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product guide



Right on Target

Avionics Databus Solutions



AIM - avionics testing for the future - Today

MIL-STD-1553

STANAG3910/ EFEX

ARINC429

AEDX/ ARINC664/ ETHERNET/ Gige

ARINC825 (CAN bus)

PANAVIA Serial Link

Fibre Channel

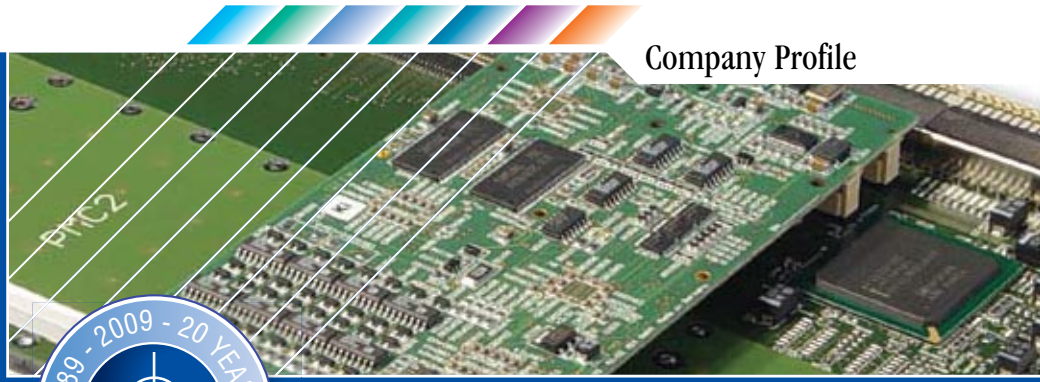


A new generation databus test & analysis tool!

AIM GmbH

Avionics Databus Solutions

With more than 20 years in the business, AIM GmbH is a leading European designer and manufacturer of high quality and advanced avionics test & simulation modules, embedded interfaces, databus test & analysis software, data loaders and complete system solutions.



Company Profile

AIM offers the complete solution for all **MIL-STD-1553, STANAG3910/ EFEX, ARINC429, AFDX/ ARINC664, Gigabit Ethernet, ARINC825 (CAN bus), PANAVIA Serial Link and Fibre Channel/ ARINC818** applications.

- Design & Development
- Embedded Interfaces
- Test & Integration
- Production Testing
- Validation/ Conformance/ EMC Testing
- Trials & Analysis
- Data Loading
- In-Service Support & Maintenance

With our broad customer appeal, AIM's products are used by the worlds leading defence & aerospace companies.



AIM's **PBA.pro™** Databus Test & Analysis Software offers a new generation design to cover a wide range of applications from a stand alone protocol analyser to a complete systems test bench or advanced avionics integration facility. **PBA.pro™** supports single or multiple AIM avionics interfaces and 3rd party hardware resources within a single powerful application framework.



