



# RAR-EC

## RoHS Dual Port ARINC 429 ExpressCard Interface

### 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 (32 and 64 bit), Vista, XP, 2000, NT, Linux® and Visual Basic software API support
- 64-bit, 1 microsecond time-tagging
- Available with ARINC 615 Data Loader, Data Loader GUI and ARINC 615 cabling
- Optional IRIG

The GE Intelligent Platforms 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

GE'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 (32 and 64 bit), Vista, XP, 2000, NT, Linux and Visual Basic software development., BusTools/ARINC, GE'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. GE Intelligent Platforms' powerful API libraries provide total flexibility in receiving and generating ARINC bus traffic.

### Tools and Solutions

BusTools/ARINC is an easy-to-use Windows XP/2000/Me/NT/98/95-based ARINC 429 bus analysis, simulation and data monitoring solution that is optionally available on the portable RAR-EC and other GE 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.



# RAR-EC – RoHS Dual Port ARINC 429 ExpressCard Interface

## Specifications

### ARINC 429 Receive Channels

- Number of channels: up to 7
- Baud rates: Programmable 5 KHz to 200 KHz
- Input levels:  $\pm 6.5$  to  $\pm 13$  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  $\mu$ 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:  $\pm 10$  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 (32 and 64bit), Vista, XP, 2000, NT, Linux and Visual Basic 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

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

## Optional Software

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

## About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit [www.ge-ip.com](http://www.ge-ip.com).

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