



Maritime Box PC Systems



Powerful Maritime Box PCs

The Maritime Box PC family satisfies the needs of a powerful Box PC unit with the latest generation of Intel® Core™ processors, furthermore long-term availability safes the investments in software and system solutions. The MPC box is designed in cooperation with users in the worldwide maritime market to get a reliable, flexible and most fitting system for maritime automation applications.

High Performance Maritime PC

- ✓ 3 CPU performance classes of Intel® Core™ family 4th Generation
- ✓ Nearly unlimited configuration possibilities and Add-Ons
- ✓ Long-term availability for same configuration 5-7 years



Robust Design for harsh environment at sea

- ✓ Direct mounting without any “antivibration kits”
- ✓ 3 different mounting possibilities, mounting compatible with other vendors of PC boxes
- ✓ Extension slots to plug in additional PCI, PCIe and MiniPCIe Cards...



Designed for Maritime Automation Applications

- ✓ Type approval DNV GL and tested acc. to EN60945
- ✓ Designed and Manufactured 100% in Germany

Universal Configuration of the MPC box



The MPC box combines a robust design for harsh environment with highest PC performance for high reliable automation applications and long-term availability to protect your investments. The diversity of maritime applications demands a great variety of system solutions. The MPC box meets the various requirements by providing a wide range of configuration possibilities, such as different power supplies, interfaces, mounting possibilities, operating systems, and more.

The illustration below shows a graphical overview of the major possibilities to set up the MPC box for your application.

Power Supply

24 VDC
230 VAC
24 VDC + 230 VAC Redundancy

CPU Type

Intel® Celeron®
Intel® Core™ i5-4590T
Intel® Core™ i7-4770TE

Bus Expansion

RiserCard: 2 x PCI + 1 x MiniPCIe
RiserCard: 1 x PCI + 1 x PCIe
RiserCard: 2 x PCIe

Memory

RAM 4 GB
RAM 8 GB
RAM 16 GB



Mounting Capability

LB: 6 oblong hole Ø 4.6 (Standard)
MK: 4 pressnut M6
HT: 6 oblong hole Ø 4.0

Interface

2 x LAN 1Gbit/s (up to 4)
4 x USB V3.0
8 x USB (4 x 3.0, 4 x 2.0)
4 x RS485/RS422 galv. isolated more ...

Operating System

Windows® Embedded Standard 2009 (WES)
Windows® 7
Windows® 10
Linux (e.g. Debian 8.4, custom-designed ...)

Storage Disk Drive

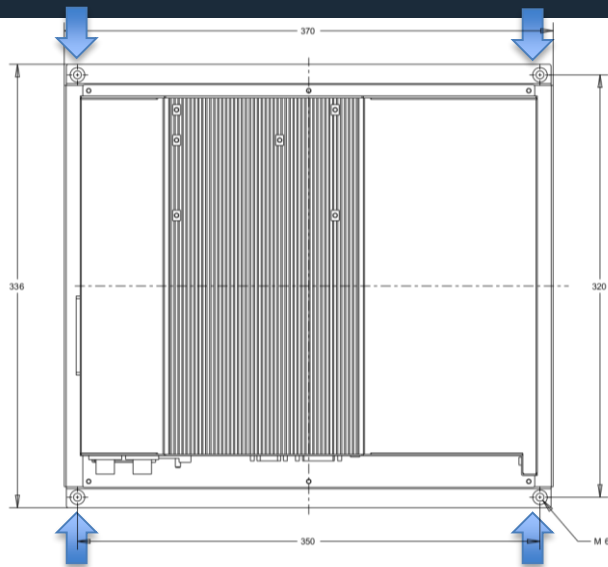
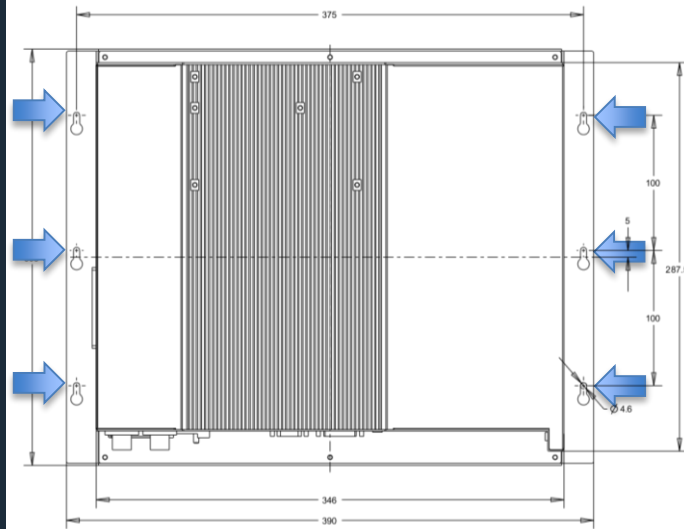
SSD 64 GB, MLC
SSD 128 GB, MLC
SSD 256 GB, MLC
SSD 512 GB, MLC
SSD 32 GB, SLC, ext. temp.

