.5 of IECCE 02:</b>   |   |
| 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<br><input checked="" type="checkbox"/> Not applicable  |
| <b>When differences exist; they shall be identified in the General product information section.</b>   |   |
| <b>Name and address of factory (ies) .....</b>  | 1) Socket Mobile, Inc.<br>39700 Eureka Drive, Newark, CA 94560, USA<br><br>2) AlphaEMS Corp.<br>44193 S. Grimmer Blvd., Fremont, CA 94538 USA |

**General product information:**

**SCKT201102-10, June 25<sup>th</sup>, 2021:** Update CDF to add scan engine SE4107 as an alternate to SE2707 for S740 and D740 scanners. Input test performed to show similarity to previous models. No additional testing was necessary. Remove EOL Models (CHS 7xx).

**SCKT201102-09, November 2<sup>nd</sup>, 2020:** New EN 62368-1 test report for the following:

- Update existing EN 60950-1 test report to EN 62368-1 3<sup>rd</sup> Ed.
- Add new models D745 and D755.
- Add alternate Scan engine for model D760 (SE4720)

Product is a handheld barcode scanner. Device is considered Class III, powered by internal batteries and/or recharged using external 5Vdc source (Computer host, or external adapter). All models are similar except for the type of rechargeable battery powering the device and the type of scan engine. The device interfaces wirelessly with computer host, phones, or tablets using Bluetooth.

Models S760 and S790 are new model variants which are being added without test. These models use the same circuitry as previous S7xx models and similar scan engines evaluated previously.

|      | Rechargeable Battery Type  | Scan Engine              | Type  |
|------|----------------------------|--------------------------|---|
| S700 | Two NIMH, AA Cell, 2000mAh | SE655                    | LED, Class 1, 630nm, IEC/EN 62471 (Exempt Group).               |
| S700 | Two NIMH, AA Cell, 2000mAh | Marson MT780 (alternate) | LED, 625nm Visible Red, IEC/EN 62471 (Exempt Group).            |
| S730 | Two NIMH, AA Cell, 2000mAh | SE965HP                  | Laser, Class 2 Laser, 650nm, IEC/EN 60825-1                     |
| S740 | Two NIMH, AA Cell, 2000mAh | SE2707 or SE4107         | LED, IEC/EN 62471 (Exempt Group)                                |
| S760 | Two NIMH, AA Cell, 2000mAh | SE4710                   | LED, 660nm, IEC/EN 62471 (Exempt Group)                         |
| S760 | Two NIMH, AA Cell, 2000mAh | SE4720 (Alternate)       | Red LED 610nm (AIM), 660nm (illum) IEC/EN 62471 (Exempt Group). |
| S790 | Two NIMH, AA Cell, 2000mAh | SE4750DP                 | Laser, Class 2, 655nm, IEC/EN 60825-1                           |
| D700 | Single Li-Po Cell 3.7V     | SE655 Series             | LED, Class 1, 630nm, IEC/EN 62471 (Exempt Group).               |
| D730 | Single Li-Po Cell 3.7V     | SE965HP                  | Laser, Class 2 Laser, 650nm, IEC/EN 60825-1                     |
| D740 | Single Li-Po Cell 3.7V     | SE2707 or SE4107         | LED, IEC/EN 62471 (Exempt Group)                                |
| D745 | Single Li-Po Cell 3.7V     | SE2707                   | LED, 610nm (AIM), 660nm (illum), IEC/EN 62471 (Exempt Group).   |
| D750 | Single Li-Po Cell 3.7V     | EA31 Series              | LED, 617nm (Red AIM) IEC/EN 62471 (Exempt Group).               |
| D755 | Single Li-Po Cell 3.7V     | SE4720                   | LED, 525nm, Green AIM IEC/EN 62471 (Exempt Group).              |
| D760 | Single Li-Po Cell 3.7V     | SE4710                   | LED, 660nm, IEC/EN 62471 (Exempt Group)                         |
| D760 | Single Li-Po Cell 3.7V     | SE4720 (Alternate)       | Red LED 610nm (AIM), 660nm (illum) IEC/EN 62471 (Exempt Group). |
| D790 | Single Li-Po Cell 3.7V     | SE4750DP                 | Laser, Class 2, 655nm, IEC/EN 60825-1                           |
| D600 | Single Li-Po Cell 3.7V     | None                     | NFC (non-optical) type reader                                   |

**SCKT160415-08: June 2<sup>nd</sup>, 2020.** Update report to add alternate Lithium-Ion battery for D7xx models.

**SCKT160415-07: September 19<sup>th</sup>, 2018.** Update report to add charging docks/cradles part numbers.

**SCKT160415-06: August 10<sup>th</sup>, 2018.** Update report to add new models D760, D790. Models are similar except for the type of rechargeable batteries, and scan engine. Adding alternate Lithium-Ion Battery. See details of all models covered in this report in the table below:

**SCKT160415-05:** Update report to add new S7xx Series models: S700, S730, S740

**SCKT160415-04: March 23<sup>rd</sup>, 2017.** Update report to add additional CHS 7Ci, 7Di, 7Mi, and 7Pi models. Models are similar except for the type of rechargeable batteries, and scan engine. See details of all models covered in this report below:

**SCKT160415-03: February 22<sup>nd</sup>, 2017.** Update report to add model D600, CHS 7Qi, and CHS 7Xi. Model D600 is identical to the D7xx series, except that it scans RFID tags electronically, rather than using an optical scanner. Model D600 uses the same battery as the D7xx series. Models CHS 7Qi, and CHS 7Xi are similar to previous models. They use the EA11 imager.

**SCKT160415-02: August 8<sup>st</sup>, 2016.** Update report to add model D730. D730 is similar to previous models, except for the use of a



class 2 laser scan engine. Scan engine has been separately certified and Socket Mobile does not modify it in any way. Additionally, adding new Cipher SM1 LED based scan engine for other models.

**Class 2 Laser Module**

D730, standard enclosure, Imager (Class 2 Laser)

**Original report SCKT160415-01**

The D7xx Series handheld barcode scanners are used to interface wirelessly with phones, tablets and computers via Bluetooth.

The handheld scanner is powered by a single internal rechargeable 1400mAh LI-ON battery (ICR18500). The battery cannot exceed 15VA output and is considered a Limited Power Source (LPS). The product is not provided with a fire enclosure in compliance with this standard.

To charge the internal battery, the product may receive DC5V from either of two ways.

1) Power is provided to the device using a USB cable where DC5V is provided from wither an external certified power adapter or host computer. The USB cable is connected directly to the USB Type-C connector.

2) The external 5Vdc power is provided using an external power adapter which is connected to an external charging cradle. In this mode, power is provided to the device by placing the Handheld scanner into the charging cradle where power is connected via two charging pins which make contact with the device.

**D7xx Scanner Differences:** All models are the same with the exception of the scanner engine.

**Class 1 LED Modules**

D700, standard enclosure, Linear Imager, (Class 1 LED),

D750, standard enclosure, Omnidirectional imager, (Class 1 LED)

**Battery Charging:**

There are several layers of protection against charging / discharging of the internal battery.

- 1) Li-Ion battery charger IC LTC4066 located in the D7xx circuit board monitors and controls charging of the internal battery. It includes the use of an NTC which stops charging if the battery temp exceeds 50°C.
- 2) Li-Ion Battery is UL recognized to UL1642. It is additionally provided with Protection Control Module (PCM). The PCM module stops charging if the battery reaches or exceeds 4.2V. The PCM module stops output if the voltage drops below 3.0Vdc.
- 3) PTC's are located in the Input circuit, and additionally at the battery connection. The PTC is rated 0.75A hold, 1.5A (trip). Under any single fault condition, the maximum charge current into the battery would be 1.5A max.

**Technical Considerations:**

- The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C.
- The signal interfaces comply with the limits of Limited Power Source (LPS) according to Annex Q.
- The operator is not intended to have access internal to the equipment.
- This device has been evaluated for use up to altitudes of 3000m.

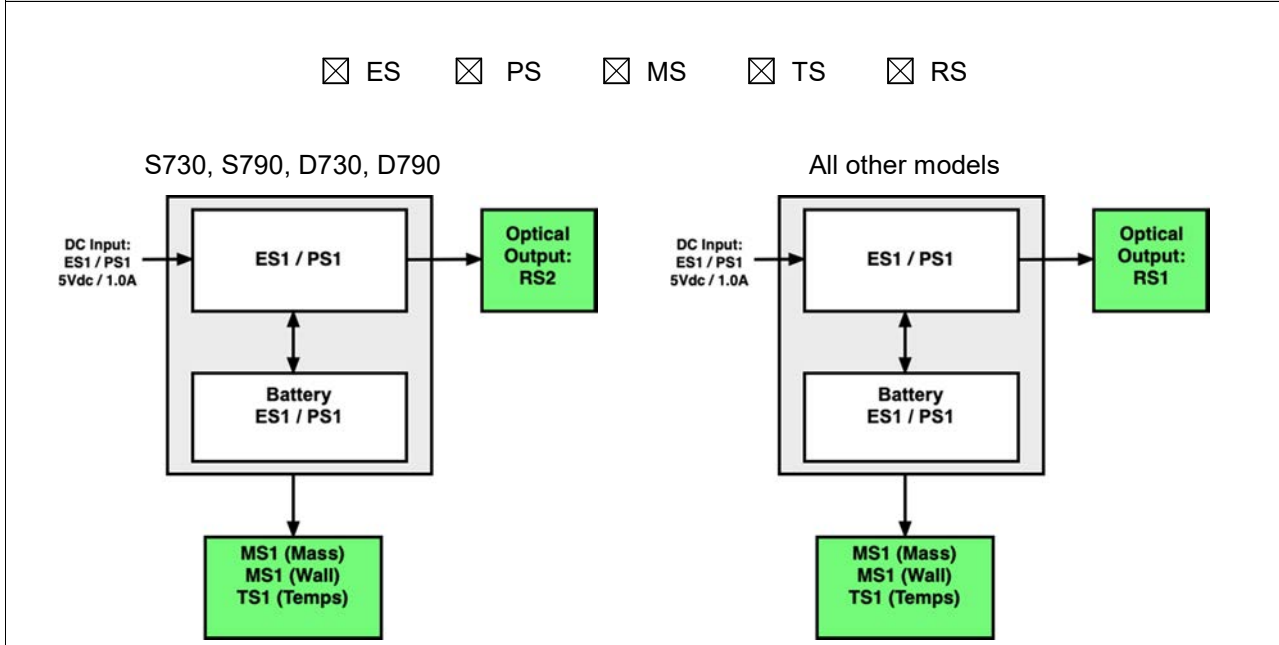
| <b>OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS</b>          |                                       |  |  |                   |
|---|---------------------------------------|--|--|-------------------|
| <b>Clause</b>   | <b>Possible Hazard</b>                |  |  |                   |
| 5   | Electrically-caused injury            |  |  |                   |
| Class and Energy Source<br>(e.g. ES3: Primary circuit)    | Body Part<br>(e.g. Ordinary)          | Safeguards   |  |                   |
|   |                                       | B  | S  | R                 |
| ES1: DC Input and all circuitry                           | Ordinary                              | --   | --   | --                |
| 6   | Electrically-caused fire              |  |  |                   |
| Class and Energy Source<br>(e.g. PS2: 100 Watt circuit)   | Material part<br>(e.g. Printed board) | Safeguards   |  |                   |
|   |                                       | B  | 1 <sup>st</sup> S  | 2 <sup>nd</sup> S |
| PS1: DC Input (<15W)                                      | PWB                                   | Certified Components   | --   | --                |
| PS1: Battery output                                       | Battery / PEC                         | Certified Components   | --   | --                |
| 7   | Injury caused by hazardous substances |  |  |                   |
| Class and Energy Source<br>(e.g. Ozone)                   | Body Part<br>(e.g., Skilled)          | Safeguards   |  |                   |
|   |                                       | B  | S  | R                 |
| <b>Models: S7xx series</b>                                |                                       |  |  |                   |
| PS1, 2000mAh AA NIMH Battery                              | Ordinary                              | Certified Component  | Limited materials due to size, and certified battery used and protected according to its certification | --                |
| PS1, 2000mAh AA NIMH Battery                              | Instructed and skilled                | Replacement and disposal are detailed properly in the servicing instructions | --   | --                |
| <b>Models: All D7xx series</b>                            |                                       |  |  |                   |
| PS1: 3.7V, Li-Po Battery, 1400-1500mAh                    | Ordinary                              | Enclosure prevents access<br>Certified Component                             | Limited materials due to size, and certified battery used and protected according to its certification |                   |
| PS1: 3.7V, Li-Po Battery, 1400-1500mAh                    | Instructed and skilled                | Replacement and disposal are detailed properly in the servicing instructions | --   | --                |
| 8   | Mechanically-caused injury            |  |  |                   |
| Class and Energy Source<br>(e.g. MS3: Plastic fan blades) | Body Part<br>(e.g. Ordinary)          | Safeguards   |  |                   |
|   |                                       | B  | S  | R                 |
| MS1: Equipment Mass <7kg                                  | Ordinary (Stability)                  | Product weighs <1kg  | --   | --                |
| MS1: Sharp edges and corners                              | Ordinary                              | Designed to comply with suitable rounding                                    | --   | --                |
| MS1: Equipment mass ≤ 1 kg mounted ≤ 2 m                  | Ordinary                              | Product and optional cradle mount weighs <1kg                                | --   | --                |
| 9   | Thermal burn                          |  |  |                   |
| Class and Energy Source<br>(e.g. TS1: Keyboard caps)      | Body Part<br>(e.g., Ordinary)         | Safeguards   |  |                   |
|   |                                       | B  | S  | R                 |

| TS1: External accessible parts (metal enclosure)   | Ordinary                      | --  | -- | -- |
|--|-------------------------------|---|----|----|
| <b>10</b>  | <b>Radiation</b>              |   |    |    |
| Class and Energy Source<br>(e.g. RS1: PMP sound output)  | Body Part<br>(e.g., Ordinary) | Safeguards  |    |    |
|  |                               | B   | S  | R  |
| RS2 Laser:<br>Models S730, D730, D790 only   | Ordinary                      | Warnings provided in manual and on product.<br><br>Laser modules certified Class 2 under IEC60825-1 | -- | -- |
| RS1 LED:<br>All other models   | Ordinary                      | IEC / EN 62471 Exempt Risk Group  | -- | -- |
| RS1: LED indicators  | Ordinary                      | LEDs selected are standard indicating types only  | -- | -- |
| Supplementary Information:<br>"B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard |                               |   |    |    |

ENERGY SOURCE DIAGRAM

**Optional.** Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



| IEC 62368-1 |  |   |          |
|-------------|--|---|----------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict  |
| <b>4</b>    | <b>GENERAL REQUIREMENTS</b>                                  |   | <b>P</b> |
| 4.1.1       | Acceptance of materials, components and subassemblies        | Equipment incorporates certified components to IEC standards and other relevant component standards as applicable.  | P        |
| 4.1.2       | Use of components  | <p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of the standard.</p> <p>Components which are not Certified are used in accordance with their ratings and they comply with applicable parts of IEC 62368-1 and applicable component standards.</p> <p>Components, for which no relevant IEC- standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1 and and IEC 60950-1.</p> | P        |
| 4.1.3       | Equipment design and construction                            | No parts of equipment which could cause injury.   | P        |
| 4.1.4       | Specified ambient temperature for outdoor use (°C)<br>.....: |   | N/A      |
| 4.1.5       | Constructions and components not specifically covered        | None used   | N/A      |
| 4.1.8       | Liquids and liquid filled components (LFC)                   | None used (See G.15)  | N/A      |
| 4.1.15      | Markings and instructions                                    | (See Annex F)   | P        |
| 4.4.3       | Safeguard robustness   |   | P        |
| 4.4.3.1     | General  |   | P        |
| 4.4.3.2     | Steady force tests   | No internal hazards   | P        |
| 4.4.3.3     | Drop tests   | Subjected to drop tests of 1000mm<br>(See Annex T.7)  | P        |
| 4.4.3.4     | Impact tests   | No internal hazards. 4.4.3.3 above used for handheld equipment.   | N/A      |
| 4.4.3.5     | Internal accessible safeguard tests                          | No internal solid safeguards  | N/A      |
| 4.4.3.6     | Glass impact tests   | No enclosure safeguards   | N/A      |

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| Clause      | Requirement + Test  | Result - Remark   | Verdict |
|             |   | made of glass<br>(See Clause T.9, Annex U)                      |         |
| 4.4.3.7     | Glass fixation tests  | See above   | N/A     |
|             | Glass impact test (1J)  | See above   | N/A     |
|             | Push/pull test (10 N)   | See above   | N/A     |
| 4.4.3.8     | Thermoplastic material tests                                    | (See Annex T.8)   | P       |
| 4.4.3.9     | Air comprising a safeguard                                      |   | N/A     |
| 4.4.3.10    | Accessibility, glass, safeguard effectiveness                   |   | N/A     |
| 4.4.4       | Displacement of a safeguard by an insulating liquid             |   | N/A     |
| 4.4.5       | Safety interlocks   | None provided nor required<br>(See Annex K)                     | N/A     |
| <b>4.5</b>  | <b>Explosion</b>  |   | P       |
| 4.5.1       | General   |   | P       |
| 4.5.2       | No explosion during normal/abnormal operating condition         |   | P       |
|             | No harm by explosion during single fault conditions             |   | N/A     |
| <b>4.6</b>  | <b>Fixing of conductors</b>                                     |   | P       |
|             | Fix conductors not to defeat a safeguard                        | Termination of conductors provided with a reliable fixing means | P       |
|             | Compliance is checked by test..... :                            |   | N/A     |
| <b>4.7</b>  | <b>Equipment for direct insertion into mains socket-outlets</b> |   | N/A     |
| 4.7.2       | Mains plug part complies with relevant standard .. :            | Not direct plug-in equipment.                                   | N/A     |
| 4.7.3       | Torque (Nm) .. :  | See above   | N/A     |
| <b>4.8</b>  | <b>Equipment containing coin/button cell batteries</b>          |   | N/A     |
| 4.8.1       | General   | No coin / button cell type batteries                            | N/A     |
| 4.8.2       | Instructional safeguard .. :                                    | See above   | N/A     |
| 4.8.3       | Battery compartment door/cover construction                     | See above   | N/A     |
|             | Open torque test  | See above   | N/A     |
| 4.8.4.2     | Stress relief test  | See above   | N/A     |
| 4.8.4.3     | Battery replacement test  | See above   | N/A     |
| 4.8.4.4     | Drop test   | See above   | N/A     |
| 4.8.4.5     | Impact test   | See above   | N/A     |
| 4.8.4.6     | Crush test  | See above   | N/A     |
| 4.8.5       | Compliance  | See above   | N/A     |
|             | 30N force test with test probe                                  | See above   | N/A     |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict |
|             | 20N force test with test hook  | See above  | N/A     |
| <b>4.9</b>  | <b>Likelihood of fire or shock due to entry of conductive object</b> |  | N/A     |
| <b>4.10</b> | <b>Component requirements</b>  |  | N/A     |
| 4.10.1      | Disconnect Device  | Class III device with no direct connection to Mains<br><br>(See Annex L)                   | N/A     |
| 4.10.2      | Switches and relays  | No switches or relays are located in PS3 circuits or used as a safeguard.<br>(See Annex G) | N/A     |

|            |   |  |     |
|------------|---|--|-----|
| <b>5</b>   | <b>ELECTRICALLY CAUSED INJURY</b>   |  | P   |
| <b>5.2</b> | <b>Classification and limits of electrical energy sources</b>                         |  | P   |
| 5.2.2      | ES1, ES2 and ES3 limits   | Battery operation (2.75 to 4.3Vdc) at ES1/SELV limits.<br><br>DC input when charging is (5Vdc) at ES1/SELV limits.                                       | P   |
| 5.2.2.2    | Steady-state voltage and current limits .....   | (See appended table 5.2)   | P   |
| 5.2.2.3    | Capacitance limits .....  | Class III, DC input. No charged capacitor electrical energy source. (See appended table 5.2)   | N/A |
| 5.2.2.4    | Single pulse limits .....   | No such single pulses<br>(See appended table 5.2)  | N/A |
| 5.2.2.5    | Limits for repetitive pulses .....  | No such repetitive pulses<br>(See appended table 5.2)  | N/A |
| 5.2.2.6    | Ringling signals  | No ringling signals generated<br>(See Annex H)   | N/A |
| 5.2.2.7    | Audio signals   | No audio signals generated<br>(See Clause E.1)   | N/A |
| <b>5.3</b> | <b>Protection against electrical energy sources</b>                                   |  | P   |
| 5.3.1      | General Requirements for accessible parts to ordinary, instructed and skilled persons | ES1 circuits only  | N/A |
| 5.3.1 a)   | Accessible ES1/ES2 derived from ES2/ES3 circuits                                      | Separated by REINFORCED INSULATION as part of external DC power source, where ES1 limits are maintained under SINGLE FAULT. Not part of this evaluation. | N/A |
| 5.3.1 b)   | Skilled persons not unintentional contact ES3 bare conductors                         | No ES3 circuits  | N/A |

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| Clause      | Requirement + Test  | Result - Remark  | Verdict  |
| 5.3.2.1     | Accessibility to electrical energy sources and safeguards                   | No parts at ES2 or ES3 levels.   | N/A      |
|             | Accessibility to outdoor equipment bare parts                               |  | N/A      |
| 5.3.2.2     | Contact requirements  | ES1 circuits only  | N/A      |
|             | Test with test probe from Annex V   |  | -        |
| 5.3.2.2 a)  | Air gap – electric strength test potential (V) .....                        | See above  | N/A      |
| 5.3.2.2 b)  | Air gap – distance (mm) .....   | See above  | N/A      |
| 5.3.2.3     | Compliance  | See above  | N/A      |
| 5.3.2.4     | Terminals for connecting stripped wire                                      | No terminals   | N/A      |
| <b>5.4</b>  | <b>Insulation materials and requirements</b>                                |  | <b>P</b> |
| 5.4.1.2     | Properties of insulating material   | Functional insulation only   | N/A      |
| 5.4.1.3     | Material is non-hygroscopic   | No non-hygroscopic material used.  | N/A      |
| 5.4.1.4     | Maximum operating temperature for insulating materials .....                | See above  | N/A      |
| 5.4.1.5     | Pollution degrees .....   | 2  | P        |
| 5.4.1.5.2   | Test for pollution degree 1 environment and for an insulating compound      | Pollution degree 2 applied   | N/A      |
| 5.4.1.5.3   | Thermal cycling test  | See above  | N/A      |
| 5.4.1.6     | Insulation in transformers with varying dimensions                          | Considered   | N/A      |
| 5.4.1.7     | Insulation in circuits generating starting pulses                           | No such circuits   | N/A      |
| 5.4.1.8     | Determination of working voltage .....                                      | DC 5V max<br>(See appended table 5.4.1.8)  | P        |
| 5.4.1.9     | Insulating surfaces   |  | N/A      |
| 5.4.1.10    | Thermoplastic parts on which conductive metallic parts are directly mounted |  | N/A      |
| 5.4.1.10.2  | Vicat test.....   | (See appended table 5.4.1.10.2)  | N/A      |
| 5.4.1.10.3  | Ball pressure test .....  | (See appended table 5.4.1.10.3)  | N/A      |
| 5.4.2       | Clearances  | Functional insulation only   | P        |
| 5.4.2.1     | General requirements  | Unit is powered by internal 3.7Vdc battery and recharged using 5Vdc from external host or adapter. Class III input only with no direct connection to AC Mains. | P        |
|             | Clearances in circuits connected to AC Mains, Alternative method            | (See Annex X)  | N/A      |



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| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| 5.4.2.2     | Procedure 1 for determining clearance   |  | N/A     |
|             | Temporary overvoltage .....   |  | —       |
| 5.4.2.3     | Procedure 2 for determining clearance   |  | N/A     |
| 5.4.2.3.2.2 | a.c. mains transient voltage .....  | Class III with no direct connection to AC Mains.                                       | —       |
| 5.4.2.3.2.3 | d.c. mains transient voltage .....  | No DC Mains  | —       |
| 5.4.2.3.2.4 | External circuit transient voltage.....                                       | N/A  | —       |
| 5.4.2.3.2.5 | Transient voltage determined by measurement .....                             |  | —       |
| 5.4.2.4     | Determining the adequacy of a clearance using an electric strength test ..... | (See appended table 5.4.2)   | N/A     |
| 5.4.2.5     | Multiplication factors for clearances and test voltages .....                 | 1.14 for up to 3000m   | N/A     |
| 5.4.2.6     | Clearance measurement .....   | (See appended table 5.4.2)   | N/A     |
| 5.4.3       | Creepage distances  | Functional insulation only   | P       |
| 5.4.3.1     | General   | Battery powered or Class III device powered by ES1 with no direct connection to mains. | P       |
| 5.4.3.3     | Material group .....  | Material group III assumed as worst case   | —       |
| 5.4.3.4     | Creepage distances measurement .....  | (See appended table 5.4.3)   | N/A     |
| 5.4.4       | Solid insulation  |  | N/A     |
| 5.4.4.1     | General requirements  |  | N/A     |
| 5.4.4.2     | Minimum distance through insulation .....                                     | (See appended table 5.4.4.2)   | N/A     |
| 5.4.4.3     | Insulating compound forming solid insulation                                  | None used  | N/A     |
| 5.4.4.4     | Solid insulation in semiconductor devices                                     |  | N/A     |
| 5.4.4.5     | Insulating compound forming cemented joints                                   | No such construction   | N/A     |
| 5.4.4.6     | Thin sheet material   |  | N/A     |
| 5.4.4.6.1   | General requirements  |  | N/A     |
| 5.4.4.6.2   | Separable thin sheet material   |  | N/A     |
|             | Number of layers (pcs) .....  |  | N/A     |
| 5.4.4.6.3   | Non-separable thin sheet material   |  | N/A     |
|             | Number of layers (pcs) .....  |  | N/A     |
| 5.4.4.6.4   | Standard test procedure for non-separable thin sheet material .....           | (See appended table 5.4.9)   | N/A     |
| 5.4.4.6.5   | Mandrel test  |  | N/A     |
| 5.4.4.7     | Solid insulation in wound components  |  | N/A     |

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| Clause      | Requirement + Test   | Result - Remark                         | Verdict |
| 5.4.4.9     | Solid insulation at frequencies >30 kHz, $E_P$ , $K_R$ , $d$ , $V_{PW}$ (V)..... : | (See appended Table 5.4.4.9)            | N/A     |
|             | Alternative by electric strength test, tested voltage (V), $K_R$ ..... :           | (See appended Tables 5.4.4.9 and 5.4.9) | N/A     |
| 5.4.5       | Antenna terminal insulation  | No such terminal                        | N/A     |
| 5.4.5.1     | General  |   | N/A     |
| 5.4.5.2     | Voltage surge test   |   | N/A     |
| 5.4.5.3     | Insulation resistance ( $M\Omega$ )..... :   |   | N/A     |
|             | Electric strength test ..... :   | (See appended table 5.4.9)              | N/A     |
| 5.4.6       | Insulation of internal wire as part of supplementary safeguard                     |   | N/A     |
| 5.4.7       | Tests for semiconductor components and for cemented joints                         | None                                    | N/A     |
| 5.4.8       | Humidity conditioning  |   | N/A     |
|             | Relative humidity (%), temperature ( $^{\circ}C$ ), duration (h) ..... :           |   | —       |
| 5.4.9       | Electric strength test   |   | N/A     |
| 5.4.9.1     | Test procedure for type test of solid insulation..... :                            | (See appended table 5.4.9)              | N/A     |
| 5.4.9.2     | Test procedure for routine test  |   | N/A     |
| 5.4.10      | Safeguards against transient voltages from external circuits                       | No external circuits                    | N/A     |
| 5.4.10.1    | Parts and circuits separated from external circuits                                |   | N/A     |
| 5.4.10.2    | Test methods   | See above                               | N/A     |
| 5.4.10.2.1  | General  |   | N/A     |
| 5.4.10.2.2  | Impulse test ..... :   | (See appended table 5.4.9)              | N/A     |
| 5.4.10.2.3  | Steady-state test..... :   | (See appended table 5.4.9)              | N/A     |
| 5.4.10.3    | Verification for insulation breakdown for impulse test ..... :                     |   | N/A     |
| 5.4.11      | Separation between external circuits and earth                                     |   | N/A     |
| 5.4.11.1    | Exceptions to separation between external circuits and earth                       |   | N/A     |
| 5.4.11.2    | Requirements   |   | N/A     |
|             | SPDs bridge separation between external circuit and earth                          |   | N/A     |
|             | Rated operating voltage $U_{op}$ (V)..... :  |   | —       |
|             | Nominal voltage $U_{peak}$ (V)..... :  |   | —       |
|             | Max increase due to variation $\Delta U_{sp}$ ..... :                              |   | —       |

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| Clause      | Requirement + Test   | Result - Remark   | Verdict |
|             | Max increase due to ageing $\Delta U_{sa}$ .....   |   | —       |
| 5.4.11.3    | Test method and compliance .....   | (See appended table 5.4.9)  | N/A     |
| 5.4.12      | Insulating liquid  | None  | N/A     |
| 5.4.12.1    | General requirements   |   | N/A     |
| 5.4.12.2    | Electric strength of an insulating liquid .....  | (See appended table 5.4.9)  | N/A     |
| 5.4.12.3    | Compatibility of an insulating liquid .....  | (See appended table 5.4.9)  | N/A     |
| 5.4.12.4    | Container for insulating liquid .....  |   | N/A     |
| <b>5.5</b>  | <b>Components as safeguards</b>  |   | N/A     |
| 5.5.1       | General  |   | N/A     |
| 5.5.2       | Capacitors and RC units  |   | N/A     |
| 5.5.2.1     | General requirement  |   | N/A     |
| 5.5.2.2     | Safeguards against capacitor discharge after disconnection of a connector.....           | (See appended table 5.5.2.2)  | N/A     |
| 5.5.3       | Transformers   | No safety related transformers  | N/A     |
| 5.5.4       | Optocouplers   | No safety related optocouplers.<br>(See sub-clause 5.4 or Clause G.12)                                  | N/A     |
| 5.5.5       | Relays   | (See sub-clause 5.4)  | N/A     |
| 5.5.6       | Resistors  | No safety related resistors<br>(See Clause G.10)  | N/A     |
| 5.5.7       | SPDs   | No SPDs provided.<br>(See Clause G.8)   | N/A     |
| 5.5.8       | Insulation between the mains and an external circuit consisting of a coaxial cable ..... | No such cable connections   | N/A     |
| 5.5.9       | Safeguards for socket-outlets in outdoor equipment                                       | No socket-outlets, nor outdoor equipment  | N/A     |
|             | RCD rated residual operating current (mA).....   |   | —       |
| <b>5.6</b>  | <b>Protective conductor</b>  |   | N/A     |
| 5.6.2       | Requirement for protective conductors  |   | N/A     |
| <b>5.6</b>  | <b>Protective conductor</b>  | Low voltage battery powered or Class III where protective conductor not required.                       | N/A     |
| 5.6.2       | Requirement for protective conductors  |   | N/A     |
| 5.6.2.1     | General requirements   |   | N/A     |
| 5.6.2.2     | Colour of insulation   |   | N/A     |
| 5.6.3       | Requirement for protective earthing conductors   | Battery and/or Class III device powered by ES1/SELV where no protective earthing conductor is required. | N/A     |

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| Clause      | Requirement + Test   | Result - Remark   | Verdict |
|             | Protective earthing conductor size (mm <sup>2</sup> ) ..... :                    |   | —       |
|             | Protective earthing conductor serving as a reinforced safeguard                  |   | N/A     |
|             | Protective earthing conductor serving as a double safeguard                      |   | N/A     |
| 5.6.4       | Requirements for protective bonding conductors                                   |   | N/A     |
| 5.6.4.1     | Protective bonding conductors  |   | N/A     |
|             | Protective bonding conductor size (mm <sup>2</sup> ). ..... :                    |   | —       |
| 5.6.4.2     | Protective current rating (A)..... :   |   | N/A     |
| 5.6.5       | Terminals for protective conductors  |   | N/A     |
| 5.6.5.1     | Terminal size for connecting protective earthing conductors (mm)..... :          |   | N/A     |
|             | Terminal size for connecting protective bonding conductors (mm) ..... :          |   | N/A     |
| 5.6.5.2     | Corrosion  |   | N/A     |
| 5.6.6       | Resistance of the protective bonding system                                      |   | N/A     |
| 5.6.6.1     | Requirements   |   | N/A     |
| 5.6.6.2     | Test Method..... :   |   | N/A     |
| 5.6.6.3     | Resistance ( $\Omega$ ) or voltage drop..... :                                   | (See appended table 5.6.6)  | N/A     |
| 5.6.7       | Reliable connection of a protective earthing conductor                           |   | N/A     |
| 5.6.8       | Functional earthing  | None provided   | N/A     |
|             | Conductor size (mm <sup>2</sup> ). ..... :                                       |   | N/A     |
|             | Class II with functional earthing marking ..... :                                |   | N/A     |
|             | Appliance inlet cl & cr (mm)..... :  |   | N/A     |
| <b>5.7</b>  | <b>Prospective touch voltage, touch current and protective conductor current</b> |   | N/A     |
| 5.7.2       | Measuring devices and networks   |   | N/A     |
| 5.7.2.1     | Measurement of touch current   | Battery operated and/or Class III low voltage device, powered by ES1/SELV where touch current measurement not required. | N/A     |
| 5.7.2.2     | Measurement of voltage   |   | N/A     |
| 5.7.3       | Equipment set-up, supply connections and earth connections                       |   | N/A     |
| 5.7.4       | Unearthed accessible parts ..... :   | (See appended table 5.7.4)  | N/A     |
| 5.7.5       | Earthed accessible conductive parts ..... :                                      | (See appended table 5.7.5)  | N/A     |

