

# Advantech Industrial Panel PCs

Your most trust worthy partner in harsh environments



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# Comprehensive IPPC & AWS Series Product Portfolio

Advantech offers a series of reliable industrial panel PCs, their robust design and high computing power make them a great fit for almost every industrial application. All products in the series are constructed with a stainless steel chassis and heavy-duty aluminum front panel which enables them to withstand the toughest industrial environments. Equipped with powerful Intel® Core i processors, these products have great performance and also provide multiple expansion slots for add-on boards. With such a wide range of comprehensive products, Advantech's industrial panel PC series can be used for a wide range of applications.



## Automation Workstation

- All-in-one industrial workstation
- Programmable membrane keypad
- Enables reliability in machine building industries
- Super extensibility and flexible configuration



## Industrial Panel PCs

- High computing power and high performance processor
- Slim chassis design
- Convenient front accessible USB
- PCI-PCIe expansion for different vertical sectors
- SUSIAccess & iManager support

# Industrial Panel PC

IPPC 9000/6000/4000 series



Advantech's IPPC-9000 & 6000 series are all equipped with high power Intel CPUs and their compact size makes them the perfect fit for every industrial environment. The IPPC-4000 series are rackmount Industrial Panel PCs which have been designed to be an all-in-one and cost-effective solution for traditional IPC users. All IPPC products are fully capable of meeting different application development requirements in mission-critical environments.



## IPPC-9000 series

- Intel® Core™ i7/i5/i3 Celeron® μFC-PGA988 processor with Intel® QM67 chipset
- 15" XGA/17" SXGA LED backlight LCD with low power consumption
- Front access USB connector
- Supports 1 xPCIe x1 or 4 (Gen2) (PCI optional)
- Heavy-duty stainless steel chassis with aluminum front panel
- Strengthened glass protects the front panel from shock damage and is IP65 certified
- Supports dual display of HDMI, LVDS, VGA
- Supports 1 x 2.5" SATA II or SATA III HDD and 1 x CFast
- Hard anodic coating prevents panel abrasion and acid corrosion
- Supports embedded software APLs and Utilities



## IPPC-6000 series

- 15" XGA/17" SXGA/19" SXGA TFT LCD with touchscreen
- Supports Intel® Core™ i7/i5/i3 processor with Q87 chipset (up to 3.1GHz)
- System supports four DIMM sockets support up to 32 GB DDR3 1333/1600 MHz SDRAM
- Offers two expansion slots (PCIe riser card optional) for PCI (PCIe) add-on cards
- SATA 2.0 or SATA 3.0 HDDs and RAID 0,1 compatibility
- Front USB access and system reset function
- IP65 compliant front panel
- Supports Intel AMT 9.0 and Intel vPro
- Supports Microsoft® Windows® 8 and Windows 7
- Supports SUSIAccess and Embedded Software APIs
- Optional Functionality –CFast, PCI/PCIe expansion, DVD-ROM



## IPPC-4000 series

- 4U height 19" rackmount chassis with 5.7" VGA TFT display
- Slim keyboard & mouse pad drawer with lockable clip
- Supports high performance Intel Core 2 Duo processors (and up)
- Offers 14 expansion slots for 2 PICMG, 10 PCI, 2 ISA
- Lockable front door prevents unauthorized access
- Membrane function keys (F1~F5) for varied application access
- Handy screen function for Industrial Automation Controller and Monitoring
- Front accessible USB to plug-in versatile USB devices
- All-in-one IPC system for saving cost/space from IPC with LCD/keyboard
- Telecom/Power Station portal and platform for test & measurement equipment
- Suitable for Automatic Testing Equipment and Production Line Testers

# Industrial Panel PC

AWS-8000 series



The AWS-8000 series is a PC-based industrial workstation with an industrial grade color monitor. This series of products are specifically designed for use within factories and other harsh industrial environments. As well as a robust design, the impressive expandability is another highlight of this series which offers great flexibility for application specific requirements.

