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Intelligent HMI and Monitors

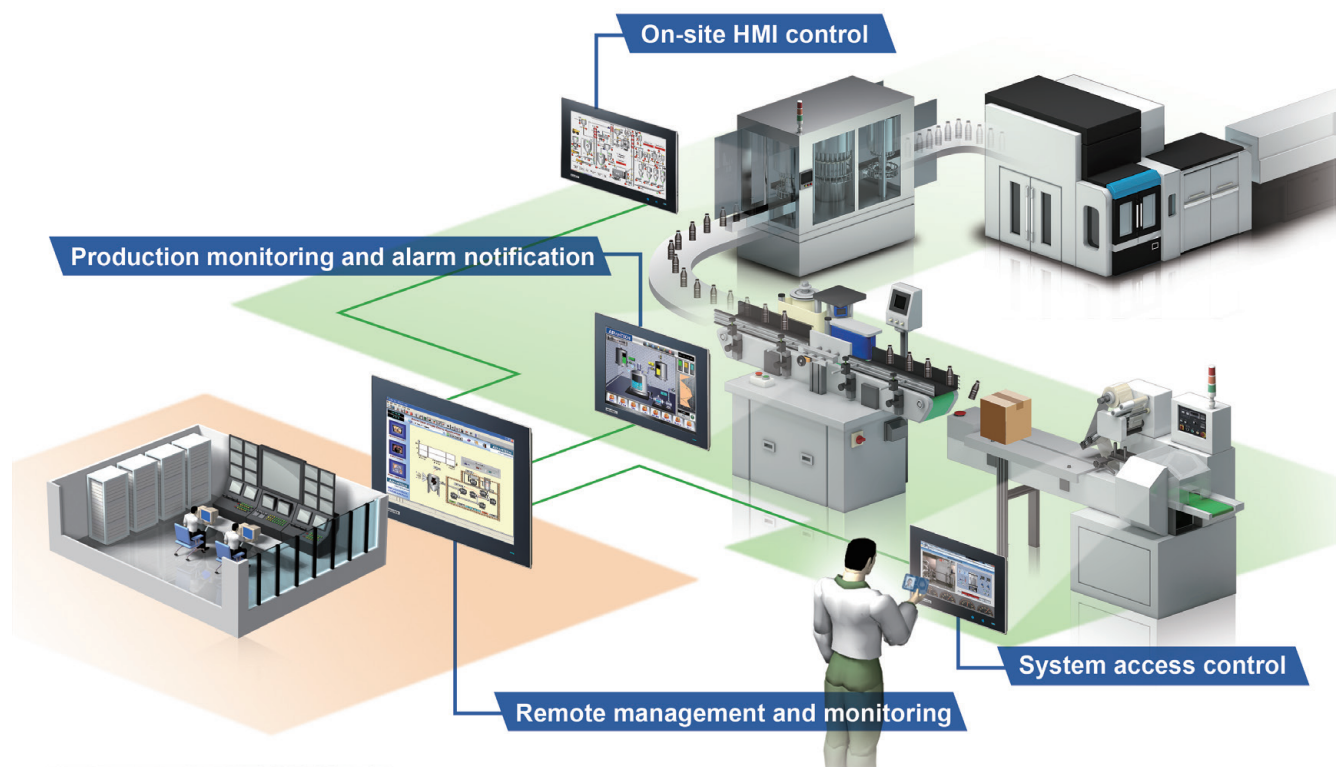
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Intelligent HMI and Monitors

Powerful HMI solutions for realizing the factory IT ecosystem and driving IIoT

Advantech offers a diverse range of general as well as domain focused HMI products of varying size (from 3.5" to 23.8") and screen ratio (4:3 and 16:9). Our HMI product category includes high performance control panels, low-power industrial thin clients, web browser terminals, domain focused HMI, and industrial monitors. In response to Industry 4.0, Advantech has developed a new generation of modular solutions for a diverse range of configurations to meet specific usage requirements, offering customers a quick time to market and high level of expandability. All Advantech HMI products are equipped with relevant software (HMINavigation, WebAccess/SCADA or WISE-PaaS/DeviceOn) as well as Advantech's iDOOR technology, making them suitable for various applications.



Product Categories

Modular Series

In response to ongoing advances in Industry 4.0, Advantech has created its new series of modular panel PC solutions based on three performance-segmented modules — a control panel, industrial thin-client, and industrial monitor. The modular design of our solutions allows the computing box modules to be interchangeably combined with our display modules to provide comprehensive platform solutions for specific field applications. This modularization offers many advantages, including flexible configuration, rapid integration and deployment, reduced system downtime and maintenance costs, and support for future expansion.



Control Panels

Advantech's control panel series of PC-based open control platforms feature a high-performance, fanless design and can be integrated with a wide variety of machines in diverse environments to support complex machine control tasks and data visualization applications. The optimized design includes three Gigabit LANs that support multiple fieldbus communication protocols, an IP66-rated front panel that protects against dust and water ingress, and support for flexible iDOOR and PCIe expansion, making these platforms particularly ideal for industrial automation control operations.



Thin-Client Terminals

Advantech's thin client modules feature a compact, fanless, and low-power design that supports multiple aspect ratios (4:3 and 16:9) and allows the modules to be equipped with a range of display sizes (5.7" to 23.8"). These thin client modules are primarily deployed as manufacturing execution systems (MESs) or for work flow monitoring and production process visualization. Under the Industry 4.0 trend, thin clients are widely utilized in distributed control architectures because of their easy deployment and suitability for the centralized management of devices and information. This architecture allows the OS to be quickly dispatched from server to client following a hardware replacement while still ensuring data security.



Operator Panels

Advantech's WebOP series of operator panels feature a range of display sizes (7" to 12") and supports multiple communication interfaces (e.g., RS-232/422/485, Ethernet, and USB). Bundled with WebAccess/HMI software, Advantech's WebOP series supports over 450 PLC communication protocols, ensuring convenient integration with equipment made by a comprehensive range of manufacturers.

Domain Focused HMI

In addition to standard products, Advantech provides domain-focused systems with customizable features designed to satisfy specific requirements across various vertical markets. Verified with ATEX/ UL Class 1 Division 2, IEC 61131-2/61010, and EN1672/ FDA certification, Advantech's domain-focused rugged HMIs are sufficiently robust for operation in extreme environments typical of the locomotive, food and beverage, oil and gas, and machine tool manufacturing industries. Ensuring system flexibility and compatibility are also major focus points for Advantech when designing domain-focused HMI products.



Industrial Monitors

Independent controllers and industrial PCs embedded in machines require an interface for data processing and visualization, for which Advantech produces industrial monitors in a range of sizes (6", 12.1", 15", 17", 18.5", to 23.8"). Featuring an industrial-grade LED LCD with a backlight lifetime of 50,000 hours, high IP-rated bezel, and wide temperature support, our industrial monitors are equipped to withstand operation in harsh environments. Versatile mounting options (panel, wall, desktop, rack, and VESA arm) are also supported to ensure easy installation for various usage scenarios.

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IoT Software Solutions

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AI & Advanced Computer Vision

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Intelligent HMI and Monitors

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Serial Communication

Modular Panel PCs

Panel Modules



Model	FPM-D12T-BE	FPM-D15T-BE	FPM-D15W-FBE	FPM-D17T-BE
Panel Size	12"	15"	15.6"	17"
Resolution	1024 x 768	1024 x 768	1920 x 1080	1280 x 1024
Luminance	600 cd/m ²	300 cd/m ²	450 cd/m ²	350 cd/m ²
Touch	5-wire resistive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch
Wi-Fi Antenna	-	△	△	△
NFC Reader	-	△	△	△
IP Rating	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel
Operating Temperature	-25~60°C (-14~140°F)	-25~60°C (-14~140°F)	-25~60°C (-14~140°F)	-25~60°C (-14~140°F)
Storage Temperature	-20~60°C (-4~140°F)	-20~60°C (-4~140°F)	-20~60°C (-4~140°F)	-20~60°C (-4~140°F)
Weight (Net)	2.5 kg	4 kg	4 kg	4.8 kg

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Model	FPM-D18W-BE	FPM-D19T-BE	FPM-D21W-BE	FPM-D24W-BE
Panel Size	18.5"	19"	21.5"	23.8"
Resolution	1366 x 768	1280 x 1024	1920 x 1080	1920 x 1080
Luminance	250 cd/m ²	350 cd/m ²	250 cd/m ²	350 cd/m ²
Touch	Projected capacitive touch	5-wire resistive touch	Projected capacitive touch	Projected capacitive touch
Wi-Fi Antenna	△	△	△	△
NFC Reader	△	△	△	△
IP Rating	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel
Operating Temperature	0~55°C (32~131°F)	0~50°C (32~122°F)	0~55°C (32~131°F)	0~55°C (32~131°F)
Storage Temperature	-20~60°C (-4~140°F)	-30~70°C (-22~158°F)	-20~60°C (-4~140°F)	-20~60°C (-4~140°F)
Weight (Net)	5.2 kg	6.6 kg	6.8 kg	7.8 kg

✓: supported, -: not supported, △: optional

Monitor Box Module



Model	FPM-B700-AE
Video Interface Available	HDMI, DP, DVI, VGA, iLink
Power Input	24 V _{DC} ± 20%
Mount Options	Panel, stand, and VESA mount
iLINK Technology	Supported

Configurable I/O Module for Monitor Box



Model	FPM-M700-HDAE	FPM-M700-DPAE	FPM-M700-TRAE	FPM-M700-RXAE
Description	HDMI + USB Touch Module	Display + USB Touch Module	iLINK Tx + Rx Module	iLINK Rx Module

*FPM-M700 I/O module is essential for Monitor Box Module to have Video Interfaces and iLink technology.

Computing Box Modules



Model	TPC-B200-E12AE	TPC-B200-J12AE	TPC-B500-6C2AE	TPC-B500-633AE	TPC-B500-653AE	TPC-B500-673AE	
CPU	Intel® Atom® E3940 Processor	Intel® Celeron® J3455 Processor	Intel® Celeron® 3955U	Intel® Core™ i3-6100U	Intel® Core™ i5-6300U	Intel® Core™ i7-6600U	
Memory	4 GB DDR3L 1600 MHz SO-DIMM	4 GB DDR3L 1600 MHz SO-DIMM	4 GB DDR4 2133 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM	8 GB DDR4 2133 MHz SO-DIMM	
I/O	2 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 2 x GbE, 1 x Line Out, 1 x DP	2 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 2 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP	1 x RS-232, 1 x RS-232/422/485, 2 x USB 3.0, 2 x USB 2.0, 3 x GbE, 1 x Line Out, 1 x DP
Expansion	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Half-size PCIe, 2 x Full-size mini PCIe	1 x Half-size PCIe, 2 x Full-size mini PCIe	1 x Half-size PCIe, 2 x Full-size mini PCIe	1 x Half-size PCIe, 2 x Full-size mini PCIe	
Power Input	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	
Operating System	Microsoft® Windows 10 IoT Enterprise LTSB	Microsoft® Windows 10 IoT Enterprise LTSB	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSB	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSB	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSB	Microsoft® Windows WES7 (32/64-bit), Windows 7 (32/64-bit), Ubuntu 16.04, Windows 10 IoT Enterprise LTSB	
Mount Options	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	Panel, stand, and VESA mount (with optional mounting kit)	



Model	TPC-B510-833AE	TPC-B510-853AE	TPC-B510-873AE	TPC-B610H-A00A	TPC-B610W-A00A
CPU	Intel® Core™ i3-8145UE	Intel® Core™ i5-8365UE	Intel® Core™ i7-8665UE	Intel® 10th Gen. Core™ i Socket CPU (LGA1200)	Intel® 10th Gen. Core™ i Socket CPU (LGA1200)
Memory	8 GB DDR4 2400 MHz SO-DIMM	8 GB DDR4 2400 MHz SO-DIMM	8 GB DDR4 2400 MHz SO-DIMM	Dual channel DDR4 SO-DIMM (each channel supports up to 32G, 2933 MHz)	Dual channel DDR4 SO-DIMM, ECC supported. (each channel supports up to 32G, 2933 MHz)
I/O	2 x RS-232/422/485, 1 x USB 2.0, 4 x USB3.1, 1 x iDoor Slot, 1 x DP, 1 x Line out	2 x RS-232/422/485, 1 x USB 2.0, 4 x USB3.1, 1 x iDoor Slot, 1 x DP, 1 x Line out	2 x RS-232/422/485, 1 x USB 2.0, 4 x USB3.1, 1 x iDoor Slot, 1 x DP, 1 x Line out	1 x RS-232/422/485 (COM 1), 1 x RS-232 (COM 2), 5 x USB 3.2 (Gen 1), 1 x USB 2.0, 1 x Displayport 1.2, 1 x Audio line out/Mic in	1 x RS-232/422/485 (COM 1), 1 x RS-232 (COM 2), 5 x USB 3.2 (Gen 1), 1 x USB 2.0, 1 x Displayport 1.2, 1 x Audio line out/Mic in
Expansion	1 x Full-size mPCIe slot 1 x M.2 M key 2280 (SATA or NVMe PCIe x4) 1 x M.2 B key 3052 (supports 5G module)	1 x Full-size mPCIe slot 1 x M.2 M key 2280 (SATA or NVMe PCIe x4) 1 x M.2 B key 3052 (supports 5G module)	1 x Full-size mPCIe slot 1 x M.2 M key 2280 (SATA or NVMe PCIe x4) 1 x M.2 B key 3052 (supports 5G module)	1 x PCIe x16 1 x PCI 1 x Full-size mini PCIe 1 x M.2 3052 (5G) 1 x SIM card slot	1 x PCIe x16 1 x PCIe x4 1 x Full-size mini PCIe 1 x M.2 3052 (5G) 1 x SIM card slot
Power Input	24 V _{DC} ±20%	24 V _{DC} ±20%	24 V _{DC} ±20%	24 V _{DC} ±20%	24 V _{DC} ±20%
Operating System	Microsoft® Windows 10 LTSC, Linux, Android	Microsoft® Windows 10 LTSC, Linux, Android	Microsoft® Windows 10 LTSC, Linux, Android	Microsoft® Windows 10 LTSC, Linux	Microsoft® Windows 10 LTSC, Linux
Mount Options	Panel, Wall, Stand, VESA	Panel, Wall, Stand, VESA	Panel, Wall, Stand, VESA	Panel, Wall, VESA, Desktop	Panel, Wall, VESA, Desktop

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- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
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- 13 Industrial Communication
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- 16 Serial Communication

High-Performance Control Panels

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Model		TPC-324W	TPC-317	TPC-315	TPC-312
CPU		8th Gen. Intel® Core™ i3/i5/i7 Processor	8th Gen. Intel® Core™ i3/i5/i7 Processor	8th Gen. Intel® Core™ i3/i5/i7 Processor	8th Gen. Intel® Core™ i3/i5/i7 Processor
Memory		Dual channel DDR4 SO-DIMM (each channel supports up to 32G)	Dual channel DDR4 SO-DIMM (each channel supports up to 32G)	Dual channel DDR4 SO-DIMM (each channel supports up to 32G)	Dual channel DDR4 SO-DIMM (each channel supports up to 32G)
Display	Display Type	FHD TFT LED LCD	SXGA TFT LED LCD	XGA TFT LED LCD	XGA TFT LED LCD
	Display Size	23.8" (16:9)	17" (4:3)	15" (4:3)	12.1" (4:3)
	Max. Resolution	1920 x 1080	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.7M	16.2M	16.2M
	Luminance (cd/m ²)	350	300	300	300
	VieWIng Angle (H/V°)	178/178	160/140	176/176°	178/178
	Backlight Life	30,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs
Touchscreen		PCAP	5-wire analog resistive	5-wire analog resistive	5-wire analog resistive
Network (LAN)		2 x 10/100/1000BASE-T	2 x 10/100/1000BASE-T	2 x 10/100/1000BASE-T	2 x 10/100/1000BASE-T
I/O Ports		2 x RS-232/422/485 1 x USB 2.0 4 x USB 3.2 (Gen 2) 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in	2 x RS-232/422/485 1 x USB 2.0 4 x USB 3.2 (Gen 2) 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in	2 x RS-232/422/485 1 x USB 2.0 4 x USB 3.2 (Gen 2) 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in	2 x RS-232/422/485 1 x USB 2.0 4 x USB 3.2 (Gen 2) 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in
Expansion Slots		1 x Full-size mini PCIe 1 x SIM (M.2 B Key 4G/5G module)	1 x Full-size mini PCIe 1 x SIM (M.2 B Key 4G/5G module)	1 x Full-size mini PCIe 1 x SIM (M.2 B Key 4G/5G module)	1 x Full-size mini PCIe 1 x SIM (M.2 B Key 4G/5G module)
DC Power Input (Voltage)		24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%
Dimensions		595.9 x 374.1 x 70 mm (23.46 x 14.73 x 2.76 in)	410.4 x 343.4 x 68 mm (16.16 x 13.52 x 2.68 in)	383.2 x 307.3 x 66.5 mm (15.09 x 12.10 x 2.62 in)	311.8 x 238 x 67 mm (12.28 x 9.37 x 2.64 in)
Weight		9.3 kg (20.5 lbs)	6.1 kg (13.45 lbs)	5.8 kg (12.79 lbs)	4.1 kg (9.04 lbs)
Enclosure		Die cast aluminum alloy	Die cast aluminum alloy	Die cast aluminum alloy	Die cast aluminum alloy
Mounting		VESA Mount, Desktop, Wall or Panel Mount	VESA Mount, Desktop, Wall or Panel Mount	VESA Mount, Desktop, Wall or Panel Mount	VESA Mount, Desktop, Wall or Panel Mount
Operating Temperature		-10 ~ 50°C (14 ~ 122°F)	-10 ~ 55°C (14 ~ 131°F)	-10 ~ 55°C (14 ~ 131°F)	-10 ~ 55°C (14 ~ 131°F)
Ingress Protection (Front Panel)		IP66	IP66	IP66	IP66
Certification		BSMI, CCC, CE, FCC Class A, CB/UL	BSMI, CCC, CE, FCC Class A, CB/UL	BSMI, CCC, CE, FCC Class A, CB/UL	BSMI, CCC, CE, FCC Class A, CB/UL
Operating System		Windows 10, Android, Linux	Windows 10, Android, Linux	Windows 10, Android, Linux	Windows 10, Android, Linux

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Industrial Thin-Client Terminals

