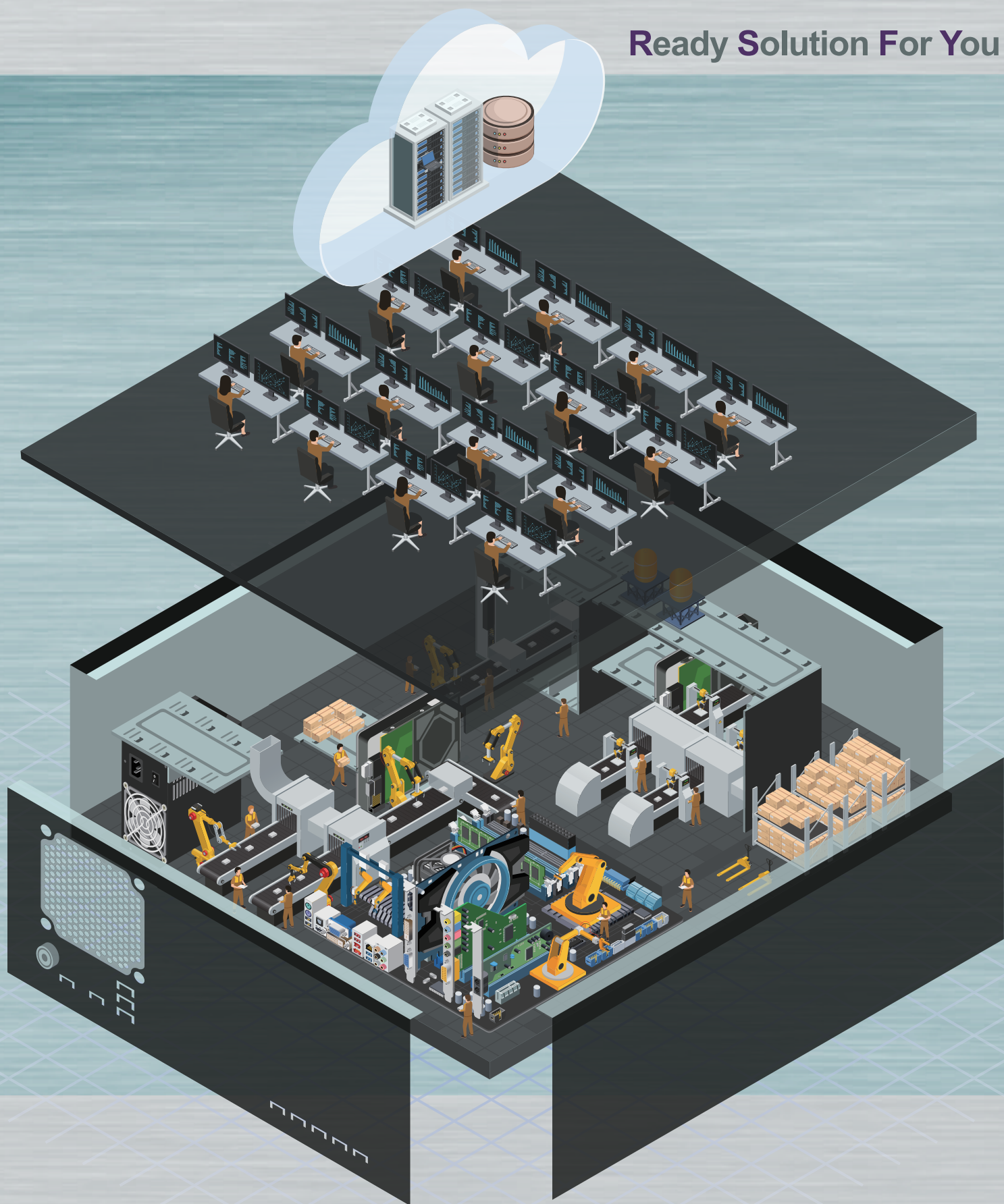


Ready Solution For You







# About Portwell

Portwell, Inc. was founded in 1993 and entered the Industrial PC market in 1995 by developing single-board computers. Today, our continuous development of leading-edge products has resulted in strong growth in market shares and revenue, a firm place on the Taipei stock exchange (TAISDAQ), and has established Portwell as a major worldwide supplier of specialty computing application platforms and services. Portwell, Inc. is a Premier member of the Intel® Internet of Things Solutions Alliance. From modular components to market-ready systems, Intel and the 250+ global member companies of the Intel® Internet of Things

Solutions Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Portwell, Inc. is also a member of the selected group of Intel® Applied Computing Platform Providers (IACPP), as well as Advanced Telecom Computing Architecture (ATCA) and an executive member of PCI Industrial Computer Manufacturing group (PICMG).



Portwell Engine (PE) Building

Portwell, Inc. has worldwide operations in the U.S.A., Taiwan, Japan, China, Netherlands, United Kingdom, Germany, Latin America and India. Whether you are working on a computer board or turnkey system, Portwell is the perfect partner to help you deliver your products to the market on time as well as maintain longevity of product. With 20 years experience in the design and manufacturing of specialty computer boards and systems, Portwell not only provides a one-stop resource for off-the-shelf products, but also supplies custom-built solutions and a global logistics services to suit your needs.

Portwell OEM and ODM solutions satisfy your needs in retail automation, medical equipment, industrial automation,

infotainment, communication, and network security markets. Encouraged by our flexible business support, manufacturing excellence, and compliance with high quality and environmental standards such as ISO 9001/14000/13485, OHSAS and RoHS, customers have taken advantage of our dedicated and sophisticated engineering resource to satisfy their requirements for the design, manufacturing and logistics of application-specific computer boards, customized computer chassis, and specific computer system configurations. Whether you are working on a Medical Single Board Computer or Internet Security Appliance, Portwell is, again, the perfect partner to help you deliver your products to the market on time and stay one step ahead of the competition.



Portwell is famous for her platform service that could offer the following benefits to customers.

### ■ Complete Product Portfolio

Select from our full range of both off-the-shelf and versatile custom solutions to scale your products. Portwell provides not only board-level products but also peripheral-level and complete system solutions.

### ■ Implement Latest Intel Technology

Portwell delivers cutting-edge solutions not only to meet and exceed the demand for the newest technologies, but also the need for greater product life cycles. Since partnering with Intel in 1999, and with streamline access to the latest Intel technologies and roadmaps, Portwell delivers superior products to meet your needs.

