**Description**

Acromag’s ACEX-4600 Type 6 COM Express carrier cards employ a number of key features that are critical for successful use in the rugged environments of defense/industrial applications.

High-density connectors (Samtec® SEARAY™) provide all field connections to standard I/O, CPU, and PMC/XMC module(s). This connector offers both a high-density (500 connections) and high-speed interface (10GHz) required to support Type 6 COM modules. The SEARAY connector supports both board-to-board and cable interfaces.

These carrier cards are ready for conduction cooling. Developers can install a CPU, carrier and expansion boards into a completely sealed enclosure. Acromag has developed a heat dissipation approach that meets the cooling needs of all three components.

Another vital feature is the on-board DC/DC power supply. The carrier card operates from a single external 10–32V DC power source. All internal supply voltages are derived from this single external DC power source and built onto the carrier card.

An engineering development system, Model ACEX-4600-DLS, simplifies development and testing. The system provides a connector breakout board that plugs into the carrier card.

**Key Features & Benefits**

**Carrier Functions**
- Type 6 COM Express module site for compact or basic size processor board
- Two Mini PCIe sites for I/O expansion
- Single or dual PMC/XMC sites
- High-density, high-speed connector for CPU, I/O, and PMC/XMC interface

**CPU Supported Functions**
- Two Gigabit Ethernet ports
- PCIe port x 4
- Four USB 3.0 ports
- Two USB 2.0 ports
- Three Digital Display Interfaces
- Two SATA III ports
- Audio Line in/out
- Two RS232/RS485 serial ports
- Eight GPIO
- System temperature sensor (on-board)
- Two fan control line (on-board)
- System battery (on-board)
- Power monitoring LED (on-board)

**Form Factor**
- One PMC/XMC – (125mm x 170.73mm)
- Two PMC/XMC – (200mm x 170.73mm)

**Power**
- Input Power 10–36VDC (on-board DC/DC, fused)
- Reset button

**Environmental**
- -40 to 85°C operation
- -50 to 100°C storage

**Accessories**
- Front panel with 38999-type cylindrical connectors
- Conduction cooling kit
ACEX-4600 COM Express Module Type 6 Rugged Carrier Cards

ACEX-4620 double-width carrier card shown with optional ACEX-CC-01 conduction cooling kit rails and XCOM-6400 COM Express module

ACEX-4620 carrier card with one PMC and one XMC module installed

ACEX-4610 single-width carrier card shown with optional ACEX-CC-01 conduction cooling kit rails and XCOM-6400 COM Express module

ACEX-4610 carrier card bottom view showing PMC/XMC slot

ACEX-FP-01 front panel with ACEX-FP-PF power filter/bridge board mounted on an ACEX-4610 single-width carrier card

ACEX-FP-02 front panel with ACEX-CC-01 conduction rails and XCOM-6400 CPU module mounted on an ACEX-4620 double-width carrier card

Tel 248-295-0310 ■ Fax 248-624-9234 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA
COM Express

AEX-4600 COM Express Module Type 6 Rugged Carrier Cards

- COM EXPRESS MODULE
- CARRIER CARD
- REMOVABLE MEMORY
- LOCK-DOWN PLATE
- PMC/XMC MODULES
- MINI PCIe MODULES
**Performance Specifications**

### General

**Form Factor**
- ACEX-4610: 125mm x 170.73mm.
- ACEX-4620: 200mm x 170.73mm.

**PICMG Compliance**
- Complies with PICMG COM.0.

**Processor**
- Hosts basic or compact Type 6 COM Express module.

**Software Support**
- See COM Express module.

### I/O

**Mini PCIe Expansion**
- Two Mini PCIe sockets, 30mm x 51mm.

**PMC/XMC Expansion**
- Single or dual slots depending on model.

**Connector Types**
- Ethernet: two RJ45 ports.
- PCIe x 4
- Four USB 3.0 ports.
- Two USB 2.0 ports.
- Video: three digital display interfaces.
- Audio: input/output
- SATA: two SATA III ports.
- RS-232/485: two serial ports.
- GPIO: 8 channels.

### Environmental

**Operating temperature**
- -40 to 85°C.

**Storage temperature**
- -50 to 100°C.

**Relative humidity**
- 20 to 80% non-condensing.

**Power**
- 10–36VDC (on-board DC/DC, fused).

**Shock**
- Operating: 30g peak acceleration, 11ms duration.
- Non-operating: 50g peak acceleration, 11ms duration.

**Vibration (5Hz-2kHz)**
- Operating: 0.015” (380µm) peak-to-peak displacement, 2.5g max acceleration.
- Non-operating: 0.030” (760µm) peak-to-peak displacement, 5.0g max acceleration.

---

**Ordering Information**

### Carrier Cards

**ACEX-4610-LF**
- Single-width Type 6 COM Express carrier card with
  - one PMC/XMC slot
  - and two Mini PCIe slots

**ACEX-4620-LF**
- Double-width Type 6 COM Express carrier card with
  - two XMC/PMC slots
  - and two Mini PCIe slots

**NOTE:** Contact factory for lead solder options.

### Accessories

**ACEX-CC-01**
- Conduction cooling kit for ACEX-4610/4620

**ACEX-FP-01**
- Front panel with 38999-type cylindrical connectors for
  - single-width (-01) or dual-width (-02) carrier card

**ACEX-FP-02**
- Front panel with 38999-type cylindrical connectors for
  - single-width (-01) or dual-width (-02) carrier card with
  - IO mezzanine board support

**ACEX-FP-PF**
- Power filter/bridge board

**NOTE:** For COM Express Development System see

[ACEX-4600-DLS](#)