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| Clause      | Requirement + Test  | Result - Remark                            | Verdict |
| 5.7.6       | Requirements when touch current exceeds ES2 limits                                  |  | N/A     |
|             | Protective conductor current (mA)..... :  |  | N/A     |
|             | Instructional Safeguard..... :  |  | N/A     |
| 5.7.7       | Prospective touch voltage and touch current associated with external circuits       |  | N/A     |
| 5.7.7.1     | Touch current from coaxial cables   | No coaxial cable connections.              | N/A     |
| 5.7.7.2     | Prospective touch voltage and touch current associated with paired conductor cables |  | N/A     |
| 5.7.8       | Summation of touch currents from external circuits                                  |  | N/A     |
|             | a) Equipment connected to earthed external circuits, current (mA) .....             |  | N/A     |
|             | b) Equipment connected to unearthed external circuits, current (mA) .....           |  | N/A     |
| <b>5.8</b>  | <b>Backfeed safeguard in battery backed up supplies</b>                             |  | N/A     |
|             | Mains terminal ES .....   | No such supply<br>(See appended table 5.8) | N/A     |
|             | Air gap (mm) .....  |  | N/A     |

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| Clause      | Requirement + Test   | Result - Remark   | Verdict    |
| <b>6</b>    | <b>ELECTRICALLY- CAUSED FIRE</b>   |   | <b>P</b>   |
| <b>6.2</b>  | <b>Classification of PS and PIS</b>  |   | <b>P</b>   |
| 6.2.2       | Power source circuit classifications .....   | Input is considered as PS1. Additionally, Input PTC on PWB assures all circuits are at PS1 levels.<br><br>No further test consideration necessary. (See appended table 6.2.2)   | <b>P</b>   |
| 6.2.3       | Classification of potential ignition sources   |   | <b>P</b>   |
| 6.2.3.1     | Arcing PIS .....   | All internal voltages are less than 10Vdc.<br><br>(See appended table 6.2.3.1)  | <b>N/A</b> |
| 6.2.3.2     | Resistive PIS .....  | PS1 circuits only<br><br>(See appended table 6.2.3.2)   | <b>N/A</b> |
| <b>6.3</b>  | <b>Safeguards against fire under normal operating and abnormal operating conditions</b>  |   | <b>P</b>   |
| 6.3.1       | No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... | No ignition occurred and all temperatures were well below 300C<br><br>(See appended table B.1.5 and B.3)  | <b>P</b>   |
|             | Combustible materials outside fire enclosure .....   |   | <b>P</b>   |
| <b>6.4</b>  | <b>Safeguards against fire under single fault conditions</b>   |   | <b>P</b>   |
| 6.4.1       | Safeguard method   | Both methods employed, reduce the likelihood of ignition and control fire spread  | <b>P</b>   |
| 6.4.2       | Reduction of the likelihood of ignition under single fault conditions in PS1 circuits  | No supplementary safeguards are provided nor required   | <b>P</b>   |
| 6.4.3       | Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits                                  | PS1 circuits only   | <b>P</b>   |
| 6.4.3.1     | Supplementary safeguards   | Less than 4000W available power. Power source is defined as PS1. Additional overcurrent protection (PTC) is provided as first component on PWB.<br><br>Components comply with relevant Standards as shown on critical parts list. | <b>P</b>   |
| 6.4.3.2     | Single Fault Conditions .....  | (See appended table B.4)  | <b>P</b>   |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict |
|             | Special conditions for temperature limited by fuse   | Not applied  | N/A     |
| 6.4.4       | Control of fire spread in PS1 circuits   | No safeguard required  | P       |
| 6.4.5       | Control of fire spread in PS2 circuits   | PS1 circuits only  | N/A     |
| 6.4.5.2     | Supplementary safeguards   | Printed boards are minimum V-1 or better. Components are certified or rated V-2 or better mounted on V-1 class material. | P       |
| 6.4.6       | Control of fire spread in PS3 circuits   | No PS3 Circuits  | N/A     |
| 6.4.7       | Separation of combustible materials from a PIS   | Separation not required to reduce likelihood of sustained flaming or spread of fire                                      | N/A     |
| 6.4.7.2     | Separation by distance   |  | N/A     |
| 6.4.7.3     | Separation by a fire barrier   |  | N/A     |
| 6.4.8       | Fire enclosures and fire barriers  |  | N/A     |
| 6.4.8.2     | Fire enclosure and fire barrier material properties  | Fire enclosure is provided, but not required.  | N/A     |
| 6.4.8.2.1   | Requirements for a fire barrier  |  | N/A     |
| 6.4.8.2.2   | Requirements for a fire enclosure  |  | N/A     |
| 6.4.8.3     | Constructional requirements for a fire enclosure and a fire barrier                                      |  | N/A     |
| 6.4.8.3.1   | Fire enclosure and fire barrier openings   |  | N/A     |
| 6.4.8.3.2   | Fire barrier dimensions  |  | N/A     |
| 6.4.8.3.3   | Top openings and properties  |  | N/A     |
|             | Openings dimensions (mm)..... :  | --   | N/A     |
| 6.4.8.3.4   | Bottom openings and properties   |  | N/A     |
|             | Openings dimensions (mm)..... :  | --   | N/A     |
|             | Flammability tests for the bottom of a fire enclosure  | (See Clause S.3)   | N/A     |
|             | Instructional Safeguard..... :   |  | N/A     |
| 6.4.8.3.5   | Side openings and properties   | No openings in the enclosure, no hazardous voltages inside the device.   | N/A     |
|             | Openings dimensions (mm)..... :  |  | N/A     |
| 6.4.8.3.6   | Integrity of a fire enclosure, condition met: a), b) or c)..... :  | No door or cover provided that can be opened by an ORDINARY PERSON   | N/A     |
| 6.4.8.4     | Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... : |  | N/A     |
| 6.4.9       | Flammability of insulating liquid..... :   | No insulating liquid   | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| <b>6.5</b>  | <b>Internal and external wiring</b>  |  | P       |
| 6.5.1       | General requirements   | Wires where provided are UL Recognized and /or certified to IEC60332 standards | P       |
| 6.5.2       | Requirements for interconnection to building wiring<br>..... :               |  | P       |
| 6.5.3       | Internal wiring size (mm <sup>2</sup> ) for socket-outlets..... :            | No socket-outlets  | N/A     |
| <b>6.6</b>  | <b>Safeguards against fire due to the connection to additional equipment</b> |  | N/A     |

|            |  |  |     |
|------------|--|--|-----|
| <b>7</b>   | <b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>                             |  | N/A |
| <b>7.2</b> | <b>Reduction of exposure to hazardous substances</b>                     |  | N/A |
| <b>7.3</b> | <b>Ozone exposure</b>  |  | N/A |
| <b>7.4</b> | <b>Use of personal safeguards or personal protective equipment (PPE)</b> |  | N/A |
|            | Personal safeguards and instructions ..... :                             |  | —   |
| <b>7.5</b> | <b>Use of instructional safeguards and instructions</b>                  |  | N/A |
|            | Instructional safeguard (ISO 7010) ..... :                               |  | —   |
| <b>7.6</b> | <b>Batteries and their protection circuits</b>                           |  | P   |

|            |   |   |     |
|------------|---|---|-----|
| <b>8</b>   | <b>MECHANICALLY-CAUSED INJURY</b>   |   | P   |
| <b>8.2</b> | <b>Mechanical energy source classifications</b>                             |   | P   |
| <b>8.3</b> | <b>Safeguards against mechanical energy sources</b>                         |   | P   |
| <b>8.4</b> | <b>Safeguards against parts with sharp edges and corners</b>                |   | P   |
| 8.4.1      | Safeguards  | Classifications per Table 35:<br>All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard (classified as MS1). | P   |
|            | Instructional Safeguard..... :  | None required   | N/A |
| 8.4.2      | Sharp edges or corners  | No sharp edges accessible   | P   |
| <b>8.5</b> | <b>Safeguards against moving parts</b>                                      |   | N/A |
| 8.5.1      | Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts     | No moving parts   | N/A |
|            | MS2 or MS3 part required to be accessible for the function of the equipment | None  | N/A |
|            | Moving MS3 parts only accessible to skilled person                          | None  | N/A |
| 8.5.2      | Instructional safeguard ..... :   | No moving parts   | N/A |



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| Clause      | Requirement + Test   | Result - Remark   | Verdict  |
| 8.5.4       | Special categories of equipment containing moving parts              |   | N/A      |
| 8.5.4.1     | General  |   | N/A      |
| 8.5.4.2     | Equipment containing work cells with MS3 parts                       | Equipment does not contain work cells and is of a size that is not entered by a person.   | N/A      |
| 8.5.4.2.1   | Protection of persons in the work cell                               | See above   | N/A      |
| 8.5.4.2.2   | Access protection override   | See above   | N/A      |
| 8.5.4.2.2.1 | Override system  | See above   | N/A      |
| 8.5.4.2.2.2 | Visual indicator   | See above   | N/A      |
| 8.5.4.2.3   | Emergency stop system  | See above   | N/A      |
|             | Maximum stopping distance from the point of activation (m).....:     | See above   | N/A      |
|             | Space between end point and nearest fixed mechanical part (mm).....: | See above   | N/A      |
| 8.5.4.2.4   | Endurance requirements   | See above   | N/A      |
|             | Mechanical system subjected to 100 000 cycles of operation           | See above   | N/A      |
|             | - Mechanical function check and visual inspection                    | See above   | N/A      |
|             | - Cable assembly .....   | See above   | N/A      |
| 8.5.4.3     | Equipment having electromechanical device for destruction of media   | See above   | N/A      |
| 8.5.4.3.1   | Equipment safeguards   | See above   | N/A      |
| 8.5.4.3.2   | Instructional safeguards against moving parts .....                  | See above   | N/A      |
| 8.5.4.3.3   | Disconnection from the supply  | See above   | N/A      |
| 8.5.4.3.4   | Cut type and test force (N).....:                                    | See above   | N/A      |
| 8.5.4.3.5   | Compliance   | See above   | N/A      |
| 8.5.5       | High pressure lamps  | No such lamps   | N/A      |
|             | Explosion test.....:   | See above   | N/A      |
| 8.5.5.3     | Glass particles dimensions (mm).....:                                | See above   | N/A      |
| <b>8.6</b>  | <b>Stability of equipment</b>  |   | <b>P</b> |
| 8.6.1       | General  | Equipment class is MS1 based on mass of all models being <7kg in Table 36. No stability requirements based on MS1 classification. | P        |
|             | Instructional safeguard .....  | Not a television set  | N/A      |
| 8.6.2       | Static stability   |   | N/A      |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict    |
| 8.6.2.2     | Static stability test .....                                  |  | N/A        |
| 8.6.2.3     | Downward force test  | Only required for floor standing equipment per Table 36  | N/A        |
| 8.6.3       | Relocation stability   | Only required for floor standing equipment per Table 36  | N/A        |
|             | Wheels diameter (mm) .....                                   | No wheels  | —          |
|             | Tilt test  | See above  | N/A        |
| 8.6.4       | Glass slide test   | No front mounted control or display per Table 36   | N/A        |
| 8.6.5       | Horizontal force test .....                                  | No front mounted control or display per Table 36   | N/A        |
| <b>8.7</b>  | <b>Equipment mounted to wall, ceiling or other structure</b> |  | <b>P</b>   |
| 8.7.1       | Mount means type .....                                       | Optional Wall mount charging cradle is classified as MS1 (Based on equipment mass <1kg and mounted <2m). | P          |
| 8.7.2       | Test methods   | No testing required based on mass <1kg (MS1)   | N/A        |
|             | Test 1, additional downwards force (N).....                  |  | N/A        |
|             | Test 2, number of attachment points and test force (N).....  |  | N/A        |
|             | Test 3 Nominal diameter (mm) and applied torque (Nm).....    |  | N/A        |
| <b>8.8</b>  | <b>Handles strength</b>                                      |  | <b>N/A</b> |
| 8.8.1       | General  | No handles   | N/A        |
| 8.8.2       | Handle strength test   |  | N/A        |
|             | Number of handles.....                                       |  | —          |
|             | Force applied (N) .....                                      |  | —          |
| <b>8.9</b>  | <b>Wheels or casters attachment requirements</b>             |  | <b>N/A</b> |
| 8.9.2       | Pull test  | No wheels or casters   | N/A        |
| <b>8.10</b> | <b>Carts, stands and similar carriers</b>                    |  | <b>N/A</b> |
| 8.10.1      | General  | Not a cart or stand  | N/A        |
| 8.10.2      | Marking and instructions .....                               |  | N/A        |
| 8.10.3      | Cart, stand or carrier loading test                          |  | N/A        |
|             | Loading force applied (N) .....                              |  | N/A        |
| 8.10.4      | Cart, stand or carrier impact test                           |  | N/A        |
| 8.10.5      | Mechanical stability   |  | N/A        |
|             | Force applied (N) .....                                      |  | —          |

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| Clause      | Requirement + Test  | Result - Remark | Verdict |
| 8.10.6      | Thermoplastic temperature stability                           |                 | N/A     |
| <b>8.11</b> | <b>Mounting means for slide-rail mounted equipment (SRME)</b> |                 | N/A     |
| 8.11.1      | General   |                 | N/A     |
| 8.11.2      | Requirements for slide rails                                  |                 | N/A     |
|             | Instructional Safeguard .....                                 |                 | N/A     |
| 8.11.3      | Mechanical strength test                                      |                 | N/A     |
| 8.11.3.1    | Downward force test, force (N) applied.....                   |                 | N/A     |
| 8.11.3.2    | Lateral push force test                                       |                 | N/A     |
| 8.11.3.3    | Integrity of slide rail end stops                             |                 | N/A     |
| 8.11.4      | Compliance  |                 | N/A     |
| <b>8.12</b> | <b>Telescoping or rod antennas</b>                            |                 | N/A     |
|             | Button/ball diameter (mm) .....                               | None            | —       |

|            |   |   |     |
|------------|---|---|-----|
| <b>9</b>   | <b>THERMAL BURN INJURY</b>                          |   | P   |
| <b>9.2</b> | <b>Thermal energy source classifications</b>        |   | P   |
| <b>9.3</b> | <b>Touch temperature limits</b>                     |   | P   |
| 9.3.1      | Touch temperatures of accessible parts .....        | Accessible external parts and surfaces do not exceed TS1 limits in normal or abnormal operating conditions in Table 38.<br><br>(See appended table)       | P   |
| 9.3.2      | Test method and compliance                          | System run at max normal load and steady state temperatures measured on accessible surfaces in specified lab ambient with considerations for max ambient. | P   |
| <b>9.4</b> | <b>Safeguards against thermal energy sources</b>    |   | P   |
| <b>9.5</b> | <b>Requirements for safeguards</b>                  |   | P   |
| 9.5.1      | Equipment safeguard                                 | Limited temperature of enclosure under normal and single fault conditions provides safeguard against thermal transfer                                     | P   |
| 9.5.2      | Instructional safeguard .....                       | Instructional safeguard not required (no TS2 or TS3)  | N/A |
| <b>9.6</b> | <b>Requirements for wireless power transmitters</b> |   | N/A |
| 9.6.1      | General   | Not this type of equipment  | N/A |

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|-------------|--------------------------------------|--------------------------|---------|
| Clause      | Requirement + Test                   | Result - Remark          | Verdict |
| 9.6.2       | Specification of the foreign objects |                          | N/A     |
| 9.6.3       | Test method and compliance .....     | (See appended table 9.6) | N/A     |

|             |   |   |     |
|-------------|---|---|-----|
| <b>10</b>   | <b>RADIATION</b>  |   | P   |
| <b>10.2</b> | <b>Radiation energy source classification</b>   |   | P   |
| 10.2.1      | General classification  | Model(s): S730, S790, D730, D790 only:<br><br>RS2 (Class 2 under IEC60825-1). Laser radiation only present vis certified laser scan engine.<br><br>Model D600: No LED/Lasers<br><br>All other models:<br><br>RS1 (Class 1 Laser/LED under IEC60825-1/IEC62471) or classified as IEC 62471 Exempt Risk Group.<br><br>No other potential radiation. | P   |
|             | Lasers .....  | LED/Laser scan engines are approved to CDRH and/or IEC 60825-1 or IEC 62471. LEDs are clearly non-hazardous types by inspection.  | —   |
|             | Lamps and lamp systems .....  | Not such system   | —   |
|             | Image projectors .....  | Not such projector  | —   |
|             | X-Ray .....   | No such X-ray   | —   |
|             | Personal music player .....   | Not such player   | —   |
| <b>10.3</b> | <b>Safeguards against laser radiation</b>   |   | P   |
|             | The standard(s) equipment containing laser(s) comply .....                                    | Certified scan engines components selected which are compliant in their own right without additional enclosure or interlocking  | P   |
| <b>10.4</b> | <b>Safeguards against optical radiation from lamps and lamp systems (including LED types)</b> |   | P   |
| 10.4.1      | General requirements  | LED's outside of approved scan engines are standard low power indicating type which need not comply with IEC 62471 and are within Class I limits. Considered RS1  | P   |
|             | Instructional safeguard provided for accessible   |   | N/A |

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| Clause      | Requirement + Test   | Result - Remark                                | Verdict |
|             | radiation level needs to exceed                                  |  |         |
|             | Risk group marking and location .....                            |  | N/A     |
|             | Information for safe operation and installation                  |  | N/A     |
| 10.4.2      | Requirements for enclosures                                      |  | N/A     |
|             | UV radiation exposure .....                                      | No UV generated by equipment.<br>(See Annex C) | N/A     |
| 10.4.3      | Instructional safeguard .....                                    |  | N/A     |
| <b>10.5</b> | <b>Safeguards against X-radiation</b>                            |  | N/A     |
| 10.5.1      | Requirements   | No X-radiation generated                       | N/A     |
|             | Instructional safeguard for skilled persons .....                |  | —       |
| 10.5.3      | Maximum radiation (pA/kg).....                                   | (See appended tables B.3 & B.4)                | —       |
| <b>10.6</b> | <b>Safeguards against acoustic energy sources</b>                |  | N/A     |
| 10.6.1      | General  | Not personal music player                      | N/A     |
| 10.6.2      | Classification   |  | N/A     |
|             | Acoustic output $L_{Aeq,T}$ , dB(A).....                         |  | N/A     |
|             | Unweighted RMS output voltage (mV).....                          |  | N/A     |
|             | Digital output signal (dBFS).....                                |  | N/A     |
| 10.6.3      | Requirements for dose-based systems                              | No dose-based systems                          | N/A     |
| 10.6.3.1    | General requirements   | Not a personal music player                    | N/A     |
| 10.6.3.2    | Dose-based warning and automatic decrease                        |  | N/A     |
| 10.6.3.3    | Exposure-based warning and requirements                          |  | N/A     |
|             | 30 s integrated exposure level (MEL30) .....                     |  | N/A     |
|             | Warning for MEL $\geq$ 100 dB(A) .....                           |  | N/A     |
| 10.6.4      | Measurement methods  |  | N/A     |
| 10.6.5      | Protection of persons  |  | N/A     |
|             | Instructional safeguards .....                                   |  | N/A     |
| 10.6.6      | Requirements for listening devices (headphones, earphones, etc.) |  | N/A     |
| 10.6.6.1    | Corded listening devices with analogue input                     |  | N/A     |
|             | Listening device input voltage (mV) .....                        |  | N/A     |
| 10.6.6.2    | Corded listening devices with digital input                      |  | N/A     |
|             | Max. acoustic output $L_{Aeq,T}$ , dB(A).....                    |  | N/A     |
| 10.6.6.3    | Cordless listening devices                                       |  | N/A     |
|             | Max. acoustic output $L_{Aeq,T}$ , dB(A).....                    |  | N/A     |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

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|------------|--|--|-----|
| <b>B</b>   | <b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b> |  | P   |
| <b>B.1</b> | <b>General</b>   |  | P   |
| B.1.5      | Temperature measurement conditions   | (See appended table B.1.5)   | P   |
| <b>B.2</b> | <b>Normal operating conditions</b>   |  | P   |
| B.2.1      | General requirements .....   | (See Test Item Particulars and appended test tables)   | P   |
|            | Audio Amplifiers and equipment with audio amplifiers .....   | No amplifiers (See Annex E)  | N/A |
| B.2.3      | Supply voltage and tolerances  | Tested at +/- 20%  | P   |
| B.2.5      | Input test .....   | Operated in worst case operating mode with draw not exceeding rating by more than 10% (See appended table B.2.5) | P   |
| <b>B.3</b> | <b>Simulated abnormal operating conditions</b>   |  | P   |
| B.3.1      | General  |  | P   |
| B.3.2      | Covering of ventilation openings   | No openings  | N/A |
|            | Instructional safeguard .....  | Equipment not likely to be used on a soft support  | N/A |
| B.3.3      | DC mains polarity test   | No DC Mains  | N/A |
| B.3.4      | Setting of voltage selector  | No such selector provided or required.   | N/A |
| B.3.5      | Maximum load at output terminals   | No output terminals  | N/A |

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|-------------|--|---|---------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| B.3.6       | Reverse battery polarity   | <p>Model S7xx Series. Model is provided with polarity indication +/- stamped into plastic housing. No hazard if batteries are placed in reverse position. Q2 blocking diode protects against charging if batteries are installed in reverse position.</p> <p>All other models:</p> <p>Battery is installed at the factory and not user accessible. Battery is provided with keyed connector which does not allow reversal of the battery.</p> <p>Battery pack is additionally electrically protected from reverse charging.</p> | P       |
| B.3.7       | Audio amplifier abnormal operating conditions                              | No amplifiers   | N/A     |
| B.3.8       | Safeguards functional during and after abnormal operating conditions ..... | All safeguards remained in place and effective.<br>(See appended table B.3)   | P       |
| <b>B.4</b>  | <b>Simulated single fault conditions</b>                                   |   | P       |
| B.4.1       | General  | SINGLE FAULT CONDITONS considered upon review of the equipment  | P       |
| B.4.2       | Temperature controlling device   |   | N/A     |
| B.4.3       | Blocked motor test   |   | N/A     |
| B.4.4       | Functional insulation  |   | P       |
| B.4.4.1     | Short circuit of clearances for functional insulation                      | <p>Short-circuit of circuits considered where overcurrent devices and other protection means would safeguard against a failure of FUNCTIONAL INSULATION</p> <p>Shorting of FUNCTIONAL INSULATION not necessary, due to:</p> <ul style="list-style-type: none"> <li>• All components are mounted on PCBs of flammability V-1.</li> <li>• No significant flammable fuel loads internal, to conduct shorts nearby;</li> </ul>  | P       |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| B.4.4.2     | Short circuit of creepage distances for functional insulation            | See above  | P       |
| B.4.4.3     | Short circuit of functional insulation on coated printed boards          | No coated printed boards employed  | N/A     |
| B.4.5       | Short-circuit and interruption of electrodes in tubes and semiconductors |  | N/A     |
| B.4.6       | Short circuit or disconnection of passive components                     |  | N/A     |
| B.4.7       | Continuous operation of components                                       | Not intended for SHORT-TIME or INTERMITTENT OPERATION  | N/A     |
| B.4.8       | Compliance during and after single fault conditions<br>..... :           | Compliant with no external fire, nor internal fire of longer than 10 s<br>(See appended table B.4) | P       |
| B.4.9       | Battery charging and discharging under single fault conditions           | (See Annex M)  | P       |
| <b>C</b>    | <b>UV RADIATION</b>  |  | N/A     |
| <b>C.1</b>  | <b>Protection of materials in equipment from UV radiation</b>            |  | N/A     |
| C.1.2       | Requirements   | No UV radiation  | N/A     |
| C.1.3       | Test method  |  | N/A     |
| <b>C.2</b>  | <b>UV light conditioning test</b>  |  | N/A     |
| C.2.1       | Test apparatus..... :  |  | N/A     |
| C.2.2       | Mounting of test samples   |  | N/A     |
| C.2.3       | Carbon-arc light-exposure test   |  | N/A     |
| C.2.4       | Xenon-arc light-exposure test  |  | N/A     |
| <b>D</b>    | <b>TEST GENERATORS</b>   |  | N/A     |
| <b>D.1</b>  | <b>Impulse test generators</b>   |  | N/A     |
| <b>D.2</b>  | <b>Antenna interface test generator</b>                                  |  | N/A     |
| <b>D.3</b>  | <b>Electronic pulse generator</b>  |  | N/A     |
| <b>E</b>    | <b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>         |  | N/A     |
| <b>E.1</b>  | <b>Electrical energy source classification for audio signals</b>         |  | N/A     |
|             | Maximum non-clipped output power (W)..... :                              | No audio amplifiers  | —       |
|             | Rated load impedance ( $\Omega$ ) .....                                  |  | —       |
|             | Open-circuit output voltage (V)..... :                                   |  | —       |
|             | Instructional safeguard .....  | See Clause F.5   | —       |
| <b>E.2</b>  | <b>Audio amplifier normal operating conditions</b>                       |  | N/A     |
|             | Audio signal source type .....   |  | —       |



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| Clause      | Requirement + Test  | Result - Remark   | Verdict |
|             | Audio output power (W)..... :   |   | —       |
|             | Audio output voltage (V)..... :                                       |   | —       |
|             | Rated load impedance ( $\Omega$ )..... :                              |   | —       |
|             | Requirements for temperature measurement                              | (See Table B.1.5)   | N/A     |
| E.3         | Audio amplifier abnormal operating conditions                         | (See Table B.3, B.4)  | N/A     |
| <b>F</b>    | <b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b> |   | P       |
| <b>F.1</b>  | <b>General</b>  |   | P       |
|             | Language..... :   | English   | —       |
| <b>F.2</b>  | <b>Letter symbols and graphical symbols</b>                           |   | P       |
| F.2.1       | Letter symbols according to IEC60027-1                                |   | P       |
| F.2.2       | Graphic symbols according to IEC, ISO or manufacturer specific        | Symbols where used are in accordance with IEC 60417 or ISO 3864-2 or ISO 7000   | P       |
| <b>F.3</b>  | <b>Equipment markings</b>   |   | P       |
| F.3.1       | Equipment marking locations   | Markings located on the exterior of the product and easily visible.   | P       |
| F.3.2       | Equipment identification markings                                     |   | P       |
| F.3.2.1     | Manufacturer identification..... :                                    | Provided  | P       |
| F.3.2.2     | Model identification..... :   | Provided  | P       |
| F.3.3       | Equipment rating markings   | Equipment is not provided with a means for direct connection to a Main Supply. Therefore, the Rated Voltage, and Rated Current markings are optional. | P       |
| F.3.3.1     | Equipment with direct connection to mains                             | Class III device with no direct connection to AC or DC Mains  | N/A     |
| F.3.3.2     | Equipment without direct connection to mains                          | Rated markings comply with B.2.5 (when marked).   | P       |
| F.3.3.3     | Nature of the supply voltage..... :                                   | Provided with IEC 60417-5032 symbol when marking is provided.   | P       |
| F.3.3.4     | Rated voltage..... :  | Optionally marked   | P       |
| F.3.3.5     | Rated frequency..... :  | DC input only   | N/A     |
| F.3.3.6     | Rated current or rated power..... :                                   | Optionally marked   | P       |
| F.3.3.7     | Equipment with multiple supply connections                            | Single input only   | N/A     |
| F.3.4       | Voltage setting device  | No voltage setting device   | N/A     |

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| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| F.3.5       | Terminals and operating devices   | No terminals   | N/A     |
| F.3.5.1     | Mains appliance outlet and socket-outlet markings<br>..... :              | No mains outlets   | N/A     |
| F.3.5.2     | Switch position identification marking..... :                             | No such switch   | N/A     |
| F.3.5.3     | Replacement fuse identification and rating markings<br>..... :            | No replaceable fuses.  | P       |
|             | Instructional safeguards for neutral fuse ..... :                         | None   | N/A     |
| F.3.5.4     | Replacement battery identification marking ..... :                        | S7xx series with replaceable batteries have Instructional safeguard in manual per M.10   | P       |
| F.3.5.5     | Neutral conductor terminal  | No connection to mains.  | N/A     |
| F.3.5.6     | Terminal marking location   | See above  | N/A     |
| F.3.6       | Equipment markings related to equipment classification                    |  | P       |
| F.3.6.1     | Class I equipment   | Not Class I  | N/A     |
| F.3.6.1.1   | Protective earthing conductor terminal..... :                             |  | N/A     |
| F.3.6.1.2   | Protective bonding conductor terminals ..... :                            | Not required to be marked, per clause.   | N/A     |
| F.3.6.2     | Equipment class marking ..... :   | Not Class II   | N/A     |
| F.3.6.3     | Functional earthing terminal marking ..... :                              | No functional earthing   | N/A     |
| F.3.7       | Equipment IP rating marking ..... :                                       | IPX0 only where marking is not required  | N/A     |
| F.3.8       | External power supply output marking ..... :                              | No external power supply outputs   | N/A     |
| F.3.9       | Durability, legibility and permanence of marking                          | Markings are either permanently silkscreened or use labels that are tested and shown on the critical parts list, or a UL Recognized marking and labelling system as shown there. | P       |
| F.3.10      | Test for permanence of markings   | See above  | P       |
| <b>F.4</b>  | <b>Instructions</b>   |  | P       |
|             | a) Information prior to installation and initial use                      | Sufficient information is provided to the user.  | P       |
|             | b) Equipment for use in locations where children not likely to be present | Not applied  | N/A     |
|             | c) Instructions for installation and interconnection                      | Provided   | P       |
|             | d) Equipment intended for use only in restricted access area              |  | N/A     |
|             | e) Equipment intended to be fastened in place                             |  | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
|             | f) Instructions for audio equipment terminals  | No audio terminals   | N/A     |
|             | g) Protective earthing used as a safeguard   |  | P       |
|             | h) Protective conductor current exceeding ES2 limits   | Not exceeded   | N/A     |
|             | i) Graphic symbols used on equipment   | Graphical symbols are not used as an INSTRUCTIONAL SAFEGUARD, where need to be explained in the instructions | N/A     |
|             | j) Permanently connected equipment not provided with all-pole mains switch                       | Not permanently connected  | N/A     |
|             | k) Replaceable components or modules providing safeguard function                                | None   | N/A     |
|             | l) Equipment containing insulating liquid  | No insulating liquid   | N/A     |
|             | m) Installation instructions for outdoor equipment   | Although device can be used outdoors, it is not specifically considered outdoor equipment                    | N/A     |
| <b>F.5</b>  | Instructional safeguards   |  | P       |
| <b>G</b>    | <b>COMPONENTS</b>  |  | P       |
| <b>G.1</b>  | <b>Switches</b>  |  | N/A     |
| G.1.1       | General  | No switches or relays in PS3 are located outside of certified power supply.<br>(no PS3 circuits)             | N/A     |
| G.1.2       | Ratings, endurance, spacing, maximum load  | See above  | N/A     |
| G.1.3       | Test method and compliance   | See above  | N/A     |
| <b>G.2</b>  | <b>Relays</b>  |  | N/A     |
| G.2.1       | Requirements   | See above  | N/A     |
| G.2.2       | Overload test  | See above  | N/A     |
| G.2.3       | Relay controlling connectors supplying power to other equipment                                  | See above  | N/A     |
| G.2.4       | Test method and compliance   | See above  | N/A     |
| <b>G.3</b>  | <b>Protective devices</b>  |  | P       |
| G.3.1       | Thermal cut-offs   | No thermal cut-outs provided   | N/A     |
|             | Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b) |  | N/A     |
|             | Thermal cut-outs tested as part of the equipment as indicated in c)                              |  | N/A     |
| G.3.1.2     | Test method and compliance   |  | N/A     |
| G.3.2       | Thermal links  | No thermal links   | N/A     |

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| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| G.3.2.1     | a) Thermal links tested separately according to IEC 60691 with specifics                 |   | N/A     |
|             | b) Thermal links tested as part of the equipment   |   | N/A     |
| G.3.2.2     | Test method and compliance   |   | N/A     |
| G.3.3       | PTC thermistors  | PTC thermistors where provided comply with IEC 60730- 1 | P       |
| G.3.4       | Overcurrent protection devices   |   | P       |
| G.3.5       | Safeguards components not mentioned in G.3.1 to G.3.4                                    | None as SAFEGUARDS                                      | N/A     |
| G.3.5.1     | Non-resettable devices suitably rated and marking provided                               | Not used  | N/A     |
| G.3.5.2     | Single faults conditions..... :  | Method not used.<br>(See appended table B.4)            | N/A     |
| <b>G.4</b>  | <b>Connectors</b>  |   | P       |
| G.4.1       | Spacings   |   | N/A     |
| G.4.2       | Mains connector configuration..... :   | Class III device with no direct connection to Mains     | N/A     |
| G.4.3       | Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely | No such plug for non-mains power                        | N/A     |
| <b>G.5</b>  | <b>Wound components</b>  |   | N/A     |
| G.5.1       | Wire insulation in wound components  |   | N/A     |
| G.5.1.2     | Protection against mechanical stress   |   | N/A     |
| G.5.2       | Endurance test   |   | N/A     |
| G.5.2.1     | General test requirements  |   | N/A     |
| G.5.2.2     | Heat run test  |   | N/A     |
|             | Test time (days per cycle) .....   |   | —       |
|             | Test temperature (°C)..... :   |   | —       |
| G.5.2.3     | Wound components supplied from the mains   |   | N/A     |
| G.5.2.4     | No insulation breakdown  |   | N/A     |
| G.5.3       | Transformers   | No transformers serving as insulation safeguard         | N/A     |
| G.5.3.1     | Compliance method..... :   |   | N/A     |
|             | Position .....   |   | N/A     |
|             | Method of protection .....   |   | N/A     |
| G.5.3.2     | Insulation   |   | N/A     |
|             | Protection from displacement of windings .....   |   | —       |
| G.5.3.3     | Transformer overload tests   |   | N/A     |

