GE Fanuc
Embedded Systems

CEI-715
Interface for PCMCIA

Features

- Up to 8 Rx, 4 Tx ARINC 429 channels
- Available with ARINC 429, 573, 717, CSDB and ARINC 561 6-wire on same card
- 4 bi-directional avionics-level discretes
- Configuration available with ARINC 429, avionics-level discretes and digital I/O
- Fully independent channel operation
- Type II PC Card (PCMCIA)
- Easy-to-use BusTools/ARINC Windows-based GUI Bus Analyzer available
- ARINC 615 Data Loader GUI available
- High-level Windows XP, 2000, Me, NT, 98, 95, Visual Basic and LabWindows/CVI software API support
- 64-bit, 1 microsecond time-tagging
- Available with ARINC 615 Data Loader and ARINC 615 cabling

The GE Fanuc Embedded Systems CEI-715 is an intelligent, high-density, Type II PC Card (PCMCIA) interface that provides up to 12 fully independent ARINC 429/575 channels, along with up to 4 bi-directional avionics level I/O discretes. Features include programmable data rates and parity, error detection, multiple buffering modes, timetagging and automatic transmit slew rate adjustment. Hardware interrupts are not supported.

Configuration options include selection of channel count, along with a mix of ARINC 429, ARINC 573/717, CSDB and ARINC 561 6-wire protocols.

Software

GE Fanuc Embedded Systems software tools significantly reduce the time required to integrate ARINC protocols and I/O discretes into your portable application. Included with the CEI-715 is high-level API (Application Programming Interface) library support for Windows XP, 2000, Me, NT, 98, 95 and Visual Basic and LabWindows/CVI software development. BusTools/ARINC, GE Fanuc Embedded Systems' Windows-based GUI solution for bus analysis, simulation and data logging, is optionally available. It provides an easy-to-use interface to avionics data. ARINC 615 Data Loader and LabVIEW support are optionally available.

Architecture

The flexible design of the CEI-715 provides a powerful hardware foundation that supports multiple avionic protocols in a single, integrated, portable package. Bi-directional discretes support TTL to avionics-level inputs while open-collector outputs enhance application flexibility.

GE Fanuc Embedded Systems' powerful API libraries provide total flexibility in receiving and generating ARINC bus traffic. API support for the CEI-715 is compatible with the software API on GE Fanuc Embedded Systems' CEI-220/300/420/500/520/600/620 and 820 products for PC/AT, PC/104, PCI, CompactPCI and PMC platforms.

CEI-715 Interface for PCMCIA

Specifications

ARINC 429 Receive Channels
- Number of channels: up to 8
- Baud rates: Programmable 5 KHz to 200 KHz
- Input levels: ± 6.5 to ±13 VDC (A to B)
- Parity: odd, even or none
- Error reporting: parity
- Buffering: 2048 labels per channel

ARINC 429 Transmit Channels
- Number of channels: up to 4
- Baud rates: Programmable 5 KHz to 200 KHz
- Automatic slew rate adjustment
- Output level: ±10 VDC (A to B)
- Parity: odd, even or none
- Buffering: 2048 labels per channel

Receive Channel Buffering
- 2048 labels per channel or merged mode buffer, independently selectable for each channel
- 64-bit, 1 µsecond resolution time-tag with each word

Software
- API – High-level API libraries for Windows XP, 2000, Me, NT, 98, 95, Visual Basic and LabWindows/CVI included
- GUI – Optional BusTools/ARINC GUI bus analyzer
- ARINC 615 Data Loader – Optional GUI
- LabVIEW – Support optional

Physical / Environmental
- Type II PC Card (PCMCIA 2.1 compatible)
- Cabling to 37-pin D-type receptacle connector provided (part number CONCEI-715)
- Operating temperature range: 0 to +40° C
- Extended temperature range available
- Relative humidity: 5 to 90% (non-condensing)

Discrete Inputs/Outputs
- Number of bi-directional lines: 4
- Inputs: support avionics-levels (open/gnd or high/low) and TTL/CMOS
- Outputs: low side switches, each capable of sinking 0.5 ampere

Additional Protocols Supported
- ARINC 573/717 Bi-Polar RZ and Harvard Bi-Phase, (Rx and Tx)
- ARINC 561/568 6-wire receive, (Rx only)
- CSDB, (Rx and Tx)

Power (typical)
- +5 VDC: 250 mA (CEI-715-84)

MTBF
- 304,000 hours at +25° C, ground benign environment

Tools and Solutions

BusTools/ARINC is an easy-to-use, Windows XP/2000/Me/NT/98/95-based ARINC 429 bus analysis, simulation and data monitoring solution that is optionally available on the portable CEI-715 and other GE Fanuc Embedded Systems hardware products. Monitor multiple channels in real-time. Display and enter time-tagged data in hex, binary or engineering units (standard or userdefined). Filter received data by label and/or SDI. View discrete descriptors and user-bit-encoded values. Display historical and real-time charts of individual labels. Use BusTools/ARINC to send multiple messages of varying sizes with automatic ramping. Log all time-tagged data from multiple channels to a single disk file. Replay recorded data on transmit buses.

Ordering Information

CEI-715-22:	ARINC 429 PCMCIA interface with 2 Rx, 2 Tx channels and 0 I/O discretes
CEI-715-42:	ARINC 429 PCMCIA interface with 4 Rx, 2 Tx channels and 2 I/O discretes
CEI-715-44:	ARINC 429 PCMCIA interface with 4 Rx, 4 Tx channels and 4 I/O discretes
CEI-715-84:	ARINC 429 PCMCIA interface with 8 Rx, 4 Tx channels and 4 I/O discretes
CEI-715-M:	PCMCIA interface with 2 Rx/2 Tx channels of ARINC 429; 1 Rx/1 Tx of ARINC 573/717 HBP/BPRZ or 1 Rx/1 Tx of CSDB; 1 Rx of ARINC 561 6-wire; and 4 bi-directional I/O discretes
CEI-715-41-D:	ARINC 429 PCMCIA interface with 4 Rx, 1 Tx channels; 4 bi-directionsl avionics-level discretes; 4 digital (TTL) inputs; and 12 digital (TTL) outputs

Optional Software

BusTools/ARINC:	Bus Analysis and Simulation software for Windows XP, 2000, Me, NT, 98 and 95
CEI-DL:	ARINC 615-3 Data Loader GUI
CEI-LV:	LabVIEW support for ARINC 429

About GE Fanuc Embedded Systems

GE Fanuc Embedded Systems is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Embedded Systems has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanucembedded.com.

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Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:

www.gefanucembedded.com