*Accredited Testing Laboratory under the terms of ISO/IEC 17025*

# *CE CONFORMANCE REPORT*

**LOW VOLTAGE DIRECTIVE 2014/35/EU**

***for***

**Product: Asset Tracker**

**MODEL NAME: IET10MO**

**AUTHORIZED**

## SJI Co., Ltd.

**54-33, DONGTANHANA 1-GIL, HWASEONG-SI, GYEONGGI-DO, REPUBLIC OF KOREA**

**2022-07-11**

**SUMMARY**

**The equipment complies with the standards;**

**EN IEC 62368-1:2020+A11:2020 and EN 62368-1:2014+A11:2017**

**(signature)**

**D. M. Park / Team Manager**

***This is only valid in connection with Test Report: OT-227-RSD-012***

This Report is not correlated with the authentication of KOLAS.





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

| | |
|---|---|
| **Report Number..... :** | OT-227-RSD-012 |
| **Date of issue ..... :** | 2022-07-11 |
| **Total number of pages ..... :** | 11 |
| **Name of Testing Laboratory preparing the Report ..... :** | ONETECH Corp. |
| **Applicant's name ..... :** | SJI Co., Ltd. |
| **Address ..... :** | 54-33, DONGTANHANA 1-GIL, HWASEONG-SI, GYEONGGI-DO, REPUBLIC OF KOREA |
| **Test specification:** | |
| **Standard ..... :** | EN IEC 62368-1:2020 + A11:2020<br>EN 62368-1:2014+A11:2017 |
| **Test procedure..... :** | CE(LVD) |
| **Non-standard test method..... :** | N/A |
| **TRF template used ..... :** | IECEE OD-2020-F1:2020, Ed.1.3 |
| **Test Report Form No. ..... :** | IEC62368_1E (ONETECH: OTC-TRF-ST-003(1)) |
| **Test Report Form(s) Originator.... :** | UL(US) (ONETECH modified the TRF on 2021-02-22) |
| **Master TRF ..... :** | Dated 2021-02-04 |



If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

**General disclaimer:**

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

| | | | |
|---|---|---|---|
| **Test item description .....:** | Asset Tracker | | |
| **Trade Mark(s) .....:** | N/A | | |
| **Manufacturer.....:** | Same as applicant | | |
| **Model/Type reference .....:** | IET10MO | | |
| **Ratings .....:** | DC 3.6 V ⎓ (Primary lithium batteries was used) | | |
| | | | |
| **Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):** | | | |
| ☒ **Testing Laboratory:** | ONETECH Corp. | AGR No.: A226A-320 | |
| **Testing location/ address ..... :** | 12-5, Jinsaegol-gil 75 beon-gil, Chowol-eup, Gwangju-si, Gyeonggi-do 12735 Korea | | |
| **Tested by (name, function, signature) ..... :** | Jae-Hun, Lee / Project handler |  | |
| **Approved by (name, function, signature) .. :** | Dong-Myung, Park / Reviewer |  | |
| | | | |
| ☐ **Testing procedure: CTF Stage 1:** | | | |
| **Testing location/ address ..... :** | | | |
| **Tested by (name, function, signature) ..... :** | | | |
| **Approved by (name, function, signature) .. :** | | | |
| | | | |
| ☐ **Testing procedure: CTF Stage 2:** | | | |
| **Testing location/ address ..... :** | | | |
| **Tested by (name, function, signature) .....** | | | |
| **Witnessed by (name, function, signature). :** | | | |
| **Approved by (name, function, signature) .. :** | | | |
| | | | |
| ☐ **Testing procedure: CTF Stage 3:** | | | |
| ☐ **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):**

-. ATTACHMENT 1: European group differences and national differences in accordance with EN 62368-1:2014 + A11:2017 (11 Pages)

**Summary of testing:**

| **Tests performed (name of test and test clause):** | **Testing location:** |
|---|---|
| N/A | ONETECH Corp.<br>12-5, Jinsaegol-gil 75 beon-gil, Chowol-eup, Gwangju-si, Gyeonggi-do 12735 Korea |

**Summary of compliance with National Differences (List of countries addressed):**

EU group differences and national differences

☒ **The product fulfils the requirements of EN IEC 62368-1:2020 + A11:2020 and EN 62368-1:2014+A11:2017**

