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## Intelligent HMI and Monitors

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Vertrieb durch



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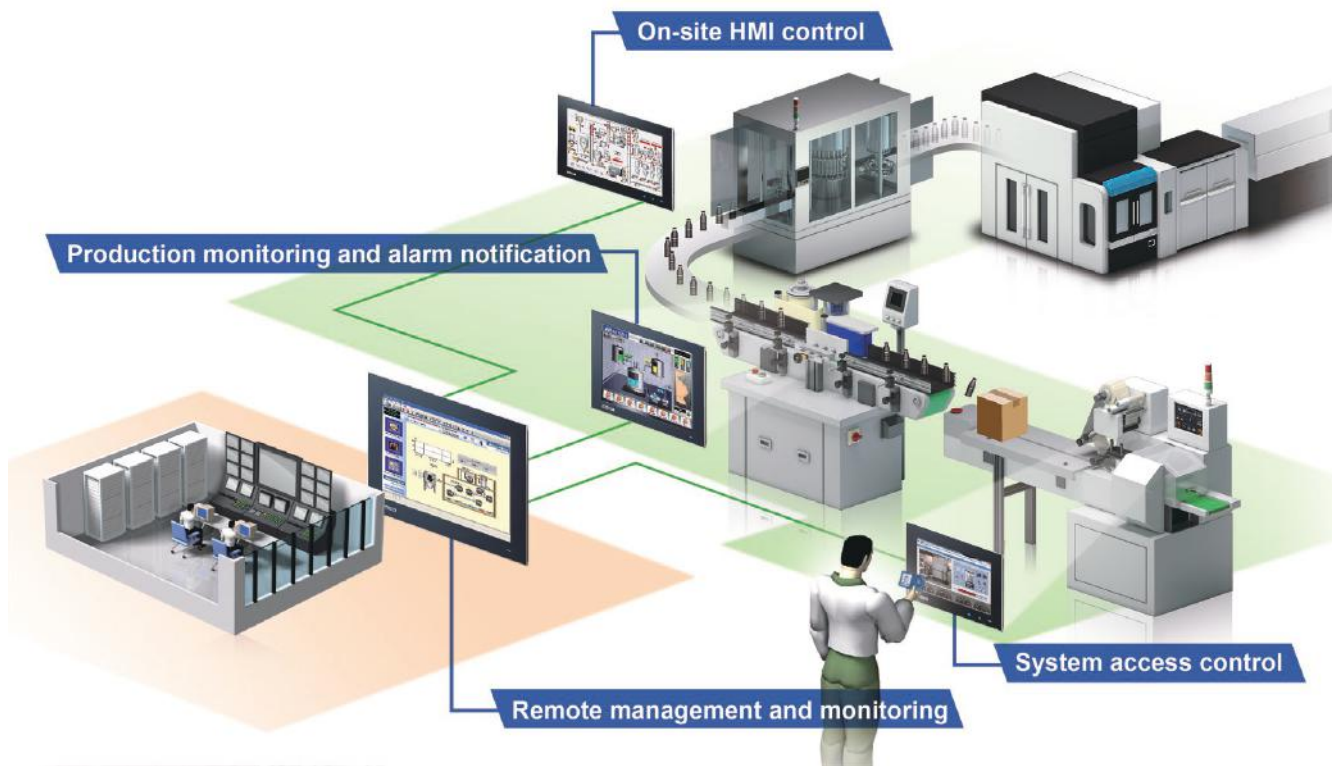


**ADVANTECH** iAutomation

**Premier Partner**

# Introduction

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.



# Modular Panel PCs

## Panel Modules

NEW

NEW



P/N	<a href="#">FPM-D12T-BE</a>	<a href="#">FPM-D15T-BE</a>	<a href="#">FPM-D15W-FBE</a>	<a href="#">FPM-D17T-BE</a>	<a href="#">FPM-D18W-BE</a>	<a href="#">FPM-D21W-BE</a>	<a href="#">FPM-D24W-BE</a>
Panel Size	12"	15"	15.6"	17"	18.5"	21.5"	23.8"
Resolution	1024 x 768	1024 x 768	1920 x 1080	1280 x 1024	1366 x 768	1920 x 1080	1920 x 1080
Touch	5-wire resistive touch	Projected capacitive touch	Projected capacitive touch	Projected capacitive 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	IP66-rated front panel	IP66-rated front panel	IP66-rated front panel

△: Please contact your local Advantech sales for optional Wi-Fi Antenna and NFC reader

## Computing Box Modules



P/N	<a href="#">TPC-B200-E12AE</a>	<a href="#">TPC-B200-J12AE</a>	<a href="#">TPC-B500-6C2AE</a>	<a href="#">TPC-B500-633AE</a>	<a href="#">TPC-B500-653AE</a>	<a href="#">TPC-B500-673AE</a>	
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 <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 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)	

## Monitor Box Module



P/N	<a href="#">FPM-B700-AE</a>
Video Interface Available	HDMI, DP, DVI, VGA, iLink
Power Input	24 V <sub>DC</sub> ± 20%
Mount Options	Panel, stand, and VESA mount
iLINK Technology	Supported

