GE
Intelligent Platforms

EPMC-1553-8
High Density PMC Module

Features

- 8 Independent MIL-STD-1553 Notice II Dual Redundant Channels
- All configurations are multi-function with simultaneous Bus Controller, Remote Terminal(s) and Bus Monitor
- Configuration options - either single RT or 31 RT
- CORE-API provided in source code with support for Windows and VxWorks
- Front panel or rear (P14) I/O options
- Optional IRIG-B receiver/generator
- 45-bit, microsecond time-tagging
- Complete message programmability
- Hardwired RT addressing
- Utilizes GE Intelligent Platforms RT Validated CORE-1553 protocol engine
- Flexible message status/interrupt generation
- I/O triggering
- Transition cabling to 1553 cable jacks included with front panel versions
- Commercial, ruggedized, extended temperature or conductively cooled configurations available

GE Intelligent Platforms EPMC-1553-8 is the first PMC (PCI Mezzanine Card) module to offer up to 8 dual redundant MIL-STD-1553B Notice II channels. Available in commercial, ruggedized and conductively cooled versions with one, two, four or eight dual-redundant channels, the EPMC-1553-8 includes advanced API (Application Programming Interface) software that reduces application development time.

Standard features include:
- Transformer coupling
- 128 Kbytes of RAM per channel
- 45-bit message time-tagging
- Triggers
- 8 bi-directional avionics-level discretes
- 8 bi-directional RS-485 differential discretes
- Support for 66 or 33 MHz PCI and PCI-X bus operation
- Automatic/manual RT Status Bit and Mode Code responses
- Programmable or hardwired RT address lines (with 1760 startup time and busy bit set) along with advanced BC functionality.

An optional IRIG-B signal Receiver/Generator with GPS synchronization and multiple configuration options is available.

Multi-function Interfaces

All EPMC-1553-8 interfaces provide simultaneous Bus Controller, Remote Terminal(s) and Bus Monitoring functionality.

Single or 31 Remote Terminal Support

Configuration options for either single (-T) or 31 (-M) RTs are available.

Software

The EPMC-1553-8 is provided with our advanced CORE-API software in easily portable source code, along with support for Windows XP (32-bit), 2000 and VxWorks. Contact factory for Linux or Integrity O/S support.

Tools for MIL-STD-1553 bus analysis, simulation, and data logging/monitoring are available separately with the QPCI-1553 card with BusTools GUI.

The EPMC card does not support BusTools GUI.

EPMC-1553-8 – High Density PMC Module

Specifications

Physical
- PMC Mezzanine Card (74 mm x 149 mm without bezel)
- Standard configuration has front panel I/O

Environmental
- Standard operating temperature range: 0°C to +55°C
- Relative humidity: 5 to 90% (non-condensing)
- Optional ruggedized, extended temp and conductively cooled configurations

Software Support
- CORE-API library in source code provided with support for Windows XP (32-bit), 2000, VxWorks and Linux. Contact factory for Integrity O/S support.

Connections
- Transformer coupling only
- I/O triggers
- 8 bi-directional avionics-level and 8 bi-directional RS-485 differential discretes
- Front panel (SCSI-III) or optional P14 I/O connections
- Transition cabling to 1553 cable jacks included on front panel configurations

Operational Modes
- All configurations provide simultaneous BC, RT and BM
- Available in single RT (-T) or 31 RT (-M) configurations

Power (8 channels at 75% duty cycle)
- +5 VDC @ 2.8 A (typ.)
- 10 W power dissipated on board

On-board Shared RAM
- 128 Kbyte (per dual-redundant channel)

PCI Signal Compatibility
- Universal (5V or 3.3V)
- Supports 66 or 33 MHz PCI bus operation
- PCI-X compatible

Configuration Options
- 8 dual-redundant channels
- Front or P14 I/O
- Ruggedized
  - All components rated to -40°C to +85°C or better
  - Up to +60°C in free air @ 75% duty cycle, all 8 channels
  - Up to +70°C with 100 ft/min air @ 75% duty cycle, all 8 channels
- Ruggedized, VITA compliant conductive cooling -40°C to +71°C rail temp @75% duty cycle, all 8 channels
- Conformal coating
- IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)

Description

Bus Controller
- Programmable control over
  - Major and minor frame content and timing
  - Intermessage gap times
  - Response time-out and late response
  - Multiple BC retry
- Modify messages, data or setup while card is running
- Insert aperiodic messages into a running BC list
- "Oneshot" mode for simplified BC operation
- Selectable interrupt generation and status messages
  - Full range of system conditions
  - All detected errors
- Error detection
  - Bit count error
  - Inverted sync
  - High word
  - Incorrect RT address
  - Low word
  - Parity error

Remote Terminal
- Available with support for either single or 31 RTs
- Utilizes RT Validated CORE-1553 IP
- Modify data, status words or setup while card is running
- Programmable message content (linked message buffers)
- Interrupts can be generated on a per message basis upon End of Message and error conditions

Bus Monitor
- Capture bus traffic with:
  - Time-tagging
  - Error status
  - Word status
  - Message status
  - RT response time
- 45-bit, microsecond resolution time-tagging

Ordering Information

EPMC-1553-8-8M
MIL-STD-1553 multi-RT-multi-function, eight dual-redundant channel, front I/O PMC interface

EPMC-1553-8T
MIL-STD-1553 single-RT, multi-function, eight dual-redundant channel, front I/O PMC interface

Option codes

W – IRIG

R – Ruggedized / extended temperature

C – Conductive cooled

Carrier Card options

3 – CPCI 3U

X – PCI

U4 – PCI Express 4 lane

Contact factory for other I/O options

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.

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