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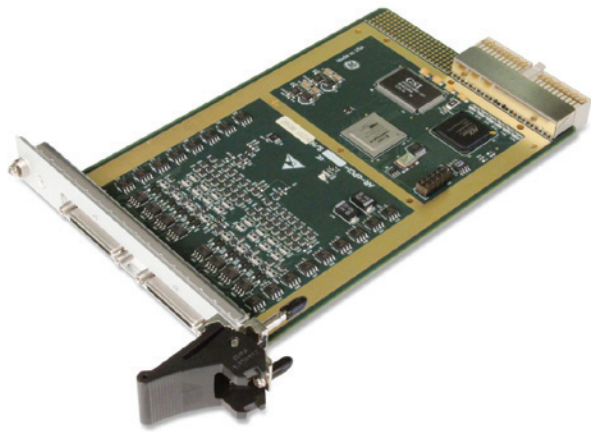
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GE
Intelligent Platforms



RAR-cPCI

RoHS Compliant, High Density Intelligent ARINC Interface for cPCI

Features

- Up to 16 Rx and 16 Tx ARINC 429 Channels
- High performance, high density interface with large buffers
- Easy to use BusTools/ARINC™ Windows®-based GUI bus analyzer available
- Advanced, high-level software API included for Windows® XP, 2000, NT, Linux® Kernel, VxWorks®, and Visual Basic
- Supports maximum data throughout on all channels simultaneously
- 16 bi-directional discretes that handle avionics-level voltages
- Independent, software-programmable bit rates for all channels
- Error injection/detection
- Support for ARINC 573 and 717
- IRIG-B Receiver/Generator optional
- Supports 66 MHz, 32-bit PCI operation
- 3U CompactPCI form factor
- Front panel OR backplane I/O configurations

Hardware

Available in a range of configurations to match your needs, the 32 channel RAR-cPCI provides complete, integrated databus functionality for ARINC 429, ARINC 575 and selected 2-wire 32-bit protocols in the CompactPCI form factor. It supports maximum data throughput on all channels while providing on-board message scheduling, label filtering, multiple buffering options, time-tagging, error detection and avionics-level I/O discretes, with support for either 33 MHz or 66 MHz 32 bit cPCI interfaces. Configurations with support for ARINC 717, ARINC 573 and IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL) support are optional. Dual-Mode functionality of the ARINC 717/573 channel programmatically supports either HBP (Harvard Bi-Phase) or BPRZ (Bi-Polar Return to Zero) signaling formats across a wide range of Bit Rate/Subframe combinations. Ruggedized configurations with extended operating temperatures are optional.

Software

GE Intelligent Platforms' software tools and solutions significantly reduce the time required to integrate various avionics protocols into your application. Included with the RAR-cPCI is our flexible, high-level API (Application Programming Interface) support for Windows XP, 2000, NT, Linux, and Visual Basic. This powerful API supports multiple cards, and is compatible with GE Intelligent Platforms' API support on PCI, PC/AT and PC/104 platforms. Optional Software includes LabVIEW support and BusTools/ARINC, our easy-to-use, Windows-based GUI solutions for ARINC 429 analysis, simulation and data logging. LabVIEW support is optional.

Architecture

The RAR-cPCI features include independent, software programmable data rates and parity, error detection and automatic transmit channel slew rate adjustment. All channels operate independently, with 2 MBytes of on-board RAM providing large transmit and receive data buffers. Discretes functioning as inputs support TTL to avionics level voltages, while discretes functioning as outputs can switch up to 0.5 ampere, with open drain outputs enhancing application flexibility.

Data Handling

On-board firmware, large data buffers 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 supported 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 very latest data.

RAR-cPCI – RoHS Compliant, High Density Intelligent ARINC Interface for cPCI

Specifications

ARINC 429 Receive Channels
- Number of channels: up to 16
- Data rates: 12.5 KHz or 100 KHz or 5KHz to 150 KHz
- Standard input levels: ±6.5 to ±13 V (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 16
- Data rates: 12.5 KHz or 100 KHz or 5 KHz to 150 KHz programmable.
- Automatic slew rate adjustment
- Standard output level: ±10 V (A to B)
- Parity: odd, even or none
- Error injection option: parity, gap, high or low bit count

Software
- API: Includes high-level API for Windows XP, 2000, Me, NT, Linux, VxWorks and Visual Basic.
- GUI: Optional BusTools/ARINC GUI bus analyzer

Physical/Environmental
- 3U CompactPCI
- Standard operating temperature range: 0°C to +70°C
- Relative humidity: 5 to 90% (non-condensing)
- Optional, ruggedized: extended operating temperature range (-40°C to +85°C) available

Bi-Directional Discretes
- Number of avionics-level discretes: 16
- As Input: Supports monitoring of TTL/CMOS/ Avionics-level voltages (open/gnd or high/low).
- As Output: Low side switches, each capable of sinking 0.5 Ampere.

Optional Configurations
- A wide range of ARINC 429 Rx/Tx and ARINC 573/717 combinations
- Optional ruggedized -40°C to +85°C operating temperature range
- Optional conformal coating
- Optional IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)
- Front panel or backplane I/O configurations

Power (typical)
- +3.3 VDC: 500 mA
- +5 VDC: 50 mA
- +12 VDC: 100 mA (no loads)
- -12 VDC: 100 mA (no loads)

PCI Signalling Voltage Compatibility
- Universal Signaling (3.3 V or 5 V)
- 66/33 MHz PCI bus operation

Ordering Information

RAR-cPCI-22	ARINC 429 cPCI Card with 2Rx, 2Tx Channels and 16 discretes
RAR-cPCI-44	ARINC 429 cPCI Card with 4Rx, 4Tx Channels and 16 discretes
RAR-cPCI-88	ARINC 429 cPCI Card with 8Rx, 8Tx Channels and 16 discretes
RAR-cPCI-1608	ARINC 429 cPCI Card with 16Rx, 8Tx Channels and 16 discretes
RAR-cPCI-0816	ARINC 429 cPCI Card with 8Rx, 16Tx Channels and 16 discretes
RAR-cPCI-1616	ARINC 429 cPCI Card with 16Rx, 16Tx Channels and 16 discretes
RAR-cPCI-1508J	ARINC 429 cPCI Card with 15Rx, 8Tx Channels, 1 ARINC 573/717 Dual-Mode channel and 16 discretes
-H suffix	6U front panel
-B suffix	No front panel
-R suffix	Ruggedized and extended temp
-C suffix	Conformal coated, conductive cooling, ruggedized, extended temp
-K suffix	Conformal coated (may be added to other configurations except -C)
-W suffix	IRIG-B synchronization In/Out (DC or AM/TTL)

Related Products

BT-ARINC	ARINC 429 Bus Analysis & Data Logging software for Windows
CEI-LV	Optional LabVIEW support for ARINC 429 (expected end Q2 2008)
LV-x30	Optional LabVIEW RT support for ARINC 429 (expected end Q2 2008)

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.

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