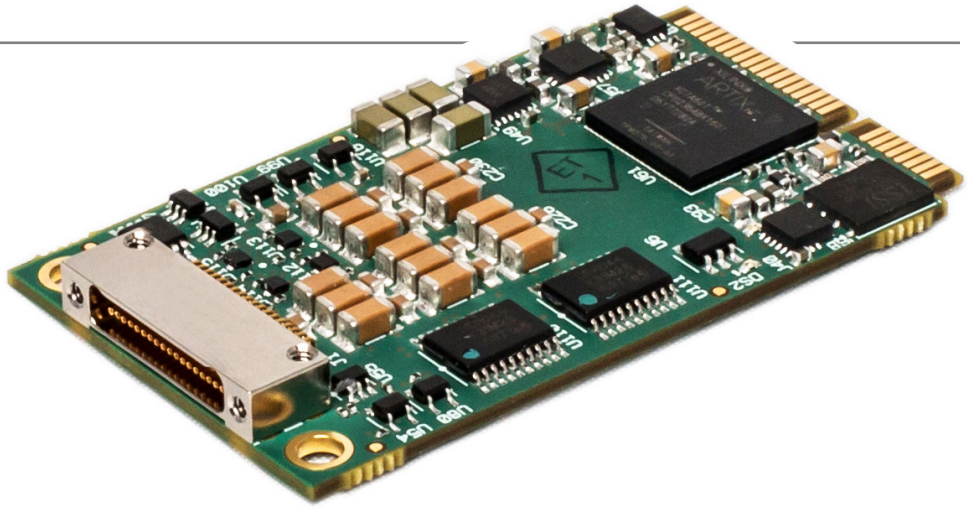
Rugged interconnect™ TECHNOLOGIES
Technologies evolve, our commitment remains



RAR-MPCIE

ARINC High Density Mini PCI Express Interface

Hardware

Available in a range of configurations to match your needs, the RAR-MPCIE provides complete, integrated databus functionality for ARINC 429, ARINC 575 and selected 2-wire, 32-bit protocols. The RAR-MPCIE supports maximum data throughput on all channels while providing onboard message scheduling, label filtering, multiple buffering options, time-tagging, error detection and avionics-level I/O discretes.

Two RAR-MPCIE configurations offer combinations of ARINC 429 channels along with ARINC 717/573 Dual-Mode functionality. Dual-Mode functionality programmatically supports either HBP (Harvard Bi-Phase) or BPRZ (Bi-Polar Return to Zero) across a very wide range of bit rate/ subframe combinations.

The RAR-MPCIE comes as standard with IRIG-B DC level signal and can be utilized to synchronize time stamps across multiple boards.

The RAR-MPCIE is very small in size (30mm x 50.95mm x 4.7mm) and is lightweight for applications deployed in highly-constrained environments where platforms require minimum SWaP solutions.

Architecture

The RAR-MPCIE features include independent, software programmable data rates and parity, error detection. 2 MBytes of on-board RAM provide large transmit and receive data buffers. All channels operate independently. Discretes support TTL to four avionics-level inputs and four outputs while open-drain outputs enhance (bi-directional) application flexibility.

Software

Abaco Systems' software tools and solutions significantly reduce the time required to integrate ARINC 429 and other avionics protocols into your application. Included with the RAR-MPCIE is our flexible, high- level, API (Application Programming Interface) support for Microsoft Windows 7 , 8, 8.1, 10, Server 2012 R1/R2, Vista, XP (32-bit/64-bit), VxWorks and Linux.Our powerful API supports multiple cards, and is compatible with Abaco Systems API support on PCI, PCIe, PMC, PC/104-Plus, Express Card, AMC and Compact PCI platforms. Optional software includes LabVIEW.

Data Handling

On-board firmware, and a high-level API are integrated to provide total flexibility in monitoring and generating ARINC bus traffic. Simultaneous scheduled and burst mode (FIFO) messaging is sup- ported on all ARINC 429 transmit channels. Each ARINC 429 receive channel provides simultaneous dedicated and buffered mode storage, along with label/SDI filtering. Three different methods are provided to buffer received data:

- Buffered mode utilizes a separate circular buffer for each channel.
- Merged mode combines all received data into a single, time-sequenced circular buffer.
- Dedicated mode provides a snapshot of the latest data.