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

# High-Performance Control Panels



Model		TPC-1881WP	TPC-1581WP
CPU		4th Gen. Intel® Core™ i7/i3 Processor	4th Gen. Intel® Core™ i3 Processor
Memory		4 GB DDR3L 1600 MHz SO-DIMM SDRAM	4 GB DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	TFT LED LCD	TFT LED LCD
	Display Size	18.5"	15.6"
	Max. Resolution	1366 x 768	1366 x 768
	Max. Colors	16.7M	16.7M
	Luminance cd/m <sup>2</sup>	300 nits	300 nits
	VieWING Angle (H/V°)	170/160	170/160
	Backlight MTBF	50,000 hr	50,000 hr
	Touchscreen	Projected capacitive touch	Projected capacitive touch
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports		RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)
HDD (Optional)		2.5" SATA HDD	2.5" SATA HDD
Intelligent Keys		Quick access through built-in front bezel function and home key button	Quick access through built-in front bezel function and home key button
CompactFlash Slots		CFast slot x 1	CFast slot x 1
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe
Digital Input/Output		-	-
Ingress Protection		Front panel: IP66	Front panel: IP66
DC Power Input (Voltage)		24 VDC ± 20%	24 VDC ± 20%
Enclosure		Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin
Mounting		Panel mount	Panel mount
Weight		6 kg (13.22 lb)	7 kg (15.44 lb)
Operating Temperature		0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)
Dimensions		488.1 x 309.1 x 56.7 mm (19.2" x 12.2" x 2.2")	419.7 x 269 x 56.7 mm (16.52" x 10.59" x 2.23")
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSC	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSC

- 1 IoT Software Solutions
- 2 Edge AI and SKY Servers
- 3 Intelligent Systems
- 4 Machine Vision Solutions
- 5 Intelligent HMI and Monitors
- 6 Automation Computers
- 7 DAO and Communication Gateways
- 8 Industrial Communication
- 9 Remote I/O, Wireless Sensing Modules and Converters
- 10 Intelligent Motion Control Solutions
- 11 EtherCAT Solutions and Automation Controllers
- 12 Industrial I/O Solutions
- 13 Intelligent Transportation Platforms
- 14 Utility and Energy Solutions



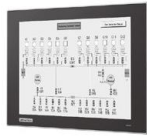
# High-Performance Control Panels



Model	TPC-1782H	TPC-1582H	TPC-1282T
CPU	4th Gen. Intel® Core™ i7/i3 Processor	4th Gen. Intel® Core™ i3 Processor	5th Gen. Intel® Core™ i3 Processor
Memory	4 GB DDR3L 1600 MHz SO-DIMM SDRAM	4 GB DDR3L 1600 MHz SO-DIMM SDRAM	4 GB DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	TFT LED LCD	TFT LED LCD
	Display Size	17"	15"
	Max. Resolution	1280 x 1024	1024 x 768
	Max. Colors	16.7M	16.2M
	Luminance cd/m <sup>2</sup>	350 nits	400 nits
	VieWING Angle (H/V°)	170/160	160/140
	Backlight MTBF	50,000 hr	50,000 hr
Touchscreen	Resistive	Resistive	Resistive
Network (LAN)	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio line out x 1, USB 2.0 x 1 (Δ) Audio MIC x 1 (Δ)
HDD (Optional)	2.5" SATA HDD	2.5" SATA HDD	2.5" SATA HDD
Intelligent Keys	-	-	-
CompactFlash Slots	CFast slot x 1	CFast slot x 1	CFast slot x 1
Expansion Slots	Full-size mini PCIe/half-size PCIe	Full-size mini PCIe/half-size PCIe	Full-size mini PCIe/half-size PCIe
Digital Input/Output	-	-	-
Ingress Protection	Front panel: IP65	Front panel: IP65	Front panel: IP66
DC Power Input (Voltage)	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%
Enclosure	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin	Front bezel: Die cast aluminum alloy Back housing: PC/ABS resin
Mounting	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount
Weight	6 kg (13.23 lb)	5.5 kg (12.13 lb)	3.2 kg (7.02 lb)
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)
Dimensions	414 x 347.5 x 84 mm (16.3" x 13.68" x 3.31")	383 x 307 x 78.5 mm (15.08" x 12.09" x 3.09")	311.8 x 238 x 77.2 mm (12.28" x 9.38" x 3.04")
Certification	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSB



# Industrial Thin-Client Terminals



Model		TPC-1751T (B)	TPC-1551WP
CPU		Intel® Atom™ E3845 1.91 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor
Memory		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	SXGA TFT LED LCD	WXGA TFT LED LCD
	Display Size	17"	15.6"
	Max. Resolution	1280 x 1024	1366 x 768
	Max. Colors	16.7M	16.7M
	Luminance cd/m2	350 nits	400 nits
	VieWING Angle (H/V°)	160/140	170/160
Backlight MTBF		50,000 hr	50,000 hr
Touchscreen		Resistive	Projected capacitive
HDD (Optional)		via iDoor	via optional kit
Network (LAN)		10/100/1000BASE-T x 2	10/100/1000BASE-T x 2
I/O Ports		RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 3	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1
CompactFlash Slots / iDoor Slot		iDoor slot x 1	CFast slot x 1
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe
DC Power Input (Voltage)		24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%
Dimensions		410.4 x 343.4 x 56.9 mm (16.16" x 13.52" x 2.24")	419.7 x 269 x 61.9 mm (16.52" x 10.59" x 2.44")
Weight		5.1 kg	5 kg
Front cover		Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy
Operating Temperature		-20 ~ 60°C (-4 ~ 140°F)	0 ~ 55°C (32 ~ 131°F)
Ingress Protection (Front Panel)		IP66	IP66
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		Windows 7, WES7, Windows 10 Enterprise LTSC, WEC 7, Linux, Android	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSC

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# Industrial Thin-Client Terminals



Model		TPC-1551T (B)	TPC-1251T (B)	TPC-1051WP	TPC-651T
CPU		Intel® Atom™ E3845 1.91 GHz quad core Processor	Intel® Atom™ E3845 1.91 GHz quad core Processor	Intel® Atom™ E3827 1.75 GHz Processor	Intel® Atom™ E3827 1.75 GHz Processor
Memory		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	4 GB (Optional 8 GB) DDR3L 1600 MHz SO-DIMM SDRAM
Display	Display Type	XGA TFT LED LCD	XGA TFT LED LCD	WXGA TFT LED LCD	VGA TFT LED LCD
	Display Size	15"	12"	10.1"	5.7"/6.5"
	Max. Resolution	1024 x 768	1024 x 768	1280 x 800	640 x 480
	Max. Colors	16.2M	16.2M	262K	262K
	Luminance cd/m2	300 nits	600 nits	300 nits	550/800 nits
	VieWING Angle (H/V°)	176/176	178/178	170/170	160/140
	Backlight MTBF	70,000 hr	50,000 hr	25,000 hr	50,000 hr
Touchscreen		Resistive	Resistive	Projected capacitive	Resistive
HDD (Optional)		2.5" SATA x 1	2.5" SATA x 1	2.5" SATA x 1	2.5" SATA x 1
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
I/O Ports		RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 3	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 3	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
CompactFlash Slots / iDoor Slot		iDoor slot x 1	iDoor slot x 1	CFlash slot x 1	CFlash slot x 1
Expansion Slots		Full-size mini PCIe	Full-size mini PCIe	Full-size mini PCIe	Full-size mini PCIe
DC Power Input (Voltage)		24 VDC ± 20%	24 VDC ± 20%	24 VDC ± 20%	24 V <sub>DC</sub> ± 20%
Dimensions		383.20 x 307.30 x 55.9 mm (15.09" x 12.10" x 2.2")	311.80 x 238 x 55.4 mm (12.28" x 9.37" x 2.18")	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		4.4 kg	3.12 kg	2.6 kg	1.5 kg
Front cover		Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy	Front bezel: Die cast aluminum alloy
Operating Temperature		-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 55°C (-4 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)
Ingress Protection (Front Panel)		IP66	IP66	IP66	IP66
Certification		BSMI, CCC, CE FCC Class A, UL	BSMI, CCC, CE FCC Class A, UL, KCC	BSMI, CCC, CE FCC Class A, UL	BSMI, CCC, CE FCC Class A, UL
Operating System		Windows 7, WES7, Windows 10 Enterprise LTSC, WEC 7, Linux, Android	Windows 7, WES7, Windows 10 Enterprise LTSC, WEC 7, Linux, Android	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSC	Windows 7, WES7, WEC7, Linux, Windows 10 Enterprise LTSC





# Domain-Focused HMI



Model	SPC-221	IPPC-5211WS	SPC-515	FPM-8151H	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	TFT LED LCD	
	Display Size	21.5"	21.5"	15"	15"	15.6"	
	Max. Resolution	1920 x 1080	1920 x 1080	1024 x 768	1024 x 768	1920 x 1080	1280 x 720
	Max. Colors	16.7M	16.7M	16.7M	16.2M	16.7M	16.7M
	Luminance cd/m <sup>2</sup>	300 nits	300 nits	300 nits	350 nits	300 nits	400 nits
	VieWING Angle (H/V°)	178/178	178/178	176 / 176	160/140	178/178	170/160
	Backlight MTBF	50,000 hr	50,000 hr	70,000 hr	50,000 hr	50,000 hr	50,000 hr
	Touchscreen	Projected capacitive touch	Projected capacitive touch	Projected capacitive touch	Resistive	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 <sub>DC</sub> 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 <sub>DC</sub> power input (connection:M12 A-coded, 5-pin male)	VGA DVI-D	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	
Digital	-	-	-	-	-	-	
Input/Output	-	-	-	-	-	-	
Ingress Protection	All-Around IP66	All-Around IP69k	All-Around IP69k	Front IP66	All-Around IP66	All-Around IP66	
DC Power Input (Voltage)	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 20% / 12 V <sub>DC</sub> / 4.75A	24 V <sub>DC</sub> ± 20%	24 V <sub>DC</sub> ± 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: 316L stainless steel Back housing: 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	VESA / Panel Mount	Pole Mount / VESA (optional)	Pole Mount / VESA (optional)	
Weight	9 kg	16 kg	8.5 kg	8.5 kg	11.6 kg	8.8 kg	
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	-20 ~ 60°C (-4 ~ 140°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	389x 313 x 56 mm	414 x 347.5 x 84 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 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	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 7/8, WES7, WEC7, Linux, Windows 10 Enterprise LTSB	Windows 10 Enterprise LTSB	Windows 10 Enterprise LTSB	