AIM - ACX3910-3U-1

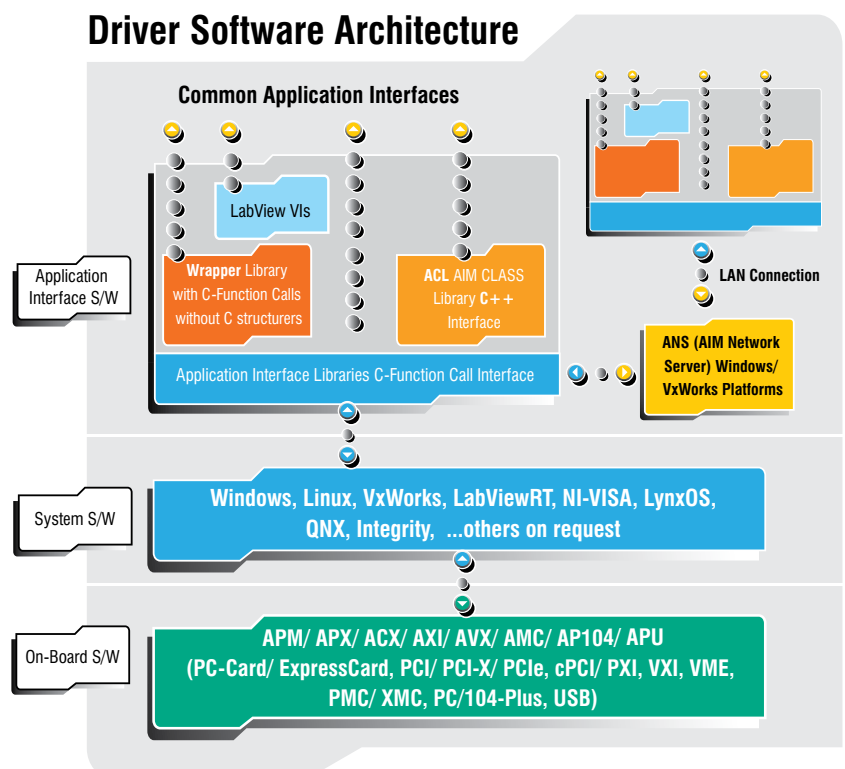


AIM - Portable Analyser

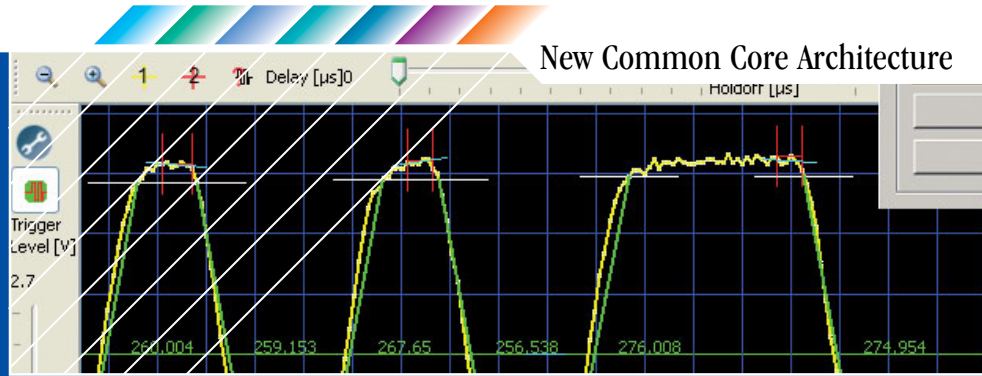
AIM provides turnkey customised system solutions based on **PBA.pro™** and AIM modules being at the core of the system. Full documentation, design reviews, project management, installation, training and long term support contracts ensure our clients success.

Included with the AIM solution is responsive and expert pre and post sales technical support and service. Our qualified and experienced team of application engineers is on hand to help you with the use and integration of any AIM product or system.

Driver Software Architecture



AIM has offices in the UK and USA with the main design and manufacturing facilities based in Freiburg, Germany. Our full service technical web site offers a powerful Download Area providing online product updates and a full documentation service. AIM markets and supports its products through qualified and authorised Representatives worldwide.



New Common Core Architecture

AIM's innovative, unique and successful 'Common Core' hardware design set new standards for onboard intelligence and performance when introduced to the market in 1998. During 2005 this proven design was enhanced with the launch of AIM's 2nd generation of 'Common Core' products. Offering improved performance and a higher channel density AIM's 2nd generation products maintain full functionality and compatibility with our first generation products.

Continuing with this proven architecture, AIM launched its 3rd generation 'Common Core' hardware design in 2010, this generation introduces the PCI-Express (PCIe) based Host interconnection standard for PCIe Interface Cards, ExpressCards,

XMC and various other platforms. AIM's 3rd generation 'Common Core' also provides the platform for intelligent standalone products.

The AIM hardware design includes the flexibility and growth potential for our clients to maximise their investment over an extended life cycle of any AIM product.

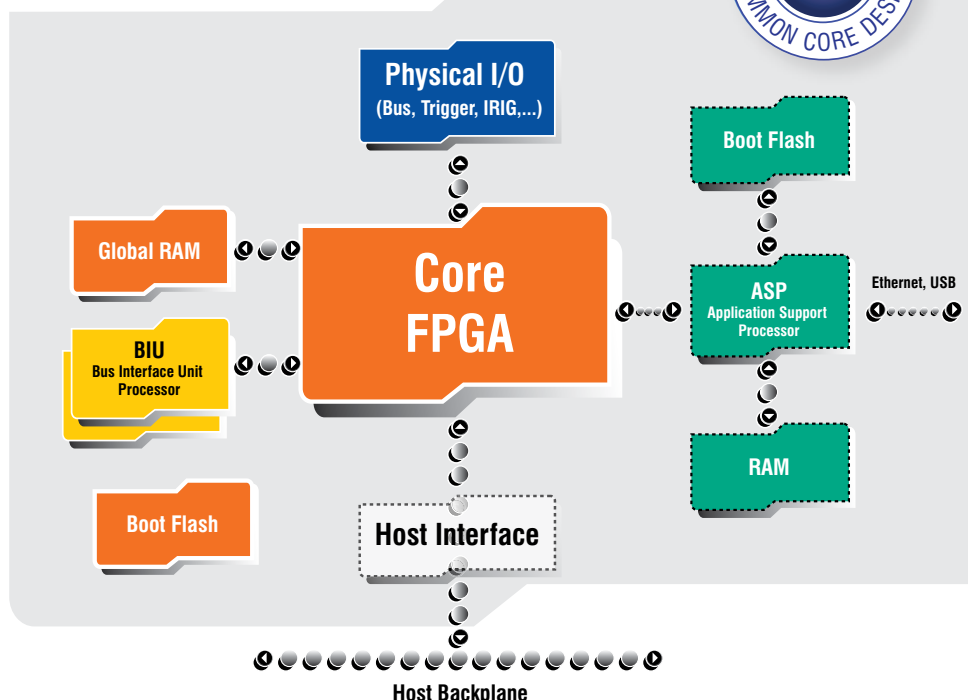
Versions with extended temperature range, conduction cooling/ Rear-I/O or conformal coating can be provided for embedded and military applications. AIM's philosophy is to introduce new form factors in line with emerging standards and market demands to supply our large installed customer base.

