

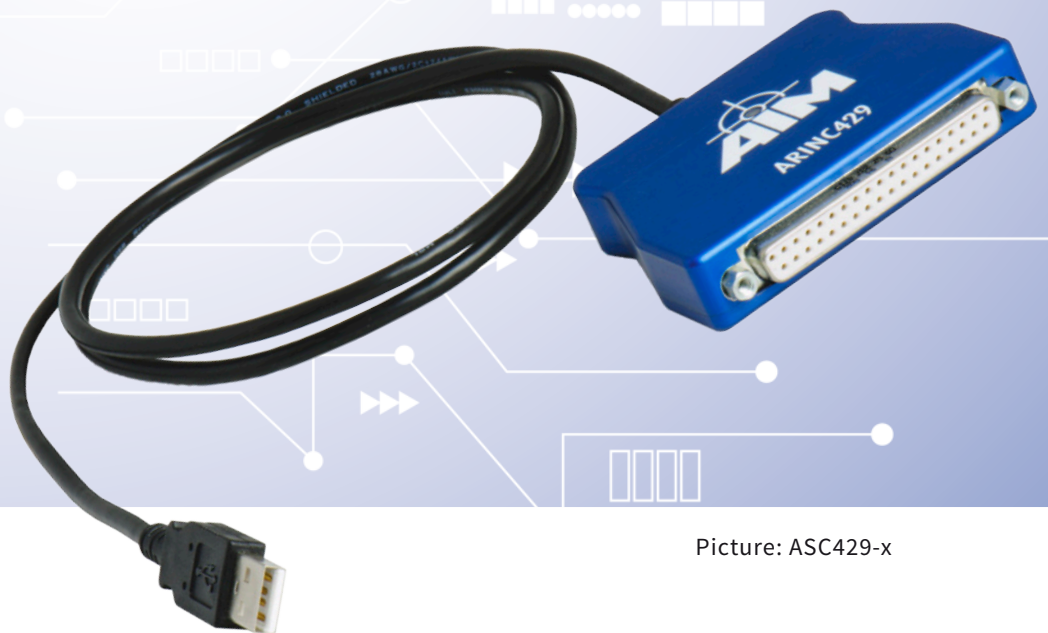


Avionics Databus
Solutions

ASC429-x

USB SmartCable™
for ARINC429
Test & Simulation

Data
Sheet



Picture: ASC429-x

ASC429-x

USB SmartCable™ for ARINC429 Test & Simulation

General Features

The ► **ASC429-x** (AIM SmartCable™) USB module offers full function test, simulation, monitoring and databus analyzer capabilities for ► **ARINC429** applications and is available in configurations with 2Tx/4Rx (6 Channels) and 4Tx/8Rx (12 Channels).

ASC429-x modules are powered from the host computer via the single USB2.0 (or higher) connection – no external power adapter is required. Designed in a connector housing size, the ASC429-x supports up to 8 discrete input/output signals to be monitored or generated.

