

# RPCC-D1553

## Dual Channel PCMCIA Interface



### Features

- 1, or 2 Independent MIL-STD-1553 Dual Redundant Channels
- Multi-function or Single-function Configurations
- 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
  - 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
  - Two bi-directional discretes
  - BC & RT error injection/detection
  - BC & RT link list structures
  - 1 MByte RAM per channel
- Software Support
  - Advanced, high-level API for 32-bit Windows and Red Hat Linux
  - Source code included
  - BusTools Analyzer supported

The RPCC-D1553 provides the highest level of performance and density for MIL-STD-1553A/B in a Type II PCMCIA (PC Card) form factor.

This dual channel card is RoHS-compliant and is a direct drop-in replacement for the PCC-D1553 card which it replaces. The RPCC-D1553 comes with all of the cables necessary for operation. Cables designed for the PCC-1553 card will not work with the RPCC-D1553 card.

The RPCC-D1553 provides 1 or 2 channels integrated with powerful API software that provides instant access to all MIL-STD-1553 databus functionality and data.

Standard features include IRIG-B Receiver (AM or DC/TTL), Generator (DC/TTL), 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 RPCC-D1553's Bus Monitor mode provides 100% bus monitoring of a fully loaded MIL-STD-1553 bus.

### Multi-function Interface

One or two multi-function 1553 interfaces operate simultaneously as a BC, up to 31 RTs and as a BM. Each can completely emulate a dual-redundant 1553 channel internally.

### Single-function Interface

One or two single-function 1553 interfaces are available with all the features and functionality of the multi-function version, but with only one major operational mode enabled at a time. Each interface functions as either a Bus Controller or 31 Remote Terminals or as a Bus Monitor.

### Software

Included with the RPCC-D1553 is GE Intelligent Platforms' easy-to-use, flexible, high-level API. Source code and Microsoft® Windows® XP, 2000, Me, NT, 98, 95 and Red Hat Linux® 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.



# RPCC-D1553 Dual Channel PCMCIA Interface

## 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
  - Red Hat Linux Tested on TI 1225 PCMCIA/PCC controller only
  - 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 MIL-STD-1553

### Connections

- Transition cabling provided
- Input and output triggers
- Two bi-directional Avionics discretes
- Transformer coupling
- IRIG-B Rec (AM or DC/TTL), Gen (DC/TTL) standard
- Fixed output voltage

### Multi-function Operational Modes

- Simultaneous BC, 31 RTs and BM

### Single-function Operational Modes

- BC or 31 RTs or BM

### Power (2 channels at 75% duty cycle)

- +5 VDC @ 640 mA (typical)
- 2 W power dissipated on board

### Power (1 channel at 75% duty cycle)

- +5 VDC @ 320 mA (typical)

### On-board dual-port RAM

- 1 Mbyte per channel

## Description

### 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
  - Late response
  - Early response
  - No response
  - Incorrect RT address
  - Parity error
- Extensive programmable error injections (on a per word basis)
- Synchronize BC operation to external time source

### 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

### Bus Monitor

- Capture 100% fully loaded bus traffic with:
  - Time-tagging
  - Error status
  - Word 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

## Ordering Information

<b>RPCC-D1553-2MW</b>	MIL-STD-1553 multi-function, two dual-redundant channels, PCMCIA card with IRIG
<b>RPCC-D1553-2SW</b>	MIL-STD-1553 single-function, two dual-redundant channels, PCMCIA card with IRIG
<b>RPCC-D1553-1MW</b>	MIL-STD-1553 multi-function, single dual-redundant channel, PCMCIA card with IRIG
<b>RPCC-D1553-1SW</b>	MIL-STD-1553 single-function, single dual-redundant channel, PCMCIA card with IRIG

## Optional Software

<b>BusTools/1553</b>	MIL-STD-1553 Bus Analysis, Simulation & Data Logging software for Windows (multi-function boards only)
<b>LV-1553</b>	LabVIEW support for MIL-STD-1553

## About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms Military/Aerospace is headquartered in Huntsville, AL.

For more information, visit [www.defense.ge-ip.com](http://www.defense.ge-ip.com).

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