

Heavy Industrial Panel PC Solution



The Next Era IoT Panel PC Solution

IEI offers complete robust panel solutions for harsh industrial environments. The product portfolio varies from sizes and performance. To catch the wave of cloud computing and intelligent solutions, IEI introduces the iRIS remote management solution to enhance efficiency for system integration. With all these benefits, IEI is your solid solution for industrial computing.

» Heavy Industrial Panel PC Product Line

General Purpose Panel PC

Size	Intel® Bay Trail	Intel® H61	Intel® H81	Intel® Q370	Intel® ULT5 NEW
5.7"	PPC-F06B-BT				
8"	PPC-F08B-BT				
10.4"	PPC-F10B-BT				
12.1"	PPC-F12B-BT				
15"	PPC-F15B-BT	PPC-5150A-H61	PPC-F15A-H81	PPC-F15C-Q370	PPC-F15D-ULT5
15.6"				PPC-FW15C-Q370	PPC-FW15D-ULT5
17"	PPC-F17B-BT	PPC-5170A-H61	PPC-F17A-H81	PPC-F17C-Q370	PPC-F17D-ULT5
18.5"				PPC-FW19C-Q370	PPC-FW15D-ULT5
19"	PPC-F19B-BT	PPC-5190A-H61			PPC-FW19D-ULT5
21.5"			PPC-F22A-H81	PPC-FW22C-Q370	PPC-FW22D-ULT5
23.8"			PPC-F24A-H81	PPC-FW24C-Q370	PPC-FW24D-ULT5

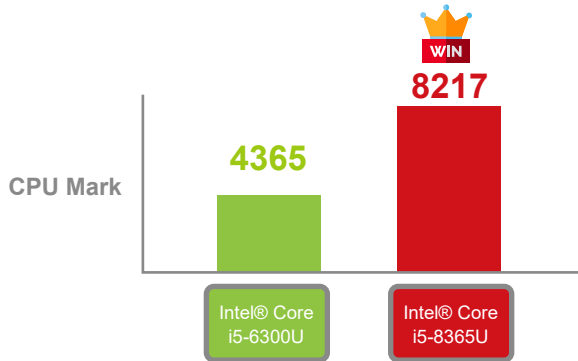
Verticak Market Panel PC

Solutions	Marine Series			UPC Series	INOX Series
Size	Intel® QM87 (PPC)	Monitor	Embedded Box	Intel® Skylake ULT	Intel® Skylake ULT
12"			SBOX-100-QM87	UPC-F12A-ULT3	
15"					INOX-F15C-ULT3
19"	S19A-QM87	S19M-AD			
24"	S24A-QM87	S24M-AD			

PPC-F-ULT5 Series

» 8th GEN. Intel® Core™ Mobile Processor

Powered by 8th Generation Intel® Whiskey Lake U-Series Processors, PPC-FxxD-ULT5 Series Panel PC not only delivers improved graphics performance but also supports passive cooling design without fans. In addition, it is equipped with HDMI port, allowing users to easily clone or extend screen to a second monitor.



	Intel® Core™ i5-6300U	Intel® Core™ i5-8365U
Cores	2	4
Threads	4	8
Process	14nm	14nm
TDP	15W	15W
Cache	3MB	6MB
Base Clock	2.4GHz	1.6GHz
Boost Clock	3.0GHz	4.1GHz

» 802.3bt PoE PD Supported

The PPC-FxxD-ULT5 industrial Power-over-Ethernet (PoE) modular panel PCs use a totally fanless cooling system and energy efficient CPU for optimal performance. The PoE-powered panel PC has been designed for use in Machine-to-Machine (M2M), Industrial Internet of Things (IIoT), and smart building automation.

PoE technology enables a facility to safely transfer electrical power, along with data, to touchscreen PCs over a standard category 5 cable in an Ethernet network. Thus, the panel PCs do not require modification of existing Ethernet cabling infrastructure and do not require a dedicated power source; making deployment fast, simple, and highly cost-effective. For added convenience and versatility, the PPC-FxxD-ULT5 panel PC with PoE function and P-CAP touchscreen can be mounted in panel, on wall or desktop.

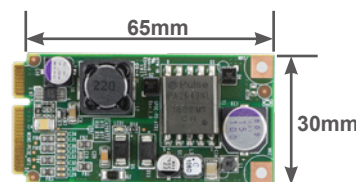
GPOE-PD-BT01-R10

- Support PoE IEEE802.3 af/at/bt
- Support up to 71 watt PD
- PCIe Mini form factor (IEI defined pinouts)



GPOE-PD-AT01-R10

- Support PoE IEEE802.3 af/at
- Support up to 25.5 watt PD
- PCIe Mini form factor (IEI defined pinouts)



» Modular Architecture



High Flexibility

The panel modules (available in 6 sizes) installed on the box PC can be swapped to provide up to 7 platform solutions for diverse applications



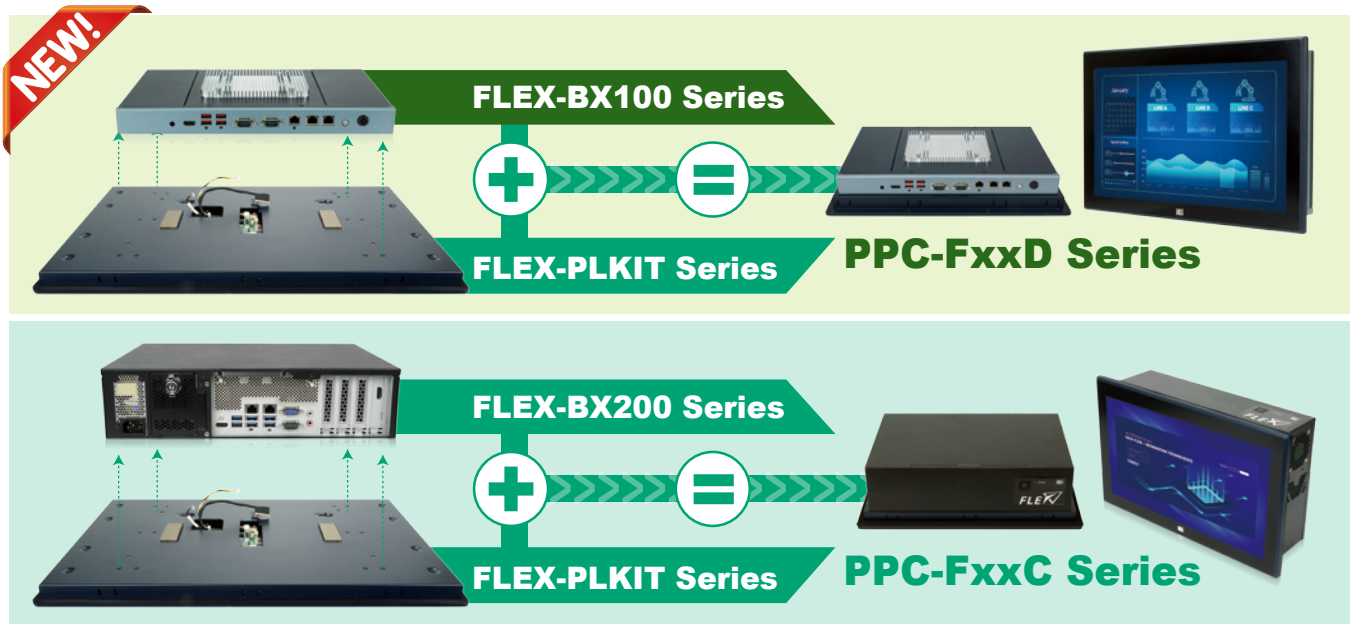
Quick Maintenance

The defective module can be separated and replaced with a new module on site; there is no need to unmount the whole system, guaranteeing minimum downtime.



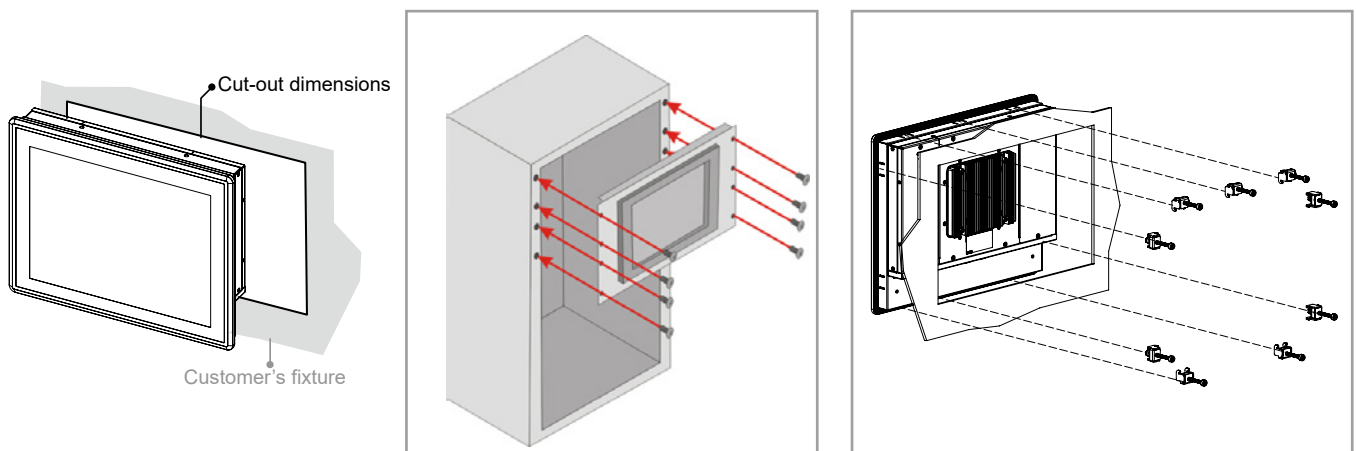
Faster Time to Market

Build the system upon specific hardware (CPU, memory, add-on-card, etc.) requirement with faster time-to-market, reducing total cost of ownership for solution providers.



» Backward-Compatible with PPC-F series

The cutout size of PPC-FxxD series is backward compatible with PPC-F series in panel mounting. There is no need to build a new fixture to integrate the PPC-FxxD series and it is easy to upgrade the performance from 4th Gen Intel® Core™ to 8th Gen Intel® Core™ with existing fixture.



PPC-F-ULT5 Series Selection Guide

New



New



New



LCD Size		15"	15.6"	17"
Model		PPC-F15D-ULT5	PPC-FW15D-ULT5	PPC-F17D-ULT5
TFT LCD	LCD Size	15"	15.6"	17"
	Max. Resolution	1024 x768	1366x768	1280x1024
	Brightness (cd/m ²)	450	400	350
	Contrast Ratio	800:1	500:1	1000:1
	LCD Color	16.2M	16.2M	16.7M
	Pixel Pitch (mm)	0.29 x 0.29	0.252 x 0.252	0.26 x 0.26
	Viewing Angle (H/V)	160°/150°	170°/160°	170°/160°
	Backlight MTBF (Hrs)	70,000	50,000	50,000
Touch Screen	Touchscreen Type	Projected capacitive type with 10-point multitouch and anti-glare coating		
	Touch Controller	EETI EXC3000		
System	CPU	8th Generation Intel® Core™ i5-8365U 4.10GHz 8th Generation Intel® Celeron® 4205U 2.00GHz		
	Memory	2 x 260-pin 2400 MHz dual-channel DDR4 unbuffered SO-DIMM supporting up to 32GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, 4K codec decode		
	Ethernet	2 x Intel® I211, 1 x Intel® I219		
Storage	2.5" HDD/SSD SATA 6Gb/s bay			
I/O Ports and Switches	4 x USB 3.2 Gen 2 (10Gbps) 1 x HDMI output 1 x RS-232/422/485 1 x RS-232 3 x GbE LAN (2 for PoE PD GbE LAN)		1 x 12V DC jack 1 x Power switch with LED indicator (blue) 1 x AT/ATX switch 1 x Line-out 1 x Reset button	
	Expansion Slots	1 x NGFF M.2 2230 A Key (PCIe x1, USB signal) 1 x NGFF M.2 2280 M Key (support PCIe 3.0 x4 NVMe) 2 x PoE PD module socket (by IEI pin definition)		
Thermal Solution	Fanless			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	Dimensions (mm) (W x H x D)	378.5 x 303 x 75	400.1 x 253.3 x 77.1	408.4 x 341.4 x 75.6
	Cutout Dimensions (W x H) (mm)	361.1 x 285.6	379.1 x 232.3	391 x 324
	Net Weight (kg)	6.1	7.1	7.2
	Color	PANTONE 296 C		
	Front Frame	Aluminum die-casting		
	Rear Cover	Sheet metal		
	Mounting	Wall mount, Panel mount, Rack mount		
Environmental	Operating Temp.	-10°C ~ 50°C (with air flow)		
	Storage Temp.	-20°C ~ 60°C		
	Humidity	10% ~ 95% (non-condensing)		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
Power Input	12V DC input			

PPC-F-ULT5 Series Selection Guide



LCD Size		18.5"	21.5"	23.8"
Model		PPC-FW19D-ULT5	PPC-FW22D-ULT5	PPC-FW24D-ULT5
TFT LCD	LCD Size	18.5"	21.5"	23.8"
	Max. Resolution	1366 x 768	1920 x 1080	1920 x 1080
	Brightness (cd/m ²)	400	250	250
	Contrast Ratio	1000:1	1000:1	3000:1
	LCD Color	16.7M	16.7M	16.7M
	Pixel Pitch (mm)	0.3 x 0.3	0.25 x 0.25	0.274 x 0.274
	Viewing Angle (H/V)	170°/160°	170°/160°	178°/178°
	Backlight MTBF (Hrs)	50,000	30,000	30,000
Touch Screen	Touchscreen Type	Projected capacitive type with 10-point multitouch and anti-glare coating		
	Touch Controller	EETI EXC3000		
System	CPU	8th Generation Intel® Core™ i5-8365U 4.10GHz 8th Generation Intel® Celeron® 4205U 2.00GHz		
	Memory	2 x 260-pin 2400 MHz dual-channel DDR4 unbuffered SO-DIMM supporting up to 32GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, 4K codec decode		
	Ethernet	2 x Intel® I211, 1 x Intel® I219		
Storage	2.5" HDD/SSD SATA 6Gb/s bay			
I/O Ports and Switches	4 x USB 3.2 Gen 2 (10Gbps) 1 x HDMI output 1 x RS-232/422/485 1 x RS-232 3 x GbE LAN (2 for PoE PD GbE LAN)	1 x 12V DC jack 1 x Power switch with LED indicator (blue) 1 x AT/ATX switch 1 x Line-out 1 x Reset button		
Expansion Slots	NGFF M.2 (2230/2280) A/E Key, M Key sockets (support NVMe SSD)			
Thermal Solution	Fanless			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	Dimensions (mm) (W x H x D)	469.8 x 289.2 x 76.9	550.4 x 358.4 x 74.4	600 x 382 x 75.56
	Cutout Dimensions (mm)	447.8 x 257.2	340 x 532	358.6 x 576.6
	Net Weight (kgs)	7.3	9.4	10.8
	Color	PANTONE 296 C		
	Front Frame	Aluminum die-casting		
	Rear Cover	Sheet metal		
	Mounting	Wall mount, Panel mount, Rack mount	Wall mount, Panel mount	
Environmental	Operating Temp.	-10°C ~ 50°C (with air flow)		
	Storage Temp.	-20°C ~ 60°C		
	Humidity	10% ~ 95% (non-condensing)		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
Power Supply	12V DC input			

PPC-F-ULT5

NEW

15"~17" Panel PC Based on Intel® Whiskey Lake ULT Processor

Features

- 15"~17" Panel PC with Intel® Whiskey Lake Core™ i5-8365U, Intel® Celeron® 4205U
- Low power consumption and fanless design
- IP66-rated front panel for water and dust resistance
- Modular architecture
- VESA 100 mm standard mounting holes for varied mounting demands
- Support PoE PD power
- Support NVMe SSD



Specifications

Model		PPC-F15D-ULT5	PPC-FW15D-ULT5	PPC-F17D-ULT5
TFT LCD	LCD Size	15"	15.6"	17"
	Max. Resolution	1024 x768	1366x768	1280x1024
	Brightness (cd/m ²)	450	400	350
	Contrast Ratio	800:1	500:1	1000:1
	LCD Color	16.2M	16.2M	16.7M
	Pixel Pitch (mm)	0.29 x 0.29	0.252 x 0.252	0.26 x 0.26
	Viewing Angle (H/V)	160°/150°	170°/160°	170°/160°
	Backlight MTBF (Hrs)	70,000	50,000	50,000
Touch Screen	Touchscreen Type	Projected capacitive type with 10-point multitouch and anti-glare coating		
	Touch Controller	EETI EXC3000		
System	CPU	8th Generation Intel® Core™ i5-8365U 4.10GHz 8th Generation Intel® Celeron® 4205U 2.00GHz		
	Memory	2 x 260-pin 2400 MHz dual-channel DDR4 unbuffered SO-DIMM supporting up to 32GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, 4K codec decode		
	Ethernet	2 x Intel® I211, 1 x Intel® I219		
Storage	2.5" HDD/SSD SATA 6Gb/s bay			
I/O Ports and Switches	4 x USB 3.2 Gen 2 (10Gbps)		1 x 12V DC jack	
	1 x HDMI output		1 x Power switch with LED indicator (blue)	
	1 x RS-232/422/485		1 x AT/ATX switch	
	1 x RS-232		1 x Line-out	
	3 x GbE LAN (2 for PoE PD GbE LAN)		1 x Reset button	
Expansion Slots	1 x NGFF M.2 2230 A Key (PCIe x1, USB signal) 1 x NGFF M.2 2280 M Key (support PCIe 3.0 x4 NVMe) 2 x PoE PD module socket (by IEI pin definition)			
Thermal Solution	Fanless			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	Dimensions (mm) (W x H x D)	378.5 x 303 x 75	400.1 x 253.3 x 77.1	408.4 x 341.4 x 75.6
	Cutout Dimensions (W x H) (mm)	361.1 x 285.6	379.1 x 232.3	391 x 324
	Net Weight (kg)	6.1	7.1	7.2
	Color	PANTONE 296 C		
	Front Frame	Aluminum die-casting		
	Rear Cover	Sheet metal		
	Mounting	Wall mount, Panel mount, Rack mount		
Environmental	Operating Temp.	-10°C ~ 50°C (with air flow)		
	Storage Temp.	-20°C ~ 60°C		
	Humidity	10% ~ 95% (non-condensing)		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
Power Input	12V DC input			

PPC-F-ULT5

NEW

18.5"~23.8" Panel PC Based on Intel® Whiskey Lake ULT Processor

Features

- 18.5"~ 23.8" Panel PC with Intel® Whiskey Lake Core™ i5-8365U, Intel® Celeron® 4205U
- Low power consumption and fanless design
- IP66-rated front panel for water and dust resistance
- Modular architecture
- VESA 100 mm standard mounting holes for varied mounting demands
- Support PoE PD power
- Support NVMe SSD



Specifications

Model		PPC-FW19D-ULT5	PPC-FW22D-ULT5	PPC-FW24D-ULT5
TFT LCD	LCD Size	18.5"	21.5"	23.8"
	Max. Resolution	1366x768	1920x1080	1920x1080
	Brightness (cd/m ²)	400	250	250
	Contrast Ratio	1000:1	1000:1	3000:1
	LCD Color	16.7M	16.7M	16.7M
	Pixel Pitch (mm)	0.3 x 0.3	0.25 x 0.25	0.274 x 0.274
	Viewing Angle (H/V)	170°/160°	170°/160°	178°/178°
	Backlight MTBF (Hrs)	50,000	30,000	30,000
Touch Screen	Touchscreen Type	Projected capacitive type with 10-point multitouch and anti-glare coating		
	Touch Controller	EETI EXC3000		
System	CPU	8th Generation Intel® Core™ i5-8365U 4.10GHz 8th Generation Intel® Celeron® 4205U 2.00GHz		
	Memory	2 x 260-pin 2400 MHz dual-channel DDR4 unbuffered SO-DIMM supporting up to 32GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, 4K codec decode		
	Ethernet	2 x Intel® I211, 1 x Intel® I219		
Storage	2.5" HDD/SSD SATA 6Gb/s bay			
I/O Ports and Switches		4 x USB 3.2 Gen 2 (10Gbps)	1 x 12V DC jack	
		1 x HDMI output	1 x Power switch with LED indicator (blue)	
		1 x RS-232/422/485	1 x AT/ATX switch	
		1 x RS-232	1 x Line-out	
		3 x GbE LAN (2 for PoE PD GbE LAN)	1 x Reset button	
Expansion Slots	NGFF M.2(2230/2280) A/E Key, M Key sockets (support NVMe SSD)			
Thermal Solution	Fanless			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	Dimensions (mm) (W x H x D)	469.8 x 289.2 x 76.9	550.4 x 358.4 x 74.4	600 x 382 x 75.56
	Cutout Dimensions (mm)	447.8 x 257.2	340 x 532	358.6 x 576.6
	Net Weight (kgs)	7.3	9.4	10.8
	Color	PANTONE 296 C		
	Front Frame	Aluminum die-casting		
	Rear Cover	Sheet metal		
	Mounting	Wall mount, Panel mount, Rack mount	Wall mount, Panel mount	
Environmental	Operating Temp.	-10°C ~ 50°C (with air flow)		
	Storage Temp.	-20°C ~ 60°C		
	Humidity	10% ~ 95% (non-condensing)		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
Power Supply	12V DC input			

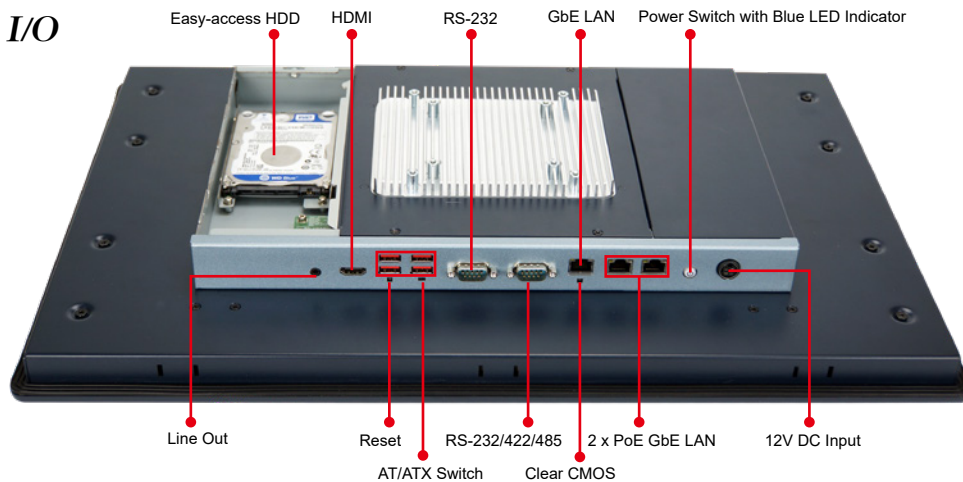
Ordering Information

	Part No.	Description
BOX PC	FLEX-BX100-ULT5-i5/4G-R10	Fanless embedded system with 14nm 8th gen. Intel® Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), one 4GB DDR4 RAM, 12VDC input, R10
	FLEX-BX100-ULT5-C/4G-R10	Fanless embedded system with 14nm 8th gen. Intel® Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), one 4GB DDR4 RAM, 12VDC input, R10
15"	PPC-F15D-ULT5-i5/4G/PC-R10	15" 450 cd/m ² 1024 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-F15D-ULT5-C/4G/PC-R10	15" 450 cd/m ² 1024 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
15.6"	PPC-FW15D-ULT5-i5/4G/PC-R10	15.6" 400 cd/m ² 1366 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-FW15D-ULT5-C/4G/PC-R10	15.6" 400 cd/m ² 1366 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
17"	PPC-F17D-ULT5-i5/4G/PC-R10	17" 350 cd/m ² 1280 x 1024 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-F17D-ULT5-C/4G/PC-R10	17" 350 cd/m ² 1280 x 1024 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
18.5"	PPC-FW19D-ULT5-i5/4G/PC-R10	18.5" 400 cd/m ² 1366 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-FW19D-ULT5-C/4G/PC-R10	18.5" 400 cd/m ² 1366 x 768 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
21.5"	PPC-FW22D-ULT5-i5/4G/PC-R10	21.5" 250 cd/m ² 1920 x 1080 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-FW22D-ULT5-C/4G/PC-R10	21.5" 250 cd/m ² 1920 x 1080 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
23.8"	PPC-FW24D-ULT5-i5/4G/PC-R10	23.8" 250 cd/m ² 1920 x 1080 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Core™ i5-8365UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10
	PPC-FW24D-ULT5-C/4G/PC-R10	23.8" 250 cd/m ² 1920 x 1080 Panel PC with 14nm 8th gen. Intel®h Whiskey Lake Celeron® 4205UE TDP 15W on-board Processor (ULT), 4GB DDR4 RAM x1, 12VDC input, PCAP touch with AG, R10

Options

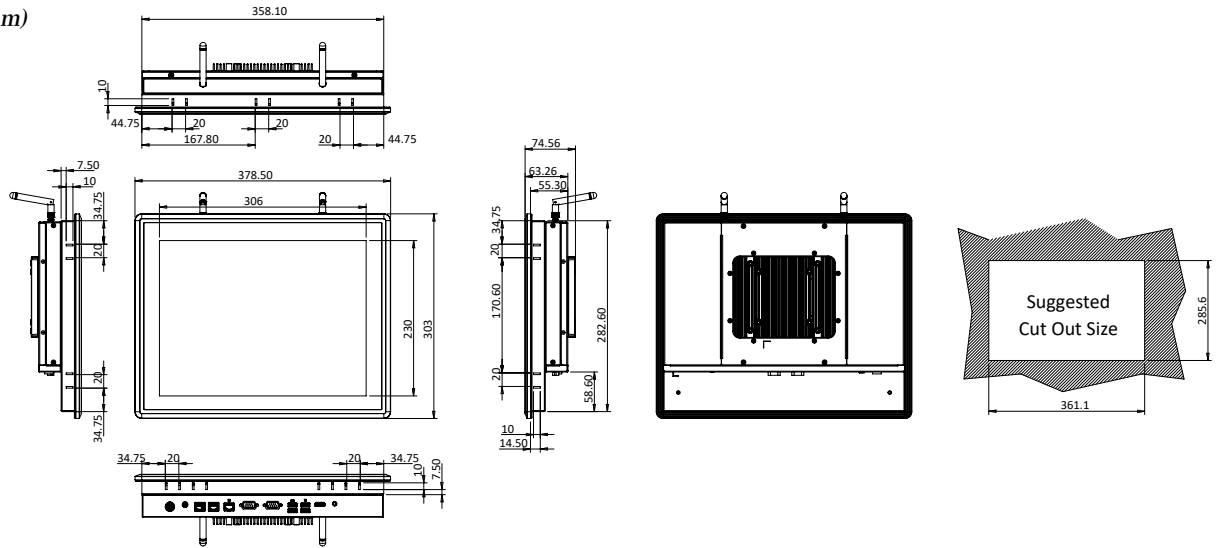
Item	PPC-F15D	PPC-FW15D	PPC-F17D	PPC-FW19D	PPC-FW22D	PPC-FW24D
Arm	ARM-31-RS					
Stand	SAND-A21-R10 STAND-C19-R10					
Wall Mount Kit	WK-190MS-R10					
Panel Mount Kit	FPK-12-R10	FPK-14-R10	FPK-13-R10	FPK-13-R10	FPK-13-R10	FPK-14-R10
Rack Mount Kit	FRK15C-R10	FRKW15C-R10	FRK17C-R10	FRKW19C-R10	N.A.	N.A.
PoE PD Kit	GPOE-PD-AT01-R10 (PoE IEEE802.3 af/at, 25.5W) GPOE-PD-BT01-R10 (PoE IEEE802.3 af/at/bt, 71W)					
WiFi Kit	EMB-WIFI-KIT03E-R10 (2T2R, 802.11 ac/a/b/g/n and BT V4.1, NGFF 2230 Type A-E)					

Fully Integrated I/O



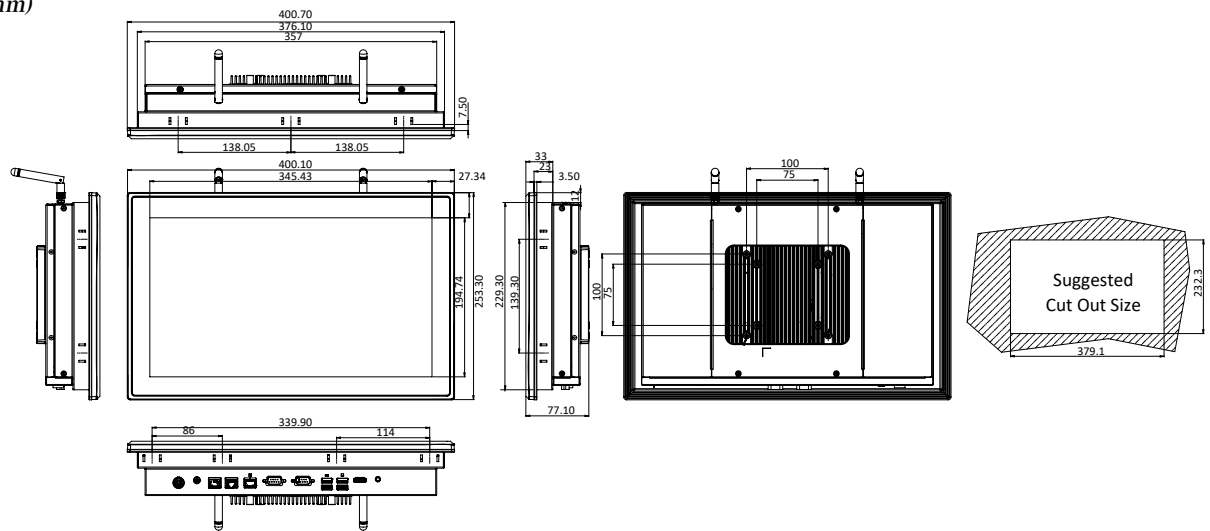
PPC-F15D-ULT5 Dimensions

(Unit: mm)



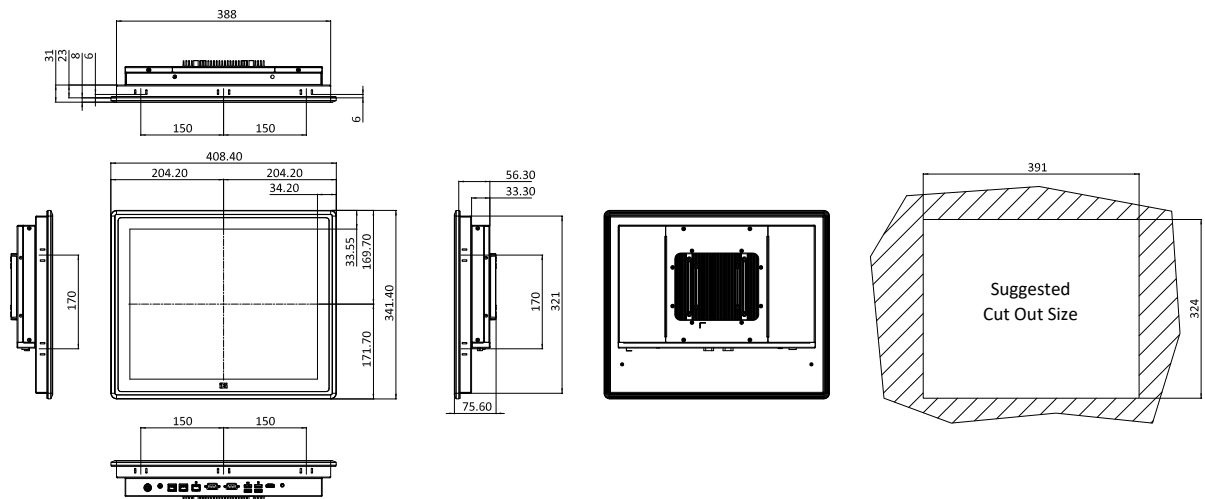
PPC-FW15D-ULT5 Dimensions

(Unit: mm)



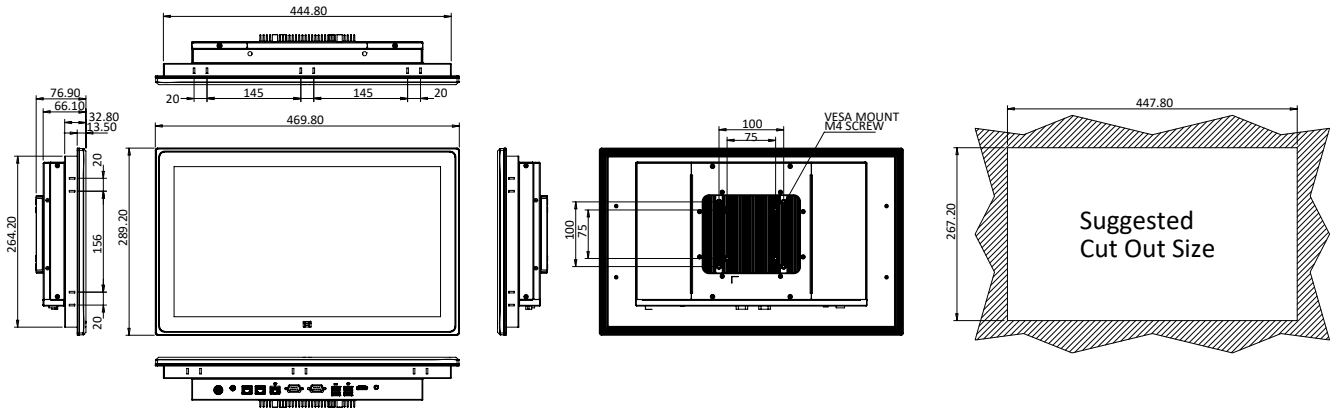
PPC-F17D-ULT5 Dimensions

(Unit: mm)