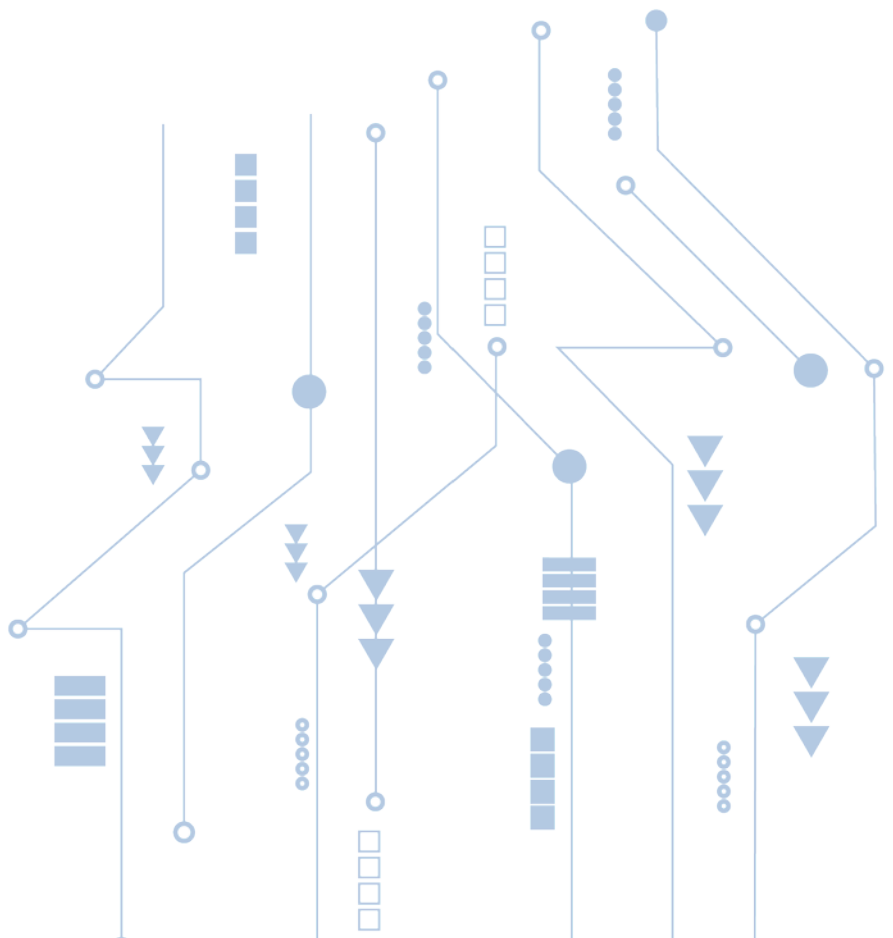
An onboard high-precision free-wheeling IRIG-B time encoder/decoder allows users to accurately synchronize single or multiple ASC429-x modules to a common time source.

The optional PBA.pro™ Databus Test and Analysis Tool (for Windows and Linux) can also be purchased for use with ASC429-x modules.

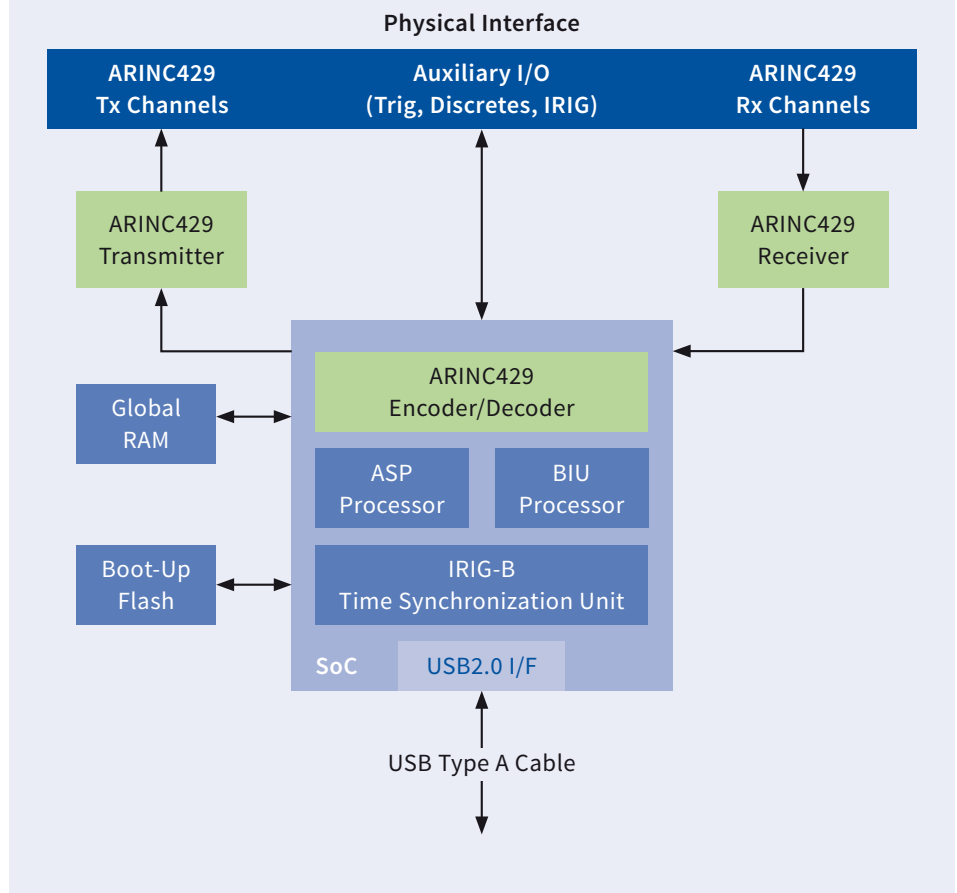
A common Application Programming Interface (API) supports all AIM ARINC429 modules.