Common Core Advantage:

- Onboard Application Support Processor (ASP) with additional peripheral I/F provisions
- Multiple Bus Interface Unit (BIU) Processors
- Core FPGA Design
- Massive onboard Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging and Synchronisation
- Host backplane Bus Master Capability
- Deterministic Timing and hard realtime capabilities onboard
- ASP Software running under Realtime OS
- Common Application Programming Interface (API) - easily port between Hardware Platforms
- Flash the Firmware for in-field Updates - latest Versions available from Web Site 'Download Area'
- Compatible with PBA.pro™ Databus Test & Analysis Tool



Common Core Architecture



For fast and effective product integration AIM includes with the supply of our modules full function driver software for a variety of operating systems: WindowsXP/ Vista/7, Linux (both in 32/64-bit versions), LabVIEW/VI's, LabVIEW/RT, VxWorks, LynxOS, others on request. A Board Software Package (BSP) includes the required drivers, user's manuals and example code to ease the development and integration task.

MIL-STD-1553

Test & Simulation Modules

AIM's MIL-STD-1553 modules provide up to 8 dual redundant buses on a single card and operate concurrently as Bus Controller, Multiple Remote Terminals (31) and Chronological/ Mailbox Bus Monitor.



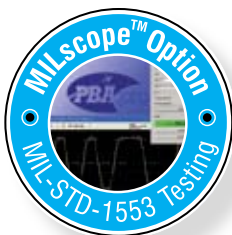
MIL-STD-1553 modules are available in a variety of industry standard form factors including PC/104-Plus, USB, PMC, XMC, PC-Card/ ExpressCard, PCI/ PCI-X/ PCIe, cPCI/ PXI, VME and VXI.

Common features include:

- Onboard Processing
- Protocol Error Injection/ Detection
- Large Scale Global Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging
- General Purpose Discrete I/O's
- Real Time Recording & Physical Bus Replay
- Multi-Level Triggering for Capture/ Filtering
- Single Function/ Simulator Only Versions available
- Application Programming Interface, ACL-AIM Class Library C++ Interface and Driver Software Support included

Unique feature:

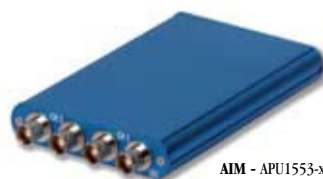
- MILScope™ Option for MIL-STD-1553 electrical Waveform Verification



AIM - ACX1553-3U



AIM - AXC1553-x



AIM - APU1553-x



AIM - AP104 - 1553-4



AIM - AEC1553-x



MIL-STD-1553

Databus Test & Analysis Software

MIL-STD-1553 resource components (PBA.pro-MIL) and database components (PBA.pro-1553-DBM) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple MIL-STD-1553 modules with BC, Multi RT Simulation, Bus Monitoring/ Recording and Physical Replay functionality.

AIM - PBA.pro-MIL



PBA.pro™ special features for MIL-STD-1553:

- Optional Scripting Packages to support Electrical and Protocol Tests of AS4112 RT Production Test Plan and Protocol Tests of AS4111 RT Validation Test Plan
- Built-In Feature for Graphical Visualisation of Simulated and Monitored Traffic
- Statistical Analysis and Message Resolving Features of Chronologic Traffic
- Support Generation of BC Simulations based on Monitored Traffic
- Import of legacy PBA-2000 Setup and Recording/ Replay Files

STANAG3910/ EFEX

Test & Simulation Modules

AIM's STANAG3910/ EFEX modules provide 1 or 2 dual redundant HS/LS buses on a single card (with onboard Fibre Optical Front End FOFE) and operate concurrently as HS/LS Bus Controller, Multiple Remote Terminals (31) and Chronological/ Mailbox Bus Monitor.



STANAG3910/ EFEX Modules are available in a variety of industry standard form factors including PCI-X, cPCI/ PXI, VME and VXI.

