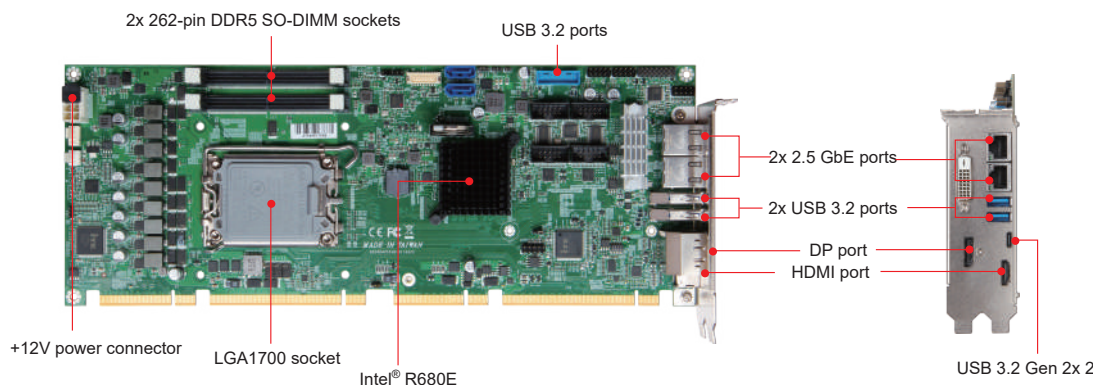




# ROBO-8116G2AR-R

14<sup>th</sup>/13<sup>th</sup>/12<sup>th</sup> Gen Intel® Core™ processors with Intel® 600 series chipset based PICMG 1.3 SHB with DDR5 SDRAM, HDMI, DVI-D, DP, Dual 2.5GbE Ethernet, Audio and USB



ROBO-8116G2AR-R is based on Intel® 600 series chipset and workstation processors. Built with flexible PCI express expansions, ROBO-8116G2AR is suitable for Medical, Industrial automation, and Digital Signage application.

## FEATURES

- Supports 12<sup>th</sup>/13<sup>th</sup>/14<sup>th</sup> Gen Intel® Core™ processors in LGA 1700 package
- Two SO-DIMM support DDR5 DRAM up to 96GB
- Supports multiple display by DVI-D, DP and HDMI
- High speed dual 2.5GbE Ethernet, high bandwidth I/O interface PCIe x16 Gen5
- Support USB 3.2 Gen2x2 and two USB 3.2 Gen2 on rear I/O
- Support onboard TPM2.0

## ORDERING GUIDE

<b>AB1-3S31</b>	(R).ROBO-8116G2AR-R. PICMG 1.3(PCI-E+PCI).LGA1700.R680E PCH. Intel Xeon/Core i3 processors. SHB. w/DP/HDMI/DVI/Dual GbE/Audio/four COM ports (Raptor Lake-S refresh)
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## PACKING LIST

<b>Standard</b>	B6902932 SATA III cable B8981980 PICMG SBC Handling and Installation B6902352 *(GP).Cable.DB9x2 to HSG(5x2)x2 L=300mm W/Bracket for Ruby-9717/Ruby-9718. CY-8A08006R.CHUAN YANG
<b>Optional</b>	B6903090 USB 3.0 cable with bracket B6902230 USB port cable with bracket



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## GENERAL

Processor	- 12 <sup>th</sup> /13 <sup>th</sup> /14 <sup>th</sup> Gen Intel® Core™ processors family in LGA1700 package - DMI x4 Link : 16GT/s - Support Intel® Turbo Boost, Hyper-Threading, Virtualization, Thermal Monitoring, Trusted Execution and Speed Step Technology (depends on CPU SKUs)
Chipset	Intel® R680E
BIOS	AMI uEFI BIOS
Memory	- Supports two DDR5 dual channel up to 96GB SO-DIMM sockets - Supports DDR5-5600 MT/s ECC 1DPC 1R and DDR5-5200 MT/s ECC 1DPC 2R SO-DIMM memory on all i9,i7 and select i5 SKUs
Storage Devices	- 4x SATAIII drives (Dual ports via Backplane) - Supports RAID 0, 1, 5, 10 - 1x M.2 Type M 2280 (on bottom side)
Watchdog Timer	Programmable watchdog timer, time out period from 0.5 sec to 254.5 secs
Hardware Monitoring	System monitor (Voltage, Fan Speed and Temperature)
Expansion Interface	- From CPU: 1x PCIe x16(Gen5) or 2x PCIe x8(Gen5) and 1x PCIe x4(Gen4) setting (Gen5 up to 32 GT/s) - From PCH: 1x PCIe x4 or 4x PCIe x1 by different BIOS support (Gen 3 up to 8.0 GT/s), 4x PCI devices at 32bit 33MHz