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Model	TPC-324W EHL	TPC-317 EHL	TPC-315 EHL	TPC-312 EHL	TPC-1551WP	TPC-1051WP	TPC-651T
CPU	Intel® Atom™ 6425E 2.00 GHz/ Celeron® J6412 2.00 GHz processor	Intel® Atom™ 6425E 2.00 GHz/ Celeron® J6412 2.00 GHz processor	Intel® Atom™ 6425E 2.00 GHz/ Celeron® J6412 2.00 GHz processor	Intel® Atom™ 6425E 2.00 GHz/ Celeron® J6412 2.00 GHz processor	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor
Memory	1 x SODIMM with 4 GB DDR4 SDRAM (up to 32 GB)	1 x SODIMM with 4 GB DDR4 SDRAM (up to 32 GB)	1 x SODIMM with 4 GB DDR4 SDRAM (up to 32 GB)	1 x SODIMM with 4 GB DDR4 SDRAM (up to 32 GB)	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	FHD TFT LED LCD	SXGA TFT LED LCD	XGA TFT LED LCD	XGA TFT LED LCD	WXGA TFT LED LCD	WXGA TFT LED LCD
	Display Size	23.8" (16:9)	17" (4:3)	15" (4:3)	12.1" (4:3)	15" (16:9)	10.1" (16:10)
	Max. Resolution	1920 x 1080	1280 x 1024	1024 x 768	1024 x 768	1366 x 768	1280 x 800
	Max. Colors	16.7M	16.7M	16.2M	16.2M	16.7M	262K
	Luminance (cd/m²)	350	300	300	600	400	300
	VieWing Angle (H/V°)	178/178	160/140	176/176	178/178	170/160	170/170
Backlight Life	30,000 hrs	50,000 hrs	70,000 hrs	50,000 hr	50,000 hr	25,000 hr	
Touchscreen	PCAP	5-wire analog resistive	5-wire analog resistive	5-wire analog resistive	PCAP	PCAP	5-wire analog resistive
Network (LAN)	2 x Intel® I211; 10/100/1000 BASE-T	2 x Intel® I211; 10/100/1000 BASE-T	2 x Intel® I211; 10/100/1000 BASE-T	2 x Intel® I211; 10/100/1000 BASE-T	10/100/ 1000BASE-T x 2	10/100/ 1000BASE-T x 2	10/100/ 1000BASE-T x 2
I/O Ports	1 x RS-232 1 x RS-232/422/485 3 x USB 3.2 1 x USB 2.0 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in 1 x Remote Power Button	1 x RS-232 1 x RS-232/422/485 3 x USB 3.2 1 x USB 2.0 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in 1 x Remote Power Button	1 x RS-232 1 x RS-232/422/485 3 x USB 3.2 1 x USB 2.0 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in 1 x Remote Power Button	1 x RS-232 1 x RS-232/422/485 3 x USB 3.2 1 x USB 2.0 1 x iDoor slot 1 x Displayport (Video output) 1 x Audio line out/ mic in 1 x Remote Power Button	1 x RS-232 1 x RS-232/422/485 3 x USB 3.2 1 x USB 2.0 1 x iDoor slot 1 x Displayport (Video output) 1 x USB 3.0 1 x USB 2.0	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1
Expansion Slots	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Full-size mini PCIe	1 x Full-size mini PCIe
DC Power Input (Voltage)	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%
Dimensions	595.9 x 374.1 x 70 mm (23.46 x 14.73 x 2.76 in)	410.4 x 343.4 x 68 mm (16.16 x 13.52 x 2.68 in)	383.2 x 307.3 x 67 mm (15.09 x 12.10 x 2.64 in)	311.8 x 238 x 67 mm (12.28 x 9.37 x 2.64 in)	419.7 x 269 x 61.9 mm (16.52 x 10.59 x 2.44 in)	283.1 x 202.3 x 61.4 mm (11.15" x 7.96" x 2.42)	199 x 152 x 58.9 mm (7.83" x 5.98" x 2.32")
Weight	9.2 kg (20.28 lbs)	6.1 kg (13.45 lbs)	5.15 kg (11.35 lbs)	4.2 kg (9.26 lbs)	5 Kg (11.02 lbs)	2.6 kg	1.5 kg
Enclosure	Die cast aluminum alloy	Die cast aluminum alloy	Die cast aluminum alloy	Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy
Operating Temperature	-10 ~ 50°C (14 ~ 122°F)	-10 ~ 50°C (14 ~ 122°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 55°C (32 ~ 131°F)	-20 ~ 55°C (-4 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)
Ingress Protection (Front Panel)	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel
Certification	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System	Windows 10 Enterprise LTSC, Advantech Linux, Android	Windows 10 Enterprise LTSC, Advantech Linux, Android	Windows 10 Enterprise LTSC, Advantech Linux, Android	Windows 10 Enterprise LTSC, Advantech Linux, Android	Microsoft® WES7 (32/64-bit), Windows 7 (32/64-bit), Windows 10 Enterprise LTSCB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSCB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSCB

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Domain-Focused HMI



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Model	SPC-221	IPPC-5211WS	SPC-515	SPC-821	SPC-815	
CPU	Intel® 6th. Core™ i7/ i5 / i3 Processor	Intel Celeron J1900	Intel® 6th. Core™ i3 Processor	Intel® 6th. Core™ i7/ i5 / i3 Processor	Intel® 6th. Core™ i7/ i5 / i3 Processor	
Memory	8 GB DDR3L SDRAM	4 GB DDR3L SDRAM	8 GB DDR3L SDRAM	8 GB DDR3L SDRAM	8 GB DDR3L SDRAM	
Display	Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	
	Display Size	21.5"	21.5"	15"	21.5"	
	Max. Resolution	1920 x 1080	1920 x 1080	1024 x 768	1920 x 1080	1366 x 768
	Max. Colors	16.7M	16.7M	16.7M	16.7M	16.7M
	Luminance (cd/m ²)	300	300	300	250	400
	VieWING Angle (H/V°)	178/178	178/178	176 / 176	178/178	170/130
	Backlight MTBF	50,000 hr	50,000 hr	70,000 hr	50,000 hr	50,000 hr
	Touchscreen	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch
Network (LAN)	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	
I/O Ports	RS-232 x1 (connection:M12 A-coded, 8-pin male) USB 2.0 x1 (connection:M12 A-coded, 8-pin female) 24 V _{DC} power input (connection:M12 A-coded, 5-pin male)	RS-232/422/485 x 1 RS-232 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x1 (connection:M12 A-coded, 8-pin male) USB 2.0 x2 (connection:M12 A-coded, 8-pin female) 24 V _{DC} power input (connection:M12 A-coded, 5-pin male)	USB 3.0 x 2 USB 2.0 x1 (Front)	USB 3.0 x 2 USB 2.0 x1 (Front)	
HDD (Optional)	2.5" SATA HDD	2.5" SATA HDD	2.5" SATA HDD / Default 64G SSD	2.5" SATA HDD	2.5" SATA HDD	
Expansion Slots	Full-size mini PCIe x1	Full-size mini PCIe x1	Full-size mini PCIe x1	Full-size mini PCIe x1	Full-size mini PCIe x1	
Ingress Protection	All-around IP66	All-around IP69k	All-around IP69k	All-around IP65	All-around IP65	
DC Power Input (Voltage)	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	
Enclosure	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy	Front bezel: Stainless steel Back housing: Aluminum/stainless steel	Front bezel: 304L Stainless Steel Back housing: 304L Stainless Steel	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy	
Mounting	VESA	VESA and flange adapter for arm and foot mount	VESA	Pole Mount/VESA (optional)	Pole Mount/VESA (optional)	
Weight	9 kg	16 kg	8.5 kg	10.6 kg	8.2 kg	
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	
Dimensions	558.4 x 349.8 x 65 mm	555 x 346.5 x 81 mm	389 x 313 x 56 mm	546.69 x 420.34 x 67 mm (w/o flange for arm mount) 546.69 x 420.34 x 160 mm (w/ flange for arm mount)	402.19 x 333.19 x 67 mm (w/o flange for arm mount) 402.19 x 333.19 x 160 mm (w/ flange for arm mount)	
Certification	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	
Operating System	Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 10 Enterprise LTSB, Linux	Windows 10 Enterprise LTSB	Windows 10 Enterprise LTSB	

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- 1 IoT Software Solutions
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- 3 SKY Servers
- 4 AI & Advanced Computer Vision
- 5 Intelligent HMI and Monitors
- 6 Automation Computers
- 7 Intelligent Transportation Platforms
- 8 Mission Critical CompactPCI Platforms
- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
- 12 High Speed DAQ Solutions
- 13 Industrial Communication
- 14 Intelligent Edge DAQ Devices
- 15 Remote I/O, Wireless I/O & Sensors
- 16 Serial Communication

