



SONOVE M2
Maritime Panel PC
Classic Series



M2C Panel PC (Classic Series)

Overview

The Panel PCs (M2C-PPC) with screen diagonals of 19, 17 and 15 inches combine classic front bezels with the latest technology. The M2C-Series satisfies the needs of both the latest and future generation of software for vessels and other maritime applications. The classic series is available with antireflex glass or with resistive touch screen. 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 M2C-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 Maritime Automation
- ✓ IP 66, 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
- ✓ Designed for Retrofit and Spare Part

Display

M2C-PPC-19 ⁽¹⁾	19 inch, 1280 x 1024, 5:4, 300 cd/m ²
M2C-PPC-17 ⁽¹⁾	17 inch, 1280 x 1024, 5:4, 300 cd/m ²
M2C-PPC-15 ⁽¹⁾	15 inch, 1024 x 768, 4:3, 350 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

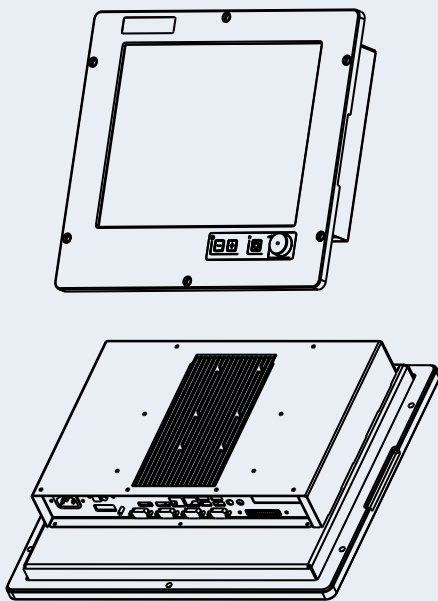
⁽¹⁾ Available Q2/2022, Type Approval in progress

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Mounting Options

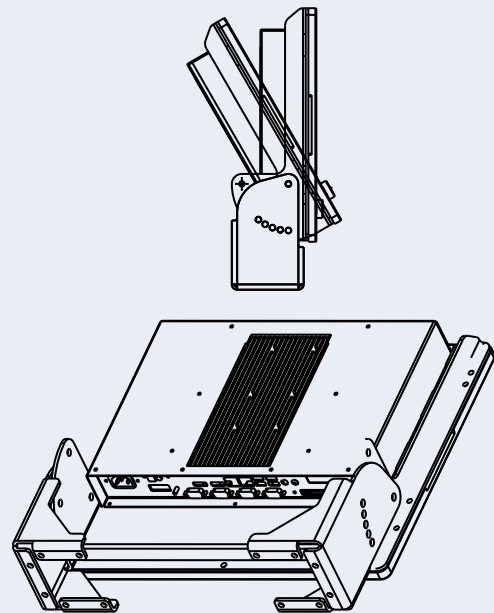
Flush Mount

- ✓ Flush Mounting with Console Mounting Kit
- ✓ Front Keys, Power On/Off and Dimming
Power LED multi-color LEDs
- ✓ Resistive Touch or Antireflex Glass
- ✓ M2C Control Interface

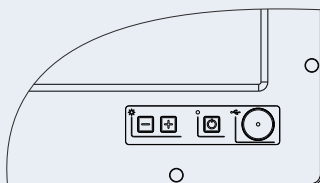


Desktop, Wall, Ceiling

- ✓ Desk, Wall, Ceiling mounting with Mounting Bracket



M2C Front Keys and LEDs

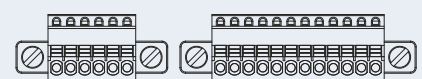


- ✓ Front Keys, Power On/Off with Status LED
- ✓ Front Keys for Dimming
- ✓ 2 x USB 2.0, Protected by screw cap (Optional)
- ✓ All Keys with dimmable backlight
- ✓ Multi-Color Status LEDs (Software API available)

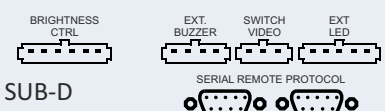
M2C Remote Control Interface

- ✓ 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



M2C Panel PC (Classic Series)

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.

M2C Panel PC (Classic Series)

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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M2C Panel PC (Classic Series)

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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Examples of M2C Panel PC standard systems with order information

M2C Panel PC, 15 inch

M2C-PPC-15 RT i5(K) DCAC	446.023.yyyy	Panel PC classic, 15 inch, resistive Touch, CPU Intel® Core™ i5-7300U, 8GB RAM, 128 GB SSD, Redundant 24VDC and 115/230VAC, Windows® 10 IoT Ent.
M2C-PPC-15 GL i5(TG) DC	441.072.yyyy	Panel PC classic, 15 inch, CPU Intel® Core™ i5-1145GRE, 8GB RAM, 1920 GB M.2-PCIe SSD, 24VDC, Windows® 10 IoT Ent.
M2C-PPC-15 RT i7(K) AC	446.011.yyyy	Panel PC classic, 15 inch, resistive Touch, CPU Intel® Core™ i7-7600U, 16 GB RAM, 512 GB SSD, 115/230VAC, Windows® 10 IoT Ent.

M2C Panel PC, 17 inch

M2C-PPC-17 RT i7(S) AC	456.051.yyyy	Panel PC classic, 17 inch, resistive Touch, CPU Intel® Core™ i7-6600U, 8GB RAM, 128 GB mSATA SSD, 115/230VAC, Windows® 7 Pro.
M2C-PPC-17 GL Cel(K) DC	451.042.yyyy	Panel PC classic, 17 inch, CPU Intel® Celeron 3965U, 16 GB RAM, 512 GB M.2-SATA SSD, 24VDC, Windows® 10 IoT Ent.

M2C Panel PC, 19 inch

M2C-PPC-19 GL i3(K) AC	461.061.yyyy	Panel PC classic, 19 inch, CPU Intel® Core™ i3-7100U, 8 GB RAM, 128 M.2-SATA SSD, 115/230VAC, Windows® 10 IoT Ent.
M2C-PPC-19 RT i5(S) DCAC	466.033.yyyy	Panel PC classic, 19 inch, resistive Touch, CPU Intel® Core™ i5-6300U, 8GB RAM, 256 GB SSD, Redundant 24VDC and 115/230VAC, Windows® 10 IoT Ent.
M2C-PPC-19 RT i7(TG) DCAC	466.083.yyyy	Panel PC classic, 19 inch, resistive Touch, CPU Intel® Core™ i7-1185GRE, 32GB RAM, 960 GB M.2-PCIe SSD, Redundant 24VDC and 115/230VAC, Windows® 10 IoT Ent.

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