PACSystems™ RXi2-XP Industrial PC

The Next Generation Of Ruggedized Computing

Introduction

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.

The RXi2-XP 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-XP 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-XP IPC has up to 32GB of ECC RAM, 5 Gigabit Ethernet interfaces, and industrial grade high-speed HDD storage (or optional SSD disk storage) to complete the high-performance design.

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

The RXi2-XP 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.

To help keep data and operations secure, the RXi2-XP utilizes Trusted Platform Module (TPM) and Microsoft Secure Boot technology.

Greater Uptime

All aspects of the RXi2-XP IPC have been engineered for reliability in harsh environments, from the use of all industrial grade components to its fanless design. The core of the RXi2-XP 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 in extended temperature ranges.

Enhanced Productivity & Lower TCO

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

The RXi2-XP 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.

For more information:
www.Emerson.com/PACSystems

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Feature	Benefit
6th Generation Intel® Core™ i3, i5, i7 and Xeon® CPUs	Delivers high-performance computing for applications that load, manipulate and store large amounts of data, or handle multiple communication ports in real-time.
Fanless operation	A robust, reliable solution with no moving parts and minimized dust contamination.
5 Gigabit Ethernet ports (four with Time SYNC IEEE1588 and 802.1AS)	Network implementation flexibility. Multiple high-speed Ethernet links for communication-centric applications with support for deterministic transfer of data/commands.
0, 1, 2 or 4 PCIe Expansion slots	Add new functionality on demand to support specific application needs.

Specifications

Processor	
	Intel® core™ i3-6102E Processor, 25W 2c 1.9GHz 3MB cache
	Intel® core™ i5-6440EQ Processor, 45W 4c 2.7GHz (-3.4GHz) 6MB no ECC
	Intel® core™ i7-6820EQ Processor, 45W 4c 2.8GHz (-3.5GHz) 8MB no ECC
	Intel® XEON® Processor E3-1505L v5, 25W 4c 2.0GHz (-2.8GHz) 8MB
	Intel® XEON® Processor E3-1505M v5, 45/35W 4c 2.8GHz (-3.7GHz) 8MB

Memory	
	Up to 32GB DDR4-2133
	Soldered, with ECC

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

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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
	Ethernet Link/Activity
	One User Defined 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.

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Range	Operating	Storage
Standard	0°C to +60°C	-40°C to +85°C
Extended	-40°C to +70°C2	-40°C to +85°C

[1] At 100% CPU load temperature range requires vertical orientation of the heat sink fins at free convection.
[2] 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.

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

Mechanical
Rugged aluminum and stainless steel housing for optima 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 4.4
VXWorks® 7.0

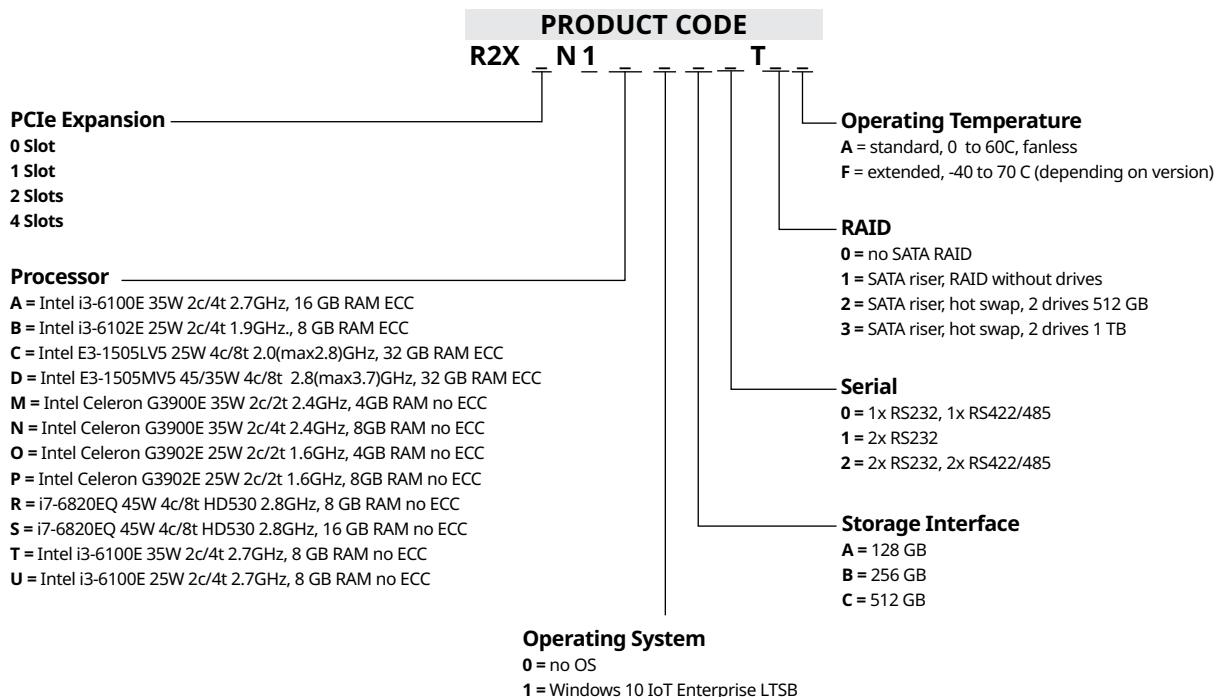| Safety |
|---|
| Designed to meet standard UL1950, CE class A, FCC-A |
| Designed to meet marine class A |