Model	TPC-125H	TPC-155H	TPC-318WH	FPM-8151H	FPM-817S	FPM-815S	
CPU	Intel® Atom™ E3845 1.91GHz Quad-core	Intel® Atom™ E3845 1.91GHz Quad-core	Intel® Core™ i5-8365UE Processor	-	-	-	
Memory	1 x SODIMM with 4 GB DDR3L SDRAM (up to 8 GB)	1 x SODIMM with 4 GB DDR3L SDRAM (up to 8 GB)	8 GB DDR4 SO-DIMM (up to 64GB)	-	-	-	
Display	Display Type	XGA TFT LED LCD	XGA TFT LED LCD	TFT LED LCD	SXGA TFT LCD	XGA TFT LCD	
	Display Size	12"	15"	18.5"	15"	15"	
	Max. Resolution	1024 x 768	1024 x 768	1366 x 768	1024 x 768	1280 x 1024	1024 x 768
	Max. Colors	16.2M	16.2M	16.7M	16.2M	16.7M	16.7M
	Luminance (cd/m²)	600	300	300	350	350	500
	VieWing Angle (H/V°)	178/178	176/176	160/140	160/140	160/140	176/176
	Backlight Life	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	70,000 hr
Touchscreen	5-wire analog resistive	5-wire analog resistive	5-wire analog resistive	5-wire resistive with enhanced ITO film	5-wire resistive with enhanced ITO film	5-wire resistive with enhanced ITO film	
Network (LAN)	2 x Intel® I210; 10/100/1000 BASE-T	2 x Intel® I210; 10/100/1000 BASE-T	2 x Intel® I210; 10/100/1000 BASE-T	-	-	-	
I/O Ports	1 x RS-232 1 x RS-232/422/485 1 x USB 3.0 3 x USB 2.0 1 x iDoor slot	1 x RS-232 1 x RS-232/422/485 1 x USB 3.0 3 x USB 2.0 1 x iDoor slot	2 x RS-232/422/485 1 x USB 2.0 4 x USB 3.2(Gen 2) 1 x iDoor slot 1 x DP(Video out put) 1 x Audio line out/ mic in	1 x VGA, 1 x DVI, 1 x RS-232, 1 x USB	1 x VGA, 1 x DP, 1 x USB	1 x VGA, 1 x DP, 1 x USB	
Expansion Slots	1 x Full-size mPCIe, 1 x iDoor slot	1 x Full-size mPCIe, 1 x iDoor slot	1 x Full-size mPCIe 1 x SIM (M.2 B Key 4G/5G module)	-	-	-	
Ingress Protection	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	
DC Power Input (Voltage)	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20%	24 V _{DC} ± 20% 12 V _{DC} / 4.75A	24 V _{DC}	24 V _{DC}	
Enclosure	Front bezel: Die-cast aluminum alloy Back housing: SECC	Front bezel: Die-cast aluminum alloy Back housing: SECC	Front bezel: Die-cast aluminum alloy Back housing: SECC	Front panel: 316L Stainless steel Rear cover: Stainless steel with ground isolation protection	304 stainless steel bezel, SPCC with anti-rust coating	304 stainless steel bezel, SPCC with anti-rust coating	
Mounting	Panel	Desktop/Wall/Panel	VESA mount, Panel mount	Panel, VESA	Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel	
Weight	3.12 kg (6.88 lbs)	4.4 kg (9.7 lbs)		8.5 kg (18.74 lbs)	6.2 kg (13.67 lb)	5.4 kg (11.9 lb)	
Operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	
Dimensions	311.8 x 238 x 55.4 mm (12.28 x 9.37 x 2.18 in)	383.2 x 307.3 x 55.9 mm	488 x 309 x 56 mm	422 x 338 x 68 mm (16.61 x 13.31 x 2.68 in)	432.5 x 365.5 x 59.3 (17.03 x 14.39 x 2.33 in)	405.3 x 329.4 x 59.3 (15.96 x 12.97 x 2.33 in)	
Certification	BSMI, CCC, CE, FCC Class A, UL, UL C1D2	BSMI, CCC, CE, FCC Class A, UL, UL C1D2	BSMI, CCC, CE, FCC Class A, UL, UL C1D2	CE, FCC Class A, UL C1D2, CB, BSMI, CCC	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	
Operating System	Microsoft® WES7 (32/64-bit), Windows 7 (32/64-bit), Windows 10 Enterprise LTSB	Microsoft® WES7 (32/64-bit), Windows 7 (32/64-bit), Windows 10 Enterprise LTSB	Microsoft® WES7 (32/64-bit), Windows 7 (32/64-bit), Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	

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Industrial Web Panels



Model		TPC-71W				TPC-61T	TPC-31T
Ordering Information		TPC-71W-N10PA	TPC-71W-N21PA	TPC-71W-N21WA	TPC-71W-N21AA	TPC-61T-E3AE	TPC-31T-E3AE
CPU		NXP® ARM® Cortex™-A9 i.MX6 dual-core processor	NXP® ARM® Cortex™-A9 i.MX6 dual-core processor	NXP® ARM® Cortex™-A9 i.MX6 dual-core processor	NXP® ARM® Cortex™-A9 i.MX6 dual-core processor	TI Cortex-A8 600MHz	TI Cortex-A8 600MHz
Backup Memory		1Mbit	1Mbit	1Mbit	1Mbit	1Mbit	1Mbit
Working Memory		DDR3L 1 GB on board	DDR3L 2 GB on board	DDR3L 2 GB on board	DDR3L 2 GB on board	DDR2 256MB on board	DDR2 256MB on board
Storage		8 GB eMMC on board	8 GB eMMC on board	8 GB eMMC on board	8 GB eMMC on board	512MB on board micro SD card 1 x SD Card slot	512MB on board micro SD card 1 x SD Card slot
Operating System		Linux Ubuntu 16.04	Linux Ubuntu 16.04	Windows Embedded Compact 7	Android 6.0	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0
Display	Type	WSVGA (16:9) TFT LCD	WSVGA (16:9) TFT LCD	WSVGA (16:9) TFT LCD	WSVGA (16:9) TFT LCD	QVGA TFT LED LCD	QVGA TFT LED LCD
	Size	7"	7"	7"	7"	5.7"	3.5"
	Max. Resolution	1024 x 600	1024 x 600	1024 x 600	1024 x 600	320 x 240	320 x 240
	Luminance (cd/m ²)	400	400	400	400	800	450
	Backlight Life (hr)	50,000	50,000	50,000	50,000	50,000	30,000
Touchscreen		PCAP	PCAP	PCAP	PCAP	4-wire resistive	4-wire resistive
Communication Interface	COM	COM1: RS-232/422/485/CAN 2.0 B (DB9)	COM1: RS-232/422/485/CAN 2.0 B (DB9)	COM1: RS-232/422/485/CAN 2.0 B (DB9)	COM1: RS-232/422/485/CAN 2.0 B (DB9)	COM1: RS-232 COM2: RS-232 COM3: RS-422/485	COM1: RS-232/485, CAN
	LAN	1 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD	1 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD	1 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD	1 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD	10/100Base-T x 1	10/100Base-T x 1
I/Os		1 x USB 2.0 Type-B Client 2 x USB 2.0 Type-A Host 1 x Micro SD	1 x USB 2.0 Type-B Client 2 x USB 2.0 Type-A Host 1 x Micro SD	1 x USB 2.0 Type-B Client 2 x USB 2.0 Type-A Host 1 x Micro SD	1 x USB 2.0 Type-B Client 2 x USB 2.0 Type-A Host 1 x Micro SD	1 x USB2.0 (Host), 1 x USB2.0 (Client)	1 x USB 2.0 (Host)
Power Supply Voltage		24 V _{DC} ± 10%	24 V _{DC} ± 10%	24 V _{DC} ± 10%	24 V _{DC} ± 10%	18 ~ 32 V _{DC}	18 ~ 32 V _{DC}
Power Consumption		9W Typical	9W Typical	9W Typical	9W Typical	8 W Typical	8 W Typical
Dimensions W x H x D (mm)		205 x 146.92 x 46 mm (8.07 x 5.78 x 1.81 in)	205 x 146.92 x 46 mm (8.07 x 5.78 x 1.81 in)	205 x 146.92 x 46 mm (8.07 x 5.78 x 1.81 in)	205 x 146.92 x 46 mm (8.07 x 5.78 x 1.81 in)	195 x 148 x 44.4 mm (7.68 x 5.83 x 1.75 in)	120.79 x 85.5 x 26.5 mm (4.76 x 3.37 x 1.04 in)
Cut-out Dimensions W x H (mm)		192 x 138.5 mm (7.56 x 5.45 in)	192 x 138.5 mm (7.56 x 5.45 in)	192 x 138.5 mm (7.56 x 5.45 in)	192 x 138.5 mm (7.56 x 5.45 in)	189 x 142 mm (7.56 x 5.68 in)	115 x 79.5 mm (4.6 x 3.18 in)
Enclosure		Die-cast aluminum alloy front bezel PC + ABS rear housing	Die-cast aluminum alloy front bezel PC + ABS rear housing	Die-cast aluminum alloy front bezel PC + ABS rear housing	Die-cast aluminum alloy front bezel PC + ABS rear housing	PC + ABS Resin	PC + ABS Resin
Net Weight		1.2 kg (2.65 lbs)	1.2 kg (2.65 lbs)	1.2 kg (2.65 lbs)	1.2 kg (2.65 lbs)	0.8 kg (1.76 lb)	0.25 kg (0.55 lb)
Mounting		VESA, Panel	VESA, Panel	VESA, Panel	VESA, Panel	Panel	Panel
Operating Temperature		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature		-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Humidity		10% ~ 90% RH @40°C, non-condensing	10% ~ 90% RH @40°C, non-condensing	10% ~ 90% RH @40°C, non-condensing	10% ~ 90% RH @40°C, non-condensing	10 ~ 95% RH @ 40°C, non-condensing	10 ~ 95% RH @ 40°C, non-condensing
Ingress Protection		IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP65-rated front panel	IP65-rated front panel
Certification		CE, FCC, CB, UL, BSMI, CCC	CE, FCC, CB, UL, BSMI, CCC	CE, FCC, CB, UL, BSMI, CCC	CE, FCC, CB, UL, BSMI, CCC	CE, BSMI, CCC, UL, FCC Class A	CE, BSMI, CCC, UL, FCC Class A

