



Relio™ R1 HPC+

Part: R155-Config, R17-Config | **Model:** R1 HPC+

The R1 HPC+ is the latest addition to the industry-leading Relio embedded computer line. The R1 HPC+ utilizes a COM-HPC architecture incorporates the newest generation of Intel® Core™ i5, Intel® Core™ i7 industrial processors and a modernized video interface. With versatile communication options like (5) 2.5Gbe Ethernet ports, Wi-Fi 6E, a total of 6 locking USB ports - (2) USB 3.1 Gen 2 Ports Type A ports, (2) USB 3.1 Gen 2 Type C port with DP Alt mode and (2) USB 2.0 Type A ports. The R1 HPC+ also features (1) dedicated DisplayPort, along with the (1) DisplayPort via USB-C noted above.

The R1 HPC+ also features an expansion bay for an SSD drive or an AI accelerator:

- CF Express Drive (2 Lanes Gen 3) (SSD only)
- E1.S Drive (4 Lanes Gen 4)
 - This can be used as a removable SSD, AI accelerator, or CAN bus expansion module.
 - Unigen Hailo-8 Biscotti E1.S AI Module
- M Key NVMe (4 Lanes Gen 4)
 - This can be used as an internal SSD, AI accelerator, or CAN bus expansion module.

Rugged Reliability

The R1 HPC+ has an extremely rugged, anodized aluminum enclosure combined with intentional thermal management for unmitigated performance under environmental extremes. The fanless, solid-state design, combined with locking SealATCH USB connectors, ensures shock and vibration tolerance as well as long-term reliability.

Configurable I/O & Future-Proof Architecture

Versatile communication comes standard with the R1 HPC+, including options like Wi-Fi 6E and 2.5 Gigabit Ethernet. With a robust and flexible I/O mix, this rugged industrial computer is capable of managing a variety of data inputs to interface with legacy systems and the most advanced peripherals, all from the edge. The embedded computer's COM-HPC architecture allows for technology migration to easily change, and upgrade, the CPU functionality without a complete system redesign or replacement.

Software Flexibility & Fast Deployment

Inside the R1 HPC+, a PCIe slot provides lanes for solid-state storage ranging from 128GB to 4TB, and lanes to add an AI accelerator. The R1 HPC+ is compatible with Windows 10 IoT Enterprise, Windows 11 IoT Enterprise, Linux RHEL 8 (or later), and Linux Ubuntu 20.04 (or later). The system is also Windows 11 IoT-ready to provide maximum flexibility for evolving, customer-specific software applications.

*Content included to be treated as PRELIMINARY. Specifications included herein are subject to modification without notice

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Features & Specifications

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Features

- **High-Throughput Industrial Performance** – Optimized for vision, AI, and high-bandwidth applications with five 2.5 GbE ports for advanced Ethernet networking.
- **Flexible Edge Connectivity** – Combines multiple USB 3.1, USB-C, and DisplayPort options with optional Wi-Fi 6E modules to support modern edge infrastructures.
- **Rugged Industrial Design** – Fanless, solid-state chassis built for continuous operation in environments from -40°C to +50°C.
- **Next-Generation COM-HPC Architecture** – Provides scalable performance, faster data transfer, and broad compatibility for future-ready edge deployments.
- **Industrial Power and Security** – 9–48 VDC locking power connector, isolated serial console, and secure I/O for dependable control in factory and field environments.
- **Expansion Ready** - The R1 HPC includes an expansion bay for an AI accelerator or a CAN bus expansion module.

Specifications

Family	Relio
CPU Type	Intel® Core™ i5, or Intel® Core™ i7
CPU	Congatec HPC/mRPLP-i5-1345URE-16G Core i5 CPU Congatec HPC/mRPLP-i7-1365URE-32G Core i7 CPU
Max RAM	32 GB DDR5
Storage	CF Express Drive, E1.S Drive, and/or M Key NVMe SSD up to 4TB (Not Included)
AI Accelerator	Unigen Hailo-8 Biscotti E1.S AI Module* (Not Included)
OS	Windows 10 IoT Enterprise Windows 11 IoT Enterprise Linux RHEL 8.7 (or later) Linux Ubuntu 20.04 (or later)
Display Support	(1) Dedicated DisplayPort, (1) DisplayPort via USB-C
Serial Ports	(1) Isolated Serial Console - USB Type C Device
Networking	(5) 2.5 Gigabit Ethernet Ports (1) M.2 Wi-Fi 6E (optional)
USB 3.0 Ports	(2) SeaLATCH locking USB 3.1 Type A Ports
USB 2.0 Ports	(2) SeaLATCH Locking USB 2.0 Type A Ports
USB C Ports	(2) SeaLATCH Locking USB 3.1 Gen 2 Type C Ports
Power Requirement	9-48VDC (TBD)
Operating Temperature	-40°C to +50°C (-40°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity Range	10 – 90% Relative Humidity, Non-Condensing
Audio	Mic In/Line Out
Dimensions	8" (L) x 5.75" (W) x 2.4" (H)

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