There are a lot more individual options and Add-On possibilities. Configure your system for your maritime application challenges.

MPC box Mounting Possibilities (LB/MK/HT)

LB: Mounting (Sonove Standard)

- ✓ Housing: galvanized steel
Cooler: black anodized aluminum
- ✓ Mounting method with 6 adjustable holes, mounting compatible to different PC boxes in the maritime market

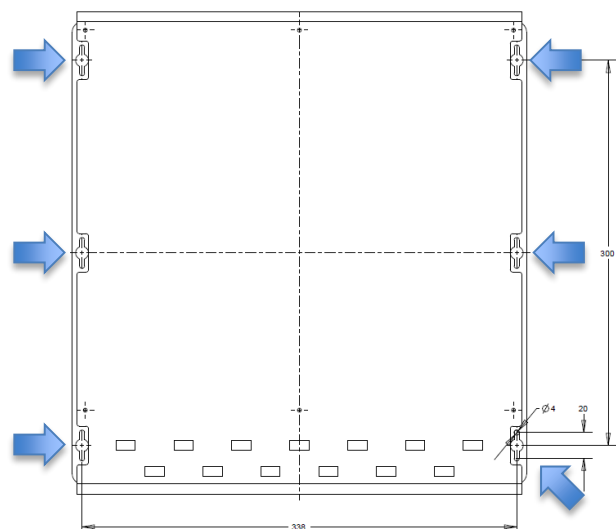


MK: Mounting

- ✓ Housing: galvanized steel or black coated
Cooler: black anodized aluminum
- ✓ Mounting method with 4 Press-In M6 nuts, mounting with M6 screws from backside, mounting method compatible with "Antivibration Kits" in the maritime market

HT: Mounting

- ✓ Housing: galvanized steel or black coated
Cooler: black anodized aluminum
Mounting plate: black coated with cable reliefs
- ✓ Mounting method with 6 long holes, mounting with M4 screws, mounting compatible to some Box PCs in the maritime market





A few examples of MPC box standard systems with Order Informations

Maritime PC Box Celeron

MPC box Celeron DC / R4 SSD64 WES	413.612.0000	Maritime box PC, Intel® Celeron®, 2 x 2.2 GHz, 24VDC, RAM 4 GB, SSD 64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows Embedded Standard, LB Sonove Mounting
MPC box Celeron AC / MK R4 SSD64 WES	413.613.9200	Maritime box PC, Intel® Celeron®, 2 x 2.2 GHz, Redundancy 230VAC/24VDC, RAM 4 GB, SSD 64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows Embedded Standard, MK Mounting
MPC box Celeron DCAC / HT R4 SSD128 W7P	413.122.9100	Maritime box PC, Intel® Celeron®, 2 x 2.2 GHz, 24VDC, RAM 4 GB, SSD 64 GB, 2 x LAN 1 Gbit/s, 4 x USB, 2 x RS232, Windows 7 Professional for Embedded Systems, HT Mounting