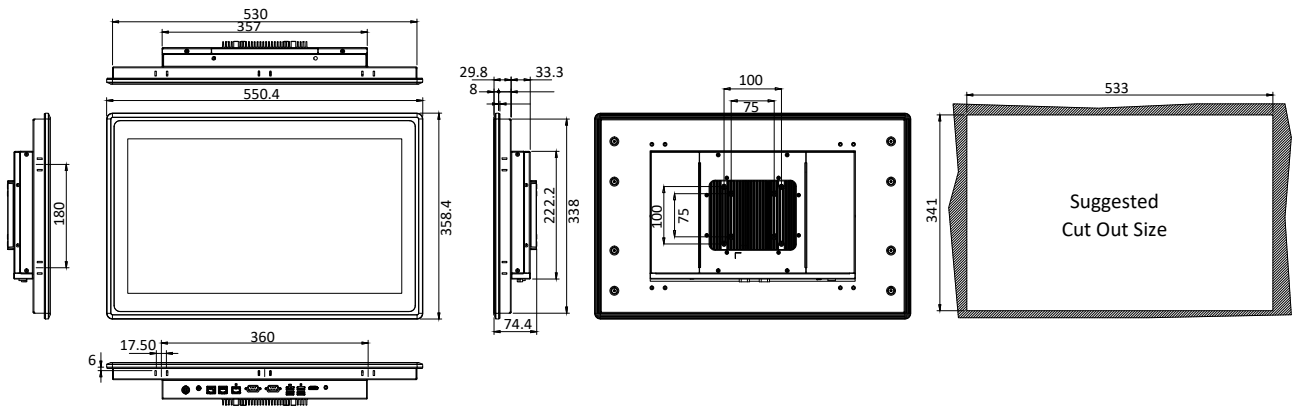
PPC-FW19D-ULT5 Dimensions

(Unit: mm)



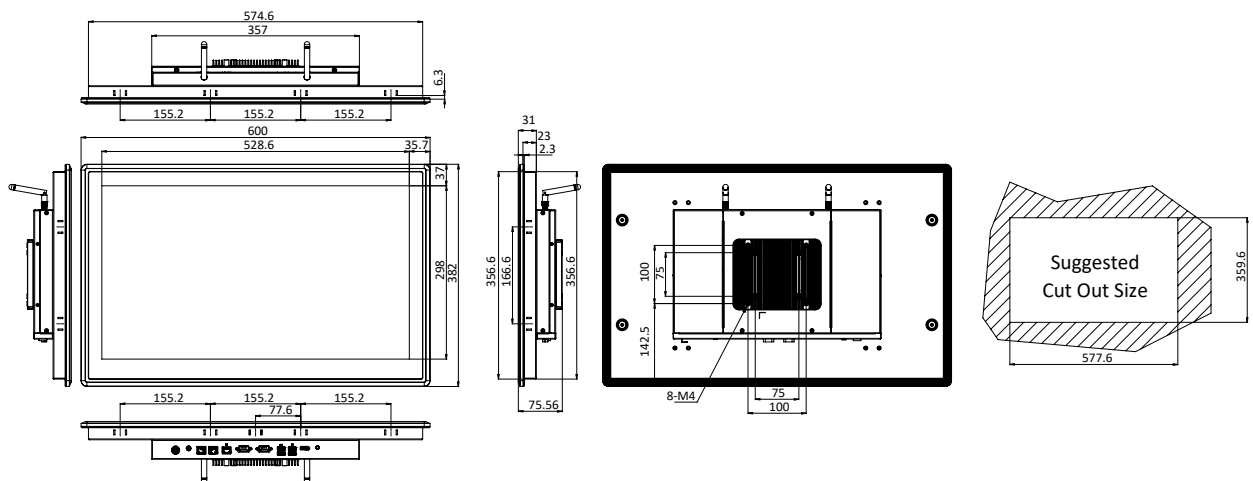
PPC-FW22D-ULT5 Dimensions

(Unit: mm)



PPC-FW24D-ULT5 Dimensions

(Unit: mm)



PPC-F-Q370 Series

» 8th Generation Intel® Core™ Desktop Processors

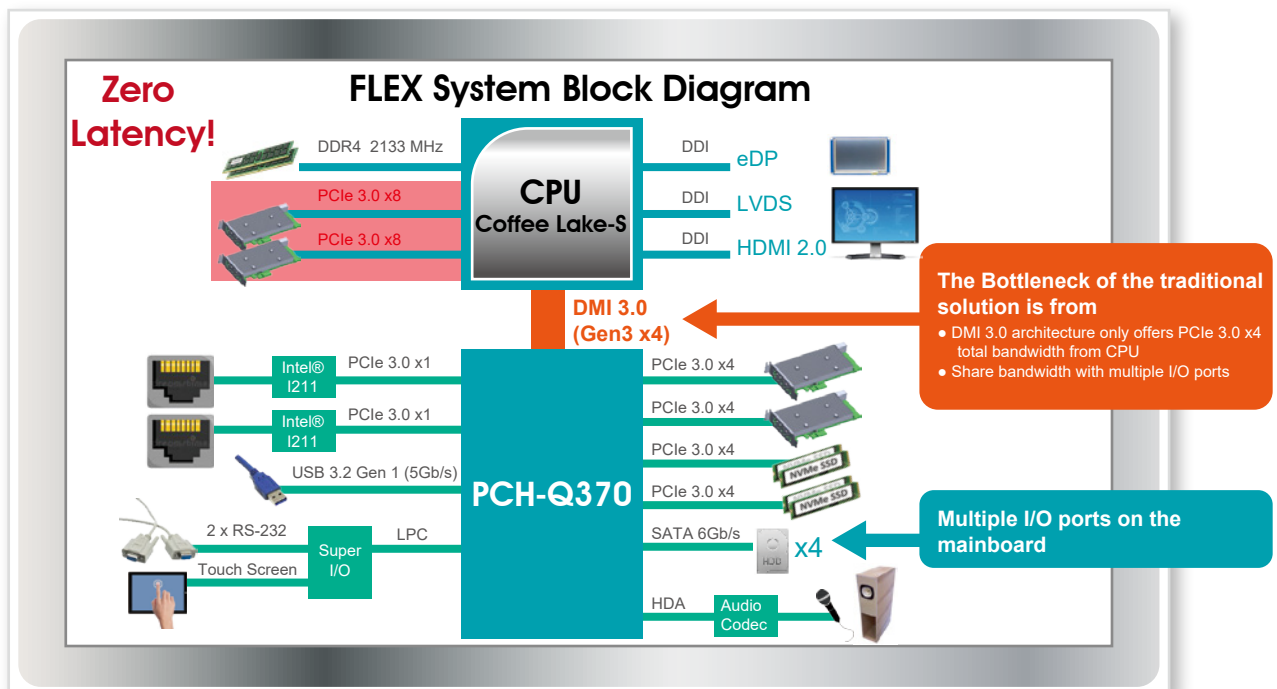
IEI FLEX series adopts the 8th Generation Intel® Core™ desktop processor, of which the Core i7 is moving to six cores with Hyper Threading, Core i5 is moving to six cores, and Core i3 is moving to four cores. The equipped LGA 1151 socket supports a wide range of performance options up to 65W TDP processors. The dual DDR4 DIMM slots with more direct trace routes support up to 64GB of memory.



CPU Generation	P/N	Lithography	# of Cores	# of Threads	Frequency	TDP
8th Gen. Intel® Coffee Lake	i7-8700T	14nm	6	12	2.40GHz	35W
	i5-8500	14nm	6	6	3.0GHz	65W
	i5-8500T	14nm	6	6	2.10GHz	35W
	i3-8100T	14nm	4	4	2.40GHz	35W
	P-G5400T	14nm	2	4	3.10GHz	35W
7th Gen. Intel® Kaby Lake	i7-7700T	14nm	4	8	2.90GHz	35W
	i5-7500T	14nm	4	4	2.70GHz	35W
	i3-7100T	14nm	2	4	3.40GHz	35W
	C-G4900T	14nm	2	2	2.9GHz	35W

» Breakthrough the Bottleneck of DMI 3.0

The signal of the two PCIe 3.0 by 8 slots directly connect to CPU instead of DMI 3.0 channel. By doing this, the PCIe 3.0 x8 add-on cards can run with lower latency and achieve complete AI card performance.

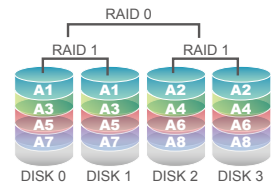
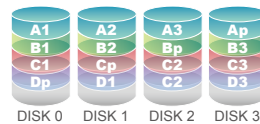
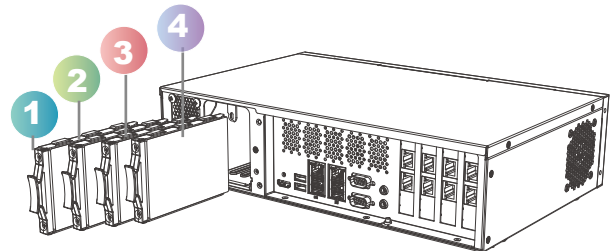


» 4-Bay Hot-Swappable HDD RAID 0/1/5/10 Protection

The FLEX series offers four 2.5" HDD bays with high speed SATA 6Gb/s interface that can expand storage capabilities and enable fast data transfers. The equipped Intel Q370 chipset provides reliable and high performance hardware RAID protection to back-up your media and critical information. You can configure the RAID 0/1/5/10 from the BIOS menu to increase performance and/or provide automatic protection against data loss from drive failure.

What type of RAID do I need?

- RAID 0 (Striping) -The highest performing level
- RAID 1 (Mirroring) -Data safety
- RAID 5 (Distributed Parity)-offers both data safety and performance
- RAID 10 (combining mirroring and striping) data safety and big data volume



Features	RAID 0	RAID 1	RAID 5	RAID 10
Minimum # Drives	2	2	3	4
Data Protection	No	Single-drive failure	Single-drive failure	Up to one disk failure in each sub-array
Capacity Utilization	100%	50%	67%-94%	50%
Typical Application	High end workstations, data logging, real-time rendering, very transitory data	Operating system, transaction database	Data warehousing, web serving, archiving	Fast databases, appliaction servers

» Secured and Strong HDD Bays



STEP 1
Unlock the HDD cover with the secured key



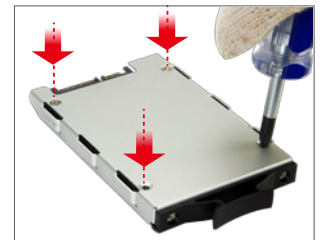
STEP 2
Open the HDD cover and you will see four drive trays



STEP 3
Pull out one of the drive trays



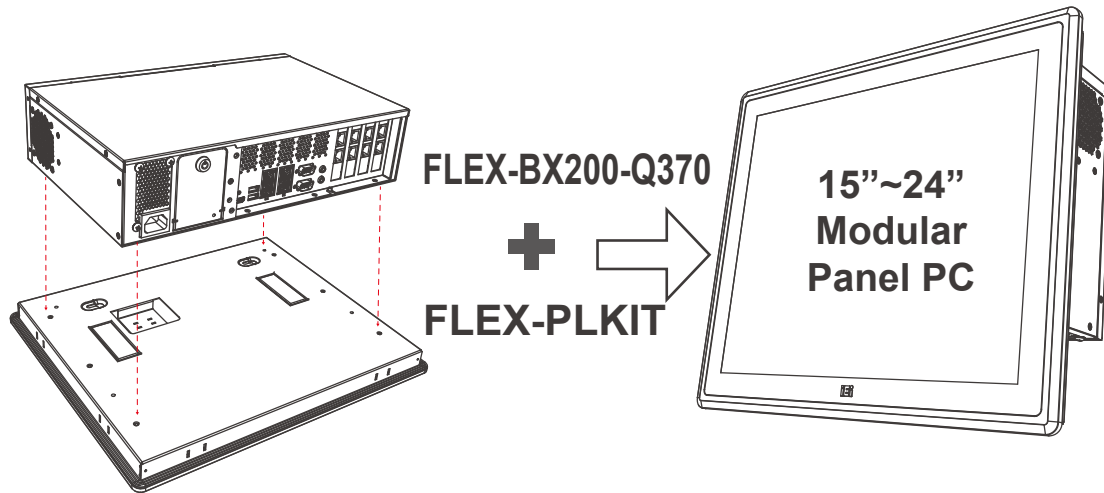
STEP 4
Mount the 2.5" SATA HDD /SSD on to the mounting bracket with 4 screws on the bottom of the drive enclosure



STEP 5
Slide the hard drive together with the bracket till the drive is fully inserted into the SATA connector

» Modular Architecture

- Cut-out dimensions are backward compatible to PPC-F series, easy to upgrade your existing project
- More than 12 SKUs by various monitor choices: 15"/17"/15.6"/18.5"/22"/24"
- PCAP touch screen
- 250W/350W DC power supply
- Easy assembly and maintenance
- One-stop shopping and building your own system to accelerate time to market

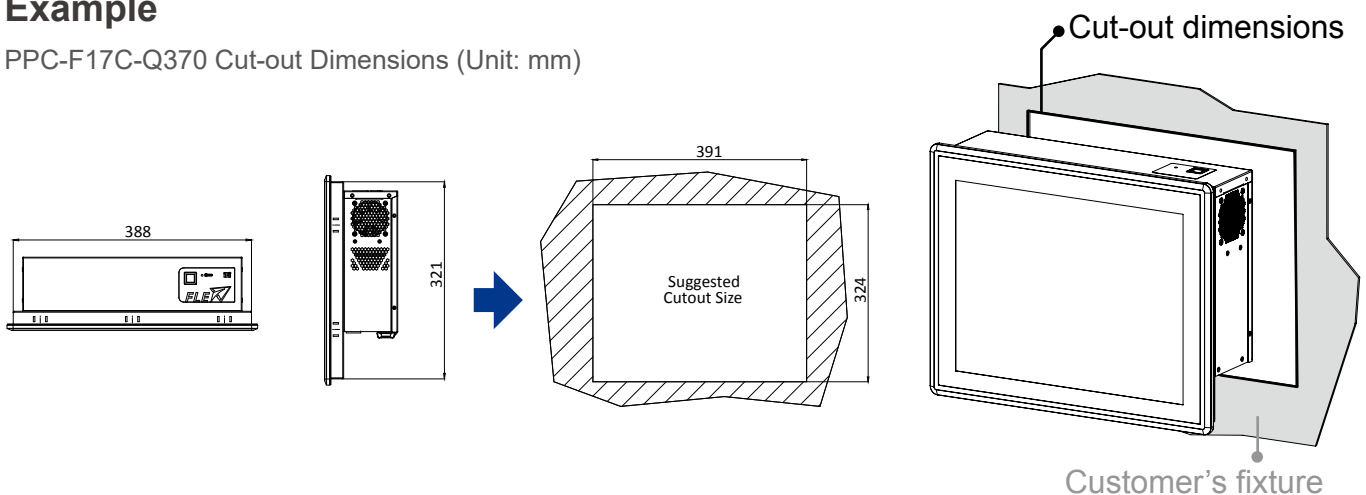


» Backward Compatible with PPC-F-Q370 Series

The cutout size of the PPC-FxxC series is backward compatible with the previous PPC-F series in panel mounting. There is no need to build a new fixture for the PPC-FxxC series, making it easy to upgrade the performance from 4th Gen. Intel® Core™ to 8th Gen. Intel® Core™ with the existing fixture.

Example

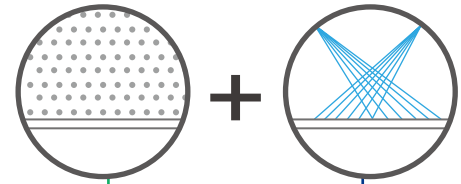
PPC-F17C-Q370 Cut-out Dimensions (Unit: mm)



» IP66 Front Panel Protection

PPC-FxxC series provides front mechanical IP dust and water resistant design. The sealing concept of PPC-FxxC contains the following product sealing to offer rugged IP66 front protection:

- PCAP touchscreen to front aluminum bezel with waterproof glue dispensing
- Internal dust sealing poron from LCD to the touchscreen
- Rubber sealing for mounting to the equipment

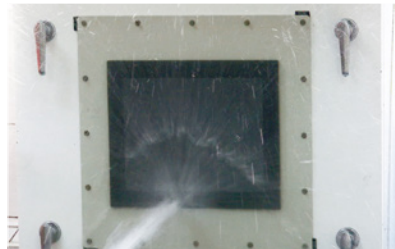


IP 6 6

- Protected against strong jets of water e.g. for use on ship decks - limited ingress permitted
- Totally protected against dust



Test for protection against dust



Test for protection against water

» Anti-glare and UV-resistant Touch Screen Ideal for Outdoor Applications

Etching anti-glare, never peel off!

The PPC-FxxC series is built with anti-glare touch screen, which has lower reflection compared to normal touch screen. The reflection will reduce from 8% to 1% and it will eliminate the interference of shine and lights on displays and improve the screen clarity.



Without AG

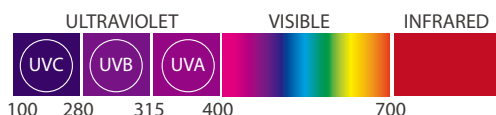
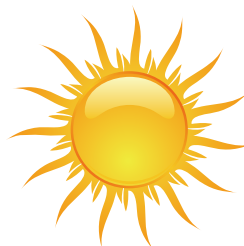


With AG

UV-resistant ensures reliable continuous operation for mission critical applications

Outdoor applications exposing to direct sunlight and long-term ultraviolet (UV) light will affect PCAP panel appearance such as PCAP top glass hard coat cracking and hazing, or varying degrees of yellowing and bubbling. Thus, IEI offers a UV resistant PCAP touch solution to equip outdoor industrial systems exposed to direct long-term sunlight with anti-UV characteristics.

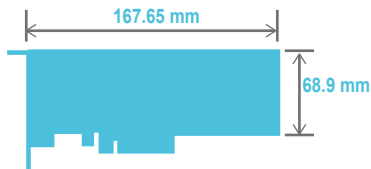
- Blocks UV wavelengths less than $\approx 340\text{nm}$
- Meets ASTM G154 performance criteria Cycle 1 for 1000 hours



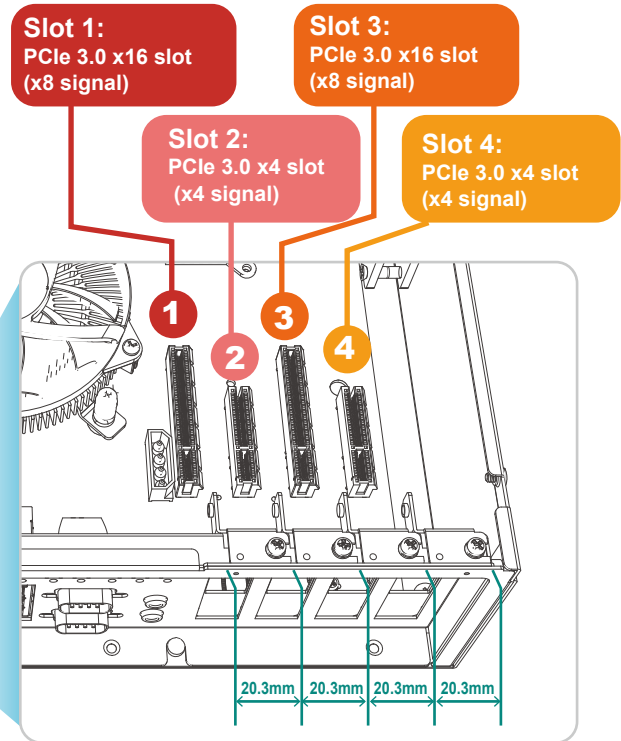
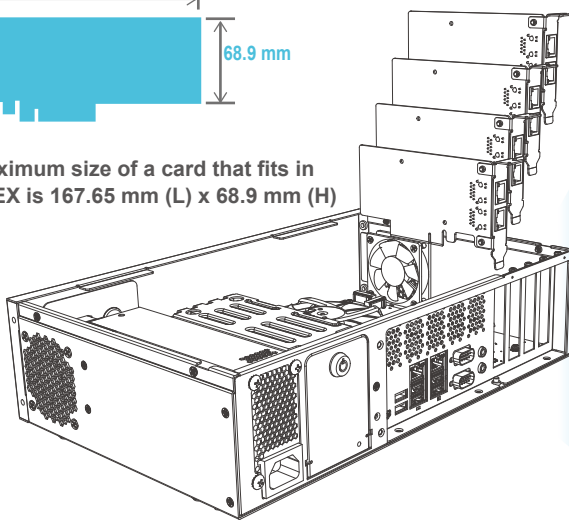
» Four PCIe x4/x8 Low Profile Expansion Slots

The PPC-FxxC series supports multiple PCIe slots including two PCIe 3.0 x8 and two PCIe 3.0 x4 slots, which are compatible with standard low profile add-on cards, to meet different edge inference computing applications.

- **High Speed:** 10GbE card, fiber network card
- **I/O card:** Serial port card, USB card, LAN card, etc.
- **AI accelerating card:** VPU card, FPGA, GPU card, etc.
- **Wireless card:** Wi-Fi card, mobile wireless card, etc.
- **Storage card**



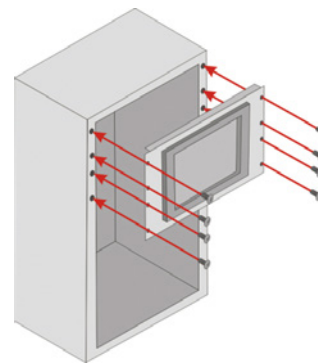
The maximum size of a card that fits in this FLEX is 167.65 mm (L) x 68.9 mm (H)



» Flexible Deployment

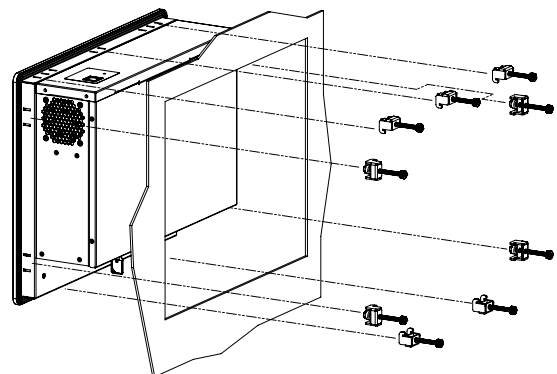
Rack Mount

The PPC-FxxC with rack mounting kit can easily fit the standard 19" cabinet for industrial applications.



Panel Mount

Panel mounting is the mounting way that mounts product into an opening of a customer's fixture from the front and secured from the rear. All user controls are located on the rear of the mechanism, making the panel mount displays a good choice for applications requiring a display with no external or exposed controls such as CNC equipment, gaming, casino system, ATM, and kiosk.



PPC-F-Q370 Series Selection Guide



LCD Size		15"	W15"	17"
Model		PPC-F15C-Q370	PPC-FW15C-Q370	PPC-F17C-Q370
TFT LCD	LCD Size	15"	15.6"	17"
	Max. Resolution	1024x768	1366x768	1280x1024
	Brightness (cd/m ²)	450	400	350
	Contrast Ratio	800:1	500:1	1000:1
	LCD Color	16.2M	16.2M	16.7M
	Viewing Angle (H/V)	160°/150°	170°/160°	170°/160°
	Backlight MTBF (Hrs)	70,000	50,000	50,000
Touch Screen		PCAP touch with 10-point multitouch, anti-glare coating		
Mainboard	CPU	8th Generation Intel® Core™ i7/i5/i3 and Pentium® processor in the LGA 1151 package		
	Chipset	Intel® Q370 Chipset		
	Memory	2 x 288-pin 2666/2400 MHz dual-channel DDR4 unbuffered DIMM slot supporting up to 64GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, supports DX2015, OpenGL 5.X and OpenCL 2 x, ES 2.0		
	Ethernet	Intel® I211 controller		
Storage		(1) 4 x Accessible 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1/5/10 support) with LED indicator (2) 2 x M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD socket		
I/O Ports and Switches		1 x HDMI output 2 x GbE LAN 6 x USB 3.2 Gen 1 (5Gb/s) Type-A 2 x RS-232 DB-9 type 1 x Mic in 1 x Line out 1 x AC power in Inlet Power button with power LED (power on=Blue) AT/ATX mode switch Reset button		
Expansion Slots		2 x PCIe 3.0 by 8 (by 16 slot) 2 x PCIe 3.0 by 4 (maximum card size supported: 68 mm x 167 mm)		
Thermal Solution		Smart Fan		
Power Supply		AC input ATX power supply 1. 250W power supply - Input: 115VAC~230VAC, 50/60Hz - Output (max.): 3.3V@12A, 5V@14A, 12V@25A, -12V@0.3A,+5Vsb@3A 2. 350W power supply (Build to Order) - Input: 115VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@29A, -12V@0.3A,+5Vsb@3A -Efficiency: Full load (100%) 87%, Typical load (50%) 90%, Light load (20%) 87%		
Watchdog Timer		Software Programmable support 1~255 sec. system reset		
Construction	IP Rating	IP66-rated front panel		
	Chassis Construction	Metal Housing		
	Mounting	Rack/Panel Mount		
	Color	Front Bezel : Cyan-blue (PSM 296C), Others: Black C		
	Cut-out dimensions (LxDxH) (mm)	361.1 x 285.6	379.1 x 232.3	391 x 324
	Dimensions (LxDxH) (mm)	378.5 x 303 x 118	400.1 x 253.3 x 121	408.4 x 341.4 x 119
Environmental	Operating Temperature	-20°C ~ 50°C (with SSD and up to TDP 65W processor) -20°C ~ 40°C (with HDD or add-on cards without fan)		
	Storage Temperature	-30°C ~ 60°C		
	Operating Humidity	5% ~95%, non-condensing		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		

PPC-F-Q370 Series Selection Guide



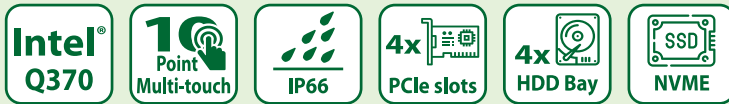
LCD Size		18.5"	21.5"	23.8"
Model		PPC-FW19C-Q370	PPC-FW22C-Q370	PPC-FW24C-Q370
TFT LCD	LCD Size	18.5"	21.5"	23.8"
	Max. Resolution	1366x768	1920x1080	1920x1080
	Brightness (cd/m ²)	400	250	250
	Contrast Ratio	1000:1	1000:1	3000:1
	LCD Color	16.7M	16.7M	16.7M
	Viewing Angle (H/V)	170°/160°	170°/160°	178°/178°
	Backlight MTBF (Hrs)	50,000	30,000	30,000
Touch Screen		PCAP touch with 10-point multitouch, anti-glare coating		
Mainboard	CPU	8th Generation Intel® Core™ i7/i5/i3 and Pentium® processor in the LGA 1151 package		
	Chipset	Intel® Q370 Chipset		
	Memory	2 x 288-pin 2666/2400 MHz dual-channel DDR4 unbuffered DIMM slot supporting up to 64GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, supports DX2015, OpenGL 5.X and OpenCL 2 x, ES 2.0		
	Ethernet	Intel® I211 controller		
Storage		(1) 4 x Accessible 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1/5/10 support) with LED indicator (2) 2 x M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD socket		
I/O Ports and Switches		1 x HDMI output 2 x GbE LAN 6 x USB 3.2 Gen 1 (5Gb/s) Type-A 2 x RS-232 DB-9 type 1 x Mic in	1 x Line out 1 x AC power in Inlet Power button with power LED (power on=Blue) AT/ATX mode switch Reset button	
Expansion Slots		2 x PCIe 3.0 by 8 (by 16 slot) 2 x PCIe 3.0 by 4 (maximum card size supported: 68 mm x 167 mm)		
Thermal Solution		Smart Fan		
Power Supply		AC input ATX power supply 1. 250W power supply - Input: 115VAC~230VAC, 50/60Hz - Output (max.): 3.3V@12A, 5V@14A, 12V@25A, -12V@0.3A,+5Vsb@3A 2. 350W power supply (Build to Order) - Input: 115VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@29A, -12V@0.3A,+5Vsb@3A -Efficiency: Full load (100%) 87%, Typical load (50%) 90%, Light load (20%) 87%		
Watchdog Timer		Software Programmable support 1~255 sec. system reset		
Construction	IP Rating	IP66-rated front panel		
	Chassis Construction	Metal Housing		
	Mounting	Rack/Panel Mount	Panel Mount	
	Color	Front Bezel : Cyan-blue (PSM 296C), Others: Black C		
	Cut-out dimensions (LxDxH) (mm)	447.8 x 267.2	533 x 341	577.6 x 359.6
	Dimensions (LxDxH) (mm)	469.8 x 289.2 x 120.8	550.4 x 358.4 x 117.8	600 x 356.6 x 119
Environmental	Operating Temperature	-20°C ~ 50°C (with SSD and up to TDP 65W processor) -20°C ~ 40°C (with HDD or add-on cards without fan)		
	Storage Temperature	-30°C ~ 60°C		
	Operating Humidity	5% ~95%, non-condensing		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		

PPC-F-Q370 Series

15"/15.6"/17" AI Ready Panel PC Based on Intel® OpenVINO™ toolkit

Features

- 15"~24" Panel PC with 8th Generation LGA 1151 Intel® Core™ i7/i5/i3 and Pentium® processor
- Four hot-swappable and accessible HDD drive bays, support RAID 0/1/5/10
- Two PCIe 3.0 by 4 and two PCIe 3.0 by 8 slots
- Dual M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD support



Specifications

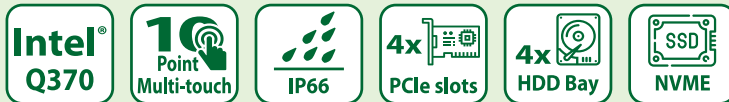
Model		PPC-F15C-Q370	PPC-F17C-Q370	PPC-FW15C-Q370
TFT LCD	LCD Size	15"	17"	15.6"
	Max. Resolution	1024x768	1280x1024	1366x768
	Brightness (cd/m ²)	450	350	400
	Contrast Ratio	800:1	1000:1	500:1
	LCD Color	16.2M	16.7M	16.2M
	Viewing Angle (H/V)	160°/150°	170°/160°	170°/160°
	Backlight MTBF (Hrs)	70,000	50,000	50,000
Touch Screen	PCAP touch with 10-point multitouch, anti-glare coating			
Mainboard	CPU	8th Generation Intel® Core™ i7/i5/i3 and Pentium® processor in the LGA 1151 package		
	Chipset	Intel® Q370 Chipset		
	Memory	2 x 288-pin 2666/2400 MHz dual-channel DDR4 unbuffered DIMM slot supporting up to 64GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, supports DX2015, OpenGL 5.X and OpenCL 2 x, ES 2.0		
Ethernet	Intel® I211 controller			
Storage	(1) 4 x Accessible 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1/5/10 support) with LED indicator (2) 2 x M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD socket			
I/O Ports and Switches	1 x HDMI output 2 x GbE LAN 6 x USB 3.2 Gen 1 (5Gb/s) Type-A 2 x RS-232 DB-9 type 1 x Mic in	1 x Line out 1 x AC power in Inlet Power button with power LED (power on=Blue) AT/ATX mode switch Reset button		
Expansion Slots	2 x PCIe 3.0 by 8 (by 16 slot) 2 x PCIe 3.0 by 4 (maximum card size supported: 68 mm x 167 mm)			
Thermal Solution	Smart Fan			
Power Supply	AC input ATX power supply 1. 250W power supply - Input: 115VAC~230VAC, 50/60Hz - Output (max.): 3.3V@12A, 5V@14A, 12V@25A, -12V@0.3A, +5Vsb@3A 2. 350W power supply (Build to Order) - Input: 115VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@29A, -12V@0.3A, +5Vsb@3A -Efficiency: Full load (100%) 87%, Typical load (50%) 90%, Light load (20%) 87%			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	IP Rating	IP66-rated front panel		
	Chassis Construction	Metal Housing		
	Mounting	Rack/Panel Mount		
	Color	Front Bezel : Cyan-blue (PSM 296C), Others: Black C		
	Cut-out dimensions (LxDxH) (mm)	361.1 x 285.6	391 x 324	379.1 x 232.3
Dimensions (LxDxH) (mm)	378.5 x 303 x 118	408.4 x 341.4 x 119	400.1 x 253.3 x 121	
Environmental	Operating Temperature	-20°C ~ 50°C (with SSD and up to TDP 65W processor) -20°C ~ 40°C (with HDD or add-on cards without fan)		
	Storage Temperature	-30°C ~ 60°C		
	Operating Humidity	5% ~95%, non-condensing		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
Safety and EMC	CE & FCC Class A certified			

PPC-F-Q370 Series

18.5"/21.5"/23.8" AI Ready Panel PC Based on Intel® OpenVINO™ toolkit

Features

- 15"~24" Panel PC with 8th Generation LGA 1151 Intel® Core™ i7/i5/i3 and Pentium® processor
- Four hot-swappable and accessible HDD drive bays, support RAID 0/1/5/10
- Two PCIe 3.0 by 4 and two PCIe 3.0 by 8 slots
- Dual M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD support



