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Find the *AIM APU429-16* at our website: *Click HERE*

product guide

General Features

The APU429-x USB Module offers full function test, simulation, monitoring and databus analyzer capabilities for ARINC429 applications and is available in configurations with 4 (2Tx/ 2Rx), 8 (4Tx/ 4Rx) or 16 (8Tx/ 8Rx) channels.

APU429-x Modules are powered from the host computer via the USB connection - no external power adapter is required.

Designed in a shirt-pocket sized box, the APU429-x supports up to 8 discrete input/ output signals to be monitored or generated.

An onboard high-precision 'free wheeling' IRIG-B time encoder/ decoder allows users to accurately synchronize single or multiple APU429-x modules to a common time source.

The APU429-x module has integrated line receivers/ transmitters for each of the ARINC429 channels.

The optional PBA.pro™ Databus Test & Analysis Tool (for Windows & Linux) and legacy PAA-429/ ParaView Databus Analyzer/ Visualizer Software (for Windows) can also be purchased for use with APU429-x cards.

A common Application Programming Interface (API) supports all AIM ARINC429 modules.

Right on Target

AIM-USA

APU429-x

USB Module for ARINC429 Test & Simulation



APU429-x Front

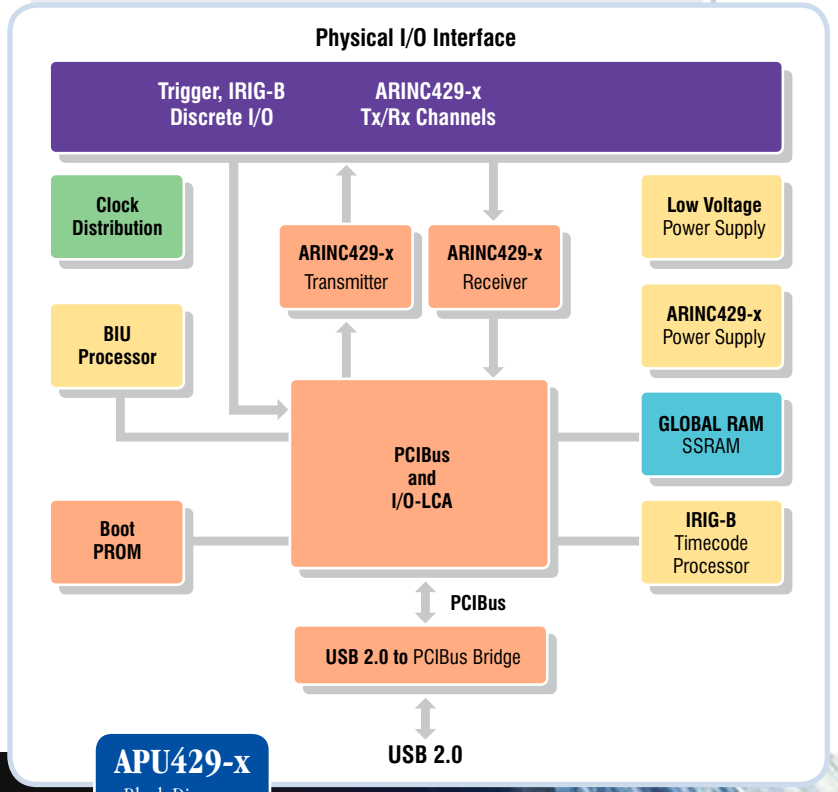


APU429-x Front

data sheet

Key Features

- *Robust and Low Power USB2.0 Module with up to 16 ARINC429 Channels*
- *Powered via USB, no external power adapter required*
- *Hot Plug Capability*
- *Ruggedised D-SUB Connector*
- *4 (2Tx/ 2Rx), 8 (4Tx/ 4Rx) or 16 (8Tx/ 8Rx) Channel Versions*
- *Concurrent Operation for Simulation/ Monitoring on all Channels*
- *Full Error Injection/ Detection Capability*
- *Multi Level Triggering for Capturing/ Filtering*
- *IRIG-B Time Encoder/ Decoder for Data Correlation*
- *Real Time Recording and synchronized Bus Replay*
- *8 bi-directional Discrete I/O Signals*
- *Drivers for Windows XP/Vista (others on request)*
- *Compatible with PBA.pro™, PAA-429 and ParaView*
- *Software compatible with AIM's Family of PC104+,PC-Card, PMC, PCI, CompactPCI/PXI, VME and VXI ARINC429 Cards*



APU429-x Block Diagram

Avionics Databus Solutions



www.aim-online.com

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Transmit Channel Operation

- *Cyclic/ Acyclic Label Transmission and Channel Loop Mode*
- *Error Injection for each Label Transfer: Short Gap, Parity, Bit Count, Coding*
- *Programmable Gap between Labels: 0 to 255 Bit*
- *Simulate Zero-Jitter Scenarios using Virtual Label Transfers*
- *Multi-Buffering with Real Time Update supported per individual Label Transfer*
- *Reconstruction of previously recorded ARINC429 Traffic physically to the Bus with excellent Timing Accuracy (Physical Replay)*
- *Interrupt Generation on Label Transmit (configurable per Label Transfer)*

