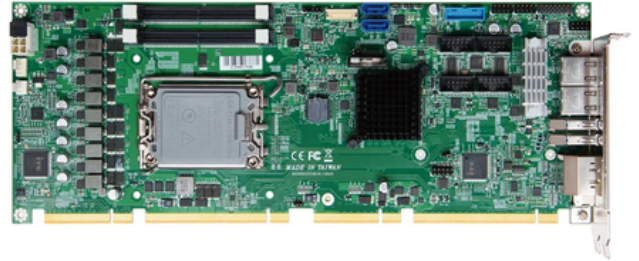


ROBO-8116G2AR-R

Single board computer with Intel® R680E chipset and Intel® Core™ 14th/13th/12th Gen. CPU

Features

- Supports Intel® 14th/13th/12th Gen. CPUs
- 2x DDR5 5,600 MHz SODIMM, up to 96GB
- Intel® R680E chipset
- PCIe x16 Gen 5 and 4x PCIe Gen 4 lanes
- Multiple displays via DVI-D, DP and HDMI
- Integrated TPM 2.0

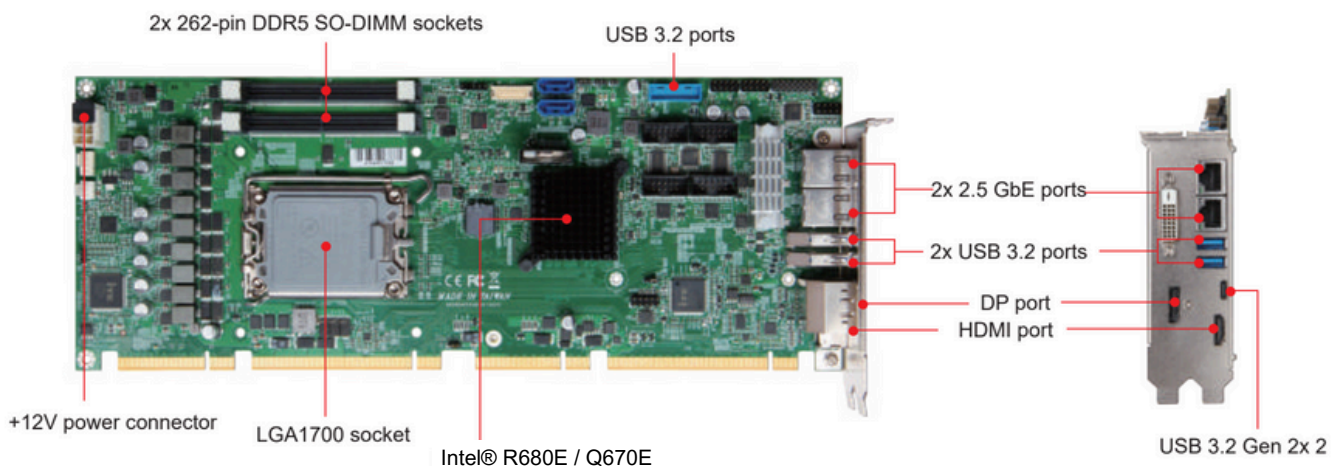


ROBO-8116G2AR-R – Modern Single Board Computer

The ROBO-8116G2AR-R is a state-of-the-art PICMG 1.3 single-board computer equipped with the latest 14th, 13th, and 12th Generation Intel® Core™ processors (formerly known as Raptor Lake-S Refresh, Raptor Lake-S, and Alder Lake-S). This powerful series offers flexible PCI Express expansions and is ideal for applications in medical technology, industrial automation, and digital signage.

Equipped with dual-channel DDR5 5600 ECC/Non-ECC SO-DIMM, the ROBO-8116G2AR-R supports up to 96GB of memory (depending on the selected SKU). With PCIe x16 Gen 5 and four PCIe Gen 4 lanes, this single-board computer is well-suited for high-speed expansion cards. Extensive display options are provided by DVI-D, DisplayPort, and HDMI, enabling the simultaneous use of multiple screens. The ROBO-8116G2AR-R features two 2.5GbE LAN ports, two USB 3.2 Gen 2, and USB 3.2 Gen 2x2 ports on the rear I/O, making it an excellent choice for network-intensive applications. An onboard TPM2.0 module additionally ensures enhanced security.