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Model		WOP-2040T		WOP-2070T		WOP-2100T	
Ordering Information		WOP-2040T-S1AE	WOP-2040T-N1AE	WOP-2070T-S2AE	WOP-2070T-N2AE	WOP-2100T-S2AE	WOP-2100T-N2AE
CPU		RISC (32-bit, 200 MHz)		RISC (32-bit, 200 MHz)			
Backup Memory		128 KB		128 KB			
Working Memory		32 MB SDRAM		64 MB SDRAM		64 MB SDRAM	
Storage		8MB NOR Flash		8 MB NOR Flash			
		-	128M NAND Flash	-	128M NAND Flash	-	128M NAND Flash
Operating System		HMI RTOS, WebAccess/HMI V2.1		HMI RTOS, WebAccess/HMI V2.1			
Display	Type	WQVGA (16:9) TFT LCD		WVGA (16:9) TFT LCD		WSVGA (16:9) TFT LCD	
	Size	4.3"		7"		10.1"	
	Max. Resolution	480 x 272		800 x 480		1024 x 600	
	Max. Colors	65,536		65,536		65,536	
	Luminance (cd/m <sup>2</sup> )	400		300		250	
	Viewing Angle (H/V°)	100/95		140/130		140/110	
	Backlight Life (hr)	LED, 20,000		LED, 20,000		LED, 20,000	
	Dimming	-		-		-	
Touchscreen		4-wire analog resistive		4-wire analog resistive		4-wire analog resistive	
Power-On LED		✓		✓		✓	
Communication	COM1	RS-232/422/485 (DB9)		RS-232/422/485 (DB9)		RS-232/422/485 (DB9)	
Interface	COM2	RS-422/485 (5-pin terminal)		RS-422/485 (5-pin terminal)		RS-422/485 (5-pin terminal)	
	COM3	RS-232 (COM1: 5/7/8-pin)		RS-232 (COM1: 5/7/8-pin)		RS-232 (COM1: 5/7/8-pin)	
	CAN	-		-		-	
	Ethernet (RJ45)	-	10/100 BASE-T	-	10/100 BASE-T	-	10/100 BASE-T
I/Os	USB Client	✓		✓		✓	
	USB Host	✓		✓		✓	
	Micro-SD Slot	-	✓	-	✓	-	✓
	SD Slot	-		-		-	
	Audio	-		-		-	
	Power Isolation	-		-		-	
	I/O Isolation	-		-		-	
Power Supply Voltage		24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%	
Power Consumption		5 W		10 W		10 W	
Dimensions W x H x D (mm)		130 x 106.2 x 36.4 mm (5.11" x 4.18" x 1.43")		188 x 143.3 x 30 mm (7.4" x 5.64" x 1.18")		269.8 x 212 x 37.4 mm (10.62" x 8.35" x 1.47")	
Cut-out Dimensions W x H (mm)		118.5 x 92.5 mm (4.66" x 3.64")		175 x 132.5 mm (6.89" x 5.21")		259.5 x 201.5 mm (10.22" x 7.93")	
Enclosure		PC + ABS		PC + ABS		PC + ABS	
Net Weight		0.3 kg (0.66 lb)		0.6 kg (1.32 lb)		1.2 kg (2.64 lb)	
Operating Temperature		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)	
Humidity		10 ~ 90% RH @ 40°C, non-condensing		10 ~ 90% RH @ 40°C, non-condensing		10 ~ 90% RH @ 40°C, non-condensing	
Ingress Protection		Front panel: IP66		Front panel: IP66		Front panel: IP66	
Certification		CE, FCC, BSMI, CCC, UL		CE, FCC, BSMI, CCC, UL		CE, FCC, BSMI, CCC, UL	

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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 <sup>2</sup>	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	