### ■ Faster Time-to-Market

Portwell's experienced engineers, complete product solutions,

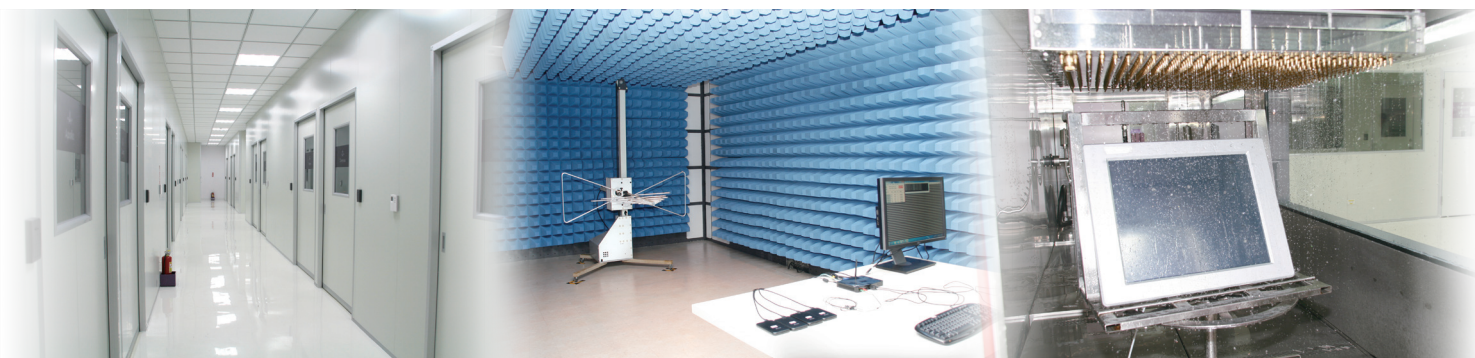
global operation and flexible business service help you meet the time-to-market requirement and reduce your new product introduction cycles as well as the costs of conducting business.

### ■ Leading Edge Innovator

Portwell is committed to product and solution innovation. We have a complete variety of proof-of-concept designs with Intel and we are also a leader in offering the latest technologies to the market.

### ■ Committed to Customer Satisfaction

Portwell maintains high expectations in a determined pursuit of commitment to continuously improve our products and services in order to satisfy and exceed our customers' needs.



Consulting • Design • Product • Manufacturing • Logistics



Portwell is proud of the technology service it provides to our partners. These services include complete service-demand consulting, product development, advanced design, quality production and global logistics.

### Share for Success

Portwell is eager to share its industrial know-how with customers via our online consulting. This feature enables customers to obtain suitable or customized solutions quickly and efficiently.

### Design, Develop, and Deliver

- We design, develop and deliver our customer requirements, such as production, reliability, stability, cost-effectiveness, and longevity of product.
- Our experienced and sophisticated engineering capabilities include electronic, mechanical, firmware and system integration expertise.

### Portwell Manufacturing Excellence

- We supply component inventory management with automation.

- In-house SMT lines and PCB assembly and functional testing.
- In-house system integration and testing.
- ISO 14001 and ISO 9001 certified manufacturing facilities (89,000 sq. ft. in Taipei).
- Flexible production capability.

### Portwell Global Presence

- Single contact window, global support.
- Sales and technical support teams are available through Portwell worldwide offices in the U.S.A., Taiwan, Japan, China, Netherland, United Kingdom, and India.
- Customer-centric service and support.



# System Production Flow



## IPQC

Verifies that all the production processes are completed correctly and accordingly to specification.



## Visual Inspection

Once systems have been assembled, they will have already been visually inspected. Our inspectors ensure all components and accessories are assembled properly and follow SOP before testing.



## Assembly

Makes certain that all the system components were assembled properly (Main board, Cable, Fan, HDD, etc.)

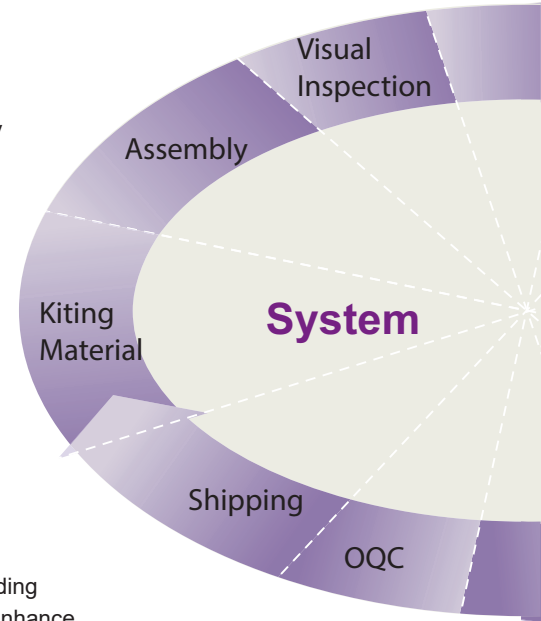
## Shipping

In order to meet the demands of storage, transportation, loading and unloading the products mechanically, our pallet stretch wrap machine is designed to enhance production efficiency and prevent damage to the products during transportation.



## OQC

To implement QC inspection procedure on packaged and finished goods, OQC has the MIL-STD 105E Table. QC staff conducts sampling according to required sampling by quantity.



## Certifications

ISO 28000:2007 specifies the requirements for a security management system, including those aspects critical to security assurance of the supply chain.



## Certifications

ISO 9000 deals with the fundamentals of quality management systems, including the eight management principles on which the family of standards is based.



## Certifications

The ISO 14000 environmental management standards exist to help organizations minimize how their operations negatively affect the environment and comply with applicable laws, regulations, and other environmentally oriented requirements and continually improve in the above.





### Basic Function Test

In order to ensure the system product is able to boot up by Dynamic Burn-In, 100% of the system products are tested for electronic functionality via a Basic Function Testing after assembly.