## AWS-8259

15" XGA TFT LCD with LED Backlight Industrial Workstation with 7 x PCI/PCIE/PICMG1.3 Slot, Passive Backplane and Membrane Keypad

- 7-slot, 15" TFT LCD with LED Backlight workstation
- Resolution: 1024 x 768
- Two-piece design: integrated or separated LCD panel & control chassis
- Built-in touchpad, USB port on front panel
- Designed for simple maintenance with hinged rear door for easy access
- IP65 compliant, Aluminum front panel and stainless steel chassis
- Hard anodic coating to prevent panel abrasion and acid corrosion





## AWS-8129H

12.1" SVGA LED Backlight LCD Industrial Workstation with 9 Slots, Passive Backplane and Membrane Keypad

- 3 ISA, 4 PCI, 2 PICMG slot combined backplanes
- Case dimensions (W x H x D): 482 x 266 x 317 mm (18.98" x 10.5" x 12.5")
- Power switch and DVD-ROM
- Front accessible USB port
- OSD & Membrane Key & Touchpad with two mouse buttons
- IP65 compliant front panel



## AWS-8248V

15" XGA TFT LCD with LED Backlight Industrial Workstation with 13 x PICe/PCI/PICMG1.3 Slots, Passive Backplane and Membrane Keypad

- Cost-effective 13-slot, XGA TFT LCD with LED Backlight workstation and resolution of 1024 x 768
- Three card-cage design: easy to maintain add-on cards, CPU card and power supply
- Two 3.5" HDDs with mobile rack drive & DVD-ROM drive in back of chassis
- Equipped with onscreen display (OSD) operation keypad on the front panel
- IP65 compliant Front panel



# Multi-axis Ceramic Resistor Test Machine

## Introduction

Multi-axis ceramic resistor test machines are used for quality testing and screening of micro-electronic components. These systems can realize diverse signals and integrate a wide range of functions and devices with real-time control such as motion, HMI and advanced testing instruments. The system highlighted in this application was created by Advantech to support dynamic displays and self-diagnostic functions.

## System Requirements

Ceramic resistor test machines are required to support multi-axis synchronized motion control and a large amount of digital control. This client wanted to integrate GPIB instruments, high-end test instruments and an HMI device. The goal was to create an advanced testing control platform with diverse signal reading, a variety of integrated functions and real-time control. The system also required efficient and real-time development software.

## System Description

Integrated with multi-axis motion control, digital status monitoring, GPIB communication instruments and a touchscreen, the system achieves real-time control and multi-axis motion and digital instrument control. Advantech's IPPC-4001D allows users to easily edit, modify and save data.

Electronic components are tested quickly and thoroughly. The system integrates visual inspection capabilities through the USB connector on the PC, which, with its high speed computing, also makes quality diagnostic tests. Equipped with Advantech's controller, diversified control cards and rich communication interfaces, the system controls various equipments, such as buttons, signal.

