GE
Intelligent Platforms

A429-PCMCIA2

ARINC to PCMCIA Interface

Features

- 8 highly configurable channels with concurrent and independent operation. Each channel selectable for:
  - High or Low Speed
- Transmitter
  - Advanced bus scheduling
  - Transmission list synchronization
  - Word level error injection
- Receiver
  - Label/SDI current value table
  - 48-bit 1 µsec time stamp
  - Error detection
- Bus Monitor
  - Filterable sequential buffer
  - Link-list buffer chains
  - 48-bit 1 µsec time stamp
  - Error detection
  - External trigger initiation
- Architecture
  - Host off-loading dsp
  - Large, flexible memory
  - Label and SDI operations
  - System event interrupts
- Software Support
  - Complimentary drivers for most operating systems
  - Integrated Avionics Library, including source code

A429-PCMCIA2 interface provides a 4 transmit and 4 receive channel ARINC interface over the PCMCIA backplane. Each channel is software confi gurable for high or low speed (100 k or 12.5 k bits per second) and ARINC 429 or 575 protocol requirements. You can add source lists to any transmit channel. The current value table, local monitor and/or global monitor buffers may fi lter and receive sink data. Either the Label or Label/SDI identify and sort the ARINC data. The on-board DSP controls the fl exible data structures, triggers, interrupts, time stamping and data communications on the 429 bus. You can use three external input triggers for synchronization. The advanced interrupt technology allows real-time event handling by the host processor.

As it receives each 32-bit ARINC 429 data, a 48-bit, 1 µsec time tag time stamps the data word. When placing the receive channel in the monitor mode, a 16-bit status word accompanies the time stamped data. This provides error information regarding each received word.

A transmitter channel allows you to send any number of label sequences on each channel. All transmit channels may also be synchronized for simultaneous transmission. Each transmitted ARINC word has an accompanying control word. The control word implements various error injection capabilities. You can transmit the words in scheduled and/or asynchronous priority methods.

For data bus visualization, recording, and archiving, you can order versions of the A429-PCMCIA2 that support operation with our PASS-3200 and PASS-1000 applications.

Hardware Overview

GE bases the A429 interfaces upon high-speed DSP, programmable logic and dual port RAM. This advanced design delivers a highly reliable hardware platform that is feature rich and user friendly. The 256 kB of dual port RAM allows the host system to access setup, receive, monitor, transmit and change data structures, at any time. Defi nable transmission and receive structures include link list and buffer length sizes. This allows the user to design the data structure optimal for the specifi c application while maintaining an easy to use environment.

A429-PCMCIA2 ARINC to PCMCIA Interface

Specifications

A429 Functionality: Transmitter Function
- Independent channel operations
- Major/Minor frame scheduling
- Priority asynchronous message insertion
- Transmission link buffers
- Synchronous word transmission
- On-the-fl y transmission list
- Error injection
- Programmable interword gap
- 100 kHz or 12.5 kHz transmission speed

Receiver Function
- Current buffer value
- Time stamped received labels
- SDI and Label differentiation
- Label fi lter functions
- 48-bit 1 µsec time stamp
- Multiple triggers and interrupts
- Error detection

Monitor
- Channel sequential monitor
- Global sequential monitor
- Buffer swap notifi cation
- Variable length buffers
- Count detection triggers

Self Test
- Power-up test with status register report
- BIT-DSP and encoder/decoder test
- Run-time health status register
- Loop back Unit Test application

Inputs/Outputs
- External triggers

PCMCIA Functionality
- PCMCIA bus
- D16 transfer modes
- Memory mapped
- Port addressing
- Selectable interrupt request

Interface Connections
- Coupling harness
- I/O box
- DB26F I/O connector

Interface Card Specifications
- Maximum power consumption with 400 ohm transmit loads: 5 V @ 910 mA
- Standard commercial temperature: 0°C to +60°C; ≤ 95% rH non-condensing
- Mechanical: Type II PCMCIA Length 3.38", Height 2.12", Thickness 0.2"

PASS Functionality
- Runs under Windows 95/98/2000/NT/XP
- Analyze, display, and archive data from A429/575 data bus
- Remote connection capability
- Available only with GE hardware in cPCI, PCI, ISA, PC104, PCMCIA and PMC form factors

Software and Documentation Support
- Low-level drivers for most operating systems
- Integrated Avionics Library with source code
- Borland and Microsoft® C Compiler compatible
- Hardware and Integrated Avionics
- Library documentation included on CD. Hard copies of the documentation are available upon request.

Customer Support
- Two-year warranty
- Extended warranties available
- Driver and library upgrades

Configurations

Model Number	Configuration
A429-PCM2-4R4T	Eight Channel ARINC 429 to PCMCIA interface
P32-PCM2-4T4R	PASS-3200 Eight Channel ARINC 429 to PCMCIA interface
P1000-PCM2-8	PASS-1000 Eight Channel ARINC 429 to PCMCIA interface

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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