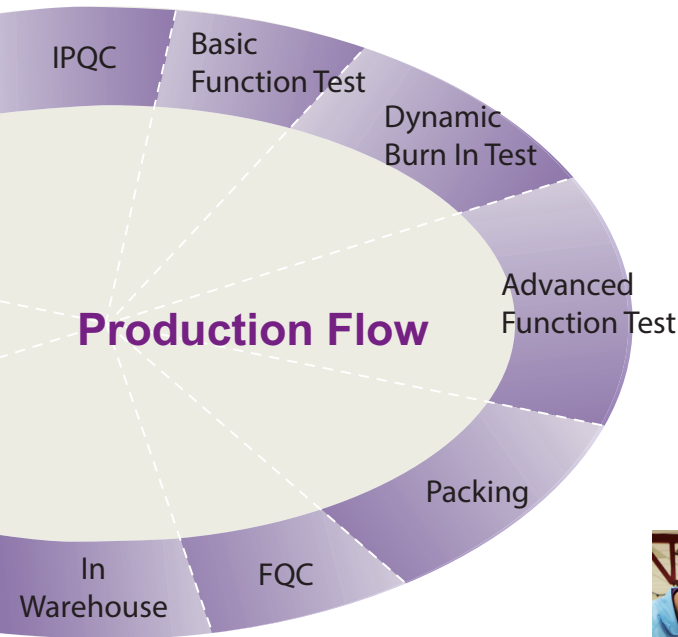
### Dynamic Burn In Test

DBI is the test used before the product is shipped out. The purpose is to screen possible weaknesses and failures which affect its reliability under different environments.



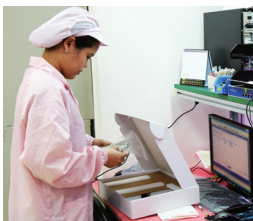
### Advanced Function Test

This procedure is to ensure the quality and functionality of the system product after the Burn-in test.



### Packing

We inspect the product for external defectiveness. Once they have passed, we then collocate all accessories into plastic bags then proceed with boxing and labeling.



### FQC

Finished and packed goods are placed in this area for inspection; the FQC department will inspect finished goods based on standard procedures.



### Certifications

ISO 13485 is an ISO standard that represents the requirements for a comprehensive management system for the design and manufacture of medical devices.



### Certifications

Quality management systems -- Particular requirements for the application of ISO 9001:2008 for automotive production and relevant service part organizations



### Certifications

OHSAS 18001:2007 is a standard which represent her highly regards labors' safety, the commitment to employees' health management and continuously improvement to the company and society.



# Embedded System



Model		RS4U-8112-MES	RS4U-8172-M2M	RS4U-B641-P&E
M/B		ROBO-8112VG2AR	WADE-8172	PCOM-B641VG+PCOM-C605
Form Factor		PICMG 1.3	Mini-ITX	COM Express Type6
System	CPU	Intel® Xeon® Processor E3-1225 v3	Intel® Celeron® Processor N3350	Intel® Celeron® Processor N3350
	Chipset	C226		
	BIOS	Phoenix uEFI BIOS	AMI uEFI BIOS	AMI uEFI BIOS
	Memory	8GB DDR3 ECC	2GB DDR3L	4GB DDR3L
	Graphic Controller	Gen 9	Intel® HD Graphics 500	Intel® HD Graphics 500
	Audio Codec	ALC886	ALC887	ALC892
	Super I/O	IT8728F	EC	EC
	Storage	Internal: 3x 5.25", 1x 3.5" HDD	32GB M.2 SSD (2242)	1x CFEX 2GB 1x 64GB 2.5" SATA SSD
External I/O	Serial	1x RS-232/422/485 1x RS-232	2x RS-232/422/485 4x RS-232	1x RS-232/422/485 1x RS-232
	USB	2x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O	4x USB 3.0 ports on rear I/O 4x USB 2.0 ports on Front I/O	4x USB 3.0 ports on rear I/O
	Display	1x DVI-I	1x VGA 1x HDMI	1x VGA 1x HDMI 1x DP
	Ethernet	Intel® I217LM + I210AT	2x RTL8111G	Intel® I210AT + I210IT
	Audio	N/A	Line-out, Mic-in	Line-out, Mic-in
	D I/O	8-bit Digital I/O	8-bit Digital I/O	N/A
Expansion		"1x PCIe x16 1x PCIe x8, 9x PCI sockets"	1x Full-size Mini-PCle	N/A
PWR	System	100V~240V AC, Full Range	DC 12 or 19~24V	DC 9~32V
Environment	OP Temp.	0°C ~ 50°C	-5°C ~ 50°C	-20°C ~ 50°C
	Storage Temp.	-40°C ~ 80°C	-40°C ~ 80°C	-40°C ~ 80°C
	Humidity	95%@40°C, non-condensing	95%@40°C, non-condensing	95%@40°C, non-condensing
	Vibratoin	5Grms/10-500Hz, IEC 60068-2-06	5Grms/10-500Hz, IEC 60068-2-06	5Grms/10-500Hz, IEC 60068-2-06
	Shock	50G, 11 msec, IEC 60068-2-27	50G, 11 msec, IEC 60068-2-27	50G, 11 msec, IEC 60068-2-27
Mechanical	imenson(WxDxH)	482 x 481 x 177 mm	200 x 200 x 45 mm	203 x 190 x 70 mm
	Weight	12Kg	3Kg	4Kg
Page		7-8	9-10	11-12





Model		RS4U-1703-IAC	RS4U-Q170-TVS	RS4U-8017-IAB
M/B		RUBY-SQ1703	RUBY-SQ1703	WADE-8017
Form Factor		ATX	ATX	Mini-ITX
System	CPU	Intel® Core™ i7-6700 Processor	Intel® Core™ i5-6500 Processor	Intel® Core™ i5-6500 Processor
	Chipset	Q170	Q170	Q170
	BIOS	AMI uEFI BIOS	AMI uEFI BIOS	AMI uEFI BIOS
	Memory	8GB DDR4	8GB DDR4	8GB DDR4
	Graphic Controller	Gen 9	Gen 9	Gen 9
	Audio Codec	ALC892	ALC892	ALC892
	Super I/O	EC	EC	EC
	Storage	Internal: 2x 5.25", 1x 3.5" HDD	Internal: 2x 5.25", 1x 3.5" HDD	1x 128GB 2.5" SATA SSD
External I/O	Serial	2x RS-232/422/485 4x RS-232	2x RS-232/422/485 4x RS-232	2x RS-232/422/485 4x RS-232
	USB	4x USB 3.0 ports on rear I/O 2x USB 3.0 ports on Front I/O	4x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O	4x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O
	Display	1x VGA 1x HDMI 1x DVI-D	1x VGA 1x HDMI 1x DVI-D	"1x VGA 1x HDMI 1x DP"
	Ethernet	2x Intel® I210AT	2x Intel® I210AT	Intel® I219LM + I211AT
	Audio	Line-out, Line-in, Mic-in	Line-out, Line-in, Mic-in	Line-out, Line-in, Mic-in
	D I/O	8-bit Digital I/O	8-bit Digital I/O	8-bit Digital I/O
Expansion		1x PCIe16 or 2x PCIe8 (Gen3), 2x PCIe4 (Gen3), 3x PCI	1x PCIe16 or 2x PCIe8 (Gen3), 2x PCIe4 (Gen3), 3x PCI	1x PCIe16 (Gen3), 2x PCIe1 (Gen3), 2x PCI
PWR	System	100V~240V AC, Full Range	100V~240V AC, Full Range	100V~240V AC, Full Range
Environment	OP Temp.	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C
	Storage Temp.	-40°C ~ 80°C	-40°C ~ 80°C	-40°C ~ 80°C
	Humidity	95%@40°C, non-condensing	95%@40°C, non-condensing	95%@40°C, non-condensing
	Vibratoin	5Grms/10-500Hz, IEC 60068-2-06	5Grms/10-500Hz, IEC 60068-2-06	5Grms/10-500Hz, IEC 60068-2-06
	Shock	50G, 11 msec, IEC 60068-2-27	50G, 11 msec, IEC 60068-2-27	50G, 11 msec, IEC 60068-2-27
Mechanical	imention(WxDxH)	330 x 408x 204.2 mm	482 x 481 x 177 mm	300 x 281.2 x 150 mm
	Weight	10.2Kg	12Kg	10.2Kg
Page		13-14	15-16	17-18

