# EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
**MRA0000043**

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

## Sonove GmbH

**Sonthofen, Bayern, Germany**

for
**Computers and Programmable Logic Controllers,**
**Touch Screens, i.e. Display Monitor that is also an Input Device**

with type designation(s)
**Maritime Panel PC M2-PPC, M2C-PPC; Maritime Monitor M2-M, M2C-M; Maritime Box M2-PC**

The product is found to comply with
**EU RO Mutual Recognition Technical Requirements for Display Monitors, Video Screens, Terminals**
**EU RO Mutual Recognition Technical Requirements for Computers and Programmable Logic Controllers**
**EU RO Mutual Recognition Technical Requirements for Touch Screen i.e. a Display Monitor or a Video Screen that is also an Input Device**

Intended service
**Control-, Monitoring-, Alarm- and Safety Systems subject to classification.**

| | |
|---|---|
| **Temperature [°C]:** | **[°C]: -15°C to 55°C** |
| **Vibration:** | **±1 mm / 0.7 g** |
| **EMC:** | **All locations including bridge and deck zone** |
| **IP Code:** | **IP Code: IP66 (when sealed to console), IP20 (rear); IP20 (PC Box)** |

## This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2029-03-10**.

Issued at **Hamburg** on **2024-11-06**
DNV local unit: **Augsburg** for **DNV**

Approval Engineer: **Jens Dietrich**

**Frederik Tore Elter**
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.
LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