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Model	FPM-5191G	FPM-5171G	FPM-5151G	FPM-2170G	FPM-2150G	FPM-2120G	
Display	Display Type	SXGA	SXGA	XGA	SXGA	XGA	SVGA
	Display Size	19"	17"	15"	17"	15"	12"
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1280 x 1024	1024 x 768	800 x 600
	Max. Colors	16.7M	16.7M	16.2M	16.7M	16.2M	16.2M
	Luminance cd/m <sup>2</sup>	350	350	400	350	400	450
	Viewing Angle (H/V°)	170/160	160/140	160/140	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	VGA/DVI	VGA/DVI	VGA	VGA	VGA	
Touchscreen	Combo	Combo	Combo	Combo	Combo	Combo	
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 (Adapter)	100 ~ 240 V (Adapter)	100 ~ 240 V (Adapter)	
DC Power Input	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	12 V	12 V	12 V	
Operating Temperature	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	
Storage Temperature	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°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	413.72 x 347.22 x 52.13 mm	383 x 307 x 48.13 mm	311 x 237 x 40.63 mm	
Cut-out Dimensions	454 x 338 mm	454 x 338 mm	424 x 293 mm	400.92 x 334.42 mm	374.5 x 298.5 mm	303 x 229 mm	
Weight	8.5 kg	7 kg	6 kg	5.6 kg	4.5 kg	4 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, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, 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	

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# Industrial Monitors



Model		FPM-3191G	FPM-3171G	FPM-3151G	FPM-3121G
Display	Display Type	SXGA	SXGA	XGA	XGA
	Display Size	19"	17"	15"	12.1"
	Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768
	Max. Colors	16.7M	16.7M	16.2M	16.2M
	Luminance cd/m <sup>2</sup>	350	350	350	600
	Viewing Angle (H/V°)	170/160	160/140	160/140	160/140
	Backlight MTBF	50,000 hr	50,000 hr	50,000 hr	50,000 hr
Video Port	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	
Touchscreen	Combo	Combo	Combo	Combo	
OSD (onscreen display)	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)	
DC Power Input	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	10 ~ 30 V	
Operating Temperature	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	
Storage Temperature	-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C	-30 ~ 80°C	
Dimensions	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	441 x 376.4 mm	447.2 x 329.2 mm	303.5 x 229.5 mm	303.5 x 229.5 mm	
Weight	10.65 kg	9.25 kg	7.73 kg	4.07 kg	
Certifications	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	

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Model		FPM-221W	FPM-215W	FPM-1150G	FPM-817S	FPM-815S
Display	Display Type	Full HD	WXGA	XGA	SXGA	XGA
	Display Size	21.5"	15.6"	15"	17"	15"
	Max. Resolution	1920 x 1080	1366 x 768	1024 x 768	1280 x 1024	1024 x 768
	Max. Colors	16.7M	16.7M	16.2M	16.7M	16.7M
	Luminance cd/m <sup>2</sup>	250	300	300	350	500
	Viewing Angle (H/V°)	178/178	160/160	160/140	160/140	176/176
	Backlight MTBF	50,000 hr	50,000 hr	70,000 hr	50,000 hr	70,000 hr
Video Port	HDMI or VGA	HDMI or VGA	HDMI or VGA	VGA/DP	VGA/DP	
Touchscreen	USB	USB	USB	USB	USB	
OSD (onscreen display)	-	-	Front panel control buttons	Rear panel control buttons, lockable	Rear panel control buttons, lockable	
Power Input Voltage	100 ~ 240 V (Adapter)	100 ~ 240 V (Adapter)	100 ~ 240 V (Adapter)	100 ~ 240 V	100 ~ 240 V	
DC Power Input (voltage)	12 V	12 V	12 V	24 V	24 V	
Operating Temperature	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C	-20 ~ 60°C	-20 ~ 60°C	
Storage Temperature	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-30 ~ 70°C	-30 ~ 70°C	
Dimensions	558.4 x 349.8 x 56.2 mm	419.7 x 269 x 56.2 mm	392.3 x 313.6 x 51.2 mm	432.5 x 365.5 x 59.3 mm	405.3 x 329.4 x 59.3 mm	
Cut-out Dimensions	550.30 x 341.8 mm	412.40 x 261.70 mm	381.4 x 302.5 mm	382 x 320 mm	350 x 277 mm	
Weight	8 kg	4 kg	4 kg	7 kg	4 kg	
Certifications	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC, 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	