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| Clause      | Requirement + Test  | Result - Remark  | Verdict  |
| G.5.3.3.1   | Test conditions   |  | N/A      |
| G.5.3.3.2   | Winding temperatures  |  | N/A      |
| G.5.3.3.3   | Winding temperatures – alternative test method                    |  | N/A      |
| G.5.3.4     | Transformers using FIW  |  | N/A      |
| G.5.3.4.1   | General   |  | N/A      |
|             | FIW wire nominal diameter .....                                   |  | —        |
| G.5.3.4.2   | Transformers with basic insulation only                           |  | N/A      |
| G.5.3.4.3   | Transformers with double insulation or reinforced insulation..... |  | N/A      |
| G.5.3.4.4   | Transformers with FIW wound on metal or ferrite core              |  | N/A      |
| G.5.3.4.5   | Thermal cycling test and compliance                               |  | N/A      |
| G.5.3.4.6   | Partial discharge test  |  | N/A      |
| G.5.3.4.7   | Routine test  |  | N/A      |
| G.5.4       | Motors  | None   | N/A      |
| G.5.4.1     | General requirements  |  | N/A      |
| G.5.4.2     | Motor overload test conditions                                    |  | N/A      |
| G.5.4.3     | Running overload test   |  | N/A      |
| G.5.4.4.2   | Locked-rotor overload test  |  | N/A      |
|             | Test duration (days) .....  |  | —        |
| G.5.4.5     | Running overload test for DC motors                               |  | N/A      |
| G.5.4.5.2   | Tested in the unit  |  | N/A      |
| G.5.4.5.3   | Alternative method  |  | N/A      |
| G.5.4.6     | Locked-rotor overload test for DC motors                          |  | N/A      |
| G.5.4.6.2   | Tested in the unit  |  | N/A      |
|             | Maximum Temperature .....   |  | N/A      |
| G.5.4.6.3   | Alternative method  |  | N/A      |
| G.5.4.7     | Motors with capacitors  |  | N/A      |
| G.5.4.8     | Three-phase motors  |  | N/A      |
| G.5.4.9     | Series motors   |  | N/A      |
|             | Operating voltage .....   |  | —        |
| <b>G.6</b>  | <b>Wire Insulation</b>  |  | <b>P</b> |
| G.6.1       | General   | Wiring is certified and suitably rated, serving FUNCTIONAL insulation only | P        |
| G.6.2       | Enamelled winding wire insulation                                 |  | N/A      |

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|-------------|---|-----------------|---------|
| Clause      | Requirement + Test  | Result - Remark | Verdict |
| <b>G.7</b>  | <b>Mains supply cords</b>   |                 | N/A     |
| G.7.1       | General requirements  | No power cord.  | N/A     |
|             | Type .....  |                 | —       |
| G.7.2       | Cross sectional area (mm <sup>2</sup> or AWG) .....                     |                 | N/A     |
| G.7.3       | Cord anchorages and strain relief for non-detachable power supply cords |                 | N/A     |
| G.7.3.2     | Cord strain relief  | See above       | N/A     |
| G.7.3.2.1   | Requirements  | See above       | N/A     |
|             | Strain relief test force (N).....                                       | See above       | N/A     |
| G.7.3.2.2   | Strain relief mechanism failure   | See above       | N/A     |
| G.7.3.2.3   | Cord sheath or jacket position, distance (mm).....                      | See above       | N/A     |
| G.7.3.2.4   | Strain relief and cord anchorage material                               | See above       | N/A     |
| G.7.4       | Cord Entry  | See above       | N/A     |
| G.7.5       | Non-detachable cord bend protection                                     |                 | N/A     |
| G.7.5.1     | Requirements  |                 | N/A     |
| G.7.5.2     | Test method and compliance  |                 | N/A     |
|             | Overall diameter or minor overall dimension, <i>D</i> (mm) .....        |                 | —       |
|             | Radius of curvature after test (mm).....                                |                 | —       |
| G.7.6       | Supply wiring space   |                 | N/A     |
| G.7.6.1     | General requirements  |                 | N/A     |
| G.7.6.2     | Stranded wire   |                 | N/A     |
| G.7.6.2.1   | Requirements  |                 | N/A     |
| G.7.6.2.2   | Test with 8 mm strand   |                 | N/A     |
| <b>G.8</b>  | <b>Varistors</b>  |                 | N/A     |
| G.8.1       | General requirements  |                 | N/A     |
| G.8.2       | Safeguards against fire   |                 | N/A     |
| G.8.2.1     | General   |                 | N/A     |
| G.8.2.2     | Varistor overload test  |                 | N/A     |
| G.8.2.3     | Temporary overvoltage test  |                 | N/A     |
| <b>G.9</b>  | <b>Integrated circuit (IC) current limiters</b>                         |                 | N/A     |
| G.9.1       | Requirements  |                 | N/A     |
|             | IC limiter output current (max. 5A).....                                |                 | —       |
|             | Manufacturers' defined drift .....                                      | --              | —       |
| G.9.2       | Test Program  |                 | N/A     |

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| Clause      | Requirement + Test                                      | Result - Remark   | Verdict |
| G.9.3       | Compliance  |   | N/A     |
| <b>G.10</b> | <b>Resistors</b>  |   | N/A     |
| G.10.1      | General   | No resistors used as safeguards                               | N/A     |
| G.10.2      | Conditioning  |   | N/A     |
| G.10.3      | Resistor test   |   | N/A     |
| G.10.4      | Voltage surge test                                      |   | N/A     |
| G.10.5      | Impulse test  |   | N/A     |
| G.10.6      | Overload test   |   | N/A     |
| <b>G.11</b> | <b>Capacitors and RC units</b>                          |   | N/A     |
| G.11.1      | General requirements                                    | No safety related capacitors                                  | N/A     |
| G.11.2      | Conditioning of capacitors and RC units                 |   | N/A     |
| G.11.3      | Rules for selecting capacitors                          |   | N/A     |
| <b>G.12</b> | <b>Optocouplers</b>                                     |   | N/A     |
|             | Optocouplers comply with IEC 60747-5-5 with specifics   | No safety related optocouplers                                | N/A     |
|             | Type test voltage $V_{ini,a}$ ..... :                   |   | —       |
|             | Routine test voltage, $V_{ini,b}$ ..... :               |   | —       |
| <b>G.13</b> | <b>Printed boards</b>                                   |   | N/A     |
| G.13.1      | General requirements                                    |   | N/A     |
| G.13.2      | Uncoated printed boards                                 | (See appended table 5.4.2, 5.4.3)                             | N/A     |
| G.13.3      | Coated printed boards                                   | No coated printed boards                                      | N/A     |
| G.13.4      | Insulation between conductors on the same inner surface | No primary circuits   | N/A     |
| G.13.5      | Insulation between conductors on different surfaces     |   | N/A     |
|             | Distance through insulation ..... :                     |   | N/A     |
|             | Number of insulation layers (pcs) ..... :               |   | —       |
| G.13.6      | Tests on coated printed boards                          |   | N/A     |
| G.13.6.1    | Sample preparation and preliminary inspection           |   | N/A     |
| G.13.6.2    | Test method and compliance                              |   | N/A     |
| <b>G.14</b> | <b>Coating on components terminals</b>                  |   | N/A     |
| G.14.1      | Requirements ..... :                                    | No coatings on component terminals used.<br>(See Clause G.13) | N/A     |
| <b>G.15</b> | <b>Pressurized liquid filled components</b>             |   | N/A     |

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|-------------|--|---------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark           | Verdict |
| G.15.1      | Requirements   | No pressurized components | N/A     |
| G.15.2      | Test methods and compliance  |                           | N/A     |
| G.15.2.1    | Hydrostatic pressure test  |                           | N/A     |
| G.15.2.2    | Creep resistance test  |                           | N/A     |
| G.15.2.3    | Tubing and fittings compatibility test   |                           | N/A     |
| G.15.2.4    | Vibration test   |                           | N/A     |
| G.15.2.5    | Thermal cycling test   |                           | N/A     |
| G.15.2.6    | Force test   |                           | N/A     |
| G.15.3      | Compliance   |                           | N/A     |
| <b>G.16</b> | <b>IC including capacitor discharge function (ICX)</b>   |                           | N/A     |
| G.16.1      | Condition for fault tested is not required   | Not used                  | N/A     |
|             | ICX with associated circuitry tested in equipment  |                           | N/A     |
|             | ICX tested separately  |                           | N/A     |
| G.16.2      | Tests  |                           | N/A     |
|             | Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... : |                           | —       |
|             | Mains voltage that impulses to be superimposed on ..... :  |                           | —       |
|             | Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test ..... : |                           | —       |
| G.16.3      | Capacitor discharge test..... :  |                           | N/A     |
| <b>H</b>    | <b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>  |                           | N/A     |
| <b>H.1</b>  | <b>General</b>   |                           | N/A     |
| <b>H.2</b>  | <b>Method A</b>  |                           | N/A     |
| <b>H.3</b>  | <b>Method B</b>  |                           | N/A     |
| H.3.1       | Ringling signal  | No ringing signals        | N/A     |
| H.3.1.1     | Frequency (Hz) ..... :   |                           | —       |
| H.3.1.2     | Voltage (V) ..... :  |                           | —       |
| H.3.1.3     | Cadence; time (s) and voltage (V) ..... :  |                           | —       |
| H.3.1.4     | Single fault current (mA):..... :  |                           | —       |
| H.3.2       | Tripping device and monitoring voltage   |                           | N/A     |
| H.3.2.1     | Conditions for use of a tripping device or a monitoring voltage                                    |                           | N/A     |
| H.3.2.2     | Tripping device  |                           | N/A     |
| H.3.2.3     | Monitoring voltage (V) ..... :   |                           | N/A     |



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| Clause         | Requirement + Test   | Result - Remark  | Verdict |
| <b>J</b>       | <b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>  |  | N/A     |
| <b>J.1</b>     | <b>General</b>   |  | N/A     |
|                | Winding wire insulation..... :   |  | —       |
|                | Solid round winding wire, diameter (mm)..... :   |  | N/A     |
|                | Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm <sup>2</sup> )..... : |  | N/A     |
| <b>J.2/J.3</b> | Tests and Manufacturing  | (See separate test report)   | —       |
| <b>K</b>       | <b>SAFETY INTERLOCKS</b>   |  | N/A     |
| <b>K.1</b>     | <b>General requirements</b>  |  | N/A     |
|                | Instructional safeguard..... :   | No interlock provided nor required   | N/A     |
| <b>K.2</b>     | <b>Components of safety interlock safeguard mechanism</b>  |  | N/A     |
| <b>K.3</b>     | <b>Inadvertent change of operating mode</b>  |  | N/A     |
| <b>K.4</b>     | <b>Interlock safeguard override</b>  |  | N/A     |
| <b>K.5</b>     | <b>Fail-safe</b>   |  | N/A     |
| K.5.1          | Under single fault condition   |  | N/A     |
| <b>K.6</b>     | <b>Mechanically operated safety interlocks</b>   |  | N/A     |
| K.6.1          | Endurance requirement  |  | N/A     |
| K.6.2          | Test method and compliance..... :  |  | N/A     |
| <b>K.7</b>     | <b>Interlock circuit isolation</b>   |  | N/A     |
| K.7.1          | Separation distance for contact gaps & interlock circuit elements  |  | N/A     |
|                | In circuit connected to mains, separation distance for contact gaps (mm)..... :                              |  | N/A     |
|                | In circuit isolated from mains, separation distance for contact gaps (mm)..... :                             |  | N/A     |
|                | Electric strength test before and after the test of K.7.2..... :   | (See appended table 5.4.9)   | N/A     |
| K.7.2          | Overload test, Current (A)..... :  |  | N/A     |
| K.7.3          | Endurance test   |  | N/A     |
| K.7.4          | Electric strength test   |  | N/A     |
| <b>L</b>       | <b>DISCONNECT DEVICES</b>  |  | N/A     |
| <b>L.1</b>     | <b>General requirements</b>  | Device is battery powered, or Class III device powered by ES1/SELV input (when charging). No direct connection to Mains. No disconnect device is required. | N/A     |

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| Clause      | Requirement + Test   | Result - Remark   | Verdict  |
| <b>L.2</b>  | <b>Permanently connected equipment</b>                                 | Not permanently connected.  | N/A      |
| <b>L.3</b>  | <b>Parts that remain energized</b>                                     | No parts which remain energized   | N/A      |
| <b>L.4</b>  | <b>Single-phase equipment</b>  |   | N/A      |
| <b>L.5</b>  | <b>Three-phase equipment</b>   |   | N/A      |
| <b>L.6</b>  | <b>Switches as disconnect devices</b>                                  | None  | N/A      |
| <b>L.7</b>  | <b>Plugs as disconnect devices</b>                                     |   | N/A      |
| <b>L.8</b>  | <b>Multiple power sources</b>  | Single low voltage DC input only  | N/A      |
|             | Instructional safeguard .....  | See above   | N/A      |
| <b>M</b>    | <b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>    |   | <b>P</b> |
| <b>M.1</b>  | <b>General requirements</b>  |   | <b>P</b> |
| <b>M.2</b>  | <b>Safety of batteries and their cells</b>                             |   | <b>P</b> |
| M.2.1       | Batteries and their cells comply with relevant IEC standards .....     | S7xx series uses 2x rechargeable AA (LR6) size NiMH type batteries in series. Battery has UL 2054 certification.<br><br>D7xx series handheld scanner employs a single non-user replaceable Li-on rechargeable battery. Battery has UL1642 approval and has been tested to show it is safe under short-circuit/rapid discharge conditions. | <b>P</b> |
| <b>M.3</b>  | <b>Protection circuits for batteries provided within the equipment</b> |   | <b>P</b> |
| M.3.1       | Requirements   |   | <b>P</b> |
| M.3.2       | Test method  |   | <b>P</b> |

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|-------------|--|---|---------|
| Clause      | Requirement + Test                                   | Result - Remark   | Verdict |
|             | Overcharging of a rechargeable battery               | <p>Under a single fault, charging into the battery would be limited to 0.75A to 1.5A max (due to multiple PTC's used which are rated 0.75A (hold), 1.5A trip) located on USB and Cradle inputs as well as battery connection.</p> <p>The overcharge test was performed using single battery tested outside of the handheld scanner.</p> <p><b>D755: U3 shorted from pin 9 (IN) to 2,4,5 (BAT). Left in place for 1 hour. Only 1.6 deg rise on battery case.</b></p> <p><b>D755: U3 Shorted from pins 1,3,8 (Out) to pins 2,4,5 (BAT). Battery is fully charged after 2.55 hrs where charging is removed. Fault was left in place for 16 hours.</b></p> <p><b>See table M.3 for details.</b></p> | P       |
|             | Excessive discharging                                | <p>Maximum sustainable load (5A) applied directly to battery output. No hazards. No damage to the battery pack.</p> <p>In the actual circuit, any discharge current would be limited to 0.75A (1.5A trip) by a certified PTC which is provided in battery circuit in addition to the protective electronic circuit (PEC) provided by the battery.</p>   | P       |
|             | Unintentional charging of a non-rechargeable battery | Battery is intended to be recharged.  | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
|             | Reverse charging of a rechargeable battery   | <p>S7xx Series: Model is provided with polarity indication +/- stamped into plastic housing. No hazard if batteries are placed in reverse position. Q2 blocking diode protects against reverse battery protection. Even if a single fault of Q2 occurs, PTC3 prevents damage.</p> <p>All other models:</p> <p>Battery is provided with keyed connector which does not allow reversal of the battery. Battery pack is additionally protected from reverse charging. Battery is installed at the factory and not user accessible.</p>                                    | P       |
| M.3.3       | Compliance   | (See appended table M.3)   | P       |
| <b>M.4</b>  | <b>Additional safeguards for equipment containing a portable secondary lithium battery</b> |  | P       |
| M.4.1       | General  |  | P       |
| M.4.2       | Charging safeguards  |  | P       |
| M.4.2.1     | Requirements   | <p>Under Normal, Abnormal, and Single Fault conditions, the charging voltage and charging current do not exceed the maximum specified charging voltage and charging current specifications. Maximum charging current is assured by use of PTC.</p> <p>Under Abnormal operating conditions, the battery charging circuits stops charging when the temperature of the battery exceeds the highest specified charging temperature AND limits the charging current to specified values when battery temperature drops below the lowest specified charging temperature.</p> | P       |
| M.4.2.2     | Compliance..... :  | (See appended table M.4.2)   | P       |
| M.4.3       | Fire enclosure..... :  | Cell complies with PS1 limits.   | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| M.4.4       | Drop test of equipment containing a secondary lithium battery  | <b>Performed on model D755 which represents other models. Product is considered hand-held equipment which contains a secondary lithium battery</b> | P       |
| M.4.4.2     | Preparation and procedure for the drop test  | <b>Two samples fully charged at same time under same charging conditions.</b>  | P       |
| M.4.4.3     | Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): ..... : | <b>Bref = 4.199131 Vdc<br/>Bdrop = 4.145486 Vdc<br/><br/>&lt;5%<br/>1.28% difference at beginning<br/>1.13% difference at end of 24hr period.</b>  | P       |
| M.4.4.4     | Check of the charge/discharge function   | <b>Charge / discharge circuit continues to function after test.</b>  | P       |
| M.4.4.5     | Charge / discharge cycle test  | <b>3 complete charge/discharge cycles completed.</b>   | P       |
| M.4.4.6     | Compliance   | <b>No fire, no explosion, and no venting of the battery occurs. Safeguards remain in place.</b>  | P       |
| <b>M.5</b>  | <b>Risk of burn due to short-circuit during carrying</b>   |  | N/A     |
| M.5.1       | Requirement  | No exposed battery terminals.  | N/A     |
| M.5.2       | Test method and compliance   |  | N/A     |
| <b>M.6</b>  | <b>Safeguards against short-circuits</b>   |  | N/A     |
| M.6.1       | External and internal faults   |  | N/A     |
| M.6.2       | Compliance   |  | N/A     |
| <b>M.7</b>  | <b>Risk of explosion from lead acid and NiCd batteries</b>   |  | N/A     |
| M.7.1       | Ventilation preventing explosive gas concentration   | No batteries of this type  | N/A     |
|             | Calculated hydrogen generation rate ..... :  |  | N/A     |
| M.7.2       | Test method and compliance   |  | N/A     |
|             | Minimum air flow rate, Q (m <sup>3</sup> /h)..... :  |  | N/A     |
| M.7.3       | Ventilation tests  |  | N/A     |
| M.7.3.1     | General  |  | N/A     |
| M.7.3.2     | Ventilation test – alternative 1   |  | N/A     |

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|-------------|---|------------------------------|---------|
| Clause      | Requirement + Test  | Result - Remark              | Verdict |
|             | Hydrogen gas concentration (%)..... :   |                              | N/A     |
| M.7.3.3     | Ventilation test – alternative 2  |                              | N/A     |
|             | Obtained hydrogen generation rate..... :  |                              | N/A     |
| M.7.3.4     | Ventilation test – alternative 3  |                              | N/A     |
|             | Hydrogen gas concentration (%)..... :   |                              | N/A     |
| M.7.4       | Marking..... :  |                              | N/A     |
| <b>M.8</b>  | <b>Protection against internal ignition from external spark sources of batteries with aqueous electrolyte</b> |                              | N/A     |
| M.8.1       | General   | No batteries of this type    | N/A     |
| M.8.2       | Test method   |                              | N/A     |
| M.8.2.1     | General   |                              | N/A     |
| M.8.2.2     | Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s)..... :  |                              | —       |
| M.8.2.3     | Correction factors..... :   |                              | —       |
| M.8.2.4     | Calculation of distance $d$ (mm)..... :   |                              | —       |
| <b>M.9</b>  | <b>Preventing electrolyte spillage</b>  |                              | N/A     |
| M.9.1       | Protection from electrolyte spillage  |                              | N/A     |
| M.9.2       | Tray for preventing electrolyte spillage  |                              | N/A     |
| <b>M.10</b> | Instructions to prevent reasonably foreseeable misuse   |                              | N/A     |
|             | Instructional safeguard..... :  |                              | N/A     |
| <b>N</b>    | <b>ELECTROCHEMICAL POTENTIALS</b>   |                              | P       |
|             | Material(s) used..... :   | Considered                   | —       |
| <b>O</b>    | <b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>   |                              | P       |
|             | Value of $X$ (mm)..... :  | 1.0mm for Pollution Degree 2 | —       |
| <b>P</b>    | <b>SAFEGUARDS AGAINST CONDUCTIVE OBJECTS</b>  |                              | P       |
| <b>P.1</b>  | <b>General</b>  | No openings                  | P       |
| <b>P.2</b>  | <b>Safeguards against entry or consequences of entry of a foreign object</b>                                  |                              | P       |
| P.2.1       | General   |                              | P       |
| P.2.2       | Safeguards against entry of a foreign object  |                              | P       |
|             | Location and Dimensions (mm)..... :   | No openings                  | —       |
| P.2.3       | Safeguards against the consequences of entry of a foreign object  | No openings                  | N/A     |
| P.2.3.1     | Safeguard requirements  |                              | N/A     |
|             | The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment                       |                              | N/A     |

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|-------------|---|---|---------|
| Clause      | Requirement + Test  | Result - Remark   | Verdict |
|             | Transportable equipment with metalized plastic parts..... :       | See above   | N/A     |
| P.2.3.2     | Consequence of entry test..... :                                  | No ES3 or PS3   | N/A     |
| <b>P.3</b>  | <b>Safeguards against spillage of internal liquids</b>            |   | N/A     |
| P.3.1       | General   | No liquids  | N/A     |
| P.3.2       | Determination of spillage consequences                            |   | N/A     |
| P.3.3       | Spillage safeguards   |   | N/A     |
| P.3.4       | Compliance  |   | N/A     |
| <b>P.4</b>  | <b>Metallized coatings and adhesives securing parts</b>           |   | N/A     |
| P.4.1       | General   | No metalized coatings or parts  | N/A     |
| P.4.2       | Tests   |   | N/A     |
|             | Conditioning, T <sub>c</sub> (°C)..... :                          |   | —       |
|             | Duration (weeks)..... :   |   | —       |
| <b>Q</b>    | <b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b> |   | P       |
| <b>Q.1</b>  | <b>Limited power sources</b>                                      | Input to device is considered PS1.  | P       |
| Q.1.1       | Requirements  |   | P       |
|             | a) Inherently limited output                                      | Optional External Power adapter is considered LPS output. Adapter is certified as shown on the critical parts list.<br><br>Internal Lithium Ion battery is inherently limited according to table Q.1. | P       |
|             | b) Impedance limited output                                       | Additionally, certified 0.75A (1.5A trip) PTC's provided at battery output, and on USB and Cradle inputs.<br><br>S7xx Series, and D7xx models have PTC's provided on USB and Cradle inputs.           | P       |
|             | c) Regulating network limited output                              |   | N/A     |
|             | d) Overcurrent protective device limited output                   |   | N/A     |
|             | e) IC current limiter complying with G.9                          |   | N/A     |
| Q.1.2       | Test method and compliance..... :                                 | Conducted by test and inspection as clause allows<br>(See appended table Q.1)   | P       |
|             | Current rating of overcurrent protective device (A)..... :        |   | N/A     |

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|-------------|---|-----------------|---------|
| Clause      | Requirement + Test  | Result - Remark | Verdict |
| <b>Q.2</b>  | <b>Test for external circuits – paired conductor cable</b>  | None            | N/A     |
|             | Maximum output current (A) .....  |                 | N/A     |
|             | Current limiting method .....   |                 | —       |
| <b>R</b>    | <b>LIMITED SHORT CIRCUIT TEST</b>   |                 | N/A     |
| <b>R.1</b>  | <b>General</b>  |                 | N/A     |
| <b>R.2</b>  | <b>Test setup</b>   |                 | N/A     |
|             | Overcurrent protective device for test .....  |                 | —       |
| <b>R.3</b>  | <b>Test method</b>  |                 | N/A     |
|             | Cord/cable used for test .....  |                 | —       |
| <b>R.4</b>  | <b>Compliance</b>   |                 | N/A     |
| <b>S</b>    | <b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>  |                 | N/A     |
| <b>S.1</b>  | <b>Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W</b> |                 | N/A     |
|             | Samples, material .....   |                 | —       |
|             | Wall thickness (mm) .....   |                 | —       |
|             | Conditioning (°C) .....   |                 | —       |
|             | Test flame according to IEC 60695-11-5 with conditions as set out   |                 | N/A     |
|             | - Material not consumed completely  |                 | N/A     |
|             | - Material extinguishes within 30s  |                 | N/A     |
|             | - No burning of layer or wrapping tissue  |                 | N/A     |
| <b>S.2</b>  | <b>Flammability test for fire enclosure and fire barrier integrity</b>  |                 | N/A     |
|             | Samples, material .....   |                 | —       |
|             | Wall thickness (mm) .....   |                 | —       |
|             | Conditioning (°C) .....   |                 | —       |
| <b>S.3</b>  | <b>Flammability test for the bottom of a fire enclosure</b>   |                 | N/A     |
| S.3.1       | Mounting of samples   |                 | N/A     |
| S.3.2       | Test method and compliance  |                 | N/A     |
|             | Mounting of samples .....   |                 | —       |
|             | Wall thickness (mm) .....   |                 | —       |
| <b>S.4</b>  | <b>Flammability classification of materials</b>   |                 | N/A     |
| <b>S.5</b>  | <b>Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power exceeding 4 000 W</b>       |                 | N/A     |
|             | Samples, material .....   |                 | —       |



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|-------------|---|--|------------|
| Clause      | Requirement + Test                          | Result - Remark  | Verdict    |
|             | Wall thickness (mm) .....                   |  | —          |
|             | Conditioning (°C) .....                     |  | —          |
| <b>T</b>    | <b>MECHANICAL STRENGTH TESTS</b>            |  | <b>P</b>   |
| <b>T.1</b>  | <b>General</b>                              |  | <b>P</b>   |
| <b>T.2</b>  | <b>Steady force test, 10 N</b> .....        | 10N applied to internal components does not compromise required creepages and clearances. (See appended table T.2) | <b>P</b>   |
| <b>T.3</b>  | <b>Steady force test, 30 N</b> .....        | No such internal accessible safeguard<br>(See appended table T.3)  | <b>N/A</b> |
| <b>T.4</b>  | <b>Steady force test, 100 N</b> .....       | Applied for Hand-Held equipment. Enclosure withstands 100N applied.<br>(See appended table T.4)                    | <b>P</b>   |
| <b>T.5</b>  | <b>Steady force test, 250 N</b> .....       | Hand-Held equipment is subject to T.4 only.<br>(See appended table T.5)  | <b>N/A</b> |
| <b>T.6</b>  | <b>Enclosure impact test</b>                | Hand-Held equipment is subject to T.4 only.<br><br>ES1 present only, no hazards.<br>(See appended table T.6)       | <b>N/A</b> |
|             | Fall test                                   | ES1 present only, no hazards   | <b>N/A</b> |
|             | Swing test                                  | --   | <b>N/A</b> |
| <b>T.7</b>  | <b>Drop test</b> .....                      | Applied as part of Hand-Held equipment. 1000mm<br>(See appended table T.7)   | <b>P</b>   |
| <b>T.8</b>  | <b>Stress relief test</b> .....             | Not required. All internal circuits are ES1/PS1.<br><br>(See appended table T.8)                                   | <b>N/A</b> |
| <b>T.9</b>  | <b>Glass Impact Test</b> .....              | Glass not depended upon as safeguard<br>(See appended table T.9)   | <b>N/A</b> |
| <b>T.10</b> | <b>Glass fragmentation test</b>             |  | <b>N/A</b> |
|             | Number of particles counted.....            | See above  | <b>N/A</b> |
| <b>T.11</b> | <b>Test for telescoping or rod antennas</b> |  | <b>N/A</b> |
|             | Torque value (Nm) .....                     | No antennas  | <b>N/A</b> |

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|-------------|---|--|---------|
| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| <b>U</b>    | <b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>   |  | N/A     |
| <b>U.1</b>  | <b>General</b>  |  | N/A     |
|             | Instructional safeguard:  | No CRTs  | N/A     |
| <b>U.2</b>  | <b>Test method and compliance for non-intrinsically protected CRTs</b>  |  | N/A     |
| <b>U.3</b>  | <b>Protective screen</b>  |  | N/A     |
| <b>V</b>    | <b>DETERMINATION OF ACCESSIBLE PARTS</b>  |  | P       |
| <b>V.1</b>  | <b>Accessible parts of equipment</b>  |  | P       |
| V.1.1       | General   | No hazardous parts or circuits within the product.   | P       |
| V.1.2       | Surfaces and openings tested with jointed test probes   | See above  | N/A     |
| V.1.3       | Openings tested with straight unjointed test probes   | See above  | N/A     |
| V.1.4       | Plugs, jacks, connectors tested with blunt probe  | See above  | N/A     |
| V.1.5       | Slot openings tested with wedge probe   |  | N/A     |
| V.1.6       | Terminals tested with rigid test wire   |  | N/A     |
| <b>V.2</b>  | <b>Accessible part criterion</b>  |  | P       |
| <b>X</b>    | <b>ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)</b> |  | N/A     |
|             | Clearance .....   | (See appended table X)   | N/A     |
| <b>Y</b>    | <b>CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES</b>   |  | N/A     |
| <b>Y.1</b>  | <b>General</b>  | Product may be used outdoors (short-term) but is not considered outdoor equipment.<br><br>No internal hazards (ES1/PS1 only) | N/A     |
| <b>Y.2</b>  | <b>Resistance to UV radiation</b>   |  | N/A     |
| <b>Y.3</b>  | <b>Resistance to corrosion</b>  |  | N/A     |
| <b>Y.3</b>  | <b>Resistance to corrosion</b>  |  | N/A     |
| Y.3.1       | Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by .....  |  | N/A     |
| Y.3.2       | Test apparatus  |  | N/A     |
| Y.3.3       | Water – saturated sulphur dioxide atmosphere  |  | N/A     |
| Y.3.4       | Test procedure .....  |  | N/A     |
| Y.3.5       | Compliance  |  | N/A     |
| <b>Y.4</b>  | <b>Gaskets</b>  |  | N/A     |
| Y.4.1       | General   |  | N/A     |

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|-------------|--|----------------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark                  | Verdict |
| Y.4.2       | Gasket tests   |                                  | N/A     |
| Y.4.3       | Tensile strength and elongation tests                      |                                  | N/A     |
|             | Alternative test methods ..... :                           |                                  | N/A     |
| Y.4.4       | Compression test   |                                  | N/A     |
| Y.4.5       | Oil resistance   |                                  | N/A     |
| Y.4.6       | Securing means   | (See Annex P.4)                  | N/A     |
| <b>Y.5</b>  | <b>Protection of equipment within an outdoor enclosure</b> |                                  | N/A     |
| Y.5.1       | General  |                                  | N/A     |
| Y.5.2       | Protection from moisture                                   |                                  | N/A     |
|             | Relevant tests of IEC 60529 or Y.5.3 ..... :               |                                  | N/A     |
| Y.5.3       | Water spray test   |                                  | N/A     |
| Y.5.4       | Protection from plants and vermin                          |                                  | N/A     |
| Y.5.5       | Protection from excessive dust                             |                                  | N/A     |
| Y.5.5.1     | General  |                                  | N/A     |
| Y.5.5.2     | IP5X equipment   |                                  | N/A     |
| Y.5.5.3     | IP6X equipment   |                                  | N/A     |
| <b>Y.6</b>  | <b>Mechanical strength of enclosures</b>                   | Not considered outdoor equipment | N/A     |
| Y.6.1       | General  |                                  | N/A     |
| Y.6.2       | Impact test ..... :  | (See Table T.6)                  | N/A     |

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.2  | TABLE: Classification of electrical energy sources |                 |            |             |                    |                               | P        |
|--|--|-----------------|------------|-------------|--------------------|-------------------------------|----------|
| Supply Voltage                             | Location (e.g. circuit designation)                | Test conditions | Parameters |             |                    |                               | ES Class |
|  |  |                 | U (V)      | I (mA)      | Type <sup>1)</sup> | Additional Info <sup>2)</sup> |          |
| 3.7Vdc<br>(4.25 max)<br>Battery<br>Voltage | DC Input / All<br>circuits                         | --              | 4.25Vdc    | 1500mA<br># | SS                 | --                            | 1        |
| 5Vdc<br>Charging<br>Voltage                | DC Input / All<br>circuits                         | --              | 5Vdc       | 1500mA<br># | SS                 | --                            | 1        |