# RS4U-8112-MES

19" Rack-Mount System with 6th Generation Intel® Core™ Processor based PICMG1.3 SHB



Multiple & synchronization control in manufacturing execution system



The RS4U-8112-MES builds on Intel® 6th Generation Intel® Core™ Processor , that can support dual channel DDR3 SDRAM memory, support dual Gigabit Ethernet ports, one PCIe x16, one PCIe x8 and nine PCI sockets. The RS4U-8112-MES is ideal platform with high performance and flexible PCIe/PCI expansion for Manufacturing Execution, Automation.

## Key Features

- Haswell platform with ECC support
- Integrated I210 GbE x1 with EtherCAT optional 3rd party driver support
- Xeon® power with Desktop price, higher C/P
- API function control by Super IO
- Support up to 9x legacy PCI slots

## Key Benefits

- Cost vs. Performance
- Mature platform for quick design win
- EtherCAT optional support available
- Rich legacy expansion support
- Easy H/W control by API

## System

CPU	Intel® Xeon® Processor E3-1225 v3
Chipset	C226
BIOS	Phoenix uEFI BIOS
Memory	8GB DDR3 ECC
Graphic Controller	Gen 9
Audio Codec	ALC886
Super I/O	IT8728F
Storage	Internal: 3x 5.25", 1x 3.5" HDD

## External I/O

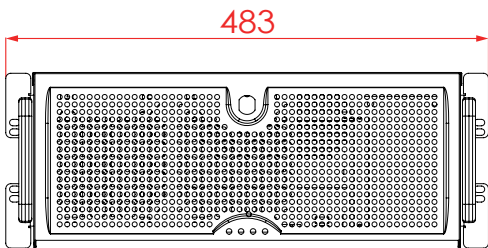
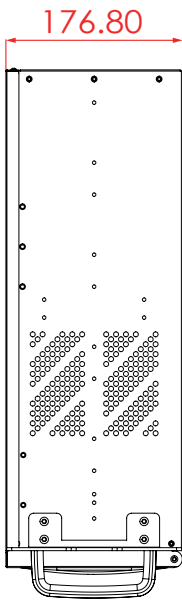
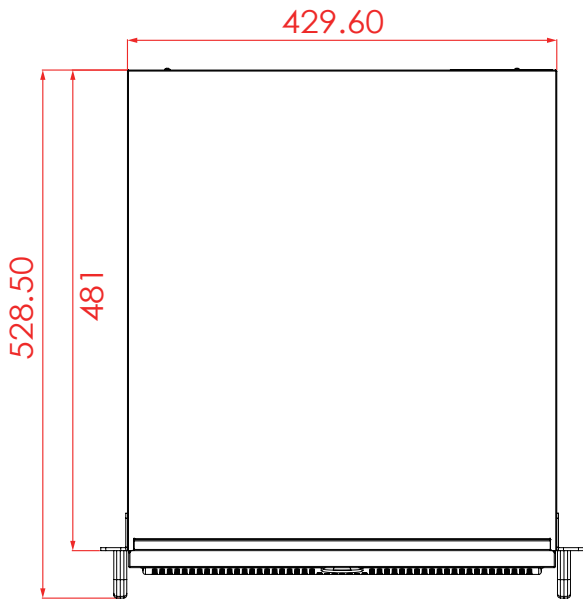
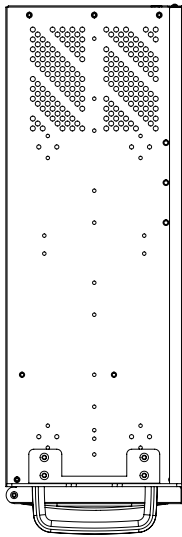
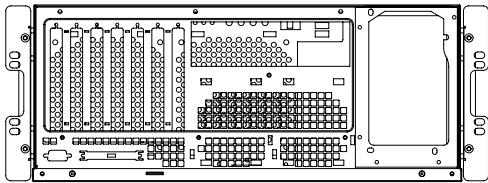
Serial	1x RS-232/422/485 1x RS-232"
USB	2x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O"
Display	1x DVI-I
Ethernet	Intel® I217LM + I210AT
Audio	N/A
D I/O	8-bit Digital I/O
Expansion	1x PCIe x16 1x PCIe x8, 9x PCI sockets
System PWR	100V~240V AC, Full Range



