

# RXi2-UP Industrial PC

## The Next Generation Of Ruggedized Computing

Emerson has developed the next generation of its powerful, expandable, and reliable industrial computers (IPC). RXi2 IPCs offer new processor choices, increased and faster storage, improved graphics, and enhanced security features. Regardless of the processor you choose, the RXi2 family of IPCs (EP, XP & UP) offer all the functionality in the same shared chassis.

The RXi2-UP IPC delivers compact, rugged, mid-to high-range performance computing capabilities to run HMI, historian, and analytics applications right at the machine to enable improved real-time control of operations and better integration into plant-wide systems.

Combining outstanding computing capabilities with the added expandability of 0, 1, 2 or 4 PCI Express slots and CFast storage, the RXi2-UP is ideal for a range of demanding industrial applications.

### High-Performance Computing

Emerson uses the latest Intel processors based on their unmatched performance. The RXi2-UP IPC has up to 32GB of ECC RAM, 5 Gigabit Ethernet interfaces, and industrial grade SSD disk storage to complete the high-performance design.

These features make the RXi2-UP IPC the perfect platform for running industrial EDGE applications right at the machine, even in the harshest environments.

The RXi2-UP IPC provides additional application flexibility with both mini PCI Express and low-profile PCI Express slots. This expandability combined with advanced CPUs delivers high-performance, computing.

The core of the RXi2-UP IPC architecture is Emerson's rugged COM Express modular CPU platform. Emerson incorporates patented thermal monitoring technology with sophisticated passive cooling techniques to provide the



highest-performance, fanless industrial computing platform that can operate at peak computing performance in extended temperature ranges without having to throttle the CPU.

### Greater Uptime

All aspects of the RXi2-UP IPC have been engineered for reliability in harsh environments, from the use of all industrial grade components to its fanless design. To help keep data and operations secure, the RXi2-UP utilizes Trusted Platform Module (TPM) and Microsoft Secure Boot technology. Security coupled with RXi2-UP's strong shock and vibration resistance and available RAID storage options, in a RAID-0 or RAID-1 configuration, makes the RXi2-UP competitive in the IPC market.

### Enhanced Productivity & Lower TCO

The RXi2-UP IPC combines high performance with reliability, enhancing productivity and reducing cost of ownership.

The RXi2-UP IPC delivers low TCO through features such as compact size, reduced maintenance, low power consumption, and ease of future performance upgrades enabled by our innovative rugged COM Express CPU architecture.

Feature	Benefit
7th Generation Intel® Core™ i3, i5, i7 and Xeon® CPUs	<ul style="list-style-type: none"> <li>Delivers high-performance computing for applications that load, manipulate and store large amounts of data, or handle multiple communication ports in real-time</li> </ul>
Fanless operation	<ul style="list-style-type: none"> <li>A robust, reliable solution with no moving parts and minimized dust contamination</li> </ul>
5 Gigabit Ethernet ports (four with Time SYNC IEEE1588 and 802.1AS)	<ul style="list-style-type: none"> <li>Network implementation flexibility</li> <li>Multiple high-speed Ethernet links for communication-centric applications with support for deterministic transfer of data/commands</li> </ul>
0, 1, 2 or 4 PCIe Expansion slots	<ul style="list-style-type: none"> <li>Add new functionality on demand to support specific application needs</li> </ul>
Patented CPU Cooling Technology	<ul style="list-style-type: none"> <li>Add new functionality on demand to support specific application needs</li> <li>Offers 100% CPU performance even as temperatures rise ensuring that your process always stays</li> </ul>