Supplementary information:

1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.  
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.  
# limited by PTC, 0.75A hold, 1.5A trip.

| 5.4.1.8  | TABLE: Working voltage measurement |                  |                |          | N/A |
|----------|------------------------------------|------------------|----------------|----------|-----|
| Location | RMS voltage (V)                    | Peak voltage (V) | Frequency (Hz) | Comments |     |
|          |                                    |                  |                |          |     |
|          |                                    |                  |                |          |     |

Supplementary information:

Class III device powered by DC input (ES1).

| 5.4.1.10.2                | TABLE: Vicat softening temperature of thermoplastics |                |                  | N/A |
|---------------------------|--|----------------|------------------|-----|
| Method.....:              | ISO 306 / B50  |                |                  | —   |
| Object/ Part No./Material | Manufacturer/trademark                               | Thickness (mm) | T softening (°C) |     |
|                           |  |                |                  |     |
|                           |  |                |                  |     |

Supplementary information:

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.4.1.10.3 TABLE: Ball pressure test of thermoplastics |                        |                |                       |                          | N/A |
|--|------------------------|----------------|-----------------------|--------------------------|-----|
| Allowed impression diameter (mm) .....                 |                        |                |                       |                          | —   |
| Object/Part No./Material                               | Manufacturer/trademark | Thickness (mm) | Test temperature (°C) | Impression diameter (mm) |     |
|  |                        |                |                       |                          |     |
|  |                        |                |                       |                          |     |
| Supplementary information:                             |                        |                |                       |                          |     |

| 5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance                      |           |               |                         |                  |         |                        |                  | N/A     |
|---|-----------|---------------|-------------------------|------------------|---------|------------------------|------------------|---------|
| Clearance (cl) and creepage distance (cr) at/of/between:                      | $U_p$ (V) | $U_{rms}$ (V) | Freq <sup>1)</sup> (Hz) | Required cl (mm) | cl (mm) | E.S. <sup>2)</sup> (V) | Required cr (mm) | cr (mm) |
|   |           |               |                         |                  |         |                        |                  |         |
|   |           |               |                         |                  |         |                        |                  |         |
| Supplementary information: Functional insulation only.                        |           |               |                         |                  |         |                        |                  |         |
| 1) Only for frequency above 30 kHz  |           |               |                         |                  |         |                        |                  |         |
| 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)         |           |               |                         |                  |         |                        |                  |         |
| Functional insulation only. (Secondary circuit mounted on V-1 rated material) |           |               |                         |                  |         |                        |                  |         |

| 5.4.4.2 TABLE: Minimum distance through insulation |                  |            |                   |                   | N/A |
|--|------------------|------------|-------------------|-------------------|-----|
| Distance through insulation (DTI) at/of            | Peak voltage (V) | Insulation | Required DTI (mm) | Measured DTI (mm) |     |
|  |                  |            |                   |                   |     |
| Supplementary information:                         |                  |            |                   |                   |     |

| 5.4.4.9 TABLE: Solid insulation at frequencies >30 kHz |       |                 |       |                    |            | N/A            |
|--|-------|-----------------|-------|--------------------|------------|----------------|
| Insulation material                                    | $E_P$ | Frequency (kHz) | $K_R$ | Thickness $d$ (mm) | Insulation | $V_{PW}$ (Vpk) |
|  |       |                 |       |                    |            |                |
| Supplementary information:                             |       |                 |       |                    |            |                |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.4.9                         | TABLE: Electric strength tests                     |                  |                       | N/A |
|-------------------------------|--|------------------|-----------------------|-----|
| Test voltage applied between: | Voltage shape<br>(Surge, Impulse, AC,<br>DC, etc.) | Test voltage (V) | Breakdown<br>Yes / No |     |
|                               |  |                  |                       |     |
|                               |  |                  |                       |     |
|                               |  |                  |                       |     |

Supplementary information: Class III device with no direct connection to AC Mains. Electric strength test not required.

| 5.5.2.2  | TABLE: Stored discharge on capacitors |  |                    |                              |          | N/A |
|----------|---------------------------------------|--|--------------------|------------------------------|----------|-----|
| Location | Supply voltage (V)                    | Operating and fault<br>condition <sup>1)</sup> | Switch<br>position | Measured<br>voltage<br>(Vpk) | ES Class |     |
|          |                                       |  |                    |                              |          |     |
|          |                                       |  |                    |                              |          |     |
|          |                                       |  |                    |                              |          |     |

Supplementary information:  
X-capacitors installed for testing:  
 bleeding resistor rating:  
 ICX:  
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit

| 5.6.6    | TABLE: Resistance of protective conductors and terminations |                   |                     |                            | N/A |
|----------|---|-------------------|---------------------|----------------------------|-----|
| Location | Test current<br>(A)   | Duration<br>(min) | Voltage drop<br>(V) | Resistance<br>( $\Omega$ ) |     |
|          |   |                   |                     |                            |     |
|          |   |                   |                     |                            |     |
|          |   |                   |                     |                            |     |

Supplementary information:

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.7.4    | TABLE: Unearthed accessible parts |                    |  |  |            | N/A      |
|----------|-----------------------------------|--------------------|--|--|------------|----------|
| Location | Operating and fault conditions    | Supply Voltage (V) | Parameters                                     |  |            | ES class |
|          |                                   |                    | Voltage (V <sub>rms</sub> or V <sub>pk</sub> ) | Current (A <sub>rms</sub> or A <sub>pk</sub> ) | Freq. (Hz) |          |
|          |                                   |                    |  |  |            |          |
|          |                                   |                    |  |  |            |          |
|          |                                   |                    |  |  |            |          |

Supplementary information:  
Abbreviation: SC= short circuit; OC= open circuit

| 5.7.5                           | TABLE: Earthed accessible conductive part   |                    |         | N/A |
|---------------------------------|---|--------------------|---------|-----|
| Supply voltage (V) .....        |   |                    |         | —   |
| Phase(s) .....                  | [ ] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye                                |                    |         |     |
| Power Distribution System ..... | <input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT |                    |         |     |
| Location                        | Fault Condition No in IEC 60990 clause 6.2.2  | Touch current (mA) | Comment |     |
|                                 |   |                    |         |     |
|                                 |   |                    |         |     |
|                                 |   |                    |         |     |

Supplementary Information:

| 5.8      | TABLE: Backfeed safeguard in battery backed up supplies |                               |          |                          |                   | N/A      |
|----------|---|-------------------------------|----------|--------------------------|-------------------|----------|
| Location | Supply voltage (V)                                      | Operating and fault condition | Time (s) | Open-circuit voltage (V) | Touch current (A) | ES Class |
|          |   |                               |          |                          |                   |          |

Supplementary information:  
Abbreviation: SC= short circuit, OC= open circuit

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 6.2.2                    | TABLE: Power source circuit classifications |              |             |                              |          | P        |
|--------------------------|---|--------------|-------------|------------------------------|----------|----------|
| Location                 | Operating and fault condition               | Voltage (V)  | Current (A) | Max. Power <sup>1)</sup> (W) | Time (S) | PS class |
| Input (All other models) | Normal / SFC / ABN                          | DC5V Max     | 0.75A Max   | 7.5W                         | 3        | 1        |
| Battery Power            | Normal / SFC / ABN                          | DC 4.25V Max | 0.75A Max   | 7.5W                         | 3        | 1        |

Supplementary information:  
Abbreviation: SC= short circuit; OC= open circuit  
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.

| 6.2.3.1                                     | TABLE: Determination of Arcing PIS   |                            |                  |                      | P |
|---|--------------------------------------|----------------------------|------------------|----------------------|---|
| Location                                    | Open circuit voltage after 3 s (Vpk) | Measured r.m.s current (A) | Calculated value | Arcing PIS? Yes / No |   |
| Charging:<br>DC Input / All circuits        | 5.0 Vdc                              | 1.5A                       | <15W             | No                   |   |
| Battery Powered:<br>DC Input / All circuits | 4.25 Vdc Max                         | 1.5A                       | <15W             | No                   |   |

Supplementary information:

| 6.2.3.2                                     | TABLE: Determination of resistive PIS |                     |                         | P |
|---|---------------------------------------|---------------------|-------------------------|---|
| Location                                    | Operating and fault condition         | Dissipate power (W) | Resistive PIS? Yes / No |   |
| Charging:<br>DC Input / All circuits        | 5.0 Vdc                               | 1.5A                | No                      |   |
| Battery Powered:<br>DC Input / All circuits | 4.3 Vdc Max                           | 1.5A                | No                      |   |

Supplementary information:  
Abbreviation: SC= short circuit; OC= open circuit



| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 8.5.5  | TABLE: High pressure lamp |                  |                                     |                                       | N/A |
|--|---------------------------|------------------|-------------------------------------|---------------------------------------|-----|
| Lamp manufacturer                                  | Lamp type                 | Explosion method | Longest axis of glass particle (mm) | Particle found beyond 1 m<br>Yes / No |     |
|  |                           |                  |                                     |                                       |     |
| Supplementary information: No high-pressure lamps. |                           |                  |                                     |                                       |     |

| 9.6   | TABLE: Temperature measurements for wireless power transmitters |              |                                  |              |                                       |              |                                       | N/A          |
|---|---|--------------|----------------------------------|--------------|---------------------------------------|--------------|---------------------------------------|--------------|
| Supply voltage (V)..... :                                 |   |              |                                  |              |                                       |              | —                                     |              |
| Max. transmit power of transmitter (W)..... :             |   |              |                                  |              |                                       |              | —                                     |              |
| Foreign objects   | w/o receiver and direct contact                                 |              | with receiver and direct contact |              | with receiver and at distance of 2 mm |              | with receiver and at distance of 5 mm |              |
|   | Object (°C)   | Ambient (°C) | Object (°C)                      | Ambient (°C) | Object (°C)                           | Ambient (°C) | Object (°C)                           | Ambient (°C) |
|   |   |              |                                  |              |                                       |              |                                       |              |
| Supplementary information: No wireless power transmitters |   |              |                                  |              |                                       |              |                                       |              |

| 5.4.1.4, 9.3, B.1.5, B.2.6  | TABLE: Thermal requirements         |      |                      |      |  |  | (01)                          | P |
|---|-------------------------------------|------|----------------------|------|--|--|-------------------------------|---|
|   | Supply voltage (V) .....            | 5Vdc | 5Vdc                 |      |  |  | —                             |   |
|   | Ambient T <sub>min</sub> (°C) ..... | 23   | T <sub>ma</sub> = 50 |      |  |  | —                             |   |
|   | Ambient T <sub>max</sub> (°C) ..... | --   | --                   |      |  |  | —                             |   |
| Maximum measured temperature T of part/at.....:   |                                     |      | T (°C)               |      |  |  | Allowed T <sub>max</sub> (°C) |   |
| Battery Case (near Protection Circuit)  |                                     |      | 28.5                 | 55.5 |  |  |                               |   |
| U3 (USB Power Controller and Li-Ion Battery Charger (Warmest IC) (LTC4066)                                    |                                     |      | 50.7                 | 77.7 |  |  |                               |   |
| U7 – (FAN3989) Case   |                                     |      | 43.9                 | 70.9 |  |  |                               |   |
| U9 Battery Monitor (DS2745) Case  |                                     |      | 37.2                 | 64.2 |  |  |                               |   |
| U11 (16-bit microcontroller) Case   |                                     |      | 35.9                 | 62.9 |  |  |                               |   |
| Scan Engine ( ) Metal Case  |                                     |      | 25.5                 | 52.5 |  |  |                               |   |
| External Plastic  |                                     |      | 25.0                 | 52.0 |  |  |                               |   |
| <b>Supplementary information: Model D750: Temps measured at 23°C and calculated for T<sub>ma</sub> = 50°C</b> |                                     |      |                      |      |  |  |                               |   |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.4.1.4,<br>9.3, B.1.5,<br>B.2.6   | TABLE: Thermal requirements         |        |             |  |  | (01) | P                             |
|--|-------------------------------------|--------|-------------|--|--|------|-------------------------------|
|  | Supply voltage (V) .....            | 5Vdc   | 5Vdc        |  |  |      | —                             |
|  | Ambient T <sub>min</sub> (°C) ..... | 23     | Tma =<br>50 |  |  |      | —                             |
|  | Ambient T <sub>max</sub> (°C) ..... | --     | --          |  |  |      | —                             |
| Maximum measured temperature T of part/at.....:  |                                     | T (°C) |             |  |  |      | Allowed T <sub>max</sub> (°C) |
| Abnormal Charging (5V/1.5A applied directly to freshly drained battery)                            |                                     |        |             |  |  |      |                               |
| Battery Case   |                                     | 28.5   | 55.5        |  |  |      |                               |
| Battery Protection Circuit PWB   |                                     | 50.7   | 77.7        |  |  |      |                               |
| Test Duration:   |                                     | 17 hrs | Calc        |  |  |      |                               |
| <b>Supplementary information: Model D750:</b> Temps measured at 23°C and calculated for Tma = 50°C |                                     |        |             |  |  |      |                               |
| Battery charging is limited under single fault by two PTC's rated 0.75A hold, 1.5A trip.           |                                     |        |             |  |  |      |                               |

| 5.4.1.4,<br>9.3, B.1.5,<br>B.2.6   | TABLE: Thermal requirements         |        |             |  |  | (01) | P                             |
|--|-------------------------------------|--------|-------------|--|--|------|-------------------------------|
|  | Supply voltage (V) .....            | 5Vdc   | 5Vdc        |  |  |      | —                             |
|  | Ambient T <sub>min</sub> (°C) ..... | 23     | Tma =<br>50 |  |  |      | —                             |
|  | Ambient T <sub>max</sub> (°C) ..... | --     | --          |  |  |      | —                             |
| Maximum measured temperature T of part/at.....:  |                                     | T (°C) |             |  |  |      | Allowed T <sub>max</sub> (°C) |
| Rapid Discharge – 1.5A load applied directly to battery +/- output                                 |                                     |        |             |  |  |      |                               |
| Battery Case   |                                     | 35.1   | 62.1        |  |  |      |                               |
| Battery Protection Circuit PWB   |                                     | 41.3   | 68.3        |  |  |      |                               |
| Test Duration:   |                                     | >3 hrs | Calc        |  |  |      |                               |
| <b>Supplementary information: Model D750:</b> Temps measured at 23°C and calculated for Tma = 50°C |                                     |        |             |  |  |      |                               |
| Battery discharge is limited under single fault by two PTC's rated 0.75A hold, 1.5A trip.          |                                     |        |             |  |  |      |                               |

| IEC 62368-1  |   |                 |             |  |  |             |                                     |
|--|---|-----------------|-------------|--|--|-------------|-------------------------------------|
| Clause   | Requirement + Test                        | Result - Remark |             |  |  |             | Verdict                             |
| <b>5.4.1.4,<br/>9.3, B.1.5,<br/>B.2.6</b>  | <b>TABLE: Thermal requirements – D730</b> |                 |             |  |  | <b>(02)</b> | <b>P</b>                            |
|  | Supply voltage (V) .....                  | 3.7 Vdc         | 3.7 Vdc     |  |  |             | —                                   |
|  | Ambient T <sub>min</sub> (°C) .....       | 23              | Tma =<br>50 |  |  |             | —                                   |
|  | Ambient T <sub>max</sub> (°C) .....       | --              | --          |  |  |             | —                                   |
| <b>Maximum measured temperature T of part/at.....:</b>   |   | <b>T (°C)</b>   |             |  |  |             | <b>Allowed T<sub>max</sub> (°C)</b> |
| Scan Engine – Internal Plastic Case  |   | 33.7            | 60.7        |  |  |             | 105                                 |
| Microcontroller Case   |   | 34.3            | 61.3        |  |  |             | 105                                 |
| Battery Case   |   | 28.6            | 55.6        |  |  |             | 105                                 |
| External Plastic   |   | 29.3            | 56.3        |  |  |             | 85                                  |
| <b>Supplementary information: Model D730:</b> Temps measured at 23°C and calculated for Tma = 50°C<br>Device is set to repeatedly scan a barcode.<br>3.7Vdc is the internal battery voltage during test. |   |                 |             |  |  |             |                                     |

|  |   |                       |             |          |      |             |                                     |
|--|---|-----------------------|-------------|----------|------|-------------|-------------------------------------|
| <b>5.4.1.4,<br/>9.3, B.1.5,<br/>B.2.6</b>  | <b>TABLE: Thermal requirements – D600</b> |                       |             |          |      | <b>(03)</b> | <b>P</b>                            |
|  | <b>Supply voltage (V) .....</b>           | 3.7 Vdc               | 3.7 Vdc     |          | 5V   | 5V          | —                                   |
|  | <b>Ambient T<sub>min</sub> (°C) .....</b> | 25                    | Tma =<br>50 |          | 25   | Tma =<br>50 | —                                   |
|  | <b>Ambient T<sub>max</sub> (°C) .....</b> | --                    | --          |          | --   | --          | —                                   |
| <b>Maximum measured temperature T of part/at.....:</b>   |   | <b>T (°C)</b>         |             |          |      |             | <b>Allowed T<sub>max</sub> (°C)</b> |
|  |   | Scanning Continuously |             | Charging |      |             |                                     |
| Battery  |   | 37.0                  | 62.0        | 33.7     | 58.7 |             | 105                                 |
| Battery Lead   |   | 37.2                  | 62.2        | 34.4     | 59.4 |             | 105                                 |
| Inductor Bat Circuit   |   | 36.4                  | 61.4        | 44.6     | 69.6 |             | 105                                 |
| Main IC Case   |   | 36.9                  | 61.9        | 39.2     | 64.2 |             | 105                                 |
| Diode Case   |   | 36.4                  | 61.4        | 37.6     | 62.6 |             | 105                                 |
| IC Case Top PWB  |   | 36.4                  | 61.4        | 35.5     | 60.5 |             | 105                                 |
| Enclosure Plastic  |   | 33.9                  | 58.9        | 30.9     | 55.9 |             | 85                                  |
| <b>Supplementary information: Model D600:</b> Temps measured at 25°C and calculated for Tma = 50°C<br>Device is set to repeatedly scan.<br>3.7Vdc is the internal battery voltage during test. |   |                       |             |          |      |             |                                     |

| IEC 62368-1  |   |                 |             |  |                          |                                     |          |
|--|---|-----------------|-------------|--|--------------------------|-------------------------------------|----------|
| Clause   | Requirement + Test                        | Result - Remark |             |  |                          | Verdict                             |          |
| <b>5.4.1.4,<br/>9.3, B.1.5,<br/>B.2.6</b>  | <b>TABLE: Thermal requirements – D600</b> |                 |             |  |                          | <b>(03)</b>                         | <b>P</b> |
|  | <b>Supply voltage (V)</b> .....           | 3.7 Vdc         | 3.7 Vdc     |  | 5V                       | 5V                                  | —        |
|  | <b>Ambient T<sub>min</sub> (°C)</b> ..... | 25              | Tma =<br>50 |  | 25                       | Tma =<br>50                         | —        |
|  | <b>Ambient T<sub>max</sub> (°C)</b> ..... | --              | --          |  | --                       | --                                  | —        |
| <b>Maximum measured temperature T of part/at.....:</b>   |   | <b>T (°C)</b>   |             |  |                          | <b>Allowed T<sub>max</sub> (°C)</b> |          |
|  |   | Short +/-       |             |  | Overcharge 5V@2A Applied |                                     |          |
| Battery  |   | 27.9            | 52.9        |  | 38.1                     | 63.1                                | --       |
| Battery Wire   |   | 26.9            | 51.9        |  | 34.1                     | 59.1                                | --       |
| Supplementary information: Model D600 Battery Howell 18500: Temps measured at 25°C and calculated for Tma = 50°C |   |                 |             |  |                          |                                     |          |

|   |  |                       |             |    |          |                                     |          |
|---|--|-----------------------|-------------|----|----------|-------------------------------------|----------|
| <b>5.4.1.4,<br/>9.3, B.1.5,<br/>B.2.6</b>   | <b>TABLE: Thermal requirements – S7xx series</b> |                       |             |    |          | <b>(05)</b>                         | <b>P</b> |
|   | <b>Supply voltage (V)</b> .....                  | 2.75 Vdc              | 2.75 Vdc    | -- | 5.0 Vdc  | 5.0 Vdc                             | —        |
|   | <b>Ambient T<sub>min</sub> (°C)</b> .....        | 21                    | Tma =<br>50 |    | 21       | Tma =<br>50                         | —        |
|   | <b>Ambient T<sub>max</sub> (°C)</b> .....        | --                    | --          |    | --       | --                                  | —        |
| <b>Maximum measured temperature T of part/at.....:</b>  |  | <b>T (°C)</b>         |             |    |          | <b>Allowed T<sub>max</sub> (°C)</b> |          |
| Test Condition:   |  | Scanning Continuously |             | -- | Charging |                                     | --       |
| S730 - Warmest IC Case  |  | 29.3                  | 58.3        | -- | 36.7     | 65.7                                | 105      |
| S730 – uController IC Case  |  | 34.6                  | 63.6        | -- | 28.4     | 57.4                                | 105      |
| S730 – Q1 Voltage Regulator   |  | 30.5                  | 59.5        | -- | 33.4     | 62.4                                | 105      |
| S730 – Scanner Engine   |  | 34.8                  | 63.8        | -- | 24.2     | 53.2                                | 105      |
| S730 - Internal Plastic   |  | 28.1                  | 57.1        | -- | 31.2     | 60.2                                | 105      |
| S730 - Battery  |  | 28.7                  | 57.7        | -- | 27.4     | 56.4                                | 105      |
| <b>Supplementary information:</b>   |  |                       |             |    |          |                                     |          |
| Temps measured at 21°C and calculated for Tma = 50°C  |  |                       |             |    |          |                                     |          |
| Model S730 represents other models in series.   |  |                       |             |    |          |                                     |          |
| 5V is provided by external power source. 2.75V is the battery voltage at the beginning of the test. |  |                       |             |    |          |                                     |          |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

|   |   |          |          |    |             |                               |          |
|---|---|----------|----------|----|-------------|-------------------------------|----------|
| <b>5.4.1.4, 9.3, B.1.5, B.2.6</b>   | <b>TABLE: Thermal requirements – D750 w/ felloTech P/N 18500 Battery:</b> |          |          |    |             | <b>(08)</b>                   | <b>P</b> |
|   | Supply voltage (V) .....  | 5Vdc     | 5Vdc     |    | Batt (4.2V) | Batt (4.2V)                   | —        |
|   | Ambient T <sub>min</sub> (°C) .....                                       | 23       | Tma = 50 |    | 23          | Tma = 50                      | —        |
|   | Ambient T <sub>max</sub> (°C) .....                                       | --       | --       |    | --          | --                            | —        |
| Maximum measured temperature T of part/at.....:   |   | T (°C)   |          |    |             | Allowed T <sub>max</sub> (°C) |          |
|   |   | Charging |          | -- | Operating   |                               | --       |
| Battery Case (felloTech 18500)  |   | 25.8     | 52.8     |    | 33.1        | 60.1                          | 90       |
| U3 (USB Power Controller and Li-Ion Battery Charger (Warmest IC) (LTC4066)  |   | 34.1     | 61.1     |    | 33.0        | 60.0                          | 105      |
| U7 – (FAN3989) Case   |   | 29.2     | 56.2     |    | 34.9        | 61.9                          | 105      |
| U9 Battery Monitor (DS2745) Case  |   | 30.5     | 57.5     |    | 33.9        | 60.9                          | 105      |
| U11 (16-bit microcontroller) Case   |   | 28.6     | 55.6     |    | 35.2        | 62.2                          | 105      |
| Scan Engine - Metal Case  |   | 24.6     | 51.6     |    | 34.1        | 61.1                          | 105      |
| External Plastic  |   | 27.9     | 54.9     |    | 30.2        | 57.2                          | 95       |
| Supplementary information: Model D750 w/ felloTech P/N 18500 Battery:<br>Temps measured at 23°C and calculated for Tma = 50°C |   |          |          |    |             |                               |          |

|   |   |                  |             |    |               |                               |          |
|---|---|------------------|-------------|----|---------------|-------------------------------|----------|
| <b>5.4.1.4, 9.3, B.1.5, B.2.6</b>   | <b>TABLE: Thermal requirements - D750 w/ felloTech P/N 18500 Battery:</b> |                  |             |    |               | <b>(08)</b>                   | <b>P</b> |
|   | Supply voltage (V) .....  | Batt (4.2V)      | Batt (4.2V) |    | 5V @ 3A       | 5V @ 3A                       | —        |
|   | Ambient T <sub>min</sub> (°C) .....                                       | 23               | Tma = 50    |    | 23            | Tma = 50                      | —        |
|   | Ambient T <sub>max</sub> (°C) .....                                       | --               | --          |    | --            | --                            | —        |
| Maximum measured temperature T of part/at.....:   |   | T (°C)           |             |    |               | Allowed T <sub>max</sub> (°C) |          |
|   |   | 1) Short Battery |             | -- | 2) Overcharge |                               | --       |
| Battery Case (felloTech 18500)  |   | 24.6             | 51.6        |    | 46.6          | 73.6                          | 150      |
| Duration:   |   | >7 hrs           |             |    | >7 hrs        |                               | --       |
| Supplementary information: Model D750 w/ felloTech P/N 18500 Battery:<br>Temps measured at 23°C and calculated for Tma = 50°C   |   |                  |             |    |               |                               |          |
| 1) Battery short resulted in removal of output. No current / no temp increase. Removing short results in normal battery operation.<br>2) 5Vdc @ 3A applied directly to battery input terminals. Left in place for >7hrs. No significant temperature increase. |   |                  |             |    |               |                               |          |

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| Clause      | Requirement + Test | Result - Remark | Verdict |

| 5.4.1.4,<br>9.3, B.1.5,<br>B.2.6  | TABLE: Thermal requirements D755 (D7xx Series) (09) |             |    |                    |                    | P                                   |
|---|---|-------------|----|--------------------|--------------------|-------------------------------------|
| Supply voltage (V) .....  | 5Vdc  | 5Vdc        | -- | 4.14V<br>(battery) | 4.14V<br>(battery) | —                                   |
| Ambient T <sub>min</sub> (°C) .....   | 23  | Tma =<br>50 | -- | 23                 | Tma =<br>50        | —                                   |
| Ambient T <sub>max</sub> (°C) .....   | --  | --          | -- | --                 | --                 | —                                   |
| Maximum measured temperature T of<br>part/at.....:  | T (°C)  |             |    |                    |                    | Allowed<br>T <sub>max</sub><br>(°C) |
| Test Conditions:  | 1) Charging   |             | -- | 2) Operational     |                    | --                                  |
| Battery Case  | 29.9  | 56.9        | -- | 33.9               | 60.9               | 105                                 |
| U3 Case (Li-Ion Linear Charger )  | 66.5  | 93.5        | -- | 39.0               | 66.0               | 105                                 |
| U31 uController Case  | 35.5  | 62.5        | -- | 44.5               | 71.5               | 105                                 |
| U30 HW Decoder Case   | 31.5  | 58.5        | -- | 55.3               | 82.3               | 105                                 |
| Scan Engine   | 25.9  | 52.9        | -- | 45.8               | 72.8               | 105                                 |
| Touch temperature Limit:  | @25C  | --          | -- | @25C               | --                 | --                                  |
| Ext Plastic Held  | 27.4  | --          | -- | 30.7               | --                 | 48                                  |
| Supplementary information: Model D755: Represents other models in series.<br>Temps measured at 23°C and calculated for Tma = 50°C<br>1) Charging drained battery using external source set to 5.00Vdc<br>2) Worst case operation. Connected to laptop using bluetooth. Repeatedly scanning barcodes as fast as possible over extended period. |   |             |    |                    |                    |                                     |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

|  |   |                         |                      |    |                         |                      |                               |
|--|---|-------------------------|----------------------|----|-------------------------|----------------------|-------------------------------|
| <b>5.4.1.4, 9.3, B.1.5, B.2.6</b>  | <b>TABLE: Thermal requirements - D755 (D7xx Series)</b> |                         |                      |    |                         | <b>(09)</b>          | <b>P</b>                      |
|  | Supply voltage (V) .....                                | 5Vdc                    | 5Vdc                 | -- | 5Vdc                    | 5Vdc                 | —                             |
|  | Ambient T <sub>min</sub> (°C) .....                     | 23                      | T <sub>ma</sub> = 50 | -- | 23                      | T <sub>ma</sub> = 50 | —                             |
|  | Ambient T <sub>max</sub> (°C) .....                     | --                      | --                   | -- | --                      | --                   | —                             |
| Maximum measured temperature T of part/at.....:  |   | T (°C)                  |                      |    |                         |                      | Allowed T <sub>max</sub> (°C) |
| Test Conditions:   |   | 1) Short U3 (IN to BAT) |                      | -- | 2 Short U3 (Out to BAT) |                      | --                            |
| Battery Case   |   | 24.6                    | 51.6                 | -- | 25.7                    | 52.7                 | 105                           |
| Test Duration:   |   | 1 hr                    |                      |    | 16 hrs                  |                      |                               |
| <p>Supplementary information: Model D755: Represents other models in series.<br/>                 Temps measured at 23°C and calculated for T<sub>ma</sub> = 50°C</p> <p>1) Charging w/ SC applied to U3 IN (pin 9) to BAT (2,4,5). 5V applied and charging begins at 0.58A (Input). Affect is that during charge time portion of the cycle, it charges at 342mA rather than 453mA. Left in place for 1 hr.</p> <p>2) Charging w/ SC applied to U3 OUT (1,3,8) to BAT (2,4,5). 0.453 charge current, then 900mA charge current for first 5 seconds when short is applied. After that, the charge current reduces to 475mA. Input current to device is around 0.7 to 0.8A. (PTC is limiting charge current into battery).</p> |   |                         |                      |    |                         |                      |                               |

| Temperature T of winding:  | t <sub>1</sub> (°C) | R <sub>1</sub> (Ω) | t <sub>2</sub> (°C) | R <sub>2</sub> (Ω) | T (°C) | Allowed T <sub>max</sub> (°C) | Insulation class |
|----------------------------|---------------------|--------------------|---------------------|--------------------|--------|-------------------------------|------------------|
|                            |                     |                    |                     |                    |        |                               |                  |
| Supplementary information: |                     |                    |                     |                    |        |                               |                  |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| B.3, B.4  |   | TABLE: Abnormal operating and fault condition tests |           |          |                  |  | P |
|---|---|---|-----------|----------|------------------|--|---|
| Ambient temperature $T_{amb}$ (°C) .....                          |   | See table B.2.6                                     |           |          |                  |  | — |
| Power source for EUT: Manufacturer, model/type, output rating.... |   | See heating table B.2.6 for details                 |           |          |                  |  | — |
| Component No.   | Condition   | Supply voltage (V)                                  | Test time | Fuse no. | Fuse current (A) | Observation  |   |
| (01)  |   |   |           |          |                  |  |   |
| Battery   | Short   | 4.0V (Battery)                                      | <10mS     | --       | --               | Short applied to battery terminals. PCM module removes the short immediately. Left in place for 1 hr.  |   |
| Battery   | Apply 15VA  | 4.05V (Uoc)   | <10mS     | --       | --               | Apply 15VA load to battery output +/- Output goes to 0V in <10mS. Circuit must be removed before resumption of output.   |   |
| Battery   | MAX VA  | 4.05 Uoc  | --        | --       | --               | Load applied directly to battery output terminals. Load started at 0 and rapidly increased to find max VA. Max 3.32A, 9.6W before shutdown. Circuit must be removed before resumption of output.   |   |
| Battery   | Simulate single Fault to Charging Circuit in model D7xx | 5Vdc  | >17hr     | -        | -                | 5V@1.5A applied directly to battery +/- terminals. PCM module removes power when battery voltage reached 4.407Vdc. Left in place overnight for >17hrs. NB, NC, NT<br>Model D7xx has two 0.75A hold (1.5A trip) certified PTC's which limit the charge current to the battery. 1.5A was selected to simulate worst case charging current. |   |
| Battery   | Simulate fault to PCM Module. Short U2 (both CO and DO) | 5Vdc  |           |          |                  | Input current is the same as under normal charge (0.34A). Left in place for >7 hrs.<br>NB, NC, NT  |   |
| (03)  |   |   |           |          |                  |  |   |
| Battery (D600)  | Short   | 3.7V (Battery)                                      | <10mS     | --       | --               | Short applied to battery terminals. PCM module removes the short immediately. Left in place for 1 hr.  |   |
| Battery (D600)  | Apply 15VA  | 4.03V (Uoc)   | <10mS     | --       | --               | Apply 15VA load to battery output +/- Output goes to 0V in <10mS. Circuit must be removed before resumption of output.   |   |
| Battery (D600)  | MAX VA  | 4.03 Uoc  | --        | --       | --               | Load applied directly to battery output terminals. Load started at 0 and rapidly increased to find max VA. Max 3.1A, 8.4W before shutdown. Circuit must be removed before resumption of output.  |   |
| Battery (D600)  | Overcharge  | 5Vdc  | 15Hrs     |          |                  | 5V@2A applied directly to battery +/- terminals. PCM module removes power when battery voltage reached 4Vdc.   |   |