**Statement concerning the uncertainty of the measurement systems used for the tests**

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

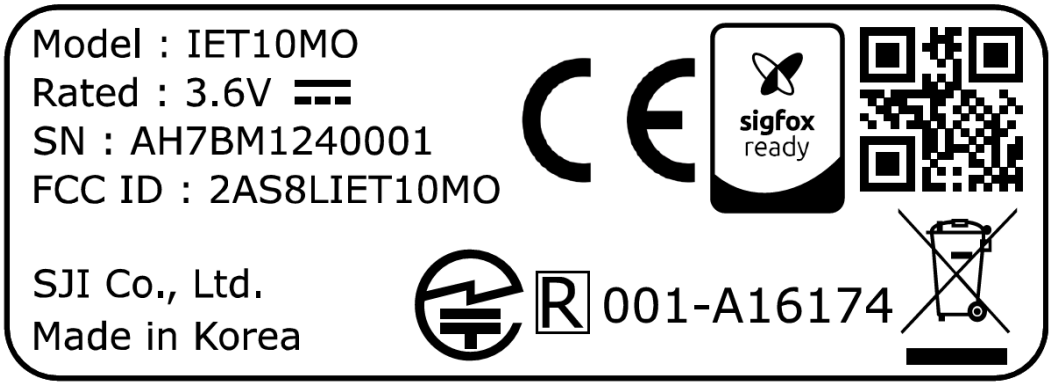
**Procedure number, issue date and title:**

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

**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.**



| **Test item particulars:** | |
|---|---|
| **Product group** ..... : | ☒ end product ☐ built-in component |
| **Classification of use by** ..... : | ☒ Ordinary person ☐ Children likely present<br>☒ Instructed person<br>☒ Skilled person |
| **Supply connection**..... : | ☐ AC mains ☐ DC mains<br>☒ not mains connected<br>☒ ES1 ☐ ES2 ☐ ES3 |
| **Supply tolerance** ..... : | ☐ +10%/-10%<br>☐ +20%/-15%<br>☐ + %/ - %<br>☒ None |
| **Supply connection – type** ..... : | ☐ pluggable equipment type A -<br>☐ non-detachable supply cord<br>☐ appliance coupler<br>☐ direct plug-in<br>☐ pluggable equipment type B -<br>☐ non-detachable supply cord<br>☐ appliance coupler<br>☐ permanent connection<br>☐ mating connector<br>☒ other: not directly connected to the mains |
| **Considered current rating of protective device**..... : | ☐ A<br>Location: ☐ building ☐ equipment<br>☒ N/A |
| **Equipment mobility** ..... : | ☐ movable ☐ hand-held ☐ transportable<br>☐ direct plug-in ☒ stationary ☐ for building-in<br>☐ wall/ceiling-mounted ☐ SRME/rack-mounted<br>☐ other: |
| **Overvoltage category (OVC)** ..... : | ☐ OVC I ☐ OVC II ☐ OVC III<br>☐ OVC IV ☒ other: not directly connected to the mains |
| **Class of equipment** ..... : | ☐ Class I ☐ Class II ☒ Class III<br>☐ Not classified ☐ |
| **Special installation location** ..... : | ☒ N/A ☐ restricted access area<br>☐ outdoor location ☐ |
| **Pollution degree (PD)** ..... : | ☐ PD 1 ☒ PD 2 ☐ PD 3 |
| **Manufacturer's specified $T_{ma}$**..... : | 60 °C ☐ Outdoor: minimum °C |
| **IP protection class** ..... : | ☒ IPX0 ☐ IP___ |
| **Power systems** ..... : | ☐ TN ☐ TT ☐ IT - $V_{L-L}$<br>☒ not AC mains |
| **Altitude during operation (m)** ..... : | ☒ 2000 m or less ☐ 5000 m |
| **Altitude of test laboratory (m)** ..... : | ☐ 2000 m or less ☒ 200 m |
| **Mass of equipment (kg)** ..... : | 104 g |

| | |
|---|---|
| **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 .....:** | 2020-05-28 (Original) |
| | 2022-07-08 (Amendment 1) |
| **Date (s) of performance of tests .....:** | 2020-05-28 to 2020-06-10 (Original) |
| | N/A (Amendment 1) |

**General remarks:**

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

**Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**

**Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:**

| | |
|---|---|
| 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 .....: | ☐ **Yes**<br>☒ **Not applicable** |

**When differences exist; they shall be identified in the General product information section.**

| | |
|---|---|
| **Name and address of factory (ies) ..... :** | SJI Co., Ltd.<br>54-33, DONGTANHANA 1-GIL, HWASEONG-SI, GYEONGGI-DO, REPUBLIC OF KOREA |

**General product information and other remarks:**

1. The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: +60 °C
2. This unit is Tracking device that supports SIGFOX, BLE, WIFI and GPS.
3. This device is able to transmit and receive messages using the SIFFOX network.