Environment	
OP Temp	0°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27

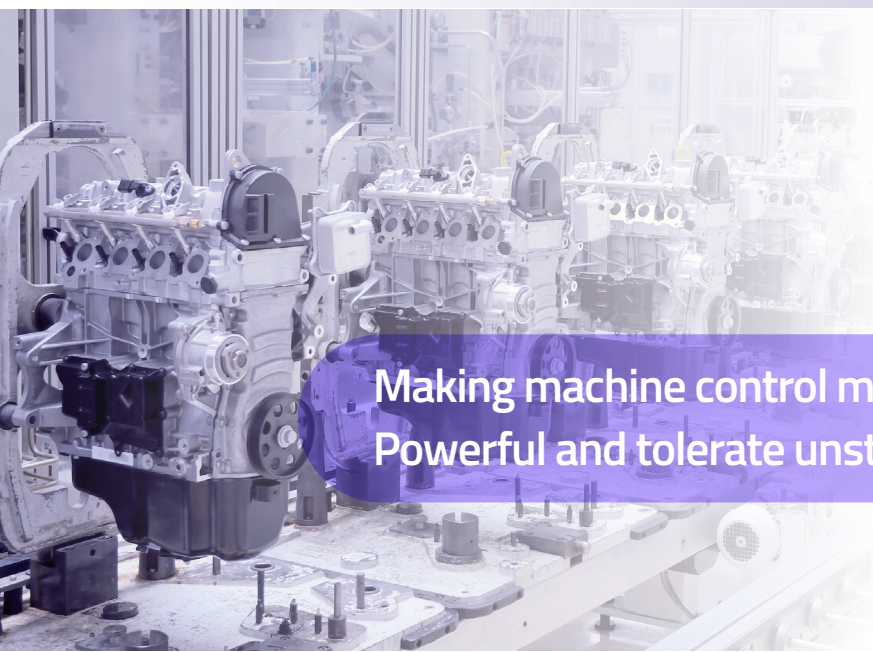
Mechanical	
imension(WxDxH)	482 x 481 x 177 mm
Weight	12Kg

Mechanical Drawing



# RS4U-8172-M2M

Embedded rugged fan-less system with Intel® Pentium® Processor based Mini-ITX board



Making machine control more easy.

Powerful and tolerate unstable power voltage transient loss



The RS4U-8172-M2M builds on Intel® Pentium® Processor SoC , that can support dual channel DDR3L SO-DIMM memory, support dual Gigabit Ethernet ports, one M.2 socket and one Mini PCIe socket. The RS4U-81720-M2M is ideal platform with rich I/O and high resolution for automation, POS, kiosk and digital signage applications.

## Key Features

- New Apollo Lake platform
- 4K codec encode & decode ability
- 2x integrated Realtek GbE
- 12, 19-24V wide range DC in
- API function control
- Integrated TPM support

## Key Benefits

- Low power and cost
- Support 4Kx2K high resolution
- Realtek GbE for cost saving
- TPM support for security purpose
- Wide DC in support for harsh environment
- Easy H/W control by API

## System

CPU	Intel® Celeron® Processor N3350
Chipset	
BIOS	AMI uEFI BIOS
Memory	4GB DDR3L
Graphic Controller	Intel® HD Graphics 500
Audio Codec	ALC892
Super I/O	EC
Storage	1x CFEX 2GB 1x 64GB 2.5" SATA SSD

## External I/O

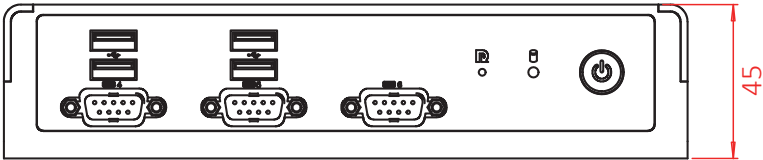
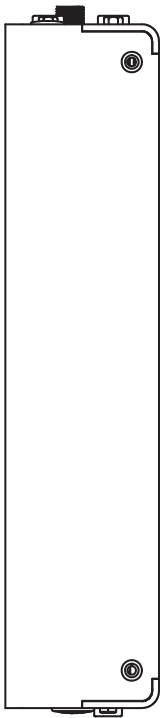
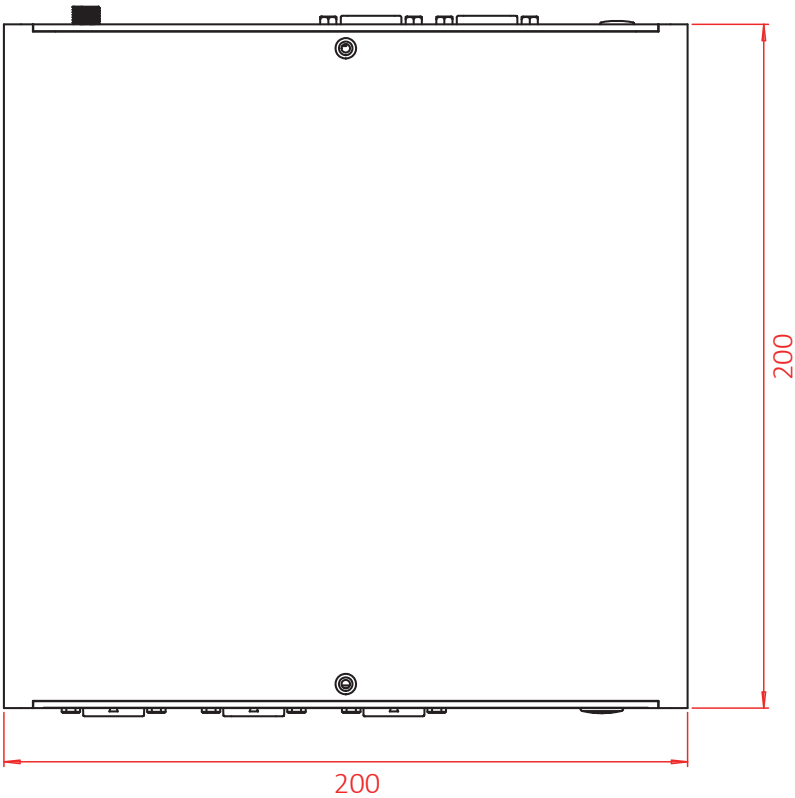
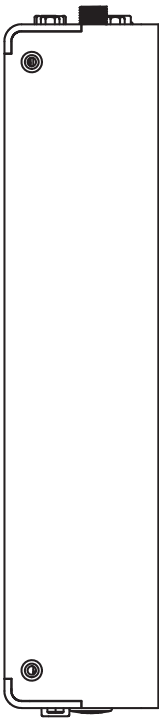
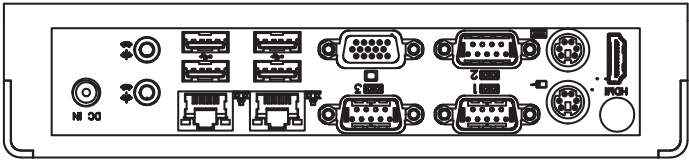
Serial	1x RS-232/422/485 1x RS-232
USB	4x USB 3.0 ports on rear I/O
Display	1x VGA 1x HDMI 1x DP"
Ethernet	Intel® I210AT + I210IT
Audio	Line-out, Mic-in
D I/O	N/A
Expansion	N/A
System PWR	DC 9~32V



Environment	
OP Temp	-20°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27

Mechanical	
imension(WxDxH)	200 x 200 x 45 mm
Weight	3Kg

Mechanical Drawing



# RS4U-B641-P&E

Embedded rugged fan-less system with Intel® Pentium® Processor based Mini-ITX board



Renewable energy, Renewable system. Today's resource for a brighter tomorrow!