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|--|---|--|--------|-----------------|----|---|
| Clause                                     | Requirement + Test                        |  |        | Result - Remark |    | Verdict   |
| (05)                                       |   |  |        |                 |    |   |
| S700                                       | Batteries reversed                        | -2.75V                                     |        | --              | -- | Batteries Reversed.<br>Q2 blocks reverse voltage. No battery current when placed in reverse. Left in place for 1 hour. No damage to unit. NC, NT  |
| S700                                       | Batteries reversed / Charging             | 5Vdc input<br>-2.75V (rev battery voltage) |        | --              | -- | Batteries reversed, and charging applied to barrel jack. Scanner works (operating from input voltage, but no battery current. Q2 blocks reversed battery voltage.<br>No damage, NC, NT  |
| S700                                       | Batteries reversed / Q2 shorted           | -2.75V                                     |        | --              | -- | Batteries Reversed and Q2 shorted.<br>Current flows, but PTC3 limits reverse discharge current to approx. 700mA. Left in place for 1 hour. No damage to unit. NC, NT  |
| S700                                       | Batteries reversed / Q2 shorted: Charging | 5Vdc input<br>-2.75V (rev battery voltage) |        | --              | -- | Batteries reversed, Q2 shorted and charging applied to barrel jack. PTC3 limits the reverse current from batteries to approx. 700mA. Charging is not implemented when the input voltage is applied. Battery voltage is cut off from rest of circuitry.<br>No damage, NC, NT |
| (06)                                       |   |  |        |                 |    |   |
| D7xx Alternate Battery Novacell P/N 201806 | MAX VA                                    | 4.09Uoc                                    | --     | --              | -- | Load applied directly to battery output terminals. Load started at 0 and rapidly increased to find max VA. Max 3.59A, 10.8W before shutdown. Circuit must be removed before resumption of output.<br>(D   |
| D7xx Alternate Battery Novacell P/N 201806 | Overcharge                                | 5Vdc                                       | 15Hrs  | --              | -- | 5V@2A applied directly to battery +/- terminals. (2A is well above the PTC trip current of 1.5A). The PCM module removes power when the battery voltage exceeds 4.75Vdc.  |
| (08)                                       |   |  |        |                 |    |   |
| D700 Alternate Battery felloTech P/N 18500 | Short                                     | 4.2 Vdc Uoc                                | >7 hrs | --              | -- | Short output directly at battery output terminals. Output is immediately removed. Left in place for 7 hrs with no temperature increase on battery case. Battery functions normally after short is removed. See table 4.5 for temps.<br>NC, NT                               |
| D700 Alternate Battery felloTech P/N 18500 | Overcharge                                | 5Vdc                                       | >7 hrs |                 |    | 5V@3A applied directly to battery +/- terminals. (3A is well above the PTC trip current of 1.5A). Charging current reduced to 0A, once battery is fully charged. See table 4.5 for temps.<br>NC, NT   |
| (09)                                       |   |  |        |                 |    |   |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

|              |                                     |      |         |    |    |   |
|--------------|-------------------------------------|------|---------|----|----|---|
| D755 Battery | Overcharge<br>(Short U3 IN to BAT)  | 5Vdc | >1hr    | -- | -- | Short applied to U3 IN (pin 9) to BAT (pins 2,4,5). 5V applied and charging begins at 0.58A (Input). Charging is 0.453A CC. With short in place charge time portion of the cycle is reduced to 342mA. Input current to the device remains the same 0.58A.<br>Left in place for >1 hour. Only 1.6 deg rise on battery case.<br>NL, NS, NE, NF, NT, NC                                      |
| D755 Battery | Overcharge<br>(Short U3 OUT to BAT) | 5Vdc | >16 hrs | -- | -- | Short U3 Out (pins 1,3,8) to BAT (pins 2,4,5). 0.453A normal charge current, then 984mA charge current for first 5 seconds when short is applied. After that, the charge current reduces to 475mA shortly after. Input current to device is around 0.7 to 0.8A. Battery is fully charged after 2.55 hrs where charging is removed. Left in place for >16 hours.<br>NL, NS, NE, NF, NT, NC |

Supplementary information:

NB - No indication of dielectric breakdown; YB - Dielectric breakdown (indicate time and location)  
 NC - Cheesecloth remained intact; YC - Cheesecloth charred or flamed  
 NT - Tissue paper remained intact; YT - Tissue paper charred or flamed

| M.3  | TABLE: Protection circuits for batteries provided within the equipment (01) |                                    |                    |   |   |                              | P               |
|--|---|------------------------------------|--------------------|---|---|------------------------------|-----------------|
| Is it possible to install the battery in a reverse polarity position? .....                |   |                                    |                    |   |   | No                           | —               |
| Equipment Specification  | Charging  |                                    |                    |   |   |                              |                 |
|  | Voltage (V)   |                                    |                    |   | Current (A)   |                              |                 |
|  | 5Vdc  |                                    |                    |   | Rated 1.0A<br>(limited by PTC rated 0.75A hold, 1.5A trip)        |                              |                 |
| Manufacturer/type  | Battery specification   |                                    |                    |   |   |                              |                 |
|  | Non-rechargeable batteries  |                                    |                    | Rechargeable batteries  |   |                              |                 |
|  | Discharging current (A)   | Unintentional charging current (A) | Charging           |   | Discharging current (A)   | Reverse charging current (A) |                 |
|  |   |                                    | Voltage (V)        | Current (A)   |   |                              |                 |
| Howell Energy Co Ltd<br>ICR18500<br>3.7V 1400mAH   | --  | --                                 | 3.7V<br>(4.6V max) | 0.2C <sub>5</sub> A Std<br>(520mA)<br><br>1C <sub>5</sub> A Fast Charge | 0.2C <sub>5</sub> A Std<br>(520mA)<br><br>1.5C <sub>5</sub> A Max | --                           |                 |
| Note: The tests of M.3.2 are applicable only when above appropriate data is not available. |   |                                    |                    |   |   |                              |                 |
| Specified battery temperature (°C) .....   |   |                                    |                    |   |   | 0-45C (Charging)             |                 |
| Component No.  | Fault condition   | Charge/discharge mode              | Test time          | Temp. (°C)  | Current (A)   | Voltage (V)                  | Observation     |
| --   | Normal  | Charge                             | --                 | --  | 0.292A  | --                           | Normal charging |

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|--|----------------------------|-----------|--------|------|-----------------|-------------------|---|
| Clause   | Requirement + Test         |           |        |      | Result - Remark |                   | Verdict   |
| Battery  | 5V@1.5A Applied to Battery | Charging  | 17 hrs | 28.5 | 1.5A            | 3.6 to 4.407 Vdc  | Simulate faults in Model D7xx battery charging circuit. Applied 5V@1.5A directly to the battery +/- terminals. (this would be the highest charge current due to use of two PTC's both of which would limit the current). Left fault in place for >17hrs. Battery charges and then stops when PCM module senses voltage is above the max charge voltage. See table 4.5 for battery and PCM temps measured during test.<br>NL, NS, NE, NF, NT, NC |
| U2   | Short                      | Charging  | 7 hrs  | 25.7 | 0.34            | 4.149 Vdc         | Short U2 in PCM on battery. Battery is installed inside model D7xx and then charged. 5V@10A applied to USB input from external power source. Resulting input current is 0.34A (same as normal charge). Left in place for >7 hrs. After approx 4 hrs, the input current was reduced to zero. The voltage across the battery was 4.149Vdc.<br>NL, NS, NE, NF, NT, NC  |
| --   | Short                      | Discharge | 17 hrs | 35.1 | 1.5A            | 4.3V to depletion | 1.5A load applied directly to battery. Simulating component fault after PTC. NL, NS, NE, NF, NT, NC   |
| Supplementary information:   |                            |           |        |      |                 |                   |   |
| Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. |                            |           |        |      |                 |                   |   |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| M.3  | TABLE: Protection circuits for batteries provided within the equipment (05) |  |                                 |  |                         |                              | P               |
|--|---|--|---------------------------------|--|-------------------------|------------------------------|-----------------|
| Is it possible to install the battery in a reverse polarity position? .....  |   | Yes, but blocking diode Q2 protects against damage if this occurs. |                                 |  |                         | —                            |                 |
| Equipment Specification  | Charging  |  |                                 |  |                         |                              |                 |
|  | Voltage (V)   |  |                                 | Current (A)  |                         |                              |                 |
|  | 5Vdc  |  |                                 | Rated 1.0A<br>(limited by PTC rated 0.75A hold, 1.5A trip) |                         |                              |                 |
| Manufacturer/type  | Battery specification   |  |                                 |  |                         |                              |                 |
|  | Non-rechargeable batteries  |  |                                 | Rechargeable batteries                                     |                         |                              |                 |
|  | Discharging current (A)   | Unintentional charging current (A)                                 | Charging                        |  | Discharging current (A) | Reverse charging current (A) |                 |
|  |   |  | Voltage (V)                     | Current (A)  |                         |                              |                 |
| S7xx Series  | --  | 1.2V (x2)  | Std Charge<br>200mA<br>(0.1C)   | 1C to 1.0V   | --                      |                              |                 |
| AA NI-MH<br>NI-MH Battery, Rated 1.2V (x2),<br>2000mAh<br>UL 2054  |   |  | Fast Charge<br>1000mA<br>(0.5C) | Max<br>4000mAH<br>(2C)                                     |                         |                              |                 |
| Note: The tests of M.3.2 are applicable only when above appropriate data is not available.   |   |  |                                 |  |                         |                              |                 |
| Specified battery temperature (°C) .....   |   |  |                                 | 0-45C (Charging)   |                         |                              |                 |
| Component No.  | Fault condition   | Charge/discharge mode  | Test time                       | Temp. (°C)   | Current (A)             | Voltage (V)                  | Observation     |
| --   | Normal  | Charge   | --                              | --   | 0.362A                  | --                           | Normal charging |
| Supplementary information:   |   |  |                                 |  |                         |                              |                 |
| Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. |   |  |                                 |  |                         |                              |                 |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| M.3  | TABLE: Protection circuits for batteries provided within the equipment (06) |                                    |                          |  |  |                              | P               |
|--|---|------------------------------------|--------------------------|--|--|------------------------------|-----------------|
| Is it possible to install the battery in a reverse polarity position? .....  |   | No – connector is keyed.           |                          |  |  | —                            |                 |
| Equipment Specification  | Charging  |                                    |                          |  |  |                              |                 |
|  | Voltage (V)   |                                    |                          |  | Current (A)  |                              |                 |
|  | 5Vdc  |                                    |                          |  | Rated 1.0A<br>(limited by PTC rated 0.75A hold, 1.5A trip) |                              |                 |
| Manufacturer/type  | Battery specification   |                                    |                          |  |  |                              |                 |
|  | Non-rechargeable batteries  |                                    |                          | Rechargeable batteries   |  |                              |                 |
|  | Discharging current (A)   | Unintentional charging current (A) | Charging                 |  | Discharging current (A)                                    | Reverse charging current (A) |                 |
|  |   |                                    | Voltage (V)              | Current (A)  |  |                              |                 |
| D7xx Series –<br>Novacell P/N 201806<br>(D760/D790)<br><br>Li-Ion Battery,<br>3.7V, 1500mAh  | --  | --                                 | 3.7V<br>(2.75 to 4.2Vdc) | Std Charge<br>300mA<br>(0.2CA)<br><br>Fast Charge<br>1500mA<br>(1.0CA) | 0.2CA<br>(300mA)<br><br>Max 1.0 CA<br>(1500mA)             | --                           |                 |
| Note: The tests of M.3.2 are applicable only when above appropriate data is not available.   |   |                                    |                          |  |  |                              |                 |
| Specified battery temperature (°C) .....   |   |                                    |                          | 0-40C (Charging)   |  |                              |                 |
| Component No.  | Fault condition   | Charge/discharge mode              | Test time                | Temp. (°C)   | Current (A)  | Voltage (V)                  | Observation     |
| --   | Normal  | Charge                             | --                       | --   | 0.275A   | --                           | Normal charging |
| Supplementary information:   |   |                                    |                          |  |  |                              |                 |
| Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. |   |                                    |                          |  |  |                              |                 |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

|  |  |                                    |  |  |  |                              |
|--|--|------------------------------------|--|--|--|------------------------------|
| <b>M.3</b>   | <b>TABLE: Protection circuits for batteries provided within the equipment (08)</b> |                                    |  | <b>P</b>   |  |                              |
| Is it possible to install the battery in a reverse polarity position? .....          |  | No – connector is keyed.           |  | —  |  |                              |
| Equipment Specification  | Charging   |                                    |  |  |  |                              |
|  | Voltage (V)  |                                    | Current (A)  |  |  |                              |
|  | 5Vdc   |                                    | Rated 1.0A<br>(limited by PTC rated 0.75A hold, 1.5A trip) |  |  |                              |
| Manufacturer/type  | Battery specification  |                                    |  |  |  |                              |
|  | Non-rechargeable batteries   |                                    | Rechargeable batteries                                     |  |  |                              |
|  | Discharging current (A)  | Unintentional charging current (A) | Charging   |  | Discharging current (A)                        | Reverse charging current (A) |
|  |  |                                    | Voltage (V)  | Current (A)  |  |                              |
| D7xx Series – Alt Battery - felloTech P/N 18500<br><br>Li-Ion Battery, 3.7V, 1400mAh | --   | --                                 | 3.7V<br>(2.75 to 4.2Vdc)                                   | Std Charge<br>280mA<br>(0.2CA)<br><br>Fast Charge<br>1400mA<br>(1.0CA) | 0.2CA<br>(280mA)<br><br>Max 1.0 CA<br>(1400mA) | --                           |

Note: The tests of M.3.2 are applicable only when above appropriate data is not available.

Specified battery temperature (°C)..... : 0-40C (Charging)

| Component No. | Fault condition                     | Charge/ discharge mode | Test time | Temp. (°C) | Current (A)                              | Voltage (V) | Observation  |
|---------------|-------------------------------------|------------------------|-----------|------------|--|-------------|--|
| --            | Normal                              | Charge                 | --        | --         | 0.275A                                   | --          | Normal charging  |
| Battery       | 5V @ 3A applied directly to battery | Charge                 | >7 hrs    | 46.6       | 1400mA<br>(PEC OC protection = 1.3-2.5A) | --          | 5Vdc @ 3A applied directly to battery input terminals. Left in place for >7hrs. No significant temperature increase. NL, NS, NE, NF, NT, NC            |
| Battery       | Short                               | Discharge              | >7 hrs    | 24.6       | --                                       | --          | Battery short resulted in removal of output. No current / no temp increase. Removing short results in normal battery operation. NL, NS, NE, NF, NT, NC |

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| M.3  | TABLE: Protection circuits for batteries provided within the equipment (09) |                                    |                     |                         |  |                              | P   |
|--|---|------------------------------------|---------------------|-------------------------|--|------------------------------|---|
| Is it possible to install the battery in a reverse polarity position? .....  |   |                                    |                     |                         |  | No                           | —   |
| Equipment Specification  | Charging  |                                    |                     |                         |  |                              |   |
|  | Voltage (V)   |                                    |                     |                         | Current (A)  |                              |   |
|  | 5Vdc  |                                    |                     |                         | Rated 1.0A<br>(limited by PTC rated 0.75A hold, 1.5A trip) |                              |   |
| Manufacturer/type  | Battery specification   |                                    |                     |                         |  |                              |   |
|  | Non-rechargeable batteries  |                                    |                     | Rechargeable batteries  |  |                              |   |
|  | Discharging current (A)   | Unintentional charging current (A) | Charging            |                         | Discharging current (A)                                    | Reverse charging current (A) |   |
|  |   |                                    | Voltage (V)         | Current (A)             |  |                              |   |
| felloTech P/N 18500 (5Vdc (input) D755   | --  | --                                 | 3.5-4.3Vdc (varies) | 0.453 CC (into battery) | Max 0.316A<br>Avg 0.183A                                   | --                           |   |
| Note: The tests of M.3.2 are applicable only when above appropriate data is not available.   |   |                                    |                     |                         |  |                              |   |
| Specified battery temperature (°C) .....   |   |                                    |                     |                         |  | 0-45C (Charging)             |   |
| Component No.  | Fault condition   | Charge/discharge mode              | Test time           | Temp. (°C)              | Current (A)  | Voltage (V)                  | Observation   |
| U3   | Short<br>Pin 9 (in)<br>to Pins 2,4,5 (BAT)                                  | Overcharging                       | 1 hr                | 24.6                    | 0.342A   | 4.14                         | 5V applied and charging begins at 0.58A (Input). Charging is 0.453A CC. With short in place charge time portion of the cycle is reduced to 342mA. Input current to the device remains the same 0.58A.<br>Left in place for 1 hour. Only 1.6 deg rise on battery case.<br>NL, NS, NE, NF, NT, NC   |
| U3   | Short pins 1,3,8 (OUT) to Pins 2,4,5 (BAT)                                  | A. Overcharging                    | 16 hrs              | 25.7                    | 0.984A<br>Pk for <5 seconds.<br><br>Avg 0.457A             | 3.590<br>to<br>4.278         | 0.453A normal charge current, then 984mA charge current for first 5 seconds when short is applied. After that, the charge current reduces to 475mA shortly after. Input current to device is around 0.7 to 0.8A. Left in place for 16 hours. Battery is fully charged after 2.55 hrs where charging is removed.<br>NL, NS, NE, NF, NT, NC |
| Supplementary information:   |   |                                    |                     |                         |  |                              |   |
| Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. |   |                                    |                     |                         |  |                              |   |

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|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| M.4.2  | TABLE: Charging safeguards for equipment containing a secondary lithium battery (D7xx Series) |                      |                      |            | P                            |
|--|---|----------------------|----------------------|------------|------------------------------|
| Maximum specified charging voltage (V) .....   | 4.3V max  |                      |                      |            | —                            |
| Maximum specified charging current (A) .....   | 1400mA  |                      |                      |            | —                            |
| Highest specified charging temperature (°C) .....  | 45C   |                      |                      |            |                              |
| Lowest specified charging temperature (°C) .....   | 0C  |                      |                      |            |                              |
| Battery manufacturer/type  | Operating and fault condition   | Measurement          |                      |            | Observation                  |
|  |   | Charging voltage (V) | Charging current (A) | Temp. (°C) |                              |
| felloTech P/N 18500  | Norm  | 3.516                | 0.453                | 23C        | Charging                     |
| felloTech P/N 18500  | LCST  | 3.401*               | --                   | 0C         | * Battery voltage. No charge |
| felloTech P/N 18500  | Norm  | 3.614                | 0.453                | 10C        | Charging                     |
| felloTech P/N 18500  | Norm  | 3.523                | 0.453                | 40C        | Charging                     |
| felloTech P/N 18500  | HCST  | 3.422*               | --                   | 45C        | * Battery voltage. No charge |
| felloTech P/N 18500  | Norm  | 3.422*               | --                   | 50C        | * Battery voltage. No charge |
| Supplementary information: <a href="#">Model D755</a>  |   |                      |                      |            |                              |
| Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature |   |                      |                      |            |                              |

| Q.1                                    | TABLE: Circuits intended for interconnection with building wiring (LPS) |                     |          |                     |       | N/A    |       |
|--|---|---------------------|----------|---------------------|-------|--------|-------|
| Output Circuit                         | Condition   | U <sub>oc</sub> (V) | Time (s) | I <sub>sc</sub> (A) |       | S (VA) |       |
|  |   |                     |          | Meas.               | Limit | Meas.  | Limit |
|  |   |                     |          |                     |       |        |       |
|  |   |                     |          |                     |       |        |       |
| Supplementary Information: No outputs. |   |                     |          |                     |       |        |       |



| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| T.2, T.3, T.4, T.5  |               | TABLE: Steady force test |       |           |                   |             | P |
|---|---------------|--------------------------|-------|-----------|-------------------|-------------|---|
| Part/Location   | Material      | Thickness (mm)           | Probe | Force (N) | Test Duration (s) | Observation |   |
| Top   | Thermoplastic | >1mm                     | 30mm  | 100N      | 5 Sec             | No hazards  |   |
| Bottom  | Thermoplastic | >1mm                     | 30mm  | 100N      | 5 Sec             | No hazards  |   |
| Right / Left Sides  | Thermoplastic | >1mm                     | 30mm  | 100N      | 5 Sec             | No hazards  |   |
| Supplementary information: <b>100N required (Actual = 111N)</b> |               |                          |       |           |                   |             |   |

| T.6, T.9   |          | TABLE: Impact test |             |             |  | N/A |
|--|----------|--------------------|-------------|-------------|--|-----|
| Location/part  | Material | Thickness (mm)     | Height (mm) | Observation |  |     |
|  |          |                    |             |             |  |     |
|  |          |                    |             |             |  |     |
| Supplementary information: Class III device powered by ES1. No hazardous circuits. |          |                    |             |             |  |     |

| T.7  |               | TABLE: Drop test |             |                       |  | P |
|--|---------------|------------------|-------------|-----------------------|--|---|
| Location/part  | Material      | Thickness (mm)   | Height (mm) | Observation           |  |   |
| Bottom   | Thermoplastic | >1mm             | 1000 mm     | No damage, No access. |  |   |
| Top  | Thermoplastic | >1mm             | 1000 mm     | No damage, No access. |  |   |
| Front / Side   | Thermoplastic | >1mm             | 1000 mm     | No damage, No access. |  |   |
| Supplementary information: <b>Passes tests of M.4.4 following drop test.</b> |               |                  |             |                       |  |   |

| T.8                        |          | TABLE: Stress relief test |                       |              |             | N/A |
|----------------------------|----------|---------------------------|-----------------------|--------------|-------------|-----|
| Location/Part              | Material | Thickness (mm)            | Oven Temperature (°C) | Duration (h) | Observation |     |
|                            |          |                           |                       |              |             |     |
|                            |          |                           |                       |              |             |     |
|                            |          |                           |                       |              |             |     |
| Supplementary information: |          |                           |                       |              |             |     |

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| <b>X</b>                     | <b>TABLE: Alternative method for determining minimum clearances distances</b> |                  |                  | N/A |
|------------------------------|---|------------------|------------------|-----|
| Clearance distanced between: | Peak of working voltage (V)   | Required cl (mm) | Measured cl (mm) |     |
|                              |   |                  |                  |     |
|                              |   |                  |                  |     |
| Supplementary information:   |   |                  |                  |     |

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| 4.1.2                            |                                      | TABLE: Critical components information                       |  |  |  | P   |
|----------------------------------|--------------------------------------|--|--|--|--|---|
| Item No.                         | Object/part no.                      | Manufacturer/ Trademark                                      | Type/Model   | Technical Data   | Standard   | Mark(s) of Conformity   |
| <b>1) Models D7xx, D600 only</b> |                                      |  |  |  |  |   |
| 1.1a                             | Thermoplastic, Housing (top, bottom) | GE (Sabic)   | Cycoloy C6200  | Rated minimum 94V-0 at 2.5mm thick.  | UL94   | UL ( <a href="#">E121562</a> )                                    |
| 1.1b                             | Alternate                            | Interchangeable  | Interchangeable  | Rated minimum 94-HB  | UL94   | UL  |
| 1.2                              | Printed wiring board (SELV)          | Interchangeable  | Interchangeable  | Min V-1, 105 °C  | UL796  | UL  |
| 1.3                              | PTC (PTC1, PTC2)                     | Bel Fuse   | 0ZCC0075FF2C   | Rated 16V, Hold current 0.75A, Trip current 1.5A.<br><small>(Limits input current from USB port, or Cradle connector to the device).</small> | EN 60738-1-1<br>UL 1434                                | TUV<br>UL (E305051)   |
| 1.4a                             | Scan Engine – Model D700             | Zebra<br><small>(Symbol Technologies Inc., Motorola)</small> | SE655 Series<br>(SE-655-E100R)   | Scan Engine, CMOS linear imager<br>Class 1 LED (630nm)   | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-30133-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 1.4b                             | Alternate Scan Engine – D700         | Cipherlab co LTD.  | SM1  | Scan Engine, CMOS linear imager<br>Class 1 LED   | EN/IEC62471 (Exempt Group)<br>IEC 60950-1              | CB (Tested with product)  |
| 1.5                              | Scan Engine – Model D730             | Zebra<br><small>(Symbol Technologies Inc., Motorola)</small> | SE-965HP-xxxxx<br><small>(where x represents Interchangeable alphanumeric suffixes which do not affect safety).</small>  | Scan Engine, with Class 2 internal Laser Radiation (650nm)   | IEC/EN 60825-1<br>UL 60950-1                           | CB (US-26231-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 1.6a                             | Scan Engine - Model D740             | Zebra<br><small>(Symbol Technologies Inc., Motorola)</small> | SE2707 (may be followed by additional alphanumeric characters)   | LED, 610nm (AIM), 660nm (Illum)  | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-29768-UL)<br>cURus ( <a href="#">E143267</a> )             |
| <b>1.6b</b>                      | <b>Alternate</b>                     | <b>Zebra, (Symbol, Motorola)</b>                             | <b>SE4107-xxxxxx</b><br><b>(where X may be any alphanumeric character or blank representing configuration options not impacting product safety)</b>                  | <b>Scan Engine, linear imager, LED</b>   | <b>EN/IEC62471 (Exempt Group)</b><br><b>UL 62368-1</b> | <b>CB (US-35970-UL)</b><br><b>cURus (<a href="#">E143267</a>)</b> |
| 1.7                              | Scan Engine - Model D745             | Zebra, (Symbol, Motorola)                                    | SE2707 (may be followed by additional alphanumeric characters)   | LED, 610nm (AIM), 660nm (Illum)  | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-29768-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 1.8                              | Scan Engine – Model D750             | Intermec   | EA31 Series (P/N 3-14301102)   | CMOS 2D imager w/ LED Aimer, Class 1 LED (617nm)   | UL 60950-1   | UL ( <a href="#">E142821</a> )                                    |
| 1.9                              | Scan Engine – Model D755             | Zebra, (Symbol, Motorola)                                    | SE4720   | LED, 525nm, Green AIM  | EN/IEC62471 (Exempt Group)<br>UL 62368-1               | CB (US-34315-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 1.10a                            | Scan Engine - Model D760             | Symbol Technologies (Motorola, Zebra)                        | SE4710 (SE4710-xxxxxx)<br><small>(where each "X" may be any alphanumeric character or blank representing configuration options not affecting product safety)</small> | CCD imager, Class I LED<br>610nm Aiming LED.<br>Hyper Red 660nm Illumination LED.  | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-29768-UL)<br>cURus ( <a href="#">E143267</a> )             |

| IEC 62368-1                       |                                      |  |                                |   |  |  |
|-----------------------------------|--------------------------------------|--|--------------------------------|---|--|--|
| Clause                            | Requirement + Test                   |  |                                | Result - Remark   | Verdict                                  |  |
| 1.10b                             | Alternate Scan Engine – Model D760   | Zebra, (Symbol, Motorola)                | SE4720                         | Red LED 610nm (AIM), 660nm (illum)  | EN/IEC62471 (Exempt Group)<br>UL 62368-1 | C'B (US-34315-UL)<br>cURus ( <a href="#">E143267</a> ) |
| 1.11                              | Scan Engine - Model D790             | Symbol Technologies (Motorola, Zebra)    | SE4750DP                       | Scan Engine, with Class 2 internal Laser Radiation (655nm)  | EN/IEC62471 (Exempt Group)<br>UL 60950-1 | CB<br>UL ( <a href="#">E143267</a> )                   |
| 1.12a                             | RFID Scan Engine – Model D600        | NXP                                      | CLRC663                        | NFC (non-optical) type reader   | --                                       | Evaluated with product                                 |
| 1.12b                             | Alternate                            | Interchangeable                          | Interchangeable                | NFC (non-optical) type reader   | --                                       | Evaluated with product                                 |
| 1.13                              | Li-Ion Battery Charger IC            | Linear Technology                        | LTC4066                        | Single Cell charger from USB Port. Rated 500mA  | --                                       | Evaluated with product.                                |
| 1.14                              | NTC Thermistor (R68)                 | Interchangeable                          | Interchangeable                | Rated 10k<br>(Thermistor temporarily disables charging if battery temp exceeds 50C)   | --                                       | Evaluated with product.                                |
| 1.15                              | (PTC3, Battery)                      | Bel Fuse                                 | 0ZCC0075FF2C                   | Rated 16V, Hold current 0.75A, Trip current 1.5A.<br><br>(First component after battery connector. Limits both charge current into the battery and discharge current from battery). | UL 1434<br>EN 60738-1-1                  | UL ( <a href="#">E305051</a> )<br>TUV                  |
| 1.16                              | Battery:                             | Consists of the following                |                                | Single Cell Battery w/ protection circuit module. PVC Jacket and 28 AWG wiring and connector.   | --                                       | Tested as part of evaluation.                          |
| 1.16.1a                           | Battery Cell                         | Howell Energy Co. Ltd.                   | ICR18500 (18500)               | Lithium Ion Polymer Battery, Rated 3.7V (4.6V max), 1400mAh   | UL1642                                   | UL ( <a href="#">MH49053</a> )                         |
| 1.16.1b                           | Alternate Battery Cell               | Novacell (HUIZHOU WES NEW ENERGY CO LTD) | P/N 201806<br>ICR18500 (18500) | Lithium Ion Polymer Battery, Rated 3.7V, 1500mAh  | UL1642                                   | UL ( <a href="#">MH61023</a> )                         |
| 1.16.1c                           | Alternate Battery Cell               | felloTech (Fello Tech Co Ltd)            | P/N 18500                      | Lithium Ion Polymer Battery, Rated 3.7V, 1400mAh  | UL1642                                   | UL ( <a href="#">MH61728</a> )                         |
| 1.16.2                            | Protection Circuit Module            | Interchangeable                          | Interchangeable                | Protection Circuit<br><br>Limits battery charge and Discharge.  | --                                       | --   |
| <b>2) Models S7xx Series only</b> |                                      |  |                                |   |  |  |
| 2.1a                              | Thermoplastic, Housing (top, bottom) | Chi Mei Corporation                      | PC-540A                        | "Wonderloy" PC/ABS, Rated minimum 94V-0 at 1.5mm thick.   | UL94                                     | UL ( <a href="#">E56070</a> )                          |
| 2.1b                              | Alternate                            | Interchangeable                          | Interchangeable                | Rated minimum 94-HB   | UL94                                     | UL   |
| 2.2a                              | Printed wiring board (SELV)          | Cheng-Mao, Electronics Co Ltd            | Type 2M                        | Rated V-0, 130°C  | UL796                                    | UL   |
| 2.2b                              | Alternate                            | Interchangeable                          | Interchangeable                | Min V-1, 105 °C   | UL796                                    | UL   |

| IEC 62368-1 |                                    |  |  |  |  |   |
|-------------|------------------------------------|--|--|--|--|---|
| Clause      | Requirement + Test                 |  |  | Result - Remark  | Verdict  |   |
| 2.3         | PTC (PTC1, PTC2)                   | Bel Fuse                                   | 0ZCC0075FF2C   | Rated 16V, Hold current 0.75A, Trip current 1.5A.<br><br>(Limits input current to the device from either the charging cradle connector (PTC1) or charging barrel Jack (PTC2)). | UL 1434<br>EN 60738-1-1                                | UL (E305051)<br>TUV   |
| 2.4a        | Scan Engine - Model S700 only      | Marson                                     | MT-780   | Scan Engine, CMOS linear imager<br>Class 1 LED (630nm)   | EN/IEC62471 (Exempt Group)                             | Tested with application   |
| 2.4b        | Alternate                          | Zebra, (Symbol, Motorola)                  | SE655 Series (SE-655-E100R)  | Scan Engine, CMOS linear imager<br>Class 1 LED (630nm)   | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-30133-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 2.5         | Scan Engine – Model S730 only      | Symbol Technologies Inc. (Zebra, Motorola) | SE-965HP-xxxxx<br><br>(where X may be any alphanumeric character or blank representing configuration options not impacting product safety) (SE-965HP-100R) | Scan Engine, with Class 2 internal Laser Radiation (650nm)   | IEC/EN 60825-1<br>UL 60950-1                           | CB (US-26231-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 2.6         | Scan Engine Model S740             | Zebra, (Symbol, Motorola)                  | SE2707-xxxxxx<br><br>(where X may be any alphanumeric character or blank representing configuration options not impacting product safety) (SE2707-LS000R)  | Scan Engine, linear imager<br>Class 1 LED (660 nm)   | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-29768-UL)<br>cURus ( <a href="#">E143267</a> )             |
| <b>2.6b</b> | <b>Alternate</b>                   | <b>Zebra, (Symbol, Motorola)</b>           | <b>SE4107-xxxxxx</b><br><br><b>(where X may be any alphanumeric character or blank representing configuration options not impacting product safety)</b>    | <b>Scan Engine, linear imager, LED</b>   | <b>EN/IEC62471 (Exempt Group)</b><br><b>UL 60950-1</b> | <b>CB (US-35970-UL)</b><br><b>cURus (<a href="#">E143267</a>)</b> |
| 2.7a        | Scan Engine – Model S760           | Zebra                                      | SE4710   | LED imager engine<br>LED, 660nm  | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB (US-29768-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 2.7b        | Alternate Scan Engine – Model S760 | Zebra, (Symbol, Motorola)                  | SE4720   | Red LED 610nm (AIM), 660nm (illum)   | EN/IEC62471 (Exempt Group)<br>UL 62368-1               | CB (US-34315-UL)<br>cURus ( <a href="#">E143267</a> )             |
| 2.8         | Scan Engine – Model S790           | Zebra                                      | SE4750DP   | Scan Engine, with Class 2 internal Laser Radiation (655nm)   | EN/IEC62471 (Exempt Group)<br>UL 60950-1               | CB<br>cURus ( <a href="#">E143267</a> )                           |
| 2.9         | NIMH Battery Monitor (U5)          | Dallas Semiconductor (Maxim)               | DS2745   | --   | --   | Evaluated with product.   |
| 2.10        | NIMH Charge Controller (U2)        | Dallas Semiconductor (Maxim)               | BQ2002E  | --   | --   | Evaluated with product.   |
| 2.11        | NTC Thermistor (RT1)               | Interchangeable                            | Interchangeable  | Rated 10k<br><br>(Thermistor disables charging if temp exceeds 65C)  | --   | Evaluated with product.   |
| 2.12a       | Battery – (two provided).          | MANLY (Shenzhen FBtech Co Ltd)             | AA2000<br><br>(May additionally have prefix RTU)   | AA Size (LR6)<br>Rechargeable NI-MH Battery, Rated 1.2V, 2000mAh   | UL 2054  | UL ( <a href="#">MH46375</a> )                                    |
| 2.12b       | Alternate                          | Novacell (Jiangsu Cel Battery Co. Ltd)     | AA2000   | AA Size (LR6)<br>Rechargeable NI-MH Battery, Rated 1.2V, 2000mAh   | UL 2054  | UL ( <a href="#">MH46026</a> )                                    |

| IEC 62368-1 |                    |  |  |                 |         |  |
|-------------|--------------------|--|--|-----------------|---------|--|
| Clause      | Requirement + Test |  |  | Result - Remark | Verdict |  |

|       |           |  |                         |   |         |                                |
|-------|-----------|--|-------------------------|---|---------|--------------------------------|
| 2.12c | Alternate | BPI<br>(Shenzhen<br>Betterpower Battery<br>Co, Ltd)      | AA2000                  | AA Size (LR6)<br>Rechargeable NI-MH<br>Battery, Rated 1.2V,<br>2000mAh      | UL 2054 | UL ( <a href="#">MH10329</a> ) |
| 2.12d | Alternate | Tenergy<br>(Shenzhen<br>Highpower<br>Technology Co. Ltd) | Centura<br>(HFR-AA2000) | AA Size (LR6)<br>Rechargeable NI-MH<br>Battery, Rated 1.2V,<br>2000mAh      | UL 2054 | UL ( <a href="#">MH21283</a> ) |
| 2.12e | Alternate | Interchangeable  | Interchangeable         | AA Size (LR6)<br>Rechargeable NI-MH<br>Battery, Rated 1.2V,<br>1000-2000mAh | UL 2054 | UL                             |