The 14th Generation Intel® Core™ processors offer significant performance improvements over their predecessors, including a hybrid architecture with up to 8 Performance-cores (P-cores) and 16 Efficient-cores (E-cores). These processors are backward compatible with Intel® 600 series chipsets, allowing for an easy upgrade path. With the capability to support up to four 4K displays simultaneously and Intel® Deep Learning Boost for enhanced AI acceleration, the ROBO-8116G2AR-R provides a future-proof solution for demanding applications.



ROBO-8116G2AR-R

Single board computer with Intel® R680E chipset and Intel® Core™ 14th/13th/12th Gen. CPU

Specifications	ROBO-8116G2AR-R
SYSTEM	
CPU	12th/13th/14th 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 sku)
Chipset	Intel® R680E or Q670E
Graphics	Intel® processors integrated graphics engine Provides improved 3D multimedia capabilities including Microsoft DirectX 12, OpenGL 4.5
RAM	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	4x SATAIII drives (Dual ports via Backplane) Supports RAID 0, 1, 5, 10 1x M.2 Type M 2280 (on bottom side)
BIOS	AMI uEFI BIOS
Hardware Monitoring	System monitor (Voltage, Fan Speed and Temperature)
Watchdog	Programmable watchdog timer, time out period from 0.5 sec to 254.5 secs.
Expansion	From CPU: 1x PCIe 5.0 x16 or 2x PCIe 5.0 x8 and 1x PCIe 4.0 x4 by jumper setting (Gen 5 up to 32 GT/s) From PCH: 1x PCIe 3.0 x4 or 4x PCIe 3.0 x1 by different BIOS support (Gen 3 up to 8.0 GT/s), 4x PCI devices at 32bit 33MHz
Super I/O (Embedded Controller)	ITE IT5121E-I
INTERFACE	
Ethernet	Dual Intel® WGI225LM Gigabit Ethernet controller Dual I0BASE-T / 100BASE-TX / 1000BASE-T / 2500BASE-T Ethernet PCI Express x1 interface based on Gigabit Ethernet Dual RJ-45 connectors with two LED indicators
USB	2x USB 3.2 Gen 1 ports on board (5Gb/s) 2x USB 3.2 Gen 2 ports on bracket (10Gb/s) 1x USB 3.2 Gen 2x2 type-C port on bracket (20Gb/s)
COM	2x RS-232 ports 2x RS-232/422/485 ports selectable LPC to COM port IC: Fintek F81216DG
Digital I/O	On board programmable 8-bit Digital I/Os
Video	Triple independent displays by DP on bracket: Resolution up to 4096x2160 @ 60Hz DVI-D on bracket: up to 1920x1200 @ 60Hz HDMI on board: up to 4096x2160 @ 30Hz
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
ENVIRONMENTAL	
Power Supply	Typical: +12V, +5V Supports ATX mode
Operating Temperature	0°C ~ 60°C
Storage Temperature	-20°C ~ 80°C
Humidity	5 ~ 95 %, non-condensing
Dimensions	338.5mm(L) x 126.39mm(W), 13.33"(L) x 4.98"(W) PCB: 12 layers
MTBF	Over 100,000 hours at 40°C
Certifications	CE, FCC Class A

ROBO-8116G2AR-R

Single board computer with Intel® R680E chipset and Intel® Core™ 14th/13th/12th Gen. CPU

Ordering Information	
MODEL NO.	
ABI-3S31	ROBO-8116G2AR-R. PICMG 1.3 (PCI-E+PCI). LGA1700. R680E PCH. Intel® Core™ Processors. SHB. w/ HDMI/Dual GbE/Audio/four COM ports
ABI-3S33	ROBO-8116G2AR-Q670E-R. PICMG 1.3 (PCI-E+PCI). LGA1700. Q670E PCH. Intel® Core™ Processors. SHB. w/ HDMI/Dual GbE/Audio/four COM ports
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

