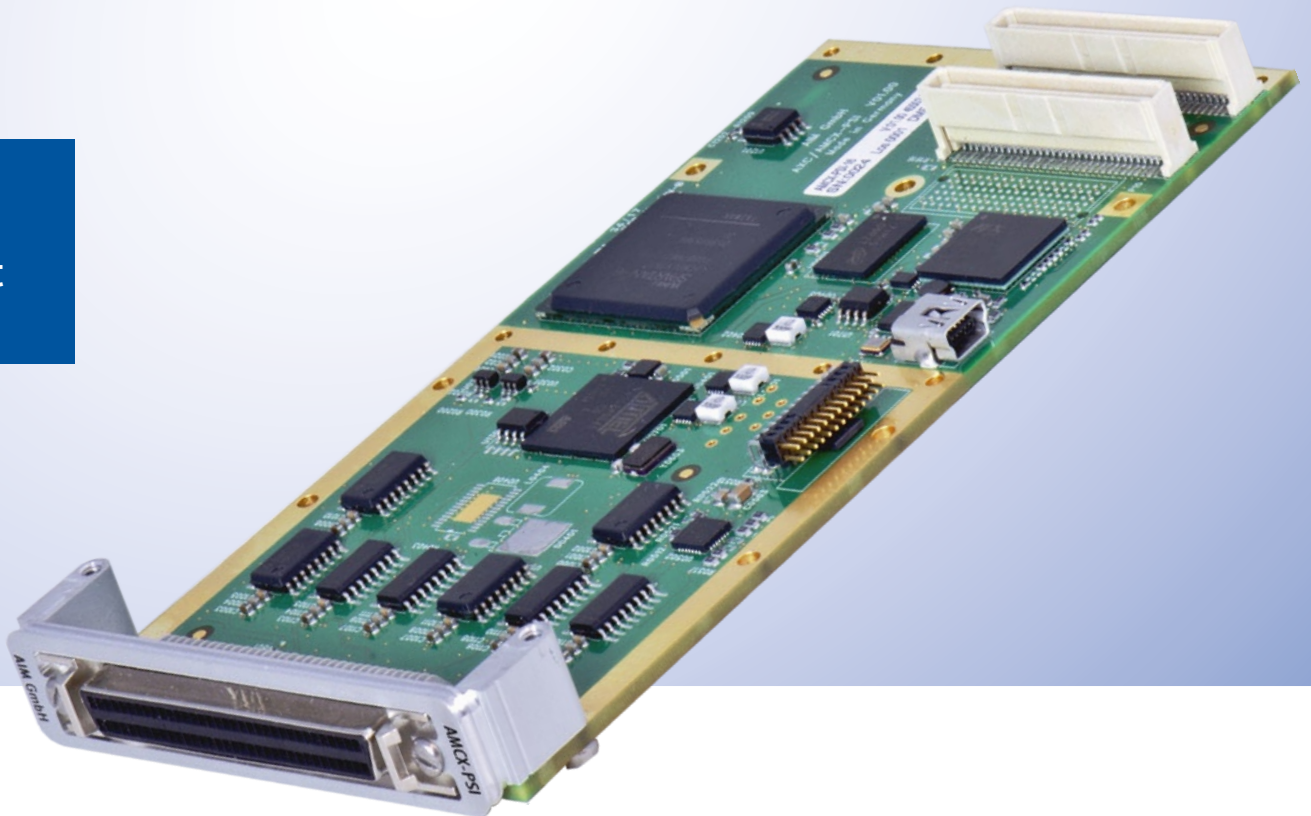


# AMCX-PSI-16

16 Channel PANA VIA  
Test & Simulation Module  
for PMC

Data  
Sheet



# AMCX-PSI-16

## 16 Channel PANA VIA Test & Simulation Module for PMC

### General Features

The ► **AMCX-PSI-16** is a member of AIM's next generation of PMC modules targeted to embedded ► **PANA VIA** applications.

The AMCX-PSI-16 provides simulation, monitoring and recording, protocol testing and data selection of 8 transmit (TX) and 8 receive (RX) serial data channels according to the PANA VIA interface standard specification.

The AMCX-PSI-16 is designed to be installed either on a host carrier board to adapt to buses like standard PCI/PCIe, VME/VPX, cPCI/cPCIe or on an embedded host computer.

