



SONOVE M2 Maritime Panel PC



M2 Panel PC

Overview

The innovative Panel PCs (M2-PPC) with screen sizes of 27, 24 and 18.5 inch are specially designed for bridge use and navigation. The M2-Series impresses with its brand-new, filigree design and maximum flexibility in configuration and assembly. Two different designs allow flush-mounting as well as desktop, wall or ceiling mounting. Optional features such as Capacitive Multi-Touch, Optical Bonding or High Bright allow intelligent solutions for a wide variety of operating conditions. The configuration variety of different CPUs up to 11th Generation Intel® Core™ Processors, memory up to 64 GB, storage up to 2 TB, high-performance graphics, I/Os, PCIe and MiniPCIe extension slots enable tailor-made solutions. All systems of the M2-Series are "Made in Germany", provide high long-term availability and are tested according to EN 60945, EU RO MR⁽¹⁾ approved by DNV GL.



- ✓ Designed for Navigation and Maritime Automation
- ✓ IP 56, complete front plate is milled from solid aluminium
- ✓ Additional I/O and COM Ports for Remote Control
- ✓ Internal Buzzer and Interface for external Buzzer
- ✓ Full Range Dimming (0 .. 100%)
3 Dimming Modes
- ✓ ECDIS Compliant / Calibrated for your ECDIS applications

Display

M2-PPC 27	27 inch, 1920 x 1080, 16:9, 300 cd/m ²
M2-PPC-24	24 inch, 1920 x 1080, 16:9, 300 cd/m ²
M2-PPC-24HB	24 inch, High Bright, 1920 x 1080, 16:9, 1000 cd/m ²
M2-PPC-18.5 ⁽¹⁾	18.5 inch, 1920 x 1080, 16:9, 300 cd/m ²
M2-PPC-18.5HB ⁽¹⁾	18.5 inch, High Bright 1920 x 1080, 16:9, 1000 cd/m ²

Performance

CPU	up to 11 th Generation Intel® Core™ Processors
Memory	up to 64 GB RAM
Storage	up to 2 x 2 TB (RAID)
Graphics	up to Intel® Iris® Xe Graphics

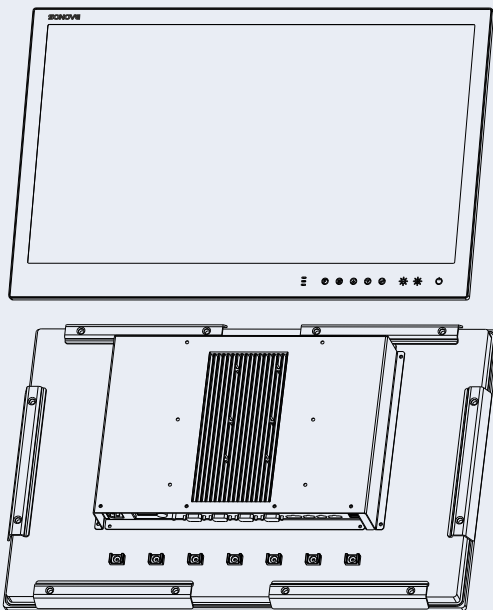
⁽¹⁾ Available Q2/2022, Type Approval in progress

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Mounting Options

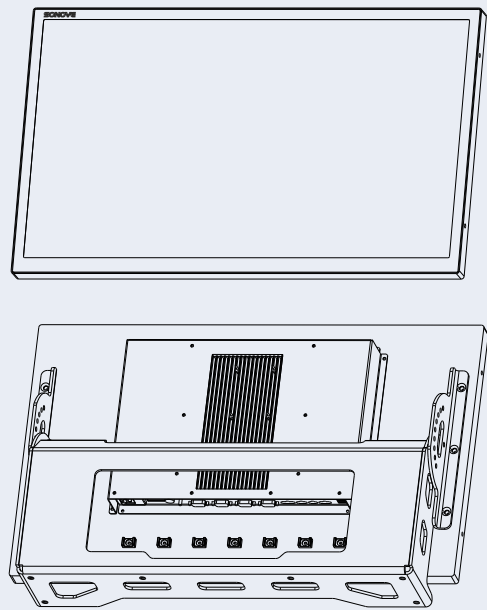
Flush Mount (FM)