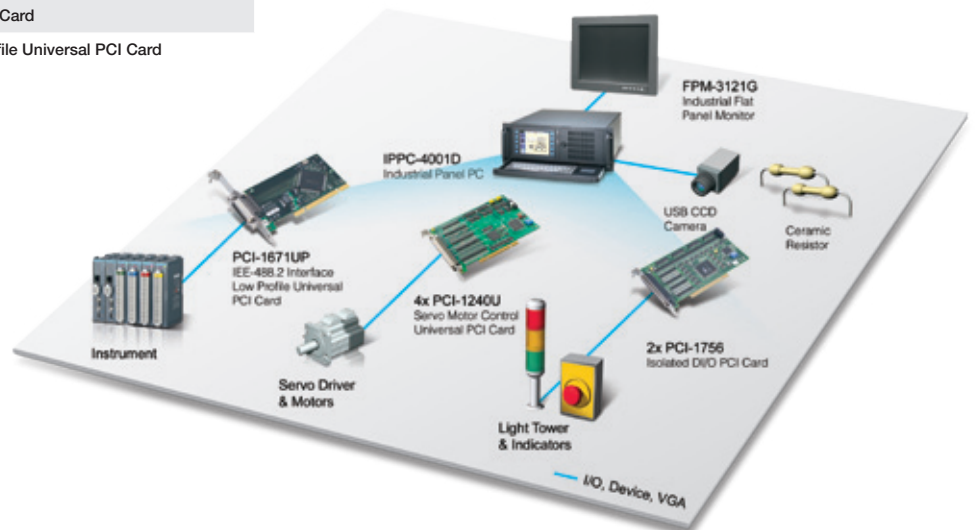
## Project Implementation

Products	Specifications
FPM-3121G	12.1" Industrial Monitor with Resistive Touchscreen, Direct VGA, DVI and Wide Operating Temperature
IPPC-4001D	5.7" VGA TFT LCD 4U 19" Rack Industrial Panel PC with 14 Expansion Slots & Keyboard Drawer
PCI-1240U	4-axis Stepping and Servo Motor Control Universal PCI Card
PCI-1756	64-ch Isolated Digital I/O PCI Card
PCI-1671UP	IEEE-488.2 Interface Low Profile Universal PCI Card

## Conclusion

Advantech's advanced PC with integrated control and communication modules, not only realizes real-time communication between the system and external measuring instruments, but also increases system response times and production precision.

## System Diagram





# A Robust Panel PC for Intelligent Tightening Machine in an Automobile Assembly Factory



## Introduction

As China becomes one of the world's largest auto markets, there is a strong demand for highly accurate manufacturing machines. During the assembly process, bolt tightening is critical in ensuring car safety and needs to precisely control torque and rotation angle. Its tightening speed has to be adjusted according to softness and hardness of bolt material as well as a degree of fitting tightness. Automated machines provide more precise control and can be upgraded to intelligent applications by using advanced IT technologies. However, the quality of the Human Machine Interface (HMI) affects the machine's performance, resulting in industrial panel PCs being indispensable in ensuring stable system operation.

## System Requirements

In order to meet users' strict assembly requirements, this System Integrator planned to upgrade its product and intended to use an all-in-one industrial panel PC to replace the previous large and slow computer and monitor. Since the operating environment is filled with a variety of pollutants which cause computers to frequently crash, the new PC must have better resistance to vibration, dust, humidity and electromagnetic interference. The unit also needed a rugged design to protect the front panel since most of the workers are accustomed to using tools to touch the monitor. The customer also needed a PCI slot and front USB access.

## System Description

Advantech proposed a sturdy and durable IPPC-6152A with two expansion PCI slots and external communication cards to connect to a PLC, enabling the tightening machine to accurately control angle transducer and torque sensor by default values, and all sorts of parameters can be easily monitored and changed directly through touch. The IPPC-6152A is equipped with a 15" LCD screen which offers a high resolution display and lightweight design to provide the most suitable viewing angle and user friendly HMI for operators. Its front panel is IP65 compliant and made of aluminum and has strengthened glass. It also provides a front USB access port and reset key for connecting other devices or configuration without removing the rear cover. Due to overheating concerns and reliability issues, the IPPC-6152A, supports a wide operating temperature range of 0~50°C, dust and moisture resistance, vibration protection and anti-interference via the use of a CE-compliant metal enclosure to guarantee system stability during prolonged operation.