Common features include:

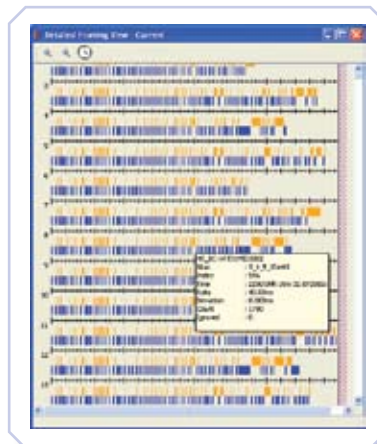
- Onboard Processing
- Protocol Error Injection/ Detection
- Large Scale Global Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging
- General Purpose Discrete I/O's
- Real Time Recording & Physical Bus Replay (electrical and optical)
- Multi-Level Triggering for Capture/ Filtering
- Support for Direct Digital Links (DDL's) and Fibre Optic DDL (FODDL)
- Single Function/ Simulator Only Versions available
- Application Programming Interface and Driver Software Support included

Unique feature:

- CTX Version with fully programmable Fibre Optical Front End (FOFE) to support EFABus Optical Validation Testing



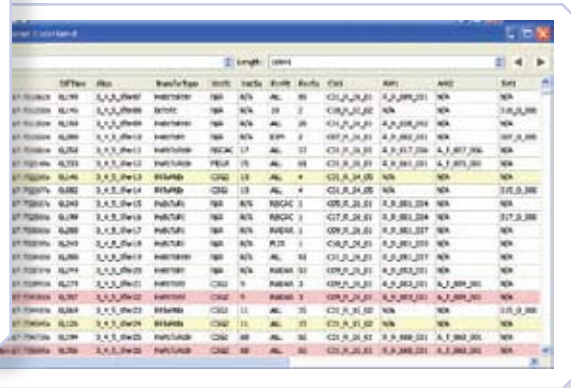
AIM - PBA.pro-STANAG



STANAG3910/ EFEX

Databus Test & Analysis Software

STANAG3910/ EFEX resource components (PBA.pro-STANAG) and database components (PBA.pro-STANAG-DBM) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple STANAG3910/ EFEX modules with BC, Multi RT Simulation, Bus Monitoring/ Recording and Physical Replay functionality.



PBA.pro™ special features for STANAG3910/ EFEX:

- Built-In Feature for graphical Visualisation of simulated and monitored Traffic (LS and HS)
- Built-In Support for Control of CTX Hardware Features
- Support for Resolving monitored Transactions to user definable Identifiers/ Names
- Support Generation of BC Simulations based on monitored Traffic
- Import of legacy PBA-3910 Setup and Recording/ Replay Files

ARINC429

Test & Simulation Modules

AIM's ARINC429 modules provide up to 64 ARINC429 channels on a single card and operate concurrently as Transmitter or Receiver channels for high speed or low speed transmission rates.

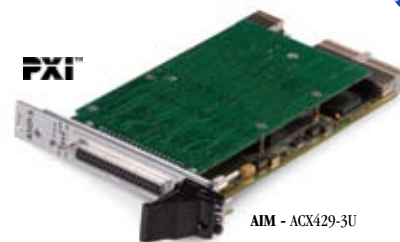


ARINC429 Testing

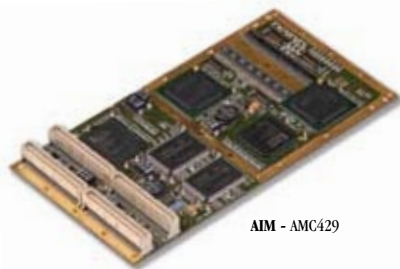
ARINC429 modules are available in a variety of industry standard form factors including PC/104-Plus, USB, PMC, PC-Card/ ExpressCard, PCI-X/ PCIe, cPCI/ PXI, VME and VXI.

Common features include:

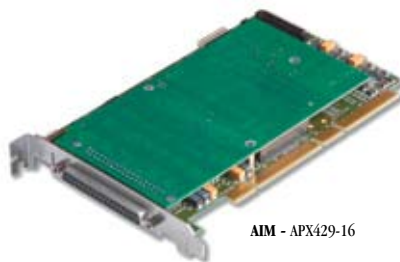
- Onboard Processing
- Software Programmable Tx or Rx Channels with High/ Low Bit Rate
- Cyclic/ Acyclic Label Transmission
- Protocol Error Injection/ Detection
- Large Scale Global Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging
- General Purpose Discrete I/O's
- Real Time Recording & Physical Bus Replay (synchronised across Channels)
- Multi-Level Triggering for Capture/ Filtering
- Support for Loop/ Pollution Mode
- Application Programming Interface and Driver Software Support included



AIM - ACX429-3U



AIM - AMC429



AIM - APX429-16



AIM - APU429-x



AIM - AEC429-x

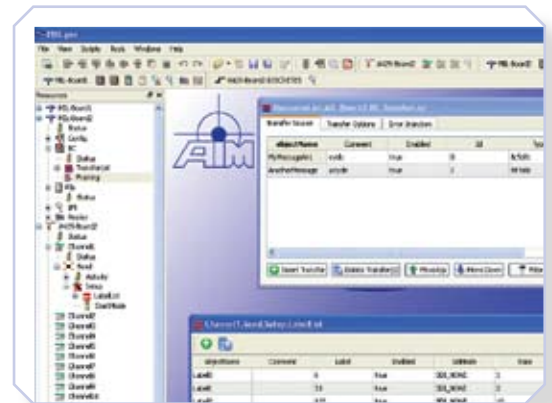


ARINC429

Databus Test & Analysis Software

ARINC429 resource components (PBA.pro-ARINC429) and database components (PBA.pro-ARINC429-DBM) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple ARINC429 modules with Transmitter/ Receiver Simulation, Bus Monitoring/ Recording and Physical Replay functionality.

