W4U-IRP-S

4U Rack IPC Server with 12th/13th/14th Gen Intel® Core™ Processors

KEY FEATURES

- Supports Intel® 12th/13th/14th generation Core™ i9/i7/i5/i3 processors with R680E chipset, up to 125W
- Equipped with 4 x DDR5 U-DIMM slots, supporting a maximum capacity of up to 128GB
- Supports a single high-performance graphics card up to 300W (such as NVIDIA RTX series) for AI and heavy workload acceleration
- Supports single ATX power supply options ranging from 850W to 1300W
- Hot-swappable driver design with RAID 0/1 ensures continuous 24/7 mission-critical operations without service interruption.
- Lockable front panel and intrusion buzzer work together to block unauthorized access and provide instant alerts if the case is opened
- Highly expandable platform supporting 1x PCIe x16, 1x PCIe x8, 3x PCIe x4, and 2x PCI slots for diverse industrial applications
- Support Intel® AMT and Intel vPro®

INTRODUCTION

The W4U-IRP-S is a power-efficient and highly expandable 4U IPC Server designed for machine vision control, Edge AI, and industrial automation. Powered by 12th, 13th, or 14th Gen Intel® Core™ processors with the Intel® R680E chipset, the system supports processors up to 125W, up to 128GB DDR5 memory, and a single high-performance graphics card up to 300W. Its versatile PCIe and PCI expansion architecture provides the flexibility required for vision, control, networking, data acquisition, and other demanding industrial workloads.

SPECIFICATIONS

System Specification

Processor	Intel® Core™ i7 processor 14700 (up to 5.40 GHz) (Default) Intel® socket 1700 for 14th/ 13th/12th Gen Intel® Core™ i9/ i7/ i5/ i3 processors Supports up to 125W TDP	**Chipset**	Intel® R680E
Memory	2 x U-DIMM, DDR5 5600 MHz, 32GB (16GB per DIMM) (Default) 4 x U-DIMM, DDR5 5600 MHz, max. 128GB(Max. 32GB per DIMM)	**Storage**	256GB SSD (Default) 512GB SSD (Optional) 1TB (Optional) 2TB (Optional) 4TB (Optional) 7 x SATA III for 2.5" SSD/HDD up to 8TB (Supports RAID 0,1,5,10) (Optional)
Ethernet controller	3 x Intel® 2.5GbE by I226-LM	**Security**	1 x Internal SPI TPM header
Operating System	Windows 11 IoT Enterprise (64 bit) (Optional) Windows 10 IoT Enterprise (64 bit) (Optional)	**WLAN**	Support (Optional)

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	Windows 11 Pro 64 bit (Optional) Linux Ubuntu 24.04 (Optional)		
BT	Support (Optional)	**Sensors**	Chassis Intrusion Detection
Expansion Port	1 x M.2 2230 E-Key Slot (for Wi-Fi module) 1 x PCIe 5.0 x16 Slot (x16 mode.When PCIe 5.0 x8 slot being used, this slot will change to x8 mode) 1 x PCIe 5.0 x16 Slot (x8 mode) 1 x PCIe 4.0 x4 Slot (x4 mode) 1 x PCIe 4.0 x4 Slot (x4 mode) 1 x PCIe 3.0 x4 Slot (x4 mode) 2 x PCI	**Graphic Card**	NVIDIA RTX A1000 Graphic Card (Optional) NVIDIA RTX A2000E 12 GB Graphic Card (Optional) NVIDIA RTX 2000E Ada Graphic Card (Optional) NVIDIA RTX PRO 2000 BlackwellGraphic Card (Optional) NVIDIA RTX PRO 4000 Blackwell SFF Graphic Card (Optional) NVIDIA RTX 4000E Ada Graphic Card (Optional) NVIDIA RTX A4000E Graphic Card (Optional) NVIDIA RTX PRO 4000 Blackwell Graphic Card (Optional) NVIDIA RTX PRO 4500 BlackWell 32GB Graphic Card (Optional) NVIDIA RTX PRO 5000 BlackWell 48GB /72GB Graphic Card (Optional) NVIDIA RTX PRO 6000 Blackwell Max-Q Workstation Edition (96GB) Graphic Card (Optional) NVIDIA WinFast RTX 5060 HURRICANE 8GB Graphic Card (Optional)
OOB Management	Support Intel® AMT and Intel vPro® (Varies by CPU SKU)		

Mechanical

Dimension	483 x 177 x 451mm	**Weight**	35 kg
Mounting	4U Rack mounting	**Enclosure**	Electroplated steel
Cooling System	Fan Design		

Environment

Operating Humidity	10% to 90% RH, Non-Condensing	**Operating Temperature**	0°C to 50°C
Storage Temperature	-10°C to 60°C		

Certification

Certification	CE, FCC

IO Ports

Power Input	VAC 90-264, 500W, ATX P/S, 80 PLUS® Bronze (Default) VAC 90-264, 650W~850W, ATX P/S, 80 PLUS® Gold (Without GPU) (Optional) VAC 90-264, 850W/1300W, ATX P/S, 80 PLUS® Gold (With GPU) (Optional)	**USB Port**	Front side 2 x USB2.0 (Type-A) Rear side : 6 x USB3.2 Gen2: (Type- A)
Serial Port	Rear side: 1 x RS232/422/485 (Default RS232)	**Video**	1 x DisplayPort 1.4 output. Maximum resolution of 4096 x 2160 @ 60 Hz 1 x HDMI 2.1 output. Maximum resolution of 4096 x 2160 @ 30 Hz 1 x VGA output.Maximum resolution of 1920 x 1200 @ 60 Hz
Audio	Mic in Line in Line out	**Expansion Port**	1 x M.2 2230 E-Key Slot (for Wi-Fi module) 1 x PCIe 5.0 x16 Slot (x16 mode.When both PCIe 5.0 x16 slot being used, this slot will change to x8 mode) 1 x PCIe 5.0 x16 Slot (x8 mode) 1 x PCIe 4.0 x4 Slot (x4 mode) 1 x PCIe 4.0 x4 Slot (x4 mode) 1 x PCIe 3.0 x4 Slot (x4 mode) 2 x PCI
LAN	3 x Intel® 2.5GbE by I226-LM	**Indicator**	1 x LED Indicator for power 1 x LED Indicator for storage
Drive Bay	1 x Hot-swap RAID BOX for SATAIII/SATAII or NVMe (Optional) 1 x 3.5 (Optional) 1 x 24X Slim DVD (Optional)	**Internal connector**	2 x Headers Support Additional 4 x USB3.2 Gen1 2 x Headers Support Additional 2 x USB2.0 5 x COM Headers (1 x RS232/422/485,4 x RS232)

Control

Button	1 x Front side Power Switch 1 x Rear side Power Switch(power input control)

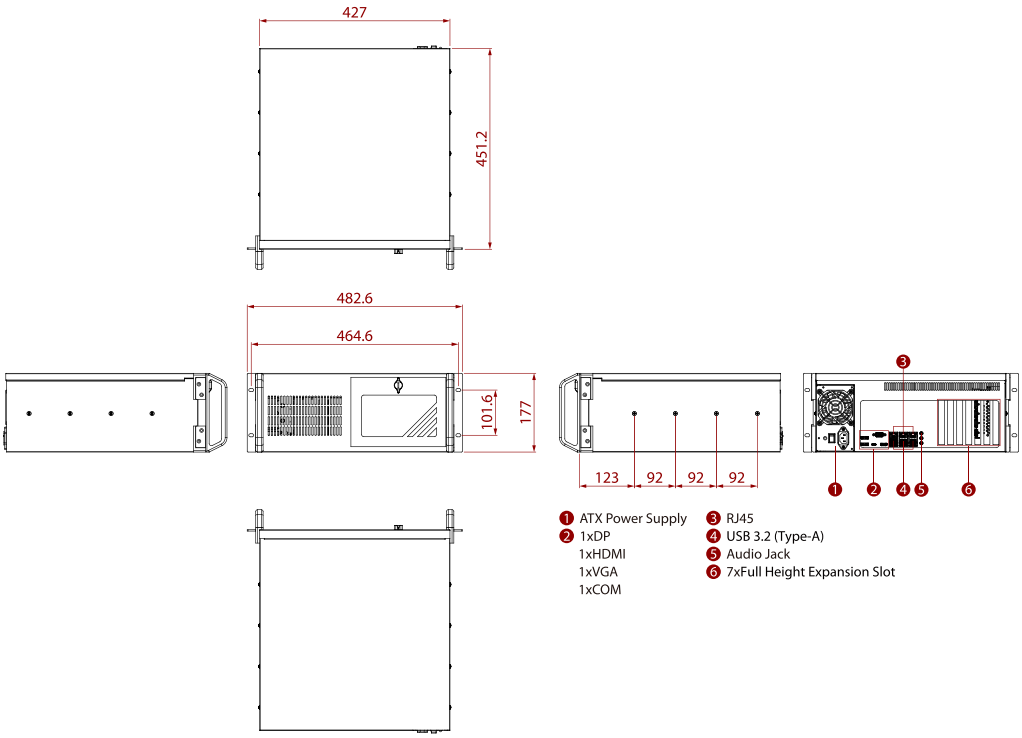
Accessory

Accessory	Power Cord Quick Start Guide

DIMENSIONS UNIT:MM

NOTE

1. This is a simplified drawing, and some



components are not marked in detail.
2. Please contact our sales representative if you need further product information.
3. All specifications are subject to change without prior notice.
4. The product shown in this datasheet is a standard model. For diagrams that contain customized or optional I/O, please contact the Winmate Sales Team for more information.
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