**3) Charging Cradle P/N 8530-00078xx (Black) or 8530-00090xx (White)  
(optional) (where x = A-Z, 0-9, “/”, “-“or blank, not safety related)**

|      |  |                     |                 |   |        |                               |
|------|--|---------------------|-----------------|---|--------|-------------------------------|
| 3.1a | Thermoplastic,<br>Housing (top,<br>bottom) | Chi Mei Corporation | PC-540A         | “Wonderloy” PC/ABS,<br>Rated minimum 94V-0<br>at 1.5mm thick. | UL94   | UL ( <a href="#">E56070</a> ) |
| 3.1b | Alternate                                  | Interchangeable     | Interchangeable | Rated minimum 94-<br>HB                                       | UL94   | UL                            |
| 3.2  | Printed wiring<br>board (SELV)             | Interchangeable     | Interchangeable | Min V-1, 105 °C   | UL796  | UL                            |
| 3.3  | Fuse (F1)                                  | Interchangeable     | Interchangeable | Rated min 5Vdc, 1.5A  | UL 248 | UL                            |

**4) Charging Stand P/N 8530-00057xx (optional) (where x = A-Z, 0-9, “/”, “-“or blank, not safety related)**

|      |  |                     |                 |   |        |                               |
|------|--|---------------------|-----------------|---|--------|-------------------------------|
| 4.1a | Thermoplastic,<br>Housing (top,<br>bottom) | Chi Mei Corporation | PC-540A         | “Wonderloy” PC/ABS,<br>Rated minimum 94V-0<br>at 1.5mm thick. | UL94   | UL ( <a href="#">E56070</a> ) |
| 4.1b | Alternate                                  | Interchangeable     | Interchangeable | Rated minimum 94-<br>HB                                       | UL94   | UL                            |
| 4.2  | Printed wiring<br>board (SELV)             | Interchangeable     | Interchangeable | Min V-1, 105 °C   | UL796  | UL                            |
| 4.3  | Fuse (F1)                                  | Interchangeable     | Interchangeable | Rated min 5Vdc, 1.5A  | UL 248 | UL                            |

**5) Optional Power Adapter**

|      |            |                 |  |   |            |                                      |
|------|------------|-----------------|--|---|------------|--------------------------------------|
| 5.1a | AC Adapter | Phihong         | PSAA05A-050xxx<br><small>(where x = any alphanumeric<br/>character or blank)</small><br>(PSAA05A-050QL6) | Rated 100-240V~,<br>0.2A, 50/60Hz, 0.2A,<br>(11-15VA)<br>Output: DC 5V, 1.0A            | EN 62368-1 | TUV GS                               |
| 5.1b | Alternate  | Interchangeable | Interchangeable  | Rated 100-240Vac,<br>50/60Hz. Output<br>Rated 5V, 1A max.<br>Marked LPS or “Class<br>2” | EN 62368-1 | TUV, VDE,<br>Nemko or<br>equivalent. |

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-2039.

2) Description line content is optional. Main line description needs to clearly detail the component used for testing.

**List of test equipment used:**

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Original report (D7xx Series, D750, D730)

(01)

| Instr.<br>Code | Instrument<br>I.D.     | Instrument<br>Type            | Range Used<br>Or<br>Reference   | Make and Model         | Calibration Date |          |
|----------------|------------------------|-------------------------------|---|------------------------|------------------|----------|
|                |                        |                               |   |                        | Last             | Due      |
| 1e             | US37027751<br>(SAF-06) | Digital<br>Multimeter         | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz                 | HP, 34970A             | 12/10/15         | 12/10/16 |
| 1e.11          | MY41216676<br>(SAF-92) | Multiplex.<br>Channel         | 0-300V<br>1A<br>-150 to 1200 °C   | Keysight/HP,<br>34901A | 11/30/15         | 11/30/16 |
| 1g             | 89570037<br>(SAF-27)   | Digital<br>Multimeter         | 1000V, 10A<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke 87 V/E           | 02/02/16         | 02/02/17 |
| 1k             | MY44006564<br>(SAF-71) | Digital<br>Multimeter         | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz                 | Agilent, 34970A        | 02/09/16         | 02/09/17 |
| 4e             | 13080482<br>(SAF-87)   | True RMS<br>Power<br>Analyzer | See Data Sheet  | Extech 380803          | 07/02/15         | 07/02/16 |
| 11a            | E00084528<br>(SAF-007) | DC Power<br>Supply            | 0-80V dc, 0-75A   | Xantrex, XDC 80-75     | 07/06/15         | 07/06/16 |
| 19a            | A06BM02108<br>(SAF-81) | DC Load                       | 0-360Vdc<br>0-30A, 300W   | Array, 3711A           | 09/03/15         | 09/03/16 |

D730: 2016-08-02 to 2016-08-08

(02)

| Instr.<br>Code | Instrument<br>I.D.     | Instrument<br>Type    | Range Used<br>Or<br>Reference  | Make and Model     | Calibration Date |            |
|----------------|------------------------|-----------------------|--|--------------------|------------------|------------|
|                |                        |                       |  |                    | Last             | Due        |
| 1n             | 30930173<br>(SAF-91)   | Digital<br>Multimeter | 0-1000V AC/DC<br>0-400mA DC/AC<br>0-10A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke 87 V         | 05/31/16         | 05/31/17   |
| 1o             | 34370113<br>(SAF-96)   | Digital<br>Multimeter | 0-1000V AC/DC<br>0-400mA DC/AC<br>0-10A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke 87 V         | 04/06/2016       | 04/06/2017 |
| 1e.9           | MY41201777<br>(SAF-89) | Multiplex.<br>Channel | 0-300V<br>1A<br>-150 to 1200 °C  | HP/Agilent, 34901A | 03/28/16         | 03/28/17   |
| 1m             | US37036788<br>(SAF-84) | Digital<br>Multimeter | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz  | Agilent, 34970A    | 12/23/15         | 12/23/16   |
| 11a            | E00084528<br>(SAF-007) | DC Power<br>Supply    | 0-80V dc, 0-75A  | Xantrex, XDC 80-75 | 07/11/16         | 07/11/17   |
| 19a            | A06BM02108<br>(SAF-81) | DC Load               | 0-360Vdc<br>0-30A, 300W  | Array, 3711A       | 09/03/15         | 09/03/16   |



S7xx Series (January 8-11<sup>th</sup>, 2018)

(05)

| Instr.<br>Code | Instrument<br>I.D.                                      | Instrument<br>Type    | Range Used<br>Or<br>Reference   | Make and Model   | Calibration Date |          |
|----------------|---|-----------------------|---|--|------------------|----------|
|                |   |                       |   |  | Last             | Due      |
| 1e.3           | MY41035468<br>(SAF-55)                                  | Multiplex.<br>Channel | 0-300V<br>1A<br>-150 to 1200 °C   | Agilent, 34901A  | 05/16/17         | 05/16/18 |
| 1j             | 11820060<br>(SAF-61)                                    | Digital<br>Multimeter | 0-1000 V AC/DC<br>0-400 mA DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V   | 11/16/17         | 11/16/18 |
| 1m             | US37036788<br>(SAF-84)                                  | Digital<br>Multimeter | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz   | Agilent, 34970A  | 12/28/17         | 12/28/18 |
| 1p             | 34860335<br>(SAF-97)                                    | Digital<br>Multimeter | 0-1000 V AC/DC<br>0-400 mA DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V   | 06/09/17         | 06/09/18 |
| 1q             | 38060145<br>(SAF-105)                                   | Digital<br>Multimeter | 0-1000 V AC/DC<br>0-400 mA DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V   | 04/05/17         | 04/05/18 |
| 5              | 0393/9114<br>(SAF-36)                                   | AC Power<br>Source    | 0-150/0-300V,<br>10/5 A<br><br>20-5000Hz  | Pacific Power Source,<br>112AMX-with UPC12<br>Controller | 03/07/17         | 03/07/18 |
| 7c             | B040493<br>(SAF-12)                                     | Oscilloscope          | DC-200MHz   | Tektronix TDS3024B                                       | 08/22/17         | 08/22/18 |
| 7c.1           | B016369<br>(To be used with<br>Item 7c)<br><br>(SAF-63) | Differential<br>Probe | 100/1MΩ   | Tektronix P5210  | 08/22/17         | 08/22/18 |
| 8              | 1704<br>(SAF-14)  | Force Gauge           | 1-100lbs  | Chatillon, DPPH-100                                      | 03/22/17         | 03/22/18 |
| 11a            | E00084528<br>(SAF-07)                                   | DC Power<br>Supply    | 0-80V dc, 0-75A   | Xantrex, XDC 80-75                                       | 07/19/17         | 07/19/18 |

|     |                            |                                   |  |                               |          |          |
|-----|----------------------------|-----------------------------------|--|-------------------------------|----------|----------|
| 11d | 72879520120603<br>(SAF-74) | DC Programmable Power Supply      | 0-32Vx2, 0-6V,<br>0-3Ax3                     | Tenma 72-8795                 | 04/11/17 | 04/11/18 |
| 19  | A06BK03093<br>(SAF-67)     | DC Load                           | 0-360Vdc<br>0-30A, 300W                      | Array, 3711A                  | 08/23/17 | 08/23/18 |
| 21  | 05246<br>(SAF-37)          | Wall Mount Barometer/ Thermometer | 945-1045 mbar/<br>.1 deg.                    | Oakton 03316-80               | 01/31/17 | 01/31/19 |
| 22q | 160634632                  | Digital Timer                     | 1/100 s                                      | Control Company,<br>5004      | 07/29/16 | 07/29/18 |
| 23c | SELP001<br>(SAF-46)        | Finger Probe                      | N/A  | UL                            | 05/25/17 | 05/25/20 |
| 23d | SELP002<br>(SAF-47)        | Finger Probe                      | N/A  | UL                            | 05/25/17 | 05/25/20 |
| 24  | SELIB001<br>(SAF-43)       | Impact Ball                       | N/A  | ED&D ITB-01                   | 05/10/17 | 05/10/20 |
| 27  | 34602 08/00<br>(SAF-42)    | Scale                             | 0-160 lbs<br>(73 kg)                         | Sunbeam,<br>Freightmaster 400 | 05/17/17 | 05/17/18 |
| 27b | 1107000294<br>(SAF-79)     | Scale                             | kg, g, oz, lbs<br>1500g max<br>(3.3 lbs max) | Zieis<br>Z1500-TS             | 06/22/17 | 06/22/18 |
| 30b | 1840-0026<br>(SAF-104)     | Tape Measure                      | mm/inches                                    | Johnson 1840-0026             | 03/16/17 | 03/16/20 |
| 32  | 23840088<br>(SAF-83)       | Infrared Thermometer              | See Data Sheet                               | Fluke, 62 MAX                 | 12/06/17 | 12/06/18 |

Add Models D760 / D790, (August 1<sup>st</sup> -10<sup>th</sup>, 2018)

(06)

| Instr.<br>Code | Instrument<br>I.D.      | Instrument<br>Type                      | Range Used<br>Or<br>Reference   | Make and Model                        | Calibration Date |          |
|----------------|-------------------------|---|---|---------------------------------------|------------------|----------|
|                |                         |   |   |                                       | Last             | Due      |
| 1n             | 30930173<br>(SAF-91)    | Digital<br>Multimeter                   | 0-1000V AC/DC<br>0-400mA DC/AC<br>0-10A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF    | Fluke 87 V                            | 06/18/18         | 06/18/19 |
| 1p             | 34860335<br>(SAF-97)    | Digital<br>Multimeter                   | 0-1000 V AC/DC<br>0-400 mA DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V                            | 06/11/18         | 06/11/19 |
| 11c            | SELBPS001<br>(SAF-69)   | DC Power<br>Supply                      | 0-30Vdc<br>0-10A  | Circuit Specialists,<br>Inc. CSI3010X | 02/21/18         | 02/21/19 |
| 19             | A06BK03093<br>(SAF-67)  | DC Load                                 | 0-360Vdc<br>0-30A, 300W   | Array, 3711A                          | 08/23/17         | 08/23/18 |
| 21             | 05246<br>(SAF-37)       | Wall Mount<br>Barometer/<br>Thermometer | 945-1045 mbar/<br>.1 deg.   | Oakton 03316-80                       | 01/31/17         | 01/31/19 |
| 22u            | 181396991               | Digital Timer                           | 1/100 s   | Control Company,<br>5004              | 06/27/18         | 06/27/20 |
| 27             | 34602 08/00<br>(SAF-42) | Scale                                   | 0-160 lbs<br>(73 kg)  | Sunbeam,<br>Freightmaster 400         | 05/17/18         | 05/17/19 |
| 27b            | 1107000294<br>(SAF-79)  | Scale                                   | kg, g, oz, lbs<br>1500g max<br>(3.3 lbs max)  | Zieis<br>Z1500-TS                     | 06/21/18         | 06/21/19 |
| 30b            | 1840-0026<br>(SAF-104)  | Tape Measure                            | mm/inches   | Johnson 1840-0026                     | 03/16/17         | 03/16/20 |
| 32             | 23840088<br>(SAF-83)    | Infrared<br>Thermometer                 | See Data Sheet  | Fluke, 62 MAX                         | 12/06/17         | 12/06/18 |

## SCKT160415-07: D7xx Alternate battery (felloTech)

(08)

| Instr. Code | Instrument I.D.            | Instrument Type    | Range Used Or Reference   | Make and Model                        | Cal Date - Last | Cal Date - Due |
|-------------|----------------------------|--------------------|---|---------------------------------------|-----------------|----------------|
| 1e.11       | MY41216676<br>(SAF-92)     | Multiplex. Channel | 0-300V<br>1A<br>-150 to 1200 °C   | Keysight/HP, 34901A                   | 12/02/19        | 12/02/20       |
| 1h          | US37046116<br>(SAF-54)     | Digital Multimeter | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz   | Agilent, 34970A                       | 03/04/20        | 03/04/21       |
| 1q          | 38060145<br>(SAF-105)      | Digital Multimeter | 0-1000 V<br>AC/DC<br>0-400 mA<br>DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V                            | 03/31/20        | 03/31/21       |
| 11c         | SELBPS001<br>(SAF-69)      | DC Power Supply    | 0-30Vdc<br>0-10A  | Circuit Specialists,<br>Inc. CSI3010X | 03/04/20        | 03/04/21       |
| 19b         | A06 BN 03 030<br>(SAF-109) | DC Load            | 0-360Vdc<br>0-30A, 300W   | Array, 3711A                          | 10/03/19        | 10/03/20       |

## SCKT201102-09

(09)

| Instr. Code | Instrument I.D.        | Instrument Type    | Range Used Or Reference   | Make and Model      | Cal Date - Last | Cal Date - Due |
|-------------|------------------------|--------------------|---|---------------------|-----------------|----------------|
| 1e          | US37027751<br>(SAF-06) | Digital Multimeter | 0-300VAC/DC,<br>0 – 1200 deg C,<br>10mA-1A,<br>3-300kHz   | HP, 34970A          | 12/18/19        | 12/18/20       |
| 1e.11       | MY41216676<br>(SAF-92) | Multiplex. Channel | 0-300V<br>1A<br>-150 to 1200 °C   | Keysight/HP, 34901A | 12/02/19        | 12/02/20       |
| 1g          | 89570037<br>(SAF-27)   | Digital Multimeter | 1000V, 10A<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF                               | Fluke 87 V/E        | 02/19/20        | 02/19/21       |
| 1n          | 30930173<br>(SAF-91)   | Digital Multimeter | 0-1000V<br>AC/DC<br>0-400mA<br>DC/AC<br>0-10A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance: | Fluke 87 V          | 06/15/20        | 06/15/21       |

|     |                        |   |  |                                       |          |          |
|-----|------------------------|---|--|---------------------------------------|----------|----------|
|     |                        |   | 9,999uF  |                                       |          |          |
| 1q  | 38060145<br>(SAF-105)  | Digital<br>Multimeter                   | 0-1000 V<br>AC/DC<br>0-400 mA<br>DC/AC<br>0-10 A DC/AC<br>Temp:-200 deg<br>C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke, 87V                            | 03/31/20 | 03/31/21 |
| 2c  | 3985257<br>(SAF-24)    | Temperature<br>Indicator                | -190-1200 deg<br>C   | Fluke, 52                             | 12/09/19 | 12/09/20 |
| 8   | 1704<br>(SAF-14)       | Force Gauge                             | 1-100lbs   | Chatillon, DPPH-100                   | 04/21/20 | 04/21/21 |
| 11c | SELBPS001<br>(SAF-69)  | DC Power<br>Supply                      | 0-30Vdc<br>0-10A   | Circuit Specialists,<br>Inc. CSI3010X | 03/04/20 | 03/04/21 |
| 15a | ZP1645372<br>(SAF-103) | Environmental<br>Chamber                | 40 – 93%RH<br>-45-175 deg C  | CSZ ZPH-32-3.5-<br>SCT/AC             | 02/21/20 | 02/21/21 |
| 16a | CH18656<br>(SAF-68)    | Humidity/<br>Temp Chart<br>Recorder     | See Data Sheet   | Extech RH520                          | 07/12/19 | 07/12/21 |
| 17  | 0214248<br>(SAF-08)    | Digital Caliper<br>CD6"CS               | 1/100mm  | Mitutoyo 500-196                      | 03/26/20 | 03/26/21 |
| 19  | A06BK03093<br>(SAF-67) | DC Load                                 | 0-360Vdc<br>0-30A, 300W  | Array, 3711A                          | 09/25/20 | 09/25/21 |
| 20c | 2129<br>(SAF-76)       | Current Shunt                           | 20A, 50mV  | Crompton TM-20.50                     | 04/01/20 | 04/01/23 |
| 21  | 05246<br>(SAF-37)      | Wall Mount<br>Barometer/<br>Thermometer | 945-1045 mbar/<br>0.1 deg  | Oakton 03316-80                       | 02/14/19 | 02/14/21 |
| 22x | 192548901              | Digital Timer                           | 1/100 s  | Control Company,<br>5004              | 10/09/19 | 10/09/21 |
| 23a | 1483024<br>(SAF-44)    | Finger Probe                            | N/A  | Zenith, BS 3042-I                     | 05/20/20 | 05/20/23 |
| 23e | L12491766<br>(SAF-112) | Finger Probe                            | N/A  | ED&D, ULP-01                          | 06/04/20 | 06/04/21 |
| 24  | SELIB001<br>(SAF-43)   | Impact Ball                             | N/A  | ED&D ITB-01                           | 05/06/20 | 05/06/23 |
| 25  | SELPP001<br>(SAF-48)   | Pin Probe                               | N/A  | UL                                    | 05/20/20 | 05/20/23 |

|     |                         |                         |  |                               |          |          |
|-----|-------------------------|-------------------------|--|-------------------------------|----------|----------|
| 26  | SELPROT001<br>(SAF-39)  | Protractor              | N/A  | Empire 36                     | 05/20/20 | 05/20/23 |
| 27  | 34602 08/00<br>(SAF-42) | Scale                   | 0-160 lbs<br>(73 kg)                         | Sunbeam,<br>Freightmaster 400 | 05/06/20 | 05/06/21 |
| 27b | 1107000294<br>(SAF-79)  | Scale                   | kg, g, oz, lbs<br>1500g max<br>(3.3 lbs max) | Zieis<br>Z1500-TS             | 07/01/20 | 07/01/21 |
| 30b | 1840-0026<br>(SAF-104)  | Tape Measure            | mm/inches                                    | Johnson 1840-0026             | 04/01/20 | 04/01/23 |
| 32  | 23840088<br>(SAF-83)    | Infrared<br>Thermometer | See Data Sheet                               | Fluke, 62 MAX                 | 11/20/19 | 11/20/20 |

**SCKT201102-10****(10)**

| Instr. Code | Instrument I.D.         | Instrument Type                         | Range Used Or Reference  | Make and Model                        | Cal Date - Last | Cal Date - Due |
|-------------|-------------------------|---|--|---------------------------------------|-----------------|----------------|
| 1o          | 34370113<br>(SAF-96)    | Digital Multimeter                      | 0-1000V<br>AC/DC<br>0-400mA<br>DC/AC<br>0-10A DC/AC<br>Temp:-200 deg C<br>+1090 deg C<br>Capacitance:<br>9,999uF | Fluke 87 V                            | 03/25/21        | 03/25/22       |
| 11c         | SELBPS001<br>(SAF-69)   | DC Power Supply                         | 0-30Vdc<br>0-10A   | Circuit Specialists,<br>Inc. CSI3010X | 03/19/21        | 03/19/22       |
| 16a         | CH18656<br>(SAF-68)     | Humidity/<br>Temp Chart Recorder        | See Data Sheet   | Extech RH520                          | 07/07/21        | 07/07/23       |
| 17          | 0214248<br>(SAF-08)     | Digital Caliper<br>CD6"CS               | 1/100mm  | Mitutoyo 500-196                      | 03/23/21        | 03/23/22       |
| 21          | 05246<br>(SAF-37)       | Wall Mount<br>Barometer/<br>Thermometer | 945-1045 mbar/<br>0.1 deg  | Oakton 03316-80                       | 02/17/21        | 02/17/23       |
| 22z         | 200733592               | Digital Timer                           | 1/100 s  | Control Company,<br>5004              | 11/18/20        | 11/18/22       |
| 25          | SELPP001<br>(SAF-48)    | Pin Probe                               | N/A  | UL                                    | 05/20/20        | 05/20/23       |
| 26          | SELPROT001<br>(SAF-39)  | Protractor                              | N/A  | Empire 36                             | 05/20/20        | 05/20/23       |
| 27          | 34602 08/00<br>(SAF-42) | Scale                                   | 0-160 lbs<br>(73 kg)   | Sunbeam,<br>Freightmaster 400         | 05/05/21        | 05/05/22       |

|     |                        |                         |  |                   |          |          |
|-----|------------------------|-------------------------|--|-------------------|----------|----------|
| 27b | 1107000294<br>(SAF-79) | Scale                   | kg, g, oz, lbs<br>1500g max<br>(3.3 lbs max) | Zieis<br>Z1500-TS | 07/01/20 | 07/01/21 |
| 30b | 1840-0026<br>(SAF-104) | Tape Measure            | mm/inches                                    | Johnson 1840-0026 | 04/01/20 | 04/01/23 |
| 32  | 23840088<br>(SAF-83)   | Infrared<br>Thermometer | See Data Sheet                               | Fluke, 62 MAX     | 12/01/20 | 12/01/21 |

| IEC62368_1C- ATTACHMENT   |  |                 |         |
|---|--|-----------------|---------|
| Clause  | Requirement + Test   | Result - Remark | Verdict |
| <b>ATTACHMENT TO TEST REPORT</b><br><b>IEC 62368-1</b><br><b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b><br>(Audio/video, information and communication technology equipment - Part 1: Safety requirements) |  |                 |         |
| <b>Differences according to</b> ..... : EN IEC 62368-1:2020+A11:2020  |  |                 |         |
| <b>Attachment Form No.</b> ..... : EU_GD_IEC62368_1C  |  |                 |         |
| <b>Attachment Originator</b> ..... : UL(Demko)  |  |                 |         |
| <b>Master Attachment</b> ..... : 2020-03-10   |  |                 |         |
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|   | <b>CENELEC COMMON MODIFICATIONS (EN)</b>   |                 | P       |
|   | Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018.<br><br>Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".   |                 | P       |
|   | Add the following annexes:<br>Annex ZA (normative)                      Normative references to international publications with their corresponding European publications<br>Annex ZB (normative)                      Special national conditions<br>Annex ZC (informative)                      A-deviations<br>Annex ZD (informative)                      IEC and CENELEC code designations for flexible cords |                 | P       |
| <b>1</b>  | <b>Modification to Clause 3 .</b>  |                 | P       |
| <b>3.3.19</b>   | <b>Sound exposure</b><br><i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>  |                 | N/A     |




| IEC 62368-1     |  |  |          |
|-----------------|--|--|----------|
| Clause          | Requirement + Test   | Result - Remark  | Verdict  |
| 3.3.19.1        | <p><b>momentary exposure level, MEL</b></p> <p>metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2.</p> <p>Note 1 to entry: MEL is measured as A-weighted levels in dB.<br/>Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.</p>  | Added. No such headphone or earphone feature that requires additional evaluation | N/A      |
| 3.3.19.3        | <p><b>sound exposure, <math>E</math></b></p> <p>A-weighted sound pressure (<math>p</math>) squared and integrated over a stated period of time, <math>T</math></p> <p>Note 1 to entry: The SI unit is Pa<sup>2</sup> s.</p> $E = \int_0^T p(t)^2 dt$   | See above  | N/A      |
| 3.3.19.4        | <p><b>sound exposure level, SEL</b></p> <p>logarithmic measure of sound exposure relative to a reference value, <math>E_0</math>, typically the 1 kHz threshold of hearing in humans.</p> <p>Note 1 to entry: SEL is measured as A-weighted levels in dB.</p> $SEL = 10 \lg \left( \frac{E}{E_0} \right) \text{ dB}$ <p>Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.</p>  | See above  | N/A      |
| 3.3.19.5        | <p><b>digital signal level relative to full scale, dBFS</b></p> <p>levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused</p> <p>Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.</p> | See above  | N/A      |
| <b>2</b>        | <b>Modification to Clause 10</b>   |  | <b>P</b> |
| <b>10.6</b>     | <b>Safeguards against acoustic energy sources</b><br>Replace 10.6 of IEC 62368-1 with the following:   |  | N/A      |
| <b>10.6.1.1</b> | <p><b>Introduction</b></p> <p><b>Safeguard</b> requirements for protection against</p>   | No acoustic sources.<br>All of 10.6 does not apply                               | N/A      |

| IEC 62368-1 |  |                 |         |
|-------------|--|-----------------|---------|
| Clause      | Requirement + Test   | Result - Remark | Verdict |
|             | <p>long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an <b>ordinary person</b>, that:</p> <ul style="list-style-type: none"> <li>– is designed to allow the user to listen to audio or audiovisual content / material; and</li> <li>– uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and</li> <li>– has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.).</li> </ul> <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6.<br/>These requirements are valid for music or video mode only.<br/>The requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– professional equipment;</li> </ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> <li>– hearing aid equipment and other devices for assistive listening;</li> <li>– the following type of analogue personal music players: <ul style="list-style-type: none"> <li>• long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and</li> <li>• cassette player/recorder;</li> </ul> </li> </ul> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that</p> |                 |         |

| IEC 62368-1     |  |   |         |
|-----------------|--|---|---------|
| Clause          | Requirement + Test   | Result - Remark                                   | Verdict |
|                 | <p>within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>  |   |         |
| <b>10.6.1.2</b> | <p><b>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b></p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.</p>  | Product does not generate non-ionizing radiation. | N/A     |
| <b>10.6.2</b>   | <b>Classification of devices without the capacity to estimate sound dose</b>   |   | N/A     |
| <b>10.6.2.1</b> | <p><b>General</b></p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output <math>L_{Aeq,T}</math>, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, <math>T</math> becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning</p> | No acoustic energy sources                        | N/A     |

| IEC 62368-1     |  |                 |         |
|-----------------|--|-----------------|---------|
| Clause          | Requirement + Test   | Result - Remark | Verdict |
|                 | does not need to be given as long as the average sound pressure of the song does not exceed the required limit.<br>For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.   |                 |         |
| <b>10.6.2.2</b> | <p><b>RS1 limits (to be superseded, see 10.6.3.2)</b></p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the <math>L_{Aeq,T}</math> acoustic output shall be <math>\leq 85</math> dB when playing the fixed “programme simulation noise” described in EN 50332-1.</li> <li>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be <math>\leq 27</math> mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.</li> <li>– The RS1 limits will be updated for all devices as per 10.6.3.2.</li> </ul> |                 | N/A     |
| <b>10.6.2.3</b> | <p><b>RS2 limits (to be superseded, see 10.6.3.3)</b></p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the <math>L_{Aeq,T}</math> acoustic output shall be <math>\leq 100</math> dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1.</li> <li>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be <math>\leq 150</math> mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.</li> </ul>  |                 | N/A     |
| <b>10.6.2.4</b> | <p><b>RS3 limits</b></p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>   |                 | N/A     |

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|-----------------|--|--|---------|
| Clause          | Requirement + Test   | Result - Remark  | Verdict |
| <b>10.6.3</b>   | <b>Classification of devices (new)</b>   |  | N/A     |
| <b>10.6.3.1</b> | <p><b>General</b></p> <p>Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.</p>  | Not a dosed based system<br>All of 10.6.3 does not apply | N/A     |
| <b>10.6.3.2</b> | <p><b>RS1 limits (new)</b></p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the <math>L_{Aeq,T}</math> acoustic output shall be <math>\leq 80</math> dB when playing the fixed “programme simulation noise” described in EN 50332-1.</li> <li>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be <math>\leq 15</math> mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.</li> </ul>   |  | N/A     |
| <b>10.6.3.3</b> | <p><b>RS2 limits (new)</b></p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> <li>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be <math>\leq 80</math> dB when playing the fixed "programme simulation noise" described in EN 50332-1.</li> <li>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be <math>\leq 15</math> mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.</li> </ul> |  | N/A     |
| <b>10.6.4</b>   | <b>Requirements for maximum sound exposure</b>   |  | N/A     |
| <b>10.6.4.1</b> | <b>Measurement methods</b>   | No audio outputs   | N/A     |

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|-----------------|--|--|---------|
| Clause          | Requirement + Test   | Result - Remark  | Verdict |
|                 | <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>   |  |         |
| <b>10.6.4.2</b> | <p><b>Protection of persons</b></p> <p>Except as given below, protection requirements for parts <b>accessible to ordinary persons, instructed persons and skilled persons</b> are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a <b>safeguard</b>.</p> <p>Between RS2 and an <b>ordinary person</b>, the <b>basic safeguard</b> may be replaced by an <b>instructional safeguard</b> in accordance with Clause F.5, except that the <b>instructional safeguard</b> shall be placed on the equipment, or on the packaging, or in the instruction manual.</p> <p>Alternatively, the <b>instructional safeguard</b> may be given through the equipment display during use.</p> <p>The elements of the <b>instructional safeguard</b> shall be as follows:</p> <p>– element 1a: the symbol  IEC 60417-6044 (2011-01)</p> <p>– element 2: “High sound pressure” or equivalent wording</p> <p>– element 3: “Hearing damage risk” or equivalent wording</p> <p>– element 4: “Do not listen at high volume levels for long periods.” or equivalent wording</p> <p>An <b>equipment safeguard</b> shall prevent exposure of an <b>ordinary person</b> to an RS2 source without intentional physical action from the <b>ordinary person</b> and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> | EUT does not produce sound pressure. No audio outputs. | N/A     |