AIM - PBA.pro-ARINC429



PBA.pro™ special features for ARINC429:

- Compatible Database with Engineering Unit Definition of ARINC429 Standard Labels and Equipment ID's
- Support for Loop/ Pollution Mode of Interface Modules
- Scripts for Database Import of Airbus ICD



AFDX/ ARINC664

Test & Simulation Modules

AIM's AFDX/ ARINC664 modules provide up to 4 AFDX ports (2 dual redundant AFDX channels) on a single card and operate concurrently in traffic simulator or receiver/ monitor modes.

AFDX/ ARINC664 Testing



AFDX/ ARINC664 modules are available in a variety of industry standard form factors including **PMC, PC-Card, PCI/ PCI-X, USB, cPCI and VME.**

Common features include:

- Onboard Processing
- Programmable Ports for Single or Dual Redundant Operation
- Generic, UDP Port oriented or Replay Transmit Mode
- Chronological or UDP/VL oriented Receive Mode
- Protocol Error Injection/ Detection
- Large Scale Global Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging
- Multi-Level Triggering for Capture/ Filtering
- Variants available with Boeing specific extensions
- Application Programming Interface and Driver Software Support included

Unique Hardware solutions for AFDX/ ARINC664:

- APX-GNET, 2 or 4 port Gigabit AFDX/ Ethernet Interface for PCI-X with electrical or optical physical front end via Small Form factor Plugable (SFP)
- fdXTap, USB based AFDX/ ARINC664 Network Tap and Monitoring Box for 2 full duplex Network Links



AFDX/ ARINC664

Databus Test & Analysis Software

AFDX/ ARINC664 resource components (PBA.pro-AFDX) and database components (PBA.pro-AFDX-DBM) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple AFDX/ ARINC664 modules with Tx/Rx E/S Simulation, Generic Tx Modes, Network Monitoring/ Recording and Physical Replay functionality.



AIM - AMC-FDX-2



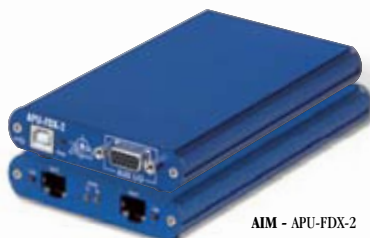
AIM - API-FDX-2



AIM - APX-GNET-2



AIM - fdXTap



AIM - APU-FDX-2



AIM - APM-FDX-2

PBA.pro™ special features for AFDX/ ARINC664:

- Support for REROS (Re-Routing and Pollution) Mode of Interface Boards
- Full support for fdXTap with Receiver Features identically to the Interface Boards
- Import of legacy fdXplorer Setup Files
- Scripts for Database Import of Airbus ICD
- Support for Boeing specific extensions

Unique Software solution for Data Loading/ ARINC615-A:

EasyLoad-615A, ready to use ARINC615-A data-loader software package for AIM's AFDX/ ARINC664 cards or standard Ethernet incl. ARINC665 Media Set Generating Function.

ARINC825 (CAN bus)

Test & Simulation Modules

AIM's ARINC825 (CAN bus) modules provide up to 4 ARINC825 (CAN bus) channels on a single card and operate concurrently as Transmitter or Receiver channels.



ARINC825 (CAN bus) Testing

ARINC825 (CAN bus) modules are available in a variety of industry standard form factors including **PMC, PCI-X, cPCI** and **VME**.

Common features include:

- *FPGA based CAN Controllers*
- *Additional 32-bit Microcontroller inside FPGA (Application Support Processor)*
- *Support of 11-bit and 29-bit CAN ID's (in accordance with CAN 2.0B specification)*
- *Cyclic/ Acyclic ID Transmission Mode*
- *Full Receiver or Listener Mode*
- *Chronological (FIFO) and ID oriented (Object) Receive Mode*
- *Protocol Error Detection*
- *IRIG-B Time Decoder for Time Tagging of CAN frames with 1µs resolution*
- *Application Programming Interface and Driver Software Support included*
- *PMC Variants for Conduction Cooling and Extended Temperature Range available*



ARINC825 (CAN bus)

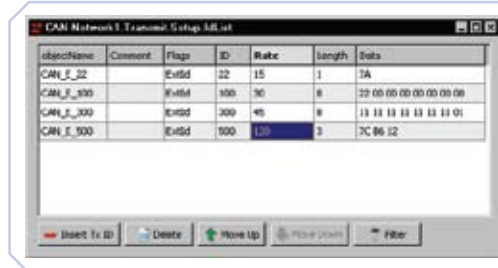
Databus Test & Analysis Software

ARINC825 (CAN bus) resource components (PBA.pro-CAN) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple ARINC825 (CAN bus) modules with Receiver, Transmitter Simulation and Monitoring/ Recording functionality. Resource components include database manager functions for engineering unit conversion.