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# General Panel PCs

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New Generation



Model	PPC-3060S	<a href="#">PPC-3100S</a> <a href="#">PPC-3120S</a> <a href="#">PPC-3150S</a>				<a href="#">PPC-3150SW</a> <a href="#">PPC-3180SW</a> <a href="#">PPC-3210SW</a> PPC-324W-PN4				<a href="#">PPC-3100</a> <a href="#">PPC-3120</a>		
CPU	Intel® Celeron® 1.58 GHz Processor (Dual Core)	Intel® Celeron® 1.83 GHz Processor (Quad Core)				Intel® Pentium® 1.1 GHz Processor (Quad Core)		Intel® Celeron® 1.83 GHz Processor (Quad Core)	Intel® Pentium® 1.1 GHz Processor (Quad Core)	Intel® Atom™ 1.6GHz Processor (Quad Core)		
Memory	1 x SO-DIMM DDR3L 1333 MHz (max. 4 GB)	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)				1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)		1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)	1 x SODIMM DDR3L 1600/1866 MHz (max. 8 GB)		
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD		
Display Size	6.5	10.4	12.1	15	15.6	18.5	21.5	23.8	10.4	12.1		
Screen Ratio	4:3	4:3			16:9		16:9	16:9	4:3			
Max. Resolution	640 x 480	800 x 600 / 1024 x 768	1024 x 768	1024 x 768	1366 x 768	1366 x 768	1920 x 1080	1920 x 1080	800 x 600	1024 x 768		
Luminance cd/m <sup>2</sup>	800	400 / 350	500	400	400	300	300	350	400	600		
Viewing Angle (H/V°)	160,140	160,140 / 176,176	178,178	176,176	170,160	170,160	178,178	178,178	160,140	178,178		
Backlight MTBF	50,000 hr	30,000 hr	30,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	50,000 hr	30,000 hr	50,000 hr		
Touchscreen	5-wire resistive	Projected capacitive multi-touch/5-wire resistive				Projected capacitive multi-touch/5-wire resistive				5-wire resistive		
Network (LAN)	2 x GbE (Intel I211-AT)	2 x GbE (Intel I211-AT)				2 x GbE (Intel I211-AT, Intel I219LM)		2 x GbE (Intel I211-AT)	2 x GbE (Intel I211-AT, Intel I219LM)	2 x GbE (Intel I210-IT)		
IO Ports	2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 2 x USB 2.0, 1 x USB 3.0	2 x serial ports: 1 x RS-232, 1x RS-232/422/485 (adjustable via BIOS) (for PPC-3100S-RAE) 2 x USB 2.0, 1 x USB 3.0 (for PPC-3100S-PBE)				2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 2 x USB 2.0, 2 x USB 3.0 1 x line out		2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 1 x USB 2.0, 1 x USB 3.0	2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 1 x USB 2.0, 1 x USB 3.0	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 mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay		1 x 2.5" SATA bay 1 x mSATA bay		1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay	1 x 2.5" SATA bay 1 x mSATA bay			
Expansion	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 PCIe x1; 1 x PCI (only PPC-3120) 1 x full-size mini PCIe		
Power Input (Voltage)	12 ~ 24 V <sub>DC</sub>	12 ~ 24 V <sub>DC</sub>				12 ~ 24 V <sub>DC</sub>		12 ~ 24 V <sub>DC</sub>	12 ~ 24 V <sub>DC</sub>	9 ~ 32 V <sub>DC</sub>		
Enclosure	Front: Aluminum alloy Back: SECC	Aluminum alloy				Aluminum alloy		Aluminum alloy	Aluminum alloy	Front: Aluminum alloy Back: Plastic + SECC		
Ingress Protection	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		
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD				0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD		0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with 2.5" SATA SSD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5" SATA SSD		
Storage Temperature	-30 ~ 60°C (-22 ~ 140°F)	-40 ~ 60°C (-40 ~ 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)		
Dimensions	197.6 x 150.6 x 41 mm (7.8" x 5.9" x 1.6")	272 x 217 x 46 mm (10.7" x 8.5" x 1.8")	317 x 246 x 49 mm (12.5" x 9.7" x 1.9")	391.3 x 312.4 x 51.5 mm (15.4" x 12.3" x 2.0")	419.7 x 269 x 58.6 mm (16.52" x 10.59" x 2.3")	488 x 309 x 58.5 mm (19.21" x 12.17" x 2.3")	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")	271.8 x 216.8 x 57.5 mm (10.7" x 8.53" x 2.26")	317 x 246 x 60.5 mm (12.5" x 9.7" x 2.4")		
Weight	1.5 kg	1.9 kg	2.1 kg	4 kg	4.7 kg	5.4 kg	7.5 kg	TBD	2.8 kg	3.4 kg		
Certification	BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B				BSMI, CCC, CB, UL, CE, FCC Class B		BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B		
Operating System	Windows 7(32/64-bit)/ 10(64-bit), WES7P, WEC7, Windows 10 IOT LTSC, Linux, Android 6.0	Windows 7(32/64-bit)/10(64-bit), WES7P, WEC7, Windows 10 IOT LTSC, Linux, Android 6.0				Windows 10(64-bit), Windows 10 IOT LTSC, Linux, Android 8.1		Windows 7(32/64-bit)/ 10(64-bit), WES7P, WEC7, Windows 10 IOT LTSC, Linux, Android 6.0	Windows 10(64-bit), Windows 10 IOT LTSC, Linux, Android 8.1	Windows 10 (64-bit), Win 10 LTSC, Linux, Android 8.1		