Specifications

Model		PPC-FW19C-Q370	PPC-FW22C-Q370	PPC-FW24C-Q370
TFT LCD	LCD Size	18.5"	21.5"	23.8"
	Max. Resolution	1366x768	1920x1080	1920x1080
	Brightness (cd/m ²)	400	250	250
	Contrast Ratio	1000:1	1000:1	3000:1
	LCD Color	16.7M	16.7M	16.7M
	Viewing Angle (H/V)	170°/160°	170°/160°	178°/178°
	Backlight MTBF (Hrs)	50,000	30,000	30,000
Touch Screen	PCAP touch with 10-point multitouch, anti-glare coating			
Mainboard	CPU	8th Generation Intel® Core™ i7/i5/i3 and Pentium® processor in the LGA 1151 package		
	Chipset	Intel® Q370 Chipset		
	Memory	2 x 288-pin 2666/2400 MHz dual-channel DDR4 unbuffered DIMM slot supporting up to 64GB		
	Graphics Engine	Intel® HD Graphics Gen 9 Engines with 16 low-power execution units, supports DX2015, OpenGL 5.X and OpenCL 2.x, ES 2.0		
	Ethernet	Intel® I211 controller		
Storage	(1) 4 x Accessible 2.5" SATA 6Gb/s HDD/SSD bay (RAID 0/1/5/10 support) with LED indicator (2) 2 x M.2 2280 PCIe Gen 3.0 x4 NVMe™ SSD socket			
I/O Ports and Switches	1 x HDMI output 2 x GbE LAN 6 x USB 3.2 Gen 1 (5Gb/s) Type-A 2 x RS-232 DB-9 type 1 x Mic in	1 x Line out 1 x AC power in Inlet Power button with power LED (power on=Blue) AT/ATX mode switch Reset button		
Expansion Slots	2 x PCIe 3.0 by 8 (by 16 slot) 2 x PCIe 3.0 by 4 (maximum card size supported: 68 mm x 167 mm)			
Thermal Solution	Smart Fan			
Power Supply	AC input ATX power supply 1. 250W power supply - Input: 115VAC~230VAC, 50/60Hz - Output (max.): 3.3V@12A, 5V@14A, 12V@25A, -12V@0.3A, +5Vsb@3A 2. 350W power supply (Build to Order) - Input: 115VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@29A, -12V@0.3A, +5Vsb@3A -Efficiency: Full load (100%) 87%, Typical load (50%) 90%, Light load (20%) 87%			
Watchdog Timer	Software Programmable support 1~255 sec. system reset			
Construction	IP Rating	IP66-rated front panel		
	Chassis Construction	Metal Housing		
	Mounting	Rack/Panel Mount	Panel Mount	
	Color	Front Bezel : Cyan-blue (PSM 296C), Others: Black C		
	Cut-out dimensions (LxDxH) (mm)	447.8 x 267.2	533 x 341	577.6 x 359.6
	Dimensions (LxDxH) (mm)	469.8 x 289.2 x 120.8	550.4 x 358.4 x 117.8	600 x 356.6 x 119
Environmental	Operating Temperature	-20°C ~ 50°C (with SSD and up to TDP 65W processor) -20°C ~ 40°C (with HDD or add-on cards without fan)		
	Storage Temperature	-30°C ~ 60°C		
	Operating Humidity	5% ~95%, non-condensing		
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak		
	Shock	10G acceleration part to part (11ms)		
	Safety and EMC	CE & FCC Class A certified		

Ordering Information

	Part No.	Description
15"	PPC-F15C-Q370-P/PC/25-R10	15" 450cd/m ² 1024 x768 AI modular Panel PC , Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F15C-Q370-i3/PC/25-R10	15" 450cd/m ² 1024 x768 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F15C-Q370-i5/PC/25-R10*	15" 450cd/m ² 1024 x768 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F15C-Q370-i7/PC/25-R10*	15" 450cd/m ² 1024 x768 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
17"	PPC-F17C-Q370-P/PC/25-R10	17" 350cd/m ² 1280 x 1024 AI modular Panel PC, Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F17C-Q370-i3/PC/25-R10	17" 350cd/m ² 1280 x 1024 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F17C-Q370-i5/PC/25-R10*	17" 350cd/m ² 1280 x 1024 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-F17C-Q370-i7/PC/25-R10*	17" 350cd/m ² 1280 x 1024 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
15.6"	PPC-FW15C-Q370-P/PC/25-R10	15.6" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW15C-Q370-i3/PC/25-R10	15.6" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW15C-Q370-i5/PC/25-R10*	15.6" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW15C-Q370-i7/PC/25-R10*	15.6" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
18.5"	PPC-FW19C-Q370-P/PC/25-R10	18.5" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW19C-Q370-i3/PC/25-R10	18.5" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10"
	PPC-FW19C-Q370-i5/PC/25-R10*	18.5" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW19C-Q370-i7/PC/25-R10*	18.5" 400cd/m ² 1366 x 768 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
21.5"	PPC-FW22C-Q370-P/PC/25-R10	21.5" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW22C-Q370-i3/PC/25-R10	21.5" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW22C-Q370-i5/PC/25-R10*	21.5" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW22C-Q370-i7/PC/25-R10*	21.5" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
23.8"	PPC-FW24C-Q370-P/PC/25-R10	23.8" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Pentium® Gold G5400T Processor (2-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10"
	PPC-FW24C-Q370-i3/PC/25-R10	23.8" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i3-8100T Processor (4-core, 4-thread, 3.10 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10"
	PPC-FW24C-Q370-i5/PC/25-R10*	23.8" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i5-8500T Processor (6-core, 6-thread, 2.1 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10
	PPC-FW24C-Q370-i7/PC/25-R10*	23.8" 250cd/m ² 1920 x 1080 AI modular Panel PC, Intel® Core™ i7-8700T Processor (6-core,12-thread,2.4 GHz) TDP 35W, two PCIe x4 and two PCIe x8 slots, four HDD bays, 250W PSU, R10"

*Build to order

**350W AC PSU models are by build-to-order manufacturing

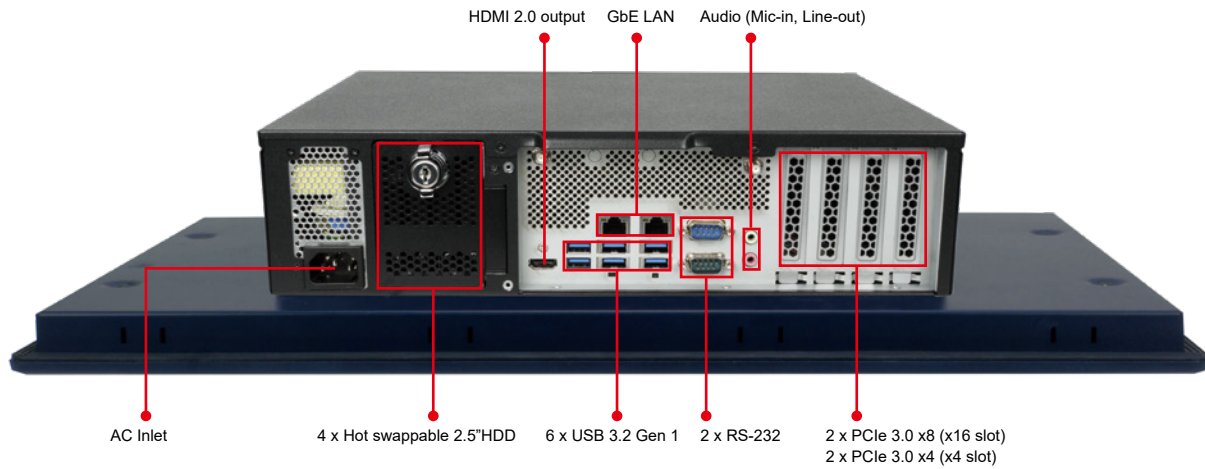
Options

Item	PPC-F15C	PPC-FW15C	PPC-F17C	PPC-FW19C	PPC-FW22C	PPC-FW24C
Panel Mount Kit	FPK-12-R10	FPK-14-R10	FPK-13-R10	FPK-13-R10	FPK-13-R10	FPK-14-R10
Rack Mount Kit	FRK15C-R10	FRKW15C-R10	FRK17C-R10	FRKW19C-R10	N.A.	N.A.

Packing List

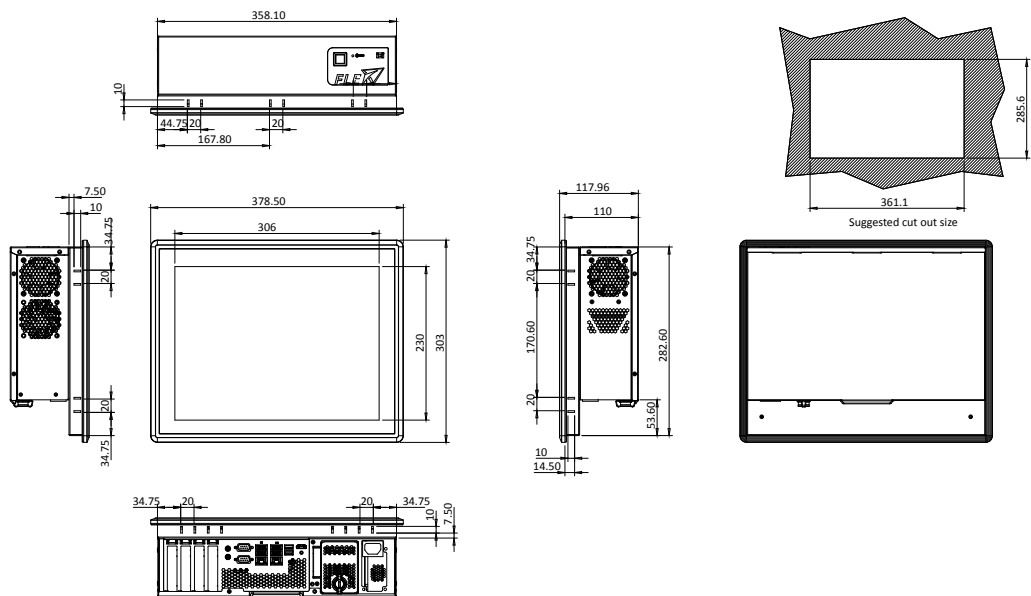
Item	Q'ty	Description
44013-030041-RS	16	Flat head screws for HDD bracket, M3*4
32702-000200-100-RS	1	European power cord, 1830mm

Fully Integrated I/O



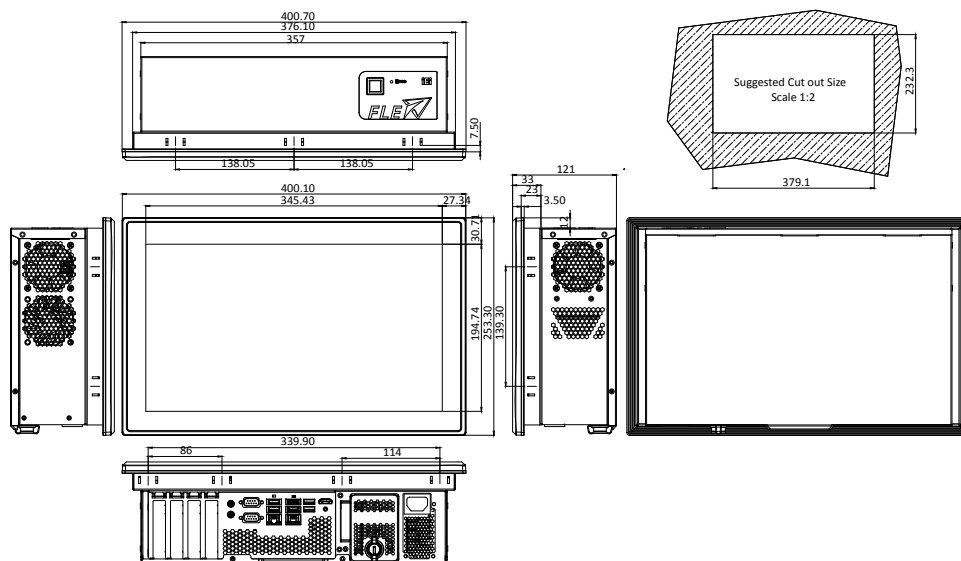
PPC-F15C-Q370 Dimensions

(Unit: mm)



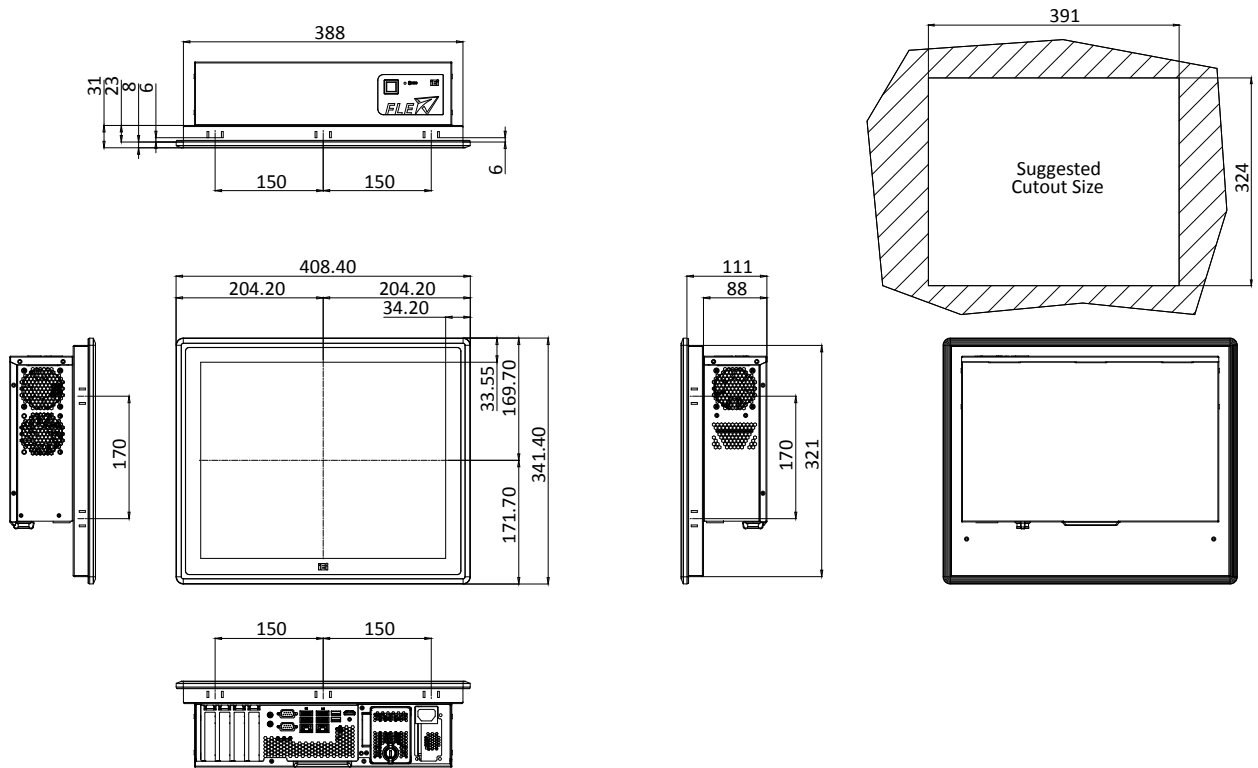
PPC-FW15C-Q370 Dimensions

(Unit: mm)



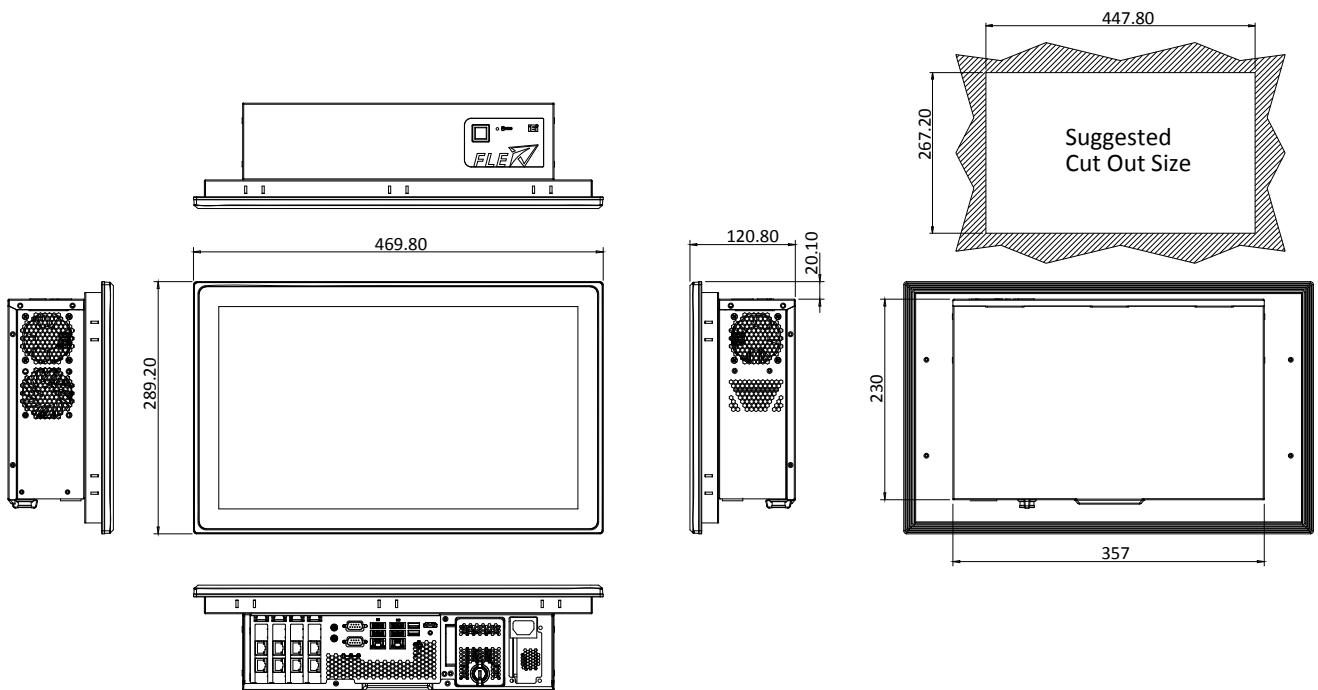
PPC-F17C-Q370 Dimensions

(Unit: mm)



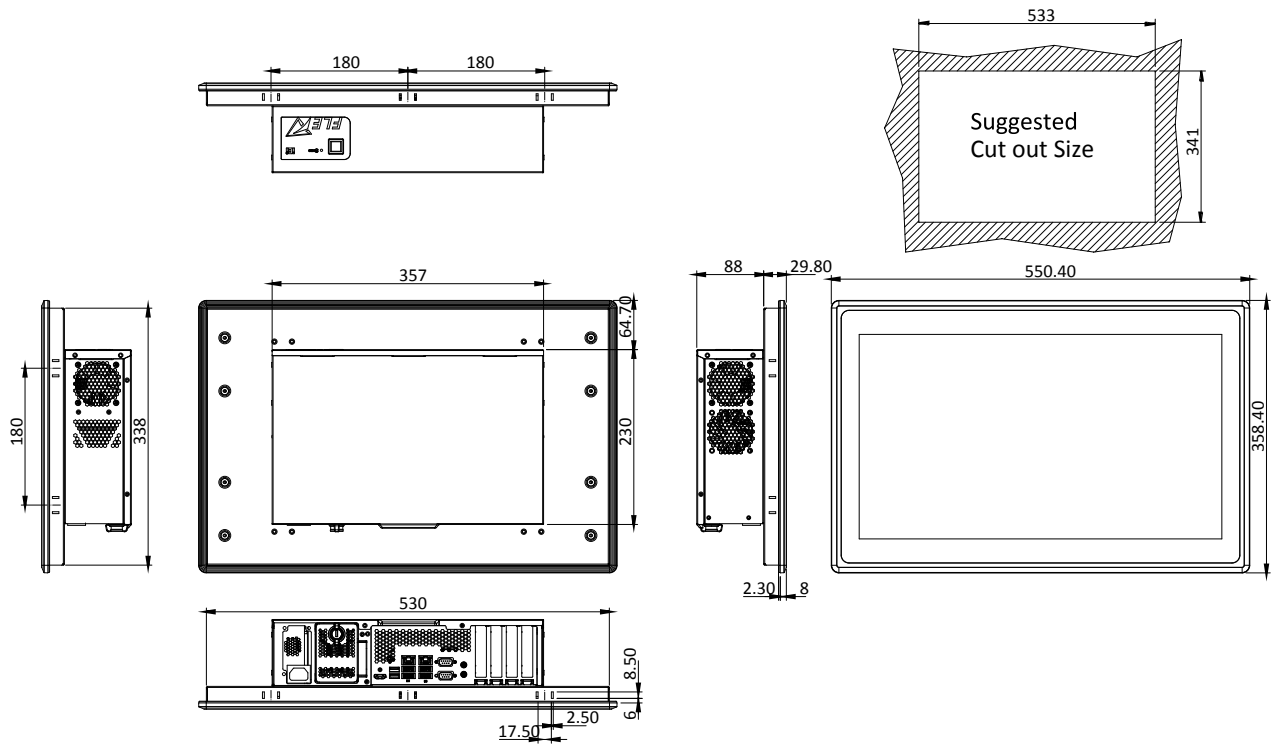
PPC-FW19C-Q370 Dimensions

(Unit: mm)



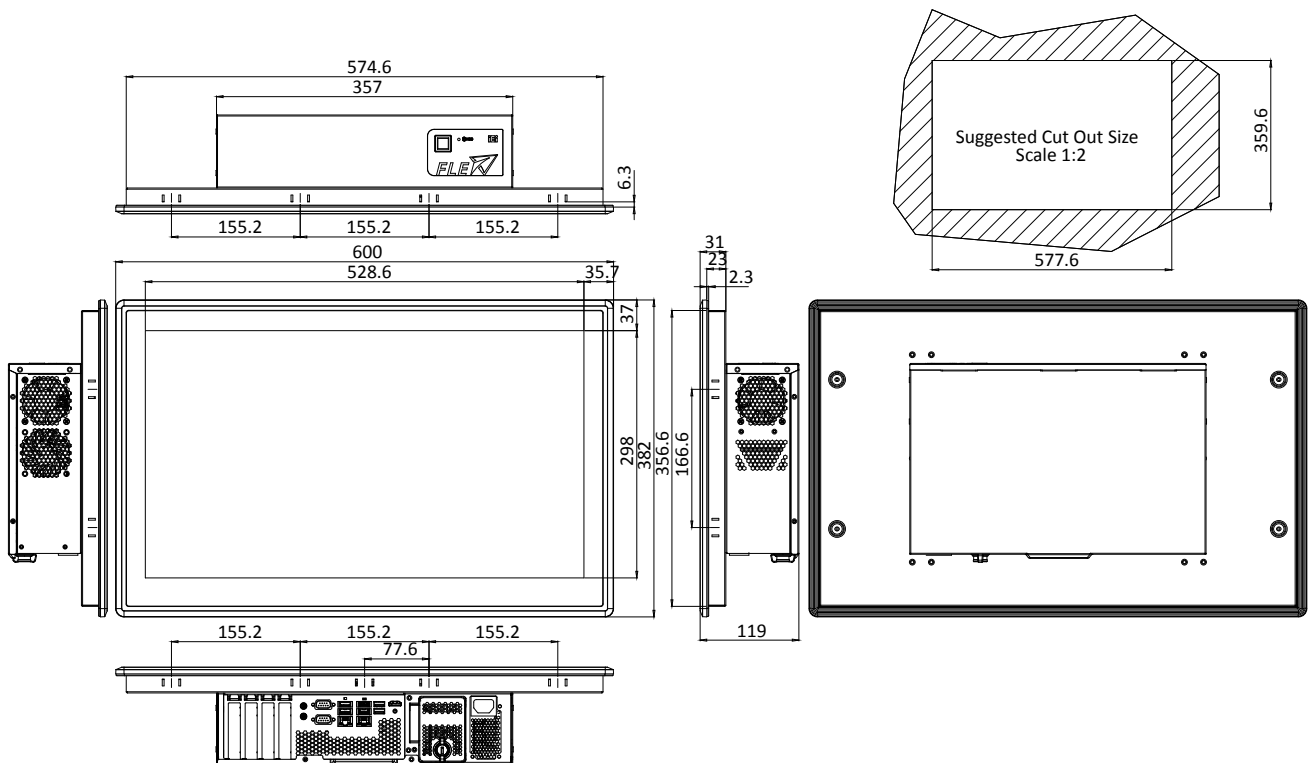
PPC-FW22C-Q370 Dimensions

(Unit: mm)



PPC-FW24C-Q370 Dimensions

(Unit: mm)



PPC-F Series

IEI is dedicated to developing impeccable industrial panel PC products. The PPC and PPC-F series industrial panel PCs not only keep rugged design of IP65 protection but also enrich aesthetic experience by implementing the seamless mounting method. The projected capacitive touch option is added to these new series of products to provide up to 2 points multi-touch solution! Additionally, we also provide high performance H81 series and low power consumption Bay Trail series to meet customers' requests.

■ PPC-F Industrial Panel PC Series

The PPC-F series aims at slim and compact design. Therefore, this new series makes a huge improvement in mechanical design to achieve the goal.



PPC-F15A-H81
262.2 x 322.2 mm

VS



PPC-5150A-H61
309 x 410 mm

■ 8mm Ultra Thin Bezel Design

To enhance aesthetic experience in industrial automation applications, the depth of the front bezel of the PPC-F is only 8mm to minimize the gap between the wall and the system in wall/panel mounting, which is neat and simple during integration.

■ 10-Point Multi Touch

The PPC series supports 10-point projected capacitive touch, enhancing smooth operations! IEI also provides 12" to 24" resistive single type and projected capacitive type touchscreen options to enrich simple and intuitive user experience.

■ FHD Industrial Panel PC Available

Going big is the market trend on industrial panel PC and monitor products. Thus, IEI launches new PPC-F series industrial panel PC. Users can enjoy high quality graphics and enriched data display at the same time from FHD panels.

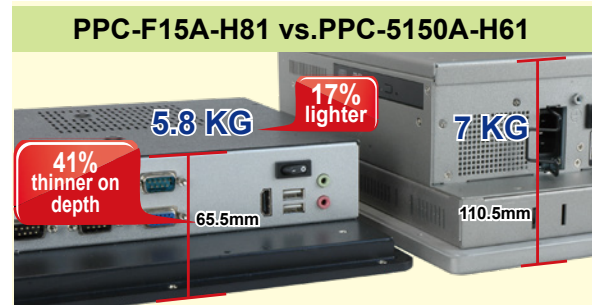
■ Impeccable Front Panel

6H Anti-scratch Touch

The PPC-F series equipped with projected capacitive touchscreen uses 6H hardness vandal proof strengthened glass to prevent damages from physical impact.

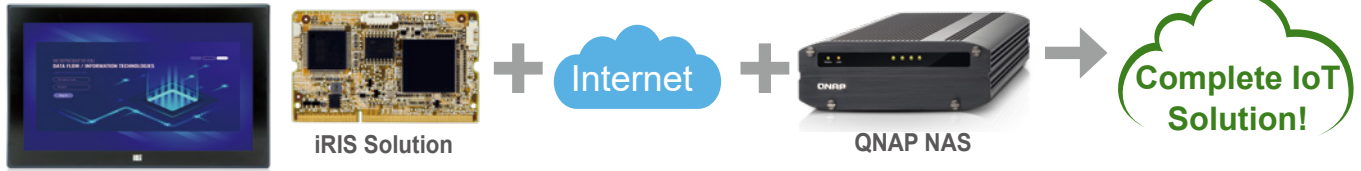
Front Bezel IP65 Protection

Designed for harsh environments, the PPC-F series provides front bezel IP65 protection to resist dust and water jet.



■ IEI Remote Intelligent Management System

The PPC-F supports iEi iRIS remote management, which helps users to manage multiple devices through single management interface and elevates work efficiency. iRIS solution only requires a module and Internet connection! (For PPC-F H81 & PPC-F 12B/15B/17B only)



Remote Power Management

Users can remotely power on/off all the iRIS devices and set up power cycle to simplify power control process.



Unify industrial automation process through a simple setting!



24H Active Recovery

With remote troubleshooting everywhere, there is no need to send out maintenance staff anymore!



Automatic Error Alert

System sends alert by email/SMS to designated members when error happens



Video Streaming and Record

Real-time record main screen video for trouble diagnosis



Remote Troubleshooting

Maintainers can troubleshoot the error through remote KVM

■ Built-in 80-Plus Silver Power Supply

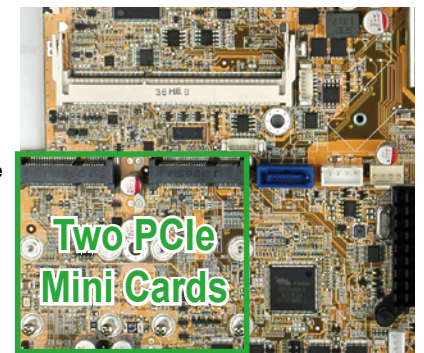
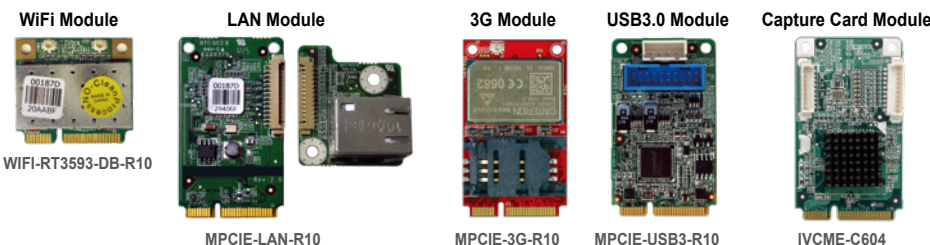
The 80-plus silver power supply is implemented into the PPC-F H81 series, which reduces power loss and increases efficiency during power transition. With the certified power supply, the power transition between AC source and DC source could maintain up to 85% efficiency, and the power loss is only 15% or less. For customers, the high efficiency of power transition could reduce not only cost but also heat loss.. Furthermore, it could make a friendly environment. (For PPC-F H81 series only)

Parameters	Loading	Gold	Silver	Bronze	80 Plus
Efficiency	20%	87%	85%	82%	80%
	50%	90%	88%	85%	80%
	100%	87%	85%	82%	80%
Power Factor	50%	90% (across the full range)			90% (@100% Load)



■ PCIe Mini Card Expansion

Two full-size PCIe Mini card expansion slots are reserved in the PPC-F series (Depends on models). With a wide variety of IEI PCIe Mini card solutions, it is flexible and easy to add extra functions in the system.