Receive Channel Operation

- *Label Oriented Receive Mode (individual Buffers for each Label with Multi-Buffering and Real Time Updates)*
- *Chronological Receive Mode per Channel with 1µs Resolution Time Stamping*
- *Chronological Mode concurrent to Label Oriented Receive Mode*
- *Local (one Buffer per Channel) or Global Monitoring (one Buffer all Channels)*
- *Continuous or Single Shot Capturing Modes*
- *Support of SDI Handling*
- *Interrupt Generation on Label Reception (configurable per Label/ SDI)*
- *Complex Triggering and Filtering Functions*
- *Loop of received Data to configurable Transmit Channel with Label Data Modification Capability*

Physical Bus Interface

APU429-x Modules have integrated ARINC429 Line Transmitter/ Receiver Channels and selectable Transmission Rate for each Single Channel independently.

IRIG-B Time Encoder/ Decoder

- *Onboard, free wheeling IRIG-B Time Encoder/ Decoder with amplitude modulated sinusoidal Output*
- *Synchronize with multiple AIM Modules or any IRIG-B compatible Module*

Discrete I/O

- *8 bi-directional Discrete I/O Signals*

Driver Software Support

- *Common Application Programming Interface (API)*
- *Drivers for Windows XP/Vista (incl. LabVIEW/VI's) (other OS on request)*

Technical Data

USB2.0 Interface: 480Mbit USB2.0 Standard Interface (Revision 2.0)

Memory: 1MB Global RAM

Processor: One 400MHz RISC Processor

Time Tagging: 46-bit absolute IRIG-B Time

Discrete I/O: 8 bi-directional Discrete I/O Signals

Trigger I/O: 3 Trigger Input and 3 Trigger Output Lines, TTL compatible

Physical Bus Interface: 2, 4 or 8 ARINC429 Transmitter; 2, 4 or 8 ARINC429 Receiver

ARINC-Connector: 37-pin D-Sub Connector

USB-Connector: Mini USB-Connector (B-Type)

Auxiliary I/O Connector: 15-pin High-Density D-Sub Connector for Discrete I/O, IRIG-B and Trigger Signals

Dimensions: 133mm x 85mm x 19mm

Supply Voltage: +5V (USB Supply Voltage - requires 2x PC USB Ports)

Power Consumption: 3.5W Idle 5W Max

Operating Temp. Range: Standard 0ºC...+ 50ºC ambient
Extended on request

Storage Temp. Range: -40ºC...+85ºC

Humidity: 5 up to 95% (non-condensing)

Ordering Information

APU429-4

2 Channel Transmitter/ 2 Channel Receiver USB2.0 to ARINC429 Interface:
Including IRIG-B Time Encoder/ Decoder and 8 General Purpose Discrete I/O's
1MB Global RAM
Including USB Cable (1.2m, occupying two USB Ports)
Includes Driver Software for WindowsXP/Vista

APU429-8

4 Channel Transmitter/ 4 Channel Receiver USB2.0 to ARINC429 Interface:
Including IRIG-B Time Encoder/ Decoder and 8 General Purpose Discrete I/O's
1MB Global RAM
Including USB Cable (1.2m, occupying two USB Ports)
Includes Driver Software for WindowsXP/Vista

APU429-16

8 Channel Transmitter/ 8 Channel Receiver USB2.0 to ARINC429 Interface:
Including IRIG-B Time Encoder/ Decoder and 8 General Purpose Discrete I/O's
1MB Global RAM
Including USB Cable (1.2m, occupying two USB Ports)
Includes Driver Software for WindowsXP/Vista

AIM Office Contacts:

AIM-USA
Seven Neshaminy Interplex
Suite 211
Trevose, PA 19053
USA
Tel: 267-982-2600
Toll Free: 877-520-1553
Fax: 215-645-1580
email: salesusa@aim-online.com

AIM UK
Cressex Enterprise Centre
Lincoln Road
High Wycombe
Bucks, HP12 3RB
UK
Tel: +44 1494 446844
Fax: +44 1494 449324
email: salesuk@aim-online.com

AIM GmbH
Sasbacher Str.2
79111 Freiburg
Germany
Tel: +49 761 45 22 90
Fax: +49 761 45 22 93 3
email: sales@aim-online.com

AIM GmbH
Vertriebsbüro München
Terofalstrasse 23 a
80689 München
Germany
Tel: +49 89 70 92 92 92
Fax: +49 89 70 92 92 94
email: salesgermany@aim-online.com

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