AIM - AMC825-4



AIM - PBA.pro-CAN



AIM - ACC825-x-3U



AIM - ACC825-x-6U



PBA.pro™ special features for ARINC825 (CAN bus):

- *Database Support for Decoding of CAN ID related Payload included in the Resource Component*
- *Activity Display for CAN ID's*
- *Support for ARINC825 interpretation of the 29-bit ID's*
- *Scripts for Database Import of Airbus ICD*



PANAVIA Serial Link

Test & Simulation Modules



PANAVIA Serial Link

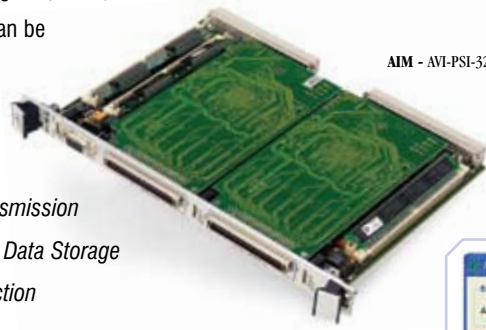
Databus Test & Analysis Software

AIM's PANAVIA modules provide up to 32 channels (configured half as TX, half as RX) on a single card and operate concurrently as Transmitter and Receiver channels.



PANAVIA resource components (PBA.pro-PSI) are available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple PANAVIA modules with Transmitter, Receiver Simulation and Monitoring/ Recording functionality. Resource components include database manager functions for engineering unit conversion.

PANAVIA modules are available in a variety of industry standard form factors including PCI, cPCI, VME and VXI. Additional form factors can be introduced upon request.



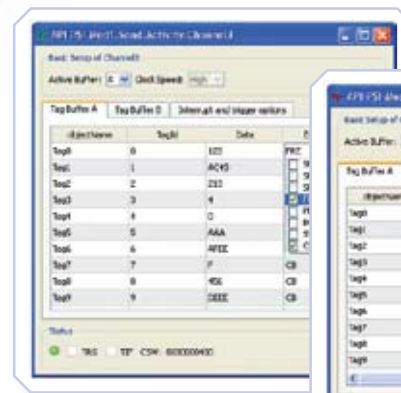
AIM - AVI-PSI-32

Common features:

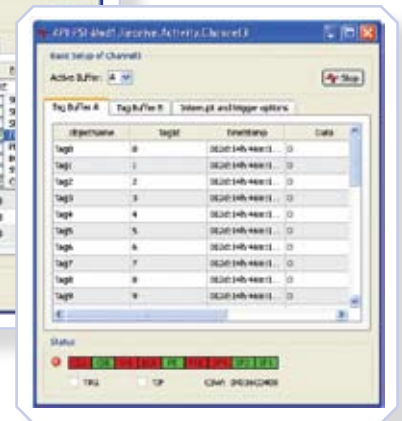
- Onboard Processing
- Continuous Data & Clock Transmission
- Tag Oriented or Chronological Data Storage
- Protocol Error Injection/ Detection
- Large Scale Global Memory
- IRIG-B Time Encoder/ Decoder for Time Tagging
- Application Programming Interface and Driver Software Support included

PBA.pro™ special features for PANAVIA:

- Database Support for Decoding of PANAVIA TAG Payload included in the Resource Component
- Chronological Bus Monitor incl. Support for Recording Function PANAVIA TAG



AIM - PBA.pro-PSI



Fibre Channel

Test & Simulation Modules

The Fibre Channel modules from AIM GmbH provide two ports on a single interface card, offering data generation/ simulation and monitor/ analyser functions.



Fibre Channel

Databus Test & Analysis Software

Fibre Channel modules are available as PCI-X/ PCIe form factors.

Common features:

- Onboard Dual Core Processor with 2 x 1200MHz with internal bandwidth of 12GB/s
- Up to 4GB shared DDR2 RAM with 64-bit data path @533MHz
- Supports FC-AE-1553, FC-AV and FC-AE-ASM protocols, compatible with SAE AS5653 (HS-1760)
- Onboard IRIG-B Time Encoder & Decoder for Time stamping
- 4 Trigger Inputs & 4 Trigger Outputs

Traffic Generation

- Programmable Timing & Sequencing with support for Error Injection
- Generic Frame Transmission or
- Traffic Simulation of above mentioned protocols

Traffic Reception

- Physical & Logical Error Detection
- Interframe Gap measurement
- Time Stamping of received frames
- Comprehensive Filtering/ Triggering/ Capturing
- Massive onboard Monitor Buffer

Application Programming Interface and Driver Software included



AIM - APX-FC-AE-2

FC-AE-resource component available for the PBA.pro™ Databus Test and Analysis Tool to support single or multiple APX-FC-AE modules with Receiver, Transmitter Simulation and Monitoring/ Recording functionality.