The AMCX-PSI-16 module uses a high performance RISC processor with 128MB of Global RAM whereby all channels can operate concurrently at PANA VIA serial highways with the intelligence to process data in real time.

An onboard IRIG-B time encoder/decoder provides a sinusoidal output and free-wheeling mode for time tag synchronization on the system level when using

one or more AMCX-PSI-16 or other AIM databus and network interfaces.

The 8 transmit (TX) channels, on the AMCX-PSI-16 module, act as an autonomously operating data communication simulator, supporting a continuous transmission sequence with user definable data words.

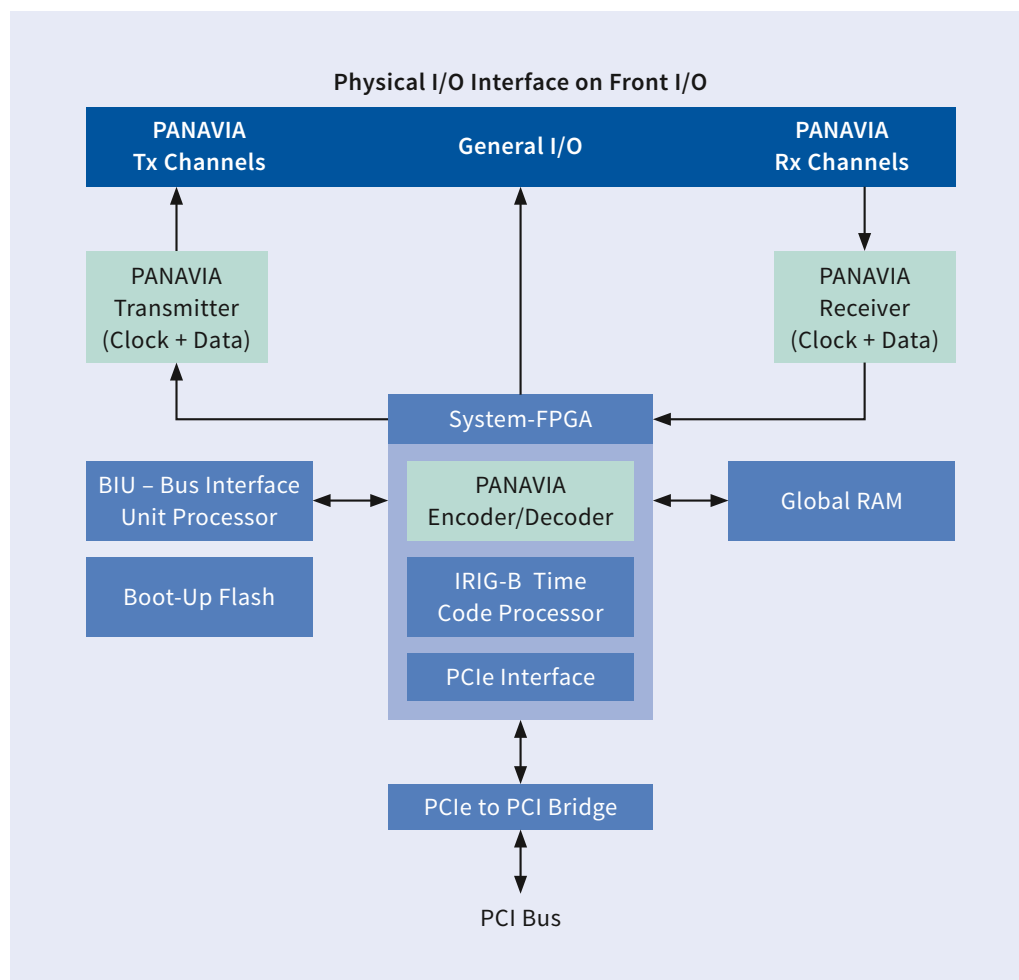
The 8 receive (RX) channels, on the AMCX-PSI-16 module provide the PANA VIA

standard decoding, with unique onboard error detection, triggering and data selection capability.

Full function driver software is delivered with the AMCX-PSI-16 cards in comprehensive Board Software Packages (BSP's) for Windows operating systems.

The optional ► **PBA.pro™** databus test and analysis tool for Windows can also be purchased for use with AMCX-PSI-16 cards.

