

Embedded Computers

ARCX1100 Rugged, Small Form Factor Embedded Computer



Intel® Atom™ CPU (E3950 Apollo Lake) ♦ Four I/O expansion slots (AcroPack® or mini PCIe)

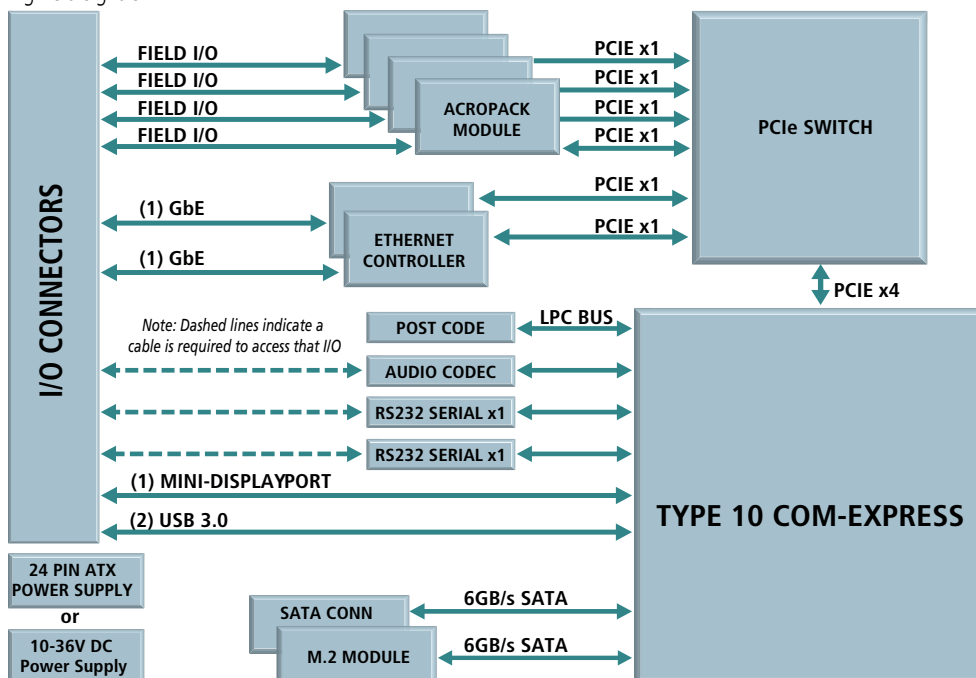
Description

The ARCX1100 is a customizable-off-the-shelf (COTS), SWaP-optimized deployable computing solution. This rugged, small form factor computer is designed for a variety of defense and industrial applications. For maximum flexibility, the modular platform combines a carrier card hosting a COM Express Type 10 CPU and a mix of AcroPack I/O modules to support a variety of communication, monitoring and control functions. Front ports offer easy access to gigabit Ethernet, USB, video, and COM signals. High-density connectors simplify interfacing field signals.

Typical applications include deployable systems such as: vetronics, C4ISR, payload management, as well as command and control for drones and robotics. The ARCX1100 is perfect as a portable communication system with the ability to add A/D, D/A, discrete I/O, RS-232/485, CAN bus, Ethernet, FPGA, MIL-STD-1553, and other signal interfaces. Using AcroPack plug-in I/O modules provides a more rugged alternative to mini PCIe modules that eliminates the need for internal cables. More than 25 AcroPack models are available to meet your I/O requirements.

Key Features & Benefits

- Intel Atom COM Express Type 10 module (Apollo Lake)
- Four AcroPack / mini PCIe slots for field I/O
 - A/D and D/A analog I/O
 - Digital I/O and counter/timers
 - Serial communication
 - Ethernet communication
 - CANbus communication
 - Mil-STD 1553 and ARINC 429
 - FPGA signal processing
 - Many more
- Ports available
 - Four field I/O 68-pin CHAMP
 - Two GbE RJ45 ports
 - Mini-DisplayPort
 - Two USB 3.0 ports
 - Two COM RS232 ports
- One M.2 site
- One SATA connector
- -40 to 71°C extended temperature range
- Wide range DC input power with redundancy



Acromag 
THE LEADER IN INDUSTRIAL I/O

Tel 844-878-2352 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

Embedded Computers

ARCX1100 Rugged, Small Form Factor Embedded Computer



Performance Specifications

■ Processor Interface

Compatibility

Provides an electrical and mechanical interface for an industry standard COM Express Type 10 Mini (55mm x 84mm) CPU module.