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
1 slot: 252 x 203 x 132 mm (9.92 x 8 x 4.24 in) Weight – 4,3kg
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 108.5 mm (9.92 x 8 x 4.24 in) Weight – 4,6kg

Slim version available

Understanding Part Number Nomenclature

PRODUCT CODE

R2X _ **N** **1** _ _ _ **T** _ _

PCIe Expansion
0 Slot
1 Slot
2 Slots
4 Slots

Processor
A = Intel i3-6100E 35W 2c/4t 2.7GHz, 16 GB RAM ECC
B = Intel i3-6102E 25W 2c/4t 1.9GHz., 8 GB RAM ECC
C = Intel E3-1505LV5 25W 4c/8t 2.0(max2.8)GHz, 32 GB RAM ECC
D = Intel E3-1505MV5 45/35W 4c/8t 2.8(max3.7)GHz, 32 GB RAM ECC
M = Intel Celeron G3900E 35W 2c/2t 2.4GHz, 4GB RAM no ECC
N = Intel Celeron G3900E 35W 2c/4t 2.4GHz, 8GB RAM no ECC
O = Intel Celeron G3902E 25W 2c/2t 1.6GHz, 4GB RAM no ECC
P = Intel Celeron G3902E 25W 2c/2t 1.6GHz, 8GB RAM no ECC
R = i7-6820EQ 45W 4c/8t HD530 2.8GHz, 8 GB RAM no ECC
S = i7-6820EQ 45W 4c/8t HD530 2.8GHz, 16 GB RAM no ECC
T = Intel i3-6100E 35W 2c/4t 2.7GHz, 8 GB RAM no ECC
U = Intel i3-6100E 25W 2c/4t 2.7GHz, 8 GB RAM no ECC

Operating Temperature
A = standard, 0 to 60C, fanless
F = extended, -40 to 70 C (depending on version)

RAID
0 = no SATA RAID
1 = SATA riser, RAID without drives
2 = SATA riser, hot swap, 2 drives 512 GB
3 = SATA riser, hot swap, 2 drives 1 TB

Serial
0 = 1x RS232, 1x RS422/485
1 = 2x RS232
2 = 2x RS232, 2x RS422/485

Storage Interface
A = 128 GB
B = 256 GB
C = 512 GB

Operating System
0 = no OS
1 = Windows 10 IoT Enterprise LTSB

Example: R2X 4 N 1 B 1 A 2 T 0 A

Ordering Information

Part Number	Description	Operating Temperature
R2X0N1R0B1T0A	Quad Core i7-6820EQ, 2.8GHz, 0 Slot, 256GB SSD, 16GB DDR4, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2X0N1R1B1T0A	Quad Core i7-6820EQ, 2.8GHz, 0 Slot, 256GB SSD, 16GB DDR4, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2X1N1B0A1T0A	Dual Core i3-6102E, 1.9Hz, 1 Slot, 128GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2X1N1B1A1T0A	Dual Core i3-6102E, 1.9Hz, 1 Slot, 128GB SSD, 8GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2X1N1C0A1T0A	Quad Core XEON E3-1505Lv5, 2.0GHz, 1 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 5xRJ45, No OS	0°C to +60°C
R2X1N1C1A1T0A	Quad Core XEON E3-1505Lv5, 2.0GHz, 1 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 5xRJ45, Windows 10	0°C to +60°C
R2X2N1C0B2T0F	Quad Core XEON E3-1505Lv5, 2.0GHz, 2 Slot, 256GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	-40°C to +70°C
R2X4N1B0A2T0A	Dual Core i3-6102E, 1.9GHz, 4 Slot, 128GB SSD, 8GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2X4N1B1A2T0A	Dual Core i3-6102E, 1.9GHz, 4 Slot, 128GB SSD, 8GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2X4N1C0A2T0A	Quad Core XEON E3-1505Lv5, 2.0GHz, 4 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2X4N1C1A2T0A	Quad Core XEON E3-1505Lv5, 2.0GHz, 4 Slot, 128GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C
R2X4N1D0C2T0A	Quad Core XEON E3-1505M, 2.8GHz, 4 Slot, 512GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, No OS	0°C to +60°C
R2X4N1D1C2T0A	Quad Core XEON E3-1505M, 2.8GHz, 4 Slot, 512GB SSD, 32GB DDR4 ECC, 2xRS232, 2xRS422/485, 5xRJ45, Windows 10	0°C to +60°C