## I/O INTERFACE

Super I/O	ITE IT5121E-I
Audio	- Intel® PCH built-in High Definition Audio up to 192-kHz 32-bit - Realtek ALC888S HDA codec, 7.1 channels one on board audio pin header
Ethernet	- Dual Intel® WGI225LM Gigabit Ethernet controller - Dual 10BASE-T / 100BASE-TX / 1000BASE-T / 2500BASE-T Ethernet - PCI Express x1 interface based on Gigabit Ethernet - Dual RJ-45 connectors with two LED indicators
Serial Port	- 2x RS-232 ports - 2x RS-232/422/485 ports selectable - LPC to COM port IC: Fintek F81216DG
USB	- 4x USB 2.0 ports (through backplane) - 2x USB 3.2(Gen1) ports on board - 2x USB 3.2(Gen2) ports on bracket - 1x USB 3.2(Gen2 x2) type-C port on bracket
Keyboard & Mouse	TDB
GPIO	On board programmable 8-bit Digital I/Os

## DISPLAY

Graphic Controller	Intel® Core™ i3/i5/i7/i9 processors integrated graphics engine Provides improved 3D multimedia capabilities including Microsoft DirectX 12, OpenGL 4.5
Display Interface	- Support independent triple display by DP on bracket: Resolution up to 4096x2160 @ 60Hz - DVI-D on bracket: up to 1920x1200 @ 60Hz - HDMI on board: up to 4096x2160 @ 30Hz

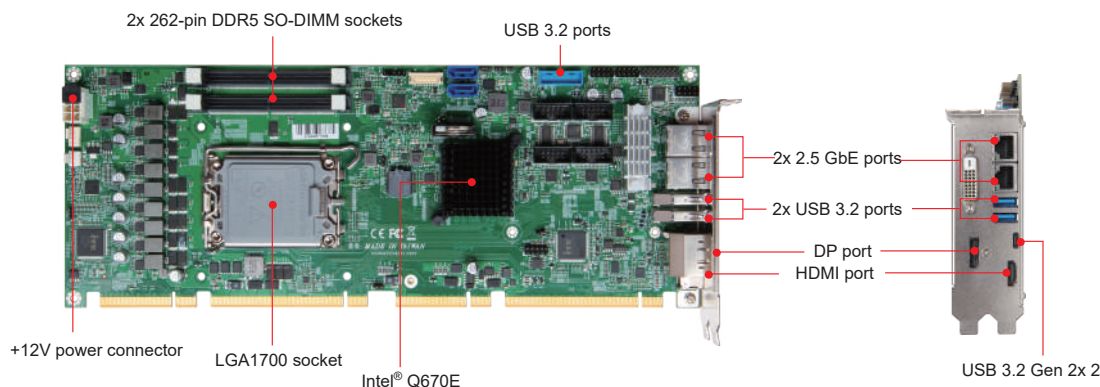
## Mechanical & Environment

Dimension	- 338.5mm(L) x 126.39mm(W), 13.33"(L) x 4.98"(W) PCB: 12 layers
Power Supply	- Typical: +12V, +5V - Support ATX mode
Environment	- Operation Temperature: 0°C to 60°C - Storage Temperature: -20°C to 80°C - Relative Humidity: 5~95%, non-condensing
Certification	CE, FCC Class A
MTBF	Over 100,000 hours at 40°C

\*All information provided is subject to change without notice. Last updated: June 10, 2024

# ROBO-8116G2AR-Q670E-R

14<sup>th</sup>/13<sup>th</sup>/12<sup>th</sup> Gen Intel® Core™ processors with Intel® 600 series chipset based PICMG 1.3 SHB with DDR5 SDRAM, HDMI, DVI-D, DP, Dual 2.5GbE Ethernet, Audio and USB



ROBO-8116G2AR-Q670E-R is based on Intel® 600 series chipset and workstation processors. Built with flexible PCI express expansions, ROBO-8116G2AR-Q670E is suitable for Medical, Industrial automation, and Digital Signage application.

## FEATURES

- Supports 12<sup>th</sup>/13<sup>th</sup>/14<sup>th</sup> Gen Intel® Core™ processors in LGA 1700 package
- Two SO-DIMM support DDR5 DRAM up to 96GB
- Supports multiple display by DVI-D, DP and HDMI
- High speed dual 2.5GbE Ethernet, high bandwidth I/O interface PCIe x16 Gen5
- Support USB 3.2 Gen2x2 and two USB 3.2 Gen2 on rear I/O
- Support onboard TPM2.0

## ORDERING GUIDE

AB1-3S33	(R). ROBO-8116G2AR-Q670E-R. PICMG 1.3 (PCI-E+PCI), LGA1700. Q670E PCH. Intel Core i3/i5/i7/i9 processors. SHB. w/DP/HDMI/DVI/Dual GbE/Audio/four COM ports (Raptor lake-s refresh)
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## PACKING LIST

Standard	B6902932 SATA III cable B8981980 PICMG SBC Handling and Installation B6902352 *(GP). Cable: DB9x2 to HSG(5x2)x2 L=300mm W/Bracket for Ruby-9717/Ruby-9718. CY-8A08006R. CHUAN YANG
Optional	B6903090 USB 3.0 cable with bracket B6902230 USB port cable with bracket



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## GENERAL

Processor	- 12 <sup>th</sup> /13 <sup>th</sup> /14 <sup>th</sup> Gen Intel® Core™ processors family in LGA1700 package - DMI x4 Link : 16GT/s - Support Intel® Turbo Boost, Hyper-Threading, Virtualization, Thermal Monitoring, Trusted Execution and Speed Step Technology (depends on CPU SKUs)
Chipset	Intel® Q670E
BIOS	AMI uEFI BIOS
Memory	- Supports two DDR5 dual channel up to 96GB SO-DIMM sockets - Supports DDR5-5600 MT/s 1DPC 1R and DDR5-5200 MT/s 1DPC 2R SO-DIMM memory on all i9, i7 and select i5 SKUs
Storage Devices	- 4x SATAIII drives (Dual ports via Backplane) - Supports RAID 0, 1, 5, 10 - 1x M.2 Type M 2280 (on bottom side)
Watchdog Timer	Programmable watchdog timer, time out period from 0.5 sec to 254.5 secs
Hardware Monitoring	System monitor (Voltage, Fan Speed and Temperature)
Expansion Interface	- From CPU: 1x PCIe x16 (Gen5) or 2x PCIe x8 (Gen5) and 1x PCIe x4 (Gen4) setting (Gen5 up to 32 GT/s) - From PCH: 1x PCIe x4 or 4x PCIe x1 by different BIOS support (Gen 3 up to 8.0 GT/s), 4x PCI devices at 32bit 33MHz

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Serial Port	- 2x RS-232 ports - 2x RS-232/422/485 ports selectable - LPC to COM port IC: Fintek F81216DG
USB	- 4x USB 2.0 ports (through backplane) - 2x USB 3.2 (Gen1) ports on board - 2x USB 3.2 (Gen2) ports on bracket - 1x USB 3.2 (Gen2 x2) type-C port on bracket
Keyboard & Mouse	TDB
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Environment	- Operation Temperature: 0°C to 60°C - Storage Temperature: -20°C to 80°C - Relative Humidity: 5~95%, non-condensing
Certification	CE, FCC Class A
MTBF	Over 100,000 hours at 40°C

\*All information provided is subject to change without notice. Last updated: June 4, 2024