PPC-F Series Selection Guide



LCD Size		5.7"	8"	10.4"	12"	15"	
Model		PPC-F06B-BT	PPC-F08B-BT	PPC-F10B-BT	PPC-F12B-BT	PPC-F15A-H81	PPC-F15B-BT
Display	LCD Size	5.7" (4:3)	8" (4:3)	10.4"	12" (4:3)	15" (4:3)	15" (4:3)
	Max. Resolution	640 (W) x 480 (H)	800 (W) x 600 (H)	800 (W) x 600 (H)	1024 (W) x 768 (H)	1024 (W) x 768 (H)	1024 (W) x 768 (H)
	Brightness (cd/m ²)	550	500	400	600	450	450
	Contrast Ratio	800 : 1	500 : 1	700 : 1	700 : 1	800 : 1	800 : 1
	LCD Color	262K	16.2M	16.2M	16.2M	16.2M	16.2M
	Pixel Pitch (mm) (HxV)	0.18 x 0.18	0.2025 x 0.0675	0.264 x 0.264	0.24 x 0.24	0.297 x 0.297	0.297 x 0.297
	Viewing Angle (V/H)	160° / 140°	140° / 120°	160° / 140°	160° / 140°	160° / 150°	160° / 150°
	Backlight MTBF (hrs)	50000	50000	30000	50000	70000	70000
Touch	TouchScreen	4-wire resistive type flat touch window, 3H	5-wire resistive type flat touchscreen, 3H	5-wire resistive type flat touchscreen, 3H	5-wire resistive single touch window, 3H (Anti-glare Surface) 10-point Projected capacitive touch window, 6H (Anti-UV, Anti-glare Surface)		
	Touch Controller	PenMount DMC9000	PenMount DMC9000	PenMount DMC9000	Penmount DMC 9000 EETI EXC3188	Penmount DMC 9000 EETI EXC3188	Penmount DMC 9000 EETI EXC3188
Motherboard	CPU	Intel® Celeron® processor N2807, dual-core, 1.58GHz	Intel® Celeron® J1900 on-board SoC, quad-core, 2GHz	Intel® Celeron® J1900 on-board SoC, quad-core, 2GHz	Intel® Celeron® quad-core J1900 SoC, 2GHz	4th generation Intel® Core™ i7/ i5/i3, Pentium® and Celeron® processor, up to TDP 65W CPU	Intel® Celeron® quad-core J1900 SoC, 2GHz
	Chipset	N/A	N/A	N/A	N/A	N/A	Intel® H81
	RAM	2GB DDR3L 1600MHz on-board RAM (system max. 4GB by MOQ=300pcs)	1 x 204-pin DDR3L SO-DIMM slot (max. 8GB)	1 x 204-pin DDR3L SO-DIMM slot (max. 8GB)	2 x 204-pin 1066/1333 MHz DDR3L SO-DIMM supported (max. 8GB)	2 x 204-pin DDR3 SO-DIMM slots (max. 16GB)	2 x 204-pin 1066/1333 MHz DDR3L SO-DIMM supported (max. 8GB)
	Ethernet	2 x RTL 8111E	2 x RTL 8111E	2 x RTL 8111E	1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I211 controller	1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I217 controller	1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I211 controller
	Audio Codec	Realtek ALC662 HD codec	Realtek ALC892 HD codec	Realtek ALC892 HD codec	Realtek ALC662 HD codec	Realtek ALC662 HD codec	Realtek ALC662 HD codec
I/O Ports and Switches		1 x RJ-45 LAN port 1 x RS-232 COM port (DB-9 connector) (RI/5V/12V) 1 x RS-422/485 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x 9 V~36 V DC lockable jack (2-pin) 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x AT/ATX switch	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.2 Gen 1 (5Gb/s) 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 2.0 2 x USB 3.2 Gen 1 (5Gb/s) 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack	2 x RJ-45 LAN port 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-422/485 1 x VGA 1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x Power switch	2 x RJ-45 LAN Port 2 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out 1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch	2 x RJ-45 LAN port 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-232/422/485 1 x VGA 1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x Line-out 1 x Power switch
Drive Bay	HDD Driver Bay	N/A	N/A	1 x 2.5" HDD bay	1 x 2.5" HDD bay	1 x 2.5" HDD bay	1 x 2.5" HDD bay
	SSD	mSATA					
Expansion Slot		1 Full Size PCIe Mini Slot (with mSATA, PCIe/USB Signal)	1 x Full-size PCIe Mini slot (with mSATA/Pcie/USB signal) 1 x Half-size PCIe Mini slot for Wi-Fi modules			1 x Full-size PCIe Mini card slot 1 x Full-size PCIe Mini card slot colay mSATA	
System Cooling		Fanless	Fanless	Fanless	Fanless	Active fan	Fanless
Environment	Operating Temperature	-10°C~50°C (14°F~122°F)					
	Storage Temperature	-20°C~60°C (-4°F~140°F)					

PPC-F Series Selection Guide



LCD Size		17"		19"	22"	23.8"
Model		PPC-F17A-H81	PPC-F17B-BT	PPC-F19B-BT	PPC-F22A-H81	PPC-F24A-H81
Display	LCD Size	17"	17"	19"	22"	23.8"
	Max. Resolution	1280 (W) x 1024 (H)			1920 (W) x 1080 (H)	
	Brightness (cd/m ²)	350			250	
	Contrast Ratio	1000 : 1				
	LCD Color	16.7M				
	Pixel Pitch (mm) (HxV)	0.26 x 0.26	0.26 x 0.26	0.294 x 0.294	0.25 x 0.25	0.28 x 0.28
	Viewing Angle (V/H)	170° / 160°	170° / 160°	170° / 160°	165° / 165°	178° / 178°
	Backlight MTBF (hrs)	50000			30000	
Touch	Touchscreen	5-wire resistive single touch window, 3H (Anti-glare Surface) 10-point Projected capacitive touch window, 6H (Anti-UV, Anti-glare Surface)			10-point Projected capacitive touch window, 6H (Anti-UV, Anti-glare Surface)	
	Touch Controller	Penmount DMC 9000 EETI EXC3188			EETI EXC3188	
Motherboard	CPU	4th generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU	Intel® Celeron® quad-core J1900 SoC, 2GHz	Intel® Celeron® processor J1900 (2M cache, up to 2.42 GHz)	4th generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU	
	Chipset	Intel® H81	N/A		Intel® H81	
	RAM	2 x 204-pin DDR3 SO-DIMM slots (max. 16GB)	2 x 204-pin 1066/1333 DDR3L SO-DIMM supported (max. 8GB)	2 x 204-pin DDR3L SO-DIMM slot (max. 8GB), pre-installed with 2GB	2 x 204-pin DDR3 SO-DIMM slots (max. 16GB)	
	Ethernet	1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I211 controller				
	Audio Codec	Realtek ALC662 HD codec				
I/O Ports and Switches		2 x RJ-45 LAN Port 2 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out 1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch	2 x RJ-45 LAN port 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-232/422/485 1 x VGA 1 x DC jack (4-pin) 1 x Terminal block 1 x Microphone & speaker 1 x power switch	2 x RJ-45 LAN port 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-232/422/485 1 x VGA 1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x Line-out (PPC-F15B & PPC-F17B & PPC-F19B only) 1 x Power switch	2 x RJ-45 LAN Port 2 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out 1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch	2 x RJ-45 LAN Port 2 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out 1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch
Drive Bay	HDD Driver Bay	1 x 2.5" SATA HDD bay with anti-shook			1 x 2.5" SATA HDD bay with anti-shook or 1 x 3.5" SATA HDD bay with anti-shook	
	SSD	mSATA				
Expansion Slot		1 x Full-size PCIe Mini card 1 x Full-size PCIe Mini card co-lay mSATA				
System Cooling		Active fan	Fanless	Fanless	Active fan	
Environment	Operating Temperature	-10°C~50°C (14°F~122°F)				
	Storage Temperature	-20°C~60°C (-4°F~140°F)				

PPC-F H81 Series



Intelligent Industrial Panel PC

Features

- Support IEI iRIS-2400 IEI remote intelligent solution
- Scalable Intel® H81 chipset supports LGA1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor with up to 65W TDP
- Robust IP65 aluminum front bezel
- Aesthetic ultra-thin bezel for seamless panel mount installation
- Projected capacitive multi-touch
- Dual full-size PCIe Mini card expansion
- AC/DC power input options (DC model by build to order manufacturing)



Specifications

Model		PPC-F15A	PPC-F17A	PPC-F22A	PPC-F24A	
LCD	LCD Display	15" (4:3)	17" (5:4)	21.5" (16:9)	23.8" (16:9)	
	Max. Resolution	1024(W) x 768(H)	1280(W) x 1024(H)	1920(W) x 1080(H)	1920(W) x 1080(H)	
	Brightness (cd/m ²)	450	350	250	250	
	Contrast Ratio	800 : 1	800 : 1	1000 : 1	3000 : 1	
	LCD Color	16.2M	16.7M	16.7M	16.7M	
	Pixel Pitch (mm)	0.297 x 0.297	0.26 x 0.26	0.25 x 0.25	0.28 x 0.28	
	Viewing Angle (H-V)	160° / 150°	170° / 160°	170° / 160°	178° / 178°	
	Backlight MTBF (hrs)	70000	50000	30000	30000	
Motherboard	SBC Model: FPPCMB-H81-R10 CPU: LGA1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor with up to 65W TDP Chipset: Intel® H81 RAM: Support 2 x 204-pin 1066/1333/1600 MHz dual-channel DDR3 SO-DIMM slots (max. 16GB)					
Touch	Touchscreen & Controller: 5-wire resistive single touch window, 3H/Penmount 9000 (Anti-glare Surface) 10-point Projected capacitive touch window, 6H/EETI EXC3188 (Anti-UV, Anti-glare Surface)		10-point Projected capacitive touch window, 6H/EETI EXC3188 (Anti-UV, Anti-glare Surface)			
Input Interfaces	I/O Ports & Switch	2 x RJ-45 LAN Port 2 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0 1 x HDMI output 4 x RS-232 1 x RS-422/485 1 x MIC-in 1 x Line-out		1 x VGA output 1 x AC/DC power plug (DC model is by build to order manufacturing) 1 x AT/ATX switch 1 x Clear CMOS 1 x Reset button 1 x Power switch		
	Expansion	1 x Full-size/half-size PCIe Mini card (PCIe and USB signal) 1 x Full-size/half-size PCIe Mini card (PCIe, USB and mSATA signal)				
Wireless LAN	802.11 b/g/n (optional)					
Storage	1 x 2.5" HDD/SSD drive bay 1 x mSATA		1 x 2.5" HDD/SSD drive bay or 1 x 3.5" HDD/SSD drive bay 1 x mSATA			
iRIS Remote Management Solution	iRIS-2400 (optional)					
Physical	Construction Material	Aluminum front cover and sheet metal rear cover				
	Mounting	Panel mount, rack mount, 100x100 VESA mount		Panel mount, 100x100 VESA mount		
	Enclosure Color	Black C				
	Dimensions (mm)	303 x 378.5 x 68.7	341.4 x 408.4 x 73.8	350.4 x 550.4 x 71.7	382 x 600 x 71.7	
	Cutout Dimensions (mm)	285.6 x 361.1	323 x 390	341 x 536	359.6 x 577.6	
Net/ Gross Weight (kg)	5.6/ 8.3	7.5/10.7	10.1/14.4	10.5/14.8		
Environment	Operating Temperature (with air flow)	-10°C ~ 50°C				
	Storage Temperature	-20°C ~ 60°C				
	Humidity	10% to 95% (non-condensing)				
	IP Level	Front IP 65				
Safety and EMC	CE & FCC certified					
Power Supply	AC Input	AC input ATX power supply - P/N: 63030-010220-100-RS - 220W power supply - Input: 90VAC-264VAC, 50/60Hz - Output (max.): 3.3V@10A, 5V@14A, 12V@14A, -12V@0.3A				
	DC Input (produced by order)	DC input ATX power supply - P/N: XACE-4520C-RS - 200W power supply - Input: 24VDC, 15A (max) - Output (max.): 3.3V@12A, 5V@12A, 12V@15.4A, -12V@0.5A				
Power Consumption	80W	100W	110W	120W		

Ordering Information

Part No.	Description
PPC-F15AA-H81i-P/4G/PC-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R22
PPC-F15AA-H81i-i3/4G/PC-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R22
PPC-F15AA-H81i-i5/4G/PC-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, PCAP touch window with AG coating, R22
PPC-F15AA-H81i-P/4G/R-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R22
PPC-F15AA-H81i-i3/4G/R-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R22
PPC-F15AA-H81i-i5/4G/R-R22	15" 450 cd/m ² XGA Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R22
PPC-F17AA-H81i-P/4G/PC-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R13
PPC-F17AA-H81i-i3/4G/PC-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R13
PPC-F17AA-H81i-i5/4G/PC-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R13
PPC-F17AA-H81i-P/4G/R-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R13
PPC-F17AA-H81i-i3/4G/R-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R13
PPC-F17AA-H81i-i5/4G/R-R13	17" 350 cd/m ² SXGA Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, resistive touch window with AG coating, R13
PPC-F22AA-H81i-i3/4G/PC-R13	21.5" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, AG projective capacitive touch window, R13
PPC-F22AA-H81i-i5/4G/PC-R13	21.5" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, AG projective capacitive touch window, R13
PPC-F22AA-H81i-P/4G/PC-R13	21.5" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, AG projective capacitive touch window, R13
PPC-F24AA-H81i-P/4G/PC-R21	23.8" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Intel® Pentium® Processor G3420 (3M Cache, 3.20 GHz), TDP 53W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R21
PPC-F24AA-H81i-i3/4G/PC-R21	23.8" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Core i3 Dual Core i3-4330 Processor (4M Cache, 3.50 GHz), TDP 54W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R21
PPC-F24AA-H81i-i5/4G/PC-R21	23.8" 250 cd/m ² FHD Panel PC with Intel® H81 chipset, Core i5 Quad Core i5-4570S Processor (6M Cache, up to 3.60 GHz), TDP 65W, 2GB RAM*2, support iRIS-2400, black color, PSU ACE-A622B, projective capacitive touch window with AG coating, R21

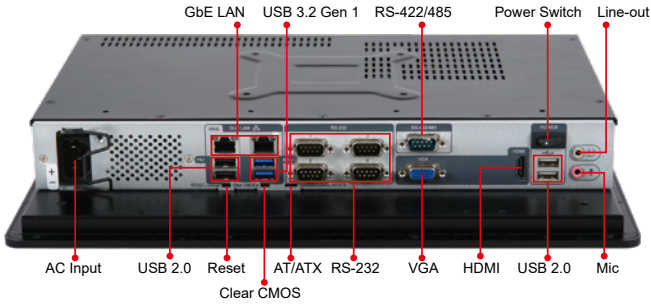
Options

Item	PPC-F15A	PPC-F17A	PPC-F22A	PPC-F24A
Arm	ARM-31-RS	ARM-31-RS	ARM-31-RS	ARM-31-RS
Stand	STAND-A21 STAND-A19-RS STAND-C19-R10	STAND-C19-R10 STAND-A21-R10	STAND-C19-R10 STAND-A21-R10	STAND-C19-R10 STAND-A21-R10
Wall Mount Kit	WK-190MS-R10			
Panel Mount Kit	FPK-04-R10		FPK-05-R10	FPK-06-R10
Rack Mount Kit	FRK15-R10	FRK17-R10	N/A	
Wi-Fi Kit	EMB-WIFI-KIT11-R20			
iRIS (IEI Remote Intelligent System) Kit	iRIS-2400-R10			

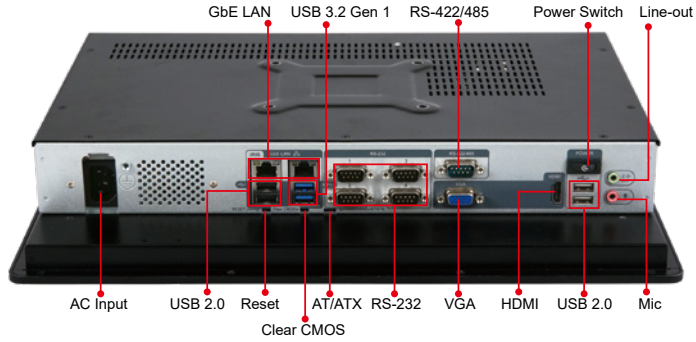
Packing List

Item	Q'ty	Remark
Power Cord	1	Depends on shipping region
Screw Kit	1	

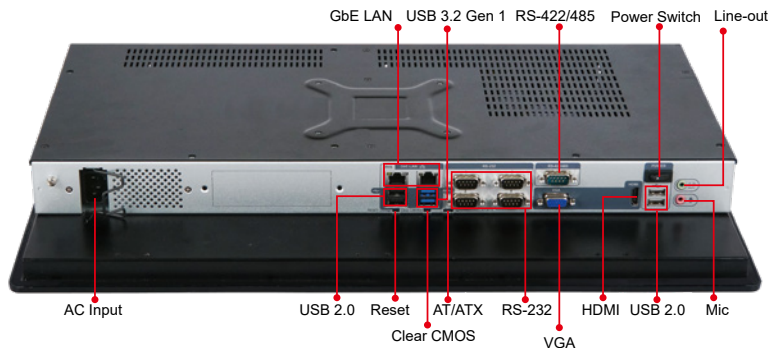
PPC-F15A
Fully Integrated I/O



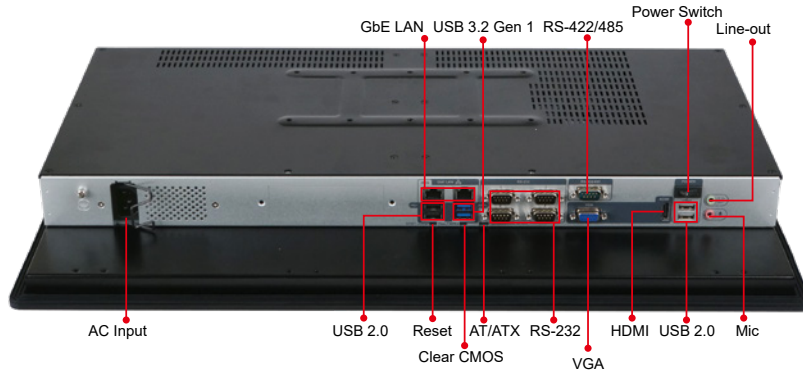
PPC-F17A
Fully Integrated I/O



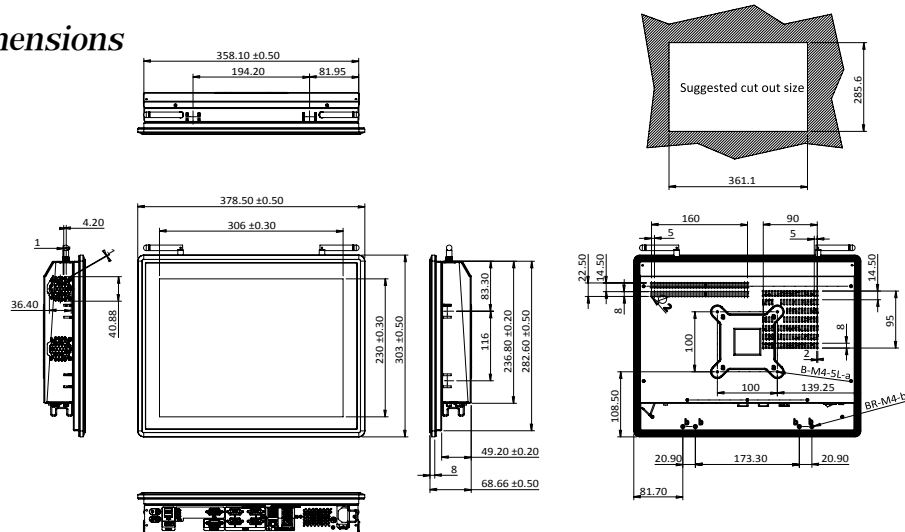
PPC-F22A
Fully Integrated I/O



PPC-F24A
Fully Integrated I/O

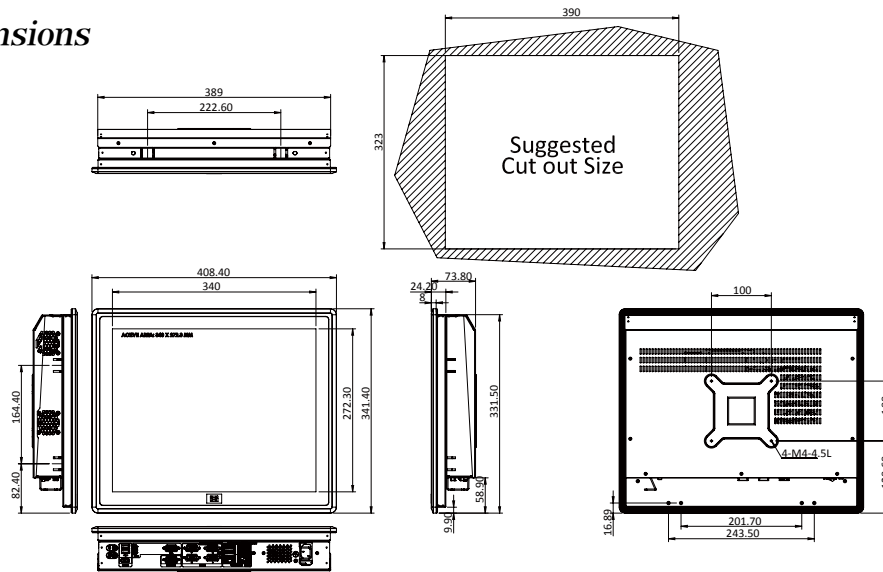


PPC-F15A Dimensions
(Unit: mm)



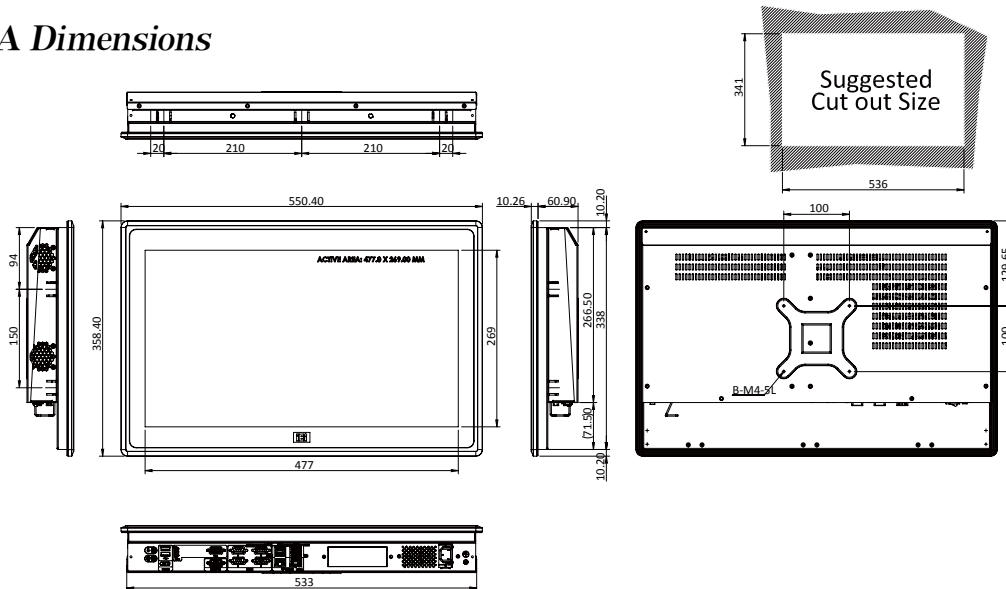
PPC-F17A Dimensions

(Unit: mm)



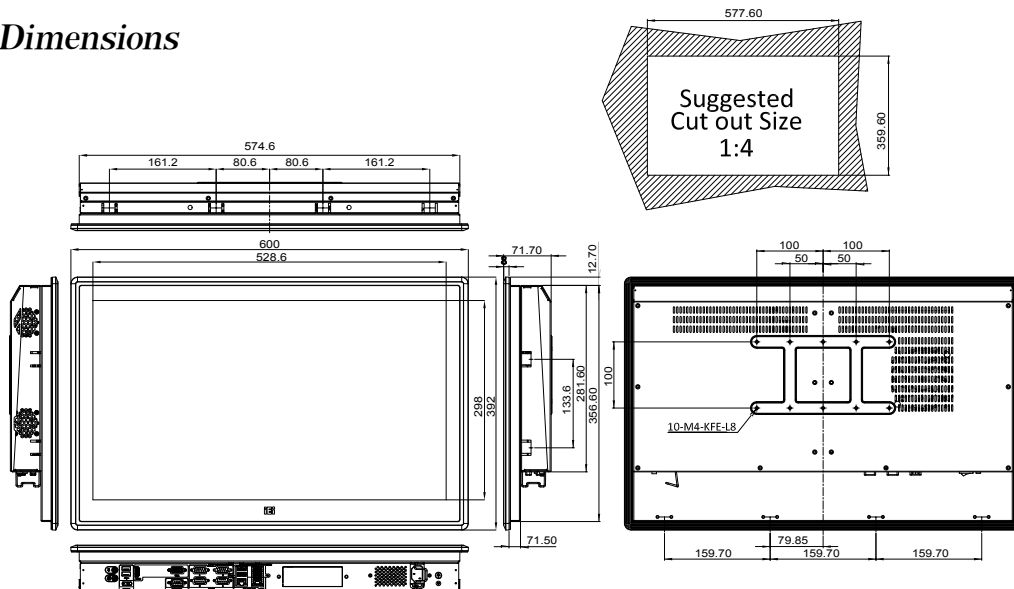
PPC-F22A Dimensions

(Unit: mm)



PPC-F24A Dimensions

(Unit: mm)



PPC-F Bay Trail Fanless Series

5.7"/8"/10.4" Fanless Intel® Bay Trail Solution

Features

- 5.7", 8" and 10.4" fanless industrial panel PC
- 2.0 GHz Intel® Celeron® J1900 quad-core processor or 1.58 GHz Intel® Celeron® N2807 dual-core processor
- Low power consumption DDR3L memory supported
- IP 65 compliant front panel
- 9 V~30 V wide DC input
- mSATA SSD supported
- Dual GbE for backup
- -10°C~50°C extended operating temperature



Specifications

Model		PPC-F06B-BT	PPC-F08B-BT	PPC-F10B-BT
LCD	LCD Display	5.7" (4:3)	8" (4:3)	10.4"
	Max. Resolution	640 (W) x 480 (H)	800 (W) x 600 (H)	800 (W) x 600 (H)
	Brightness (cd/m²)	550	500	400
	Contrast Ratio	800:1	500:1	700:1
	LCD Color	262K	16.2M	16.2M
	Pixel Pitch (mm)	0.18 (H) x 0.18 (V)	0.2025 (H) x 0.0675 (V)	0.264 (H) x 0.264 (V)
	Viewing Angle (H-V)	160° / 140°	140° / 120°	160° / 140°
	Backlight MTBF (hrs)	50000	50000	30000
Motherboard	CPU	Intel® Celeron® N2807 dual-core processor, 1.58GHz	Intel® Celeron® J1900 quad-core on-board SoC, 2GHz	
	RAM	2GB DDR3L 1600MHz on-board RAM (system max. 4GB, by MOQ=300pcs)	1 x 204-pin DDR3L SO-DIMM slots (max. 8GB)	
Touch	Touchscreen & Controller	4-wire resistive type flat touch window, PenMount DMC9000	5-wire resistive type flat touchscreen, PenMount DMC9000	
	Surface Hardness	3H	3H	3H
Input Interfaces	I/O Ports & Switches	2 x RJ-45 LAN port 1 x RS-232 COM port (DB-9 connector) (RI/5V/12V) 1 x RS-422/485 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x 9 V~30 V DC lockable DC jack (2-pin) 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x AT/ATX switch	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x USB 3.2 Gen 1 (5Gb/s) 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack	1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB9 connector) (RI/5V/12V) 2 x USB 2.0 2 x USB 3.2 Gen 1 (5Gb/s) 2 x GbE LAN 1 x Power switch 1 x Reset button 1 x AT/ATX switch 1 x Audio port (line-out) 1 x 9 V~30 V lockable power jack
		Expansion	1 x Full-size PCIe Mini slot (mSATA/PCIe/USB signal)	1 x Full-size/half-size PCIe Mini slot (mSATA/PCIe/USB signal) 1 x Half-size PCIe Mini slot (PCIe signal only)
Wireless LAN			802.11 b/g/n (optional)	
Storage	SSD	mSATA	mSATA	mSATA
	HDD	N/A	N/A	1 x 2.5" HDD bay
Physical	Construction Material		Aluminum front bezel	
	Mounting	Stand, panel mount, rack mount, VESA 75x75	Stand, panel mount, rack mount, VESA 75x75	Stand, panel mount, rack mount, VESA 75x75/100x100
	Enclosure Color		Black C	
	Dimensions (mm)	136.4 x 178.5 x 56.3	182.2 x 222.2 x 44	232.4 x 285.2 x 44
	Net Weight	0.89 kg	1.17 kg	1.77 kg
	Cut-out Dimensions (mm)	157.5 x 115.4	207 x 154	267.2 x 214.4
Environment	Operating Temperature (with air flow)	-10°C~50°C (14°F~122°F)		
	Storage Temperature	-20°C~60°C (-4°F~140°F)		
	Humidity	10% to 95% (non-condensing)		
	IP Level	IP 65 compliant front panel		
	Safety and EMC	CE & FCC Class A certified		
Power	Power Adapter	P/N: 63040-010036-121-RS 36W Power Adapter Input: 90 - 264V AC, 50/60Hz Output: 12V DC		
	Power Requirement	9 ~ 30V DC		
	Power Consumption	24W	28W	34W

Ordering Information

Part No.	Description
PPC-F06B-BT-N1/2G/R-R10	5.7" 450 cd/m ² VGA panel PC with Intel® Celeron® processor N2807, TDP 4.3W, 2GB on-board DDR3L RAM, black color, 9-30V DC input, resistive touch window, R10
PPC-F08B-BT-J1/2G/R-R10	8" 500 cd/m ² SVGA panel PC with Intel® Celeron® processor J1900, TDP 10W, 2GB DDR3L RAM, black color, 9-30V DC input, resistive touch window, R10
PPC-F10B-BT-J1/2G/R-R10	10.4" 400 cd/m ² SVGA panel PC with Intel® Celeron® processor J1900, TDP 10W, 2GB DDR3L RAM, black color, 9-30V DC input, resistive touch window, R10

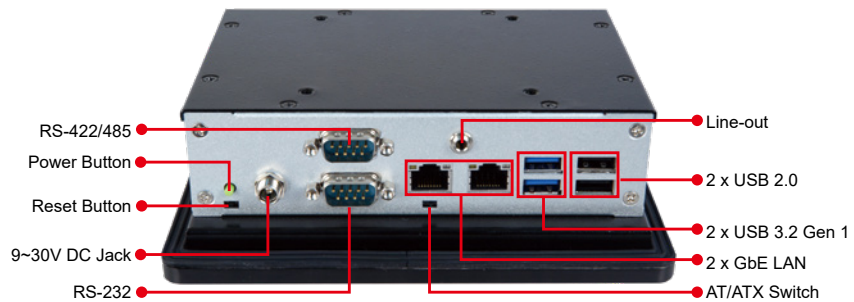
Options

Item	PPC-F06B	PPC-F08B	PPC-F10B
Arm	ARM-11-RS	ARM-11-RS	ARM-11-RS
Stand	STAND-100-RS STAND-B08	STAND-100-RS STAND-B08 STAND-C12-R10	STAND-100-RS STAND-B08 STAND-C12-R10
Wall Mount Kit	AFLWK-12	AFLWK-12	AFLWK-12
Panel Mount Kit	FPK-07-R10	FPK-07-R10	FPK-09-R10
Wi-Fi Kit		EMB-WIFI-KIT01-R20	

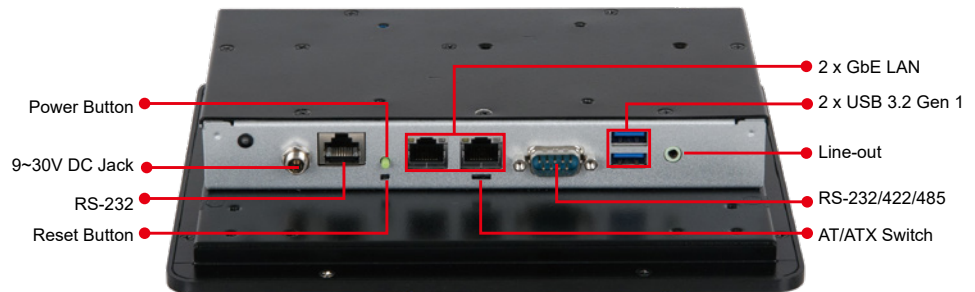
Packing List

Item	Q'ty	Remark
PPC-FxxB-BTi Panel PC	1	
Power Cord	1	Part numbers vary by regions
Screw Pack	1	Including necessary screws
Power Adapter	1	9V~30V DC P/N: 63040-010036-121-RS

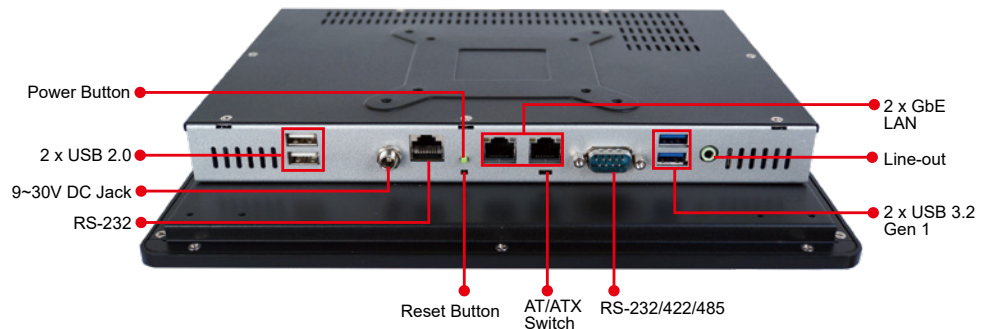
PPC-F06B Fully Integrated I/O

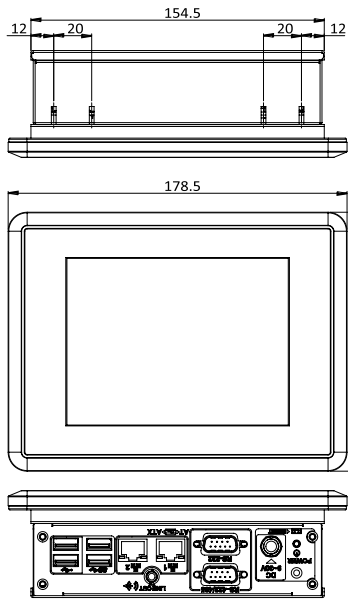


PPC-F08B Fully Integrated I/O

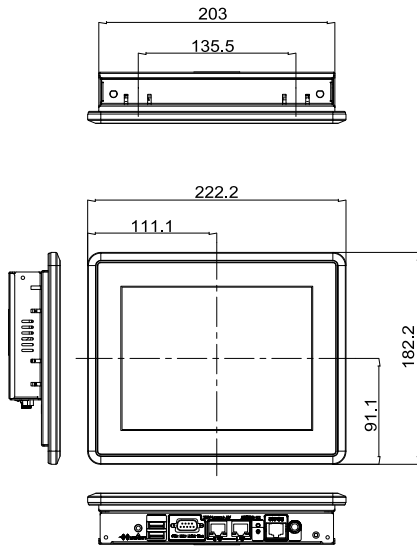
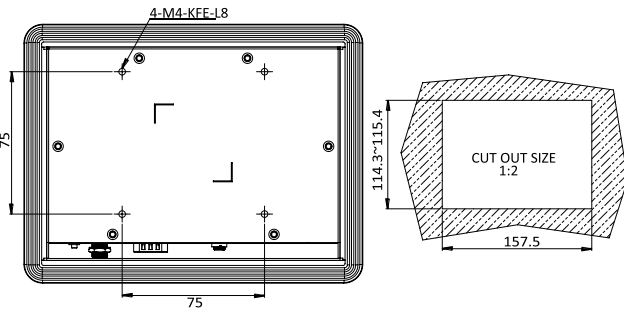


