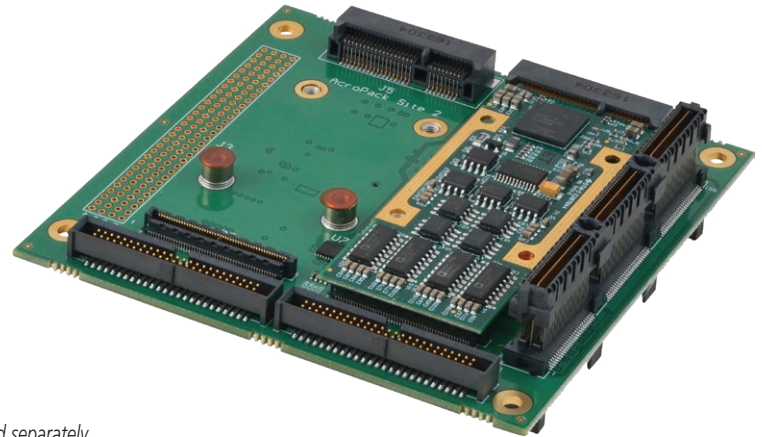
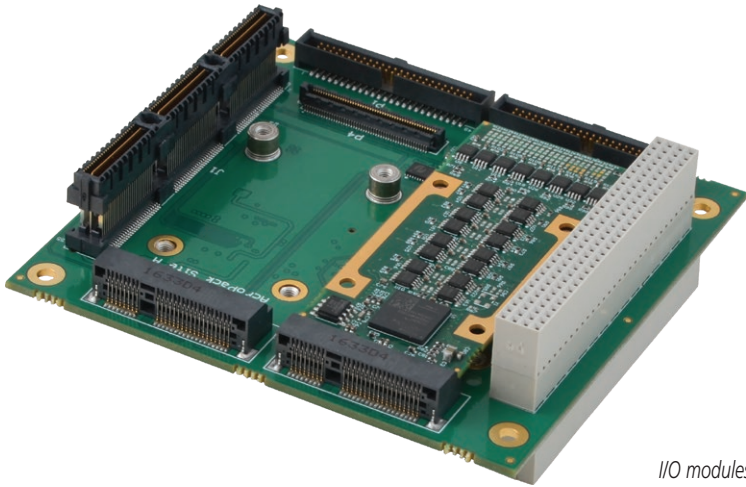


AcroPack® Carriers

APX4020 Series PCI Express Carrier Cards for AcroPack® Modules



I/O modules sold separately

Two AcroPack or mPCIe mezzanine module slots ♦ Non-Intelligent carrier card ♦ PCI/104-Express / PCIe/104 interface

Description

Models

APX4021: PCI/104-Express™

APX4022: PCIe/104™

The AcroPack® product line updates our popular Industry Pack I/O modules with a PCIe interface format. This tech-refresh design offers a compact size, low cost I/O, the same functionality and memory map of the existing Industry Pack modules.

This board interfaces two AcroPack mezzanine modules to a PCI Express bus on a PC-based computer system.

Two AcroPack module slots give you the freedom to mix a variety of I/O functions (A/D, D/A, digital in, digital out, serial I/O, etc.) on a single board. Or, combine modules of the same type for almost one hundred channels on a single card. Either way, the APX4020 Series saves your precious card slots and reduces your costs.

Select I/O modules from Acromag's offering or use most third-party mPCIe compliant modules.

Key Features & Benefits

- Two AcroPack or mini-PCIe module slots support any combination of I/O functions
- PCI Express compliant
- Plug-and-play carrier configuration and interrupt support
- Fused +1.5V, +3.3V, +5V, +12V, and -12V DC power is provided. A fuse is present on each supply line serving each AcroPack module.
- Front panel 50-pin connectors for field I/O signals
- Extended temperature range
- DIP switch card identification
- Standard 14-pin Xilinx JTAG programming header
- Software development tools for VxWorks®, Linux®, and Windows® environments.



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

Performance Specifications

■ PCI Express Bus Compliance

This device meets or exceeds all written PCI Express specifications per revision 2.1.

Includes a PCIe Gen 2 switch to expand the single host PCIe port to two ports, one to each device (AcroPack or mini-PCIe).

The host port consists of four PCIe lanes, each of the mini-PCIe sites have one lane each.

■ I/O Interface

Connectors

J1 (PCIe/104 Top connector: ASP-142781-03 with 0.866-inch (22.00 mm) stack height.

J2 (PCIe/104 Bottom connector): ASP-129646-03.

P4, P5 (AcroPack Field I/O): 100-pin socket (Samtec SS5-50-3.00-L-D-K-TR).

P1, P2 (Carrier Field I/O): 50-Pin Header (Samtec SHF-125-01-L-D-SM-LC).

J4 and J5 (Mini-PCIe): 52-pin socket (TE Connectivity 1759547-1).

P5 (JTAG): 14-pin header (Molex 87832-1420).

J3 (legacy PCI Bus, Top connector): 120-Pin PC104-Plus (ept 264-61303-12).

SH1 (legacy PCI Bus, Bottom side): Shroud PC104-Plus (ept 264-17302).

Gold plating in the connection area, M2.5 screws and spacers provide excellent connection integrity and stability for harsh environments.

■ Ease of Use

A unique carrier and site number can be set for each AcroPack site by a DIP switch. This provides the capability to distinguish a particular AcroPack module from others when multiple instances of the same module are used in a system.

A standard 14-pin Xilinx JTAG programming header is provided for programming and debugging the FPGA on some AcroPack modules. The JTAG ports of the two AcroPack modules are daisy-chained.

■ Physical

Physical Configuration

PCIe x4 lane.
Length: 3.775 inches (95.89 mm).
Height: 3.550 inches (90.17 mm).

■ Power Requirements

AcroPack sites

Supply Voltage	Current (Max)*
+12V ±8% max.	0.5A
+12V ±8% max.	0.5A
+5V ±5% max.	0.5A
+3.3V ±9% max.	1.1A
+1.5V 5% max.	0.5A
+303Vaux 9% max.	100mA

■ Environmental

Operating temperature

-40 to +85°C with 300 LFM airflow.

Storage temperature

-55 to +85°C.

Relative humidity

95% at 60°C non-condensing.

Shock Operating

IEC 60068-2-27: 30G, 11ms half sine, 50G, 3ms half, 18 shocks at 6 orientations.

Vibration Operating

Sinusoidal: IEC 60068-2-6: 10-500Hz, 5G, 2 Hours/axis.
Random: IEC 60068-2-64: 10-500Hz, 5G-rms, 2 Hours/axis.

Ordering Information

[Go to on-line ordering page >](#)

Carrier Card

APX4021

PCI/104-Express AcroPack carrier card for AcroPack or mPCIe modules.

APX4022

PCIe/104 AcroPack carrier card for AcroPack or mPCIe modules.

See Acromag.com/AcroPacks for a full list of I/O modules.

Accessories

5025-288

Termination panel, DIN-rail mountable, SCSI-3 connector, 68 screw terminals.

5028-420

Round cable, shielded, male SCSI-3 connector to 68-pin CHAMP. 0.8mm, 2 meters long.

5028-615

Cable, 68-pin CHAMP to pigtail, 36 inches long.

5028-616

Cable, 68-pin CHAMP to pigtail, 70 inches long.

Software (see software documentation for details)

APSW-API-VXW

VxWorks software support package.

APSW-API-WIN

Windows DLL driver software support pkg.

APSW-API-LNX

Linux® support (website download only).

