Embedded Computers

**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™ CPU (E3950 Apollo Lake)
- Four I/O expansion slots (AcroPack® or mini PCIe)

**Typical applications include deployable systems such as: vetronics, C4ISR, payload management, as well as command and control for drones and robotics.**

**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.

**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

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

Bulletin #8400-936
**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 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**: Sineoidal: 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.

**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](http://www.acromag.com/AcroPacks) for I/O modules ordering information.
- **5028-618**: ACEX4041 Serial Cable
- **5028-617**: ACEX4041 Audio Cable
- **5028-615**: API0 Cable 68-Pin CHAMP-PIGTAIL 36 inches
- **5028-616**: API0 Cable 68-Pin CHAMP-PIGTAIL 70 inches

**Hardware**
- All ports and I/O connections are easily accessible from the rear panel.
- IP65 water-resistant versions available.
- Carrier card mounts securely inside to host CPU, I/O, and storage modules.

---

**ISO9001**
**AS9100**

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

All trademarks are property of their respective owners. Copyright © Acromag, Inc. 2019. Data subject to change without notice. Printed in USA 4/2020