The builds on Intel® Apollo Lake SoC Processor, that can support dual channel DDR3L memory, support dual Gigabit Ethernet ports, one mSATA socket and one Mini PCIe socket. The RS4U-B641-P&E is ideal platform with rich I/O and high resolution for automation, POS, kiosk and digital signage applications.

## Key Features

- New Apollo Lake platform
- 4K codec encode & decode ability
- 9-32V wide range DC in
- eAPI function control
- CFEX support with SPI ROM inside

## Key Benefits

- Low power and cost
- Support 4Kx2K high resolution
- 50G static shock and 5Grms dynamic vibration
- Storage and security functions on CFEX
- Wide DC in support for different usage
- Easy H/W control by eAPI

## System

CPU	Intel® Celeron® Processor N3350
Chipset	
BIOS	AMI uEFI BIOS
Memory	2GB DDR3L
Graphic Controller	Intel® HD Graphics 500
Audio Codec	ALC887
Super I/O	EC
Storage	32GB M.2 SSD (2242)

## External I/O

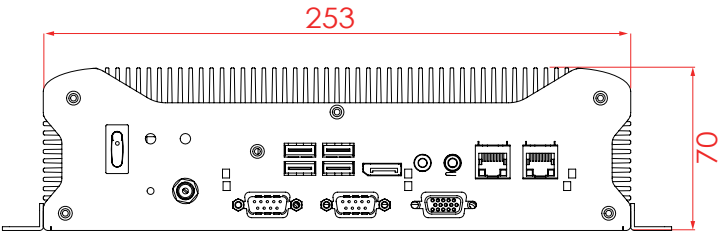
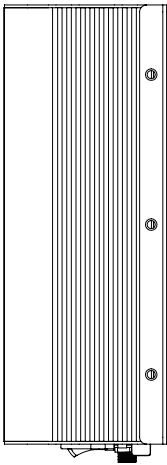
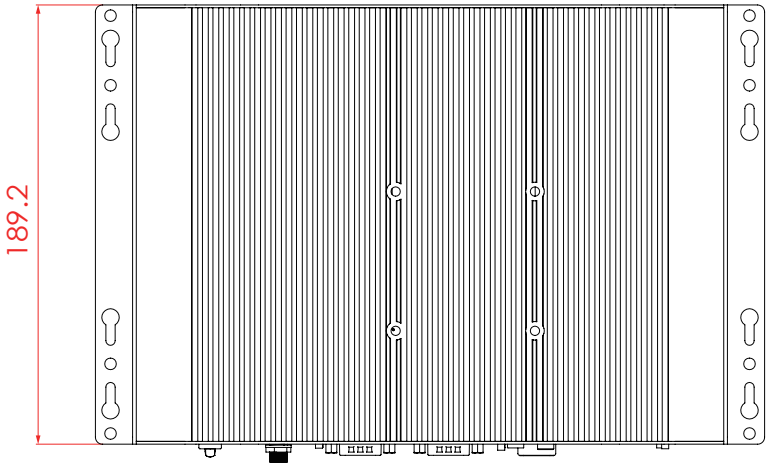
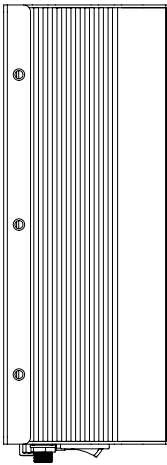
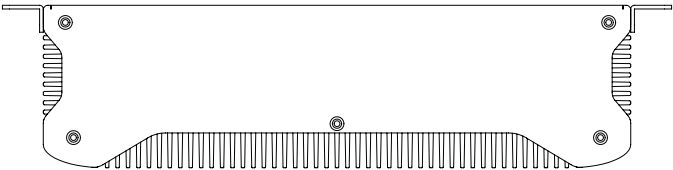
Serial	2x RS-232/422/485 4x RS-232 "
USB	4x USB 3.0 ports on rear I/O 4x USB 2.0 ports on Front I/O"
Display	1x VGA 1x HDMI"
Ethernet	2x RTL8111G
Audio	Line-out, Mic-in
D I/O	8-bit Digital I/O
Expansion	1x Full-size Mini-PCIe
System PWR	DC 12 or 19~24V



Environment	
OP Temp	-5°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27

Mechanical	
imension(WxDxH)	203 x 190 x 70 mm
Weight	4Kg

Mechanical Drawing



# RS4U-1703-IAC

ATX full-sized industrial node system with 6th Generation Intel® Core™ Processors



**Powerful, Durable &  
Reliable Japan design & Made-In-Taiwan**



The RS4U-1703-IAC builds on Intel® 6th Generation Intel® Core™ Processor, that can support dual channel DDR4 SDRAM memory, support dual Gigabit Ethernet ports, one PCIe x16 or two PCIe x8, two PCIe x4 and three PCI sockets. The RS4U-1703-IAC is ideal platform with high performance and flexible PCIe/PCI expansion for Industrial Automation Control.