Maritime PC Box i5

MPC box i5 DC / R4 SSD64 W7P	411.112.0000	Maritime box PC, Intel® Celeron®, 2 x 2.2 GHz, 24VDC, RAM 4 GB, SSD 64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows 7 Professional for Embedded Systems
MPC box i5 DC / 4R SSD128 Linux 4RS485	411.B22.9100	Maritime box PC, Intel® Celeron®, 2 x 2.2 GHz, 24VDC, RAM 4 GB, SSD 64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Linux (Debian)
MPC box i5 DCAC / HT R4 SSD128 W7P	411.123.9100	Maritime box PC, Intel® i5®, 4 x 2.2 GHz, 24VDC, RAM 4 GB, SSD64 GB, 4 x LAN 1Gbit/s, 8 x USB, 2 x RS232, Redundancy 230VAC/24VDC, Windows 7 Professional for Emb. Systems, HT Mounting

Maritime PC Box i7

MPC box i7 DC / MK R4 SSD64 W7P PCI	410.112.9200	Maritime box PC, Intel® Core™ i7-4770TE, 24VDC, RAM 4 GB, SSD64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows 7 Professional for Embedded Systems, MK Mounting
MPC box i7 AC /R4 SSD64 W7P	410.113.0000	Maritime box PC, Intel® Core™ i7-4770TE, 230VAC, RAM 4 GB, SSD64 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows 7 Professional for Embedded Systems, LB Sonove Mounting
MPC box i7 DC / R8 SSD128 W7P PCI	410.122.0100	Maritime box PC, Intel®Core™ i7-4770TE, 24VDC, RAM 8 GB, SSD128 GB, 2 x LAN 1Gbit/s, 4 x USB, 2 x RS232, Windows 7 Professional for Embedded Systems, LB Sonove Mounting

This chart of standard systems is only a small choice of available MPC box systems, we can provide. Choose your own individual configuration for your best fitting maritime system solution!