- ✓ Flush Mounting with Console Mounting Kit
- ✓ Capacitive Front Keys, Power On/Off and Dimming
Optional Multi-Color Status LEDs
- ✓ Capacitive Multi-Touch or Antireflex Glass
- ✓ M2 Control Interface

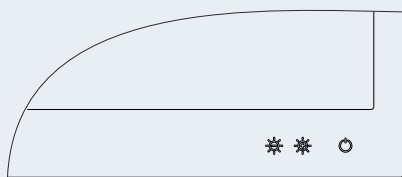


Desktop, Wall, Ceiling

- ✓ Desk, Wall, Ceiling mounting with Mounting Bracket
- ✓ Extreme small frames without any Front Keys and LEDs
(Backside Keys and LED)
- ✓ Capacitive Multi-Touch or Antireflex Glass
- ✓ M2 Control Interface



M2 Front Keys and LEDs



- ✓ Capacitive Front Keys, Power On/Off with Status LED
- ✓ Capacitive Front Keys for Dimming
- ✓ All Keys with dimmable backlight
- ✓ Multi-Color Status LEDs (optional)

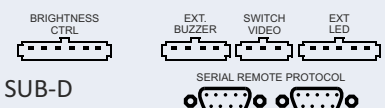
M2 Remote Control Interface

- ✓ RS 232/485/422 for Remote Control
- ✓ Dig. IN for Dimming Keys (+/-) and Potentiometer IN
- ✓ Dig. IN for Video Source Select
- ✓ Buzzer Control IN and Relais OUT for external Buzzer
- ✓ Analog OUT for Multi-Color Status LED

- ✓ Screwless
Cable Entry Plugs



- ✓ Alternatively
SMP Connectors and SUB-D



M2 Panel PC

Technical Data

6th Generation Intel® Core™ Processors

System	Processor	6th Generation Intel® Core™ Processors Intel® Core™ i7-6600U, Dual Core, 4M Cache, 2.6GHz up to 3.4GHz Intel® Core™ i5-6300U, Dual Core, 3M Cache, 2.4GHz up to 3.0GHz	
	Memory	Up to 16GB, Dual Channel DDR3L 1600MHz	
	Storage	1 x mSATA SSD up to 1TB 2 x SSD up to 2TB RAID 0/1/5	
Graphics	Controller	Intel® HD Graphics 520	
	Feature	OpenGL 4.4, DirectX 12, OpenCL 2.1 HW Decode: AVC/H264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8/9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9	
	Displays	Triple Displays; Internal Display + 1 x DP + 1 x DP++	
Expansion	Interface	1 x PCIe x4 (Gen3) Low Profile	
Rear I/O	Ethernet	2 x GbE (RJ-45)	Optional up to 6 x GbE
	USB	4 x USB 3.0	Optional up to 8 x USB
	Display	1 x DP and 1 x DP++	
	Audio	1 x Line-out, 1 x Mic-in	
	Serial		Optional up to 4x COM (RS232, RS422/485)
Optional (M2 CB)	Controller	M2 Controller Board	
	Feature	1 x Internal Alarm-Buzzer 1 x Out for ext. Alarm-Buzzer 1 x Potentiometer In, 2 x Push Button In 2 x Out for Status LED	
Watchdog Timer	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
Security	TPM	dTPM 2.0 (available upon request)	
Power Options	DC	24 VDC	
	AC	230/115 VAC (50/60Hz)	
	DCAC	24 VDC + 230/115 VAC (redundant)	
OS Support		Windows 7 Windows 8.1 Windows 10 Linux	
Environment	Operating Temp.	-15 to +55°C	
	Storage Temp.	-20 to +70°C	
	IP Rating	IP66 (front) - IP20 (rear)	
Type Approval	Type Approval in progress, expected Q2/2022	DNV EU RO MR, Tested according to EN 60945	

Options and additional features are configurable. Contact your Sonove sales representative for further information.
Depending on the product configuration, interfaces or slot brackets may differ from the figures in this document.