Key Features

- Robust and Low Power USB2.0 Module with up to 12 ARINC429 Channels
- Powered via single USB2.0 (or higher), no external power adapter required
- Hot Plug Capability
- Ruggedized 37-pin female D-SUB Connector
- 6 Channels (2Tx/4Rx) and 12 Channels (4Tx/8Rx) 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 Linux and Windows
- Compatible with PBA.pro™ and EasyLOAD-429/EasyDLE Application Software
- Software compatible with AIM's Family of ARINC429 Cards



ASC429-x Block Diagram



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)
- Notification 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 Monitoring (individual Buffer per Channel) or Global Monitoring (common Buffer for all Channels)
- Continuous or Single Shot Capturing Modes
- Support of SDI Handling
- Notification 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

The ASC429-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 & Trigger I/O

- 8 bi-directional Discrete-I/O Signals
- 1 Trigger Input
- 1 Trigger Output

Driver Software Support

- C/C++ Application Programming Interface (API), .NET Assemblies, LabView VI's
- Drivers for Linux and Windows

Technical Data

USB2.0 Interface

480Mbit USB2.0 Standard Interface
(Revision 2.0)

Memory

128MB RAM

Processor

SoC Device with 2x 400 MHz Processors

Time Tagging

46-bit absolute IRIG-B Time

Discrete I/O

8 bi-directional Discrete-I/O Signals

Trigger I/O

1 Trigger Input and 1 Trigger Output Line,
TTL compatible

Physical Bus Interface

2 or 4 ARINC429 Transmitter;

4 or 8 ARINC429 Receiver

ARINC and Auxiliary Connector

37-pin D-Sub Connector for ARINC429 Tx/Rx
and Discrete-I/O, IRIG-B and Trigger Signals

USB-Connection

fixed mounted cable with single
USB Type A host Connector, USB-C cable
upon Request

Dimensions

75mm x 65mm x 16mm (W x L x H)
(Housing incl. D-Sub I/O-Connector)

Supply Voltage

+5V from single USB2.0 (or higher) Supply
Voltage

Power Consumption

2.5W max

Operating Temp. Range

Standard: 0°C to +50°C ambient

Extended: -15°C to +60°C

Storage Temp. Range

-40°C to +85°C

Humidity

5 up to 95% (non-condensing)

Ordering Information

ASC429-6

2 Channel Transmitter/4 Channel
Receiver USB2.0 to ARINC429 Interface:
Including IRIG-B Time Encoder/Decoder,
8 General Purpose Discrete-I/O's,
1x Trigger In, 1x Trigger Out, 128MB RAM
Including USB Cable (1m),
USB Type A Connector host side,
fixed on housing side, USB-C cable
upon Request
Includes Driver Software for Linux
and Windows

ASC429-12

4 Channel Transmitter/8 Channel
Receiver USB2.0 to ARINC429 Interface:
Including IRIG-B Time Encoder/Decoder
and 8 General Purpose Discrete-I/O's,
1x Trigger In, 1x Trigger Out, 128MB RAM
Including USB Cable (1m),
USB Type A Connector host side,
fixed on housing side, USB-C cable
upon Request
Includes Driver Software for Linux
and Windows

► AIM Office Contacts:

AIM GmbH

Sasbacher Str. 2
D-79111 Freiburg / Germany
Phone +49 (0)761 4 52 29-0
Fax +49 (0)761 4 52 29-33
sales@aim-online.com

AIM GmbH – Munich Sales Office

Terofalstr. 23a
D-80689 München / Germany
Phone +49 (0)89 70 92 92-92
Fax +49 (0)89 70 92 92-94
salesgermany@aim-online.com

AIM UK Office

Cressex Enterprise Centre, Lincoln Rd.
High Wycombe, Bucks. HP12 3RB / UK
Phone +44 (0)1494-446844
Fax +44 (0)1494-449324
salesuk@aim-online.com

AIM USA LLC

Seven Neshaminy Interplex
Suite 211 Trevoise, PA 19053
Phone 267-982-2600
Fax 215-645-1580
sales@aim-online.us