NEW



Model	<a href="#">PPC-3150</a> <a href="#">PPC-3170</a> <a href="#">PPC-3190</a>			PPC-412	<a href="#">PPC-3151</a>	<a href="#">PPC-3151W</a> <a href="#">PPC-3211W</a>	<a href="#">PPC-3191SW</a> <a href="#">PPC-3181SW</a> <a href="#">PPC-3211SW</a> <a href="#">PPC-324W-P7</a>				
CPU	Intel® Atom™ 1.91 GHz Processor (Quad Core)			6th Gen Intel® Core™ i5 processor (Dual Core)	6th Gen Intel® Core™ i5 processor (Dual Core)	7th Gen. Intel® Core™ i5 Processor (Dual Core)	6th Gen Intel® Core™ i3/i5 processor (Dual Core)			7th Gen Intel® Core™ i3/i5 processor (Dual Core)	
Memory	1 x SO-DIMM DDR3L 1333 MHz (max. 8 GB)			1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB) (1.2 V)	1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB) (1.2 V)	1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB)	1 x SO-DIMM DDR4 1866/2133 MHz (max. 16 GB)				
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD		TFT LED LCD			
Display Size	15	17	19	12.1	15	15.6	21.5	15.6	18.5	21.5	23.8
Screen Ratio	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		1366 x 768		1920 x 1080	
Luminance cd/m <sup>2</sup>	500	350	350	600	500	450	300	400	300	300	350
Viewing Angle (H/V°)	176,176	160,140	170,160	178,178	176,176	170,170	178,178	170,170	170,160	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	50,000 hr		50,000 hr	
Touchscreen	5-wire resistive			5-wire resistive	Projected capacitive multi-touch	Projected capacitive multi-touch		Projected capacitive multi-touch			
Network (LAN)	2 x GbE (Intel I210)			2 x GbE (Intel® I211-AT, I219LM)	2 x GbE (Intel® I211-AT, I219LM)	2 x GbE (Intel I211-AT, Intel I219LM)		2 x GbE (Intel I211-AT, Intel I219LM)			
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 (terminal block) 1 x USB 3.0, 3 x USB 2.0 1 x VGA, 1 x DP1.1a 1 x GPIO (8 channels, TTL level) via internal pin header (requires optional module) 1 x line out, 1 x mic in			5 x serial ports: 4 x RS-232, 1 x isolated RS-422/485, 4 x USB 3.0 1 x VGA 1 x DP1.2 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, 4 x USB 3.0, 1 x VGA 1 x DP1.2 4 x USB 3.0, 1 x VGA 1 x line out, 1 x mic in 1 x GPIO (8 channels, TTL level) via internal pin header 1 x line out, 1 x mic in	2 x RS-232, 1 x RS-422/485 with 1K VDC isolation Either 2 x RS-232 or 1 x RS-232 + 1 x GPIO(TTL, 8 pin programmable) on right side (optional module) 4 x USB 3.0 (rear), 1 x line out, 1 x mic in 1 x DB15 VGA 1 x Display Port (1.2) 1 x TPM 2.0 (optional)	2 x serial ports: 1 x RS-232, 1 x RS-232/422/485 (adjustable via BIOS) 2 x USB 3.0, 2 x USB 2.0 (right side) 1 x HDMI 1 x TPM2.0 (optional, internal)				
Storage	1 x 2.5" SATA bay 1 x mSATA bay			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)	1 x 2.5" SATA bay	2 x 2.5" SATA bay (supports Intel RAID)	1 x 2.5" SATA bay 1 x mSATA bay			
Expansion	1 x PCI (standard); 1 x PCIe x1 (in the accessory box) 1 x Full-size mini PCIe Optional: 1 x CFast; 1 x CF card (PPC-3150/3170 only); 1 x Internal USB dongle; 2 x RS-232 or 1 x RS-232 + 1 x GPIO			1 x Full-size mini PCIe	1 x PCIe x4 (standard); 1 x PCI (in the accessory box) 1 x Full-size mini PCIe Optional: 1 x CFast; 1 x CF card; 1 x Internal USB dongle; 2 x RS-232 or 1 x RS-232 + 1 x GPIO	1 x PCIe x4 (standard); 1 x PCI (in the accessory box) 1 x Full-size mini PCIe	1 x Full-size mini PCIe				
Power Input (Voltage)	9 ~ 32 Vdc			9 ~ 32 Vdc	9 ~ 32 Vdc	9 ~ 32 Vdc		12 ~ 24 Vdc			
Enclosure	Front: Aluminum alloy Back: Plastic			Front: Aluminum alloy Back: Plastic	Front: Aluminum alloy Back: Plastic	Front: Aluminum alloy Back: Plastic		Aluminum alloy			
Ingress Protection	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 100, wall, stand, ARM		Panel, VESA 100, wall, stand, ARM			
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with 2.5 SATA SSD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5 SATA SSD			0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 45°C (32 ~ 113°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 40°C (32 ~ 104°F) with HDD	0 ~ 50°C (32 ~ 122°F) with SSD 0 ~ 45°C (32 ~ 113°F) with HDD			
Storage Temperature	-40 ~ 60°C (-40 ~ 140°F)		-30 ~ 60°C (-22 ~ 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 55.1 mm (15.4" x 12.3" x 2.1")	437 x 357 x 56.5 mm (17.2" x 14.0" x 2.2")	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")	391.4 x 312.5 x 55.35 mm (15.41" x 12.3" x 2.18")	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")	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")
Weight	5.3 kg	6.3 kg	7.0 kg	3.4 kg	5.4 kg	5.4 kg	7.8 kg	4.8 kg	7.6 kg	8.1 kg	8.7 kg
Certification	BSMI, CCC, CB, UL, CE, FCC Class A			BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B	BSMI, CCC, CB, UL, CE, FCC Class B		BSMI, CCC, CB, UL, CE, FCC Class B			
Operating System	Windows 7(32/64-bit)/10(64-bit), WES7P, WEC7, Win10 LTSC, Linux, Android 6.0			Windows 10 (64-bit), Win10 LTSC, Linux	Windows 7(32/64-bit)/10(64-bit), WES7P(64-bit), Win10 IOT LTSC, Linux	Windows 10 (64-bit), Win10 LTSC, Linux	Windows 7(32/64-bit)/10(64-bit), WES7P, Windows 10 IOT LTSC, Linux		Windows 10(64-bit), Windows 10 IOT LTSC, Linux		