PBA.pro™ Special Features:

- Capture in Realtime Display in chronological Format with Full Timing information
- Decoding of captured Frames in FC1, FC2 & FC4 Layers
- Setup and Control of all Transmit Modes
- Database Manager Component to support Engineering Unit Conversion



PBA.pro™

Databus Test & Analysis Software

PBA.pro™ is the new generation of Databus Test and Analysis software solution designed using a modular, scalable and integrated approach for use with AIM's family of high performance test and simulation modules.



AIM - Portable Analyser

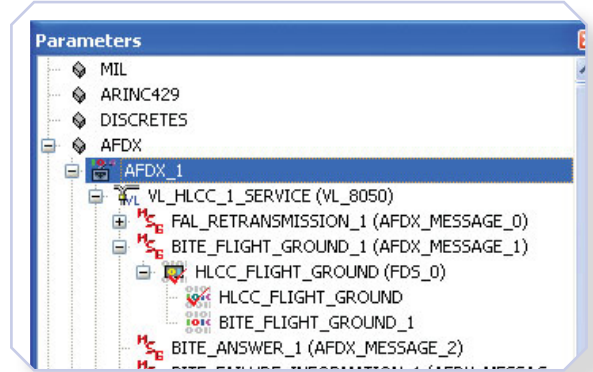
PBA.pro™ is a powerful yet cost effective software system running on both WINDOWS and LINUX platforms covering a wide range of applications from a stand alone databus analyser to a complete systems test bench or advanced avionics integration facility.

PBA.pro™ is available as full functional Development versions as well as Run-Time License for execution of dedicated Applications created with PBA.pro™ Development versions.

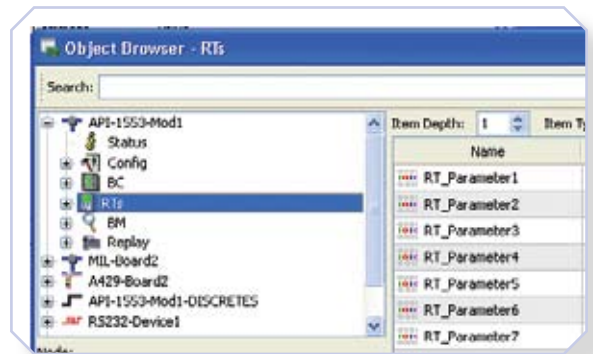
Common features:

- Manage single or multiple AIM Avionics Interfaces and 3rd Party Hardware Resources within a single Framework
- Designer Component to build Custom Displays and Control Panels

AIM - PBA.pro Database Manager



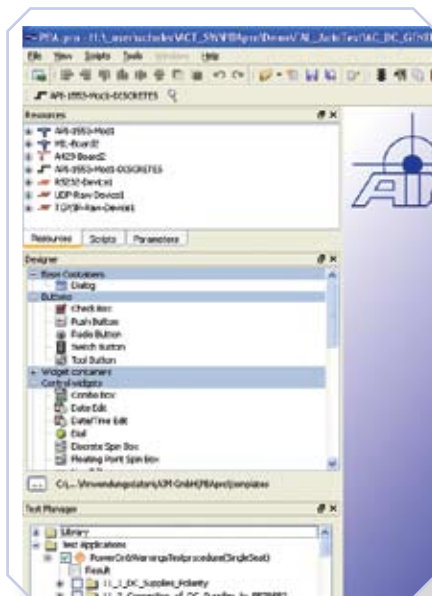
AIM - PBA.pro Object Browser



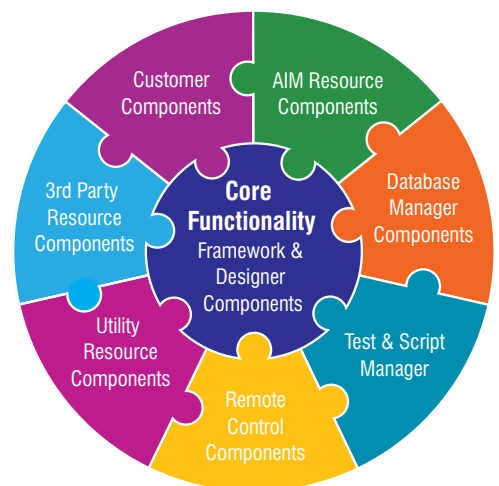
A new generation databus test & analysis tool!



AIM - PBA.pro Framework & Designer



- Resource Components for all AIM Avionics Interfaces and Various 3rd Party Hardware Resources (e.g. Analogue, Digital, Serial, GPIB, ASV/I, ARINC818, PCM Telemetry,...)
- Database Manager Components to support Engineering Unit Conversion
- Test & Script Manager Component using Scripting Languages Tcl and Python to support:
 - Automated Test Sequences and Setup of Components
 - Customer Interaction
 - Remote Control
 - Import and Creation of Engineering Unit Databases
 - Data Export into User Definable Formats
 - Embedding into Large Scale Test System Architectures
 - Complete Script Application Packages e.g. MIL-STD1553 AS4112 Testplan



PBA.pro™ - modular, scalable and integrated approach for a broad range of avionics applications.

