



# Maritime Automation Systems and Solutions





**SONOVE** GmbH is a powerful new force in maritime automation systems. We provide flexible solutions for embedded Panel PC and monitors, with configuration software to control, visualize and manage data on commercial and leisure craft. All our products are designed and manufactured in Germany according to high level of EU specifications.

The maritime environment requires a unique level of demanding performance, functionality and certification. Our portfolio of solutions satisfies the requirements on all counts, whether it be high temperature, vibration resistance, or certification. Our solutions are specifically designed for maritime applications. This enables us to have a competitive edge for our systems and software.



# Marine Hardware and Software Automation Solutions

## SONOVE system solutions:

- ✓ **SONOVE** provides systems, combining professional individual automation Software with Marine Panel PCs
- ✓ **SONOVE** provides Software Engineering Services for HMI/SCADA, communication for maritime automation
- ✓ **SONOVE** provides the most flexible hardware systems for maritime automation solutions



## Our flexibility for your solution:

- ✓ Our products for all your maritime automation requirements
- ✓ Custom front panel can be designed with your logo and your hardware configuration, to tailor individual HMI solutions
- ✓ All our products are entirely designed and manufactured in Germany



## Marine certification:

- ✓ Designed from scratch, our marine products have satisfied all the major marine certifications.
- ✓ All products are tested according to IACS E10 as well EN 60945 for bridge use and approved by GL and DNV



# SONOVE Maritime Automation Technology

## High Performance Maritime PC:

- ✓ Based on CPU Intel iCore i7 which guarantees high performance, reliable and long term product lifespan
- ✓ Passive cooling system and fanless cooling provides high reliability
- ✓ Choice of multiple operating system platforms, allows almost any software compatibility, and real-time applications



## Connectivity:

- ✓ Two independent Gigabit LAN interfaces
- ✓ Up to four RS 232 / RS485 galvanic isolated, serial interfaces for connection of actuators and sensors with NMEA 0183
- ✓ Custom I/O connectivity can be tailored for specific applications.

## Latest Display Technology

- ✓ Elevated brightness displays, with LED backlight and high contrast levels
- ✓ Daylight readable, fully dimmable to zero. Antireflex glass guarantees full readability in all environments from sunlight to nighttime.
- ✓ Safe and reliable touch technology



# Maritime Panel PC

The Maritime Panel PC iCore family satisfies the needs of both the latest and the future generation of software for ships and other marine applications. Our range of products are fully certified by DNV and GL.



- LED Display sizes: 15" to 46"
- Resistive touch or antireflex glass
- Intel® Core™ i7, or Celeron
- Passive fanless cooling System
- Operating temp. -15 till +55° C (15-23")
- Interfaces: 4 RS232 / RS485, 2 GLAN, 4 USBs (2 at front)
- Certificates: DNV, GL, RS
- Power supply: 18-36VDC, alt. widerange 88-264VAC

The MPPC series is available with anti-reflex glass or with resistive touch screen suitable for marine applications. A choice of the latest operating systems with options of DC or AC power supply. Available with many standard options like flash memory, speakers, alarm buzzer, I/O interfaces, and others. The units can be easily configured for most applications. Our customisation options and features ensure that even the most demanding requirements can be fulfilled.

	MPPC15	MPPC17	MPPC19	MPPC20	MPPC23	MPPC46
Display size	15"	17"	19"	20"	23"	46"
Resolution	1024 x 768	1280 x 1024	1280 x 1024	1600 x 1200	1920 x 1080	1920 x 1080
Bright. [cd/m <sup>2</sup> ]	350	300	300	300	300	600
Protection	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 65 (front) IP 40 (back)	IP 67 (front) IP 22 (back)
RAM	max. 16 GB	max. 16 GB	max. 16 GB	max. 16 GB	max. 16 GB	max. 16 GB
Memory	SSD max. 1 TB	SSD max. 1 TB	SSD max. 1 TB	SSD max. 1 TB	SSD max. 1 TB	SSD max. 1 TB
Operatin Sys.	Windows, Linux	Windows, Linux	Windows, Linux	Windows, Linux	Windows, Linux	Windows, Linux

# Maritime Monitors

The maritime monitor family satisfies the needs of the high quality graphical user interfaces of today's marine craft and marine applications. All our range are fully certified by DNV and GL.



- LED Display sizes: 15" till 46"
- Resistive touch or antireflex glass
- Passive cooling System
- Operating temp. -15 till +55° C (15-23")
- Interfaces: VGA, DVI, Video In, Composite, 2 USB – 2 USB Front
- Certificates: DNV, GL, RS
- Power supply: 18-36VDC, alt. widerange 88-264VAC

The MM series is available with antireflex glass or with resistive touch screen in a wide choice of display sizes suitable for marine applications. Multi-video-input, DC or AC power supply and front side data inputs allows complete flexibility. The high brightness displays with LED backlight are dimmable down to zero for bridge use.

	MM15	MM17	MM19	MM20	MM23	MM46
Display size	15"	17"	19"	20,1"	23"	46"
Resolution	1024 x 768	1280 x 1024	1280 x 1024	1600 x 1200	1920 x 1080	1920 x 1080
Bright. [cd/m <sup>2</sup> ]	350	300	300	300	300	600
Protection	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 67 (front) IP 40 (back)	IP 65 (front) IP 40 (back)	IP 67 (front) IP 22 (back)
Dual Video IN	Picture in Picture	Picture in Picture	Picture in Picture	Picture in Picture	Picture in Picture	Picture in Picture
Video IN	VGA, DVI, SVI, Composite	VGA, DVI, SVI, Composite	VGA, DVI, SVI, Composite	VGA, DVI, SVI, Composite	VGA, DVI, SVI, Composite	VGA, DVI, SVI, Composite
certifications	GL, DNV, EN60945	GL, DNV, EN60945	GL, DNV, EN60945	GL, DNV, EN60945	GL, DNV, EN60945	–

# Marine Automation Solutions

## Box PC, Customisation, Bespoke Design

### Marine PC box:

- ✓ MPC box, designed for harsh marine environments in cabinets, engine rooms or bridges
- ✓ Two different architectures (Core-I, ATOM) satisfying the needs of performance and environment
- ✓ The MPC boxes are fanless and without any moving parts

	MPC box i7	MPC box AT
CPU	i7, 2 x 1,7 – 2,8 GHz, opt. Celeron 2 x 2,2 GHz	ATOM, 2 x 1,6 GHz, opt. ATOM 2 x 1,0 GHz
RAM	max. 8 GB	max. 1 GB
Flash max.	SSD 256 GB	CFC 64 GB
Ethernet	2 x GLAN	1 x GLAN
Serial I/O	4x USB 4 RS232/485	4x USB 4 RS232/485
Power supply	DC, 18-32 V AC, 88-260 V	DC, 18-32 V AC, 88-260 V
Operating sys.	Windows, Linux, others	Windows, Linux, others



### Individual Options:

- ✓ I/O Extensions for our marine products e.g. RS 485 to CAN Bus, or others, including Software Drivers, etc.
- ✓ Front Design and fully customised designs e.g. labeling, color of bezel, mechanics, etc.
- ✓ High quality mounting bracket e.g. desk mounting, wall, etc.

### Turnkey solutions:

- ✓ Fully individual software customisation, beginning from customer image, up to complete automation solution for our MPPCs
- ✓ System integration and solution providing for maritime automation based on our product range



# SONOVE creates Maritime Automation Solutions



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