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NEW



NEW



NEW



NEW



NEW



Model	TPC-107W	TPC-110W	TPC-115W	PPC-112W	PPC-115W	
CPU	i.MX8M Mini Quad NXP i.MX 8M Mini up to 4 Arm Cortex A53 cores, up to 1.6GHz	i.MX8M Mini Quad NXP i.MX 8M Mini up to 4 Arm Cortex A53 cores, up to 1.6GHz	i.MX8M Mini Quad NXP i.MX 8M Mini up to 4 Arm Cortex A53 cores, up to 1.6GHz	Rockchip ARM® RK3399 Dual-core Cortex-A72 and Quad-core Cortex-A53	Rockchip ARM® RK3399 Dual-core Cortex-A72 and Quad-core Cortex-A53	
Memory	2GB LPDDR4-1866 MHz	2GB LPDDR4-1866 MHz	2GB LPDDR4-1866 MHz	On-board 2GB LPDDR4-1333	On-board 2GB LPDDR4-1333	
Storage	16GB eMMC on board	16GB eMMC on board	16GB eMMC on board	16GB eMMC NAND Flash; 1x Micro SD slot (Max.128G)	16GB eMMC NAND Flash; 1x Micro SD slot	
Operating System	Yocto	Yocto	Yocto	Android 10 (default), Linux	Android 10 (default), Linux	
Display	Type	WSGA TFT LCD	WXGA TFT LCD	FHD TFT LCD	TFT LCD	TFT LCD
	Size	7"	10.1"	15.6"	11.6"	15.6"
	Max. Resolution	1024 x 600	1280 x 800	1920 x 1080	1366 x 768	1366 x 768
	Luminance (cd/m²)	425	500	450	250	220
	Backlight Life (hr)	50,000	50,000	50,000	15,000	15,000
Touchscreen	10 Points	10 Points	10 Points	Projected Capacitive Multi-touch	Projected Capacitive Multi-touch	
LAN	2 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD (LAN A)	2 x RJ45 with 10/100/1000 Mbps Optional module to support PoE PD (LAN A)	2 x RJ45 with 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	
I/O Ports	1 x RS-232/422/485 (COM 1) 1 x selectable mode for RS-285 and CAN 2.0 B 1 x USB 2.0 Type-B Client (Internal) 2 x USB 2.0 Type-A Host 1 x Micro SD (Internal)	1 x RS-232/422/485 (COM 1) 1 x selectable mode for RS-285 and CAN 2.0 B 1 x USB 2.0 Type-B Client (Internal) 2 x USB 2.0 Type-A Host 1 x Micro SD (Internal)	1 x RS-232/422/485 (COM 1) 1 x selectable mode for RS-285 and CAN 2.0 B 1 x USB 2.0 Type-B Client (Internal) 2 x USB 2.0 Type-A Host 1 x Micro SD (Internal)	1 x USB 2.0; 1 x USB 3.0; 2 x USB 2.0 (internal by request) 1 x micro USB OTG 1 x RS 232; 1 x RS232 (internal by request) 1 x DC in 5 x GPIO (by request) (3.3V TTL level)	1 x USB 2.0; 1 x USB 3.0; 2 x USB 2.0 (internal by request) 1 x micro USB OTG 1 x RS 232; 1 x RS232 (internal by request) 1 x DC in 5 x GPIO (by request) (3.3V TTL level)	
Expansion	M.2 Key-E 2230 (Wi-fi/BT)	M.2 Key-E 2230 (Wi-fi/BT)	M.2 Key-E 2230 (Wi-fi/BT)	1 x M.2 2230 Key E slot for wireless card 1 x Camera (optional)	1 x M.2 2230 Key E slot for wireless card	
Power Supply Voltage	24V _{DC} ± 20%	24V _{DC} ± 20%	24V _{DC} ± 20%	12V _{DC} , 36W adapter	12V _{DC} , 36W adapter	
Dimensions W x H x D (mm)	205 x 146.92 x 52 mm	283.1 x 202.3 x 52 mm	419.7 x 269 x 52 mm	291.7 x 186.6 x 49.2 mm (11.48 x 7.35 x 1.94 in)	402.0 x 260.0 x 53.2 mm (15.83 x 10.24 x 2.09 in)	
Cut-out Dimensions W x H (mm)	192.4 x 139.0 mm	274.1 x 193.3 mm	411.9 x 261.2 mm	298.00 x 193.00 mm (11.73 x 7.60 in)	392.00 x 250.00 mm(15.43 x 9.84 in)	
Mounting	VESA and Panel Mounting	VESA and Panel Mounting	VESA and Panel Mounting	VESA 100,Panel mounting (optional)	VESA 100,Panel mounting (optional)	
Operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	
Storage Temperature	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	
Humidity	10 ~ 90% RH @ 40 °C, non-condensing	10 ~ 90% RH @ 40 °C, non-condensing	10 ~ 90% RH @ 40 °C, non-condensing	10 ~ 95% RH (non-condensing)	10 ~ 95% RH (non-condensing)	
Ingress Protection	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel	IP65-rated front panel	IP65-rated front panel	
Certification	EMC: CE, FCC Class A, BSMI Safety: CB, UL, CCC	EMC: CE, FCC Class A, BSMI Safety: CB, UL, CCC	EMC: CE, FCC Class A, BSMI Safety: CB, UL, CCC	CE, FCC Class B, BSMI, CB, UL, CCC, UKCA	CE, FCC Class B, BSMI, CB, UL, CCC, UKCA	

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- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
- 12 High Speed DAQ Solutions
- 13 Industrial Communication
- 14 Intelligent Edge DAQ Devices
- 15 Remote I/O, Wireless I/O & Sensors
- 16 Serial Communication

Industrial Operator Panels



Model	☞ WOP-204K-NAE	☞ WOP-207K-NAE	☞ WOP-208K-NAE	☞ WOP-210K-NAE	☞ WOP-212K-NAE	☞ WOP-215K-NAE	
CPU	RISC ARM9 300MHz 32bits						
Backup Memory	128KB						
Backup Battery: Type/ Voltage/Capacity	Manganese dioxide-Li/Organic Electrolyte, 3V, 650mAh						
Working Memory	64 MB SDRAM						
Storage	128M NAND Flash						
Application Software	Operating System	HMI RTOS, HMInavi Designer V4.0					
	Runtime Max Size	64 MB (in NAND Flash)					
	Data Logger Max Size	64 MB (in NAND Flash)					
	Max Programming Screen	7999 Pages					
	Max Macro Commands	Unlimited					
Display	Type	WQVGA TFT LCD	WVGA TFT LCD	SVGA TFT LCD	WSVGA TFT LCD	XGA TFT LCD	XGA TFT LCD
	Size	4.3"	7"	8"	10.1"	12"	15"
	Max. Resolution	480 x 272	800 x 480	800 x 600	1024 x 600	1024 x 768	1024 x 768
	Max. Colors	65,536 colors (16bit)					
	Luminance (cd/m ²)	400	400	250	350	500	350
	Backlight Life (hr)	LED, 20,000					
Touchscreen	4 wires Analog resistive						
Communication Interface	COM1	RS-232 (5-Pin Terminal)	RS-232 (DB9 Female)	RS-232 (DB9 Female)	RS-232 (DB9 Female)	RS-232 (DB9 Female)	RS-232 (DB9 Female)
	COM2	RS-422/485 (5-Pin Terminal)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)	RS-422/485 (DB9 Female)
	COM3	RS-485 (5-Pin Terminal)	RS-485 (DB9 Female)	RS-485 (DB9 Female)	RS-485 (DB9 Female)	RS-485 (DB9 Female)	RS-485 (DB9 Female)
	Ethernet (RJ45)	10/100-BaseT	10/100-BaseT	10/100-BaseT	10/100-BaseT	10/100-BaseT	10/100-BaseT
I/Os	USB Client	Yes	Yes	Yes	Yes	Yes	Yes
	USB Host	Yes	Yes	Yes	Yes	Yes	Yes
	Power Isolation	Yes	Yes	Yes	Yes	Yes	Yes
Power Supply Voltage	24V _{DC} ± 10%						
Power Consumption	10W	20W	20W	20W	20W	20W	
Dimension W x H x D (mm)	129 x 103 x 31.3mm (5.08" x 4.06" x 1.23")	189.6 x 144.9 x 36mm (7.46" x 5.70" x 1.42")	233 x 176 x 43.3mm (9.17" x 6.93" x 1.7")	270.1 x 212.1 x 43.4mm (10.63" x 8.35" x 1.71")	335.4 x 245.8 x 60.3mm (13.21" x 9.68" x 2.37")	399.1 x 297.6 x 57.3mm (15.71" x 11.72" x 2.26")	
Cut-out Dimension W x H (mm)	118.5 x 92.5mm (4.67" x 3.64")	175 x 132.5mm (6.89" x 5.22")	221 x 164mm (8.70" x 6.44")	259.5 x 201.5mm (10.22" x 7.93")	302 x 228.5mm (11.89" x 9")	384.5 x 283mm (15.14" x 11.14")	
Front Panel thickness (mm)	5 mm	6 mm	6 mm	6 mm	6 mm	6 mm	
Enclosure	PC				Die-cast aluminum alloy front bezel		
Net Weight	0.23 kg (0.51 lbs)	0.55 kg (1.21 lbs)	1 kg (2.2 lbs)	1.1 kg (2.43 lbs)	2 kg (4.41 lbs)	3 kg (6.61 lbs)	
Reliability Certification	Operating Temperature	-10 ~ 60°C (14 ~ 140°F)					
	Storage Temperature	-20 ~ 70°C (-4 ~ 158°F)					
	Humidity	95% RH @ 40°C					
	Shock Vibration	5 ~ 500Hz (X,Y,Z direction, 1 Grms, 1 hour per axis)					
	Ingress Protection	Front panel: IP66					
	CE	EN61000-6-2, EN61000-6-4					
	EMI	FCC Part 15 Class A					
	UL	UL61010					

