



RAR-USB

RoHS ARINC 429 USB Adapter

Features

- Up to sixteen receive and five transmit ARINC 429 channels
- Optional ARINC 717 receive and transmit
- Eight bi-directional avionics-level discretes
- Fully independent channel operation
- Easy-to-use BusTools/ARINC Microsoft® Windows®-based GUI Bus Analyzer available
- Support for Microsoft® Windows® 7, Vista, and XP 32-bit and 64-bit operating systems
- IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL) standard
- 64-bit 1 microsecond resolution received message time-tagging
- 1024 entry Message Scheduler with independent entry transmission rate and channel assignment
- 52K entry Transmit Playback feature supporting one microsecond resolution time-sequenced message transmission

The GE Intelligent Platforms RAR-USB is an intelligent, high-density, USB 2.0 interface that provides up to 16 total fully independent receive channels along with up to 5 total fully independent transmit channels and eight bi-directional avionics-level discretes. Features include programmable bus rates and parity, error detection, time-tagging and adjustable slew rates.

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

Software

GE's software tools significantly reduce the time required to integrate ARINC protocols and discrete I/O into your portable application. Included with the RAR-USB is a high-level API (Application Programming Interface) library, with support for software development under 32-bit/64-bit Microsoft Windows 7, Vista, and XP, operating systems. 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.

Architecture

The flexible design of the RAR-USB provides a powerful hardware foundation that supports multiple avionics 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 Platform's powerful API libraries provide total flexibility in receiving and generating ARINC bus traffic.

Tools and Solutions

BusTools/ARINC is an easy-to-use Windows based ARINC 429 bus analysis, simulation and data monitoring solution that is optionally available.

- Monitor multiple channels in real-time.
- Display 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 traffic with automatic ramping.
- Log all time-tagged data from multiple channels to a single disk file.
- Replay recorded data on transmit buses.



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Specifications

ARINC 429 Receive Channels

- Number of channels: up to 16
- Baud rates: Programmable 5 KHz to 200 KHz
- Input levels: ± 6.5 to ± 13 VDC (A to B)
- Parity Checking : enable/disable
- Error reporting: parity and invalid bit count
- Buffering: 176K message Merged Receive Buffer with 64-bit, 1 micro-second resolution time-tag with each message

ARINC 429 Transmit Channels

- Number of channels: up to 5
- Baud rates: Programmable 5 KHz to 200 KHz
- Programmable slew rate
- Output level: ± 10 VDC (A to B)
- Parity: odd, even or disabled
- Buffering: 8192 messages per channel for burst transmission
- 1024 entry Message Scheduler with independent entry transmission rate and channel assignment
- 52K entry Transmit Playback feature supporting one microsecond resolution time-sequenced message transmission

Additional Features and Protocols Supported

- IRIG-B Receiver (AM or DC/TTL) and Generator (DC-TTL)
- ARINC 573/717 Bi-Polar RZ and Harvard Bi-Phase, (Rx and Tx)
- Programmable Frame Size and Bus Speed
- Buffering: 128K messages

Software

- API – High-level API libraries for Microsoft® Windows® 7, Vista, XP

Physical / Environmental

- USB 2.0
- Cabling to 68-pin SCSI-3 receptacle connector compatible with the RCEI-530 and RAR-PCIE for 429 and discretes only (not 717)
- Optional cabling to 37-pin D-type receptacle connector compatible for 429 and discretes only (not 717) with the CEI-715, RCEI-715A & RAR-EC
- Card operating temperature: -40° C to $+75^{\circ}$ C

- Relative humidity: up to 95% (non-condensing)

Discrete Inputs/Outputs

- Number of bi-directional lines: 8
- Inputs: supports avionics-levels (open/gnd or high/low) and TTL/CMOS
- Outputs: low side switches, each capable of sinking 0.5 ampere

Power (typical)

- 5 VDC, 500mA Max

Ordering Information

RAR-USB-1605W	ARINC 429 USB INTERFACE BOX WITH 16 RX, 5 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0805W	ARINC 429 USB INTERFACE BOX WITH 8 RX, 5 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0404W	ARINC 429 USB INTERFACE BOX WITH 4 RX, 4 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0202W	ARINC 429 USB INTERFACE BOX WITH 2 RX, 2 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-1601W	ARINC 429 USB INTERFACE BOX WITH 16 RX, 1 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0505W	ARINC 429 USB INTERFACE BOX WITH 5 RX, 5 TX CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-1504JW	ARINC 429 USB INTERFACE BOX WITH 15 RX, 4 TX CHANNELS, 1 RX, 1TX ARINC 717 CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0804JW	ARINC 429 USB INTERFACE BOX WITH 8 RX, 4 TX CHANNELS, 1 RX, 1TX ARINC 717 CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0404JW	ARINC 429 USB INTERFACE BOX WITH 4 RX, 4 TX CHANNELS, 1 RX, 1TX ARINC 717 CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES
RAR-USB-0202JW	ARINC 429 USB INTERFACE BOX WITH 2 RX, 2 TX CHANNELS, 1 RX, 1TX ARINC 717 CHANNELS, IRIG-B REC/GEN, 8 I/O DISCRETES, ROHS COMPLIANT, INCLUDES USB AND SCSI CABLES

Optional Software

BT-ARINC	BusTools/ARINC Windows GUI software for ARINC Bus Analysis, Simulation, and Logging
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GE Intelligent Platforms Contact Information

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Global regional phone numbers are listed by location on our web site at defense.ge-ip.com/contact

defense.ge-ip.com