## Product description

| Name | Part number | Description |
|---|---|---|
| M2-M-18.5 DT GL | 562.00x.yyyy | Maritime Monitor, 18.5 inch, Desktop, Glass |
| M2-M-18.5 FM GL | 563.00x.yyyy | Maritime Monitor, 18.5 inch, Flush Mount, Glass |
| M2-M-18.5 DT CT | 567.00x.yyyy | Maritime Monitor, 18.5 inch, Desktop, Capacitive Multi-Touch |
| M2-M-18.5 FM CT | 568.00x.yyyy | Maritime Monitor, 18.5 inch, Flush Mount, Capacitive Multi-Touch |
| M2-M-18.5HB DT GL | 562.10x.yyyy | Maritime Monitor, 18.5 inch, High Bright, Desktop, Glass |
| M2-M-18.5HB FM GL | 563.10x.yyyy | Maritime Monitor, 18.5 inch, High Bright, Flush Mount, Glass |
| M2-M-18.5HB DT CT | 567.10x.yyyy | Maritime Monitor, 18.5 inch, High Bright, Desktop, Cap. Multi-Touch |
| M2-M-18.5HB FM CT | 568.10x.yyyy | Maritime Monitor, 18.5 inch, High Bright, Flush Mt., Cap. Multi-Touch |
| M2-M-24 DT GL | 582.00x.yyyy | Maritime Monitor, 24 inch, Desktop, Glass |
| M2-M-24 FM GL | 583.00x.yyyy | Maritime Monitor, 24 inch, Flush Mount, Glass |
| M2-M-24 DT CT | 587.00x.yyyy | Maritime Monitor, 24 inch, Desktop, Capacitive Multi-Touch |
| M2-M-24 FM CT | 588.00x.yyyy | Maritime Monitor, 24 inch, Flush Mount, Capacitive Multi-Touch |
| M2-M-24HB DT GL | 582.10x.yyyy | Maritime Monitor, 24 inch, High Bright, Desktop, Glass |
| M2-M-24HB FM GL | 583.10x.yyyy | Maritime Monitor, 24 inch, High Bright, Flush Mount, Glass |
| M2-M-24HB DT CT | 587.10x.yyyy | Maritime Monitor, 24 inch, High Bright, Desktop, Capacitive Multi-Touch |
| M2-M-24HB FM CT | 588.10x.yyyy | Maritime Monitor, 24 inch, High Bright, Flush Mt., Cap.Multi-Touch |
| M2-M-27 DT GL | 591.00x.yyyy | Maritime Monitor, 27 inch, Desktop, Glass |
| M2-M-27 FM GL | 592.00x.yyyy | Maritime Monitor, 27 inch, Flush Mount, Glass |
| M2-M-27 DT CT | 596.00x.yyyy | Maritime Monitor, 27 inch, Desktop, Capacitive Multi-Touch |
| M2-M-27 FM CT | 597.00x.yyyy | Maritime Monitor, 27 inch, Flush Mount, Capacitive Multi-Touch |
| M2C-M-15 GL | 541.00x.yyyy | Maritime Monitor (classic), 15 inch, Glass |
| M2C-M-15 RT | 546.00x.yyyy | Maritime Monitor (classic), 15 inch, Resistive Touch |
| M2C-M-17 GL | 551.00x.yyyy | Maritime Monitor (classic), 17 inch, Glass |
| M2C-M-17 RT | 556.00x.yyyy | Maritime Monitor (classic), 17 inch, Resistive Touch |
| M2C-M-19 GL | 561.00x.yyyy | Maritime Monitor (classic), 19 inch, Glass |
| M2C-M-19 RT | 566.00x.yyyy | Maritime Monitor (classic), 19 inch, Resistive Touch |
| | | |
| M2-PPC-18.5 DT GL | 462.0cx.yyyy | Maritime Panel PC, 18.5 inch, Desktop, Glass |
| M2-PPC-18.5 FM GL | 463.0cx.yyyy | Maritime Panel PC, 18.5 inch, Flush Mount, Glass |
| M2-PPC-18.5 DT CT | 467.0cx.yyyy | Maritime Panel PC, 18.5 inch, Desktop, Capacitive Multi-Touch |
| M2-PPC-18.5 FM CT | 468.0cx.yyyy | Maritime Panel PC, 18.5 inch, Flush Mount, Capacitive Multi-Touch |
| M2-PPC-18.5HB DT GL | 462.1cx.yyyy | Maritime Panel PC, 18.5 inch, High Bright, Desktop, Glass |
| M2-PPC-18.5HB FM GL | 463.1cx.yyyy | Maritime Panel PC, 18.5 inch, High Bright, Flush Mount, Glass |
| M2-PPC-18.5HB DT CT | 467.1cx.yyyy | Maritime Panel PC, 18.5 inch, High Bright, Desktop, Cap. Multi-Touch |
| M2-PPC-18.5HB FM CT | 468.1cx.yyyy | Maritime Panel PC, 18.5 inch, High Bright, Flush Mt., Cap. Multi-Touch |
| M2-PPC-24 DT GL | 482.0cx.yyyy | Maritime Panel PC, 24 inch, Desktop, Glass |
| M2-PPC-24 FM GL | 483.0cx.yyyy | Maritime Panel PC, 24 inch, Flush Mount, Glass |
| M2-PPC-24 DT CT | 487.0cx.yyyy | Maritime Panel PC, 24 inch, Desktop, Capacitive Multi-Touch |
| M2-PPC-24 FM CT | 488.0cx.yyyy | Maritime Panel PC, 24 inch, Flush Mount, Capacitive Multi-Touch |
| M2-PPC-24HB DT GL | 482.1cx.yyyy | Maritime Panel PC, 24 inch, High Bright, Desktop, Glass |
| M2-PPC-24HB FM GL | 483.1cx.yyyy | Maritime Panel PC, 24 inch, High Bright, Flush Mount, Glass |
| M2-PPC-24HB DT CT | 487.1cx.yyyy | Maritime Panel PC, 24 inch, High Bright, Desktop, Cap. Multi-Touch |

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|---|---|---|
| M2-PPC-24HB FM CT | 488.1cx.yyyy | Maritime Panel PC, 24 inch, High Bright, Flush Mt., Cap. Multi-Touch |
| M2-PPC-27 DT GL | 491.0cx.yyyy | Maritime Panel PC, 27 inch, Desktop, Glass |
| M2-PPC-27 FM GL | 492.0cx.yyyy | Maritime Panel PC, 27 inch, Flush Mount, Glass |
| M2-PPC-27 DT CT | 496.0cx.yyyy | Maritime Panel PC, 27 inch, Desktop, Capacitive Multi-Touch |
| M2-PPC-27 FM CT | 497.0cx.yyyy | Maritime Panel PC, 27 inch, Flush Mount, Capacitive Multi-Touch |
| M2C-PPC-15 GL | 441.0cx.yyyy | Maritime Panel PC (classic), 15 inch, Glass |
| M2C-PPC-15 RT | 446.0cx.yyyy | Maritime Panel PC (classic), 15 inch, Resistive Touch |
| M2C-PPC-17 GL | 451.0cx.yyyy | Maritime Panel PC (classic), 17 inch, Glass |
| M2C-PPC-17 RT | 456.0cx.yyyy | Maritime Panel PC (classic), 17 inch, Resistive Touch |
| M2C-PPC-19 GL | 461.0cx.yyyy | Maritime Panel PC (classic), 19 inch, Glass |
| M2C-PPC-19 RT | 466.0cx.yyyy | Maritime Panel PC (classic), 19 inch, Resistive Touch |

