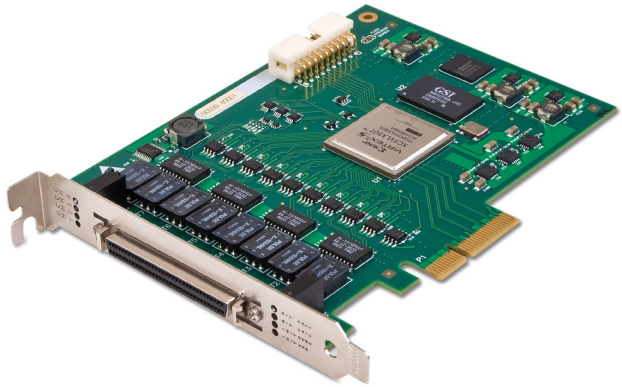
GE
Intelligent Platforms



RPCIE-1553

High Density PCI Express Interface

Features

- 1, 2 or 4 dual-redundant MIL-STD-1553A/B Notice II channels
- Native 4 lane PCI Express interface (no bridge)
- Simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor
- High-level API for Microsoft® Windows® 7 (32 and 64bit), Vista, XP, 2000, NT, VxWorks®, Linux, LynxOS, QNX and Solaris included
- Multi-function and dual-function versions
- Optional IRIG-B receiver/generator
- 64 bit, 25ns message time tagging (virtually unlimited time stamping)
- 18 bi-directional Avionics discretes
- Complete message programmability
- Flexible message status/interrupt generation
- I/O triggering and error injection/detection
- Transition cabling to 1553 cable jacks included
- Optional conformal coating
- Supportable throughout program lifetime with Product Lifetime Management (PLM) program

GE Intelligent Platforms' RPCIE-1553 is the latest generation of performance and flexibility for MIL-STD-1553A/B Notice II on a PCI Express module. Available in -40°C up to +70°C temperatures with one, two or four dual-redundant channels, the RPCIE-1553 includes advanced API (Application Programming Interface) software that reduces application development time.

Standard features include IRIG-B signal Receiver/Generator with GPS synchronization, transformer coupling, 66 MHz, PCI bus support, 1 Mbyte of RAM per channel, 64-bit, 25 nanosecond message timetagging, triggers, extensive BC & RT link-list structures, error injection/detection, avionics level discretes, automatic/manual RT Status Bit and Mode Code responses, along with advanced BC functionality. Variable voltage output is optionally available. The RPCIE-1553 Bus Monitors provide unparalleled error detection and 100% monitoring of fully loaded buses.

Multi-function Interfaces

RPCIE-1553 multi-function interfaces are easily configured to operate with simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor functionality.

Dual-function Interfaces

Dual-function RPCIE-1553 interfaces have all the features and functionality of the multifunction versions, with either Bus Monitor and Bus Controller, or Bus monitor and up to 31 Remote terminals.

Software

GE provides our advanced 1553 API in source code, along with support for Windows 7 (32 and 64bit), Vista, XP, 2000, NT, VxWorks, Linux, LynxOS, QNX and other operating systems. To access 1553 functionality without software development, BusTools/1553, GE's MIL-STD-1553 bus analysis, simulation and data logging/monitoring solution is available.

RPCIE-1553 – High Density PCI Express Interface

Specifications

Physical
- PCI Express Interface Card (4.376 x 6.60 inches)

Environmental
- Standard operating temperature range: -40°C up to +70°C
- Relative humidity: 5 to 95% (non-condensing)
- Optional conformal coating configurations

Software Support
- API - High-level libraries with source code included for Windows 7 (32 and 64bit), XP, 2000, Me, NT, 98, 95, VxWorks, Linux, LynxOS and Solaris
- GUI - Optional BusTools/1553 GUI Bus Analysis, Simulation & Data Logging software (multi-function boards only)
- IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)

Connections
- Transformer coupling
- I/O triggers; 18 avionics-level discretes
- Transition cabling to 1553 cable jacks included