AMCX-PSI-16  
Block Diagram



## PANAVIA Receiver

### Key Features:

- Decoding 16-bit Data and Status Words
- Tag orientated Data Storage or Chronological Data Storage
- Tag Selective Data Filtering
- Comprehensive Error Detection of:
  - Control Bit Error
  - Framing Error
  - Bit Count Error
  - Sync Bit Error
  - Parity Error
- Programmable Interrupts and Trigger on:
  - Definable Tag Receipt
  - Definable Data Word Receipt
  - Erroneous Data Receipt
  - Loss of Clock/Data
- IRIG-B Time Tagging on Received Data with a Resolution of 1 $\mu$ s

## PANAVIA Transmitter

### Key Features:

- Encoding PANAVIA Protocol for continuous Data and Clock Transmission
- Programmable Tag Sequence
- Selective Transmission Frequency of 64KHz or 62,5KHz
- Programmable Interrupts on:
  - Definable Tag Transmissions
  - End of Transfer List
- Full Error Injection on each Tag Transfer:
  - Bit Count
  - Parity
  - Framing
  - Sync Bit
  - Control Bit

## IRIG-B Time Encoder/Decoder

The AMCX-PSI-16 module includes an onboard IRIG-B time encoder/decoder with a sinusoidal output and free-wheeling mode for time tag synchronization.

This allows synchronization over the dedicated IRIG-B inputs and outputs of multiple AIM modules to one common IRIG-B time input source or to the onboard time code generator of one AMCX-PSI-16 card as the reference for the correlation of data across multiple PANAVIA links.



## Physical Bus Interface

The Physical Bus Interface circuitry provides PANAVIA compatible signals to Front-IO connector.

## Trigger-I/O Signals

One Trigger Output signal with TTL compatible voltage level is provided on the Front- I/O connector.

## Driver Software Support

An Application Programming Interface (API) is provided along with low level 32/64-bit operating system specific drivers for Windows 7/8/10 and Windows XP (32-bit).

Please contact your local sales representative for other operating systems.

Host applications can be written in C or C++. LabVIEW/VI application interfaces are also provided.

## Compatibility to legacy Modules

The AMCX-PSI-16 modules are designed as a functional replacement module for the API-/ACI-PSI-16 modules. The Application Programming Interface of the AMCX-PSI-16 is compatible to the API of PANAVIA Windows BSP3.10. A binary compatible 32-bit Windows API DLL is offered.

In case of using the AIM adapter cable type AMC-ACB-32 with the AMCX-PSI-16, the pin-out on the AMC-ACB-32 adapter cable breakout connectors is almost identical (except trigger I/O) to the ACB-8/16-PCI used with the API-/ACI-PSI-16 (details are provided on request).

## Technical Data

### System Interface

32-bit/66MHz capable PCIbus (Rev. 2.2) compliant

### Processor

1x 400MHz RISC processor

### Memory

128MB Global RAM (DDR-RAM),  
2x 8Mbit serial flash memory for BIU,  
64Mbit serial flash memory for LCA

### Encoder/Decoder

8 PANAVIA encoders and 8 decoders with full error injection and detection capability

### Time Tagging

Sinusoidal 46-bit absolute IRIG-B time stamping with 1 $\mu$ s resolution

### Trigger I/O

1x trigger output line available on Front-I/O connector, TTL compatible

### Physical Bus Interface

8 TX and 8 RX PANAVIA channels

### Connectors

68-pin, Mini D-Sub for interface signals  
2x standard PMC connectors;  
P11 and P12 for 32-bit PCI Bus

### Dimensions

149mm x 74mm Standard PMC Format

### Power Consumption

@3.3V: min. 2.3W (idle mode),  
max. 2.43W (100% operation)  
@5V: min. 2.38W (idle mode), max. 2.5W

### Operating Temp. Range

Standard: 0°C to +70°C ambient  
Extended: -40°C to +85°C ambient

### Storage Temp. Range

-40°C to +85°C

### Humidity

5 up to 95% (non-condensing)

## Ordering Information

### AMCX-PSI-16

16 channel PANAVIA PMC module:  
including 8 receive and 8 transmit channels; IRIG-B Time encoder/decoder, 128MB Global RAM, 1x trigger output

### ACB-AMC-32

Ready Made adapter cable (SCSI68 to 2xDSUB37 and 1x DSUB15)

### ACC-1

CompactPCI (3U) carrier module with one PMC slot

### ACPe-1

PCIe Carrier module with one PMC slot

### ACP-1

PCI Carrier module with one PMC slot

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