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.

**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).
- 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.

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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.

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:
Vox: 3.0V minimum Vos: 0.55V maximum
Iox: -32.0mA Iow: 32.0mA
Vin: 3.5V minimum Vih: 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. ,45mV 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-D02, 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-VLX/S/VLX110
PMC-VSX

Software (see software documentation for details)

Accessories (see accessories documentation for details)