M2 Panel PC

Technical Data

7th Generation Intel® Core™ Processors

System	Processor	7th Generation Intel® Core™ Processors Intel® Core™ i7-7600U, 2 Cores, 4M Cache, 2.80 GHz up to 3.90 GHz Intel® Core™ i5-7300U, 2 Cores, 3M Cache, 2.60 GHz up to 3.50 GHz Intel® Core™ i3-7100U, 2 Cores, 3M Cache, 2.40 GHz Intel® Celeron® 3965U, 2 Cores, 2M Cache, 2.20 GHz	
	Memory	Up to 32GB, Dual Channel DDR4 1866/2133MHz	
	Storage	1 x M.2 SSD up to 1TB or SATA3.0/PCIe Gen3 x2 NVMe 2 x SSD up to 2TB RAID 0/1/5	
Graphics	Controller	Intel® HD Graphics GT Series	
	Feature	OpenGL 4.4, DirectX 12, OpenCL 2.1 HW Decode: AVC/H264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265,VP8,VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9	
	Displays	Triple Displays; Internal Display + 2 x DP++	
Expansion	Interface	1 x PCIe x4 (Gen 3) Low Profile	
Rear I/O	Ethernet	2 x GbE (RJ-45)	Optional up to 6 x GbE
	USB	4 x USB 3.0	Optional up to 8 x USB
	Display	2 x DP++	
	Audio	1 x Line-out, 1 x Mic-in	
	Serial		Optional up to 4 x COM (RS232, RS422/485)
Optional (M2 CB)	Controller	M2 Controller Board	
	Feature	1 x Internal Alarm-Buzzer 1 x Out for ext. Alarm-Buzzer 1 x Potentiometer In, 2 x Push Button In 2 x Out for Status LED	
Watchdog Timer	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
Security	TPM	TPM 2.0 (Opt.)	
Power Options	DC	24 VDC	
	AC	230/115 VAC (50/60Hz)	
	DCAC	24 VDC + 230/115 VAC (redundant)	
OS Support		Windows 10 Linux	
Environment	Operating Temp.	-15 to +55°C	
	Storage Temp.	-20 to +70°C	
	IP Rating	IP66 (front) - IP20 (rear)	
Type Approval	Type Approval in progress, expected Q2/2022	DNV EU RO MR, Tested according to EN 60945	

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Technical Data

11th Generation Intel® Core™ Processors

System	Processor	11th Generation Intel® Core™ Processors Intel® Core™ i7-1185GRE, 4 Cores, 12M Cache, 2.80 GHz up to 4.40 GHz Intel® Core™ i5-1145GRE, 4 Cores, 8M Cache, 2.60 GHz up to 4.10 GHz	
	Memory	Up to 64GB, Dual channel DDR4 up to 3200MHz	
	Storage	1 x M.2 SSD up to 1TB or SATA3.0/PCIe Gen3 x4 NVMe 2 x SSD up to 2TB RAID 0/1/5	
Graphics	Controller	Intel® Iris® Xe Graphics for i7/i5 Processors	
	Feature	OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: WMV9, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 HW Encode: AVC/H264, JPEG, HEVC/H265, VP9	
	Displays	Triple Displays; Internal Display + DP/HDMI + USB 4.0	
Expansion	Interface	1 x PCIe x4 (Gen3 x4) Low Profile	
Rear I/O	Ethernet	3 x GbE (RJ-45)	Optional up to 7 x GbE
	USB	4 x USB 3.1 Gen2 (Type-A) 1 x USB 4.0 Type-C (Thunderbolt 3) (Support USB 3.1 Gen2, DP 1.4)	Optional up to 9 x USB
	Display	2 x DP++/HDMI (Auto-detecting) + 1 x USB Type C	
	Audio		Optional 1 x Line-out, 1 x Mic-in
	Serial		Optional up to 4 x COM (RS232, RS422/485)
Optional (M2 CB)	Controller	M2 Controller Board	
	Feature	1 x Internal Alarm-Buzzer 1 x Out for ext. Alarm-Buzzer 1 x Potentiometer In, 2 x Push Button In 2 x Out for Status LED	
Watchdog Timer	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
Security	TPM	dTPM 2.0/fTPM (Opt.)	
Power Options	DC	24 VDC	
	AC	230/115 VAC (50/60Hz)	
	DCAC	24 VDC + 230/115 VAC (redundant)	
OS Support		Windows 10 Linux	
Environment	Operating Temp.	-15 to +55°C	
	Storage Temp.	-20 to +70°C	
	IP Rating	IP66 (front) - IP20 (rear)	
Type Approval	Type Approval in progress, expected Q2/2022	DNV EU RO MR, Tested according to EN 60945	