## Key Features

- Skylake-S Desktop platform
- Japan Design & MIT quality
- Integrated I210 GbE x2 with EtherCAT optional 3rd party driver support
- Four DIMM slots, up to 64GB memory support
- API function control by Super IO
- Support 2x PCIe x16 slot with 16 lanes

## Key Benefits

- Desktop platform
- Higher quality Industrial PC
- EtherCAT optional support available
- Easy to strengthen memory capacity
- Easy H/W control by API
- PCIe expansion for graphic card & FPGA card

System	
CPU	Intel® Core™ i7-6700 Processor
Chipset	Q170
BIOS	AMI uEFI BIOS
Memory	8GB DDR4
Graphic Controller	Gen 9
Audio Codec	ALC892
Super I/O	EC
Storage	Internal: 2x 5.25", 1x 3.5" HDD
External I/O	
Serial	2x RS-232/422/485 4x RS-232
USB	4x USB 3.0 ports on rear I/O 2x USB 3.0 ports on Front I/O
Display	1x VGA 1x HDMI 1x DVI-D
Ethernet	2x Intel® I210AT
Audio	Line-out, Line-in, Mic-in
D I/O	8-bit Digital I/O
Expansion	1x PCIe x16 or 2x PCIe x8 (Gen3) 2x PCIe x4 (Gen3) 3x PCI
System PWR	100V~240V AC, Full Range

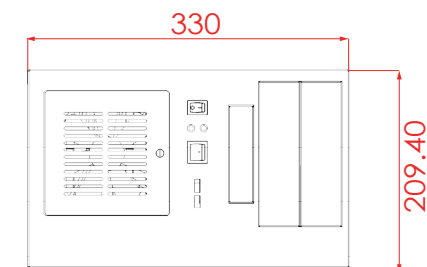
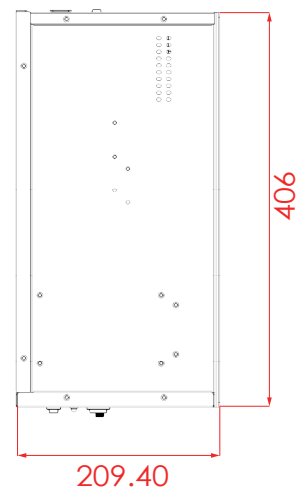
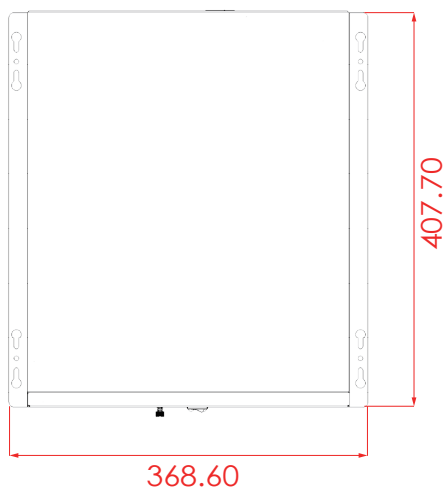
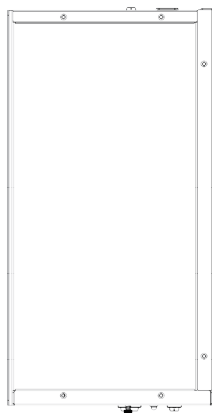
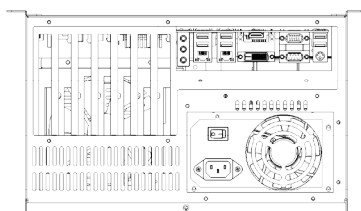
### Environment

OP Temp	0°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27

### Mechanical

imension(WxDxH)	330 x 408x 204.2 mm
Weight	10.2Kg

### Mechanical Drawing





# RS4U-Q170-TVS

19" Rack-Mount System with 6th Generation Intel® Core™ Processor based ATX full-sizes board



The RS4U-Q170-TVS builds on Intel® 6th Generation Intel® Core™ Processor, that can support dual channel DDR4 SDRAM memory, support dual Gigabit Ethernet ports, one PCIe x16 or two PCIe x8, two PCIe x4 and three PCI sockets. The RS4U-Q170-TVS is ideal platform with high performance and flexible PCIe/PCI expansion for Industrial Automation Control.

## Key Features

- Skylake-S Desktop platform
- Japan Design & MIT quality
- Integrated I210 GbE x2
- Four DIMM slots, up to 64GB memory support
- API function control by Super IO
- Support 2x PCIe x16 slot with 16 lanes

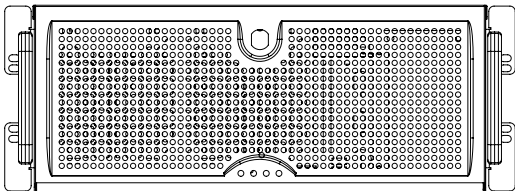
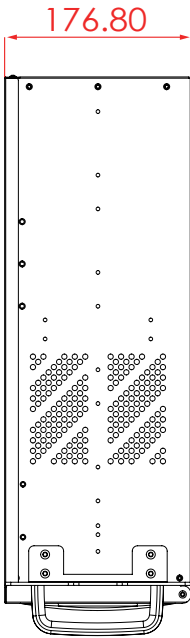
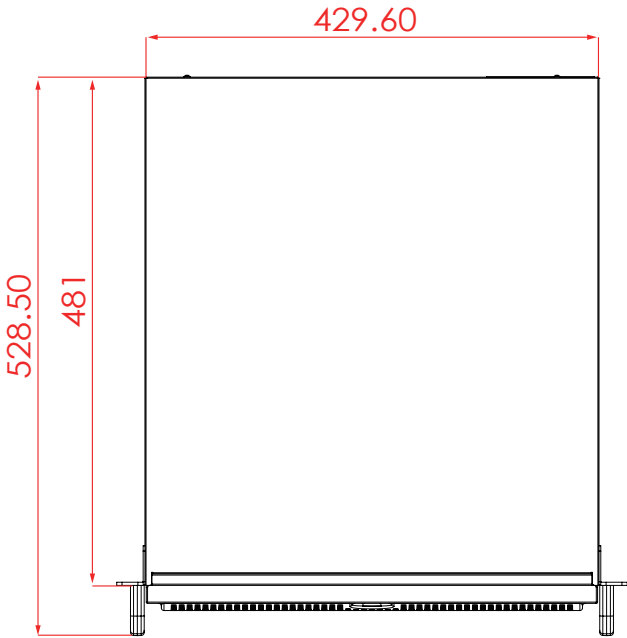
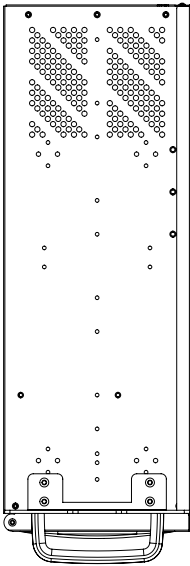
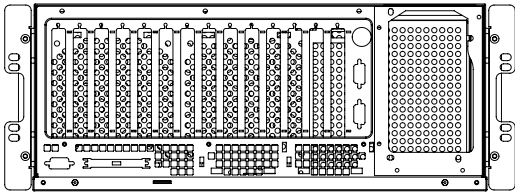
## Key Benefits