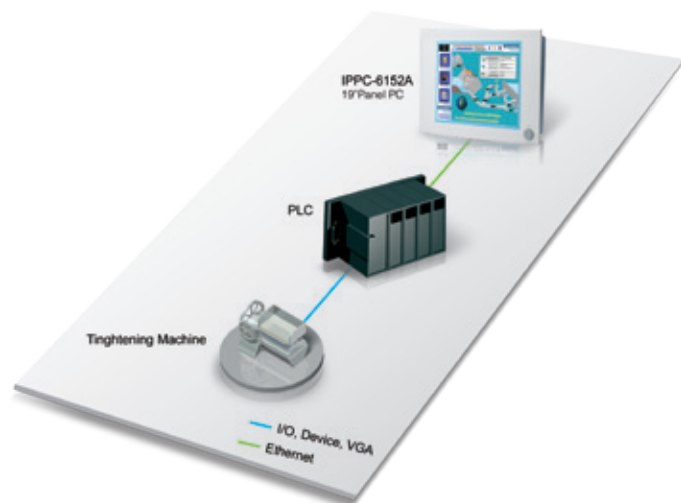
## Project Implementation

Products	Specifications
IPPC-6152A	15" XGA TFT LCD LED Backlight Core™ i7/i5/i3 Industrial Panel PC

## Conclusion

With a rugged design, fine texture and high reliability, Advantech's IPPC-6152A can seamlessly integrate its hardware and software and provide a high precision and machine for end users. Advantech's after sales services and technical support also fulfill customers' requirements and help them quickly complete their project.