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SONOVE M2 your Panel PC for Automation and Navigation

Examples of M2 Panel PC standard systems with order information

M2 Panel PC, 18.5 inch		
M2-PPC-18.5 DT GL i7(S) DCAC	463.053.yyyy	M2 Panel PC, 18.5 inch, Redundant 24VDC and 115/230VAC, Intel® Core™ i7-6600U, 2.60 GHz, 8 GB RAM, 128 GB SSD, Windows® 10 IoT Ent.
M2-PPC-18.5 FM CT i5(K) DC	468.022.yyyy	M2 Panel PC, 18.5 inch, Flush Mount, Capacitive Multi Touch, 24VDC, Intel® Core™ i5-7300U, 2.60 GHz, 8 GB RAM, 128 GB SSD, Windows® 10 IoT Ent.
M2 Panel PC, 18.5 inch, High Bright		
M2-PPC-18.5HB DT GL i7(S) DCAC	463.153.yyyy	M2 Panel PC, 18.5 inch, High Bright, Redundant 24VDC and 115/230VAC, Intel® Core™ i7-6600U, 2.60 GHz, 8 GB RAM, 128 GB SSD, Windows® 10 IoT Ent.
M2-PPC-18.5HB FM CT i5(K) DC	468.122.yyyy	M2 Panel PC, 18.5 inch, High Bright, Flush Mount, Capacitive Multi Touch, 24VDC, Intel® Core™ i5-7300U, 2.60 GHz, 8 GB RAM, 128 GB SSD, Windows® 10 IoT Ent.
M2 Panel PC, 24 inch		
M2-PPC-24 DT GL i5(S) DCAC	482.033.yyyy	M2 Panel PC, 24 inch, Redundant 24VDC and 115/230VAC, Intel® Core™ i5-6300U, 2.40 GHz, 8 GB RAM, 128 GB SSD, Windows® 7
M2-PPC-24 FM CT i7(K) AC	488.011.yyyy	M2 Panel PC, 24 inch, Flush Mount, Capacitive Multi-Touch, 115/230VAC, Intel® Core™ i7-7600U, 2.80 GHz, 16 GB RAM, 256 GB SSD, Windows® 10 IoT Ent.
M2 Panel PC, 24 inch, High Bright		
M2-PPC-24HB DT CT i5(K) DC	487.122.yyyy	M2 Panel PC, 24 inch, High Bright, Capacitive Multi-Touch, 24VDC Intel® Core™ i5-7300U, 2.60 GHz, 16 GB RAM, 256 GB SSD, Windows® 10 IoT Ent.
M2-PPC-24HB FM GL i7(K) DCAC	483.113.yyyy	M2 Panel PC, 24 inch, High Bright, Flush Mount, Redundant 24VDC + 115/230VAC, Intel® Core™ i7-7600U, 2.80 GHz, 16 GB RAM, 256 GB SSD, Windows® 10 IoT Ent.
M2 Panel PC, 27 inch		
M2-PPC-27 DT GL i7(K) DCAC	491.013.yyyy	M2 Panel PC, 27 inch, Redundant 24VDC and 115/230VAC, Intel® Core™ i7-7600U, 2.80 GHz, 16 GB RAM, 256 GB SSD, Windows® 10 IoT Ent.
M2-PPC-27 FM CT i5(K) AC	497.021.yyyy	M2 Panel PC, 27 inch, Flush Mount, Capacitive Multi Touch, 115/230VAC, Intel® Core™ i5-7300U, 2.60 GHz, 8 GB RAM, 128 GB SSD, Windows® 10 IoT Ent.

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