- Desktop platform
- Higher quality rack-mount system
- Easy to strengthen memory capacity
- Easy H/W control by API
- PCIe expansion for graphic card & FPGA card

System	
CPU	Intel® Core™ i5-6500 Processor
Chipset	Q170
BIOS	AMI uEFI BIOS
Memory	8GB DDR4
Graphic Controller	Gen 9
Audio Codec	ALC892
Super I/O	EC
Storage	Internal: 2x 5.25", 1x 3.5" HDD
External I/O	
Serial	2x RS-232/422/485 4x RS-232
USB	4x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O
Display	1x VGA 1x HDMI 1x DVI-D
Ethernet	2x Intel® I210AT
Audio	Line-out, Line-in, Mic-in
D I/O	8-bit Digital I/O
Expansion	1x PCIe x16 or 2x PCIe x8 (Gen3), 2x PCIe x4 (Gen3), 3x PCI
System PWR	100V~240V AC, Full Range

Environment	
OP Temp	0°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27
Mechanical	
imension(WxDxH)	482 x 481 x 177 mm
Weight	12Kg

Mechanical Drawing



## Making easier expansion support Industrial Automation Control



The RS4U-8017-IAB builds on Intel® 6th Generation Intel® Core™ Processor , that can support dual channel DDR4 SDRAM memory, support dual Gigabit Ethernet ports, one PCIe x16 or one PCIe x1 and two PCI sockets. The RS4U-8017-IAB is ideal platform with high performance and flexible PCIe/PCI expansion for Industrial Automation Control.

### Key Features

- Skylake-S Desktop platform
- Portwell SEB Support
- Integrated I210 GbE x2
- Dual DIMM slots, up to 32GB memory support
- API function control by Super IO
- Support 1x PCIe x16; 1x PCIe x1 and 2x PCI

### Key Benefits

- Desktop platform
- Easy to strengthen memory capacity
- Easy H/W control by API
- PCIe expansion for graphic card & FPGA card

System	
CPU	Intel® Core™ i5-6500 Processor
Chipset	Q170
BIOS	AMI uEFI BIOS
Memory	8GB DDR4
Graphic Controller	Gen 9
Audio Codec	ALC892
Super I/O	EC
Storage	1x 128GB 2.5" SATA SSD
External I/O	
Serial	2x RS-232/422/485 4x RS-232
USB	4x USB 3.0 ports on rear I/O 2x USB 2.0 ports on Front I/O"
Display	1x VGA 1x HDMI 1x DP
Ethernet	Intel® I219LM + I211AT
Audio	Line-out, Line-in, Mic-in
D I/O	8-bit Digital I/O
Expansion	1x PCIe x16 (Gen3) 2x PCIe x1 (Gen3) 2x PCI
System PWR	100V~240V AC, Full Range



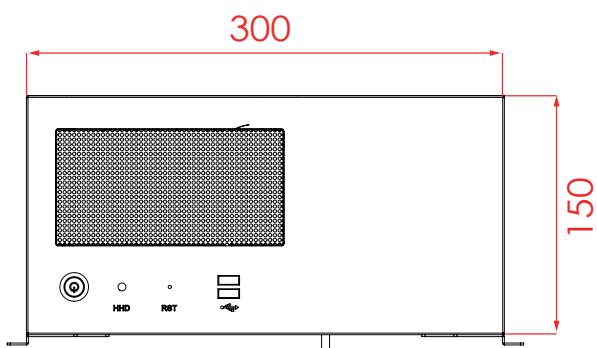
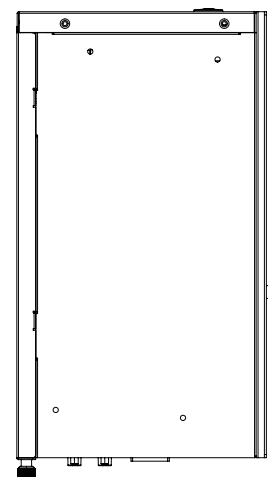
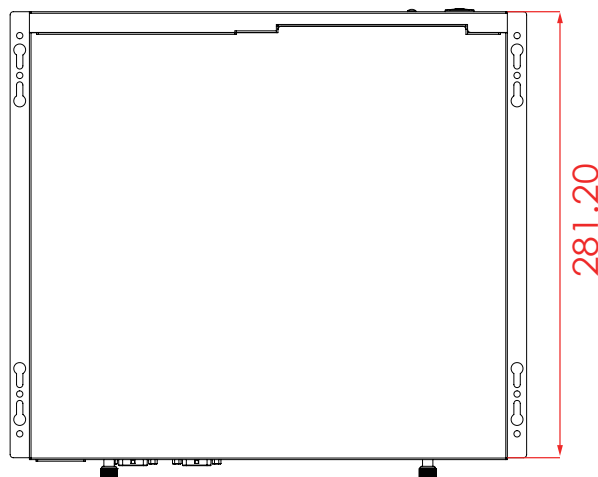
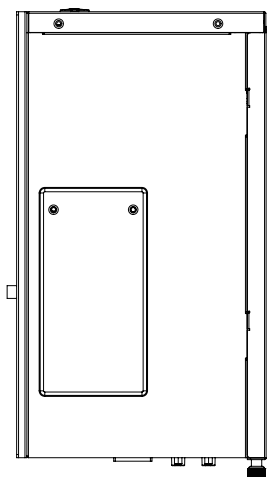
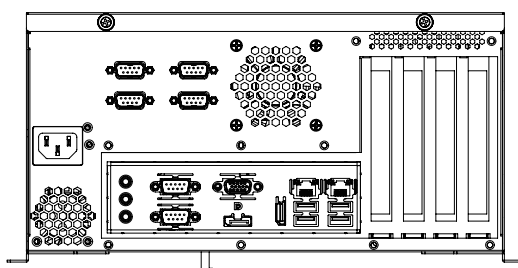
### Environment

OP Temp	0°C ~ 50°C
Stor. Temp	-40°C ~ 80°C
Humidity	95%@40°C, non-condensing
Vibratoin	5Grms/10-500Hz, IEC 60068-2-06
Shock	50G, 11 msec, IEC 60068-2-27

### Mechanical

imension(WxDxH)	300 x 281.2 x 150 mm
Weight	10.2Kg

### Mechanical Drawing



# industry 4.0



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