## System Diagram



# Industrial Panel Computer Selection Guide



Model	IPPC-9151G	IPPC-9171G	IPPC-6152A	IPPC-6172A	IPPC-6192A	IPPC-4001D	
CPU	Socket µFC- PGA988 Intel® Core™ i7, i5, i3, Celeron Mobile Processor	Socket µFC- PGA988 Intel® Core™ i7, i5, i3, Celeron Mobile Processor	Supports Intel® Core™ i7/i5/i3 processor with Q87 chipset (up to 3.1GHz)	Supports Intel® Core™ i7/i5/i3 processor with Q87 chipset (up to 3.1GHz)	Supports Intel® Core™ i7/i5/i3 processor with Q87 chipset (up to 3.1GHz)	Optional CPU Card	
Memory	Up to 8GB DDR3 SODIMM 1333MHz/1066MHz	Up to 8GB DDR3 SODIMM 1333MHz/1066MHz	Up to 32 GB DDR3 1333/1600 MHz SDRAM	Up to 32 GB DDR3 1333/1600 MHz SDRAM	Up to 32 GB DDR3 1333/1600 MHz SDRAM	Optional CPU Card	
Display	Display Type	XGA LED LCD	SXGA LED LCD	XGA TFT LCD LED Backlight	SXGA TFT LCD LED Backlight	SXGA TFT LCD LED Backlight	VGA LED LCD
	Display Size	15"	17"	15"	17"	19"	5.7"
	Max. Resolution	1024 x 768	1280 x 1024	1024 x 768	1280 x 1024	1280 x 1024	640 x 480
	Max. Colors	16.2M/256K colors	16.7M colors (RGB 6-bits + Hi-FRC data)	16.2M/262K	16.7M (RGB 6-bit + Hi-FRC data)	16.7M (RGB 6-bit + Hi-FRC data)	262 K (RGB 6-bit)
	Luminance cd/m <sup>2</sup>	350	380	400	350	350	700
	Viewing Angle (H/V°)	160/140	170/160	160/140	170/160	170/160	160/140
	Backlight MTBF (hrs)	50000 hrs	50000 hrs	50000 hrs	50000 hrs	50000 hrs	50000 hrs
Touchscreen	Resistive	Resistive	Resistive	Resistive	Resistive	-	
Network(LAN)	2 x 10/100/1000Bast-T	2 x 10/100/1000Bast-T	2 x 10/100/1000Bast-T	2 x 10/100/1000Bast-T	2 x 10/100/1000Bast-T	-	
I/O ports	4 x RS-232, 1 x VGA, 1 x HDMI, 5 x USB 2.0 (one at front), 1 x CFast slot, 1 x keyboard and 1 x mouse, Mic-in, Line-out, Line-in	4 x RS-232, 1 x VGA, 1 x HDMI, 5 x USB 2.0 (one at front), 1 x CFast slot, 1 x keyboard and 1 x mouse, Mic-in, Line-out, Line-in	4 (3 x RS-232, 1 x RS-232/422/485 to support auto flow control) 1 x GPIO 2 x Reservation ports 5 x USB Host( USB 2.0 front, 4 USB 3.0) 2 x GbE LAN VGA x1; DVI x1; DP x1 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	4 (3 x RS-232, 1 x RS-232/422/485 to support auto flow control) 1 x GPIO 2 x Reservation ports 5 x USB Host( USB 2.0 front, 4 USB 3.0) 2 x GbE LAN VGA x1; DVI x1; DP x1 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	4 (3 x RS-232, 1 x RS-232/422/485 to support auto flow control) 1 x GPIO 2 x Reservation ports 5 x USB Host( USB 2.0 front, 4 USB 3.0) 2 x GbE LAN VGA x1; DVI x1; DP x1 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	Optional CPU Card, 1 x USB port at front	
HDD (Optional)	1 x 2.5" SATA	1 x 2.5" SATA	2 x 2.5" SATA	2 x 2.5" SATA	2 x 2.5" SATA	-	
Optical Drive	-	-	1 x Slim Type DVD-RW (optional)	1 x Slim Type DVD-RW (optional)	1 x Slim Type DVD-RW (optional)	3 x 5.25" CD-ROM Bay (Optional)	
CompactFlash Slots	1 x CFast® slot	1 x CFast® slot	1 x CFast (optional)	1 x CFast (optional)	1 x CFast (optional)	-	
Expansion Slots	1 x PCIe x1 or x4 (PCI optional)	1 x PCIe x1 or x4 (PCI optional)	2 x half-length PCI Slot installed.(1x two slot PCIe x1 riser optional)	2 x half-length PCI Slot installed.(1x two slot PCIe x1 riser optional)	2 x half-length PCI Slot installed.(1x two slot PCIe x1 riser optional)	4001D: 2 x PICMG, 10 x PCI, 2 x ISA	
Built in Keyboard/Mouse	-	-	-	-	-	Drawer	
Power Input Voltage	100~240 V <sub>AC</sub>	100~240 V <sub>AC</sub>	100 ~ 240 V <sub>AC</sub>	100 ~ 240 V <sub>AC</sub>	100 ~ 240 V <sub>AC</sub>	100 ~ 240 V <sub>AC</sub>	
Front cover	Aluminum	Aluminum	Die-cast flat-sealed	Die-cast flat-sealed	Die-cast flat-sealed	Aluminum	
Operating temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	
Ingress Protection (Front Panel)	IP65	IP65	IP65	IP65	IP65	IP65	
Certification	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	
Operating System	Windows 7/XP	Windows 7/XP	Microsoft Windows 7/8	Microsoft Windows 7/8	Microsoft Windows 7/8	Optional CPU Card	
Dimensions	428 x 310 x 96.5 mm (16.4" x 12.2" x 3.8")	482 x 354.8 x 98 mm (19" x 14" x 4")	449.92 x 315.63 x 126.4 mm (17.71" x 12.43" x 4.98")	481.93 x 355.87 x 132.5 mm (18.97" x 14.01" x 5.22")	481.93 x 384.6 x 135.5 mm (18.97" x 15.14" x 5.33")	4001D: 482 x 175 x 487 mm (19" x 6.9" x 19.1") 4008D:	
Weight	10.52 Kg (23.19 lbs)	14 Kg (30.86 lbs)	13 Kg (28.6 lbs)	15 Kg (33.04 lb)	16.6 Kg (35.6 lbs)	19.99 kg (44 lbs)	
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# Industrial Workstation Selection Guide