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Industrial Monitors



Model	FPM-7211W	FPM-7181W	FPM-7151W	FPM-7151T	FPM-7121T	FPM-7061T	
Display	Display Type	Full HD	WXGA	WXGA	XGA	XGA	VGA
	Display Size	21.5"	18.5"	15.6"	15"	12.1"	6.5"
	Max. Resolution	1920 x 1080	1366 x 768	1366 x 768	1024 x 768	1024 x 768	640 x 480
	Max. Colors	16.7M	16.7M	16.7M	16.7M	16.2M	16.2M
	Luminance (cd/m ²)	300	300	300	400	600	800
	Viewing Angle (H/V°)	178/178	170/160	170/160	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DP	VGA/DP	VGA/DP	
Touchscreen	Combo	Combo	Combo	Combo	Combo	USB	
OSD (onscreen display)	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	
Power Input Voltage	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	
DC Power Input(voltage)	24 V	24 V	24 V	24 V	24 V	24 V	
Operating Temperature	0 ~ 55°C	0 ~ 55°C	0 ~ 55°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	
Storage Temperature	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-30 ~ 70°C	-30 ~ 70°C	-30 ~ 70°C	
Dimensions	558.4 x 349.8 x 47.7 mm	488 x 309 x 47.7 mm	419.7 x 269 x 47.7 mm	383.2 x 307.3 x 48.2 mm	311.8 x 238 x 44.5 mm	199 x 152 x 46.1 mm	
Cut-out Dimensions	550.3 x 341.8 mm	479.3 x 300.3 mm	412.4 x 261.7 mm	374.5 x 298.5 mm	303 x 229 mm	189.1 x 142.1 mm	
Weight	8 kg	6 kg	5 kg	4.2 kg	2.6 kg	1.2 kg	
Certifications	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	
Operating System	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	

✓ : supported, – : not supported, △ : optional

- 1 IoT Software Solutions
- 2 Intelligent Systems
- 3 SKY Servers
- 4 AI & Advanced Computer Vision
- 5 Intelligent HMI and Monitors
- 6 Automation Computers
- 7 Intelligent Transportation Platforms
- 8 Mission Critical CompactPCI Platforms
- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
- 12 High Speed DAQ Solutions
- 13 Industrial Communication
- 14 Intelligent Edge DAQ Devices
- 15 Remote I/O, Wireless I/O & Sensors
- 16 Serial Communication

Industrial Monitors



Model	FPM-5191G	FPM-5171G	FPM-5151G	FPM-3191G	FPM-3171G	FPM-3151G	FPM-3121G	
Display	Display Type	SXGA	SXGA	XGA	SXGA	SXGA	XGA	XGA
	Display Size	19"	17"	15"	19"	17"	15"	12.1"
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.7M	16.2M	16.7M	16.7M	16.2M	16.2M
	Luminance (cd/m ²)	350	350	400	350	350	350	600
	Viewing Angle (H/V°)	170/160	160/140	160/140	170/160	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	
Touchscreen	Combo	Combo	Combo	Combo	Combo	Combo	Combo	
OSD (onscreen display)	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Rear panel control buttons, lockable	Front panel control buttons	Front panel control buttons	Front panel control buttons	Front panel control buttons	
Power Input Voltage	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	100 ~ 240 V (Optional adapter)	
DC Power Input	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	
Operating Temperature	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	
Storage Temperature	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C	
Dimensions	481.93 x 384.6 x 59 mm	481.9 x 355.9 x 55 mm	449.92 x 315.63 x 50.5 mm	482 x 399.2 x 67 mm	482 x 354.8 x 63.5 mm	312 x 224 x 60 mm	312 x 224 x 60 mm	
Cut-out Dimensions	454 x 338 mm	454 x 338 mm	424 x 293 mm	441 x 376.4 mm	447.2 x 329.2 mm	303.5 x 229.5 mm	303.5 x 229.5 mm	
Weight	8.5 kg	7 kg	6 kg	10.65 kg	9.25 kg	7.73 kg	4.07 kg	
Certifications	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	CE, FCC Class A, BSMI, CCC, UL	
Operating System	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	Windows XP/ Vista/7/8/10/XPE, Linux	

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Model		FPM-221W	FPM-215W	FPM-219	FPM-217	FPM-215	FPM-212
Display	Display Type	Full HD	Full HD	SXGA TFT LCD	SXGA TFT LCD	XGA TFT LCD	XGA TFT LCD
	Display Size	21.5"	15.6"	19"	17"	15"	12"
	Max. Resolution	1920 x 1080	1366 x 768	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.7M	16.7M	16.7M	16.2M	16.2M
	Luminance (cd/m ²)	250	300	350	250	300	600
	VieWING Angle	178/178	160/160	170/160	170/160	176/176	178/178
	Backlight Life	50,000 hr	50,000 hr	70,000 hr	50,000 hr	70,000 hr	50,000 hr
Video Port		HDMI or VGA	HDMI or VGA	HDMI, DP, and VGA	HDMI, DP, and VGA	HDMI, DP, and VGA	HDMI, DP, and VGA
Touchscreen	Type	PCAP	PCAP	5-wire analog resistive	5-wire analog resistive	5-wire analog resistive	5-wire analog resistive
	Interface	12V: USB	12V: USB	USB/RS232	12V: USB 24V: USB/RS232	12V: USB 24V: USB/RS232	12V: USB 24V: USB/RS232
OSD (onscreen display)		12V: Windows OSD utility	12V: Windows OSD utility	Rear panel control buttons	12V: Windows OSD utility 24V: Rear panel control buttons	12V: Windows OSD utility 24V: Rear panel control buttons	12V: Windows OSD utility 24V: Rear panel control buttons
DC Power Input Voltage		12V	12V	24V	12V/24V	12V/24V	12V/24V
Ingress Protection		Front Panel IP66	Front Panel IP66	Front Panel IP66	Front Panel IP66	Front Panel IP66	Front Panel IP66
Enclosure		Die-casting aluminium	Die-casting aluminium	Die-casting aluminium	Die-casting aluminium	Die-casting aluminium	Die-casting aluminium
Operating Temperature		0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Dimensions		558.4 x 349.8 x 56.2 mm (21.98 x 13.77 x 2.21 in)	419.7 x 269 x 56.2 mm (16.52 x 10.59 x 2.21 in)	454 x 379.8 x 51.5 mm (17.87 x 14.95 x 2.03 in)	410.4 x 343.4 x 54 mm (16.15 x 13.51 x 2.12 in)	383.2 x 307.3 x 53.20 mm (15.08 x 12 x 2.09 in)	: 311.8 x 238.0 x 53 mm (12.27 x 9.37 x 2.08 in)
Cut-out Dimensions		550.30 x 341.8 mm (21.67 x 13.46 in)	412.40 x 261.70 mm (16.24 x 10.30 in)	443.5 x 369.3 mm (17.46 x 14.53 in)	401.3 x 334.8 mm (15.8 x 13.18 in)	374.5 x 298.5 mm (14.74 x 11.75 in)	303 x 229 mm (11.93 x 9.02 in)
Weight		6 kg	4 kg	6.2 kg	5.4 kg	4.6 kg	3.2 kg
Mounting		Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel	Stand, Wall, VESA, Panel
Operating System		Windows XP/ Vista/7/8/10/ XPE, Linux	Windows XP/ Vista/7/8/10/ XPE, Linux	Windows XP/ Vista/7/8/10/ XPE, Linux	Windows XP/ Vista/7/8/10/ XPE, Linux	Windows XP/ Vista/7/8/10/ XPE, Linux	Windows XP/ Vista/7/8/10/ XPE, Linux
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	CB/UL, CE, FCC Class A, CCC, BSMI	CB/UL, CE, FCC Class A, CCC, BSMI	CB/UL, CE, FCC Class A, CCC, BSMI	CB/UL, CE, FCC Class A, CCC, BSMI

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- 1 IoT Software Solutions
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- 7 Intelligent Transportation Platforms
- 8 Mission Critical CompactPCI Platforms
- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
- 12 High Speed DAQ Solutions
- 13 Industrial Communication
- 14 Intelligent Edge DAQ Devices
- 15 Remote I/O, Wireless I/O & Sensors
- 16 Serial Communication