**Amendment 1 Report:**

1. The test report is not valid without the original CE(LVD) Test Report.
2. The original Test Report Ref. No. OT-206-RSD-007, dated 2020-06-11 was modified on 2022-07-11 to include below;

   -. Change of applicant and factory name

   -. Correction of applicant, manufacturer and factory address

| Item | Before | After |
|---|---|---|
| Applicant and factory name | SEONG JI INDUSTRIAL CO., LTD | SJI Co., Ltd. |
| Applicant, manufacturer and factory address | 54-33, Dongtanhana 1-gil, Gyeonggi-do, Hwaseong-si, South Korea | 54-33, DONGTANHANA 1-GIL, HWASEONG-SI, GYEONGGI-DO, REPUBLIC OF KOREA |

-. Addition of European group differences and national differences in accordance with EN 62368-1:2014+A11:2017.

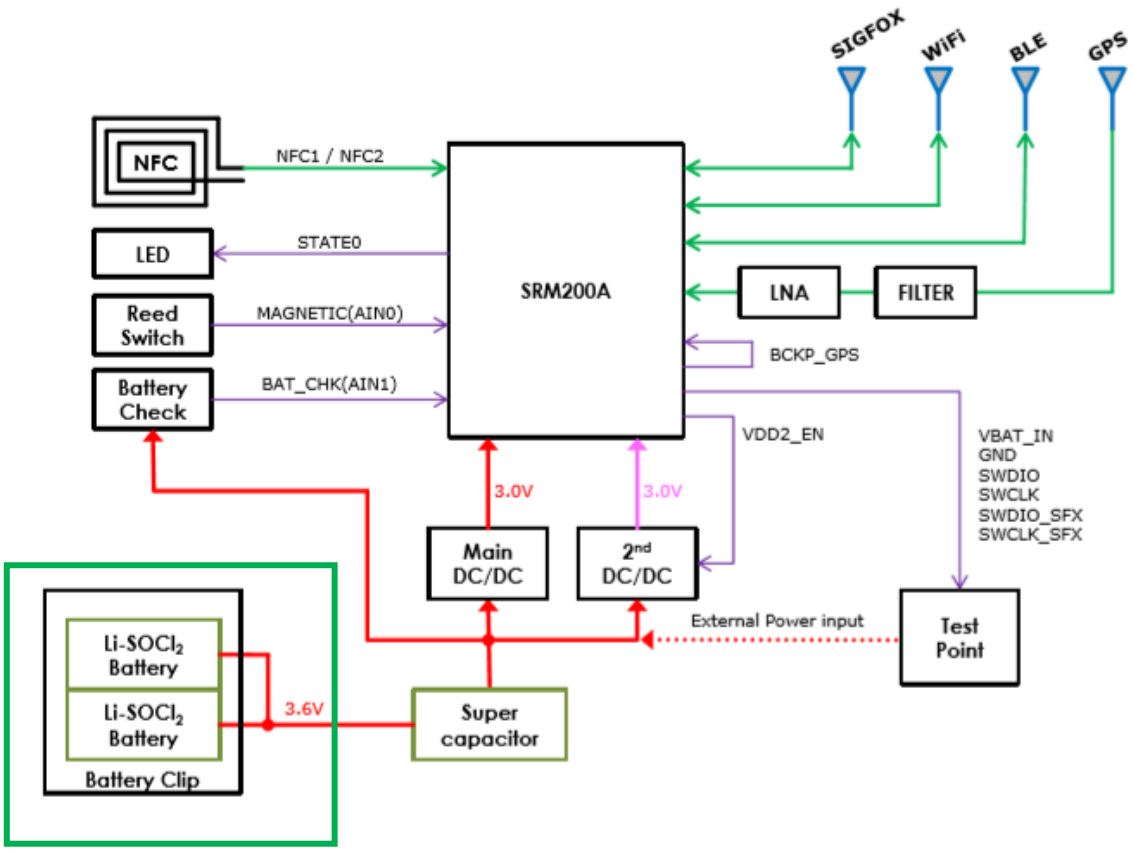
| OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS | | | | |
|---|---|---|---|---|
| **Clause** | **Possible Hazard** | | | |
| 5 | Electrically-caused injury | | | |
| Class and Energy Source (e.g. ES3: Primary circuit) | Body Part (e.g. Ordinary) | Safeguards | | |
| | | B | S | R |
| ES1: Battery (3.6 V DC) | Ordinary | N/A | N/A | N/A |
| 6 | Electrically-caused fire | | | |
| Class and Energy Source (e.g. PS2: 100 Watt circuit) | Material part (e.g. Printed board) | Safeguards | | |
| | | B | 1st S | 2nd S |
| PS1: Battery output (Max. 3.6 V DC) | PCB | Not exceeding 90% of spontaneous ignition temperature limits under normal and abnormal operating conditions. | PCB of min. V-1 class material. | N/A |
| PS1 | All other components | Not exceeding 90% of spontaneous ignition temperature limits under normal and abnormal operating conditions | All other components mounted on min. V-1 class material or made min. V-2 class or small parts of combustible material | N/A |
| 7 | Injury caused by hazardous substances | | | |
| Class and Energy Source (e.g. Ozone) | Body Part (e.g., Skilled) | Safeguards | | |
| | | B | S | R |
| Not used | Ordinary | N/A | N/A | N/A |