Model Name		AWS-8259	AWS-8129H	AWS-8248V
CPU Board		Optional CPU Card	Optional CPU Card	Optional CPU Card
Processor		Optional CPU Card	Optional CPU Card	Optional CPU Card
Memory	Size Module Type	Optional CPU Card	Optional CPU Card	Optional CPU Card
L2 Cache Memory		Optional CPU Card	Optional CPU Card	Optional CPU Card
Storage/Type		1 x 3.5" HDD optional	1 x 3.5" HDD optional	2 x 3.5" HDDs optional
Display	Size/Type	15"XGA TFT LED Backlight LCD	12.1" TFT LED Backlight LCD	15"XGA TFT LED Backlight LCD
	Max. Resolution	1024 x 768	800 x 600	1024 x 768
	Max. Colors	16.2M/262K	262 K	16.2M/262K
	Brightness (cd/m <sup>2</sup> )	400 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>
	Viewing Angle	160/140	160/140	160/140
	Backlight MTBF	50,000 hours	50,000 hours	50,000 hours
Touchscreen		Resistive (Optional)	Resistive (Optional)	Resistive (Optional)
CD-ROM/Combo Drive		-	-	-
DVD-ROM, DVD+/- RW Drive Option		1x slim DVD-ROM optional	1x slim DVD-ROM optional	1 x 5.25" DVD-ROM optional
I/O Ports		Optional CPU Card 1 x front-accessible 6-pin PS/2 with dust-protection door for keyboard	Optional CPU Card Front-accessible 6-pin PS/2 connector w/dustprotection door	Optional CPU Card 2 x 5-pin DIN connector for keyboard (front and rear)
Backplane	Backplane (PICMG1.0)	PCA-6109P4:AWS-8259TP-RAE/XAE	PCA-6109P4 (4 PCI, 3 ISA, 2 PICMG slot backplane)	PCA-6114P4:AWS-8248VTP-RAE/XAE
	Backplane (PICMG1.3)	PCE-5B07:AWS-8259TP-R1AE/X1AE	-	PCE-5B13:AWS-8248VTP-R1AE/X1AE
Button Controls		39 operating keys, 10 function keys, 10 programmable macro function keys,	47 operating keys included 26 alpha characters 10 function key 10 programmable macro function keys Reset and power on/off	39 operating keys, 10 function keys 10 programmable macro function keys Reset and power on/off
OSD		Yes, On front panel with backlight on/off switch	Yes, 6 OSD keys (Display On/Off, Brightness up, Brightness down, Menu Select, Exit)	Yes, On front panel
Touchpad		Yes, On front panel	Yes, Touchpad with two mouse buttons	Yes, On front panel
LED Indicators		Power on/off and HDD activity	Power on/off and HDD activity	Power on/off and HDD activity
Power Input		300 W 100-240VAC/50-60Hz/10A	250 W 100-240VAC/50-60Hz/10A	250 W 100-240VAC/50-60Hz/10A for AWS-8248VTP-RAE/XAE 300 W 100-240VAC/50-60Hz/10A for AWS-8248VTP-R1AE/X1AE
Front cover		Aluminum	Aluminum	Aluminum
Operating temperature		0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature		-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C
Ingress Protection (Front Panel)		IP65 compliant	IP65 compliant	IP65 compliant
Certification		BSMI, CE, CCC, and FCC class A	CCC, CE, and FCC class A	CCC, CE, and FCC class A
Operating System		Optional CPU Card	Optional CPU Card	Optional CPU Card
Dimensions (W x H x D)		482 x 356 x 229 mm (18.98" x 14.0" x 9")	482 x 266 x 317 mm (18.98" x 10.5" x 12.5")	482 x 356 x 465 mm (18.98" x 14.0" x 18.32")
Weight		18.5 kg (40.79lbs)/20 kg (44.09lbs)	17 kg (37.5 lb)	25.5 kg (56 lb)
Page				

## Regional Service & Customization Centers

<b>China</b> Kunshan 86-512-5777-5666	<b>Taiwan</b> Taipei 886-2-2792-7818	<b>Netherlands</b> Eindhoven 31-40-267-7000	<b>Poland</b> Warsaw 48-22-33-23-740 / 41	<b>USA/ Canada</b> Milpitas, CA 1-408-519-3898
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