Type Approval DNV GL



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Technical Data / Range of Application	<table border="0"> <tr><td>Panel PCs 17"-23"</td><td></td></tr> <tr><td>MPPC17 Glass Celeron DC</td><td>450.yz2.xxxx</td></tr> <tr><td>MPPC17 Glass I7 DC</td><td>450.yz2.xxxx</td></tr> <tr><td>MPPC17 RT Celeron DC</td><td>455.yz2.xxxx</td></tr> <tr><td>MPPC17 RT I7 DC</td><td>455.yz2.xxxx</td></tr> <tr><td>MPPC17 Glass Celeron AC</td><td>450.yz1.xxxx</td></tr> <tr><td>MPPC17 Glass I7 AC</td><td>450.yz1.xxxx</td></tr> <tr><td>MPPC17 RT Celeron AC</td><td>455.yz1.xxxx</td></tr> <tr><td>MPPC17 RT I7 AC</td><td>455.yz1.xxxx</td></tr> <tr><td>MPPC19 Glass Celeron DC</td><td>460.yz2.xxxx</td></tr> <tr><td>MPPC19 Glass I7 DC</td><td>460.yz2.xxxx</td></tr> <tr><td>MPPC19 RT Celeron DC</td><td>465.yz2.xxxx</td></tr> <tr><td>MPPC19 RT I7 DC</td><td>465.yz2.xxxx</td></tr> <tr><td>MPPC19 Glass Celeron AC</td><td>460.yz1.xxxx</td></tr> <tr><td>MPPC19 Glass I7 AC</td><td>460.yz1.xxxx</td></tr> <tr><td>MPPC19 Glass Celeron DC</td><td>465.yz1.xxxx</td></tr> <tr><td>MPPC19 Glass I7 DC</td><td>465.yz1.xxxx</td></tr> <tr><td>MPPC20 Celeron DC</td><td>475.yz2.xxxx</td></tr> <tr><td>MPPC20 I7 DC</td><td>475.yz2.xxxx</td></tr> <tr><td>MPPC23 RT Celeron DC</td><td>480.yz2.xxxx</td></tr> <tr><td>MPPC23 RT I7 DC</td><td>480.yz2.xxxx</td></tr> <tr><td>MPPC23 Glass Celeron AC</td><td>485.yz2.xxxx</td></tr> <tr><td>MPPC23 Glass I7 AC</td><td>485.yz2.xxxx</td></tr> <tr><td>MPPC23 RT Celeron AC</td><td>480.yz1.xxxx</td></tr> <tr><td>MPPC23 RT I7 AC</td><td>480.yz1.xxxx</td></tr> <tr><td>MPPC23 RT Celeron AC</td><td>485.yz1.xxxx</td></tr> <tr><td>MPPC23 RT I7 AC</td><td>485.yz1.xxxx</td></tr> </table>		Panel PCs 17"-23"		MPPC17 Glass Celeron DC	450.yz2.xxxx	MPPC17 Glass I7 DC	450.yz2.xxxx	MPPC17 RT Celeron DC	455.yz2.xxxx	MPPC17 RT I7 DC	455.yz2.xxxx	MPPC17 Glass Celeron AC	450.yz1.xxxx	MPPC17 Glass I7 AC	450.yz1.xxxx	MPPC17 RT Celeron AC	455.yz1.xxxx	MPPC17 RT I7 AC	455.yz1.xxxx	MPPC19 Glass Celeron DC	460.yz2.xxxx	MPPC19 Glass I7 DC	460.yz2.xxxx	MPPC19 RT Celeron DC	465.yz2.xxxx	MPPC19 RT I7 DC	465.yz2.xxxx	MPPC19 Glass Celeron AC	460.yz1.xxxx	MPPC19 Glass I7 AC	460.yz1.xxxx	MPPC19 Glass Celeron DC	465.yz1.xxxx	MPPC19 Glass I7 DC	465.yz1.xxxx	MPPC20 Celeron DC	475.yz2.xxxx	MPPC20 I7 DC	475.yz2.xxxx	MPPC23 RT Celeron DC	480.yz2.xxxx	MPPC23 RT I7 DC	480.yz2.xxxx	MPPC23 Glass Celeron AC	485.yz2.xxxx	MPPC23 Glass I7 AC	485.yz2.xxxx	MPPC23 RT Celeron AC	480.yz1.xxxx	MPPC23 RT I7 AC	480.yz1.xxxx	MPPC23 RT Celeron AC	485.yz1.xxxx	MPPC23 RT I7 AC	485.yz1.xxxx
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Test Standard	GL Guidelines for the Performance of Type Approvals, Chapter 2: Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2), Edition 2012																																																							
Documents	Test reports: TELUS PB 293e/14, TELUS PB 360e/14, TELUS PB 471e/15; MTN 07440.78.15 V1.0, MTN 07440.76.15 V1.0, MTN 07440.77.15 V1.0, MTN 07440.78.15 V1.0, MTN 07440.79.15 V1.0, MTN 07440.80.15 V1.0, MTN 07440.81.15 V1.0, Technical Description, Release 2/2014; Part lists.																																																							
Remarks	Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL (Enclosure (IP rating)). Required protection according to DNV GL rules shall be provided upon installation onboard.																																																							
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DNV GL	 Marco Rinkel Jens Dietrich																																																							
www.dnvgl.com																																																								

Further Maritime Products

The maritime product family MPC box is one of the cores of Sonoves maritime PC platform. In addition Sonove provides two more maritime product families: Maritime Panel PCs (MPPCs) and Maritime Monitors (MMs). All product families are designed especially for maritime usage, type approved by DNV GL and solely manufactured in Germany.

Our full range of MPC box, Maritime Panel PC and Maritime Monitor products are certified by DNV GL and tested acc. to EN60945.

Maritime Panel PCs

- ✓ Sonove Maritime Panel PCs 15", 17", 19", 23", 24" and 27" display sizes and different performance classes
- ✓ Type Approval DNV GL and tested acc. to EN 60945
- ✓ Further information: www.sonove.com/maritime-products/mppc/



Maritime Monitors

- ✓ Sonove Maritime Monitors 15", 17", 19", 23", 24" and 27" display sizes with different Touch and Antireflex surfaces
- ✓ Type Approval DNV GL and tested acc. to EN 60945
- ✓ Further information: www.sonove.com/maritime-products/mm/

SONOVE creates Maritime Automation Solutions



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