## Specifications

### Processor

- Intel® Core™ i3-7100E Processor, 35W 2c 2.9GHz 3MB cache no ECC
- Intel® Core™ i3-7102E Processor, 25W 2c 2.1GHz 3MB cache no ECC
- Intel® Core™ i5-7442EQ Processor, 25W 4c 2.1GHz (-2.9GHz) 6MB no ECC
- Intel® Core™ i7-7820EQ Processor, 35/45W 4c 3.0GHz (-3.7GHz) 8MB no ECC
- Intel® XEON® Processor E3-1505M v6, 35/45W 4c 3.0GHz (-4.0GHz) 8MB
- Intel® XEON® Processor E3-1505L v6, 25W 4c 2.2GHz (-3.0GHz) 8MB
- Intel® XEON® Processor E3-1501M v6, 45W 4c 2.9GHz (-3.6GHz) 6MB

### Memory

- Up to 32GB DDR4-2400
- Soldered, with ECC (depending on CPU)

### Storage Interfaces

- Primary storage device – M.2 PCI Express Gen3 x4 or M.2 SATA Gen3
- Secondary storage option – Twin 2.5” SATA drive bays, hot swap and RAID enabled
- CFast slot, user accessible, supports boot, hot plug

### Ethernet

- Four 1-gigabit Ethernet channels – RJ-45 standard, SFP optional
- One 1-gigabit Ethernet channel w/ remote management capability – RJ45

### Wireless Communication

- LTE modem option using Mini-PCIE with UIM card holder
- Wifi/Bluetooth radio option using M.2 expansion slot

### Video/Graphics Interface

- Twin DisplayPort++ 1.2 for a total of 3 independent displays

### USB Interface

- Four USB 3.0 external
- Two USB 2.0 internal

### Serial Communications

- 2 to 4 channels
- Two RS232, two RS422/485

### Expansion

- Mini-PCIE card site for NvSRAM card, LTE modem, or other
- M.2 communications slot for WiFi and Bluetooth
- PCI Express expansion slots:
  - Zero
  - One Gen3 x4
  - Two Gen2 x4
  - Four 1x Gen2 x4, 3 Gen2 x1

### Non-Volatile Memory

- 512 KB, 1MB or 2MB NVSRAM
- Storage for process relevant data
- NVSRAM option uses mini-PCIE slot LED

### LED

- Power, TPM, Temperature, SATA
- Ethernet Link/Activity
- One User Defined LED

### Others

- Timers: Legacy PC-AT, HPET
- Twin Watchdog Timers (OS, application)
- Thermal monitoring
- RTC with Lithium coin cell battery

### Power

- Input: 24V DC (±25%) with protection

**Environmental**

All values under typical conditions without added expansion slot cards.

Extended temperature variants are available upon request.

The maximum extended temperature ranges mentioned in the table below are achievable with a specific choice of CPU and storage, and without extension cards installed in the system.

For detailed information please read the manual.

Range	Operating	Storage
Standard	0°C to +60°C	-40°C to +85°C
Extended	-40°C to +70°C <sup>2</sup>	-40°C to +85°C

<sup>1</sup> At 100% CPU load temperature range requires vertical orientation of the heat sink fins at free convection.  
<sup>2</sup> Operating temperature is dependent on the CPU and SSD choice, application software, orientation of the heat sink fins at free convection. For detailed recommendations please contact support team.  
<sup>3</sup> Extended Temperature Range available upon request.  
<sup>4</sup> RAID when using HDD Drives brings Operating Temperature limits down to a maximum of 40°C depending on chosen HDD and HDD workload.

Range	Operating	Storage
Humidity	5-95% @ +40°C	5-95% @ +40°C
Altitude	6,600 ft. (2.0km)	40000 ft. (12 km)

**BIOS**

- UEFI AMI Aptio® 5

**Dimensions (H x W x D)**

- 0 slot: 252 x 203 x 108.5 mm (9.92 x 8 x 4.24 in)  
Weight: 4,2kg

- 2 slot: 252 x 203 x 155.5 mm (9.92 x 8 x 6.13 in)  
Weight: 4,4kg
- 4 slot: 252 x 203 x 195.5 mm (9.92 x 8 x 7.7 in) Weight – 4,7kg

**Mechanical**

- Rugged aluminum and stainless steel housing for optimal thermal management and durability
- IP20 – Protection against particles
- Flat and Slim (Book) mounting orientation options