| 8 | Mechanically-caused injury | | | |
|---|---|---|---|---|
| Class and Energy Source (e.g. MS3: Plastic fan blades) | Body Part (e.g. Ordinary) | Safeguards | | |
| | | B | S | R |
| MS1: Sharp edges and corners | Ordinary | N/A | N/A | N/A |
| MS1: Equipment mass (mass: 104 g) | Ordinary | N/A | N/A | N/A |
| 9 | Thermal burn | | | |
| Class and Energy Source (e.g. TS1: Keyboard caps) | Body Part (e.g., Ordinary) | Safeguards | | |
| | | B | S | R |
| TS1: Accessible external plastic enclosure (>1 min and < 8 h) | Ordinary | N/A | N/A | N/A |
| 10 | Radiation | | | |
| Class and Energy Source (e.g. RS1: PMP sound output) | Body Part (e.g., Ordinary) | Safeguards | | |
| | | B | S | R |
| Not used | Ordinary | N/A | N/A | N/A |
| 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.<br>Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings | | |
| ES1, PS1 | ES2, PS2 | ES3, PS3 |

ES1: Battery output (3.6 V DC)

PS1: Battery output (2.2 W)




☒ ES ☒ PS ☐ MS ☐ TS ☐ RS

| 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.<br>Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings | | |
| MS1, TS1 | MS2, TS2 | MS3, TS3 |

MS1: Mass (104 g)

TS1: Accessible external plastic enclosure (>1 min and < 8 h)

**[Top side view]**


**[Bottom side view]**


☐ **ES** ☐ **PS** ☒ **MS** ☒ **TS** ☐ **RS**

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

**ATTACHMENT 1 TO TEST REPORT**

**IEC 62368-1**
**EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**
(AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS)

**Differences according to**.....: EN 62368-1:2014+A11:2017

**Attachment Form No**. .....: EU_GD_IEC62368_1D_II

**Attachment Originator .....**: Nemko AS

**Master Attachment** .....: Date 2021-02-04



| | | |
|---|---|---|
| | **CENELEC COMMON MODIFICATIONS (EN)** | |
| | Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z". | P |
| CONTENTS | **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 |
| | **Delete** all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list: | P |
| | For special national conditions, see Annex ZB. | |
| 1 | **Add** the following note:<br>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU. | P |