Multi-function Operational Modes
- Simultaneous BC, 31 RTs and BM

Dual-function Operational Modes
- BC and BM, or BC and 31RTs

Power (4 channels at 75% duty cycle)
- +12 VDC @ 200mA (typ.)
- +3.3 VDC @ 2A (typ.)
- 5.9 W power dissipated on board

On-board Shared RAM
- 1 Mbyte (per dual-redundant channel)

Optional Configurations
- 1, 2 or 4 dual-redundant channels
- 1, 2 or 4 Dual or Multi-function channels
- Optional conformal coating
- Optional Direct coupling

Contact factory for custom requirements

Descriptions

Bus Controller
- Programmable control over:
  - Major and minor frame content and timing inter-message gap times
  - Response time-out and late response
- Modify messages, data or setup while card is running
- Insert aperiodic messages into a running BC list
- "Oneshot" mode for simplified BC operation
- Conditional message sequencing based on real-time message data or status
- Selectable interrupt generation and status messages on full range of system conditions or all detected errors
- Full error detection
  - Invalid word
  - Bit count error
  - High word
  - Low word
  - Inverted sync
  - Manchester
  - Late response
  - Early response
  - No response
  - Incorrect RT address
  - Parity error
- Extensive programmable error injection (on a per word basis)
- Synchronize BC operation to external time source

Remote Terminal
- Multiple RT simulation (up to 31 RTs)
- Programmable error injection (on a per word basis)
- Modify data, status words or setup while card is running
- Programmable message content (linked message buffers)
- Selectable interrupts upon multiple conditions
- RT Map Monitoring

Bus Monitor
- Capture 100% fully loaded bus traffic with:
  - Time-tagging
  - Word status
  - Error status
  - Message status
- Interrupts can be selected by RT / SA / WC
- Extensive filtering and triggering options
  - By individual RT/subaddress
  - Transmit , receive or broadcast mode codes – Internal or external triggering
  - Trigger output on user specified data
- Real-time bus playback with RT edit mode
- IRIG/GPS synchronization

Ordering Information

RPCIE-1553-G2-1MW	MIL-STD-1553 multi-function, PCI Express interface, single dual-redundant channel, 32-bit FW, variable voltage, with IRIG-B/G
RPCIE-1553-G2-1DAW	MIL-STD-1553 dual-function, PCI Express interface, single dual-redundant channel, 32-bit FW, fixed voltage, with IRIG-B/G
RPCIE-1553-G2-2MW	MIL-STD-1553 multi-function, PCI Express interface, two dual-redundant channel, 32-bit FW, variable voltage, with IRIG-B/G
RPCIE-1553-G2-2DAW	MIL-STD-1553 dual-function, PCI Express interface, two dual-redundant channel, 32-bit FW, fixed voltage, with IRIG-B/G
RPCIE-1553-G2-4MW	MIL-STD-1553 multi-function, PCI Express interface, four dual-redundant channel, 32-bit FW, variable voltage, with IRIG-B/G
RPCIE-1553-G2-4DAW	MIL-STD-1553 dual-function, PCI Express interface, four dual-redundant channel, 32-bit FW, fixed voltage, with IRIG-B/G
-K suffix	Conformal coating

Optional Software

BT-1553	MIL-STD-1553 Bus Analysis & Data Logging software for Windows (multi-function boards only)
LV-1553	Lab/View support for MIL-STD-1553

For detailed information including systems options contact GE Intelligent Platforms

About GE Intelligent Platforms

GE Intelligent Platforms is a General Electric (NYSE: GE) company, headquartered in Charlottesville, VA and part of GE Energy Management. The company's Military/Aerospace business, headquartered in Huntsville, AL, and Towcester, England, provides one of the industry's broadest ranges of high performance, rugged, SWaP-optimized embedded computing platforms. Backed by programs that provide responsive customer support and minimize long term cost of ownership for multi-year programs, GE's solutions are designed to help customers minimize program risk and cost, and to speed time-to-market. For more information, visit defense.ge-ip.com.

GE Intelligent Platforms Contact Information

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defense.ge-ip.com/avionics

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