General Panel PCs

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Model	PPC-306/310/312/315 EHL				PPC-315W/318W/321W/324W EHL				PPC-315W/318W/321W/324W TGL				PPC-3100/3120		
CPU	Intel® Celeron® N6210 1.2 GHz Processor (Dual Core)		Intel® Celeron® J6412 2.0 GHz Processor (Quad Core)		Intel® Celeron® J6412 2.0 GHz Processor (Quad Core)				Intel® 11th Gen Core i/Celeron processor				Intel® Atom™ E3940 1.6GHz Processor (Quad Core)		
Memory	1 x SO-DIMM DDR4 3200 MHz (max. 32GB)		1 x SO-DIMM DDR4 3200 MHz (max. 32GB)		1 x SO-DIMM DDR4 3200 MHz (max. 32GB)				2x SO-DIMM DDR4 3200 MHz(max 32GB x 2)				1 x SO-DIMM DDR3L 1600/1866 MHz(max. 8 GB)		
Display Size	6.5" / 7"		10.4"	12"	15"	15.6"	18.5"	21.5"	23.8"	15.6"	18.5"	21.5"	23.8"	10.4"	12.1"
Screen Ratio	4:3		4:3	4:3	16:9	16:9	16:9	16:9	16:9	16:9	16:9	16:9	16:9	4:3	4:3
Max. Resolution	640 x 480 / 1024 x 600		800 x 600 / 1024 x 768	1024 x 768	1024 x 768	1366 x 768	1366 x 768	1920 x 1080	1920 x 1080	1920 x 1080	1366 x 768	1920 x 1080	1920 x 1080	800 x 600	1024 x 768
Luminance (cd/m²)	800 / 425		400/350	500	300	400	300	300	350	450	450	250	350	400	600
Viewing Angle (H/V°)	160,140 / 170, 170		160,140 / 176,176	160,140	176,176	170,160	170,160	178,178	178,178	170,170	170,160	178,178	178,178	160, 140	178, 178
Backlight MTBF	50,000 hr		30,000 hr	30,000 hr	70,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	30,000 hr	50,000 hr
Touchscreen	Projected capacitive multi-touch/5-wire resistive				Projected capacitive multi-touch/5-wire resistive				Projected capacitive multi-touch				5-wire resistive		
Network (LAN)	2 x GbE (Intel I225LM, Intel I219LM)		2 x GbE (Intel I225LM, Intel I219LM)		2 x GbE (Intel I225LM, Intel I219LM)				2 x GbE (Intel I225LM, Intel I219LM)				2 x GbE (Intel I210-IT)		
IO Ports	2 x Serial ports (1 x RS-232 and 1 x RS-232/422/485); 2 x USB 2.0, 1 x USB 3.0, 1 x TPM2.0		2 x Serial ports (1 x RS-232 and 1 x RS-232/422/485); 2 x USB 2.0, 2 x USB 3.0, 2 x USB 2.0 internal; 1 x HDMI; 1 x Type C (USB3.1 only); 1 x TPM2.0		2 x Serial ports (1 x RS-232 and 1 x RS-232/422/485); 2 x USB 2.0, 2 x USB 3.0, 2 x USB 2.0 internal; 1 x HDMI; 1 x Type C (USB3.1 only); 1 x TPM2.0				1 x RS-232, 1 x RS-232/422/485 (Adjustable through BIOS); 3 x USB 3.2, 1 x USB 2.0, 2 x USB 2.0 (internal); 1 x Type C USB3 only; 1 x HDMI 1.4; 1 x TPM2.0; 1 x Line out				5 x serial ports: 4 x RS-232, 1 x isolated RS-422/485 (adjustable via BIOS); 4 x USB 3.0; 1 x DB15 VGA, 1 x HDMI; 1 x GPIO (8 channels, TTL level, internal); 1 x line out, 1 x mic in		
Storage	1 x 2.5" SATA Bay; 1 x M.2 2280 bay (for storage only)		1 x 2.5" SATA Bay; 1 x M.2 2280 bay (for storage only)		1 x 2.5" SATA Bay; 1 x M.2 2280 bay (for storage only)				1 x 2.5" SATA Bay; 1 x M.2 2280 bay (for storage only)				1 x 2.5" SATA bay; 1 x mSATA bay		
Expansion	1 x M.2 2230 E-key for wireless card		1 x M.2 2230 E-key for wireless card		1 x M.2 2230 E-key for wireless card				1 x M.2 2230 E-key for wireless card				1 x Full-size mini PCIe; Optional: 1 x PCIe x1 or 1 x PCI		
Power Input (Voltage)	12 ~ 30 Vdc		12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	12 ~ 30 Vdc	9 ~ 32 Vdc	9 ~ 32 Vdc
Enclosure	Aluminum alloy		Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic
Ingress Protection	Front panel: IP65		Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65
Mounting	Panel, VESA 75, wall, stand, ARM		Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM
Operating Temperature	0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)
Dimensions	197.6 x 150.6 x 41 mm (7.8" x 5.9" x 1.6")		272 x 217 x 50 mm (10.7" x 8.5" x 1.97")	317 x 246 x 52.7 mm (12.5" x 9.7" x 2.07")	392 x 314 x 55mm (15.4" x 12.3" x 2.17")	419.7 x 269 x 55 mm (16.52" x 10.59" x 2.17")	488 x 309 x 55 mm (19.21" x 12.17" x 2.17")	558.4 x 349.8 x 56.2 mm (22" x 13.8" x 2.2")	595.9 x 374.1 x 58.4 mm (23.5" x 14.7" x 2.3")	419.7 x 269.0 x 62.1 mm (16.5" x 10.6" x 2.4")	488 x 309 x 61 mm (19.21" x 12.17" x 2.4")	558.4 x 349.8 x 62.3 mm (22" x 13.8" x 2.45")	595.9 x 374.1 x 61.5 mm (23.5" x 14.7" x 2.4")	271.8 x 216.8 x 57.5 mm (10.7" x 8.53" x 2.26")	317 x 217 x 60.5 mm (12.5" x 9.7" x 2.4")
Weight	1.5 kg		3.3kg	3.69 kg	4kg	5.4kg	7kg	7.5kg	8kg	4.8 kg	7.6 kg	8.1kg	8.7kg	2.8 kg	3.4 kg
Certification	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B		BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B
Operating System	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android		Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64-bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64-bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64-bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64-bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android

√: supported, -: not supported, Δ: optional

NEW



NEW



NEW



Model	PPC-415/417/419-EHL			PPC-412	PPC-415 TGL	PPC-415W/421W ADL		
CPU	Intel® Atom™ x6414RE 1.5GHz Processor (Quad Core)			7th Gen Intel® Core™ i processor (Dual Core)	11th Gen Intel® Core™ i processor (Quad Core)	12th Gen. Intel® Core™ i Processor (Quad Core)		
Memory	1 x SO-DIMM DDR4 3200 MHz (max. 32GB)			1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB)	2 x SO-DIMM DDR4 1866/2133 MHz (max. 64 GB)	2 x SO-DIMM DDR5 4800 MHz (max. 64 GB)		
Display Size	15"	17"	19"	12"	15"	15.6"	21.5"	
Screen Ratio	4:3	4:3	4:3	4:3	4:3	16:9	16:9	
Max. Resolution	1024 x 768	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768	1920 x 1080	1920 x 1080	
Luminance (cd/m ²)	500	350	350	600	500	450	300	
Viewing Angle (H/V°)	176, 176	160, 140	170, 160	178, 178	176, 176	170, 170	178, 178	
Backlight MTBF	70,000 hr	50,000 hr	50,000 hr	50,000 hr	70,000 hr	50,000 hr	50,000 hr	
Touchscreen	5-wire resistive			5-wire resistive	Projected capacitive multi-touch	Projected capacitive multi-touch		
Network (LAN)	2 x GbE (Intel® I225LM)			2 x GbE (Intel® I210-AT, I219LM)	2 x GbE (Intel® I225LM)	2 x GbE (Intel® I225LM)	2 x GbE (Intel® I225LM)	
IO Ports	5 x serial ports: 4 x RS-232 (2 x external and 2 x via internal pin header, requires optional module); 1 x isolated RS-422/485 (adjustable via BIOS); 4 x USB 3.2; 1 x HDMI, 1 x DP 1.2; 1 x GPIO (8 channels, TTL level) via internal pin header (requires optional module); 1 x line out, 1 x mic in			4x serial ports: 3 x RS-232, 1 x isolated RS-422/485 (adjustable via BIOS); 4 x USB 3.0; 1 x VGA, 1 x DP 1.2; 1 x GPIO (8 channels, TTL level) via internal pin header; 1 x line out, 1 x mic in	5 x serial ports: 4 x RS-232 (2 x via internal pin header, requires additional optional module); 1 x isolated RS-422/485 (adjustable via BIOS); 4 x USB 3.2; 1 x HDMI, 1 x DP 1.2; 1 x GPIO (8 channels, TTL level) via internal pin header; 1 x line out, 1 x mic in	5 x serial ports: 4 x RS-232 (2 x via internal pin header, requires additional optional module); 1 x isolated RS-422/485 (adjustable via BIOS); 4 x USB 3.2; 1 x HDMI, 1 x DP 1.2; 1 x GPIO (8 channels, TTL level) via internal pin header; 1 x line out, 1 x mic in		
Storage	1 x 2.5" SATA Bay; 1 x M.2 2280 bay (for storage only)			1 x 2.5" SATA bay; 1 x M.2 bay (22 x 42 mm)	1 x 2.5" SATA bay; 1 x M.2 bay (22 x 42 mm or 22 x 80 mm)	1 x 2.5" SATA bay; 1 x M.2 bay (22 x 42 mm or 22 x 80 mm)		
Expansion	1 x M.2 2230 E-key for wireless card; 1 x PCI; 1 x PCIe x1 (in the accessory box)			1 x Full-size mini PCIe; 1 x PCI; 1 x PCIe x4 (in the accessory box)	1 x M.2 2230 E Key slot for wireless card; 1 x M.2 3052(3042) B Key slot for 4G/5G; 1 x PCI; 1 x PCIe x4 (in the accessory box)	1 x M.2 2230 E Key slot for wireless card; 1 x M.2 3052(3042) B Key slot for 4G/5G; 1 x PCI; 1 x PCIe x4 (in the accessory box)		
Power Input (Voltage)	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	9 ~ 32 V _{DC}	
Enclosure	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	Front: Aluminum alloy; Back: Plastic	
Ingress Protection	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	
Mounting	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	Panel, VESA 100, wall, stand, ARM	
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with SSD; -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or SSD	0 ~ 50°C (32 ~ 122°F) with SSD; -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or SSD	0 ~ 50°C (32 ~ 122°F) with SSD; -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or SSD	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-40 ~ 60°C (-40 ~ 140°F)	-30 ~ 60°C (-40 ~ 140°F)	-30 ~ 60°C (-40 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	
Dimensions	392.2 x 313.5 x 55.1mm (15.4" x 12.3" x 2.1")	437.0 x 357.0 x 565 mm (17.2" x 14.0" x 2.22")	454.0 x 379.8 x 62.1 mm (17.8" x 14.9" x 2.4")	317 x 246 x 60.5 mm (12.5" x 9.7" x 2.4")	392.2 x 313.5 x 55.1mm (15.4" x 12.3" x 2.1")	419.7 x 269 x 59 mm (16.5" x 10.6" x 2.3")	558.4 x 349.8 x 63.6 mm (22" x 13.8" x 2.5")	
Weight	5.3 kg	6.3 kg	7.0 kg	3.4 kg	5.4 kg	5.4 kg	7.8 kg	
Certification	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	BSMI, CCC, CB, UL, UKCA, CE, FCC Class B	
Operating System	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux, Android	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux	