PPC-F10B Fully Integrated I/O

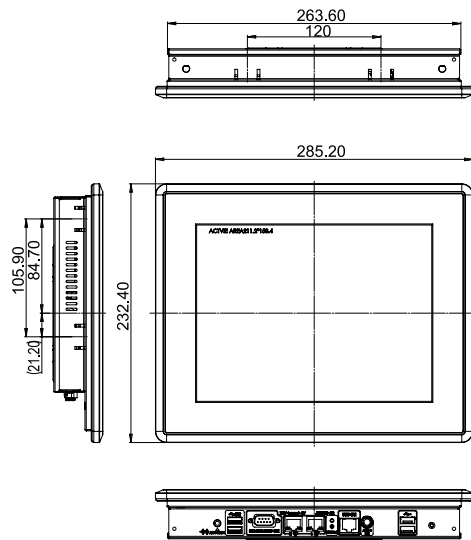
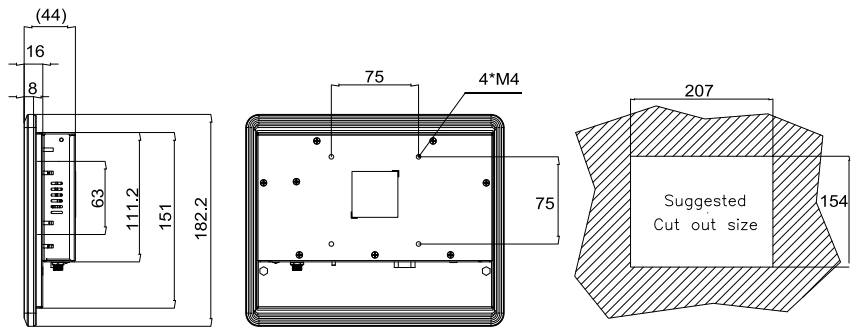




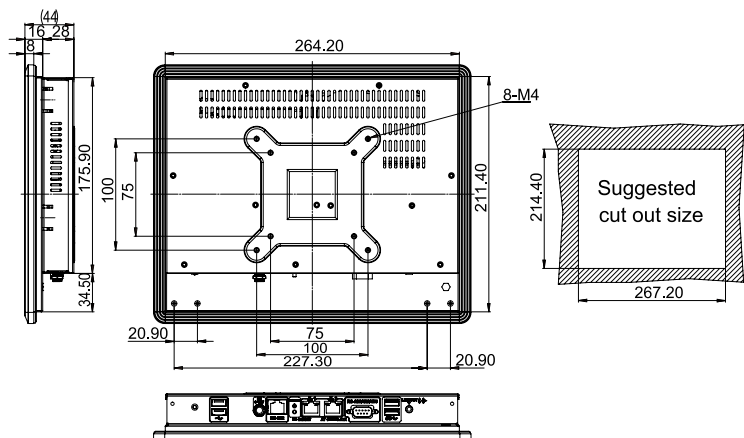
PPC-F06B-BT
Dimensions (Unit: mm)



PPC-F08B-BT
Dimensions (Unit: mm)



PPC-F10B-BT
Dimensions (Unit: mm)



PPC-F Bay Trail Fanless Series

12"/15"/17"/19" Fanless Intel® Bay Trail Solution

Features

- Support IEI iRIS-2400 remote intelligent solution
- Intel® Celeron® J1900 quad-core SoC
- Robust IP65 aluminum front bezel
- Aesthetic ultra-thin bezel for seamless panel mount installation
- Projected capacitive multi-touch and resistive single touch options
- Dual full-size PCIe Mini card expansion
- 9V~36V DC wide range DC input



Specifications

Model		PPC-F12B-BT	PPC-F15B-BT	PPC-F17B-BT	PPC-F19B-BT
LCD	LCD Display	12.1" (4:3)	15" (4:3)	17" (5:4)	19" (5:4)
	Max. Resolution	1024 (W) x 768 (H)	1024 (W) x 768 (H)	1280 (W) x 1024 (H)	1280 (W) x 1024 (H)
	Brightness (cd/m ²)	600	450	350	350
	Contrast Ratio	700 : 1	800 : 1	800 : 1	1000 : 1
	LCD Color	16.2M	16.2M	16.7M	16.7M
	Pixel Pitch (mm)	0.24 x 0.24	0.297 x 0.297	0.26 x 0.26	0.294 x 0.294
	Viewing Angle (H-V)	160° / 140°	160° / 150°	170° / 160°	170° / 160°
	Backlight MTBF (hrs)	50000	70000	50000	50000
Motherboard	CPU	Intel® Celeron® processor J1900 (2M cache, up to 2.42 GHz)			
	RAM	2 x 204-pin DDR3L SO-DIMM slot (max. 8GB), pre-installed with 2GB			
Touch	Touchscreen & Controller	5-wire resistive single touch window, 3H/Penmount DMC9000 (Anti-glare Surface) 10-point Projected capacitive touch window, 6H/EETI EXC3188 (Anti-UV, Anti-glare Surface)			
Input Interfaces	I/O Ports & Switches	2 x RJ-45 LAN port 2 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0 1 x HDMI 2 x RS-232 1 x RS-232/422/485 1 x VGA 1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x Line-out (PPC-F15B & PPC-F17B & PPC-F19B only) 1 x Power switch			
	Expansion	1 x Full-size PCIe Mini slot (mSATA/PCIe/USB signal) 1 x Full-size/half-size PCIe Mini slot (PCIe/USB signal)			
	Wireless LAN	802.11 b/g/n (optional)			
Drive Bay		1 x 2.5" HDD/SSD drive bay			
Remote Management Solution		iRIS-2400, QTS-Gateway			
Physical	Construction Material	Aluminum front panel and sheet metal rear cover			
	Mounting	Panel mount, rack mount, VESA 100x100			
	Enclosure Color	Black C			
	Dimensions (mm) (W x L x D)	262.2 x 322.2 x 47.2	303 x 378.5 x 46.2	341.4 x 408.4 x 51.8	372.4 x 447.4 x 52.87
	Weight (Net)	3.2 kg	4.1 kg	5 kg	6.5 kg
Environment	Cutout Dimensions (mm)	244.8 x 304.8	285.6 x 361	323 x 390	355 x 430
	Operating Temperature (with air flow)	-10°C~50°C (14°F~122°F)			
	Storage Temperature	-20°C~60°C (-4°F~140°F)			
	Humidity	10% to 95% (non-condensing)			
	IP Level	IP 65 compliant front panel			
Power	Safety and EMC	CE & FCC Class A certified			
	Power Adapter	P/N: 63040-010060-110-RS 60W Power Adapter Input: 90 - 264V AC, 50/60Hz Output: 12V DC			
	Power Requirement	9 V~36 V DC			
	Power Consumption	40W	41W	42W	33W

Ordering Information

Part No.	Description
PPC-F12B-BTi-J1/2G/PC-R12	12.1" 600 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, projected capacitive touch window with AG coating, R12
PPC-F12B-BTi-J1/2G/R-R12	12.1" 600 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, resistive touch window with AG coating, R12
PPC-F15B-BTi-J1/2G/PC-R22	15" 450 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, projected capacitive touch window with AG coating, R22
PPC-F15B-BTi-J1/2G/R-R22	15" 450 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, resistive touch window with AG coating, R22
PPC-F17B-BTi-J1/2G/PC-R12	17" 350 cd/m ² SXGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, projected capacitive touch window with AG coating, R12
PPC-F17B-BTi-J1/2G/R-R12	17" 350 cd/m ² SXGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, resistive touch window with AG coating, R12
PPC-F19B-BTi-J1/2G/PC-R11	19" 350 cd/m ² SXGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, AG projected capacitive touch window, R11
PPC-F19B-BTi-J1/2G/R-R11	19" 350 cd/m ² SXGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*1, support iRIS-2400, black color, 9-36V DC input, AG resistive touch window, R11



QTS-Gateway

Part No.	Description
PPC-F12B-BT-QGW-J1/4G/PC-R11	12" 600 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*2, black color, with QTS-Gateway, 9-36V DC input, projected capacitive touch window, R11
PPC-F15B-BT-QGW-J1/4G/PC-R11	15" 450 cd/m ² XGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*2, black color, with QTS-Gateway, 9-36V DC input, projected capacitive touch window, R11
PPC-F17B-BT-QGW-J1/4G/PC-R11	17" 350 cd/m ² SXGA Panel PC with Intel® Celeron® Processor J1900, TDP 10W, 2GB RAM*2, black color, with QTS-Gateway, 9-36V DC input, projected capacitive touch window, R11

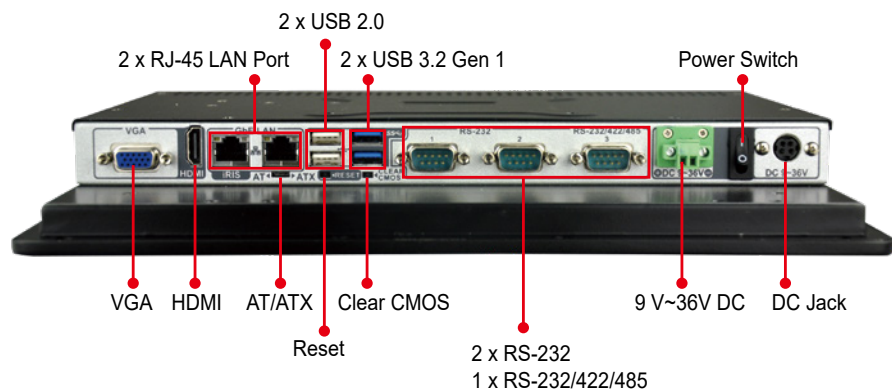
Options

Item	PPC-F12B	PPC-F15B	PPC-F17B	PPC-F19B
Arm	ARM-31-RS			
Stand	STAND-C12-R10 STAND-A12-RS	STAND-C19-R10 STAND-A19-RS	STAND-C19-R10 STAND-A19-RS	STAND-C19-R10 STAND-A19-RS
Wall Mount Kit	WK-190MS-R10			
Panel Mount Kit	FPK-09-R10	FPK-10-R10	FPK-10-R10	FPK-11-R10
Rack Mount Kit	FRK12-R10	FRK15-R10	FRK17-R10	FRK-19P-R10
Wi-Fi Kit	EMB-WIFI-KIT01-R20	EMB-WIFI-KIT11-R20	EMB-WIFI-KIT11-R20	EMB-WIFI-KIT11-R20
iRIS (IEI Remote Intelligent System) Kit	iRIS-2400-RS			

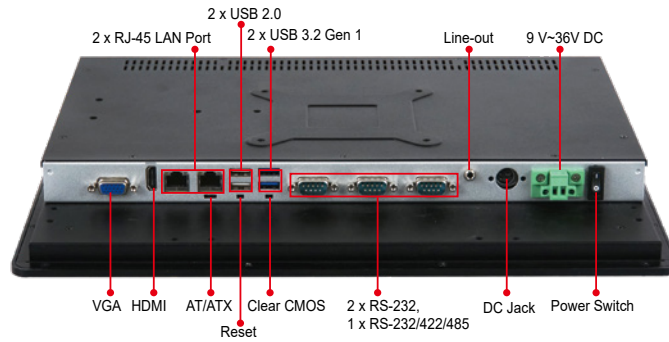
Packing List

Item	Q'ty	Remark
PPC-FxxB-BTi Panel PC	1	
Power Cord	1	Part numbers vary by regions
Screw Pack	1	Including necessary screws
Power Adapter	1	9V~36V DC(P/N: 63040-010060-110-RS)

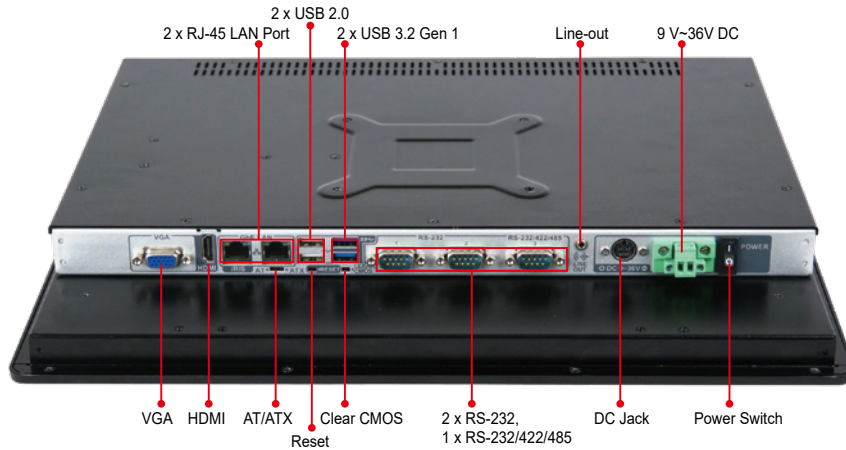
PPC-F12B Fully Integrated I/O



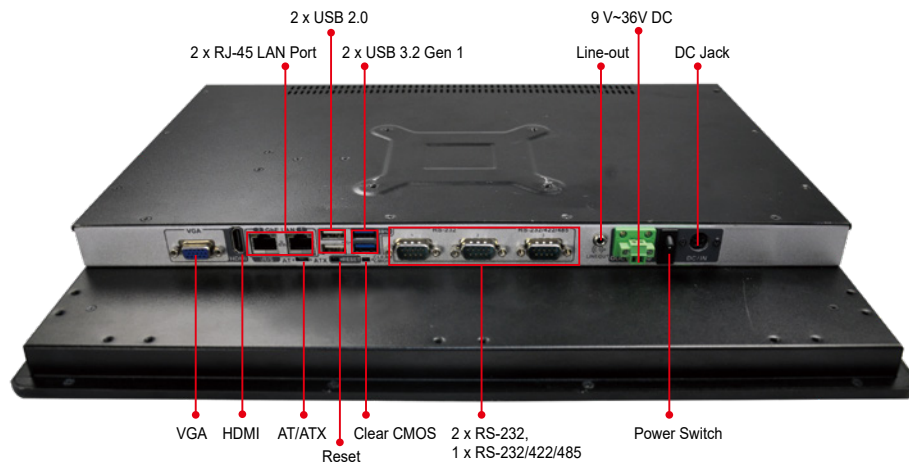
PPC-F15B
Fully Integrated I/O



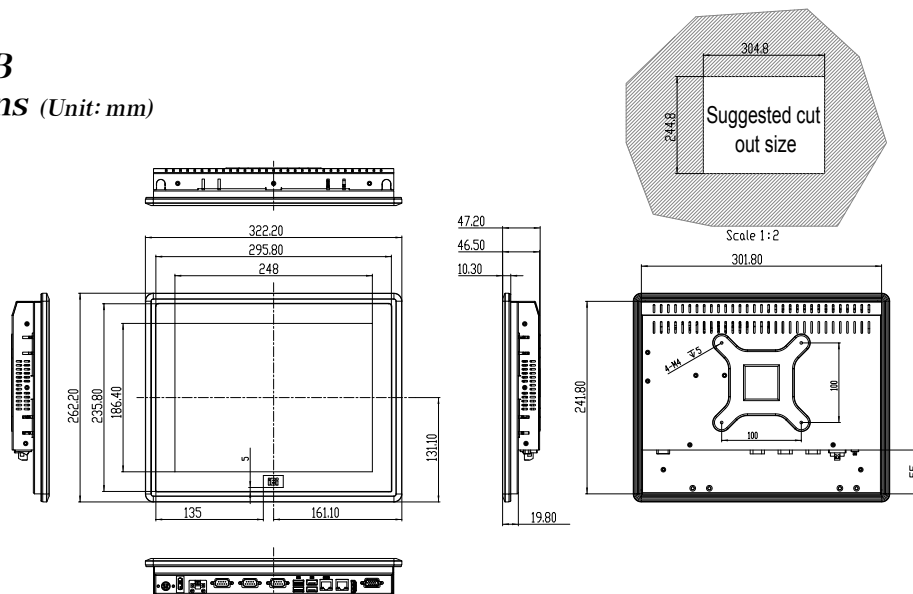
PPC-F17B
Fully Integrated I/O



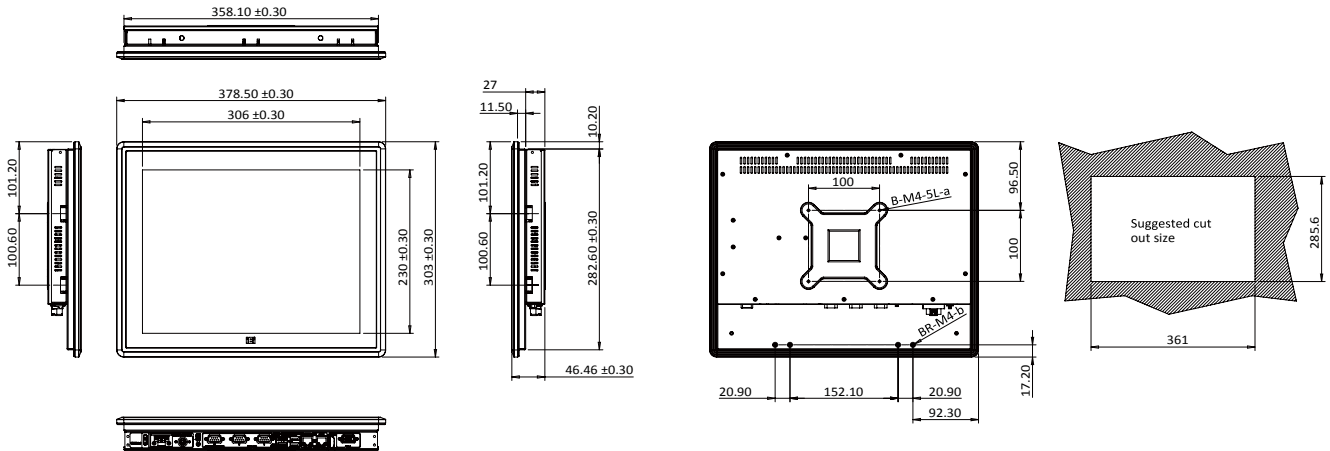
PPC-F19B
Fully Integrated I/O



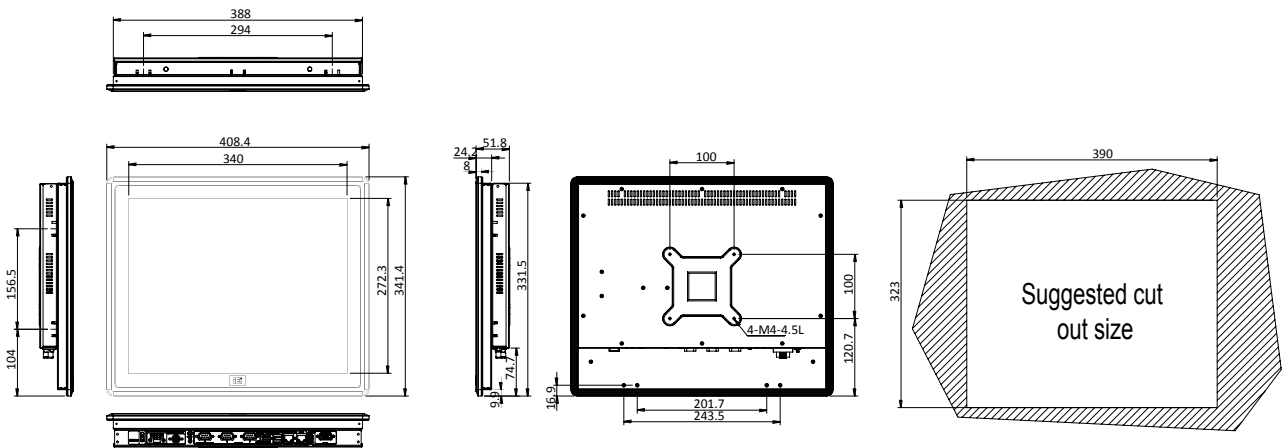
PPC-F12B
Dimensions (Unit: mm)



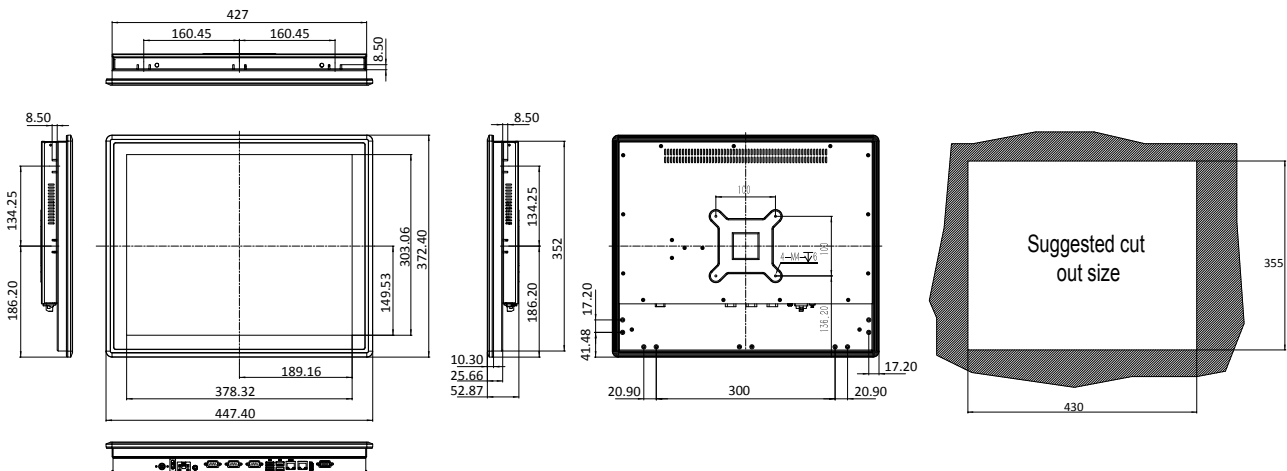
PPC-F15B Dimensions (Unit: mm)



PPC-F17B Dimensions (Unit: mm)



PPC-F19B Dimensions (Unit: mm)



PPC Series

Robust Product Design

IP Protection Improvement

The PPC series is equipped with robust front panel for water protection and tightly front assembly against the intrusion from any direction.

IP Code Table

The IP Code (International Protection Rating) consists of the letters IP followed by two digits.

Solids		Liquids	
First Numeral		Second Numeral	
No Protection	0	0	No Protection
Objects Greater than 50mm	1	1	Vertically Dripping Water
Objects Greater than 12mm	2	2	75°-90° Sprayed Water
Objects Greater than 2.5mm	3	3	30°-90° Sprayed Water
Objects Greater than 1.0mm	4	4	Water sprayed-low Pressure
Dust-Protected	5	5	Water jets-low Pressure
Dust-Tight	6	6	Water Jets-high Pressure
IP 66 Compliant!		7	Temporary Immersion
		8	Indefinite Immersion



Wide Temperature Range (-20°C~60°C)

The PPC-5150A-H61/ PPC-5170A-H61 and UPC-V315 supports wide operating temperature, surviving from any kinds of harsh environment.



High Efficiency Transmission

SFP Fiber LAN

The small form-factor pluggable transceiver (SFP) is a compact, hot-pluggable transceiver used for both telecommunication and data communication applications.

- Immunity to electromagnetic interference
- High electrical resistance
- No sparks
- Long transmission distance – up to 2 km (multi-mode)/120 km (single-mode)

Transmission Distance

Type	Core Diameter	Wavelength (nm)	Cost	Max. Distance (km)
Single-Mode	8 to 10	1310 or 1550	More expensive	120 ★
Multi-Mode	50 or 62.5	850 or 1300	Medium	2
RJ-45	N/A	N/A	Cheaper	0.1

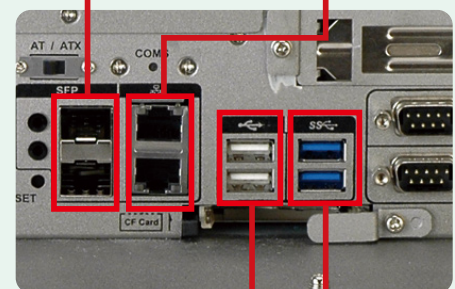
USB 3.2 Gen 1 – Faster Data Transmission

USB 3.2 Gen 1 has higher transmission speed and wider data bandwidth, supporting faster transferring for the user.

USB Version	USB 1.0	USB 2.0	USB 3.2 Gen 1
Data Transfer Rate)	12Mbps	480Mbps	5Gbps ★
Media (Data Size)	Transfer Time		
Song / Pic (4 MB)	5.3 sec	0.1 sec	0.01 sec
HD-Movie (25GB)	9.3 hr	13.9 min	70 sec

Multiple choices

We provide two transmission LAN types for choice, either 2 × Fiber LAN or 2 × RJ-45.



Transmission distance up to 120 km

USB 2.0 USB 3.2 Gen 1

PPC Series Selection Guide



LCD Size		15"	17"	19"
Model		PPC-5150A-H61	PPC-5170A-H61	PPC-5190A-H61
Display	LCD Size	15 "	17 "	19 "
	Max Resolution	1024(W) x 768(H)	1280(W) x 1024(H)	1280(W) x 1024(H)
	Brightness (cd/m ²)	450	350	350
	Contrast Ratio	800:1	800 : 1	1000 : 1
	LCD Color	16.2M	16.7M	16.7M
	Pixel Pitch (mm) (HxV)	0.297 x 0.297	0.264(H) x 0.264(V)	0.294(H) x 0.294(V)
	Viewing Angle (V/H)	150° / 160°	160° / 160°	160° / 170°
	Backlight MTBF (hrs)	50000		
Touch	Touchscreen	5-wire resistive type with RS-232 interface		
	Touch Controller	DMC 9000		
Motherboard	CPU	2nd/3rd generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU		
	Chipset	Intel® H61		
	RAM	Two 204-pin DDR3 SO-DIMM slots (max. 16GB)	Two 204-pin DDR3 SO-DIMM slots (max. 16GB)	Two 204-pin DDR3 SO-DIMM slots (max. 16GB)
	Ethernet	Realtek RTL8111E PCIe GbE controller supporting ASF 2.0		
	Audio Codec	Realtek ALC662 audio codec		
I/O Ports and Switches	4 x RS-232 COM port 1 x RS-232/422/485 port 2 x RJ-45 for LAN port 4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear 1 x VGA port 1 x Audio (Line-out, MIC-in) 2 x SFP fiber LAN 1 x Power switch 1 x AT/ATX switch 1 x PCI/PCIe slot	1 x RS-232/422/485 2 x RJ-45 for LAN port 4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear 1 x VGA port 1 x Audio (Line-out, MIC-in) 2 x SFP fiber LAN 1 x Power switch 1 x AT/ATX switch 1 x PCI/PCIe slot	4 x RS-232COM port 1 x RS-232/422/485 port 2 x RJ-45 for LAN port 4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear 1 x VGA port 1 x Audio (Line-out, MIC-in) 2 x SFP fiber LAN 1 x Power switch 1 x AT/ATX switch 1 x PCI/PCIe slot	
Drive Bay	HDD Drive Bay	1 x 2.5" SATA HDD bay with anti-shook		
	SSD	CF Type II, mSATA (SATA2)		
	CD-ROM Drive Bay	Slim type CD-ROM bay		
Expansion Slot		Either 1 x PCI slot or 1 x PCIe slot, 1 x PCIe Mini card		
System Cooling		Active with fan		
Environment	Operating Temperature	-20°C ~ 60°C	-20°C ~ 60°C	-10°C ~ 50°C
	Storage Temperature	-30°C ~ 70°C	-30°C ~ 70°C	-20°C ~ 60°C

15" Industrial Panel PC

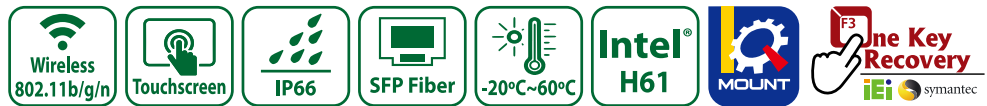
PPC-5150A-H61

Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® Processor



Features

- High brightness TFT-LCD panel with LED backlight
- Multiple storage options: 2.5" SATA HDD, CF slot and mSATA
- Dual Ethernet provides continuous network service and allows sharing among different workgroups in two different subnets
- Optional PCI / PCIe x 1 expansion slot
- Optional slim type CD-ROM drive bay
- Robust aluminum front bezel and metal casing
- IP 66 compliant front panel
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery (over 4GB storage capacity)



Specifications

Model		PPC-5150A-H61
Display	LCD Size	15 "
	Max. Resolution	1024(W) x 768(H)
	Brightness (cd/m ²)	450
	Contrast Ratio	800 : 1
	LCD Color	16.2M
	Pixel Pitch (mm) (HxV)	0.297(H) x 0.297(V)
	Viewing Angle (V/H)	150°/160°
	Backlight MTBF (hrs)	50000
Touch	Touchscreen	5-wire resistive type with RS-232 interface
	Touch Controller	DMC 9000
Motherboard	SBC	POS-H61
	CPU	2nd/3rd generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU
	Chipset	Intel® H61
	RAM	Two 204-pin DDR3 SO-DIMM slots (max. 16GB)
	Ethernet	Realtek RTL8111E PCIe GbE controller supporting ASF 2.0
	Audio Codec	Realtek ALC662 audio codec
I/O Ports and Switches		4 x RS-232 COM port 1 x RS-232/422/485 port 2 x RJ-45 for LAN port 4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear 1 x VGA port
		1 x Audio (Line-out, MIC-in) 2 x SFP fiber LAN 1 x Power switch 1 x AT / ATX switch 1 x PCI/PCIe slot
Drive Bay	HDD Drive Bay	1 x 2.5" SATA/IDE HDD bay with anti-shock
	SSD	CF Type II, mSATA (SATA2 signal)
	CD-ROM Driver Bay	SATA slim type CD-ROM bay
Expansion Slot		Either 1 x PCI slot or 1 x PCIe slot,
		1 x PCIe Mini card
Physical	Front Panel Construction	Aluminum
	Chassis Construction	Heavy-duty steel
	Mounting	Panel, wall, rack, stand and arm (VESA 100 mm x 100 mm)
	Front Panel Color	Silver (Pantone 8001C)
	Dimensions (WxHxD) (mm)	410 x 309 x 110.5
	Cut Out Dimensions (WxH) (mm)	387 x 286
	Net/Gross Weight	7 kg / 11 kg
Environment	Operating Temperature	-20°C ~ 60°C
	Storage Temperature	-30°C ~ 70°C
	System Cooling	Active with fan
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak
	Shock	10G acceleration part to part (11ms)
	IP Rating	Front IP66 Compliant
Power Supply	AC Input	AC input ATX power supply - P/N: 63030-010220-100-RS - 220W power supply - Input: 90VAC~264VAC, 50/60Hz - Output (max.): 3.3V@10A, 5V@14A, 12V@14A, -12V@0.3A
	DC Input	DC input ATX power supply - P/N: ACE-4520C-RS - 200W power supply - Input: 24 VDC (18~36 VDC) - Output (max.): 3.3V@12A, 5V@12A, 12V@15.4A, -12V@0.5A

Ordering Information

Part No.	Description
PPC-5150A-H61-P/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Pentium® G6xxT dual-core CPU (above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, AC input PSU, touch screen, R20
PPC-5150AD-H61-P/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Pentium® G6xxT dual-core CPU (above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, R20
PPC-5150A-H61-i3/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Core™ i3 2xxxT dual-core CPU (above 2.5GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, AC input PSU, touch screen, R20
PPC-5150AD-H61-i3/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Core™ i3 2xxxT dual-core CPU (above 2.5GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, R20
PPC-5150A-H61-i5/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Core™ i5 2xxxT dual-core CPU (above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, AC input PSU, touch screen, R20
PPC-5150AD-H61-i5/R-R20	15" 450 cd/m ² XGA panel PC with POS-H61, Intel® Core™ i5 2xxxT dual-core CPU (above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, R20
PCIR-01H-R10	One PCI slot riser card
PCIER-101H-R10	One PCIe x1 slot riser card

IQ Mounting Options

Item	Part No.
Rack Mount Kit	RK-150MS-R10
Arm	ARM-31-RS
Stand	STAND-210-R11

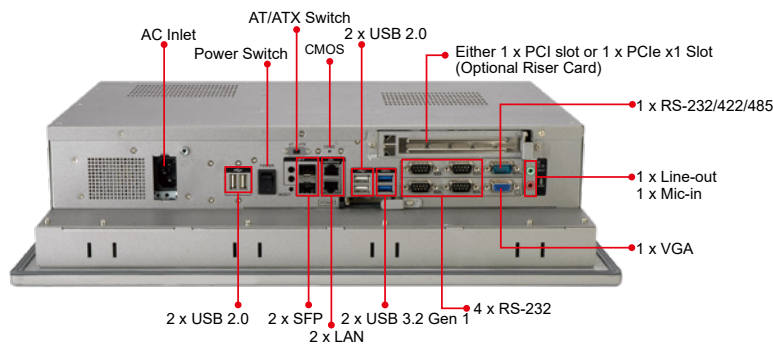
Options

Item	Description
EMB-WIFI-KIT01-R20	Wi-Fi module with RF cable and antenna, 1T1R, 802.11b/g/n
73400-AD7760H01-RS	Slim type SATA DVD-ROM