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|-----------------|---|----------------------------|---------|
| Clause          | Requirement + Test  | Result - Remark            | Verdict |
|                 | <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A <b>skilled person</b> shall not be unintentionally exposed to RS3.</p>  |                            |         |
| <b>10.6.5</b>   | <b>Requirements for dose-based systems</b>  |                            | N/A     |
| <b>10.6.5.1</b> | <p><b>General requirements</b></p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p> | Not this type of equipment | N/A     |
| <b>10.6.5.2</b> | <p><b>Dose-based warning and requirements</b></p> <p>When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.</p>  |                            | N/A     |
| <b>10.6.5.3</b> | <p><b>Exposure-based requirements</b></p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-</p>   |                            | N/A     |

| IEC 62368-1 |   |                 |         |
|-------------|---|-----------------|---------|
| Clause      | Requirement + Test  | Result - Remark | Verdict |
|             | <p>term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p> |                 |         |



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|-----------------|--|------------------------|---------|
| Clause          | Requirement + Test   | Result - Remark        | Verdict |
| <b>10.6.6</b>   | <b>Requirements for listening devices (headphones, earphones, etc.)</b>  |                        | N/A     |
| <b>10.6.6.1</b> | <p><b>Corded listening devices with analogue input</b></p> <p>With 94 dB <math>L_{Aeq}</math> acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be <math>\geq 75</math> mV.</p> <p>NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.</p>  | Not a listening device | N/A     |
| <b>10.6.6.2</b> | <p><b>Corded listening devices with digital input</b></p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the <math>L_{Aeq,T}</math> acoustic output of the listening device shall be <math>\leq 100</math> dB with an input signal of -10 dBFS.</p>   | Not a listening device | N/A     |
| <b>10.6.6.3</b> | <p><b>Cordless listening devices</b></p> <p>In cordless mode,</p> <ul style="list-style-type: none"> <li>– with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>– respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>– with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the <math>L_{Aeq,T}</math> acoustic output of the listening device shall be <math>\leq 100</math> dB with an input signal of -10 dBFS.</li> </ul> | Not a listening device | N/A     |
| <b>10.6.6.4</b> | <p><b>Measurement method</b></p> <p><i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i></p>   |                        |         |
| <b>3</b>        | <b>Modification to the whole document</b>  |                        | P       |

| IEC 62368-1             |  |                         |                       |             |   |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
|-------------------------|--|-------------------------|-----------------------|-------------|---|---------|--------------|---|--------------|---------|--------|---------|--------|--------|------|-------|--------------|---------|------|-------------------------|--------|-------------|--------------|-------------------------|--------|---------|--------|---------|------|------------|------|------------|------|------------|------|---------|------|-------|------|-----------|-----------------------|-------|--------|-------|------|---------|----------------------|-----------|------|--------------------|-----------------------|--------|--------|-------------------|--------|---------|--------|-------|------|-------|------|--|--|--|--|---|
| Clause                  | Requirement + Test   |                         |                       |             | Result - Remark   | Verdict |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
|                         | <p><b>Delete</b> all the “country” notes in the reference document according to the following list:</p> <table border="1"> <tbody> <tr> <td>0.2.1</td> <td>Note 1 and 2</td> <td>1</td> <td>Note 4 and 5</td> <td>3.3.8.1</td> <td>Note 2</td> </tr> <tr> <td>3.3.8.3</td> <td>Note 1</td> <td>4.1.15</td> <td>Note</td> <td>4.7.3</td> <td>Note 1 and 2</td> </tr> <tr> <td>5.2.2.2</td> <td>Note</td> <td>5.4.2.3.2.2<br/>Table 12</td> <td>Note c</td> <td>5.4.2.3.2.4</td> <td>Note 1 and 3</td> </tr> <tr> <td>5.4.2.3.2.4<br/>Table 13</td> <td>Note 2</td> <td>5.4.2.5</td> <td>Note 2</td> <td>5.4.5.1</td> <td>Note</td> </tr> <tr> <td>5.4.10.2.1</td> <td>Note</td> <td>5.4.10.2.2</td> <td>Note</td> <td>5.4.10.2.3</td> <td>Note</td> </tr> <tr> <td>5.5.2.1</td> <td>Note</td> <td>5.5.6</td> <td>Note</td> <td>5.6.4.2.1</td> <td>Note 2 and 3<br/>and 4</td> </tr> <tr> <td>5.6.8</td> <td>Note 2</td> <td>5.7.6</td> <td>Note</td> <td>5.7.7.1</td> <td>Note 1 and<br/>Note 2</td> </tr> <tr> <td>8.5.4.2.3</td> <td>Note</td> <td>10.2.1<br/>Table 39</td> <td>Note 3 and 4<br/>and 5</td> <td>10.5.3</td> <td>Note 2</td> </tr> <tr> <td><del>10.6.1</del></td> <td>Note 3</td> <td>F.3.3.6</td> <td>Note 3</td> <td>Y.4.1</td> <td>Note</td> </tr> <tr> <td>Y.4.5</td> <td>Note</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> |                         |                       |             |   | 0.2.1   | Note 1 and 2 | 1 | Note 4 and 5 | 3.3.8.1 | Note 2 | 3.3.8.3 | Note 1 | 4.1.15 | Note | 4.7.3 | Note 1 and 2 | 5.2.2.2 | Note | 5.4.2.3.2.2<br>Table 12 | Note c | 5.4.2.3.2.4 | Note 1 and 3 | 5.4.2.3.2.4<br>Table 13 | Note 2 | 5.4.2.5 | Note 2 | 5.4.5.1 | Note | 5.4.10.2.1 | Note | 5.4.10.2.2 | Note | 5.4.10.2.3 | Note | 5.5.2.1 | Note | 5.5.6 | Note | 5.6.4.2.1 | Note 2 and 3<br>and 4 | 5.6.8 | Note 2 | 5.7.6 | Note | 5.7.7.1 | Note 1 and<br>Note 2 | 8.5.4.2.3 | Note | 10.2.1<br>Table 39 | Note 3 and 4<br>and 5 | 10.5.3 | Note 2 | <del>10.6.1</del> | Note 3 | F.3.3.6 | Note 3 | Y.4.1 | Note | Y.4.5 | Note |  |  |  |  | P |
| 0.2.1                   | Note 1 and 2   | 1                       | Note 4 and 5          | 3.3.8.1     | Note 2  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 3.3.8.3                 | Note 1   | 4.1.15                  | Note                  | 4.7.3       | Note 1 and 2  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 5.2.2.2                 | Note   | 5.4.2.3.2.2<br>Table 12 | Note c                | 5.4.2.3.2.4 | Note 1 and 3  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 5.4.2.3.2.4<br>Table 13 | Note 2   | 5.4.2.5                 | Note 2                | 5.4.5.1     | Note  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 5.4.10.2.1              | Note   | 5.4.10.2.2              | Note                  | 5.4.10.2.3  | Note  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 5.5.2.1                 | Note   | 5.5.6                   | Note                  | 5.6.4.2.1   | Note 2 and 3<br>and 4                                     |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 5.6.8                   | Note 2   | 5.7.6                   | Note                  | 5.7.7.1     | Note 1 and<br>Note 2                                      |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| 8.5.4.2.3               | Note   | 10.2.1<br>Table 39      | Note 3 and 4<br>and 5 | 10.5.3      | Note 2  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| <del>10.6.1</del>       | Note 3   | F.3.3.6                 | Note 3                | Y.4.1       | Note  |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| Y.4.5                   | Note   |                         |                       |             |   |         |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| <b>4</b>                | <b>Modification to Clause 1</b>  |                         |                       |             |   | P       |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |
| <b>1</b>                | <p><b>Add the following note:</b></p> <p><i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i></p>  |                         |                       |             | Added. Compliance is documented separately for CE Marking | P       |              |   |              |         |        |         |        |        |      |       |              |         |      |                         |        |             |              |                         |        |         |        |         |      |            |      |            |      |            |      |         |      |       |      |           |                       |       |        |       |      |         |                      |           |      |                    |                       |        |        |                   |        |         |        |       |      |       |      |  |  |  |  |   |

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|--------------------|---|---|---------|
| Clause             | Requirement + Test  | Result - Remark   | Verdict |
| <b>5</b>           | <b>Modification to 4.Z1</b>   |   |         |
| <b>4.Z1</b>        | <p><b>Add the following new subclause after 4.9:</b></p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b>, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p> | Unit is powered by internal 3.7Vdc battery or recharged by 5Vdc via external host or adapter. Class III input only with no direct connection to AC Mains. | N/A     |
| <b>6</b>           | <b>Modification to 5.4.2.3.2.4</b>  |   | N.A     |
| <b>5.4.2.3.2.4</b> | <p><b>Add the following to the end of this subclause:</b></p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>  | Added. No such connection with external transients potentially brought into a building.   | N/A     |
| <b>7</b>           | <b>Modification to 10.2.1</b>   |   | N/A     |
| <b>10.2.1</b>      | <p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>  | Added. Such emissions are not present in equipment under evaluation.  | N/A     |

| IEC 62368-1   |   |   |         |
|---------------|---|---|---------|
| Clause        | Requirement + Test  | Result - Remark   | Verdict |
| <b>8</b>      | <b>Modification to 10.5.1</b>   |   | N/A     |
| <b>10.5.1</b> | <p><b>Add the following after the first paragraph:</b></p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p> | Added. No X-radiation   | N/A     |
| <b>9</b>      | <b>Modification to G.7.1</b>  |   | N/A     |
| <b>G.7.1</b>  | <p><b>Add the following note:</b></p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>  | <p>Unit is powered by internal 3.7Vdc battery or recharged by 5Vdc via external host or adapter. Class III input only with no direct connection to AC Mains.</p> <p>No Mains supply cord.</p> | N/A     |

| IEC 62368-1   |  |  |         |
|---------------|--|--|---------|
| Clause        | Requirement + Test   | Result - Remark  | Verdict |
| <b>10</b>     | <b>Modification to Bibliography</b>  |  | P       |
|               | <p><b>Add</b> the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.<br/> IEC 60269-2 NOTE Harmonized as HD 60269-2.<br/> IEC 60309-1 NOTE Harmonized as EN 60309-1.<br/> IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.<br/> IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.<br/> IEC 60664-5 NOTE Harmonized as EN 60664-5.<br/> IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).<br/> IEC 61508-1 NOTE Harmonized as EN 61508-1.<br/> IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.<br/> IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.<br/> IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.<br/> IEC 61643-1 NOTE Harmonized as EN 61643-1.<br/> IEC 61643-21 NOTE Harmonized as EN 61643-21.<br/> IEC 61643-311 NOTE Harmonized as EN 61643-311.<br/> IEC 61643-321 NOTE Harmonized as EN 61643-321.<br/> IEC 61643-331 NOTE Harmonized as EN 61643-331.</p> |  | P       |
| <b>11</b>     | <b>ADDITION OF ANNEXES</b>   |  | P       |
| <b>ZB</b>     | <b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>  |  | P       |
| <b>4.1.15</b> | <p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:<br/> <b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."<br/> In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"<br/> In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"<br/> In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>       | Added. Equipment is considered Class III without need for reliable earthing. | N/A     |

| IEC 62368-1                 |   |   |         |
|-----------------------------|---|---|---------|
| Clause                      | Requirement + Test  | Result - Remark   | Verdict |
| <b>4.7.3</b>                | <p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>  | Added. No such socket-outlet provided.  | N/A     |
| <b>5.2.2.2</b>              | <p><b>Denmark</b></p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>  | Added. No such high touch concern for Class III or low voltage battery powered equipment. | N/A     |
| <b>5.4.11.1 and Annex G</b> | <p><b>Finland and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV),</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a</p> | Added. No such connection to the telecommunication network provided.                      | N/A     |

| IEC 62368-1    |  |   |         |
|----------------|--|---|---------|
| Clause         | Requirement + Test   | Result - Remark   | Verdict |
|                | <p>capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul> <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p> |   |         |
| <b>5.5.2.1</b> | <p><b>Norway</b></p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>   | Added. No such connection to the mains nor IT power system. | N/A     |
| <b>5.5.6</b>   | <p><b>Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation in class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.</p>   | Added. No resistors used as basic safeguard                 | N/A     |
| <b>5.6.1</b>   | <p><b>Denmark</b></p> <p><b>Add</b> to the end of the subclause<br/>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.<br/><i>Justification:</i><br/>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>  | Added. No socket outlets                                    | N/A     |

| IEC 62368-1      |   |   |         |
|------------------|---|---|---------|
| Clause           | Requirement + Test  | Result - Remark   | Verdict |
| <b>5.6.4.2.1</b> | <p><b>Ireland and United Kingdom</b></p> <p>After the indent for <b>pluggable equipment type A</b>, the following is added:<br/> – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains plug</b>.</p>                     | <p>Added. Unit is powered by internal 3.7Vdc battery and recharged using 5Vdc from external host or adapter. Class III input only with no direct connection to AC Mains.</p> <p>No Mains supply cord.</p> | N/A     |
| <b>5.6.4.2.1</b> | <p><b>France</b></p> <p>After the indent for <b>pluggable equipment type A</b>, the following is added:<br/> – in certain cases, the <b>protective current rating</b> of the circuit supplied from the mains is taken as 20 A instead of 16 A.</p>  | <p>Added. No connection to the mains for Class III equipment.</p>   | N/A     |
| <b>5.6.5.1</b>   | <p>To the second paragraph the following is added:</p> <p>The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> in cross-sectional area.</p> | <p>Added. No connection to the mains for Class III equipment.</p>   | N/A     |
| <b>5.6.8</b>     | <p><b>Norway</b></p> <p>To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as <b>class I equipment</b>. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.</p>  | <p>Added. No such plug connection for Class III equipment.</p>  | N/A     |
| <b>5.7.6</b>     | <p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>   | <p>Added. No such connection to the mains for high touch current concerns.</p>  | N.A     |



| IEC 62368-1 |  |   |         |
|-------------|--|---|---------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| 5.7.6.2     | <p><b>Denmark</b></p> <p>To the end of the subclause the following is added:<br/>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>   | Added. No such connection to the mains for high touch current concerns. | N/A     |
| 5.7.7.1     | <p><b>Norway and Sweden</b></p> <p>To the end of the subclause the following is added:<br/>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building.<br/>Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er kopleet til beskyttelsesjord via nettplugg og/eller via annet jordtilkopleet utstyr – og er tilkopleet et koaksialbasert kabel-TV nett, kan forårsake brannfare.<br/>For å unngå dette skal det ved tilkopling av</p> | Added. Not a television distribution system                             | N/A     |

| IEC 62368-1          |   |  |         |
|----------------------|---|--|---------|
| Clause               | Requirement + Test  | Result - Remark  | Verdict |
|                      | <p>apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:<br/>           ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.</p>   |  |         |
| <b>8.5.4.2.3</b>     | <p><b>United Kingdom</b></p> <p>Add the following after the 2<sup>nd</sup> dash bullet in 3<sup>rd</sup> paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>  | Added. EUT does not include work cell. No such need for emergency stop for the equipment under evaluation. | N/A     |
| <b>B.3.1 and B.4</b> | <p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b>, until the requirements of Annexes B.3.1 and B.4 are met</p> | Added. Not direct plug-in equipment  | N/A     |

| IEC 62368-1  |  |  |         |
|--------------|--|--|---------|
| Clause       | Requirement + Test   | Result - Remark  | Verdict |
| <b>G.4.2</b> | <p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i><br/>Heavy Current Regulations, Section 6c</p> | Added. No such power cord for Class III equipment, nor socket-outlets. | N/A     |
| <b>G.4.2</b> | <p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>   | Added. Not direct plug-in equipment.                                   | N/A     |

| IEC 62368-1  |   |  |         |
|--------------|---|--|---------|
| Clause       | Requirement + Test  | Result - Remark  | Verdict |
| <b>G.7.1</b> | <p><b>United Kingdom</b></p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p> | <p>Unit is powered by internal 3.7Vdc battery and recharged using 5Vdc from external host or adapter. Class III input only with no direct connection to AC Mains.</p> <p>No mains sockets</p>      | N/A     |
| <b>G.7.1</b> | <p><b>Ireland</b></p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>  | No adapter plugs   | N/A     |
| <b>G.7.2</b> | <p><b>Ireland and United Kingdom</b></p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm<sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>   | <p>Unit is powered by internal 3.7Vdc battery and recharged using 5Vdc from external host or adapter. Class III input only with no direct connection to AC Mains.</p> <p>No Mains supply cord.</p> | N/A     |

| IEC 62368-1   |  |   |         |
|---------------|--|---|---------|
| Clause        | Requirement + Test   | Result - Remark   | Verdict |
| <b>ZC</b>     | <b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>  |   | N/A     |
| <b>10.5.2</b> | <p><b>Germany</b></p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i><br/>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p><b>NOTE</b> Contact address:<br/>Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig,<br/>Tel.: Int+49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p> | Applied. No such cathode ray tube used in the product under evaluation. | N/A     |

| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

| ZD  | IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)  |                          | N/A                   |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
|---|--|--------------------------|-----------------------|-------------------|--|-----|---------|----------------------------|--|--|-----------------------|--------------|---------|---|--------------|----------------------|--|--------------|----------------------|-------------------------------|--|--|--------------|--------------|---------|--|--------------|---------|---|--------------|---------|--|--------------|---------|--------------------------------------|--|--|------------------------------------|--------------|---------|---|--------------|----------|---|--------------|-----------|---|--|--|--|--|--------------------------|---|--|--------------------------|-----|
|   | <table border="1"> <thead> <tr> <th rowspan="2">Type of flexible cord</th> <th colspan="2">Code designations</th> </tr> <tr> <th>IEC</th> <th>CENELEC</th> </tr> </thead> <tbody> <tr> <td colspan="3"><b>PVC insulated cords</b></td> </tr> <tr> <td>Flat twin tinsel cord</td> <td>60227 IEC 41</td> <td>H03VH-Y</td> </tr> <tr> <td>Light polyvinyl chloride sheathed flexible cord</td> <td>60227 IEC 52</td> <td>H03VV-F<br/>H03VVH2-F</td> </tr> <tr> <td>Ordinary polyvinyl chloride sheathed flexible cord</td> <td>60227 IEC 53</td> <td>H05VV-F<br/>H05VVH2-F</td> </tr> <tr> <td colspan="3"><b>Rubber insulated cords</b></td> </tr> <tr> <td>Braided cord</td> <td>60245 IEC 51</td> <td>H03RT-F</td> </tr> <tr> <td>Ordinary tough rubber sheathed flexible cord</td> <td>60245 IEC 53</td> <td>H05RR-F</td> </tr> <tr> <td>Ordinary polychloroprene sheathed flexible cord</td> <td>60245 IEC 57</td> <td>H05RN-F</td> </tr> <tr> <td>Heavy polychloroprene sheathed flexible cord</td> <td>60245 IEC 66</td> <td>H07RN-F</td> </tr> <tr> <td colspan="3"><b>Cords having high flexibility</b></td> </tr> <tr> <td>Rubber insulated and sheathed cord</td> <td>60245 IEC 86</td> <td>H03RR-H</td> </tr> <tr> <td>Rubber insulated, crosslinked PVC sheathed cord</td> <td>60245 IEC 87</td> <td>H03RV4-H</td> </tr> <tr> <td>Crosslinked PVC insulated and sheathed cord</td> <td>60245 IEC 88</td> <td>H03V4V4-H</td> </tr> <tr> <td colspan="3"><b>Cords insulated and sheathed with halogen-free thermoplastic compounds</b></td> </tr> <tr> <td>Light halogen-free thermoplastic insulated and sheathed flexible cords</td> <td></td> <td>H03Z1Z1-F<br/>H03Z1Z1H2-F</td> </tr> <tr> <td>Ordinary halogen-free thermoplastic insulated and sheathed flexible cords</td> <td></td> <td>H05Z1Z1-F<br/>H05Z1Z1H2-F</td> </tr> </tbody> </table> |                          | Type of flexible cord | Code designations |  | IEC | CENELEC | <b>PVC insulated cords</b> |  |  | Flat twin tinsel cord | 60227 IEC 41 | H03VH-Y | Light polyvinyl chloride sheathed flexible cord | 60227 IEC 52 | H03VV-F<br>H03VVH2-F | Ordinary polyvinyl chloride sheathed flexible cord | 60227 IEC 53 | H05VV-F<br>H05VVH2-F | <b>Rubber insulated cords</b> |  |  | Braided cord | 60245 IEC 51 | H03RT-F | Ordinary tough rubber sheathed flexible cord | 60245 IEC 53 | H05RR-F | Ordinary polychloroprene sheathed flexible cord | 60245 IEC 57 | H05RN-F | Heavy polychloroprene sheathed flexible cord | 60245 IEC 66 | H07RN-F | <b>Cords having high flexibility</b> |  |  | Rubber insulated and sheathed cord | 60245 IEC 86 | H03RR-H | Rubber insulated, crosslinked PVC sheathed cord | 60245 IEC 87 | H03RV4-H | Crosslinked PVC insulated and sheathed cord | 60245 IEC 88 | H03V4V4-H | <b>Cords insulated and sheathed with halogen-free thermoplastic compounds</b> |  |  | Light halogen-free thermoplastic insulated and sheathed flexible cords |  | H03Z1Z1-F<br>H03Z1Z1H2-F | Ordinary halogen-free thermoplastic insulated and sheathed flexible cords |  | H05Z1Z1-F<br>H05Z1Z1H2-F | N/A |
| Type of flexible cord   | Code designations  |                          |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
|   | IEC  | CENELEC                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| <b>PVC insulated cords</b>  |  |                          |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Flat twin tinsel cord   | 60227 IEC 41   | H03VH-Y                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Light polyvinyl chloride sheathed flexible cord                               | 60227 IEC 52   | H03VV-F<br>H03VVH2-F     |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Ordinary polyvinyl chloride sheathed flexible cord                            | 60227 IEC 53   | H05VV-F<br>H05VVH2-F     |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| <b>Rubber insulated cords</b>   |  |                          |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Braided cord  | 60245 IEC 51   | H03RT-F                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Ordinary tough rubber sheathed flexible cord                                  | 60245 IEC 53   | H05RR-F                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Ordinary polychloroprene sheathed flexible cord                               | 60245 IEC 57   | H05RN-F                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Heavy polychloroprene sheathed flexible cord                                  | 60245 IEC 66   | H07RN-F                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| <b>Cords having high flexibility</b>  |  |                          |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Rubber insulated and sheathed cord  | 60245 IEC 86   | H03RR-H                  |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Rubber insulated, crosslinked PVC sheathed cord                               | 60245 IEC 87   | H03RV4-H                 |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Crosslinked PVC insulated and sheathed cord                                   | 60245 IEC 88   | H03V4V4-H                |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| <b>Cords insulated and sheathed with halogen-free thermoplastic compounds</b> |  |                          |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Light halogen-free thermoplastic insulated and sheathed flexible cords        |  | H03Z1Z1-F<br>H03Z1Z1H2-F |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |
| Ordinary halogen-free thermoplastic insulated and sheathed flexible cords     |  | H05Z1Z1-F<br>H05Z1Z1H2-F |                       |                   |  |     |         |                            |  |  |                       |              |         |   |              |                      |  |              |                      |                               |  |  |              |              |         |  |              |         |   |              |         |  |              |         |                                      |  |  |                                    |              |         |   |              |          |   |              |           |   |  |  |  |  |                          |   |  |                          |     |

Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600; Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx; 8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

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Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "/", "-" or blank)

**Figure 1 – S7xx Series - Overall Top View**



**S700**

**S730**

**S740**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 2 – S7xx Series - Overall Side View**



**S700**

**S730**

**S740**

Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 3 – S7xx Series – Overall Bottom View**



**S700**

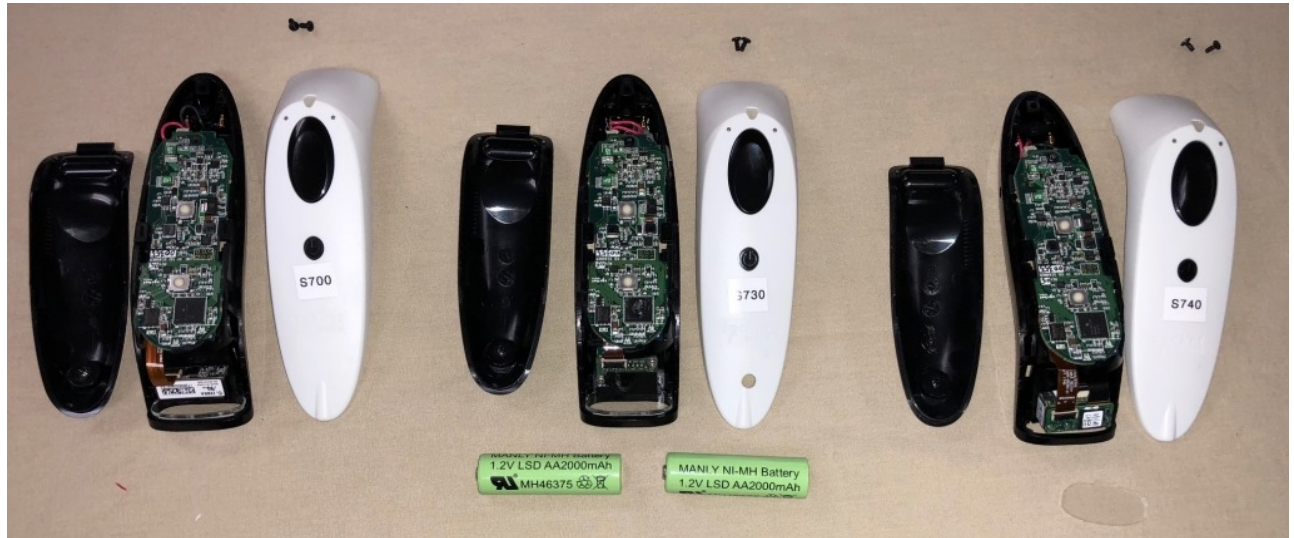
**S730**

**S740**

Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 4 – S7xx Series – Internal View



S700

S730

S740

Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

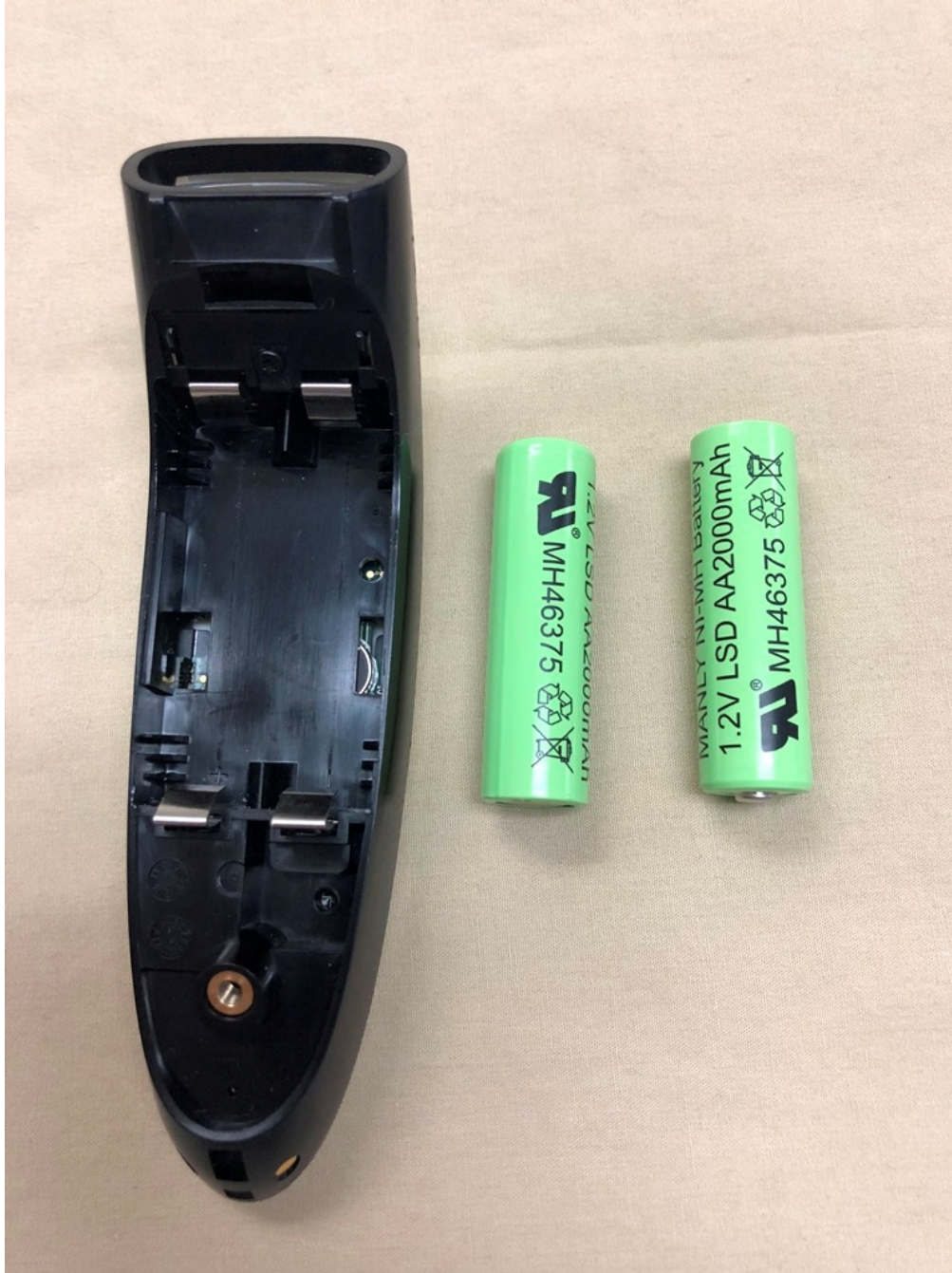
**Figure 5 – S7xx Series – Rear Internal Showing Batteries**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

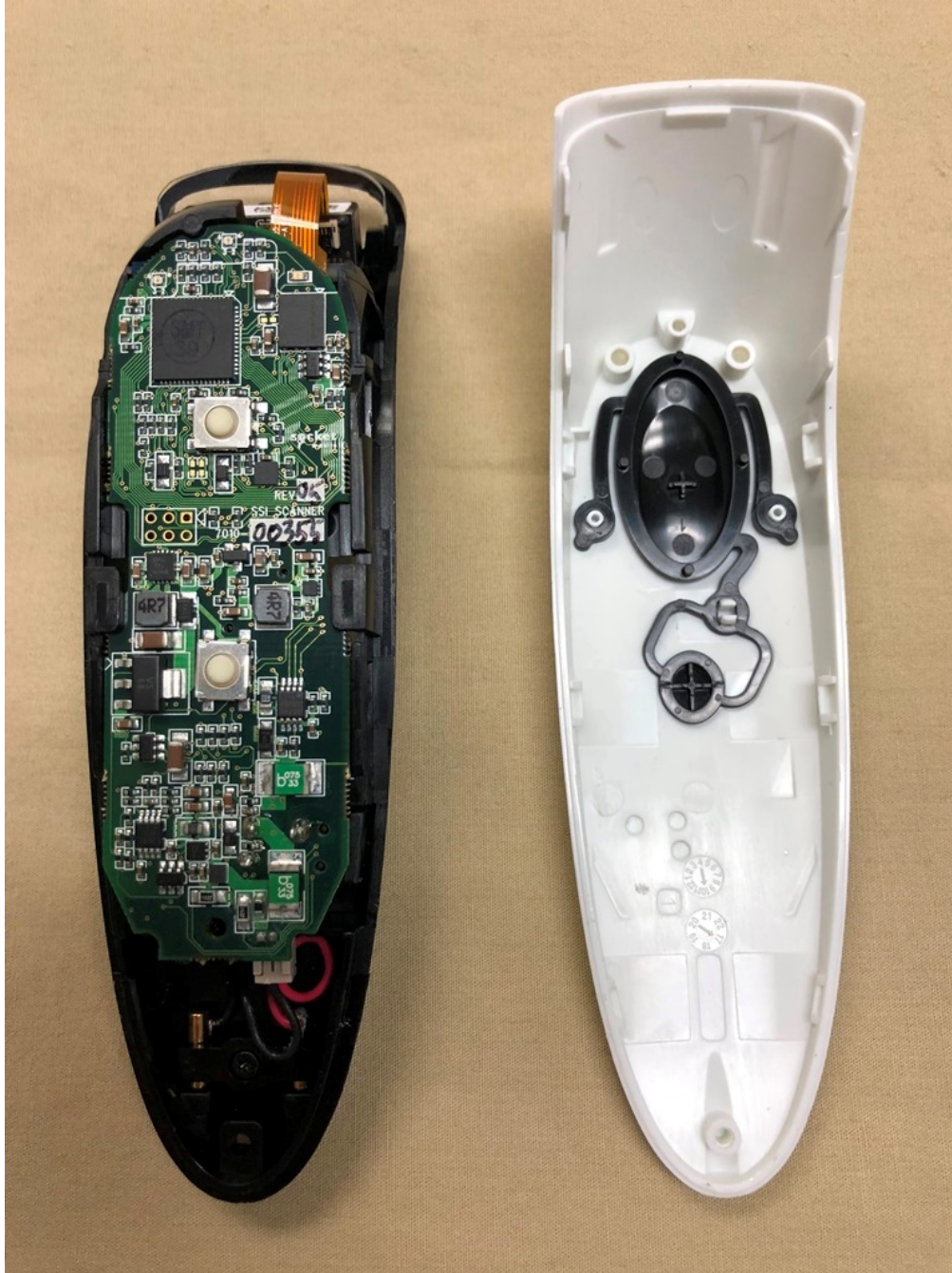
Figure 6 – S7xx Series – Rear Internal w/ Batteries Removed