| | | | | | |
|---|---|---|---|---|---|
| 0.2.1 | Note | 1 | Note 3 | 4.1.15 | Note |
| 4.7.3 | Note 1 and 2 | 5.2.2.2 | Note | 5.4.2.3.2.2 Table 13 | Note c |
| 5.4.2.3.2.4 | Note 1 and 3 | 5.4.2.5 | Note 2 | 5.4.5.1 | Note |
| 5.5.2.1 | Note | 5.5.6 | Note | 5.6.4.2.1 | Note 2 and 3 |
| 5.7.5 | Note | 5.7.6.1 | Note 1 and 2 | 10.2.1 Table 39 | Note 2, 3 and 4 |
| 10.5.3 | Note 2 | 10.6.2.1 | Note 3 | F.3.3.6 | Note 3 |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.Z1 | **Add** the following new subclause after 4.9:<br><br>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, 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):<br><br>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;<br><br>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;<br><br>c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.<br><br>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet. | Class III equipment | N/A |
| 5.4.2.3.2.4 | **Add** the following to the end of this subclause:<br><br>The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009. | | N/A |
| 10.2.1 | Add the following to [c] and [d] in table 39:<br><br>For additional requirements, see 10.5.1. | | N/A |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 10.5.1 | **Add** the following after the first paragraph:<br>*For RS 1 compliance is checked by measurement under the following conditions:*<br>*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 presets 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.*<br>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.<br>*The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.*<br>*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.*<br>*For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.*<br>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996. | | N/A |
| 10.6.1 | **Add** the following paragraph to the end of the subclause:<br>EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply. | | N/A |
| 10.Z1 | **Add** the following new subclause after 10.6.5.<br>**10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz**<br>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).<br>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 | | N/A |
| G.7.1 | **Add** the following note:<br>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD. | | N/A |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| Bibliography | **Add** the following standards:<br>**Add** the following notes for the standards indicated:<br>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 |
| **ZB** | **ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)** | | |
| 4.1.15 | **Denmark, Finland, Norway** and **Sweden**<br>To the end of the subclause the following is added:<br>**Class I pluggable equipment type A** 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 **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet.<br>The marking text in the applicable countries shall be as follows:<br>In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.”<br>In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"<br>In **Norway**: “Apparatet må tilkoples jordet stikkontakt”<br>In **Sweden**: “Apparaten skall anslutas till jordat uttag” | Class III equipment | N/A |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.7.3 | **United Kingdom**<br>To the end of the subclause the following is added:<br>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 | | N/A |
| 5.2.2.2 | **Denmark**<br>After the 2nd paragraph add the following:<br>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. | | N/A |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.4.11.1 and Annex G | **Finland and Sweden**<br>To the end of the subclause the following is added:<br>For separation of the telecommunication network from earth the following is applicable:<br>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either<br>• two layers of thin sheet material, each of which shall pass the electric strength test below, or<br>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.<br>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<br>• 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), and<br>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.<br>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.<br>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:<br>• 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;<br>• the additional testing shall be performed on all the test specimens as described in EN 60384-14;<br>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. | | N/A |
| 5.5.2.1 | **Norway**<br>After the 3rd paragraph the following is added:<br>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V). | | N/A |

| IEC 62368-1 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.5.6 | **Finland, Norway** and **Sweden**<br>To the end of the subclause the following is added:<br>Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2. | | N/A |
| 5.6.1 | **Denmark**<br>**Add** 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>*Justification:*<br>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse. | | N/A |
| 5.6.4.2.1 | **Ireland and United Kingdom**<br>After the indent for **pluggable equipment type A**, the following is added:<br>– the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug. | | N/A |
| 5.6.5.1 | To the second paragraph the following is added:<br>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:<br>1,25 $mm^2$ to 1,5 $mm^2$ in cross-sectional area. | | N/A |
| 5.7.5 | **Denmark**<br>To the end of the subclause the following is added:<br>The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c. | | N/A |

| IEC 62368-1 | | | |
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| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.7.6.1 | **Norway and Sweden**<br><br>To the end of the subclause the following is added:<br><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. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.<br><br>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.<br><br>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:<br><br>“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)”<br><br>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.<br><br>Translation to Norwegian (the Swedish text will also be accepted in Norway):<br><br>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”<br><br>Translation to Swedish:<br><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.”. | | N/A |

| IEC 62368-1 | | | |
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| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.7.6.2 | **Denmark**<br>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 . | | N/A |
| B.3.1 and B.4 | **Ireland and United Kingdom**<br>The following is applicable:<br>To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, 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 **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met | | N/A |
| G.4.2 | **Denmark**<br>To the end of the subclause the following is added:<br>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.<br>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.<br>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase 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.<br>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.<br>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.<br>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<br>*Justification:*<br>Heavy Current Regulations, Section 6c | Class III equipment | N/A |

| IEC 62368-1 | | | |
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| Clause | Requirement + Test | Result - Remark | Verdict |
| G.4.2 | **United Kingdom**<br>To the end of the subclause the following is added:<br>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. | Class III equipment | N/A |
| G.7.1 | **United Kingdom**<br>To the first paragraph the following is added:<br>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.<br>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. | Class III equipment | N/A |
| G.7.1 | **Ireland**<br>To the first paragraph the following is added:<br>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 | Class III equipment | N/A |
| G.7.2 | **Ireland and United Kingdom**<br>To the first paragraph the following is added:<br>A power supply cord with a conductor of 1,25 $mm^2$ is allowed for equipment which is rated over 10 A and up to and including 13 A. | Class III equipment | N/A |
| ZC | ANNEX ZC, NATIONAL DEVIATIONS (EN) | | |

| IEC 62368-1 | | | |
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| Clause | Requirement + Test | Result - Remark | Verdict |
| 10.5.2 | **Germany**<br>The following requirement applies:<br>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.<br>*Justification:*<br>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.<br>**NOTE** Contact address:<br>Physikalisch-Technische Bundesanstalt, Bundesallee 100,<br>D-38116 Braunschweig,<br>Tel.: Int +49-531-592-6320,<br>Internet: http://www.ptb.de | No such equipment | N/A |