✓: supported, - : not supported, △ : optional

- 1 IoT Software Solutions
- 2 Intelligent Systems
- 3 SKY Servers
- 4 AI & Advanced Computer Vision
- 5 Intelligent HMI and Monitors
- 6 Automation Computers
- 7 Intelligent Transportation Platforms
- 8 Mission Critical CompactPCI Platforms
- 9 Utility and Energy Solutions
- 10 EtherCAT Solutions and Automation Controllers
- 11 Intelligent Motion Control Solutions
- 12 High Speed DAQ Solutions
- 13 Industrial Communication
- 14 Intelligent Edge DAQ Devices
- 15 Remote I/O, Wireless I/O & Sensors
- 16 Serial Communication

General Panel PCs

NEW



Model	☞ PPC-6121	PPC-6151C/6171C/6191C-RTAE ☞ PPC-MB-8260AE PPC-MB-610 PPC-MB-620			PPC-615W/618W/621W ☞ PPC-MB-8260AE PPC-MB-610 PPC-MB-620			PPC-6151C/6171C/6191C-RMAE ☞ support certified mini-ITX MBs		
CPU	8th/9th generation Intel® Core™ i/Celeron® processors	6th/7th/8th/9th/12th Gen. Intel® Core™ i/ Celeron® Processor			6th/7th/8th/9th/12th Gen. Intel® Core™ i/ Celeron® Processor			Processor supports up to 45W TDP depending on the Mini-ITX motherboard		
Memory	2 x SO-DIMM DDR4 2666 MHz (max. 32 GB)	1 x SO-DIMM DDR4 2133 MHz (max. 16 GB)(for PPC-MB-8260AE) 2 x SO-DIMM DDR4 2666 MHz (max. 32 GB) (for PPC-MB-610) 2 x SO-DIMM DDR5 4800 MHz (max. 64 GB) (for PPC-MB-620)			1 x SO-DIMM DDR4 2133 MHz (max. 16 GB)(for PPC-MB-8260AE) 2 x SO-DIMM DDR4 2666 MHz (max. 32 GB) (for PPC-MB-610) 2 x SO-DIMM DDR5 4800 MHz (max. 64 GB)(for PPC-MB-620)			Subject to mini-ITX motherboard specifications		
Display Size	12.1"	15"	17"	19"	15.6"	18.5"	21.5"	15"	17"	19"
Screen Ratio	4:3	4:3			16:9			4:3		
Max. Resolution	1024 x 768	1024 x 768	1280 x 1024	1280 x 1024	1920 x 1080	1366 x 768	1920 x 1080	1024 x 768	1280 x 1024	1280 x 1024
Luminance (cd/m ²)	600	500	350	350	450	450	250	500	350	350
Viewing Angle (H/V°)	178,178	176,176	160,140	170,160	170,170	170,160	178,178	176,176	160,140	170,160
Backlight MTBF	50,000 hr	50,000 hr			50,000 hr			50,000 hr		
Touchscreen	Projected capacitive multi-touch/5-wire resistive	Projected capacitive multi-touch/5-wire resistive			Projected capacitive multi-touch			Projected capacitive multi-touch/5-wire resistive		
Network (LAN)	2 x GbE (Intel I210, Intel I219LM)	2 x GbE (Intel I210) (for PPC-MB-8260AE) 2 x GbE (Intel I225,Intel I219LM); (for PPC-MB-610/620)			2 x GbE (Intel I210) (for PPC-MB-8260AE) 2 x GbE (Intel I225,Intel I219LM); (for PPC-MB-610/620)			Subject to mini-ITX motherboard specifications		
IO Ports	4 x RS-232, 1 x RS-422/485 with 1K VDC isolation, 4 x USB3.1 1 x DB15 VGA, 1 x HDMI 1.4 1 x Mic in, 1 x Line out 1 x GPIO(TTL, 8 pin programmable) 1 x TPM2.0 (optional)	RS-232 (by cabling), 1 x RS-232/422/485, 1 x RS-232, 4 x USB3.0 (for PPC-MB-8260AE)/ 6 x USB3.0 (for PPC-MB-610/620) 1 x DP 1.2, 2 x USB2.0 (int. pin head) 1 x VGA(for PPC-MB-8260AE/610)/ 1 x HDMI(for PPC-MB-620) 1 x line out, 1 x mic in 1 x GPIO (8-bit) (by cabling)			RS-232 (by cabling), 1 x RS-232/422/485, 1 x RS-232, 4 x USB3.0 (for PPC-MB-8260AE)/ 6 x USB3.0 (for PPC-MB-610/620) 1 x DP 1.2, 2 x USB2.0 (int. pin head) 1 x VGA(for PPC-MB-8260AE/610)/ 1 x HDMI(for PPC-MB-620) 1 x line out, 1 x mic in 1 x GPIO (8-bit) (by cabling)			4 x Reserved ports Subject to mini-ITX motherboard specifications		
Storage	1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay or 1 x M.2(2280,M key)			1 x 2.5" SATA bay 1 x mSATA bay or 1 x M.2(2280,M key)			2 x 2.5" SATA bay		
Expansion	1 x M.2 2230(E key) 1 x PCIe x4 or 1 x PCI (optional)	1 x PCIe x4 (standard); 2 x PCI (in the accessory box) 2 x PCIe x1;1 x PCIe x1 + 1 x PCI(optional) 2 x PCIe x8 (optional, for PPC-MB-610/620) 1 x PCIe x16 (optional, for PPC-MB-610/620) 1 x Full-size mini PCIe or 1 x mSATA Bay			1 x PCIe x4 (standard); 2 x PCI (in the accessory box) 2 x PCIe x1;1 x PCIe x1 + 1 x PCI(optional) 2 x PCIe x8 (optional, for PPC-MB-610/620) 1 x PCIe x16 (optional, for PPC-MB-610/620) 1 x Full-size mini PCIe or 1 x mSATA Bay			Subject to mini-ITX motherboard specifications		
Power Input (Voltage)	12 ~ 30 VDC	100 ~ 240 VAC			24VDC / 100 ~ 240 VAC			100 ~ 240 VAC		
Enclosure	Front: Aluminum alloy Back: Plastic	Front: Aluminum alloy Back: Plastic			Front: Aluminum alloy Back: Plastic			Front: Aluminum alloy Back: Plastic		
Ingress Protection	Front panel: IP65	Front panel: IP65			Front panel: IP65			Front panel: IP65		
Mounting	Panel, VESA 75, wall, stand, ARM	Panel, VESA 75/100, wall, stand, ARM			Panel, VESA 75/100, wall, stand, ARM			Panel, VESA 75/100, wall, stand, ARM		
Operating Temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)			0 ~ 50°C (32 ~ 122°F)			0 ~ 50°C (32 ~ 122°F)		
Storage Temperature	-40 ~ 60°C (-40 ~ 140°F)	-30 ~ 60°C (-22 ~ 140°F)			-30 ~ 60°C (-22 ~ 140°F)			-30 ~ 60°C (-22 ~ 140°F)		
Dimensions	317 x 246 x 73 mm (12.48" x 9.69" x 2.87")	391.4 x 312.5 x 103.6 mm (15.4" x 12.3" x 4.08")	437 x 357 x 107.6 mm (17.2" x 14.06" x 4.2")	454 x 379.8 x 107.5 mm (17.9" x 15" x 4.2")	419 x 269 x 108.2mm (16.5" x 10.6" x 4.2")	488 x 309 x 108.2mm (19.2" x 12.1" x 4.2")	558 x 349.8 x 108.2mm (21.9" x 13.7" x 4.26")	391.4 x 312.5 x 103.6 mm (15.4" x 12.3" x 4.08")	437 x 357 x 107.6 mm (17.2" x 14.06" x 4.2")	454 x 379.8 x 107.5 mm (17.9" x 15" x 4.2")
Weight	3.8 kg	5.03 kg	5.4 kg	5.8 kg	6.1 kg	7.6 kg	8.4 kg	5.03 kg	5.4 kg	5.8 kg
Certification	BSMI, CCC, CB, UL, UKCA, CE, FCC Class A	CCC, CB, UL, UKCA, CE, FCC Class A			CCC, CB, UL, UKCA, CE, FCC Class A			CB, UL, UKCA, CE, FCC class A		
Operating System	Microsoft® Windows 10 (64 bit), Windows 10 IOT LTSC, Linux	Microsoft® Windows 7/8.1/10, Windows 10 IOT LTSC, Linux			Microsoft® Windows 7/8.1/10, Windows 10 IOT LTSC, Linux			Subject to mini-ITX motherboard specifications		

☑: supported, ☐: not supported, △: optional

