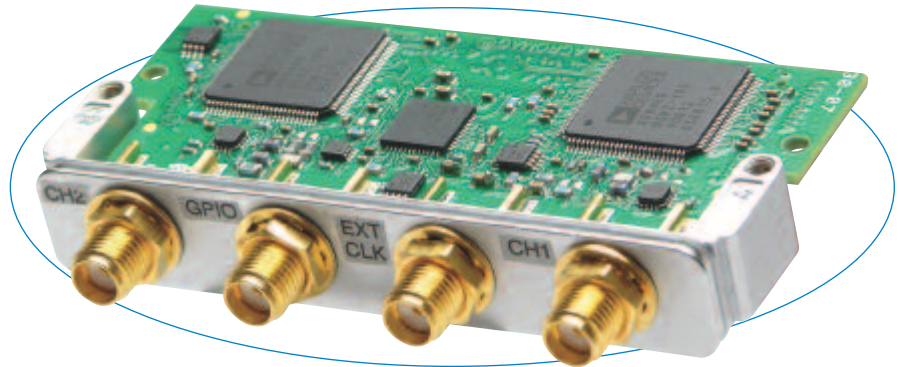


## AXM Series Analog Input (105MHz 16-bit A/D) Extension Modules



### Description

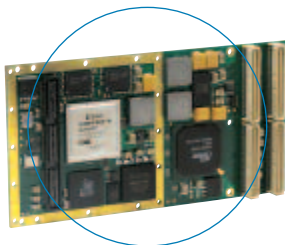
AXM Series extension modules offer numerous I/O options for Acromag's PMC modules with user-configurable FPGAs. These extension modules plug into the front mezzanine on the PMC-LX/SX, PMC-VLX, and PMC-VSX modules.

#### AXM-A30 Analog Input

This module features two 105MHz 16-bit A/D channels. An external clock and trigger can be used to control sampling.

An internal precision clock conditioner provides the functions of jitter cleaning/reconditioning, multiplication, and distribution of a reference clock.

Each clock distribution block includes a programmable divider, a phase synchronization circuit, and a programmable delay. This allows multiple integer-related and phase-adjusted copies of the reference to be distributed to multiple system components.



AXM modules attach to PMC Modules with user-configurable FPGAs.

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AXM extension modules attach to the PMC-LX/SX, PMC-VLX, and PMC-VSX module front mezzanine to provide I/O processing capabilities.

### Specifications

#### Analog Input

Input configuration: Two differential channels using two Analog Devices AD9460 A/D converter.

A/D resolution: 16 bits.

Input range: 3.4V peak-to-peak, centered at 0V, into a 50 ohm load.

External clock input: 3.3V peak-to-peak.

Input clock range: 1-105MHz.

Maximum throughput rate:

1 channel (max.): 9.5nS (105MHz).

2 channels (max.): 9.5nS (105MHz).

A/D trigger: External source, FPGA controlled.

Input clock controller: Precision clock conditioner combines the functions of jitter cleaning/reconditioning, multiplication, and distribution of a reference clock.

Signal-to-noise ratio: 69dB (25°C) typical.

Signal-to-noise and distortion: 67dB (25°C) typical.

General purpose I/O: Low voltage TTL.

#### Physical Dimensions

Size: 11.5 mm high x 31.0 mm deep x 74.0 mm wide  
(0.453 inches x 1.220 inches x 2.913 inches)

Stacking height: 5.0 mm (0.197 inches).

Complies with PMC Specification P1386.1 for a single-width PMC module when installed on a supported PMC module.

#### Connectors

Front field I/O: Four SMA PCB jack female receptacle connectors.

#### PMC Compliance

Plugs into Acromag PMC-LX/SX, PMC-VLX, and PMC-VSX modules

#### Environmental

Operating temperature: 0 to 70°C

Storage temperature: -55 to 105°C.

Relative humidity: 5 to 95% non-condensing.

Power: 4.5 Watts typical

MTBF: Consult factory.

### Ordering Information

#### AXM Plug-In I/O Modules

##### AXM-A30

2 analog input channels

##### AXM-??

Custom I/O configurations available, call factory.

#### PMC Modules

For more information, see data sheets

[PMC-LX](#)

[PMC-SX](#)

[PMC-VLX85/VLX110](#)

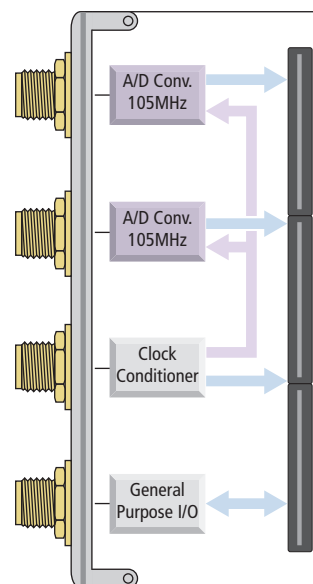
[PMC-VSX](#)

#### Software

See [software documentation](#) in Catalog 8400-139 for details.