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 7 – S7xx Series – PWB Top View



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 8 – S7xx Series – PWB Bottom View



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 9 – Optional Charging Cradle P/N 8530-00078xx (Black), 8530-00090xx (White)**





Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 10 – Optional Charging Cradle P/N 8530-00057xx**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

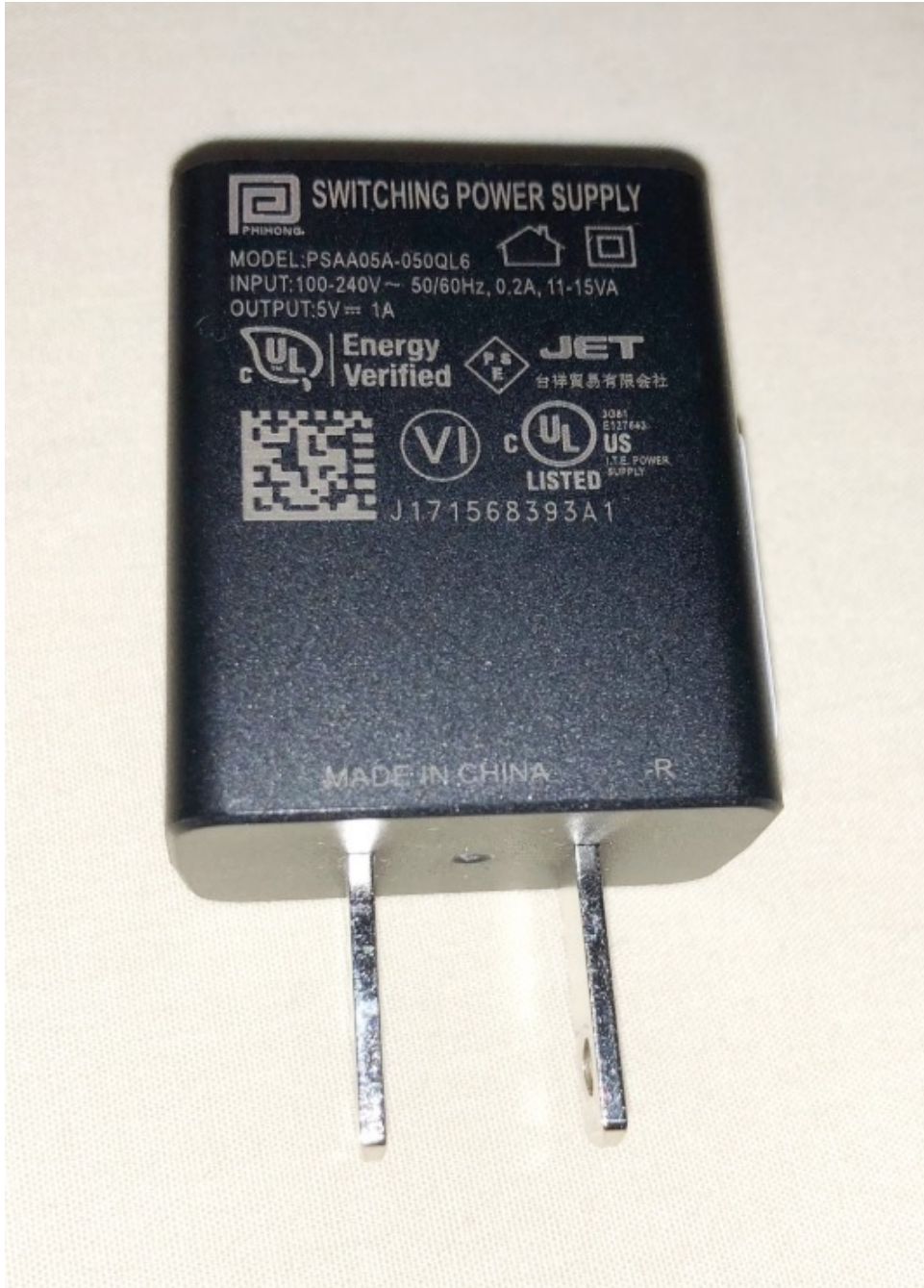
**Figure 11 – Optional Charging Dock P/N 8530-0070xx (Black), 8530-00105xx (White)**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "I", "-" or blank)

**Figure 12 – S7xx Series – Optional USB Adapter**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 13 – D7xx Series - Overall Top/Side View**



**Figure 14 – D7xx Series - Overall Bottom View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 15 – D7xx Series - Overall View showing Battery, Optional Adapter and Cable**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 16 – D7xx Series - Overall Internal View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "/", "-" or blank)

**Figure 17 – D7xx Series - Overall Internal View**



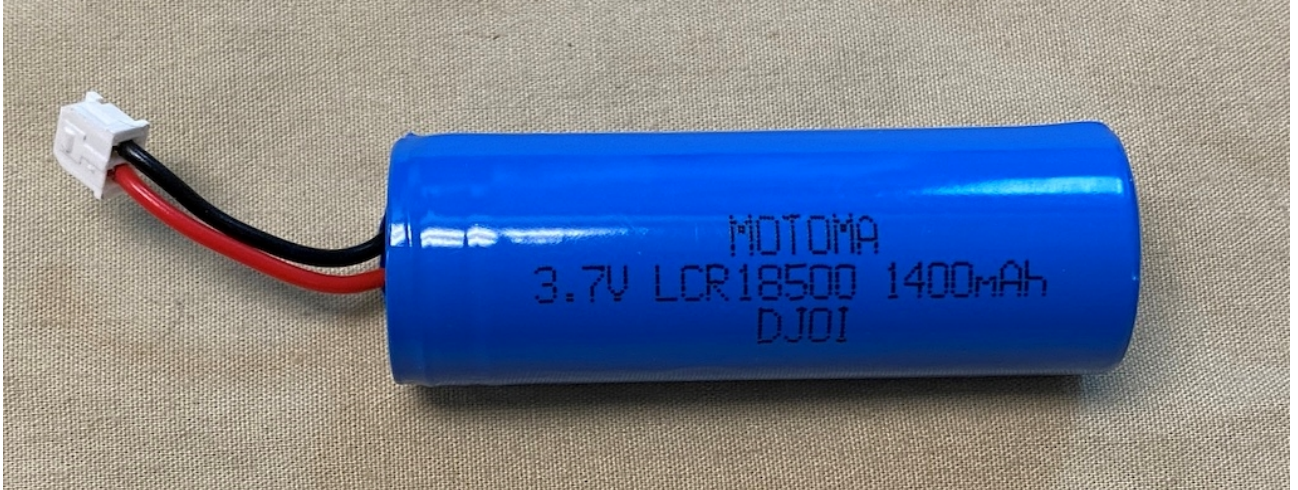
Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 18 – D7xx Series – Alternate Battery, felloTech P/N 18500**



**Figure 19 – D7xx Series – Alternate Battery, MOTOMA P/N LCR18500**





Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "/", "-", or blank)

**Figure 20 – Optional Adapter**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 21 – Model D730 - Overall Top View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 22 – Model D730 - Overall Bottom View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 23 – Model D730 - Overall Internal View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 24 – Model D600 - Overall Top View



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 25 – Model D600 - Overall Bottom View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 26 – Model D600 - Overall Internal View**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 27 – Model D600 – Optional Charger





Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

**Figure 28 – D7xx Series – Overall Top View (Models D745, D755 and D760 shown)**



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 29 – D7xx Series - Overall Bottom View (Model D745, D755 and D760 shown)



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

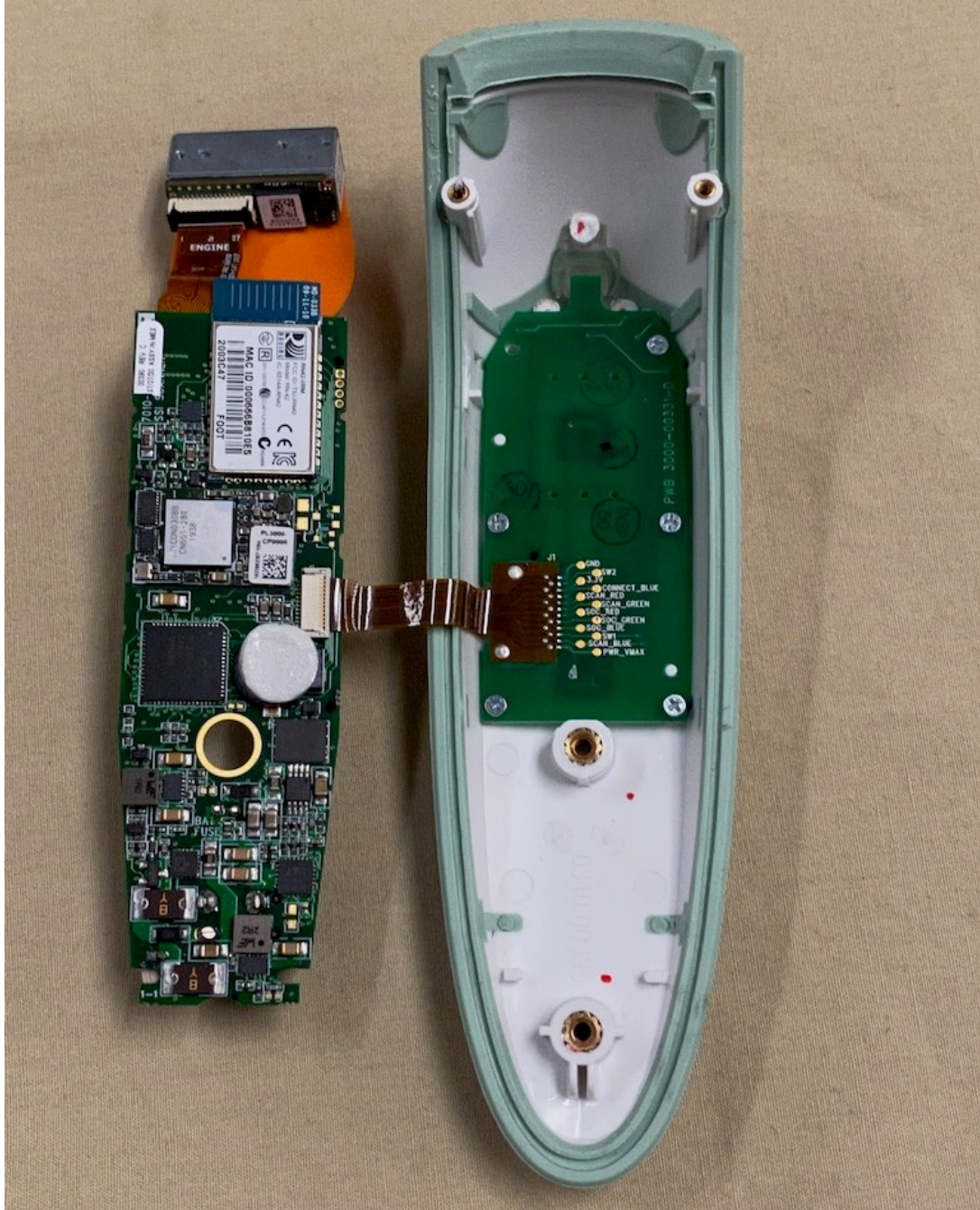
Figure 30 – D7xx Series - Overall Internal View (Model D745 Shown)



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, “/”, “-” or blank)

Figure 31 – D7xx Series - Overall Internal View (Showing PWB Top)



Product: Barcode Scanner

Type Designation: S7xx Series, D7xx Series, D600;  
Charging Cradles/docks P/N(s) 8530-00078xx; 8530-0090xx; 8530-00057xx;  
8530-00070xx; 8530-00105xx (where x = A-Z, 0-9, "-", "-" or blank)

**Figure 32 – D7xx Series - Overall Internal View (Showing PWB Bottom)**



**TEST REPORT**  
**IEC 60825-1, 2<sup>nd</sup> Edition**  
**Part 1: Equipment classification and requirements**

**Report Reference No.** .....: SEL-SCKT201102-10 Att 3  
**Date of issue** .....: November 2<sup>nd</sup>, 2020  
**Total number of pages**..... 16

**Testing Laboratory** .....: Safety Engineering Laboratory (SEL)  
**Address**.....: 2370-D Qume Dr., San Jose, CA 95131 USA.

**Applicant's name** .....: Socket Mobile, Inc.  
**Address**.....: 39700 Eureka Drive, Newark, CA 94560, USA

**Test specification:**  
**Standard** .....: IEC 60825-1 : 2007 (2nd Edition)  
**Test procedure**.....: CDRH Compliance under Laser Notice 50  
**Non-standard test method**.....: N/A

**Test Report Form No.** .....: IEC60825\_1D  
**Test Report Form(s) Originator** .....: Intertek Semko AB  
**Master TRF**.....: Dated 2007-06



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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.**

**Test item description**.....: Barcode Scanner  
**Trade Mark** .....:   
**Manufacturer**.....: Same as Applicant  
**Model/Type reference**.....: S730, S790 (S7xx Series), D730, D790 (D7xx Series),  
(where x = A-Z, 0-9, " ", "-" or blank, not safety related)  
**Ratings**.....: Class 2 (laser), DC5V, 1.0A (electrical, optionally marked)

| <b>Testing procedure and testing location:</b>  |  |
|---|--|
| <input checked="" type="checkbox"/> <b>Testing Laboratory:</b><br>Testing location/ address ..... :<br>Tested by (name + signature)..... :<br><br>Approved by (+ signature)..... :                    | Safety Engineering Laboratory (SEL)<br>2370-D Qume Dr., San Jose, CA 95131, USA<br>Paul A. Carter<br><br>Lee Ould <div style="text-align: right; margin-top: 20px;"> <br/>  </div> |
| <input type="checkbox"/> Testing procedure: TMP<br>Tested by (name + signature)..... :<br>Approved by (+ signature)..... :<br>Testing location/ address ..... :                                       |  |
| <input type="checkbox"/> Testing procedure: WMT<br>Tested by (name + signature)..... :<br>Witnessed by (+ signature) ..... :<br>Approved by (+ signature)..... :<br>Testing location/ address ..... : |  |
| <input type="checkbox"/> Testing procedure: SMT<br>Tested by (name + signature)..... :<br>Approved by (+ signature)..... :<br>Supervised by (+ signature)..... :<br>Testing location/ address ..... : |  |
| <input type="checkbox"/> Testing procedure: RMT<br>Tested by (name + signature)..... :<br>Approved by (+ signature)..... :<br>Supervised by (+ signature)..... :<br>Testing location/ address ..... : |  |

Copy of marking plate

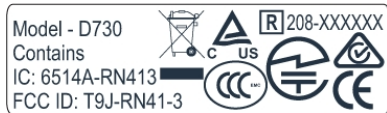


Explanatory box was not provided due to space constraints, as its inclusion would reduce the size of the text. The yellow was considered to be suitably set off against the product's dark background color, without the border.

Due to limited marking space, additional information is provided in the user manual:

Manufacturer Address: 39700 Eureka Drive, Newark, CA 94560, USA

"IEC 60825-1:2007"



Socket Mobile name/logo is molded into the housing and additionally silkscreened on the unit, not on the labels, as shown below.





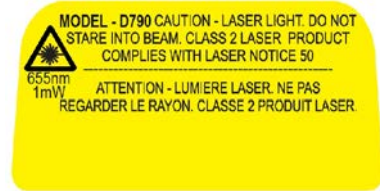
**S730:**



S730 only: Laser Warning Label



D790 only; Laser Warning Label



Explanatory box was not provided due to space constraints, as its inclusion would reduce the size of the text. The yellow was considered to be suitably set off against the product's dark background color, without the border.

Due to limited marking space, additional information is provided in the user manual:

Manufacturer Address: 39700 Eureka Drive, Newark, CA 94560, USA

"IEC 60825-1:2007"

**Summary of testing:**

**Tests performed (name of test and test clause):**

See main test report for electrical safety tests done under EN 60950-1. Scan engine's test report (CB Scheme) shown in Attachment 1 was reviewed to confirm Class 2 emission, with test data and results considered suitable. Inclusion of engine in this product is such that it does not affect the emitted radiation above Class 2 limits.

**Testing location:**

N/A

**Summary of compliance with National Differences:**

List of countries addressed: N/A

**Test item particulars:**

Classification of installation and use..... : Class III

Supply Connection ..... : Battery-powered (2.4-3.7Vdc).  
 ..... : (Not directly connected to AC Mains)  
 .....

**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 ..... : 2018-01-08  
 Date (s) of performance of tests ..... : N/A

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
 "(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 comma (point) is used as the decimal separator.

**General product information:**

The product employs a Zebra/Symbol/Motorola scan engine, Model SE-965HP without modification.  
 See Main Test Report for additional details.  
 Attachment 1 – Scan Engine (CB) Test Report for SE-965HP

| <b>4</b> | <b>ENGINEERING SPECIFICATIONS</b>  |  | <b>P</b> |
|----------|--|--|----------|
| 4.1      | General remarks  |  | P        |
|          | Modification   |  | N/A      |
| 4.2      | Protective housing   |  | P        |
| 4.2.1    | General  | No access to laser radiation in excess of Class 2 limits. Human access to Class 2 radiation is necessary for the intended function of the product. | P        |
| 4.2.2    | Service  | Removal of housing with tool by service personnel does not allow exposure in excess of Class 2 limits  | P        |
| 4.2.3    | Removable laser system   |  | N/A      |
| 4.3      | Access panels and safety interlocks  |  | N/A      |
| 4.3.1    | Access panels of protective housing  | No radiation over Class 2, and no need for warning nor interlocking. Enclosure is not designed to be removed during operation or maintenance.      | N/A      |
|          | Product Class .....  | 2  | —        |
|          | Accessible emission during removal of access panel .....                                       | 2  | P        |
|          | The removal of the panel gives access to laser radiation levels designated by "X" in the table | No   | P        |
|          | Accessible emissions after removal .....   | 2  | —        |
| 4.3.2    | Deliberate override mechanism  | None provided  | N/A      |
| 4.4      | Remote interlock connector   | None provided nor required   | N/A      |
| 4.5      | Manual reset   | None provided nor required   | N/A      |
| 4.6      | Key control  | None provided nor required   | N/A      |
| 4.7      | Laser radiation emission warning   |  | N/A      |
| 4.7.1    | Class 3R ( $\lambda < 400$ nm; $\lambda > 700$ nm), 3B and 4                                   | Class 2 product  | N/A      |
| 4.7.2    | Audible or visible warning   | None provided nor required   | N/A      |
| 4.7.3    | Operational control and laser aperture   | None provided nor required   | N/A      |
| 4.7.4    | Laser emission distributed through more than one output  | Not such construction  | N/A      |
| 4.8      | Beam stop or attenuation   | None provided nor required   | N/A      |
| 4.9      | Controls   | Considered. No laser radiation in excess of Class 2  | P        |
| 4.10     | Viewing optics   | None provided  | N/A      |

|        |   |  |     |
|--------|---|--|-----|
|        | a) Human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied   |  | N/A |
|        | b) Opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible  |  | N/A |
| 4.11   | Scanning safeguard  | Scanning safeguard is employed such that the laser discontinues operation during the normal operation of the product when motor operation is stalled or reduced below the equipment parameters. Radiation was classified accordingly. See below for additional details | P   |
| 4.12   | Walk-in access  |  | N/A |
|        | a) Means provided so that any person inside the housing can prevent activation of a Class 3B or 4 laser hazard  |  | N/A |
|        | b) A warning device provides adequate warning of emission to any person within the housing  |  | N/A |
|        | c) Where "walk-in" access during operation is intended or reasonably foreseeable, emission of laser radiation that is equivalent to Class 3B or Class 4 while someone is present inside the enclosure of Class 1, Class 2 or Class 3R product shall be prevented by engineering means |  | N/A |
| 4.13   | Environmental conditions  |  | P   |
|        | - climatic conditions   | Considered during evaluation and found suitable  | P   |
|        | - vibration and shock   | Not tested for such as faults were assumed to happen (mirror stops moving) with the output measured during the scan engine fault testing   | N/A |
| 4.14   | Protection against other hazards  |  | P   |
| 4.14.1 | Non-optical hazards (product safety standard)   |  | P   |
|        | - electrical hazards;   | See main EN60950-1 test report   | P   |
|        | - excessive temperature;  | See main EN60950-1 test report   | P   |
|        | - spread of fire from the equipment;  | See main EN60950-1 test report   | P   |
|        | - sound and ultrasonic;   | See main EN60950-1 test report   | N/A |
|        | - harmful substances;   | No harmful substances  | N/A |
|        | - explosion;  |  | N/A |
| 4.14.2 | Collateral radiation  | No collateral radiation  | N/A |

| 5             | LABELLING   |  | P   |
|---------------|---|--|-----|
| 5.1           | General   | Labels are in accordance with regard to permanency, legibility, and location. Required text is black on yellow background, as shown on page 4 above. Due to size of product and limited space, the warnings were prioritized of non-warning type information which was put into the manual | P   |
|               | LASER PRODUCT CLASS .....                                 | 2  |     |
|               | Labelling location (Product / User instruction / Package) | Label located on the product, with additional information in the user instructions.  | P   |
|               | Warning label – Hazard symbol (Figure 1)                  | Laser symbol is provided on the product, as shown  | P   |
|               | Explanatory label (Figure 2)                              | Provided. Black text on yellow background, as shown on page 4 above.<br><br>Translated into English, French. Black border is not present due to the small size of the available label space, and yellow label was considered to sufficiently stand out due to the color of the product.    | P   |
| 5.2-5.6       | Text on explanatory label .....                           | "CAUTION - LASER LIGHT. DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT"  | P   |
| 5.7           | Aperture label  | Not required for Class 2 laser product   | N/A |
| 5.8           | Radiation output and standards information                | Provided   | P   |
|               | Max output of laser radiation .....                       | 1.0mW marked on label  | —   |
|               | Pulse duration .....                                      | N/A  | —   |
|               | Emitted wavelength(s) .....                               | 650nm marked on label  | —   |
|               | The name and publication date of the standard .....       | "IEC 60825-1:2007"<br>Provided in the user manual due to small size restraints of the product and label space  | P   |
| 5.9           | Labels for access panels                                  |  | N/A |
| 5.9.1 a) – f) | Warning wording used .....                                |  | N/A |
| 5.9.2         | Labels for safety interlocked panels                      |  | N/A |
|               | Warning wording used .....                                | No interlocked panel depended upon   | N/A |

|      |   |   |     |
|------|---|---|-----|
| 5.10 | Warning for invisible laser radiation ..... | 650nm nominal wavelength is visible   | N/A |
| 5.11 | Warning for visible laser radiation .....   | Term "LASER LIGHT" used since output of the laser product is in the visible range | P   |

|          |  |   |          |
|----------|--|---|----------|
| <b>6</b> | <b>OTHER INFORMATIONAL REQUIREMENTS</b>  |   | <b>P</b> |
| 6.1      | Information for the user   |   | P        |
|          | a) adequate instructions for proper assembly, maintenance and safe use and description of the classification limitations, if appropriate | Provided  | P        |
|          | b) warning for Class 1M and 2M   | Class 2   | N/A      |
|          | c) laser beam parameters for radiation above the AEL of Class 1  | Provided where applicable   | P        |
|          | <ul style="list-style-type: none"> <li>Wavelength .....</li> </ul>   | Provided (650nm)  | P        |
|          | <ul style="list-style-type: none"> <li>Beam divergence .....</li> </ul>  | Manual contains details of beam particularly for proper scanning distances/range/angles/use   | P        |
|          | <ul style="list-style-type: none"> <li>Pulse duration .....</li> </ul>   | N/A   | N/A      |
|          | <ul style="list-style-type: none"> <li>Maximum power or energy output .....</li> </ul>   | Provided (1.0mW)  | P        |
|          | d) embedded laser products and other incorporated laser products   | Not considered embedded   | N/A      |
|          | e) MPE and NOHD for Class 3B and Class 4 laser products<br>For collimated beam Class 1M and 2M lasers the extended NOHD (ENOHD)          | Class 2 only  | N/A      |
|          | f) information for the selection of eye protection   |   | N/A      |
|          | g) reproduction of labels  | Provided  | P        |
|          | h) location of laser apertures   | Provided  | P        |
|          | i) listing of controls, adjustment of procedures and warning statement   | Provided - "Caution: Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser beam exposure" | P        |
|          | j) information about laser energy source if not incorporated in the manual   |   | N/A      |
| 6.2      | Purchasing and service information   |   | P        |
|          | a) safety classification of each laser product stated in descriptive material  | Provided  | P        |
|          | b) adequate instructions for servicing available   | Non-serviceable   | N/A      |

|          |  |  |            |
|----------|--|--|------------|
| <b>7</b> | <b>ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS</b> |  | <b>N/A</b> |
|----------|--|--|------------|

|     |  |   |     |
|-----|--|---|-----|
| 7.1 | Applicable other parts of the standard series IEC/EN 60825   |   | N/A |
|     | IEC 60825-2 (Safety of optical communication systems)  |   | N/A |
|     | IEC 60825-4 (Laser guards)   |   | N/A |
|     | IEC 60825-12 (Safety of free space optical communication systems used for transmission of information) |   | N/A |
|     | Further information may be found in:   |   | N/A |
|     | IEC/TR 60825-3 (Guidance for laser displays and shows)   |   | —   |
|     | IEC/TR 60825-5 (Manufacturer's checklist for IEC 60825-1)  |   | —   |
|     | IEC/TR 60825-8 (Guidelines for the safe use of laser beams on humans)                                  |   | —   |
|     | IEC/TR 60825-9 (Compilation of maximum permissible exposure to incoherent optical radiation)           |   | —   |
|     | IEC/TR 60825-10 (Application guidelines and explanatory notes to IEC 60825-1)                          |   | —   |
|     | IEC/TR 60825-13 (Measurements for classification of laser products)                                    |   | —   |
|     | IEC/TR 60825-14 (A user's guide)   |   | —   |
|     | IEC 62471 (CIE S 009) (Photobiological safety of lamps and lamp system)                                |   | —   |
| 7.2 | Medical laser products   |   | N/A |
|     | Class 3B and Class 4 medical laser products comply with IEC 60601-2-22                                 |   | N/A |
| 7.3 | Laser processing machines  |   | N/A |
|     | Comply with IEC/ISO 11553-1  |   | N/A |
| 7.4 | Electric toys  |   | N/A |
|     | Comply with IEC 62115  |   | N/A |
| 7.5 | Consumer electronic products   |   | P   |
|     | Complying with IEC 60950 or IEC 60065  | Complies with IEC 60950-1 / IEC 62368-1 (See main report) | P   |

|          |                                   |  |          |
|----------|-----------------------------------|--|----------|
| <b>8</b> | <b>CLASSIFICATION</b>             |  | <b>P</b> |
| 8.2      | Classification responsibilities   | Module is certified, with the information below from the laser product testing and evaluation (Attachment 1) | P        |
| 8.3      | Classification rules              |  | P        |
| 8.3a     | Radiation of a single wavelength  |  | P        |
| 8.3b     | Radiation of multiple wavelengths |  | N/A      |

|      |  |   |     |
|------|--|---|-----|
|      | 1) Laser product emission two or more wavelengths in spectral regions shown as additive in Table 5 ...:      |   | N/A |
|      | 2) Laser product emission two or more wavelengths in spectral regions not shown as additive in Table 5 ..... |   | N/A |
| 8.3c | Radiation from extended sources.....:  | Simplified method used  | P   |
|      | Value of angular subtense $\alpha$ (mrad) .....  | 1.5mrad assumed   | P   |
| 8.3d | Non-uniform retinal image radiance profile, non-circular and multiple sources                                | See c above   | N/A |
| 8.3e | Time basis   |   | P   |
|      | 1) 0.25s   | Considered  | P   |
|      | 2) 100s  |   | N/A |
|      | 3) 30000s  |   | N/A |
| 8.3f | Repetitively pulsed or modulated lasers  | Considered for three conditions below, with additional detail in Attachment 1 | P   |
|      | 1) Exposure from any single pulse not exceeding the AEL for a single pulse                                   |   | P   |
|      | 2) Average power for a pulse train   |   | P   |
|      | 3a) Constant pulse energy and pulse duration   |   | P   |
|      | 3b) Varying pulse widths or varying pulse durations  |   | N/A |

|          |  |   |          |
|----------|--|---|----------|
| <b>9</b> | <b>DETERMINATION OF ACCESSIBLE EMISSION LEVELS</b> |   | <b>P</b> |
| 9.1      | Tests  | Testing under normal and single fault conditions  | P        |
|          | Single fault eliminated                            | Tested  | N/A      |
|          | Housing material withstanding degradation          | No embedding nor attenuation by the end product   | N/A      |
|          | Fault detection                                    |   | N/A      |
| 9.2      | Measurement conditions .....                       |   | P        |
|          | Measured laser radiation .....                     | 1. 1.588mW peak power (<4.077mW limit)<br>2. 0.582mW ave power (<1.0mW limit)<br>3. 1.588mW peak power (<1.781mW limit) | P        |
| 9.3      | Measurement geometry                               |   | P        |
| 9.3.1    | General, evaluation scheme                         | Simplified method used  | —        |
|          | a) Simplified (default) method                     | $C_6=1$   | P        |
|          | b) Increased AEL by parameter $C_6$                | $C_6=1$   | N/A      |
| 9.3.2    | Default (simplified) evaluation                    | Considered  | P        |



|        |  |   |     |
|--------|--|---|-----|
|        | Condition applied .....                                | Scanning Mode – Condition 3<br>Aiming Mode – Conditions 1,<br>2 and 3 | P   |
|        | Aperture stop diameter (mm) .....                      | 3.5, 7, 50  | P   |
|        | Measurement distance (mm) .....                        | 0, 70, 100, 2000  | P   |
| 9.3.3  | Extended sources                                       | Simplified method used  | N/A |
|        | $C_6$ .....  |   | N/A |
| 9.3.3a | Aperture diameters                                     |   | N/A |
|        | Condition applied .....                                |   | N/A |
|        | Aperture stop diameter (mm). .....                     |   | N/A |
|        | Angular subtense of the apparent source $\alpha$ ..... |   | N/A |
| 9.3.3b | Angle of acceptance                                    |   | N/A |
|        | Condition applied .....                                |   | N/A |
|        | 1) Photochemical retinal limits.....                   |   | N/A |
|        | Angle of acceptance.....                               |   | N/A |
|        | 2) All other retinal limits.....                       |   | N/A |
|        | Angle of acceptance.....                               |   | N/A |

Measured laser radiation, calculations and comparison with AEL limits:

See Attachment 1 for additional details.

| <b>National Differences for (country name)</b> |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |

| Appended table | EQUIPMENT MANUFACTURE INFORMATION ( DATA SHEET ) ABOUT THE CONTAINING LASER COMPONENT/S |                                      | P |
|----------------|---|--------------------------------------|---|
| --             | Manufacturer .....  | Zebra/Motorola/Symbol                | — |
| --             | Type designation .....  | SE-965HP                             | — |
| --             | Structure .....   | Scan engine with InGaAIP laser diode | — |
| --             | Wavelength .....  | 655nm                                | — |
| --             | Output power (min. and max.) .....  | 1mW                                  | — |
| --             | Radiation is  |                                      | — |
| --             | Continuous .....  | N/A                                  | — |
| --             | Pulsed .....  | N/A                                  | — |
| --             | Pulse time .....  | N/A                                  | — |
| --             | Pulse repetition frequency .....  | N/A                                  | — |
| --             | Others .....  | N/A                                  | — |

| Appended table | EQUIPMENT MANUFACTURE INFORMATION ( DATA SHEET ) ABOUT THE CONTAINING LASER COMPONENT/S |                                      | P |
|----------------|---|--------------------------------------|---|
| --             | Manufacturer .....  | Zebra/Motorola/Symbol                | — |
| --             | Type designation .....  | SE4750DP                             | — |
| --             | Structure .....   | Scan engine with InGaAIP laser diode | — |
| --             | Wavelength .....  | 655nm                                | — |
| --             | Output power (min. and max.) .....  | 1mW                                  | — |
| --             | Radiation is  |                                      | — |
| --             | Continuous .....  | N/A                                  | — |
| --             | Pulsed .....  | N/A                                  | — |
| --             | Pulse time .....  | N/A                                  | — |
| --             | Pulse repetition frequency .....  | N/A                                  | — |
| --             | Others .....  | N/A                                  | — |

|    |                        |     |     |
|----|------------------------|-----|-----|
| -- | <b>PIC UP UNIT</b>     |     | N/A |
| -- | Manufacturer .....     | N/A | —   |
| -- | Type designation ..... | N/A | —   |
| -- | Others .....           | N/A | —   |
| -- | --                     | --  | --  |

|    |                                     |     |     |
|----|-------------------------------------|-----|-----|
| -- | <b>TRANSMITTER/TRANSCIEVER UNIT</b> |     | N/A |
| -- | Manufacturer .....                  | N/A | —   |
| -- | Type designation .....              | N/A | —   |

|    |              |     |    |
|----|--------------|-----|----|
| -- | Others ..... | N/A | —  |
| -- | --           | --  | -- |