RAD-A2B

Automotive Audio Bus and Network Monitoring Solution

Intrepid has partnered with Analog Devices to create a state-of-the art A2B (Automotive Audio Bus®) testing tool. A2B technology allows a two-Wire interface to transmit audio and control data using a multi-source audio system. This technology enables low cost transmission of audio, active noise cancellation and in-vehicle voice recognition from any part of the vehicle.

RAD-A2B combines Analog Devices' A2B technology with two CAN/CAN-FD transceivers and one LIN channel to allow mixed network messages in one time stamped log. The RAD-A2B tool includes one channel for A2B receive-only monitoring and one channel that can act as an emulator node.

The A2B tool works in harmony with the Intrepid Controls world renowned Vehicle Spy application. In Vehicle Spy, you can view A2B live data, control frames, I²C data, real-time audio meters for visual reference, and the ability to capture streams. When used as an emulator node, full A2B node simulation including downstream flashing is allowed (available with future update).

Applications

- Copies A2B bus traffic without any latency

- Decoding A2B superframes and A2B errors

- Monitor multi-channel live audio in real time with upstream and downstream audio levels

- Initialize Node track and view topology

- Single tool to monitor I2C data, GPIO states and interrupts events on A2B bus

- Use as interface with J2534 and RP1210 support over USB 2.0 (GM DPS, Ford DET, DiagRA, Chrysler CDA)

- Quickly assemble prototype A2B systems to characterize performance and evaluate trade-offs well in advance of production proto-types.
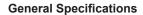
Features

- 1x A2B Bus Monitor Node

- 1x A2B Emulator Node

- 2x DW CAN-FD channels

- 2x software enabled CAN termination

- 1x LIN channel

- 1x Gigabit Ethernet (1000BASE-T) for use with DoIP, XCPoE and more; the 1000BASE-T port can be used in conjunction with Rad-Moon or Rad-Moon2 converters to add Automotive Ethernet to the setup.

- 10x Programmable tri-color LEDs

- Membrane LEDs to show link, error, and activity status

- Phantom power capable

RAD-A2B

General Specifications

- Interface to PC via 1G Ethernet or Isolated USB 2.0 (240 Mb/s)
- Low power consumption
- Power supply: 6-40V operation via barrel jack; use included power supply or vehicle power
- Ten scriptable, multi-color LEDs indicate link status and modes of operation
- Temperature range: -40°C to +85°C
- One-year limited warranty
- Field-upgradeable flash firmware
- Standalone mode, including scripting, receive messages, transmit messages, expressions, I/O and transport layers
- Dimensions: 5.41" × 3.43" × 1.43" (13.7 × 8.72 × 3.62 cm)
- Weight: 0.65 lb (295 g)

Timing Specifications

- FPGA-measured 64-bit timestamping with 10 ns accuracy on all CAN FD networks
- Simultaneous operation on all CAN FD networks only one network

Network Specifications

- AD2433 for the A2B transceiver
- 1x A2B Monitor
- 1x A2B Emulator (transmit and receive) Node
- 2x CAN / CAN FD channels: two dedicated ISO11898 Dual Wire CAN physical layers (TJA1043T)
- Software-switchable between ISO CAN FD and non-ISO (Bosch) CAN FD versions
- Up to 1 Mb/s software-selectable baud rate for arbitration phase
- Up to 8 Mb/s software-selectable baud rate for data phase
- Listen-only mode support
- CAN FD implemented using the Bosch MCAN CAN controller IP
- Software-selectable termination resistors for CAN channels
- 1x LIN (Local Interconnect)
- Full support for LIN 1.X, 2.X and J2602
- LIN J2602 / 2.X compatible physical layer
- Software enabled 1K LIN Master Resistor per channel
- LIN Bus Monitor Mode identifies errors: Sync Break Error State and Length, Sync Wave Error, Message ID parity, TFrameMax/ Slave Not Responding, Checksum Error and Transmit Bit Errors
- LIN Bus Master Mode operates at same time as LIN Bus Monitor
- LIN Bus Slave simulation – with or without an LDF file
- LIN Bus hardware schedule table with support for LIN diagnostics
- Software-selectable baud rate

Ordering Information

Part Number	Description
RAD-A2B	Automotive Audio Bus and Network Monitoring Solution

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