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GE
Intelligent Platforms



CEI-530

RoHS ARINC Interface for PCI

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, Me, NT, 98, 95, Linux Kernel, VxWorks,and Visual Basic
- Supports maximum data throughput on all channels simultaneously
- 16 input and 16 output discretes that handle 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 optional
- Supports 66MHz, 32-bit PCI operation
- PCI-X compatible

Hardware

Available in a range of configurations to match your needs, the 32 channel CEI-530 provides complete, integrated databus functionality for ARINC 429, ARINC 575 and selected 2-wire, 32-bit protocols. The CEI-530 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, with support for either 33 MHz or 66 MHz PCI interfaces. Configurations with support for ARINC 717, ARINC 573, and IRIG-B Receiver (AM or /DC/TTL) and Generator (DC/TTL) support are optional. The IRIG-B DC level signal can be utilized to synchronize time stamps across multiple boards. Several CEI-530 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.

Software

GE Intelligent Platforms' software tools and solutions significantly reduce the time required to integrate ARINC 429 and other avionics protocols into your application. Included with the CEI-530 is our flexible, high-level, API (Application Programming Interface) support for Windows XP, 2000, NT, Me, 98, 95, VxWorks and Linux Kernel Versions 2.4 and 2.6. This powerful API supports multiple cards, and is compatible with GE Intelligent Platforms API support on PCI, PC/AT, PC/104-Plus, CompactPCI and PCMCIA platforms. Optional software includes LabVIEW support and BusTools/ARINC, GE Intelligent Platforms' easy-to-use, Windowsbased GUI solution for ARINC 429 analysis, simulation and data logging.

Architecture

CEI-530 features include independent, software programmable data rates and parity, error detection and automatic transmit channel slew rate adjustment. 2 MBytes of on-board RAM provide large transmit and receive data buffers. All channels operate independently. Discretes support TTL to 16 avionics-level inputs and 16 outputs while open-collector outputs enhance 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 bufer 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.

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CEI-530: RoHS ARINC Interface for PCI

Specifications

ARINC 429 Receive Channels
- Number of channels: up to 16
- 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 16
- Data rates: 12.5 KHz, 100 KHz or 5 KHz to 150 KHz programmable
- Automatic slew rate adjustment
- Output level: ±10 VDC typical (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, 98, 95, Linux, VxWorks and Visual Basic (please check latest support versions with sales)
- GUI - Optional BusTools/ARINC GUI bus analyzer

Physical/Environmental
- PCI short card (5.0 in. x 4.2 in.)
- Operating temperature range: 0 to +70° C
- Extended operating temperature range available

Discrete Inputs and Outputs
- Number of inputs: 16
- Supports monitoring of TTL/CMOS/Avionics level voltages
- Number of outputs: 16
- Low side switches, each capable of sinking 0.5 ampere

Optional Configurations
- A wide range of Rx/Tx combinations
- ARINC 573/717 Bi-Polar RZ and Harvard Bi-Phase
- IRIG-B

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

PCI Signaling Voltage Compatibility
- Universal signaling (3.3V or 5V)
- 66/33 MHz PCI bus operation
- Compatible with PCI-X 1.0 and PCI slots

Ordering Information

CEI-530-22
ARINC 429 High Density PCI card with 2 Rx, 2 Tx channels, and 16 discretes

CEI-530-44
ARINC 429 High Density PCI card with 4 Rx, 4 Tx channels, and 16 discretes

CEI-530-88
ARINC 429 High Density PCI card with 8 Rx, 8 Tx channels, and 16 discretes

CEI-530-1616
ARINC 429 High Density PCI card with 16 Rx, 16 Tx channels, and 16 discretes

CEI-530-1608
ARINC 429 High Density PCI card with 16 Rx, 8 Tx channels, and 16 discretes

CEI-530-0816
ARINC 429 High Density PCI card with 8 Rx, 16 Tx channels, and 16 discretes

CEI-530-22J
High Density PCI card with 2 Rx,/2 Tx channels of ARINC 429, and 1 Rx,/1Tx ARINC 717/573 Dual Mode, and 16 discretes

CEI-530-44J
High Density PCI card with 4 Rx,/4 Tx channels of ARINC 429, and 1 Rx,/1Tx ARINC 717/573 Dual Mode, and 16 discretes

CEI-530-88J
High Density PCI card with 8 Rx,/8 Tx channels of ARINC 429, and 1 Rx, 1Tx ARINC 717/573 Dual Mode, and 16 discretes

CEI-530-1515J
High Density PCI card with 15 Rx,/15 Tx channels of ARINC 429, and 1 Rx, 1Tx ARINC 717/573 Dual Mode, and 16 discretes

-R suffix
Ruggedized, ext temp

-W suffix
IRIG Timing

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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