



PCCARD-1553

Interface for PCMCIA

Features

- Multi-function Features
 - Simultaneous Bus Controller, 31 Remote Terminals, or Bus Monitor
- Single-function Features
 - Bus Controller, 31 Remote Terminals, or Bus Monitor
- Bus Controller – BC
 - BC→RT, RT→BC, RT→RT
 - Mode Codes, Broadcast and single-shot messaging
 - Programmable time delays
 - Major/Minor frames
 - Real-time conditional branching
 - Two aperiodic messaging methods
- Remote Terminal – RT
 - RT data wrapping
 - Multiple RT buffers
 - Dynamic Bus Control
 - Automatic Mode Code and status bit responses
 - Programmable response time
- Bus Monitor – BM
 - Full error detection
 - Multiple monitoring methods
 - 45-bit time-tagging
 - Adv. interrupts and triggers

- Architecture
 - IRIG-B Rec (AM or DC/TTL), Gen (DC/TTL) standard
 - BC & RT error injection/detection
 - DYNAMIC architecture
 - BC & RT link list structures
 - 1 Mbyte RAM per channel
 - Direct & transformer coupling
 - Environmental options
- Software Support
 - Advanced, high-level API
 - Source code included
 - BusTools Analyzer supported

The PCCARD-1553 provides the highest level of performance and flexibility for MIL-STD-1553A/B in a Type II PCMCIA (PC Card) form factor. The PCCARD-1553 is integrated with powerful API software that provides instant access to all 1553 databus functionality and data. Standard features include IRIG B Receiver/Generator (digital), real-time bus playback (with ability to edit out RTs), aperiodic message insertion, error injection/detection, conditional BC branching, 45-bit timetags and “Oneshot” BC operation. The Bus Monitor mode provides 100% bus monitoring of a fully loaded 1553 bus.

Multi-function Interface

The PCCARD-1553-M provides a multifunction 1553 interface that can operate simultaneously as a BC, up to 31 RTs and as a BM. It can completely emulate an entire dual-redundant 1553 channel internally.

Single-function Interface

The PCCARD-1553-SA is a single-function 1553 interface with all the features and functionality of the multi-function version, but only one major operational mode is enabled at a time. This interface functions as either a Bus Controller or 31 Remote Terminals or as a Bus Monitor.

Software

Included with the PCCARD-1553 is GE Intelligent Platforms easy-to-use, flexible, high-level API. Source code and Windows XP, 2000, Me, NT, 98 and 95 support is provided. LabVIEW drivers and BusTools/1553™, GE's GUI bus analysis and simulation solution for 1553, are optionally available. GE's high performance and intuitive software solutions provide complete and simplified access to MIL-STD-1553 functionality for development, integration, test, embedded and maintenance applications.



PCCARD-1553 Interface for PCMCIA

Specifications

Physical

- Type II PC Card (PCMCIA 2.1 compatible)

Environmental

- Operating temperature range: 0 to +55° C
- Extended temperature range components available

Software

- API – Includes high-level API libraries for Windows XP, 2000, Me, NT, 98, 95 and Linux Kernel (2.4 and 2.6)
 - Source code API library provided
 - Hardware interrupts are not supported
- GUI – Optional BusTools/1553 GUI bus analysis, simulation and data logging software
- LV-1553 – LabVIEW support for PCCARD-1553

Connections

- Input and output triggers
- Transformer coupling standard, direct coupling optional
- Variable output voltage (-M only)

Multi-function Operational Modes

- Simultaneous BC, 31 RTs and BM

Single-function Operational Modes

- BC or 31 RTs or BM

Power (75% duty cycle)

- 2.5 watts max.

On-board Shared RAM

- 1 Mbyte per channel

Bus Controller

- Programmable control over:
 - Major and minor frame content and timing
 - Intermessage 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
 - Full range of system conditions
 - All detected errors
- Full error detection
 - Invalid word
 - Bit count error
 - High word
 - Low word
 - Inverted sync
 - Manchester
- Extensive programmable error injections (on a per word basis)
- Synchronize BC operation to external time source
- Programmable bus voltage (-M only)

Ordering Information

PCCARD-1553-M: MIL-STD-1553 multi-function, variable voltage, single channel PCMCIA interface board

PCCARD-1553-MA: MIL-STD-1553 multi-function, fixed voltage, single channel PCMCIA interface board

PCCARD-1553-SA: MIL-STD-1553 single-function, fixed voltage, single channel PCMCIA interface board

Optional Software

BusTools/ARINC: MIL-STD-1553 Bus Analysis, Simulation & Data Logging software for Windows (multi-function boards only)

LV-1553: LabVIEW support for PCMCIA

Remote Terminal

- Multiple RT simulation (up to 31 RTs)
- Programmable message content (linked message buffers)
- Modify data, status words or setup while card is running
- Programmable error injection (on a per word basis)
- Interrupts can be generated on a per message basis upon End of Message and error conditions
- Programmable bus voltage (-M only)

Bus Monitor

- Capture 100% fully loaded bus traffic with:
 - Time-tagging
 - Word status
 - Error status
 - Message status
 - RT response time
- 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
- 45-bit, microsecond resolution timetagging
- IRIG B Rec/Gen (digital)

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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