



# CEI-430/RCEI-430A

## High Density ARINC 429 Intelligent Interface for PC/104-Plus

### Hardware

Available in a range of configurations, the CEI-430 provides complete, integrated databus functionality for up to 24 channels of ARINC 429/575 along with ARINC 717/573 on a PC/104-Plus platform. Also available are 24 Rx and 4 Tx ARINC 429/575 along with 1 Rx and 1Tx ARINC 717/573 on the RCEI-430A. The CEI-430/RCEI-430 supports maximum data throughput on all 24 ARINC 429 channels while providing on-board message scheduling, label filtering, multiple buffering options, independent software programmable data rates and parity, automatic transmit channel slew rate adjustment, time-tagging and error detection. Support for ruggedized/extended operating temperatures, ARINC 717/573, and IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL) support is optional. The IRIG-B DC output signal can be used to synchronize time stamps across multiple boards. All ARINC channels operate independently.

Available in PC/104-Plus (with ISA bus pass-thru) or PCI-104 (no pass-thru), the CEI-430/RCEI-430A utilizes the PCI bus for all host communications. The CEI-430/RCEI-430A offers up to 16 bi-directional avionics-level discretes and 2 MB of on-board RAM.

Several configurations offer combinations of ARINC 429 channels along with ARINC 717/573 Dual-Mode functionality. Abaco's Dual-Mode functionality programmatically supports either HBP (Harvard Bi-Phase) or BPRZ (Bi-Polar Return to Zero) across a wide range of Bit Rate/Subframe combinations.

### Software

Abaco software tools and solutions significantly reduce the time required to integrate ARINC 429 and other avionics protocols into your application. Included with the CEI-430/RCEI-430A is our high-level API support for for Microsoft Windows 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, and XP (32-bit/64-bit), Linux Kernel, VxWorks. This powerful API supports multiple cards, and is compatible with API support on PCI, PC/AT, PC/104, PC/104-Plus, CompactPCI and PCMCIA platforms. LabVIEW support is optional.

### Data Handling

Large data buffers and our 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.

### FEATURES:

- PC/104-Plus or PCI-104 form factors
- Up to 12 Rx and 12 Tx ARINC 429 channels on CEI-430
- 24 Rx and 4 Tx ARINC 429 Channels are available on the RCEI-430A-2404
- 1 Rx, 1 Tx channels of Dual-Mode ARINC 717/573 available
- High performance, high density interface with large buffers
- Bi-directional avionics-level and RS-485 discretes
- Ruggedized, extended temp configurations optional
- Advanced, high-level software API included for Microsoft® Windows® 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, and XP (32-bit/64-bit), Linux® Kernel, VxWorks®
- Supports maximum data throughput on all channels simultaneously
- Independent, software-programmable bit rates for all channels
- Fully independent channel operation
- IRIG-B Receiver/Generator optional

## CEI-430/RCEI-430A High Density ARINC 429 Intelligent Interface for PC/104-Plus

### Specifications

#### ARINC 429 Receive Channels

- Number of channels: up to 12 on CEI-430 and 24 on RCEI-430A
- Data rates: 12.5 KHz, 100 KHz or 5 KHz to 150 KHz programmable
- Standard input levels:  $\pm 6.5$  to  $\pm 13$  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 12 on CEI-430 and up to 4 on RCEI-430A
- Data rates: 12.5 KHz, 100 KHz or 5 KHz to 150 KHz programmable
- Automatic slew rate adjustment
- Output level:  $\pm 10$  VDC (A to B)
- Parity: odd, even or none
- Error injection option: parity, gap, high or low bit count

#### ARINC 717/573 Channels

- Number of channels: 1 Rx, 1 Tx (only in "J" configurations)
- Dual-Mode: supports either HBP (Harvard Bi-Phase) or BPRZ (Bi-Polar Return to Zero)
- Bit rate: 768, 1536, 3072, 6144, 12,288 or 24,576 bits/sec
- Subframe size: 64, 128, 256, 512, 1024 or 2048 words
- Word size: 12 bits

### Software

- API
  - Includes high-level API for Windows 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, and XP (32-bit/64-bit), Linux and VxWorks.
  - Source code API library provided (CEI-x30-SW)
- LabVIEW - Optional CEI-LV support is available

### Bi-directional Discretes

- Number of avionics-level discretes:
  - -22 and -44 configurations: 4
  - All other configurations: 16
- Number of RS-485 discretes:
  - Not available on -22, -44 and -2404 configurations
  - All other configurations: 4

### PCI Signal Compatibility

- Universal PCI Signaling
- 33 MHz PCI bus operation

### Physical

- Standard PC/104-Plus card size
- Conforms to all standard dimensions

### Environmental

- 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

### Optional Configurations

- A range of ARINC 429 Rx/Tx and ARINC 717 combinations
- Optional ruggedized, -40°C to +85°C operating temperature range (requires specifying of slot location)
- Optional conformal coating
- Optional IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)
- PC/104-Plus (with ISA pass-thru connector) or PCI-104 (no pass-thru) form factors

### Ordering information

CEI-430-22	ARINC 429 Intelligent PC/104-Plus card with 2 Rx, 2 Tx channels; 4 avionics-level discretes
CEI-430-44	ARINC 429 Intelligent PC/104-Plus card with 4 Rx, 4 Tx channels; 4 avionics-level discretes
CEI-430-88	ARINC 429 Intelligent PC/104-Plus card with 8 Rx, 8 Tx channels; 16 avionics-level discretes, 4 RS-485 discretes
CEI-430-1212	ARINC 429 Intelligent PC/104-Plus card with 12 Rx, 12 Tx channels; 16 avionics-level discretes, 4 RS-485 discretes
CEI-430-44J	Intelligent PC/104-Plus card with 4 Rx, 4 Tx ARINC 429 channels and 1 Rx, 1 Tx Dual-Mode ARINC 717 channels; 16 avionics-level discretes, 4 RS-485 differential discretes
CEI-430-88J	Intelligent PC/104-Plus card with 8 Rx, 8 Tx ARINC 429 channels and 1 Rx, 1 Tx Dual-Mode ARINC 717 channels; 16 avionics-level discretes, 4 RS-485 differential discretes
CEI-430-1111J	Intelligent PC/104-Plus card with 11 Rx, 11 Tx ARINC 429 channels and 1 Rx, 1 Tx Dual-Mode ARINC 717 channels; 16 avionics-level discretes, 4 RS-485 differential discretes
RCEI-430A-2404	ARINC 429 Intelligent PC/104-Plus card with 24 Rx, 4 Tx channels; 16 avionics-level discretes
RCEI-430A-2404J	ARINC 429 Intelligent PC/104-Plus card with 24 Rx, 4 Tx channels; 1 Rx 1Tx ARINC 717 channels 16 avionics-level discretes
-R suffix	Ruggedized, extended operating temperature range option
-W suffix	IRIG-B Receiver (AM or DC/TTL)/Generator (DC/TTL) option
-E suffix	PCI-104 configuration (no ISA pass-thru connector)
-K suffix	Conformal coated

### Optional Software

BT-ARINC Datalogging.	BusTools ARINC Windows GUI software for ARINC Bus Analysis, Simulation and Datalogging.
CEI-DL	ARINC 615-3 Data Loader GUI
CEI-LV	LabVIEW support for ARINC 429

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