

# A<sup>2</sup>B Bus Monitor Application



## Key Features

### A<sup>2</sup>B Bus Monitor Application

- Real-time capture of A<sup>2</sup>B bus data
- A<sup>2</sup>B superframe decoding
- Track Node Initialization
- View Node Topology
- Monitor I2C data
- Monitor GPIO signaling
- Monitor Interrupt events
- Monitor I2S/TDM audio data
  - up to 14 channels upstream
  - up to 14 channels downstream
- A<sup>2</sup>B error decoding
- Live upstream and downstream audio levels
- Play multi-channel live audio simultaneously
- Export multi-channel audio to WAV

### Web interface

- No software installation required
- Windows, Linux, and Mac OS X
- Works on tablets and mobile devices

### Built on Promira Serial Platform

- Easy software upgrades
- Product extensibility
- Ethernet/USB connectivity
- Remotely accessible

### API

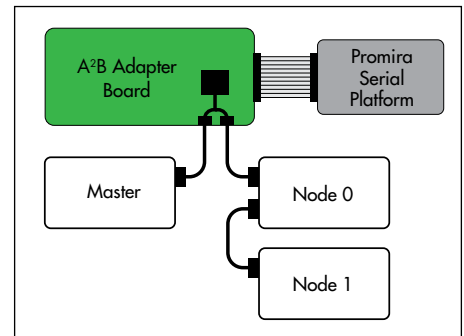
- Web socket API for platform/language agnostic integration
- Easy integration into test and validation systems

### Quality

- REACH, RoHS, China RoHS
- Manufacturing: ISO 9001, ISO 13485, AS9100C
- One-year warranty

Automotive Audio Bus (A<sup>2</sup>B) from Analog Devices, enables the next generation of high-fidelity audio applications in the fast changing automotive industry. A<sup>2</sup>B provides a two-wire interface to carry audio and control data through a multi-source/sink audio system that reduces wiring complexity and overall vehicle weight while enabling next generation features, like active noise cancellation and in-vehicle voice recognition from any seat.

Total Phase's A<sup>2</sup>B Bus Monitor Application provides unprecedented access to the A<sup>2</sup>B system. By attaching the A<sup>2</sup>B Adapter Board in-line between A<sup>2</sup>B nodes, the A<sup>2</sup>B monitor can non-intrusively sniff A<sup>2</sup>B data on the line, giving users a real-time view into A<sup>2</sup>B traffic on the bus. A<sup>2</sup>B superframes are decoded and disassembled into I2S/TDM audio data and I2C control data for easy debugging. Additionally, full reporting on Interrupts and GPIO handshakes are correlated into the data capture.



The A<sup>2</sup>B Bus Monitor attached in-line between the Master Node and Node 0

The A<sup>2</sup>B Bus Monitor Application provides multiple ways of viewing the A<sup>2</sup>B data. Besides the traditional Bus Data view, the application also offers a Node Topology view and an Audio Channels view. The Node Topology view allows quick visualization of all nodes on the A<sup>2</sup>B bus. Users can display and export all node configuration settings to validate node initialization.

The Audio Channels view allows users to diagnose audio channel problems. Real-time audio levels for all upstream and/or downstream channels are displayed and audio for multiple upstream or downstream channels can be mixed and monitored simultaneously to quickly identify I2S/TDM data slot mismatch problems. Audio data can be exported to a file for further analysis using third-party audio analysis software.

The A<sup>2</sup>B Bus Monitor Application requires the Promira<sup>®</sup> Serial Platform, taking advantage of its high performance serial data communications over USB or Ethernet. Data capture and analysis happens on the device, which allows for real-time analysis or remote data capture for later review. The A<sup>2</sup>B Bus Monitor Application is a compact solution excellent for bench top prototyping and in-vehicle field testing.

# A<sup>2</sup>B Bus Monitor Application

## Features

### Systems Debug and Validation

System level testing and validation can be challenging due to the many different components in an A<sup>2</sup>B system. With numerous potential failure points, it is important to get as much visibility into the A<sup>2</sup>B system as possible. The A<sup>2</sup>B Bus Monitor Application provides transparency into the inner workings of the A<sup>2</sup>B system. Thanks to its simple yet powerful interface that allows users to quickly inspect and monitor A<sup>2</sup>B data and node configuration. Developers can quickly identify and drill-down into problem areas debugging and validating A<sup>2</sup>B subsystems to ensure that they behave as expected.

interface. Users can quickly ensure that all expected nodes are on the Bus and can verify latency, data slot configurations and more. Quick filter buttons provide an easy way to see all changes to specific data registers in the Bus Data view.

### Interrupts and GPIO Handshakes

Monitor GPIO states and Interrupt events on the A<sup>2</sup>B bus. Debug these control signals and correlate them with bus data traffic. Determine when a node asserts an interrupt to debug master operation.



Bus Data View



Node Topology View



Audio Channels View

### A<sup>2</sup>B Bus Data

Monitor and decode A<sup>2</sup>B bus data, including GPIO and Interrupt events. Inspect timing between events to validate proper interoperability between subsystems. The entire discovery and initialization process can be captured for analysis. Data can be filtered in real-time to find specific data of interest. All the data can be exported for future analysis in other software systems.

### A<sup>2</sup>B Node Topology

Debug A<sup>2</sup>B discovery and initialization problems easily with the A<sup>2</sup>B Node Topology view. All configuration registers for discovered nodes can be viewed in a simple

### Monitor Audio Channels

See instantaneous audio levels across all upstream and downstream audio channels simultaneously. Quickly debug audio slot alignment problems. Listen to and export audio data from multiple channels simultaneously via the web interface. Audio data can be streamed to disk for long session captures by using the API.

### Digital Audio Output

The A<sup>2</sup>B Adapter Board outputs the upstream and downstream I2S/TDM audio data via hardware interfaces that can be sent to hardware-based audio analyzers.

## Specifications

### Hardware

#### Package Includes

- (1) A<sup>2</sup>B Bus Monitor Application
- (1) A<sup>2</sup>B Adapter Board
- (1) 34-pin to 34-pin cable – 40 mm
- (2) A<sup>2</sup>B Cable: Mini50 to tinned ends – 1 m

#### Requirements

- Promira Serial Platform

#### Dimensions (W x L x D)

- 122 x 96 x 20 mm  
(4.80 x 3.78 x 0.79 in)

#### Weight

- 65 g (2.3 oz)

#### Operating Temperature

- 10°–35° C (50°–95° F)

### Ordering information

| Product   | Part Number |
|---|-------------|
| A <sup>2</sup> B Bus Monitor Application            | TP604010    |
| A <sup>2</sup> B Adapter Board                      | TP504010    |
| Related Products                                    |             |
| A <sup>2</sup> B Cable: Mini50 to tinned ends – 1 m | TP510810    |
| A <sup>2</sup> B Cable: Mini50 to DuraClik – 1 m    | TP510910    |
| A <sup>2</sup> B Adapter Board Enclosure            | TP512610    |
| Country of Origin:                                  | USA         |
| HTS:  | 8543200000  |
| ECCN:   | EAR99       |