#### Accessories

See [accessories documentation](#) in Catalog 8400-139 for details.



## AXM Series I/O Extension Modules for PMC FPGA Boards

### Description

AXM Series extension modules offer numerous I/O options for Acromag's PMC modules with user-configurable FPGAs. These extension modules plug into the front mezzanine on the PMC-LX/SX, PMC-VLX, and PMC-VSX modules.

#### AXM-D02 RS-485 Differential I/O

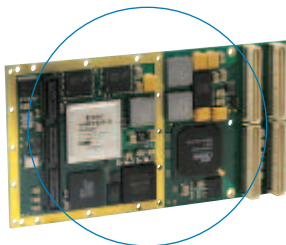
This module provides 30 differential I/O channels. Data direction, either input or output, on each channel is independently controlled. Eight of the channels support programmable change-of-state interrupts.

#### AXM-D03 Digital I/O and RS-485 Diff. I/O

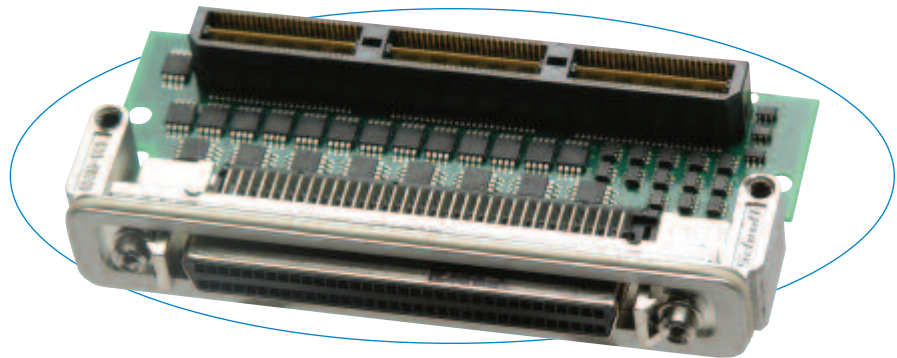
This module provides 16 CMOS and 22 RS-485 differential I/O channels. Data direction, either input or output, on each channel is independently controlled. Eight of the channels support programmable change-of-state interrupts.

#### AXM-D04 LVDS

This module provides 30 channels of low voltage differential signaling with independently configured direction. Interrupts are programmable on eight of the channels for any bit change of state or level.



AXM modules attach to PMC Modules with user-configurable FPGAs.



AXM extension modules attach to the PMC-LX/SX, PMC-VLX, and PMC-VSX module front mezzanine to provide I/O processing capabilities.

### Specifications

#### AXM-D02

Channel configuration: 30 bi-directional differential signals with independently configured direction. Channels to the FPGA are buffered using EIA RS485/RS422 line transceivers.

Differential driver output voltage:  
1.5V minimum, 3.3V maximum with 54 ohm load.

#### AXM-D03

Channel configuration: 16 bi-directional CMOS transceivers (input/output direction controlled as pairs of channels) and 22 bi-directional differential signals with independently configured direction.

Differential channels: Same as AXM-D02.

CMOS I/O electrical characteristics:

V <sub>OH</sub> : 3.8V minimum	V <sub>OL</sub> : 0.55V maximum
I <sub>OH</sub> : -32.0mA	I <sub>OL</sub> : 32.0mA
V <sub>IH</sub> : 3.5V minimum	V <sub>IL</sub> : 1.5V maximum

#### AXM-D04

Channel configuration: 30 channels of low voltage differential signaling with independently configured I/O direction.

LVDS I/O electrical characteristics:

LVDS driver output voltage: 247mV min., 454mV max.
Common mode output voltage: 1.37V max.
LVDS Input Threshold Voltage: -50mV min., 50mV max.

#### Physical Dimensions

Size: 11.5 mm high x 31.0 mm deep x 74.0 mm wide  
(0.453 inches x 1.220 inches x 2.913 inches)

Stacking height: 8.0 mm (0.315 inches).

Complies with PMC Specification P1386.1 for a single-width PMC module when attached to the PMC front mezzanine.

#### Connectors

Front field I/O: 68-pin, SCSI-3, female receptacle header (AMP 5787394-7 or equivalent).

#### Environmental

Operating temperature: -40 to 85°C

Storage temperature: -55 to 150°C.

Relative humidity: 5 to 95% non-condensing.

Power:

1.5W typical (AXM-do2, AXM-D03)

0.6W typical (AXM-D04)

MTBF: Consult factory.

### Ordering Information

#### AXM Plug-In I/O Modules

##### AXM-D02

30 RS-485 Differential I/O channels

##### AXM-D03

16 CMOS and 22 RS485 differential I/O channels

##### AXM-D04

30 LVDS I/O channels

##### AXM-??

Custom I/O configurations available, call factory.

#### PMC Modules

For more information, see data sheets

[PMC-LX](#)

[PMC-SX](#)

[PMC-VLX85/VLX110](#)

[PMC-VSX](#)

**Software** (see [software documentation](#) for details)

**Accessories** (see [accessories documentation](#) for details)

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