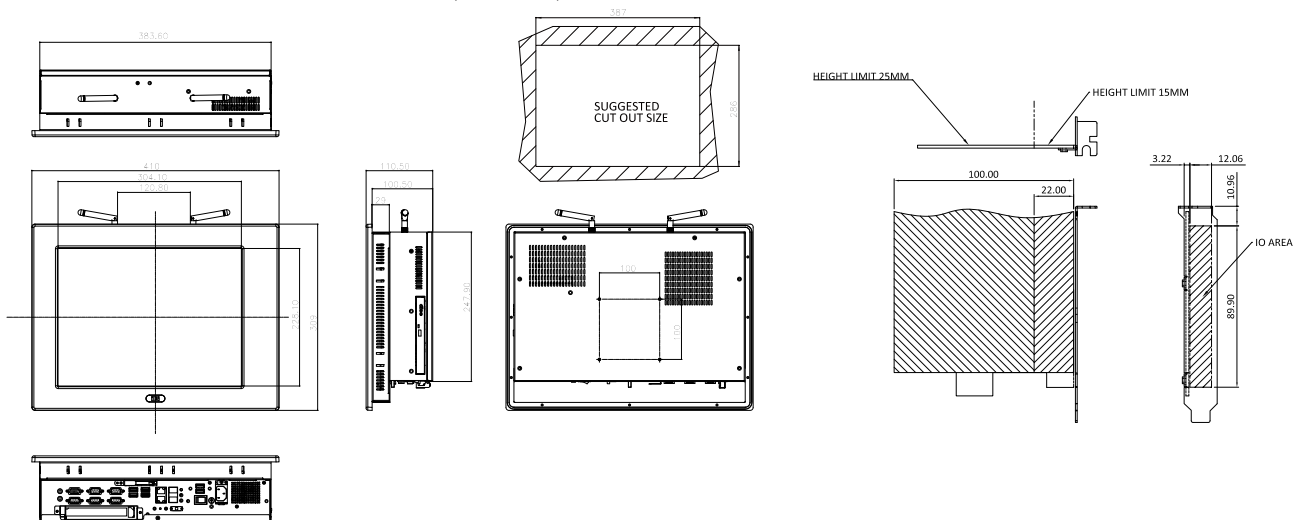
Packing List

Item	Part No.	Remark
SATA CD-ROM Cable	32803-000300-100-RS	Slim-line SATA 7+6P to SATA 7P/4P power, L=200/150 mm
Power Cord	32000-000002-RS	European standard, 1830 mm, plug (16A, 250V), connector (10A, 250V)
Panel Mount Kit	19Z00-000024-RS	19Z00-000024-RS x8
Wall Mount Kit	41020-016102-00-RS	

Fully Integrated I/O



PPC-5150A-H61 Dimensions (Unit: mm)



17" Industrial Panel PC

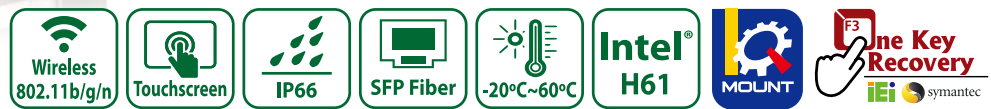
PPC-5170A-H61

Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® Processor



Features

- High brightness TFT-LCD panel with LED backlight
- Multiple storage options: 2.5" SATA HDD, CF slot, and mSATA
- Dual Ethernet provides continuous network service and allows sharing among different workgroups in two different subnets
- Optional PCI / PCIe x1 expansion slot
- Optional slim type CD-ROM drive bay
- Robust aluminum front bezel and metal casing
- IP 66 compliant front panel for PPC-5170A-H61
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery (over 4GB storage capacity)



Specifications

Model		PPC-5170A-H61
Display	LCD Size	17"
	Max. Resolution	1280(W) x 1024(H)
	Brightness (cd/m ²)	350
	Contrast Ratio	800 : 1
	LCD Color	16.7M
	Pixel Pitch (mm) (HxV)	0.264(H) x 0.264(V)
	Viewing Angle (V/H)	170°/ 160°
	Backlight MTBF (hrs)	50000
Touch	Touchscreen	5-wire resistive type with RS-232 interface
	Touch Controller	DMC 9000
Motherboard	SBC	POS-H61
	CPU	2nd/3rd generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU
	Chipset	Intel® H61
	RAM	Two 204-pin DDR3 SO-DIMM slots (Max. 16GB)
	Ethernet	Realtek RTL8111E PCIe GbE controller supporting ASF 2.0
	Audio Codec	Realtek ALC662 audio codec
I/O Ports and Switches		4 x RS-232 COM port
		1 x RS-232/422/485 port
		2 x RJ-45 for LAN port
		4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear
		1 x VGA port
Drive Bay	HDD Driver Bay	1 x 2.5" SATA HDD bay with anti-shock
	SSD	CF Type II, mSATA (SATA2 signal)
	CD-ROM Driver Bay	SATA slim type CD-ROM bay
Expansion Slot		Either 1 x PCI slot or 1 x PCIe slot
		1 x PCIe Mini card
Physical	Front Panel Construction	Aluminum
	Chassis Construction	Heavy-duty steel
	Mounting	Panel, wall, rack, stand and arm (VESA 100 mm x 100 mm)
	Front Panel Color	Silver (Pantone 8001C)
	Dimensions (WxHxD) (mm)	452 x 356 x 115
	Cut Out Dimensions (WxH) (mm)	426 x 331
	Net/Gross Weight	8 kg / 12 kg
	IP Rating	Front IP66 compliant
Environment	Operating Temperature	-20°C ~ 60°C
	Storage Temperature	-30°C ~ 70°C
	System Cooling	Active with fan
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak
	Shock	10G acceleration part to part (11ms)
Power Supply	AC Input	AC input ATX power supply - P/N: 63000-ACEA622A166-RS - 220W power supply - Input: 90VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@10A, -12V@0.8A
	DC Input	DC input ATX power supply - P/N: ACE-4520C-RS - 200W power supply - Input: 24 VDC (18~36 VDC) - Output (max.): 3.3V@12A, 5V@12A, 12V@15.4A, -12V@0.5A

Ordering Information

Part No.	Description
PPC-5170A-H61-P/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Pentium® G6xxT dual-core CPU (above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5170AD-H61-P/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Pentium® G6xxT dual-core CPU (above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PPC-5170A-H61-i3/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Core™ i3 2xxxT dual-core CPU (above 2.5GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5170AD-H61-i3/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Core™ i3 2xxxT dual-core CPU (above 2.5GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PPC-5170A-H61-i5/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Core™ i5 2xxxT dual-core CPU (above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5170AD-H61-i5/R-R10	17" 350 cd/m ² SXGA panel PC with POS-H61, Intel® Core™ i5 2xxxT dual-core CPU (above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PCIR-01H-R10	One PCI slot riser card
PCIER-101H-R10	One PCIe x1 slot riser card

IQ Mounting Options

Item	Part No.
Rack Mount Kit	RK-170MS-R10
Arm	ARM-31-RS
Stand	STAND-210-R11

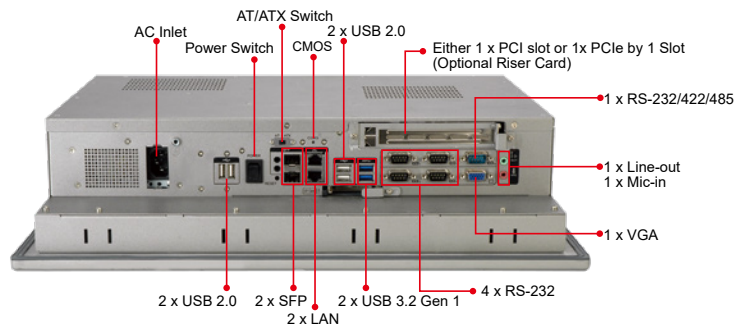
Options

Part Number	Description
19Z00-000112-RS	IDE CD-ROM installation kit (W/O IDE cable)
41019-0393C0-00-RS	IDE HDD bracket
32200-000037-RS	25cm HDD IDE cable
EMB-WIFI-KIT01-R20	Wi-Fi module with RF cable and antenna
73400-AD7760H01-RS	Slim type SATA DVD-ROM

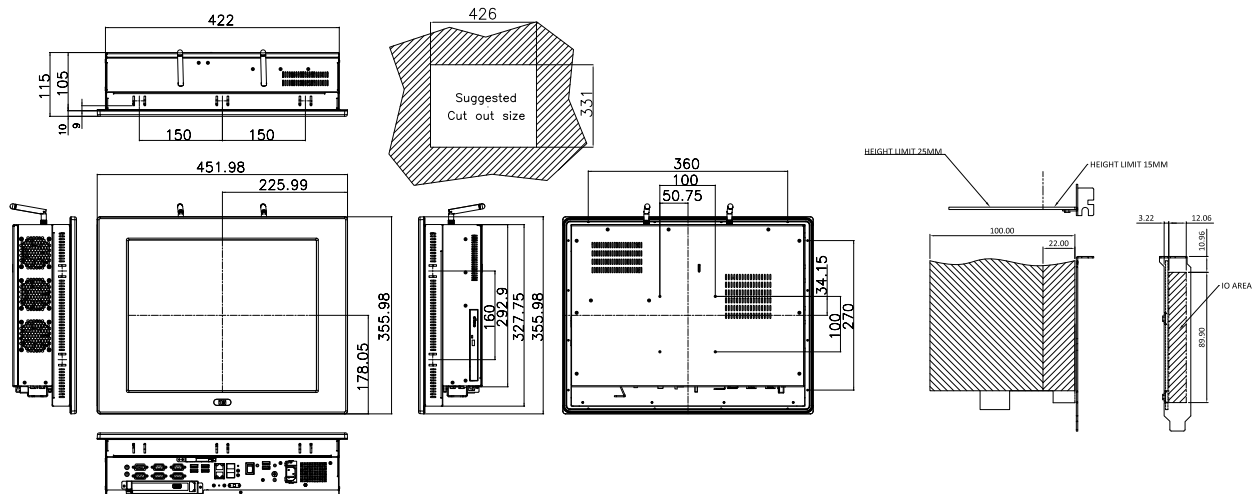
Packing List

Item	Part No.	Remark
SATA CD-ROM Cable	32803-000300-100-RS	Slim-line SATA 7+6P to SATA 7P/4P power, L=200/150 m
Power Cord	32000-000002-RS	European standard, 1830 mm, plug (16A, 250V), connector (10A, 250V)
Panel Mount Kit	19Z00-000024-RS	19Z00-000024-RS x10
Wall Mount Kit	41020-016102-00-RS	

Fully Integrated I/O



PPC-5170A-H61 Dimensions (Unit: mm)



19" Industrial Panel PC

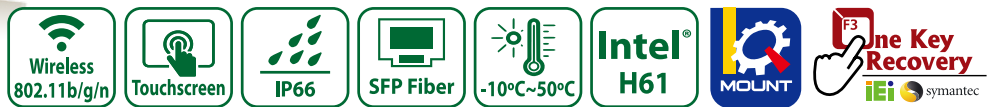
PPC-5190A-H61

Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® Processor



Features

- High brightness TFT-LCD panel with LED backlight
- Multiple storage options: 2.5" SATA HDD, CF slot, and mSATA
- Dual Ethernet provides continuous network service and allows sharing among different workgroups in two different subnets
- Optional PCI / PCIe x1 expansion slot
- Optional slim type CD-ROM drive bay
- Robust aluminum front bezel and metal casing
- IP 66 compliant front panel for PPC-5190A-H61
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery (Over 4GB storage capacity)



Specifications

Model		PPC-5190A-H61
Display	LCD Size	19"
	Max. Resolution	1280(W) x 1024(H)
	Brightness (cd/m ²)	350
	Contrast Ratio	1000 : 1
	LCD Color	16.7M
	Pixel Pitch (mm) (HxV)	0.294(H) x 0.294(V)
	Viewing Angle (V/H)	160°/ 170°
	Backlight MTBF (hrs)	50,000
Touch	Touchscreen	5-wire resistive type with RS-232 interface
	Touch Controller	DMC 9000
Motherboard	SBC	POS-H61
	CPU	2nd/3rd generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU
	Chipset	Intel® H61
	RAM	Two 204-pin DDR3 SO-DIMM slots (max. 16GB)
	Ethernet	Realtek RTL8111E PCIe GbE controller supporting ASF 2.0
	Audio Codec	Realtek ALC662 audio codec
I/O Ports and Switches		4 x RS-232 COM port 1 x RS-232/422/485 port 2 x RJ-45 for LAN port 4 x USB 2.0, 2 x USB 3.2 Gen 1 (5Gb/s) on rear 1 x VGA port
		1 x Audio (Line-out, MIC-in) 2 x SFP fiber LAN 1 x Power switch 1 x AT / ATX switch 1 x PCI/PCIe slot
Drive Bay	HDD Driver Bay	1 x 2.5" SATA HDD bay with anti-shook
	SSD	CF Type II, mSATA (SATA2 signal)
	CD-ROM Driver Bay	Slim type CD-ROM bay
Expansion Slot		Either 1 x PCI slot or 1 x PCIe slot 1 x PCIe Mini card
Physical	Front Panel Construction	Aluminum
	Chassis Construction	Heavy-duty steel
	Mounting	Panel, wall, rack, stand and arm (VESA 100 mm x 100 mm)
	Front Panel Color	Silver (Pantone 8001C)
	Dimensions (WxHxD) (mm)	482 x 399 x 115
	Cut Out Dimensions (WxH) (mm)	450 x 363
Net/Gross Weight		12.6 kg / 18.2 kg
Environment	Operating Temperature	-10°C ~ 50°C
	Storage Temperature	-20°C ~ 60°C
	System Cooling	Active with Fan
	Vibration	5~17Hz, 0.1 double amplitude displacement 17~640Hz 1.5G acceleration peak to peak
	Shock	10G acceleration part to part (11ms)
IP Rating		Front IP66 compliant
Power Supply	AC Input	AC input ATX power supply - P/N: 63000-ACEA622A166-RS - 220W power supply - Input: 90VAC~264VAC, 50/60Hz - Output (max.): 3.3V@14A, 5V@16A, 12V@10A, -12V@0.8A
	DC Input	DC input ATX power supply - P/N: ACE-4520C-RS - 200W power supply - Input: 24 VDC (18~36 VDC) - Output (max.): 3.3V@12A, 5V@12A, 12V@15.4A, -12V@0.5A

Ordering Information

Part No.	Description
PPC-5190A-H61-P/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Pentium Dual Core G6xxT (Above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5190AD-H61-P/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Pentium Dual Core G6xxT (Above 2.2GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PPC-5190A-H61-i3/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Core i3 Dual Core 2xxxT CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 RAM* 2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5190AD-H61-i3/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Core i3 Dual Core 2xxxT CPU (Above 2.5GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PPC-5190A-H61-i5/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Core i5 Dual Core 2xxxTCPU (Above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-A622A, touch screen, RoHS
PPC-5190AD-H61-i5/R-R10	19" 350 cd/m ² SXGA Panel PC with POS-H61, Core i5 Dual Core 2xxxTCPU (Above 2.7GHz), TDP 35W, 2GB DDR3 RAM*2, Silver color, PSU ACE-4520C, touch screen, RoHS
PCIR-01H-R10	1-Slot PCI riser card
PCIER-101H-R10	1-Slot PCIe x 1 riser card

IQ Mounting Options

Item	Part No.
Rack Mount Kit	RK-190MS-R10
Arm	ARM-31-RS
Stand	STAND-210-R11

Options

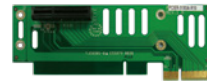
Part Number	Description
EMB-WIFI-KIT11-R20	Wi-Fi module with RF cable and antenna, 1T1R, 802.11b/g/n
73400-AD7760H01-RS	1T1R wifi module kit for embedded system, IEEE802.11a/b/g/n/ac WiFi with Bluetooth 4.0/3.0+HS, 1 x wifi module, 2 x 350mm RF cable, 2 x Antenna, RoHS

Packing List

Item	Part No.	Remark
SATA CD-ROM Cable	32803-000300-100-RS	Slim-line SATA 7+6P to SATA 7P/4P power, L=200/150 m
Power Cord	32000-000002-RS	European standard, 1830 mm, plug (16A, 250V), connector (10A, 250V)
Panel Mount Kit	19Z00-000024-RS	19Z00-000024-RS x10
Wall Mount Kit	41020-016102-00-RS	

PCIER-101H-R10

PCIe x4 slot with PCIe x1 signal riser card

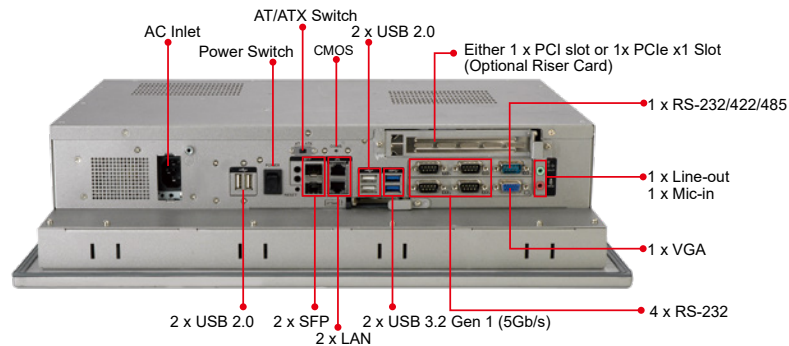


PCIR-01H-R10

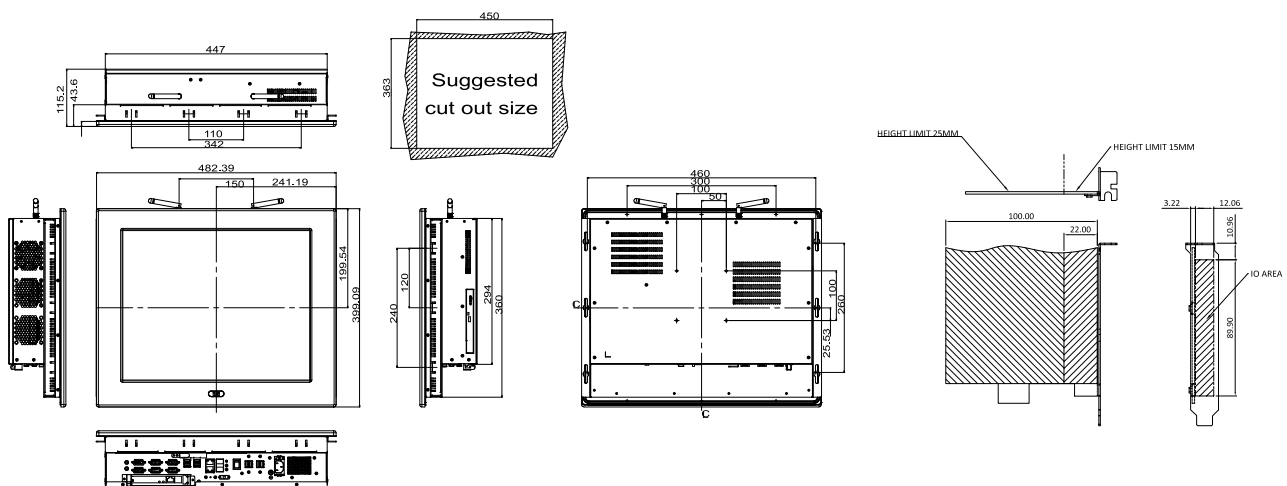
One-slot PCI riser card



PPC-5190A-H61 Fully Integrated I/O



PPC-5190A-H61 Dimensions (Unit: mm)



Vertical Market PPC Selection Guide



Marine Series

Model		S19A-QM87	S24A-QM87	S19M	S24M
Display	LCD Size	19"	24"	19"	24"
	Max. Resolution	1280 x 1024	1920 x 1080	1280 x 1024	1920 x 1080
	Brightness (cd/m ²)	300	300	300	300
	Contrast Ratio	2000:1	5000:1	2000:1	5000:1
	LCD Color	16.7M	16.7M	16.7M	16.7M
	Pixel Pitch (mm) (HxV)	0.294 x 0.294	276.75 x 276.75	0.294 x 0.294	276.75 x 276.75
	Viewing Angle (V/H)	178° / 178°	178° / 178°	178° / 178°	178° / 178°
	Backlight MTBF (hrs)	50000	50000	50000	50000
Touch	Touchscreen	Projected capacitive touch with USB interface, 6H			
Motherboard	CPU	Intel® 22nm 4th Generation Mobile Core™ i5-4400E 2.7GHz processor		-	-
	Chipset	Intel® QM87	Intel® QM87	-	-
	RAM	Two 204-pin 1600/1333 MHz dual-channel DDR3 SDRAM support up to 16GB		-	-
	Ethernet	GbE1: Intel® I217LM with Intel® AMT 9.0 support GbE2: Intel® I210-AT PCIe controller		-	-
	Audio Codec	N/A	N/A	-	-
I/O Ports and Switches	3 x USB 2.0 2 x USB 3.2 Gen 1 (5Gb/s) 1 x VGA 1 x DVI-D 1 x HDMI 1 x PS/2 (through Y-type cable supporting KB/MS) 2 x CAN-bus 2.0B, 3-pin terminal block (2.5KV isolation protection) 1 x DB-9 RS-232 (non-isolated), 4 x DB-9 RS-232/422/485 (2.5KV isolation protection) 2 x RJ-45 GbE LAN with teaming support (2KV isolation protection) 1 x Mic-in 1 x Line-out 1 x Line-in 2 x Antenna SMA hole (reserved) 1 x Isolated 9V ~ 36V DC 3-pin terminal block 1 x Power button				
Drive Bay	HDD Driver Bay	-	-	-	-
	SSD	2 x SSD Bay & 1 x CFAST	2 x SSD Bay & 1 x CFAST	-	-
Expansion Slot		2 x PCIe Mini card	2 x PCIe Mini card	-	-
System Cooling		Fanless	Fanless	Fanless	Fanless
Environment	Operating Temperature	-15°C to 55°C (5% to 95% RH)			
	Storage Temperature	-20°C to 60°C			
IP Rating		Front IP 66 / Rear IP 22			

Vertical Market PPC Selection Guide



IP69K Series

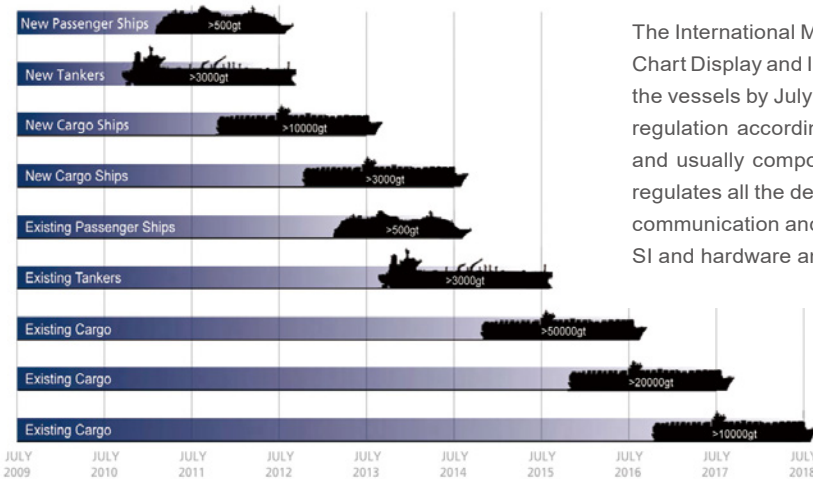
Model		UPC-F12C-ULT3	INOX-F15C-ULT3
Display	LCD Size	12.1"	15"
	Max. Resolution	1024 x 768	1024(W) x 768(H)
	Brightness (cd/m ²)	600	450
	Contrast Ratio	700 : 1	800 : 1
	LCD Color	16.2M	16.2M
	Pixel Pitch (mm) (HxV)	0.240 (H) x 0.240 (V)	0.297 (H) x 0.297 (V)
	Viewing Angle (V/H)	160° / 140°	160° / 150°
	Backlight MTBF (hrs)	50000	70000
Touch		P-CAP / Resistive Touc	P-CAP / Resistive Touch
Motherboard	CPU	6th Generation Intel® Core™ i5 and Celeron® ULT Processor	6th Generation Intel® Core™ i5 and Celeron® ULT Processor
	Chipset		
	RAM	1 x 260-pin 2133/1867 MHz single-channel DDR4 SO-DIMMs (system max. 32GB)	2 x 260-pin 2133/1867 MHz Dual-channel DDR4 SO-DIMMs (system max. 32GB)
	Ethernet	LAN1: PCIe GbE by Intel I210 controller LAN2: PCIe GbE by Intel I211 controller	2 x PCIe GbE by Intel I210 controller
	Audio Codec	Realtek ALC892 audio codec	Realtek ALC892 audio codec
I/O Ports and Switches		M12 Type: 1 x 8-pin M12 connector for RS-232 1 x 8-pin M12 connector for RS-232/422/485 1 x 8-pin M12 connector for GbE LAN 2 x 8-pin M12 connector for USB2.0 x2 1 x 5-pin M12 connector for DC Jack (12~36V DC)	2 x 8-pin M12 connector for RS-232/422/485 2 x 8-pin M12 X-Code connector for GbE LAN 2 x 8-pin M12 connector for 2*USB2.0 1 x 5-pin M12 connector for DC Jack (9-36V DC) 1 x Power switch with power led indicator 1 x Pressure relief valve
Drive Bay	HDD Driver Bay	1 x 2.5" SATA SSD bay	SATA SSD
	SSD	1 x M.2 (B key 2242 with USB 2.0 and SATA signal)	1 x mSATA / 1 x M.2 B-key (2242/2260/2280)
Expansion Slot		1 x Full-size/half-size mini PCIe card slot (PCIe x1 and USB 2.0 signal)	1 x Full size mini PCIe card slot (SATA 6G/s) 1 x Full-size/half-size (PCIex1 and USB 2.0 signal) 1 x B key M.2 slot (2242/2260/2280 with USB 3.2 Gen 1 (5Gb/s), PCIe x2, SATA signal)
System Cooling		Fanless	Fanless
Environment	Operating Temperature	-20°C ~ 60°C (without heater solution) -40°C ~ 60°C (with heater solution)	-20°C ~ 50°C
	Storage Temperature	-40°C ~ 70°C	-30°C ~ 60°C
IP Rating		Full IP65 or Full IP66 (with M12 connectors)	Front IP69K/ Others IP66

Marine Series

The maritime field faces critical environmental challenges, making reliable and rugged systems essential. IEI provides maritime professionals and marine-grade panel PCs and monitors and embedded box that use leading technologies and reliable designs which are perfect for applications on the dock, on the open deck, or in the control room or bridge.



» ECDIS Implementation Schedule

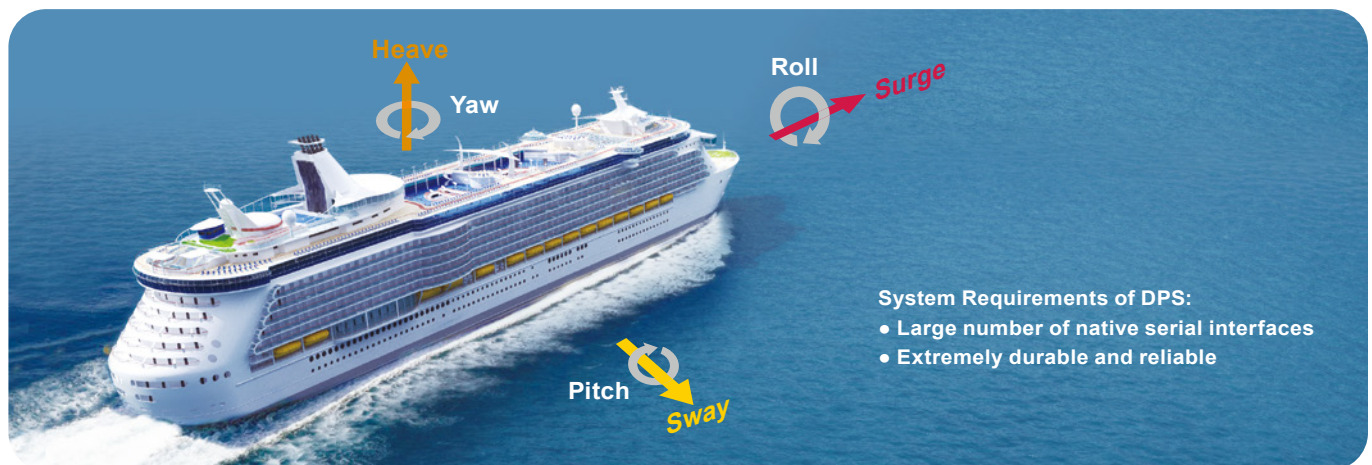


The International Maritime Organization (IMO) has announced that Electronic Chart Display and Information System (ECDIS) should be implemented into all the vessels by July 2018. Both new ships and existing ships should follow this regulation according to the timetable. The bridge systems are complicated and usually composed of multiple sub-systems. ECDIS clearly defines and regulates all the devices and connections, which include data collection, data communication and color calibration. Therefore, this is a huge opportunity for SI and hardware manufacturers.

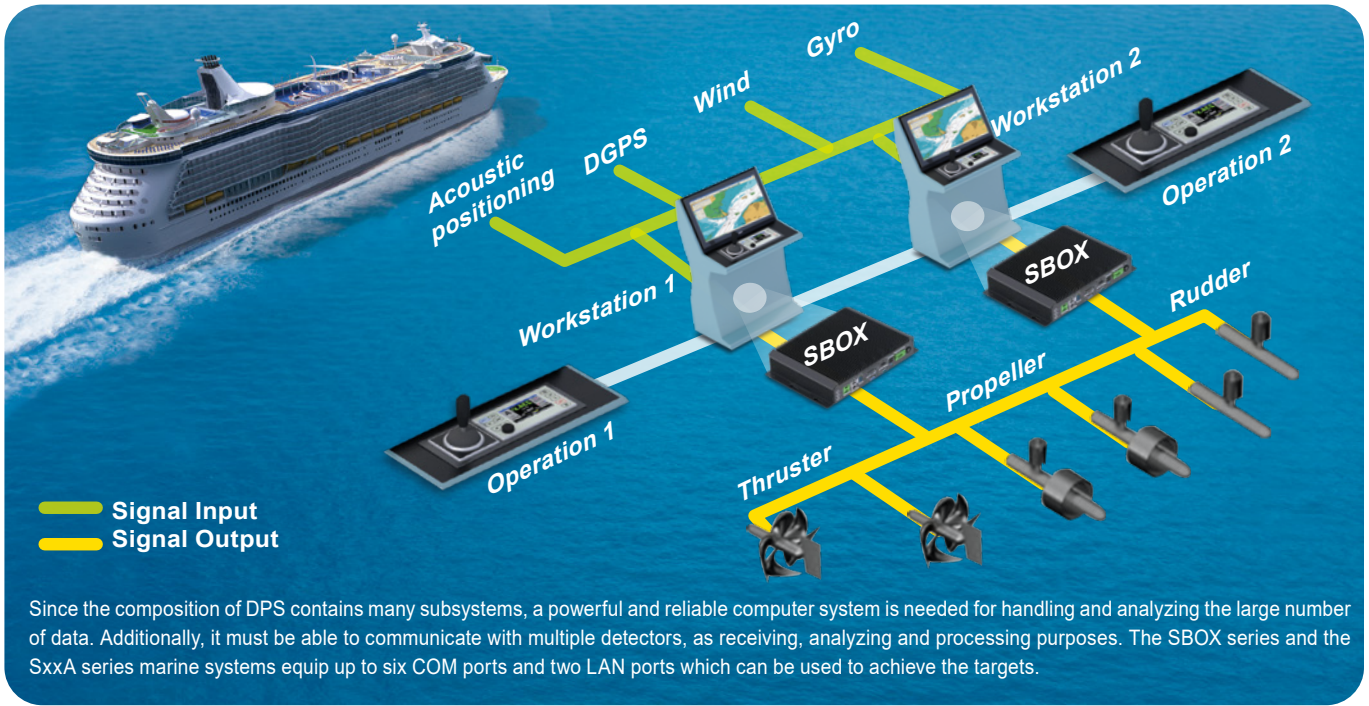
» Dynamic Position System (DPS)

Dynamic Positioning System (DPS) is a closed-loop control system. It is driven by the control system of the ship to counteract the environmental forces to the ship, such as wind, waves and ocean currents. This mechanism could make ship remain in the position on the sea. DPS precisely calculates the propellant force by continuously monitoring the ship position deviation and analyzing the natural forces which could affect ship's navigation direction. This process could make the ship remain in the correct position and maintain the right direction.

DPS is commonly used at various marine applications, such as subsea engineering work, underwater salvage, marine resources survey, marine engineering lifting, marine engineering umbilical laying, deep diving support, underwater engineering operations and marine engineering comprehensive test. DPS consists of measurement systems, control systems, power systems and propulsion systems, and other components. DPS possesses many functions which include maintaining the specified location, targeting, automatic searching for the best bow position, turning point tracking, ROV automatic tracking, changing the center of rotation, automatic navigation, parallel movement and other functions.