FEATURES:

- Up to eight Rx and four Tx ARINC 429 channels
- High performance, high density interface with large buffers
- Advanced, high-level software API included for Microsoft® Windows® 7 , 8, 8.1, 10, Server 2012 R1/R2, Vista, XP (32-bit/64-bit), VxWorks and Linux®
- Supports maximum data throughput on all channels simultaneously
- 4-input/output bi-directional discretes supporting avionics-level voltages
- Independent, software-programmable bit rates for all channels
- Error injection/detection
- Support for 2-wire ARINC 573, 575, and 717
- IRIG-B Receiver/Generator standard

abaco SYSTEMS

RAR-MPCIE *ARINC High Density Mini PCI Express Interface*

Specifications

ARINC 429 Receive Channels

- Number of channels: up to 8
- Data rates: 12.5 KHz, 100 KHz or 5 KHz to 150 KHz programmable
- Standard input levels: ± 6.5 to ±13 VDC (A to B)
- Filtering: label and/or SDI
- Parity: odd, even or none
- Error reporting: parity

ARINC 429 Transmit Channels

- Number of channels: up to 4
- Data rates: 12.5 KHz, 100 KHz or 5 KHz to 150 KHz programmable
- Output level: ±10 VDC typical (A to B)
- Parity: odd, even or none
- Error injection option: parity, gap, high or low bit count

Discrete Inputs and Outputs

- Number of inputs: 4
- Supports monitoring of TTL/CMOS/ Avionics level voltages
- Number of outputs: 4
- Low side switches, each capable of sinking 200ma

Optional Configurations

- A wide range of Rx/Tx combinations
- ARINC 573/717 Bi-Polar RZ and Harvard Bi- Phase
- Optional acrylic conformal coating
- Optional rugged high retention I/O connector
- Optional I/O transition cabling
- Contact factory for custom configurations

Power (typical)

- +3.3 VDC @ 1.05 A (typ.)
- 1.82 W power dissipated on board
- Weight 8.6 grams

Software

- Advanced, high-level software API included for Microsoft Windows 7 , 8, 8.1, 10, Server 2012 R1/R2, Vista, XP (32-bit/64-bit), VxWorks and Linux (please check latest support versions with sales)
- Labview for Windows operating systems

Physical

- Mini PCI Express interface card (30mm x 50.95 mm x 4.7mm)
- Operation Temperature range -40°C to +85°C
- Storage Temperature range -50°C to+100°C
- Relative humidity: 5 up to 95% (non-condensing)

Ordering information

RAR-MPCIE-22	ARINC 429 INTELLIGENT 1 LANE MINI PCI EXPRESS CARD WITH 2 RX, 2 TX CHANNELS, 4 DISCRETES, IRIG-B, ROHS COMPLIANT, NO CABLE
RAR-MPCIE-42	ARINC 429 INTELLIGENT 1 LANE MINI PCI EXPRESS CARD WITH 4 RX, 2 TX CHANNELS, 4 DISCRETES, IRIG-B, ROHS COMPLIANT, NO CABLE
RAR-MPCIE-44	ARINC 429 INTELLIGENT 1 LANE MINI PCI EXPRESS CARD WITH 4 RX, 4 TX CHANNELS, 4 DISCRETES, IRIG-B, ROHS COMPLIANT, NO CABLE
RAR-MPCIE-84	ARINC 429 INTELLIGENT 1 LANE MINI PCI EXPRESS CARD WITH 8 RX, 4 TX CHANNELS, 4 DISCRETES, IRIG-B, ROHS COMPLIANT, NO CABLE
RAR-MPCIE-73J	ARINC 429 INTELLIGENT 1 LANE MINI PCI EXPRESS CARD WITH 7 RX, 3 TX CHANNELS, 1 RX, 1 TX ARINC 717 CHANNELS, 4 DISCRETES, IRIG-B, ROHS COMPLIANT, NO CABLE
RCONRARMPCIER	10" CABLE WITH RUGGED 37 POSITION CONNECTOR TO A 37-PIN D-SUB FEMALE PC PANEL MOUNT CONNECTOR, WITH D-SUB MATING CONNECTOR, ROHS COMPLIANT
RCONRARMPCIE	10" CABLE WITH 50 POSITION SLIM STACK CONNECTOR TO A 37-PIN D-SUB FEMALE PC PANEL MOUNT CONNECTOR, WITH D-SUB MATING CONNECTOR, ROHS COMPLIANT
RCONMPCIER	RUGGED 37 POSITION CONNECTOR WITH 18" FLYING LEADS

Optional Hardware

K suffix	Acrylic conformal coated
M suffix	Acrylic coated with rugged high retention I/O connector
R suffix	Rugged high retention I/O connector
L suffix	Standard transition cable included
V suffix	Rugged high retention transition cable included
S suffix	Acrylic conformal coated and standard transition cable included
X suffix	Acrylic conformal coated and rugged high retention transition cable included
1155-035-8	PCI Express 1 Lane carrier card with 4 Mini PCI Express slots

Optional Software

CEI-LV	LabVIEW support for ARINC 429

WE INNOVATE. WE DELIVER. YOU SUCCEED.

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02/17 A-DS-5163