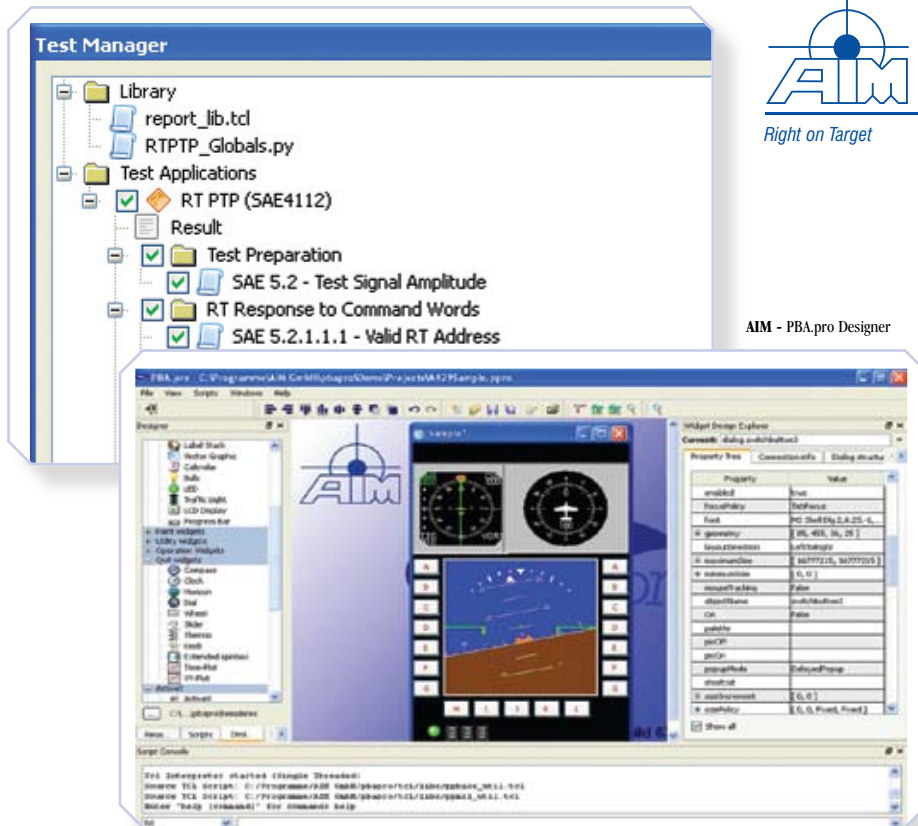


Right on Target



A new generation databus test & analysis tool!

- Utility Resource Components to view and control Utility Resources as part of the host PC Platform (UDP/ TCP Sockets, COM Ports)
- User Administration Component available for user dependent configuration of the PBA.pro™ GUI capabilities
- Embedding of ActiveX Controls and Widgets
- Matlab™ Interfacing Component available
- Capability to add Customer Components for Integration into the PBA.pro™ Framework



AIM - PBA.pro Designer



www.aim-online.com



A new generation databus test & analysis tool!

Systems Solutions

Complete customised systems from AIM

AIM's systems group provides a family of customised solutions:

- Special-to Type Test Equipment (STTE)
- High Level Bus Analysers (HLBA)
- Data Acquisition Recording & Simulation Systems (DARSS)
- Aircraft Ground Equipment (AGE)
- MIL-STD-1760 Weapon Test Sets (WTS)
- Fibre Optic MIL-STD-1553 Stub/ ARINC429 Link Extension System (FOMIS/ FOL)

PBA.pro™ is used as the baseline for all our custom system solutions in conjunction with AIM's modules, 3rd party interfaces and Commercial Off The Shelf (COTS) equipment.



AIM - 1760 Test System



AIM - Helmet Mounted Display System



AIM - Aircraft Ground Equipment (AGE)

The flexibility and scalability of the PBA.pro™ concept with its components offers a set of comprehensive 'Building Blocks' for customised Systems.

Full documentation, design reviews, project management, installation, training, long term support contracts and the AIM expertise in customised Systems guarantee your success!



Full Service Website

www.aim-online.com

The www.aim-online.com web site provides our customers with the very latest product information, technical support, databus tutorials and a rich & powerful download resource maximising the investment and use of AIM products.



Right on Target

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Cables & Accessories

AIM offers a variety of cables for use with our modules, databus analysers and systems.

For MIL-STD-1553 applications we offer an off the shelf range of Bus Couplers, Cables and Terminators and complete Bus Kits to meet all your MIL-STD-1553 test & development needs.