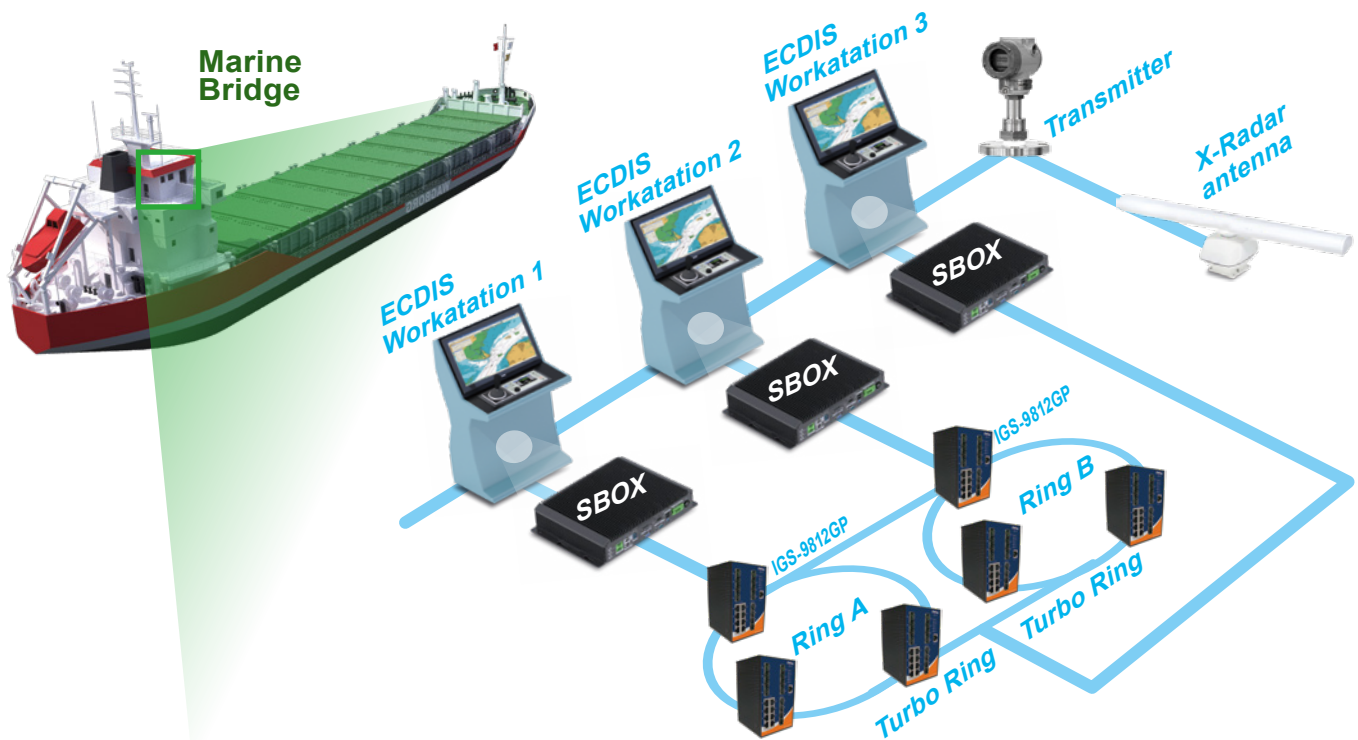


- System Requirements of DPS:**
- Large number of native serial interfaces
 - Extremely durable and reliable



» Electronic Chart Display and Information System (ECDIS)

The bridge system usually needs to collect and analyze many observation data, including anemometer stations, speed logs, weather stations and GPS signal. In order to precisely observe the changing walruses, the sensors are usually located at the top of ship or in the open deck. Therefore, with the long distance communication, these signals and communication paths should all follow specific regulation such as NEMA 0813. There are large amounts of data received at bridge, and they should be carefully processed and precisely analyzed. A powerful and reliable embedded box or panel PC is necessary for this task. IEI marine embedded box, the SBOX series, equips up to six COM ports which can be used to synchronously handle a large amount of data. The system of ship bridge consists of many sub-systems, which includes navigation system, path control system, radar system, etc. Most of them usually have dual system in order to prevent the failure of primary system. Additionally, dual system could also appear the identical information such as sea chart to the captain and pilot simultaneously. In practical application, dual or more LAN ports are necessary for connecting and controlling multiple monitors. The SBOX series and the S24A/S19A series contain six ports and two LAN ports to fulfill the requirements mentioned above.



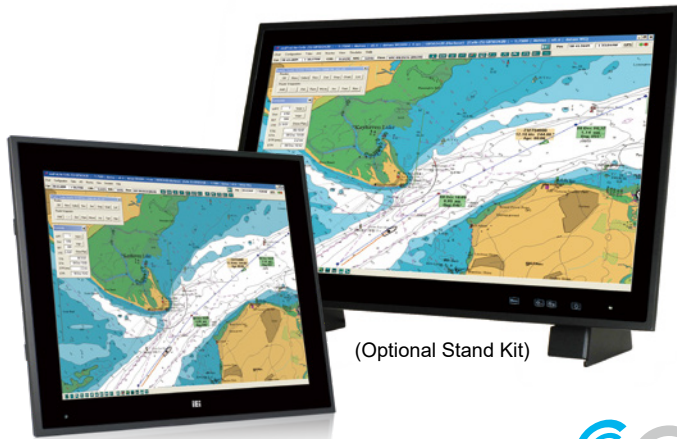
Marine Panel PC Series

S19A-QM87

Intel® Core™ i5 Dual-core Processor

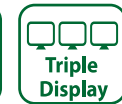
S24A-QM87

Intel® Core™ i5 Dual-core Processor



(Optional Stand Kit)

- **19" and 24" Fanless Panel PC with 4th Generation Intel® Core™ i5 Dual-core Processor**
- **-15°C ~ +55°C Wide Temperature and IP66 Protection with Flat-bezel Projected Capacitive Touchscreen**
- **Excellent Visual Performance**
 - Three independent displays
 - Full OSD function configuration
 - 0%~100% full range dimming
 - 178°/178° wide viewing angles
 - Optical bonding improves visibility under bright light (optional)
- **Isolation Protection**
 - RS-232/422/485 isolated serial ports
 - Isolated 18V ~ 36V DC input
 - 2 x Isolated CAN-bus 2.0B
- **iRIS Remote Management Module**



Specifications

Model		S19A-QM87	S24A-QM87
LCD	LCD Size	19"	24"
	Panel Type	PMVA	AMVA
	Max. Resolution	1280 x 1024 (5:4)	1920 x 1080 (16:9)
	Contrast Ratio	2000 : 1	5000 : 1
	Brightness (cd/m²)	300	300
	LCD Color	16.7M	16.7M
	Pixel Pitch (um)	294 x 294	276.75 x 276.75
	Viewing Angles (H-V)	178° / 178°	178° / 178°
Backlight MTBF (HRs)	50000	50000	
Touchscreen & Controller		EEX3188 (10 point) , 6H	EEX3188 (10 point) , 6H
System	SBC Model	SMB-QM87-R10	
	Chipset	Intel® QM87	
	CPU	Intel® 22nm 4th generation Mobile Core™ i5-4400E 2.7GHz processor	
	RAM	4GB 1600MHz DDR3 SDRAM (2GB*2) Two 204-pin 1600/1333 MHz dual-channel DDR3 SDRAM support up to 16GB	
Input Interfaces	I/O Ports & Switch	2 x USB 2.0	1 x Isolated 18V ~ 36V DC 3-pin terminal block
		2 x USB 3.2 Gen 1 (5Gb/s)	1 x Power button
	Expansion	2 x Full-size PCIe Mini slot, 1 x iRIS-2400 slot (iRIS remote management module)	1 x PS2 (through Y-type cable supporting KB/MS) 2 x CAN-bus 2.0B, 3-pin terminal block (2.5 kv isolation protection) 1 x DB-9 RS-232 (non-isolated) , 4 x DB-9 RS-232/422/485 (2.5 kv isolation protection) 2 x RJ-45 GbE LAN with teaming support (2KV isolation protection)
Ethernet Controller		GbE1: Intel® I217LM with Intel® AMT 9.0 support GbE2: Intel® I210-AT PCIe controller	
Sensor		Ambient light sensor (0% ~ 100%)	
OSD		Menu, brightness down, brightness up, LCD on/off by cap-sensor (graphics engine: Genesis STDP6038)	
Storage		2 x 2.5" SSD bay with RAID 0/1 function 1 x Accessible CFast socket	
LED Indicator		Power (power on: green; power off: orange)/storage (red, blinking)/IPMI (blue)	
Power Requirement		Isolated 24V DC (18~31.2 V DC), screw-type 3-pin terminal block	
Operating Temperature		-15°C ~ 55°C (5°F ~ 131°F)	
Storage Temperature		-20°C ~ 60°C (-4°F ~ 140°F)	
Humidity		5% to 95% RH	
Thermal Design		Fanless	
Watchdog Timer		Supports 1~255 sec. system reset	
Certifications		EMC: CE, FCC	
		Safety: DNV, IEC 60945 4th, IACS-E10, IEC 61174 IP rating: IP66 compliant front panel and IP22 compliant rear cover	
Housing		Front aluminum sheet metal (Black C)	
Cut-out Dimensions (L x W)		442 mm x 373 mm	576 mm x 358 mm
Dimensions (L x W x H)		463 mm x 394 mm x 113 mm	592 mm x 374 mm x 113 mm
Net Weight (kg)		9.91	13.03
Gross Weight (kg)		13.38	17.19
Vibration and Shock		IEC 60945 / DNV 2.4 compliant / IACS-E10	
Power Supply (DC Input)		DC Input ATX Power Supply	
		- P/N: 041D710-00-101-RS	
		- 150W power supply	
		- Input: 24V DC, 8-4A (max.) - Output (max.): 12V @13A	
Power Consumption		112W	117W

Ordering Information

P/N	Description
S19A-QM87i-i5/PC/4G-R11	19" 300cd/m ² SXGA marine panel PC with Intel® Mobile Core™ i5-4400E 2.7GHz CPU, 2*2GB DDR3 RAM, projected capacitive touch screen, isolated 18-36V DC, iRIS-2400 supported, R11
S24A-QM87i-i5/PC/4G-R11	24" 300cd/m ² FHD marine panel PC with Intel® Mobile Core™ i5-4400E 2.7GHz CPU, 2*2GB DDR3 RAM, projected capacitive touch screen, isolated 18-36V DC, iRIS-2400 supported, R11

Options

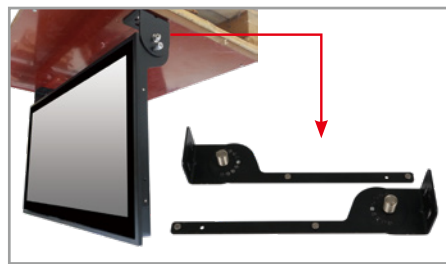
Item	Part No.	Description
Panel Mount Kit	PK-S19A-R10	For S19A
	PK-S24A-R10	For S24A
Desktop Stand	STAND-S24A-R10	For S19A & S24A
Ceiling Mount Kit	CEILMT-S24-R10	For S19A/S24A
HDMI Lockable Kit	HDMI-LK-R10	Universal HDMI Locking Adapter
iRIS Module	iRIS-2400-R10	IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface

Packing List

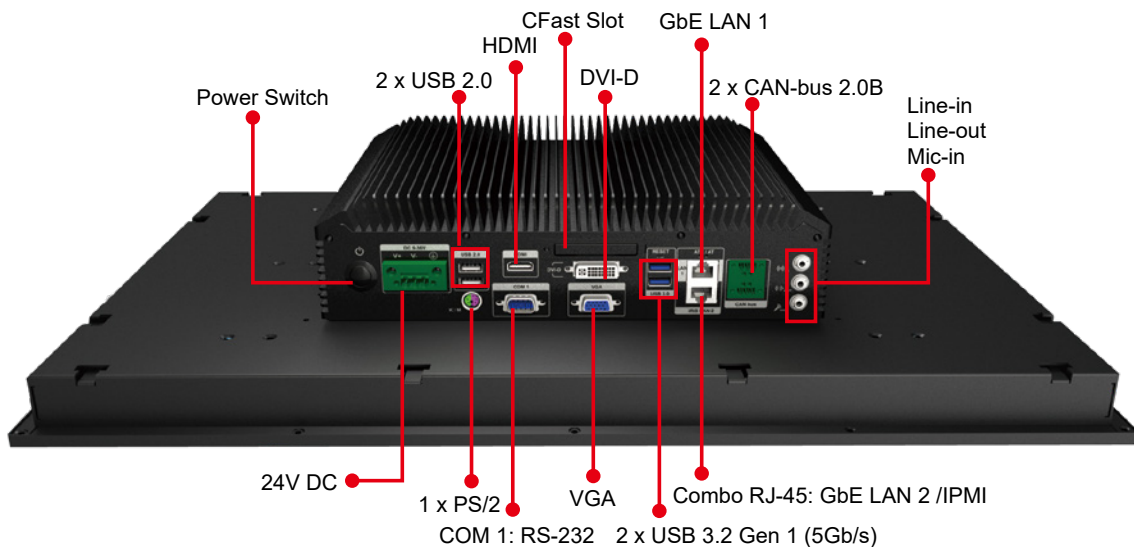
Item	Q'ty	Remark
S19A-QM87 or S24A-QM87	1	
Screw Pack	1	Including necessary screws
PS/2 Cable	1	Round cable; PS/2 cable
Wire Strain Band	3	Wire strain band



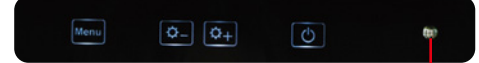
STAND-S24A-R10



CEILMT-S24-R10



Four OSD Keys by Cap-sensor
(Menu, Brightness down, Brightness up, LCD on/off)

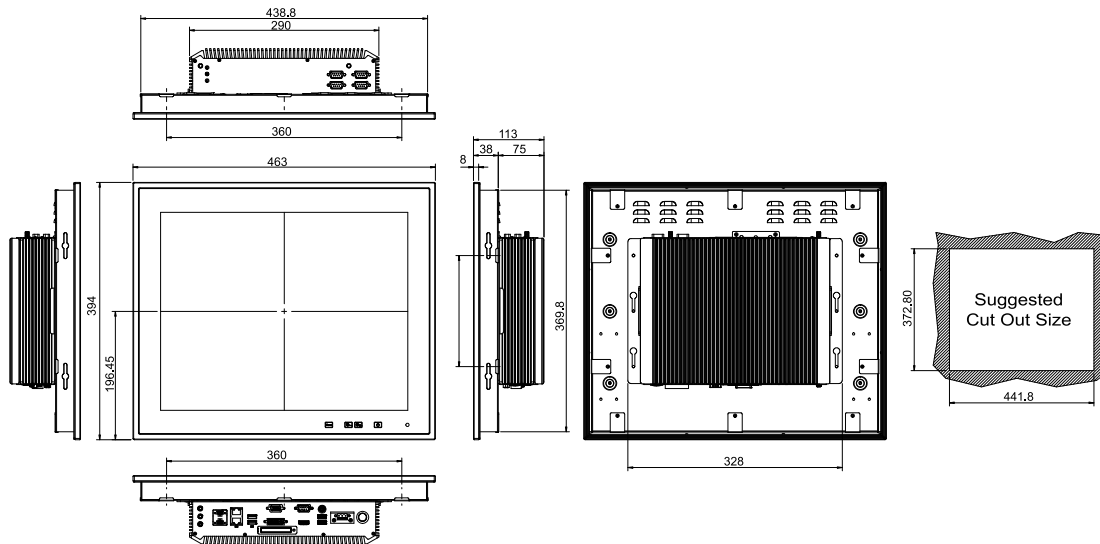


Ambient Light Sensor



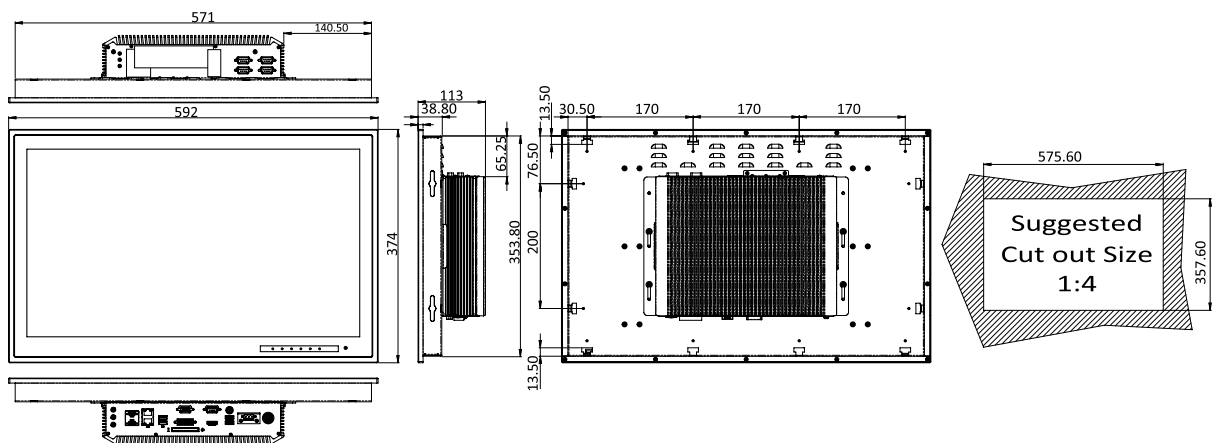
S19A-QM87 Dimensions

(Unit: mm)



S24A-QM87 Dimensions

(Unit: mm)



Marine Embedded Box Series

SBOX-100-QM87

Intel® Core™ i5 Dual-core Processor



Features

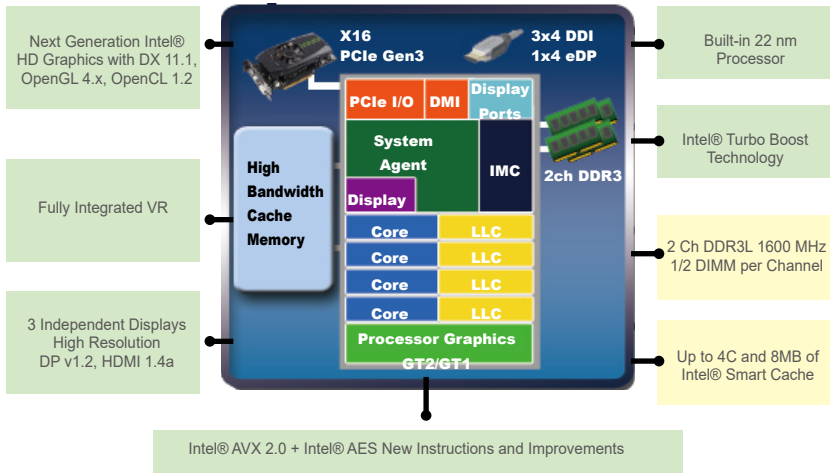
- Fanless marine computer with 4th Generation Intel® Core™ i5 dual-core processor
- -15°C ~ +55°C wide temperature
- Isolation protection
 - » 4 x RS-232/422/485 isolated serial ports
 - » Isolated 18 V~24 V DC input
 - » 2 x Isolated CAN-bus 2.0B
- 2 x 2.5" SSD bay with RAID 0/1 function
- Supports IEI iRIS-2400 (IPMI 2.0 compliant)



Intel® Core™ i5 High Performance Computing Power in a Fanless Design

IEI's high performance marine solutions are built with the powerful Intel® Core™ i5 CPU within a fanless system architecture. No matter your applications are general marine system management, monitoring or conning systems, radar systems, or ECDIS navigation, IEI's marine computers will give you the most stability than ever.

- Improved CPU performance with Intel® 22nm 4th Generation Mobile Core™ i5-4400E 2.7 GHz processor
- Two 204-pin 1600/1333MHz dual-channel DDR3 SDRAM support up to 16 GB



-15°C ~ 55°C FANLESS!

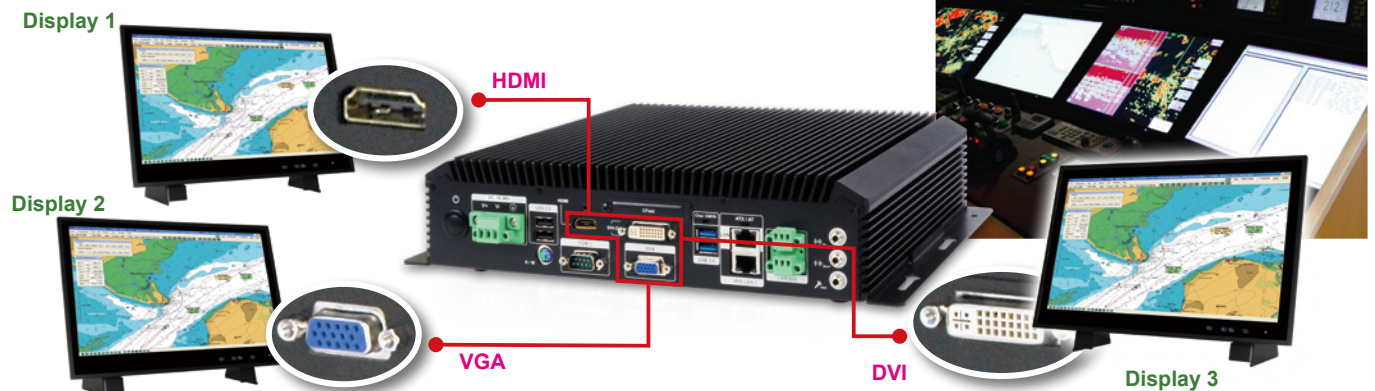


With IEI's fanless solutions, your vessels can avoid the bothersome of replacement of fan, increasing safety and efficiency for the crew and the entire ship.

Three independent aluminum heat sinks help the heat dissipate averagely, and help the system efficiently achieve wide operating temperature range between -15°C~55°C.

3 independent displays: HDMI, DVI, and VGA

The three simultaneously independent displays are supported via the on-board video output combinations of VGA, DVI and HDMI. This versatile combination of display output options make the marine system ideal for multi-monitor required applications in the bridge room.

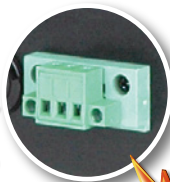


Multiple Isolated Ports for Comprehensive Protection against Electrical Surges

Ground loop and electric surges are common in the marine applications of electronic products due to the dense placement of devices. These stray electrical signals can cause equipment damage or malfunction.

2.5 kV isolation protection on the RS-232/422/485

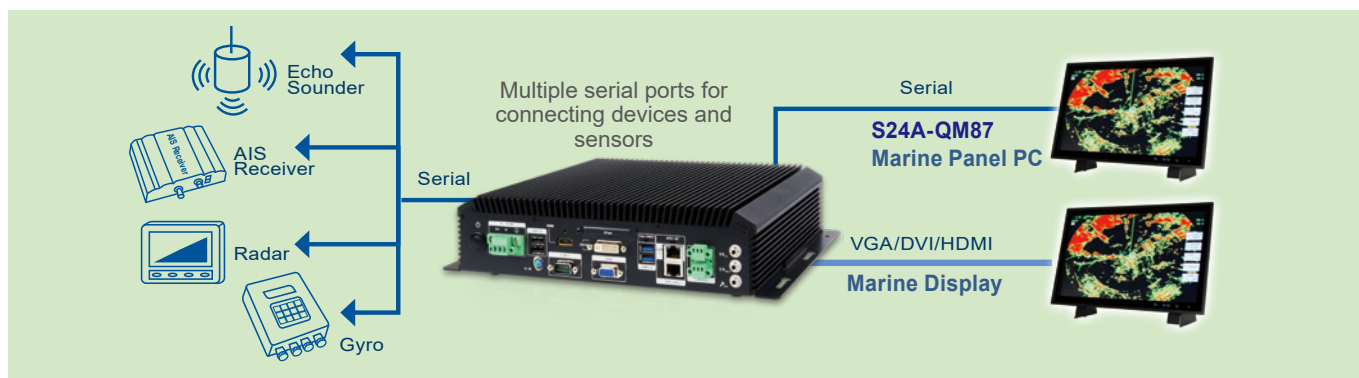
IEI marine computer is protected from any stray electrical signals from other devices on the ship. Electric surges that were generated from other electronic devices which often passed through serial lines to the marine computer can cause severe damage and malfunction to the computers.



Isolated 18 V~24 V DC power 2250 V DC Input to Output Basic Insulation

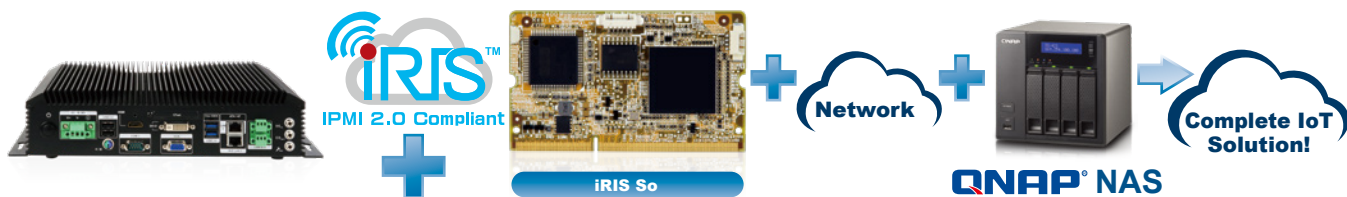
Two independent CAN 2.0B channels with 2.5 kV isolation protection

CAN 2.0B is a kind of marine electronic data network for communication between marine electronic devices such as chart plotters, navigation instruments, GPS receivers, etc.



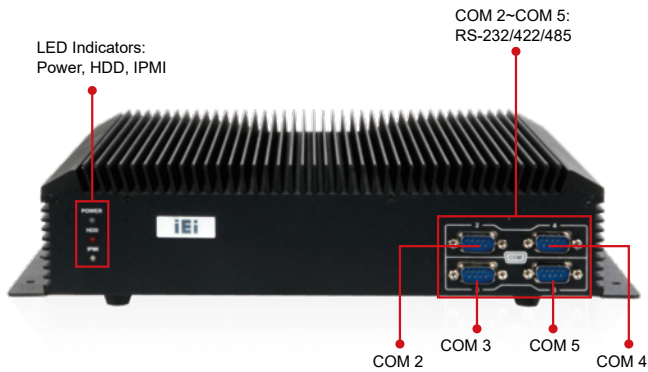
IEI Remote Intelligent Management System

The marine computer supports IEI iRIS remote management solution which helps users to manage multiple devices through single management interface and elevates work efficiency. The iRIS solution only requires a module and Internet connection!

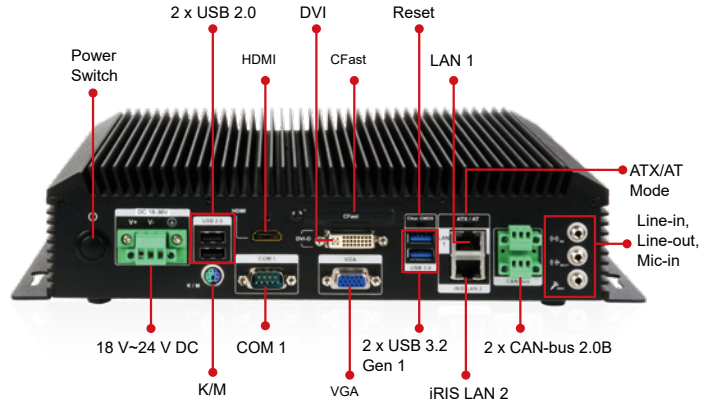


iRIS Key Feature	Detailed Functions	iRIS Key Feature	Detailed Functions
System health monitor	<ul style="list-style-type: none"> Hardware monitor Health log Event log 	Screen record	<ul style="list-style-type: none"> Remote video streaming record Event Trigger Setting & video record
Remote system maintenance	<ul style="list-style-type: none"> Remote BIOS update Remote OS recovery Remote KVM + One Key Recovery Remote out-of-band backup 	Remote power control	<ul style="list-style-type: none"> Reset Power Power Off Server – Immediately Power Off Server – Orderly Power On Server Power Cycle Server
Active alert & notice	<ul style="list-style-type: none"> Send instant system alerts via e-mail Send instant system alerts via SMS Send instant system alerts to management server 	Remote troubleshooting	<ul style="list-style-type: none"> Remote software update Remote OS installation & recovery Remote KVM Post code display
Remote device control	<ul style="list-style-type: none"> Fan control Remote KVM Remote setting BIOS 	Diagnose before dispatch	<ul style="list-style-type: none"> Health log analysis Event log analysis
		Group control	<ul style="list-style-type: none"> Group control

Front view



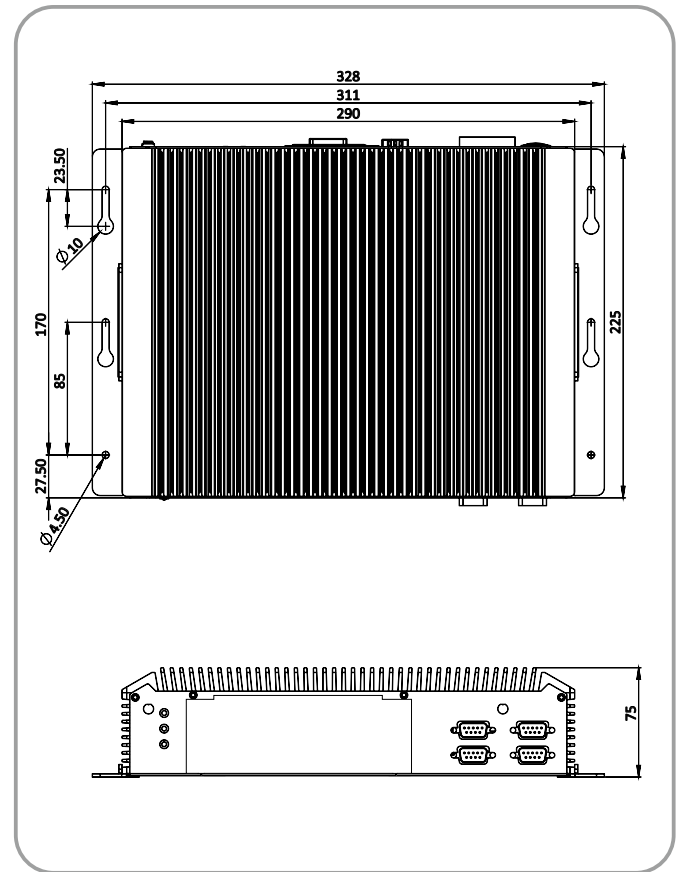
Rear view



Specifications

Model		SBOX-100-QM87	
Chassis	Color	Black	
	Dimensions (WxHxD) (mm)	290 x 75 x 225	
	System Fan	Fanless	
	Chassis Construction	Extruded aluminum alloy	
Motherboard	CPU	Intel® mobile Core™ i5-4400E (2.7 GHz, 37W)	
	Chipset	Intel® QM87	
	System Memory	2 x 204-pin DDR3 SO-DIMM slot (system max. 16 GB) Pre-installed 4 GB DDR3 SO-DIMM	
IPMI	iRIS Solution	iRIS-2400	
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s SSD bay with RAID 0/1 function	
	CF Card/CFast	1 x CFast	
	PS2 (KB/MS)	1	
I/O Interfaces	USB 3.2 Gen 1	2	
	USB 2.0	2	
	Ethernet	2 x RJ-45 with teaming support 1 x PCIe GbE by Intel® I217LM 1 x PCIe GbE by Intel® I210-AT (2 with 2 kV isolation)	
	COM Port	1 x DB-9 (non-isolated) 4 x RS-232/422/485 (with 2.5 kV isolation)	
	CAN-bus/OBD-II	2 x CAN-bus (with 2.5 kV isolation)	
	Display	1 x VGA, 1 x DVI-D, 1 x HDMI	
	Resolution	VGA: Up to 1920 x 1200 @ 60 Hz HDMI: Up to 2500 x 1600 @ 60 Hz DVI-D: Up to 2500 x 1600 @ 60 Hz	
	Audio	1 x Line-out, 1 x Line-in, 1 x Mic-in	
	Wireless	2 x Antenna SMA hole (reserved)	
	Expansions	PCIe Mini	2 x Full size*
	LED Indicator & Button	Indicator	Power (power on: green, power off: orange), storage (red, blinking), IPMI (blue)
		Power Input	Terminal block: Isolated 24V DC (18~31.2 V DC)
	Power	Consumption	100 W (Intel® mobile Core™ i5-4400E with 4 GB DDR3 memory)
Mounting		Wall mount	
Reliability	Operating Temperature	-15°C ~ 55°C (5°F ~ 131°F) with air flow (SSD)	
	Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)	
	Humidity	5% ~ 95%, non-condensing	
	Operating Shock		
	Operating Vibration	IEC 60945 and DNV 2.4 IASC-E10 compliant	
	Weight (Net/Gross)	4.08 kg / 6.03 kg	
	Safety/EMC	EMC/CE/FCC/DNV, IEC 60945 4th, IACS-E10, IEC 61174 compliant IP rating: IP22 compliant rear cover	
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E	

Dimensions (Unit: mm)



Ordering Information

Part No.	Description
SBOX-100-QM87i-5/4G-R10	Fanless marine computer with Intel® Mobile Core™ i5-4400E 2.7 GHz processor, 4 GB DDR3 memory, iRIS-2400 supported, isolated 18 V~36 V DC, R10
SBOX-100-QM87i-QGW-R10	Fanless marine computer with Intel® Mobile Core™ i5-4400E 2.7GHz Processor, DDR3 8GB, iRIS-2400 supported, with QTS-Gateway, isolated 18~36V DC, RoHS

Packing List

Item	P/N	Qty	Remark
PS/2 cable	32006-000300-100-RS	1	PS/2 cable
Rubber pad & screw pack		1	Rubber pad & screw pack

*SBOX-100-QM87i-QGW-R10 has only one Half-size PCIe Mini slot

Marine Monitor Series

The marine monitor series possesses many sophisticated features that fit with practical marine environment, including front panel IP 66 dust- and water-proof level, wide-rang operating temperatures, multi-point capacitive touch, wide viewing angles and OSD control. Especially, optical bonding is a good choice for the use of high brightness environments. Versatile mounting ways offer customers flexible methods in accordance with different operating environments.



■ Optical Bonding Enhance Visibility (optional)

The lightness is a crucial factor to sailing safety. IEI provides an option for optical bonding between touchscreen and LCD panel. The light transmitting between various medias could produce reflection. Traditionally, there is an air gap between touchscreen and LCD panel, which could reflect light seriously. It could affect the sailing security tremendously. Adding optical bonding material between touchscreen and LCD panel can improve reflection effectively and increase brightness by 10%. Furthermore, it not only increases hardness of touchscreen but also reduces power consumption.

Improving the viewing experience

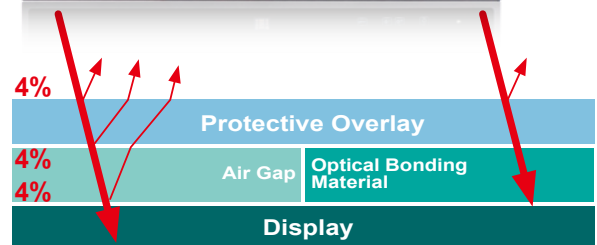
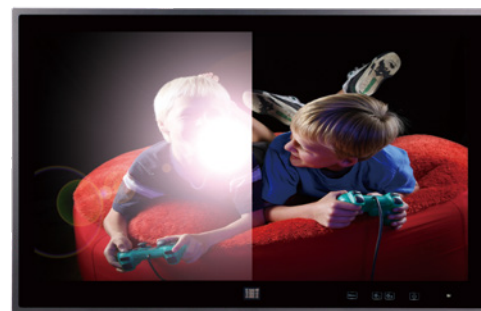
- Increase contrast ratio by 400% in sunlight
- Increase brightness by 10%

Increasing the display ruggedness

- Increase the falling ball impact resistance by up to 3 times

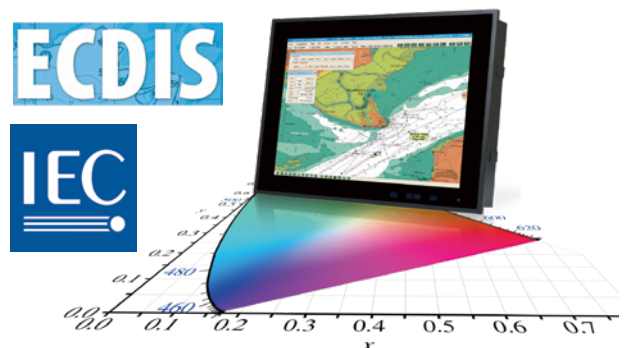
Reduced power consumption

- By reducing the light loss due to reflection



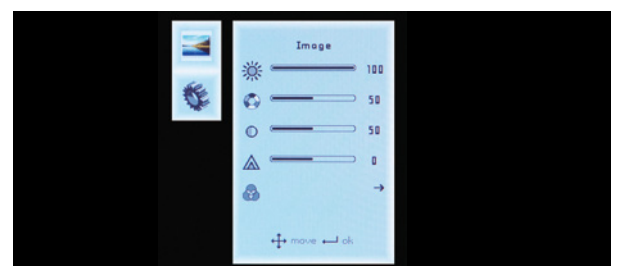
■ ECDIS (optional)

For industrial and commercial applications, color rendering accuracy and consistency are absolutely essential. The human eye is generally likely to be impacted by environment and misled presentation of colors in the brain. The maritime environment is much more ruggedized compared with general industrial environment. The requirements for the degree of light and dark and color of accuracy are more stringent. Color calibration technology ensures that monitor would effectively show the largest accuracy and minimum deviation of artificial color. IEI marine monitors and panel PCs follow the IEC 61174 ECDIS regulation. It is performed by monitoring up to N checkpoints and measuring the color and brightness of the display. After precisely calculating and highly reliable calibrating, the profile matrix will be stored in the firmware of monitor. The monitors (PPCs) compliant with ECDIS specifications will provide a more safe and secure maritime environment.



■ Adjustable LCD Brightness and Auto-Dimming Available

The auto-dimming function could slightly modify LCD brightness according to ambient light. To consider the safety of navigation and operators' eye comfort, both LCD brightness and OSD brightness are designed to be programmable.



OSD Control on Front Panel

On Screen Display (OSD) offers customers a quick way to modify the LCD brightness. In contrary to traditional tuner, the full flat OSD design not only features beautiful outward appearance but also improves the shortcoming of dust accumulation in physical button.



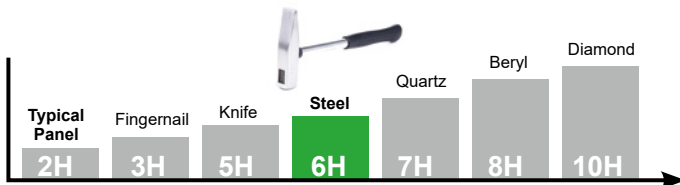
Lockable HDMI Cable Support (optional)

The lockable HDMI cable design not only increase reliability but also reduces the possibilities of accidental human errors. Therefore, important information could be displayed continuously.



6H Multiple Projected Capacitive Touchscreen

The IEI marine products provide capacitive multi-touch up to 10 points (2-point on 24" model). In practical applications, 10-point touch can simulate engine button and pump switch so that there will be less real buttons. This can enhance the reliability of marine infrastructure.



Moh's Hardness Rating



6H 10-point Touch for S19M



6H 2-point Touch for S24M

Picture-in-Picture (PIP) Function & Surveillance Application

Picture-in-Picture function offers high efficiency to surveillance. You can monitor the radar information and observe surveillance video simultaneously. Simply connect BNC camera to BNC input port and link DVR to BNC output port. Therefore, you can monitor and record at the same time, and the record can be saved for further use.

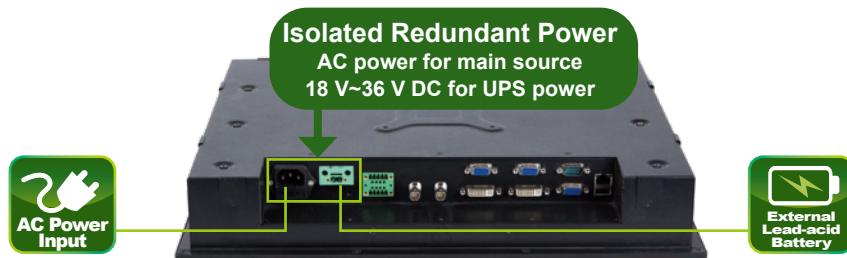


PIP Matching Table

		Main Channel				
		VGA1	VGA2	DVI1	DVI2	CVBS1
Sub Channel	VGA1	X		X	X	X
	VGA2		X	X	X	X
	DVI1	X	X	X		X
	DVI2	X	X		X	X
	CVBS1	X	X	X	X	X

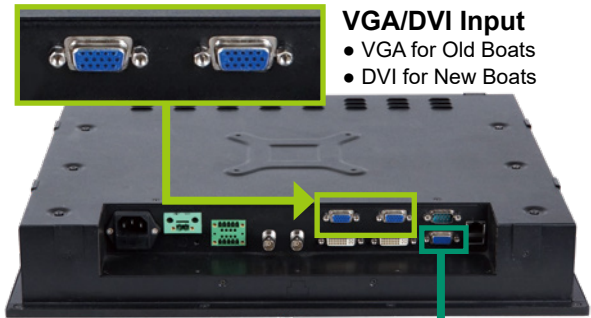
Reliable Power System

There are usually two systems - one master for use, and one slave for backup. IEI provides isolated redundant power, which means you will have separate power inputs, including AC source and DC source. When AC source is terminated, the DC source will continue to supply power to the device.



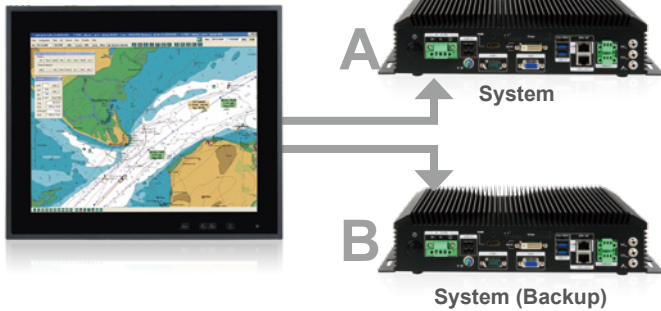
Dual Video Input Support

The IEI marine products equips with two VGA inputs and two DVI inputs. VGA is designed for the old ships while DVI is designed for the new ones. Additionally, in order to prevent failure of the main system, dual video input design is provided for much more reliability. Hence, operation will not be terminated due to switching between systems



VGA/DVI Input
 • VGA for Old Boats
 • DVI for New Boats

Dual Video Input Support Redundant VGA & DVI



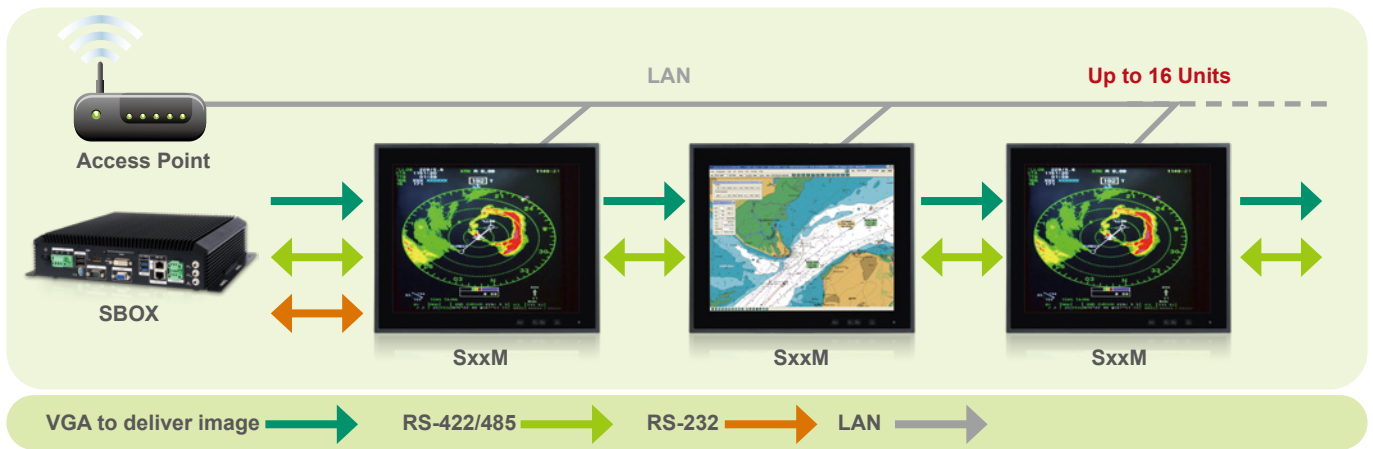
Independent Video Output Support

VGA output port features display cascade function, providing a convenient way to duplicate display signal. This function helps customers to connect devices quickly and easily.



Daisy Chain OSD Remote Control

It is essential to show the same displays to captains and pilots through the monitors which are usually cascaded at the ship bridge. The marine monitor equips both VGA input and VGA output. By connecting the VGA-out of the first monitor to the VGA-in of the second monitor, the IEI marine monitors feature group display with maximum up to 16 screens in the group. To comply with the ECDIS regulation, adjusting the brightness and contrast on all monitors at the same time is necessary, and this can be achieved through the Ethernet or serial COM ports. LAN is used to communicate in long distance in the group; as for short distance, COM port is the best choice. The LAN port can also be used for updating firmware and maintaining service.



Versatile Mounting Methods (optional)

Versatile mounting methods provide customers a secure way to settle the instrument. We provide three different mounting kits for customers, which include stand, ceiling mount kit and panel mount kit.



Stand Alone



Ceiling Mount



Panel Mount

Marine Monitor Series

S19M

19" IP66 Marine Monitors

S24M

24" IP66 Marine Monitors



Features

- **IP66 Front / IP22 Rear**
- **-15°C ~ +55°C Wide Temperature and Flat-bezel Projected Capacitive Touchscreen**
- **Excellent Visual Performance**
 - Full OSD function configuration
 - 0%~100% full range dimming
 - 178°/178° wide viewing angles
- **Multiple Video Input**
 - Two VGA, two DVI, and one BNC
- **Multiple Video Output**
 - One VGA and one BNC
- **Dual Isolated AC/DC Input with Redundant Power Protection**
- **Remote OSD Settings through LAN, RS-232, RS-422 and RS-485**



Specifications

Model	S19M	S24M	
LCD	LCD Size	19"	24"
	Panel Type	PMVA	AMVA
	Max. Resolution	1280 x 1024 (5:4)	1920 x 1080 (16:9)
	Contrast Ratio	2000 : 1	5000 : 1
	Brightness (cd/m ²)	300	300
	LCD Color	16.7M	16.7M
	Pixel Pitch (um)	294 x 294	276.75 x 276.75
	Viewing Angles (H-V)	178° / 178°	178° / 178°
Backlight MTBF (HRs)	50000	50000	
Touchscreen & Controller	EXC7920 (10-point), 6H		
Scalar Chip	STDP8028		
I/O Ports	<ul style="list-style-type: none"> • DVI-D Signal Input: 2 x DVI (24-pin, female) • VGA Signal Input: 2 x D-sub (15-pin, female) • VGA Signal Output: 1 x D-sub (15-pin, female) - Clone of VGA IN* • Composite Video Input: 1 x BNC connector (female) • Composite Video Output: 1 x BNC connector (female) • RS-232/422/485 for Remote control (non-isolated) • Touchscreen: 1 x USB Type A connector (female) • Ethernet: 1 x RJ-45 connector for remote control • Isolated AC Power Inlet: 100V~240V AC • Isolated DC Terminal Block: 18V~36V DC • 1 x Buzzer 		
PIP	Yes		
OSD Button	P-CAP button (LCD on/off, Menu, Auto, Up, Down, Left, Right)		
LED/Sensor	Ambient light sensor (0%~100%)		
Power Requirement	Multi-power Supply: Isolated AC Power: 100-240V, 2-1A, 50-60Hz Isolated DC Power: 18-36V, 8-4A		
Operating Temperature	-15°C ~ 55°C		
Storage Temperature	-20°C ~ 60°C		
Humidity	5% to 95% RH		
Thermal Design	Fanless		
Housing	Aluminum front , sheet metal back (Black C)		
Cut-out Dimensions (W x L)	442 mm x 373 mm	576 mm x 358 mm	
Dimensions (W x L x D)	463 mm x 394 mm x 113 mm	592 mm x 374 mm x 113 mm	
Mounting	VESA 100mm x 100mm		
Net Weight (kg)	7.74	11.48	
Gross Weight (kg)	11.54	15.97	
Approvals	EMC: CE, FCC		
	Safety: DNV, IEC 60945 4th, IACS-E10		
	IP Rating: IP66 front, IP22 rear		

Ordering Information

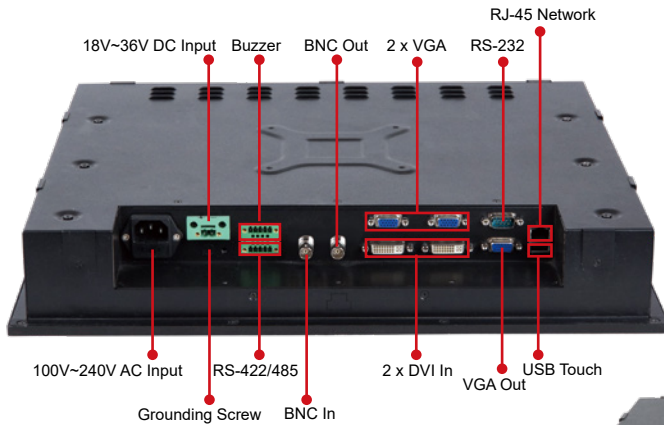
PN	Description
S19M-AD/PC-R11	19" SXGA 300cd/m ² Marine Display with AC and DC redundant power, PCAP touch screen, R11
S24M-AD/PC-R11	24" FHD 300cd/m ² Marine Display with AC and DC redundant power, PCAP touch screen, R11

Options

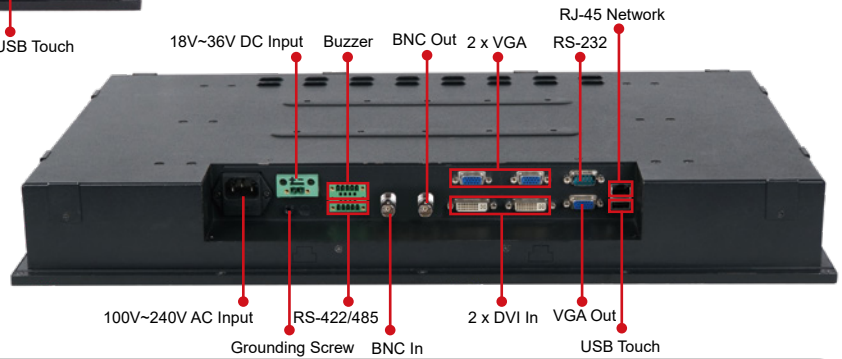
Item	Part No.	Description
Panel Mount Kit	PK-S19M-R10	For S19M
	PK-S24M-R10	For S24M
Desktop Stand	STAND-A21-R10	For S19M & S24M

Packing List

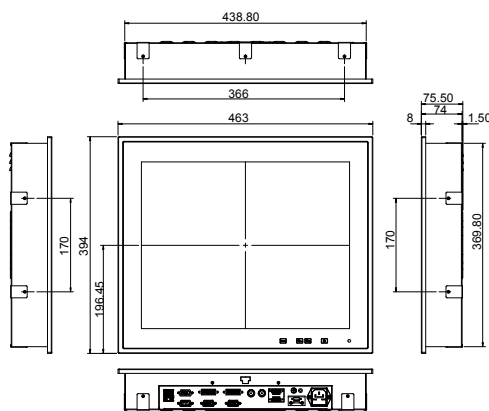
Item	Q'ty	Remark
VGA	1	VGA signal cable
DVI	1	DVI signal cable
USB	1	USB touchscreen cable
Power Cord	1	Power cord
S19M or S24M	1	



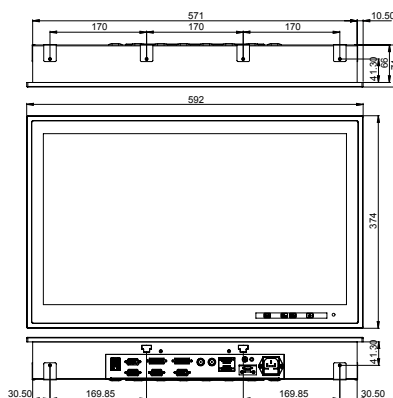
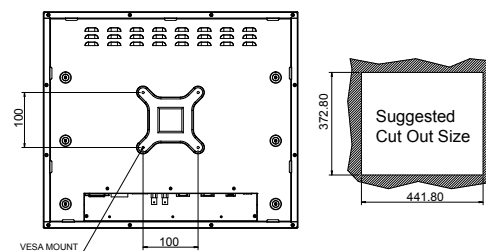
S19M
Fully Integrated I/O



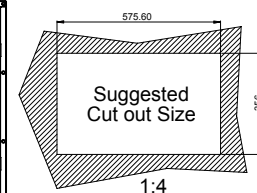
S24M
Fully Integrated I/O



S19M Dimensions
(Unit: mm)



S24M Dimensions
(Unit: mm)



UPC Series

UPC-F12C-ULT3

Intel® Core™ i5 and Celeron® ULT Processor



Features

- 12.1" fanless panel PC with Intel® Skylake ULT processor
- IP66 6-side protection with M12 connector I/O cover
- IP65 6-side protection with standard cable I/O cover
- Built-in wireless 802.11 a/b/g/n/ac and Bluetooth V4.0
- Operating temperature : -20°C ~ 60°C
- Flat glass PCAP touch with 6H hardness, resistive touch window



Specifications

Model		UPC-F12CM-ULT3	UPC-F12C-ULT3
Display	LCD Display	12.1"	
	Max Resolution	1024(W) x 768(H)	
	Brightness (cd/m ²)	600	
	Contrast Ratio	700:1	
	LCD Color	16.2M	
	Pixel Pitch (mm)	0.24(H) x 0.24(V)	
	Viewing Angle (H-V)	160° / 140°	
	Backlight MTBF (Hrs)	50,000	
Motherboard	CPU	6th generation Intel® Core™ i5 and Celeron® ULT processor	
	RAM	1 x 260-pin 2133/1867 MHz single-channel DDR4 SO-DIMMs	
	Ethernet	LAN1: PCIe GbE by Intel® I211 controller LAN2: PCIe GbE by Intel® I211 controller	
Touchscreen		P-CAP / Resistive Touch	
Input Interfaces	I/O Ports & Switch	M12 Type: 1 x 8-pin M12 connector for RS-232 1 x 8-pin M12 connector for RS-232/422/485 1 x 8-pin M12 connector for GbE LAN 2 x 8-pin M12 connector for two USB 2.0 1 x 5-pin M12 connector for DC jack (12V~36V DC)	Standard Type: 1 x DC jack (12V-36V DC) 1 x DC-in terminal block (12V-36V DC) 1 x HDMI 1 x VGA/CAN Bus 1 x RS-232 (COM1 RJ-45) 1 x RS-232/422/485 (COM2 RJ-45) 2 x LAN 2 x USB 2.0 2 x USB 3.2 Gen 1 (5Gb/s)
		Expansion	
Connectivity	Wi-Fi & BT	802.11 a/b/g/n/ac + Bluetooth v4.0	
	RFID	Reserved RFID antenna area (optional)	
Storage	1 x 2.5" HDD bay		
	1 x M.2 (B key 2242 with USB 2.0 and SATA signal)		
Physical	Construction	Aluminum die-casting	
	Mounting	VESA 100mm x 100mm	
	Net/Gross Weight (kg)	4.95 kg / 7.62 kg	5.02 kg / 7.40 kg
	Dimensions (W x L x D) (mm)	316 x 279 x 67	
Environment	Operating Temperature (with air flow)	-20°C ~ 60°C (without heater solution) -40°C ~ 60°C by project base	
	Storage Temperature	-20°C ~ 70°C	
	IP Level	Full IP65 or Full IP66 (with M12 connectors)	
	Safety	CE / FCC	
Power	Power Requirement	Power 1: 12V ~ 36V (terminal block)	
		Power 2: 12V ~ 36V (DC jack)	

Ordering Information

M12 Type

Part No.	Description
UPC-F12CM-ULT3-C/R/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, resistive touch, M12 I/O, R11
UPC-F12CM-ULT3-C/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, PCAP touch, M12 I/O, R11
UPC-F12CM-ULT3-i5/R/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, resistive touch, M12 I/O, R11
UPC-F12CM-ULT3-i5/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, PCAP touch, M12 I/O, R11

Standard Type

Part No.	Description
UPC-F12C-ULT3-C/R/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, resistive touch, R11
UPC-F12C-ULT3-C/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, PCAP touch, R11
UPC-F12C-ULT3-i5/R/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, resistive touch, R11
UPC-F12C-ULT3-i5/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, 802.11a/b/g/n/ac Wi-Fi module, PCAP touch, R11
UPC-F12C-ULT3-C/CA/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th Generation Mobile Celeron®3955U (15W) on-board Processor (ULT), 1*4GB DDR4 RAM, 802.11a/b/g/n/ac WiFi module, with CAN bus, PCAP touch, R11
UPC-F12C-ULT3-i5/CA/PC/4G-R11	12.1" 600cd/m ² XGA fanless ultra panel PC with Intel® 14nm 6th Generation Mobile Core™ i5-6300U (15W) on-board Processor (ULT), 1*4GB DDR4 RAM, 802.11a/b/g/n/ac WiFi module, with CAN bus, PCAP touch, R11

Optional

Item	Description
63040-010060-110-RS	Power Adapter (for standard only)
63040-030080-000-RS	Water-proof Power Adapter (for M12 only)
CB-M12USB02-R20	USB Cable (for M12 only)
CB-M12RJ45-R20	LAN Cable (for M12 only)
CB-M12COM-R20	COM Port Cable (for M12 only)
Arm	ARM-11-RS
Stand	STAND-A12-RS STAND-C12-R10
MIFARE RFID Kit	UPC-F-MF-RFID-KIT01-R10 (ATO only)



USB cable
(CB-M12USB02-R20)



RJ-45 LAN cable
(CB-M12RJ45-R10)



DB-9 COM port Cable
(CB-M12COM-R20)

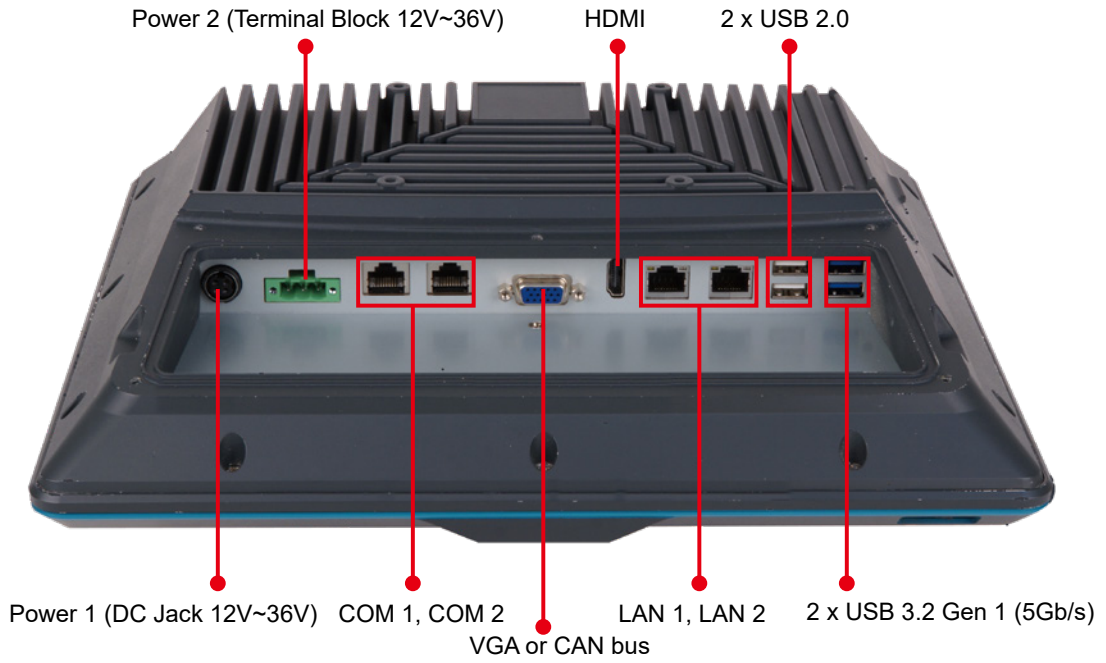


Water-proof Power Adapter
(63040-030080-000-RS)

Packing List

Item	Q'ty	Remark
Touch Pen	1	Resistive type only
Ferrite core	2	
D-Sub to RJ45 cable	2	for standard only
Waterproof plugs: Φ3	10	Φ3x2, Φ4x1, Φ5x1, cover x 6 (for standard only)
M12 to USB cable	1	for M12 only

I/O Interface

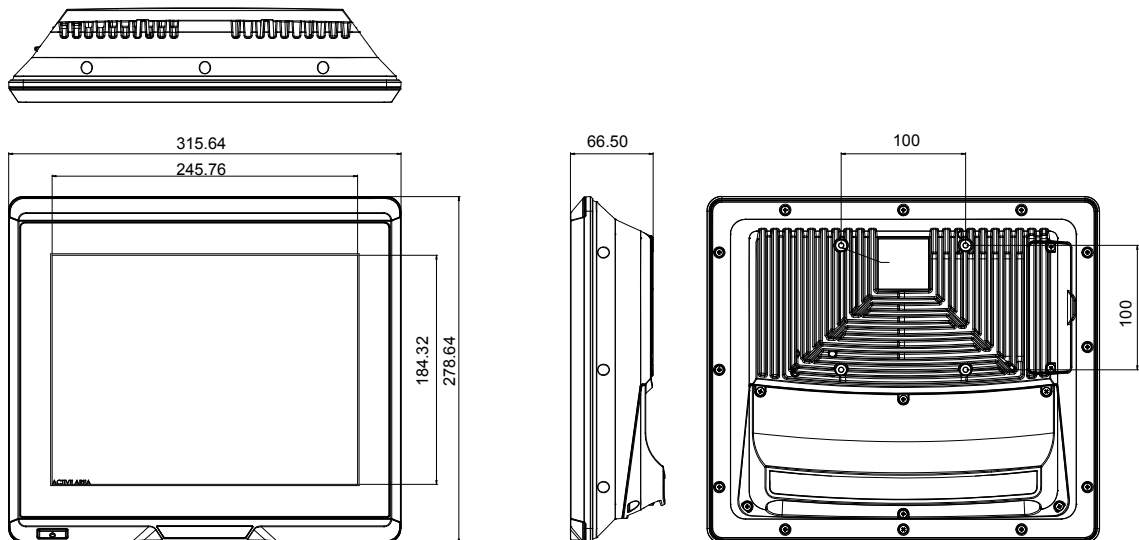


Standard IO cover



M12 IO cover

UPC-F12C Dimensions (Unit: mm)



INOX-F15C-ULT3

Intel® Core™ i5 and Celeron® ULT Processor



Features

- 15" fanless panel PC with Intel® Skylake ULT processor
- IP69K high pressure, high temperature protection
- SUS304 stainless steel housing
- Operating temperature : -20°C ~ 50°C
- Flat glass PCAP touch with 6H hardness, resistive touch window
- Accessible HDD Bay
- M12 connections



Specifications

Model		INOX-F15C-ULT3
LCD	LCD Display	15"
	Max Resolution	1024(W) x 768(H)
	Brightness (cd/m ²)	450
	Contrast Ratio	800:1
	LCD Color	16.2M
	Pixel Pitch (mm)	0.297(H) x 0.297(V)
	Viewing Angle (H-V)	160° /150°
	Backlight MTBF (Hrs)	70000
Motherboard	CPU	6th generation Intel® Core™ i5 and Celeron® ULT processor
	RAM	2 x 260-pin 2133/1867 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)
	Ethernet	2 x PCIe GbE by Intel® I210 controller
Touchscreen		Resistive Touch / PCAP Touch
Input Interfaces	I/O Ports	2 x 8-pin M12 connector for RS-232/422/485 2 x 8-pin M12 X-Code connector for GbE LAN 2 x 8-pin M12 connector for two USB 2.0 1 x 5-pin M12 connector for DC jack (9-36V DC) 1 x Power switch with power LED indicator 1 x Pressure relief valve
	Expansions	1 x Full-size PCIe Mini card slot (SATA 6Gb/s) 1 x Full-size/half-size (PCIe x1 and USB 2.0 signals) 1 x M.2 B-key slot (2242/2260/2280 with USB 3.2 Gen 1 (5Gb/s), PCIe x2 and SATA signals)
Storage		1 x 2.5" SATA SSD bay / 1 x mSATA / 1 x M.2 B-key (2242/2260/2280)
Physical	ME Construction	SUS304 stainless steel housing
	Mounting	VESA 100mm x 100mm with M8 screw
	Dimensions (WxHxD) (mm)	414 x 328.4 x 51.9
Environment	Operating Temperature (with air flow)	-20°C ~ 50°C
	Storage Temperature	-30°C ~ 60°C
	IP Level	Front: IP69K; Others: IP66
	Safety	CE / FCC
Power	Adapter	60 W; 63000-CLG6012IC-RS 60W/12V waterproof power adapter VAC:90V~264V; 12V/5A; 60W
	Requirement	9-36V DC
	Consumption	43W

Ordering Information

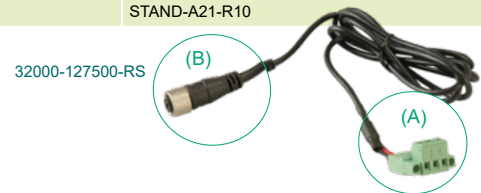
Part No.	Description
INOX-F15C-ULT3-C/R/4G-R10	15" 450cd/m ² XGA fanless stainless panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, resistive touch, R10
INOX-F15C-ULT3-C/PC/4G-R10	15" 450cd/m ² XGA fanless stainless panel PC with Intel® 14nm 6th generation mobile Celeron® 3955U (15W) on-board processor (ULT), one 4GB DDR4 RAM, PCAP touch, R10
INOX-F15C-ULT3-i5/R/4G-R10	15" 450cd/m ² XGA fanless stainless panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, resistive touch, R10
INOX-F15C-ULT3-i5/PC/4G-R10	15" 450cd/m ² XGA fanless stainless panel PC with Intel® 14nm 6th generation mobile Core™ i5-6300U (15W) on-board processor (ULT), one 4GB DDR4 RAM, PCAP touch, R10

Packing List

Item	P/N
Power Cable	32000-127500-RS
USB Cable	CB-M12USB02-R20

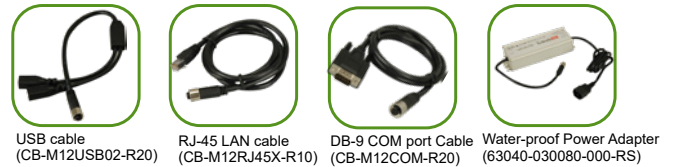
Options

Item	P/N
Arm	ARM-31-RS
Stand	STAND-A19-RS
	STAND-C19-R10
	STAND-A21-R10

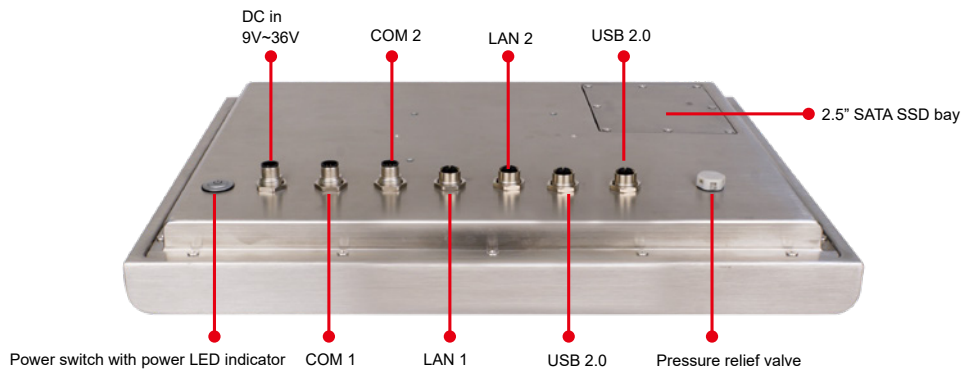


Optional Cables and Adapter

Item	P/N
USB Cable	CB-M12USB02-R20
RJ-45 LAN Cable	CB-M12RJ45X-R10
DB-9 COM Port Cable	CB-M12COM-R20
Water-proof Power Adapter	63040-030080-000-RS



I/O Interface



INOX-F15C Dimensions (Unit: mm)

