



# P-10SF

## PMC Interface for 10 Mbps 1553

### Features

- 1 or 2 independent channels of 10 Mbps, 1553 Notice 2 protocol, using RS-485 transceivers
- Single-function operation
  - Bus Controller (BC) or single RT (sRT) or Bus Monitor (BM)
- Bus Controller
  - BC->RT, RT->BC, RT->RT, mode codes and broadcast
  - Single-shot and major/minor frame messaging
  - 4-65k  $\mu$ sec programmable time delays
- Remote Terminal
  - RT data wrapping
  - Multiple RT buffers
  - Automatic Mode Code and Status Bit responses
  - Programmable response times
  - RT map monitoring
- Bus Monitor
  - Word-based
  - Circular buffer
  - Message time tagging
  - Gap and RT response times
- Architecture
  - Dynamic link-list data structures
  - 32KW DPRAM for one channel; 16KW each for dual channel
  - BC, RT and BM 48 bit message time-tagging
  - BC, RT and BM full error detection/reporting
  - Drop-bus designed RS-485 transceivers with idle-bus conditions
  - Direct coupled stub connection
  - Environmental options

### • Software Support

- Advanced, portable, high-level API
- Source code
- Driver support for Windows® and Vxworks® (PPC)

The P-10SF from GE Intelligent Platforms offers one or two channels of dual-redundant 10 Mbit 1553 Notice 2 protocol using RS-485 transceivers. This interface is an excellent choice for flight controls, actuators, electro-pneumatic controllers or for similar applications of standard 1553, requiring higher data rates. The P-10SF is available as a native PMC interface or in PCI or CompactPCI formats (supplied on carriers). Each interface provides BC, single RT or BM functionality with a portable, high-level API (Application Programming Interface) software that includes driver support for Windows and VxWorks (PPC) to reduce application development time.

Standard features include -20 V to 25 V Common-Mode Voltage Range, Bus I/O Protection to Over 16-kV HBM, Failsafe Receiver for Open-Circuit, Short-Circuit and Idle-Bus Conditions and >100 mV Receiver Hysteresis for the RS-485 transceivers plus 48-bit message time-tagging, extensive BC and RT link-list structures, error detection, advanced BC functionality, automatic/manual RT Status Bit and Mode Code responses, along with Post, PBIT, IBIT (Built-in Tests) and cable wrap testing.

### RS-485 PHY Layer

May be used in drop bus or point-to-point data link applications as related to RS-485.

### Single-function Interface

Each P-10SF interface dual redundant channel has all the features and functionality of GE Intelligent Platforms' FlightCORE-1553-10 Intellectual Property core. A dual redundant channel can operate independently as either a Bus Controller, single Remote Terminal or as a Bus Monitor.

### Software

With each interface, GE Intelligent Platforms includes CORE-API, a portable, high-level API (Application Programming Interface) software library, as well as driver support for Windows XP, 2000, Me, NT, 98, 95 and the VxWorks (PPC) operating systems.

### Board Configurations

Each P-10SF PMC interface may be obtained in 1 or 2 dual-redundant channels on a PCI and cPCI carrier with front bezel or P14 (rear) I/O and optionally in ruggedized, extended operating or conduction cooled temperature configurations.



# P-10SF PMC Interface for 10 Mbps 1553

## Specifications

### Physical

- Single-wide PMC card (74mm x 149mm)
- Optional PCI, 3U and 6U compactPCI carriers

### PCI Interface

- 33/66 MHz operation
- Universal keying (3.3 and 5 volt)

### Single-function Operational Modes

- BC or single RT or Bus Monitor

### On-board Dual Port RAM

- 32 KWords for single dual redundant channel
- 16 KWords each for two dual redundant channels

### Connections

- Point-to-point or multi-drop
- Front panel bezel or P14 I/O connection
- Transition cabling optional

### Environmental

- Commercial operating temp. range: 0°C to +70°C
- Optional extended op. temp. range: -40°C to +85°C
- Optional conductively cooled configurations: (max. +71°C rail temp)

### Options

- SCSI-3 68-pin transition cable for buses and I/O
- Stub termination optional
- PCI or compactPCI carrier card integration

### Software Support

- CORE-API - High-level libraries with source code. Driver support included for Windows XP, 2000, Me, NT, 98, 95 and VxWorks (PPC).

## Description

### BC and RT Common Features

- Link list data structure
- 48 bit message time stamp
- Full error detection
- Programmable IGT and RT response times
- Multiply message buffers
- Start-up frames
- Interrupts per message and error conditions

### Bus Controller

- Scheduling and "one-shot" operations
- 1553 message types supported
  - BC->RT, RT->BC, RT->RT,
  - Mode code, broadcast
- Reporting
  - No-response report, late message, RT timeout
  - Invalid message notification
  - Full spectrum error indicator bits
- Time tags, data and status words
- All valid data words and status words are stored

## Ordering Information

### P-10SF-1

PMC card with one dual-redundant channel of 10 Mbit 1553 Notice 2 protocol, using RS-485 transceivers. Single-function operation (BC or sRT or BM). Front bezel I/O. Includes API, example programs and electronic documentation. Windows and VxWorks (PPC) support).

### P-10SF-2

PMC card with two dual-redundant channels of 10 Mbit 1553 Notice 2 protocol, using RS-485 transceivers. Single-function operation (BC or sRT or BM). Front bezel I/O. Includes API, example programs and electronic documentation. Windows and VxWorks (PPC) support).

### Remote Terminal

- Single RT support
- Hardware RT address lines supported
- Message legalization
  - RT/ T-R/ SA/ WC/ MC legalization
  - SA31 mode code selectable
  - Broadcast selection
- Full message error reporting
- Mode code support
  - All mode codes supported
  - Mode code processing
  - Reserved mode codes
- Multiple RT structures
  - Receive, transmit and mode code data buffers
  - Broadcast data and RT control buffers
- RT wrap with settable return address

### Bus Monitor

- Capture word based bus traffic: 48 bit, 1 microsecond
- Time-tagging error, word, and message status
- Message buffer time tagging beginning of message, RT response and gap times
- Full error detection and reporting late, no, and early response invalid word and detailed error reporting

## 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](http://www.ge-ip.com).

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