



QCP-1553

High Density CompactPCI Interface

Features

- 1, 2 or 4 Independent MIL-STD-1553 Dual Redundant Channels
- Multi-function Features
 - Simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor
- External differential time-tag reset and clock inputs
- 64 bit 25 ns resolution time tagging (virtually unlimited time stamping)

- 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
 - RT Map Monitoring
- Bus Monitor - BM
 - Full error detection
 - Multiple monitoring methods
 - Adv. interrupts and triggers

- Architecture
 - 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 optional

GE Intelligent Platforms' QCP-1553 provides new levels of performance and flexibility for MIL-STD-1553A/B Notice II in a CompactPCI form factor. Available in commercial, ruggedized and 3U conductively cooled versions with one, two or four dual-redundant channels, the QCP-1553 includes advanced API (Application Programming Interface) software that reduces application development time. Standard features include selectable transformer or direct coupling, 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. ANIRIG-B signal Receiver/Generator

is optionally available. With the highest speed encoder/decoder in the industry, the QCP-1553 Bus Monitor provides unparalleled error detection and 100% monitoring of a fully loaded buses.

Multi-function Interfaces

QCP-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 QCP-1553 interfaces have all the features and functionality of the multi-function versions, with either Bus Monitor and Bus Controller, or Bus monitor and 31 Remote terminals

Software

GE provides our advanced 1553 API in source code, along with support for Microsoft® Windows® 7 (32 and 64bit), Microsoft Windows Vista®, Microsoft Windows XP, Microsoft Windows 2000, Microsoft Windows NT, VxWorks®, Linux®, Integrity, QNX, Solaris and other operating systems. To access 1553 functionality without software development, BusTools/1553, GE's MIL-STD-1553 bus analyzer, LabVIEW and LabVIEW Real-Time support is optionally available.



QCP-1553 – High Density CompactPCI Interface

Specifications

Physical

- 3U Compact PCI card (6U faceplate available)
- Standard configuration has front bezel I/O

Environmental

- Standard operating temperature range: 0°C to +70°C
- Relative humidity: 5 to 90% (non-condensing)
- Optional ruggedized, extended temp and conductively cooled configurations

Software

- API - High-level libraries with source code included for Windows 7 (32 and 64bit), Vista, XP, 2000, NT, Linux, Integrity, QNX, Solaris and VxWorks
- GUI - Optional BusTools/1553 GUI bus analyzer (multi-function boards only)
- Optional LabVIEW and LabVIEW Real-Time support

Connections

- Software-selectable direct or transformer coupling
- I/O triggers; 18 avionics-level discretes
- Front I/O standard P2 rear I/O optional.
- Transition cabling to 1553 cable jacks included on front panel configurations

Multi-function Operational Modes

- Simultaneous BC, 31 RTs and BM

Dual-function Operational Modes

- BC and 31 RTs or BC and BM

Power (4 channel at 75% duty cycle)

- 2CH, 87% duty cycle, 1100mA @ 5VDC
- 4CH, 87% duty cycle, 1700mA @ 5VDC

Timing

- Independent 64-bit, 25ns message time-tagging per channel
- Time can be programmed via the host or by a 1553 trigger
- All timers can be synchronized to 0 via the host
- Timers can independently use IRIG time
- IRIG-B receiver (AM or DC/TTL) and generator (DC/TTL)

On-board Configurations

- 1, 2 or 4 dual-redundant channels
- Variable voltage transceivers
- Optional rear panel I/O
- Optional ruggedized, -40°C to +85°C operating temperature range
- Optional ruggedized, extended temperature, conformal coated, rear I/O, 3U only, VITA compliant conductive cooling (max +71°C rail temp)
- Optional conformal coating
- Optional IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)

Warranty

- 2 year limited hardware warranty

Bus Controller

- Programmable control over:
 - Major and minor frame content and timing
 - Intermessage gap times
 - Response time-out and late response
 - Multiple BC retry
- Multiple Data Buffers
- 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 - Late response
 - Bit count error - Early response
 - High word - No response
 - Low word - Incorrect RT address
 - Inverted sync - Parity error
 - Manchester
- 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 error injection (on a per word basis)
- 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
- RT Map Monitoring

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
- 64-bit, 25 nanosecond resolution timetagging on BC, RT and BM (virtually unlimited time stamping)
- IRIG/GPS synchronization

Available Configurations

QCP-1553C-G2-1DA	MIL-STD-1553 Dual-function, single dual-redundant channel, 32-bit FW, 3U CompactPCI interface board
QCP-1553C-G2-1MA	MIL-STD-1553 Multi-function, single dual-redundant channel, 32-bit FW, 3U CompactPCI interface board
QCP-1553C-G2-2DA	MIL-STD-1553 Dual-function, two dual-redundant channel, 32-bit FW, 3U CompactPCI interface board
QCP-1553C-G2-2MA	MIL-STD-1553 Multi-function, two dual-redundant channel, 32-bit FW, 3U CompactPCI interface board
QCP-1553C-G2-4DA	MIL-STD-1553 Dual-function, four dual-redundant channel, 32-bit FW, 3U CompactPCI interface board
QCP-1553C-G2-4MA	MIL-STD-1553 Multi-function, four dual-redundant channel, 32-bit FW, 3U CompactPCI interface board

Optional Hardware

-V (replaces A)	Variable voltage
-F (replaces C after 1553)	6U front panel
-D suffix	Blank front panel, rear I/O
-R suffix	Ruggedized, extended temperature, transformer coupled
-G suffix	Blank front panel, rear I/O, ruggedized, extended temperature, transformer coupled
-C suffix	Conductive cooled, blank front panel, rear I/O, Ruggedized, extended temperature, transformer coupled, conformal coated
-W suffix	IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)
-K suffix	Conformal coated

Optional Software

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

GE Intelligent Platforms Contact Information

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