| | | |
|---|---|---|
| M2-PC-L | 415.0cx.yyyy | Maritime Box PC L |
| M2-PC-M | 416.0cx.yyyy | Maritime Box PC M |

The abbreviations "DT" for desktop and "GL" for glass (non-touch) in the article designations are optional and are not always listed
The letters 'c','x','y' in the part number are placeholders for unique product numbers (to be composed of components listed).

**Features/Options:**

Power supply:
AC: wide-range AC, 115/230 VAC, 50/60 Hz
DC: wide-range DC,24VDC (18-32 VDC)
DCAC redundant: 24VDC (18-32 VDC) + 115/230 VAC, 50/60 Hz

M2 Controller Board:
Internal Buzzer
Controller Board Interfaces:
2 x RS232/RS485 (Remote control), 1 x Relais OUT (external Buzzer), 1x Analog IN, 10VDC, GND (Potentiometer)
5 x GPIO (Buzzer control, Inc./Dec., etc.), Power 12VDC/GND, 1 x USB (Touch)

**Additional for Panel PCs and Box PCs:**
CPUs:
i7(K) Intel® Core™ i7-7600U, i5(K) Intel® Core™ i5-7300U, i3(K) Intel® Core™ i3-7100U,
i7(S) Intel® Core™ i7-6600U, i5(S) Intel® Core™ i5-6300U, Cel(K) Intel® Celeron 3965U,
i5(TG) Intel® Core™ i5-1145GRE, i7(TG) Intel® Core™ i7-1185GRE

Memory (RAM):
4/8/16/32 GB DDR3
4/8/16/32/64 GB DDR4

Flash Memory (SSD):
SSD SATA 2.5": 40 GB to 2 x 2 TB
SSD M.2 SATA: 40 GB to 1 TB
SSD M.2 PCIe: 40 GB to 1 TB
SSD mSATA: 40 GB to 1 TB

Standard Interfaces:
Display: up to 3 Displays (DP++, HDMI, USB Type C)
LAN: up to 3 x GbE (2 x 1000Mbps + 1 x 2.5Gbps)
USB: up to 9 USB (4 x USB 3.1 + 4x USB 2.0 + 1 x USB Type-C)
Serial: up to 4 Serial (2 x RS232/422/485 + 2 x RS232)

**Expansion Cards / Options (PCIe, mini PCIe, M.2):**
Serial: 1/2/4 x RS232/422/485, galv. isolated

Serial: 2 x RS232/RS485
CAN Bus: 2 x CAN Interface
LAN: 2/4/6 LAN 1 Gbit/s
Internal Speaker

Compass Safe Distances as listed in respective data sheet.

## Application/Limitation
The Type Approval covers all hardware listed under Product description. These devices are intended for use in Control-, Monitoring-, Alarm- and Safety Systems subject to classification.

## Type Approval documentation

## Marking of product
-Manufacturer's name
-Type designation
-Serial No. and date of manufacture
-Interface particulars and ratings

## Other Conditions
The (touch) monitors, also parts of PPC, have been verified for compliance with EU RO Mutual Recognition Technical Requirements for Touch Screen i.e. a display monitor or a video screen that is also an input device version 0.2, dated 2023-01-01, and (all) for Display Monitors, Video Screens, Terminals version 0.6, dated 2023-01-01.

Applicable tests according to IACS Unified Requirements E10 rev. 7 and rev. 8 have been verified. Applicable tests for protected equipment according to IEC 60945 (Fourth edition - 2002) including Corrigendum 1 have additionally been verified.

## Periodical assessment
The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:
• Ensure that type approved documentation is available
• Inspection of factory samples, selected at random from the production line (where practicable)
• Review of production and inspection routines, including test records from product sample tests and control routines
• Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
• Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
• Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed annually and at renewal of this certificate.

## Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).

END OF CERTIFICATE