High-Performance Aircraft Interface Devices

Solve avionics system integration and compatibility problems with Astronics Ballard Technology’s versatile Aircraft Interface Devices. These rugged units are an essential part of many avionics upgrades, such as electronic flight bag (EFB) and in-flight entertainment (IFE) systems, where they serve avionics data while protecting aircraft control domains from interference and corruption.

Comprehensive AID Solution

The AB2-AID is a comprehensive AID solution with a broad array of avionics I/O and high-level functionality to meet the changing needs of the modern airline industry. It features proven electronic design, rugged construction, and durable 38999 connectors for high reliability and long life. As the preeminent AID on the market, the AB2-AID is ready to manage the most demanding interface programs with valuable built-in features such as a 9-port Ethernet switch, Ethernet to serial bridge, and 8GB flash memory.

Software

The AB2-AID communicates with and is controlled over Ethernet using Ballard’s universal BTIDriver API. BTIDriver is a proven and powerful interface that provides optimum flexibility and control. Additionally, the AB2-AID is ARINC 834 software capable (contact factory for details). Although the AB2-AID can be configured and run with only a few BTIDriver API calls, the comprehensive library includes a broad range of specialized functions to support even the most complex airline data management needs.

Features

- Extensively validated
- Certified device with FAA Parts Manufacturer Approval (PMA)
- Based on proven AB2000 design deployed on over 30 aircraft platforms
- Lightweight and low power
- Integrated 9-port Ethernet switch
- Broad array of avionics I/O
- Numerous expansion options

Highly Validated

- Commercial and military
- Fixed wing, helicopter, ground mobile
- DO-160 Certified
- Rugged: MIL-STD-810
- EMC quiet: MIL-STD-461

Mechanical

- Small: 5.5 x 7.3 x 2.5 in
- Lightweight: 4.6 lb max. (including horizontal mounting hardware)
- Conduction or convection cooled
- High-reliability connectors

Applications

- Electronic Flight Bag (EFB) Integration
- In-flight entertainment systems
- Tactical mission systems
- Satellite communication systems
- Data/protocol converting
- Data concentrating
- Firewall protection for critical avionics data
- On-aircraft data loading
## AB2-AID
### Aircraft Interface Device

### Included Interfaces

**ARINC 429**
- 24 channels (16R/8T)
- Periodic and asynchronous messages
- Hardware controlled transmit scheduling
- Receive message filtering (Label/SDI)
- Sequential monitor

**ARINC 717**
- 4 channels (2R/2T)
- Biphasic/Bipolar
- Transmit and receive
- Sub-frame and super-frame support
- 64, 128, 256, 512, 1024, 2048, 4096, 8192 wps
- Sequential monitor

**RS-232/423/422/485**
- 2 channels
- Selectable baud rates
- Optional handshake signals (232 mode)
- Ethernet (TCP) serial server mode

**Ethernet (WAN)**
- Independent or router function
- Auto-sensing 10/100 Mb/s
- TCP/IP, UDP
- Web page configuration

**Ethernet Switch (LAN)**
- 9-port Managed Ethernet Switch
- Eight 10/100 Mbps Ethernet ports
- One 10/100/1000 Mbps Ethernet port
- Web page configuration
- Management functions:
  - Layer 2/3 support, VLAN, QoS, Spanning tree, Virtual Cable Tester (VCT), Port mirroring, and others

**USB 2.0 Host**
- 2 ports
- High-speed (480 Mb/s)

**Avionics Discrete I/O**
- 4 programmable Input/Output
- Open/GND configuration

### Specifications

**Base Model Features**
- PowerPC processor
- 64 MB SDRAM
- 16 MB Flash
- Real Time Clock (with 650+ hours of backup)
- 1 Ethernet port (10/100)
- 2 RS-232/423/422/485 (selectable)
- 2 USB 2.0 host ports
- Avionics discrete I/O
- IRIG A or B, AM, PWM and PPS
- Voltage and temperature monitoring
- 8 GB Flash drive
- Power: 28 VDC nominal, 33 W max.
- MTBF: 35,000+ hours

**Environmental**
- Operating temperature: -40 to 71°C
- Storage temperature: -55 to 100°C
- Conduction or convection cooled

**Mechanical**
- Compact enclosure: 5.46 x 7.31 x 2.48 in (139 x 186 x 63 mm)
- Weight:
  - AB2-AID: 3.7 lb (1.7 kg)
  - Horizontal mounting kit: 0.9 lb (0.4 kg)
  - Vertical mounting kit: 0.5 lb (0.2 kg)
- CAD installation drawings available

**Connectors**
- J1 (Power): D38999/20FC4PN (4-pin)
- J2 (Ethernet Switch): D38999/20FG35SB (79-pin)
- J3 (Databus I/O): D38999/20FG35SA (79-pin)

**Software**
- Universal BTIDriver API
- Embedded Linux OS and SDK (included)
- CoPilot analysis & test software (optional)
- Data recorder software (optional)
- ARINC 615 data loader software (optional)

**Optional Interfaces**

**ARINC 708**
- Up to 4 channels
- Hardware controlled transmit scheduling
- Receive message filtering
- Sequential monitor

**MIL-STD-1553**
- Up to 4 dual-redundant channels
- BC/RT/MON (Single- or Multi-Function)
- Hardware controlled transmit scheduling
- CH/TA/SA filtering
- Sequential monitor

### Ordering Information

**Part Numbers**
- 50-11026-05: AB2-AID
- 50-11026-02: Horizontal Mounting Kit
- 50-11026-03: Vertical Mounting Kit

**Additional AID Models**
- In addition to the 50-1126-05 AB2-AID, Ballard Technology provides additional AID models with other features, as well as custom configured AID solutions based on our proven AB3000, AB2000, and AB1000 Avionics Computer families. Contact factory to discuss your specific needs.