- 1 IoT Software Solutions
- 2 Edge AI and SKY Servers
- 3 Intelligent Systems
- 4 Machine Vision Solutions
- 5 Intelligent HMI and Monitors
- 6 Automation Computers
- 7 D4Q and Communication Gateways
- 8 Industrial Communication
- 9 Remote I/O, Wireless Sensing Modules and Converters
- 10 Intelligent Motion Control Solutions
- 11 EtherCAT Solutions and Automation Controllers
- 12 Industrial I/O Solutions
- 13 Intelligent Transportation Platforms
- 14 Utility and Energy Solutions

# General Panel PCs



Model	<a href="#">PPC-6151C</a> <a href="#">PPC-6171C</a> <a href="#">PPC-6191C-RTAE</a> PPC-MB-8260AE PPC-MB-7760A	<a href="#">PPC-6151C</a> <a href="#">PPC-6171C</a> <a href="#">PPC-6191C-RMAE</a> Support certified mini-ITX motherboards	<a href="#">PPC-6121</a>
CPU	6th/7th/8th/9th Gen. Intel® Core™ i3/i5/i7/Celeron® Processor	Processor support up to 45W TDP depending on the Mini-ITX motherboard	8th/9th generation Intel® Core™ i/Celeron® processors
Memory	1 x SO-DIMM DDR4 2133 MHz (max. 16 GB)	Subject to mini-ITX motherboard specifications	2 x 260-pin SO-DIMM DDR4 2666 MHz (max. 32 GB)
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD
Display Size	15      17      19	15      17      19	12.1
Screen Ratio	4:3	4:3	4:3
Max. Resolution	1024 x 768    1280 x 1024    1280 x 1024	1024 x 768    1280 x 1024    1280 x 1024	1024 x 768
Luminance cd/m <sup>2</sup>	500    350    350	500    350    350	600
Viewing Angle (H/V°)	160,140    160,140    170,160	160,140    160,140    170,160	178,178
Backlight MTBF	50,000 hr	50,000 hr	50,000 hr
Touchscreen	Projected capacitive multi-touch/5-wire resistive	Projected capacitive multi-touch/5-wire resistive	5-wire resistive
Network (LAN)	2 x GbE (Intel I211)	Subject to mini-ITX motherboard specifications	2 x GbE (Intel I211, Intel I219LM)
IO Ports	5 x serial ports: 3 x RS-232 (by cabling), 1 x RS-232/422/485, 1 x RS-232, 4 x USB3.0 (ext.), 2 x USB2.0 (int. pin head) 1 x DP 1.2, 1 x VGA 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	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)
Storage	1 x 2.5" SATA bay 1 x mSATA bay	2 x 2.5" SATA bay	1 x 2.5" SATA bay 1 x mSATA bay
Expansion	1 x PCIe x4 (standard); 2 x PCI (in the accessory box) Optional: 2 x PCIe x1 1 x PCIe x1 + 1 x PCI 1 x Full-size mini PCIe or 1 x mSATA Bay	Subject to mini-ITX motherboard specifications	1 x M.2 2230(E key) 1 x PCIe x4 or 1 x PCI (optional)
Power Input (Voltage)	100 ~ 240 V <sub>AC</sub>	100 ~ 240 V <sub>AC</sub>	12 ~ 30 V <sub>DC</sub>
Enclosure	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
Mounting	Panel, VESA 75/100, wall, stand, ARM	Panel, VESA 75/100, wall, stand, ARM	Panel, VESA 75, wall, stand, ARM
Operating Temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-30 ~ 60°C (-22 ~ 140°F)	-30 ~ 60°C (-22 ~ 140°F)	-40 ~ 60°C (-40 ~ 140°F)
Dimensions	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	5.03 kg    5.4 kg    5.8 kg	5.03 kg    5.4 kg    5.8 kg	3.8 kg
Certification	BSMI, CCC, CB, UL, CE, FCC Class A	CB, UL, CE, FCC classA	BSMI, CCC, CB, UL, CE, FCC Class A
Operating System	Windows 7/8.1/10, Linux	Subject to mini-ITX motherboard specifications	Windows 10 64bit, Linux