**Software Support**

- Microsoft® Windows® 10 Professional 64-Bit
- Linux® Kernel 4.9 (upon request)
- VXWorks® 7.0 (upon request)

**Safety**

- UL 60950, CE class A, FCC-A

**EMC**

- CE
- FCC



Slim version available

**Ordering Information**

Part Number	Description	Operating Temperature
R2U0N1B0A1T0A	RXi2-UP IPC, Dual Core i3-7102E, 2.1GHz, 0 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2U0N1B1A1T0A	RXi2-UP IPC, Dual Core i3-7102E, 2.1GHz, 0 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U0N1E0A1T0A	RXi2-UP IPC, Quad Core i5-7442EQ, 2.1GHz, 0 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2U0N1E1A1T0A	RXi2-UP IPC, Quad Core i5-7442EQ, 2.1GHz, 0 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U0N1J0B1T0A	RXi2-UP IPC, Quad Core XEON E3-1501M, 2.9GHz, 0 Slot, 256GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2U0N1J1B1T0A	RXi2-UP IPC, Quad Core XEON E3-1501M, 2.9GHz, 0 Slot, 256GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U1N1B0A1T0A	RXi2-UP IPC, Dual Core i3-7102E, 2.1GHz, 1 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2U1N1B1A1T0A	RXi2-UP IPC, Dual Core i3-7102E, 2.1GHz, 1 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C

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R2U1N1E0A1T0A	RXi2-UP IPC, Quad Core i5-7442EQ, 2.1GHz, 1 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2U1N1E1A1T0A	RXi2-UP IPC, Quad Core i5-7442EQ, 2.1GHz, 1 Slot, 128GB SSD, 8GB DDR4, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U1N1J1B1T0A	RXi2-UP IPC, Quad Core XEON E3-1501M, 2.9GHz, 1 Slot, 256GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U1N1F1A1T0A	RXi2-UP IPC, Quad Core i7-7820EQ, 3.0GHz, 1 Slot, 128GB SSD, 16GB DDR4, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2U1N1C0A1T0A	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 1 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2U1N1C1A1T0A	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 1 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2U2N1J1B2T0A	RXi2-UP IPC, Quad Core XEON E3-1501M, 2.9GHz, 2 Slot, 256GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2U2N1F1A2T0A	RXi2-UP IPC, Quad Core i7-7820EQ, 3.0GHz, 2 Slot, 128GB SSD, 16GB DDR4, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
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R2U2N1D1A2T0A	RXi2-UP IPC, Quad Core XEON E3-1505Mv6, 3.0GHz, 2 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows	0°C to +60°C
R2U2N1C0B2T0F	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 2 Slot, 256GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	-40°C to +70°C
R2U2N1C1B2T0F	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 2 Slot, 256GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	-40°C to +70°C
R2U4N1F0A2T0A	RXi2-UP IPC, Quad Core i7-7820EQ, 3.0GHz, 4 Slot, 128GB SSD, 16GB DDR4, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2U4N1F1A2T0A	RXi2-UP IPC, Quad Core i7-7820EQ, 3.0GHz, 4 Slot, 128GB SSD, 16GB DDR4, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2U4N1C0B2T0A	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 4 Slot, 256GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2U4N1C1B2T0A	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 4 Slot, 256GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2U4N1D0C2T0A	RXi2-UP IPC, Quad Core XEON E3-1505Mv6, 3.0GHz, 4 Slot, 512GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2U4N1D1C2T0A	RXi2-UP IPC, Quad Core XEON E3-1505Mv6, 3.0GHz, 4 Slot, 512GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2U2N1C1A1T1A	RXi2-UP IPC, Quad Core XEON E3-1505Lv6, 2.2GHz, 2 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10, RAID	0°C to +60°C
R2U4N1D1A2T1A	RXi2-UP IPC, Quad Core XEON E3-1505Mv6, 3.0GHz, 4 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10, RAID	0°C to +60°C

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