ICS-8500

Rugged FPDP II Receiver/Transmitter PMC Module

Features

- Rugged FPDP/FPDP II Receiver/ Transmitter PMC
- 8 Mbyte Buffer Memory
- FPDP I/O via PMC P4 Connector
- PCI 2.2 64-bit, 66 MHz PCI interface
- FPDP II 400 Mbyte/s interface
- Software-controlled channel selection and "corner turning" capabilities
- Continuous and One-shot buffer modes of data input (ICS-8500 Receiver)
- Continuous, One-shot and Loop modes of data output (ICS-8500 Transmitter)
- Continuous, One-shot buffer modes of data input (ICS-8500 Receiver)
- Continuous, One-shot and Loop modes of data output (ICS-8500 Transmitter)
- Windows®, Linux® and VxWorks® device drivers

The ICS-8500 is a rugged FPDP/FPDP II Receiver/Transmitter PMC module available in convection- and conduction-cooled versions. It offers functionality similar to the popular ICS-500-R and ICS-500-T PMC products; however, the ICS-8500 is configurable under software control as either a receiver or transmitter. The module includes a 400 Mbyte/s FPDP II interface via the P4 connector, an 8 Mbyte swing buffer and a PCI 2.2 64-bit, 66 MHz PCI interface. When communicating with a transmitter or receiver that is not FPDP II capable, it will revert to ANSI/VITA 17 FPDP operation, providing transfer rates of up to 160 Mbyte/s.

In receive mode, the board provides both Receive and Receive Master capabilities. A key feature of the product is its ability to perform the corner turning function. This software-enabled feature reorders multi-channel data from channel ordering by time to time ordering by channel. The feature is commonly required in sensor processing systems and is usually performed by digital signal processing (DSP) elements. By transferring this function to the dedicated hardware located on the

ICS-8500, substantial additional DSP power is made available for other activities. The ICS-8500 is ideally suited as an FPDP receiver when partnered with the ICS-8145, 16-channel high frequency rugged A/D product.

In transmit mode, the board provides an FPDP/TM interface. In addition to a continuous data transmit capability, a Loop mode of operation is available, in which a fixed length of data equal to the programmed buffer length is written to both banks of swing buffer. When triggered, this data is repetitively generated and transmitted by the FPDP output interface.

Designed for sensor processing applications where a high data rate and/or a large number of channels is required, the ICS-8500 is ideal as a data buffer between FPDP and PCI for applications in Radar, Sonar, Digital Receivers, Transient Analysis, experiments in Atomic Physics, Ultrasound, and Test and Measurement.

Device drivers for VxWorks, Linux and Windows are available.

ICS-8500 Rugged FPDP II Receiver/Transmitter PMC Module

Specifications

General
- IEEE P1386.1 compatible PCI Mezzanine Card
- Compatible with ANSI/VITA 20 conduction-cooled PMC standard
- Linux, Windows and VxWorks software drivers
- Total Power Consumption < 11W
  1.7A at +3.3V
  1.0A at +5V

Onboard Resources
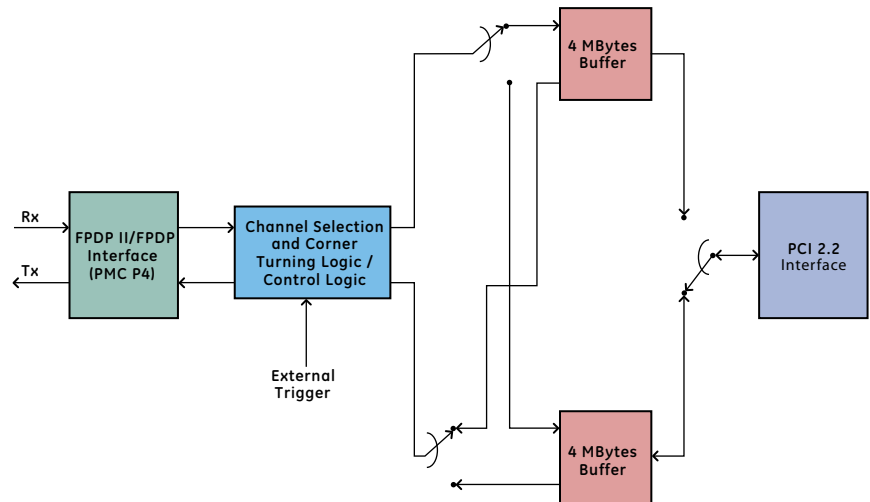- 8 MByte Memory Buffer

I/O Specifications
- PCI 2.2 64-bit, 66 MHz PCI bus interface
- FPDP/FPDP II interface via P4 connector

Environmental
- Five build levels available.
  Air- and conduction-cooled versions
- Up to -40 °C to -85 °C operating temperature

Block Diagram

Ordering Information

ICS-8500A-x00: Ruggedization level x

DRV-8500-VXW: Software Device Driver for VxWorks

DRV-8500-LX: Software Device Driver for Linux

DRV-8500-WIN: Software Device Driver for Windows

Level 1-3 correspond to convection- (air) cooled boards. Levels 4 and 5 are conduction cooled versions.

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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