



RAR-EC

RoHS Dual Port ARINC 429 ExpressCard Interface

The Abaco Systems RAR-EC is an intelligent, high-density, ExpressCard interface that provides up to 11 total Tx/Rx fully independent ARINC 429/575 channels, along with up to four bi-directional avionics level I/O discretes. Features include programmable data rates and parity, error detection, multiple buffering modes, timetagging and automatic transmit slew rate adjustment.

Configuration options include selection of channel count, along with a mix of ARINC 429 and ARINC 573/717.

Software

Abaco's software tools significantly reduce the time required to integrate ARINC protocols and I/O discretes into your portable application. Included with the RAR-EC is high-level API (Application Programming Interface) library support for Microsoft Windows 7, 8, 8.1, 10, Server 2012 R1/R2 (32 and 64 bit), Vista, XP, Linux software development. BusTools/ARINC, Abaco's Windows-based GUI solution for bus analysis, simulation and data logging, is an available option. It provides an easy-to-use interface to avionics data. ARINC 615 Data Loader and LabVIEW support are optionally available.

Architecture

The flexible design of the RAR-EC provides a powerful hardware foundation that supports multiple avionic protocols in a single, integrated, portable package. Bi-directional discretes support TTL to avionics-level inputs while low-side switch outputs enhance application flexibility. Abaco Systems' powerful API libraries provide total flexibility in receiving and generating ARINC bus traffic.

Tools and Solutions

BusTools/ARINC is an easy-to-use Windows 7, 8, 8.1, 10, Vista-based ARINC 429 bus analysis, simulation and data monitoring solution that is optionally available on the portable RAR-EC and other Abaco hardware products.

- Monitor multiple channels in real-time.
- Display and enter time-tagged data in hex, binary or engineering units (standard or user defined).
- Filter received data by label and/or SDI.
- View discrete descriptors and user-bit-encoded values.
- Display historical and real-time charts of individual labels.
- Use BusTools/ARINC to send multiple messages of varying sizes with automatic ramping.
- Log all time-tagged data from multiple channels to a single disk file.
- Replay recorded data on transmit buses.

FEATURES:

- Up to seven Rx, four Tx ARINC 429 channels
- Optional 573/717 Rx and Tx
- Four bi-directional avionics-level discretes
- Fully independent channel operation
- ExpressCard
- Easy-to-use BusTools/ARINC Microsoft® Windows®-based GUI Bus Analyzer available
- High-level Microsoft® Windows® 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, XP (32-bit/64-bit) and Linux software API support
- 64-bit, 1 microsecond time-tagging
- Available with ARINC 615 Data Loader, Data Loader GUI and ARINC 615 cabling
- Optional IRIG

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Specifications

ARINC 429 Receive Channels

- Number of channels: up to 7
- Baud rates: Programmable 5 KHz to 200 KHz
- Input levels: ± 6.5 to ± 13 VDC (A to B)
- Parity: enable/disable
- Error reporting: parity
- Receive Channel Buffering
 - 2048 messages per channel or merged mode buffer, independently selectable for each channel
 - 64-bit, 1 μ second resolution time-tag with each message

ARINC 429 Transmit Channels

- Number of channels: up to 4
- Baud rates: Programmable 5 KHz to 200 KHz
- Automatic slew rate adjustment
- Output level: ± 10 VDC (A to B)
- Parity: odd, even or none
- Buffering: 2048 labels per channel

Additional Protocols Supported

- ARINC 573/717 Bi-Polar RZ and Harvard Bi-Phase, (Rx and Tx)

Software

- API – High-level API libraries for Microsoft Windows 7, 8, 8.1, 10, Server 2012 R1/R2, (32 and 64bit), Vista, XP, and Linux included
- LabVIEW – Support optional

Physical / Environmental

- Express Card
- Cabling to 37-pin D-type receptacle connector provided (CONRAR-EC)
- Card operating temperature: 0°C to +55°C
- Extended temperature: -40°C to +65°C available (operating case temperature range not to exceed -40°C to +65°C)
- Storage temperature: -50°C to +100°C
- Relative humidity: 5 to 90% (non-condensing)

Discrete Inputs/Outputs

- Number of bi-directional lines: 4
- Inputs: support avionics-levels (open/gnd or high/low) and TTL/CMOS
- Outputs: low side switches, each capable of sinking 0.5 ampere

Power (typical)

- 3.3 VDC, 750mA

Ordering information

RAR-EC-22	ARINC 429 Express Card with 2 Rx, 2 Tx channels
RAR-EC-44	ARINC 429 Express Card with 4 Rx, 4 Tx channels
RAR-EC-74	ARINC 429 Express Card with 7 Rx, 4 Tx channels
RAR-EC-43J	ARINC 429 Express Card with 4 Rx, 3 Tx channels, and 1 ARINC 573/717 RxTx
RAR-EC-63J	ARINC 429 Express Card with 6 Rx, 3 Tx channels, and 1 ARINC 573/717 RxTx
-W suffix	IRIG-B Receiver (AM or DC/TTL) Generator (DC/TTL)
-R suffix	Operating case temperature range not to exceed -40° C. to +65° C

Optional Software

BT-ARINC	BusTools ARINC Windows GUI software for ARINC Bus Analysis, Simulation and Datalogging
CEI-DL	ARINC 615 Data Loader software for Windows

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