CPU module must have four PCIe lanes configured as an x4 port.

CPU Option

Intel® Atom™ E3950 quad-core, 1.6/2.0GHz (Turbo), 4GB RAM, 12W.

Interface

COM Express module provides CPU, memory, PCIe bus, SATA, USB, serial communication, graphics, and other computing functions.

PCIe Switch

9-port 12-lane PCIe Gen 2 switch expands the single host PCIe x4 port to 6 independent x1 ports (one for each AcroPack site and one for each Ethernet controller).

■ I/O Interfaces

AcroPack / Mini PCIe Expansion I/O

Four slots for plug-in I/O modules. Two isolated slots. Field I/O routed to 68-pin VHDCI connectors.

Ethernet Interfaces

Two Intel i210 Gigabit Ethernet Controllers. Two RJ-45 ports supporting 10/100/1000BASE-T.

Data Storage

M.2: Expansion site supports SATA III devices, speeds up to 6Gb/s. Accepts 2242, 2260 and 2280 SSD Socket 2/3 (mechanical Key B/M) modules.

SATA: Data and power connectors for use of a Solid-State Disk Drive. Supports SATA III devices, speeds up to 6Gb/s.

Serial Communication

Two ports with standard UART (RX/TX) RS-232 signal levels.

USB

Two USB 3.0 ports with speeds up to 5Gb/s.

Audio

Realtek HD Audio CODEC with line in / line out.

Video

Mini DisplayPort for high-resolution graphics.

JTAG

14-pin Xilinx JTAG header for programming and debugging FPGA AcroPack modules.

■ Electrical / Mechanical

Form Factor

Mini-ITX form factor.

Size

7.6 x 7.6 x 3.25 inches (193 x 193 x 83 mm).

4.55 pounds (2.06 kg).

PCI Express

Complies with PCI Express Specification, Rev. 2.1.

PICMG

Complies with PICMG COM Express COM.0 Specification Rev. 3.0. Conforms to COM Express Carrier Design Guide Rev. 2.0.

Power Requirement

Accepts powered from a standard 24-pin ATX power supply or a 10-36V DC power supply. Carrier will auto-switch between power sources.

+3.3 Volts (±5 %) 0.383A, typical.

+12 Volts (±8 %) 0.175A, typical.

Fuses

Individually fused +1.5V, +3.3V, +5V, +12V, and -12V DC power.

■ Environmental

Temperature Range

Operation: -40 to 71°C (200 lfm airflow min.)

Storage: -55 to 125°C.

Relative Humidity

5 to 95% non-condensing.

Shock, Operating

Designed to comply with IEC 60068-2-27. 30G, 11ms half sine, 50G, 3ms half sine, 18 shocks at 6 orientations for both test levels.

Vibration, Operating

Sinusoidal: Designed to comply with IEC 60068-2-6. 10-500Hz, 5G, 2 Hours/axis.

Random: Designed to comply with IEC 60068-2-64. 10-500Hz, 5G-rms, 2 Hours/axis.

Certifications

CE compliant.

Coating / Sealant

Conformal coating available on request.

■ Software Support

Operating Systems

AcroPack series products require support drivers specific to your operating system. Supported operating systems include Linux®, Windows®, and VxWorks®.

Power ON Self-Test (POST)

POST codes output to 2-digit LED for debugging.

Ordering Information

ARCX1111-0000

No CPU, M.2 or SSD

ARCX1121-0000

No CPU, M.2 or SSD, includes a bay to insert a 2.5" SSD

ARCX1121-2110

Includes CPU, M.2 (500GB) and 2.5" SSD (500GB)

Accessories

See www.acromag.com/AcroPacks for I/O modules ordering information.

5028-618

ACEX4041 Serial Cable

5028-617

ACEX4041 Audio Cable

5028-615

APIO Cable 68-Pin CHAMP-PIGTAIL 36 inches

5028-616

APIO Cable 68-PIN CHAMP-PIGTAIL 70 inches



All ports and I/O connections are easily accessible from the rear panel



Carrier card mounts securely inside to host CPU, I/O, and storage modules.



Metromatics

For further information or pricing, please contact us:

Melbourne 03 9872 4592 Sydney 02 9460 4355
Brisbane 07 3868 4255 Adelaide 08 8343 8516

sales@metromatics.com.au
www.metromatics.com.au

ISO9001
AS9100



IP65 water-resistant versions available

Tel 844-878-2352 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA