



The QPCX replaces the QPCI in a smaller package that supports faster speeds at less power.

# QPCX-1553

## High-Density PCI Interface

- 1, 2 or 4 Independent MIL-STD-1553 Dual
- Redundant Channels
- PCI Interface 66MHz
- Multi-, Dual-, or Single-function Configurations
- Test and Simulation Features
  - On-board Test Bus
  - UUT transformer connection
  - Selective Real-time Playback
  - BC & RT error injection/detection
  - Adv. interrupts and triggers
  - Optional BusTools/1553 Analyzer (optional)
- Bus Controller - BC
  - BC→RT, RT→BC, RT→RT
  - Mode Codes, Broadcast and single-shotmessaging
  - Programmable time delays
  - Major/Minor frames
  - Real-time conditional branching
  - Two aperiodic messaging methods
- Remote Terminal - RT
  - RT data wrapping
  - Multiple RT buffers
  - 1760 startup time
  - Programmable response time
  - RT Map Monitoring
- Bus Monitor - BM
  - Full error detection
  - Multiple monitoring methods
  - 45-bit time-tagging
  - IRIG-B Receiver/Generator included

- Architecture
  - BC & RT error injection/detection
  - 1 Mbyte RAM per channel
  - Transformer & direct coupling
  - Avionics-level discretes

GE Intelligent Platform's QPCX-1553 provides new levels of performance and flexibility for MILSTD1553A/B Notice II for PCI backplane form factors. Now faster, the QPCX also draws less power in a smaller board footprint.

Available in commercial and ruggedized versions with one, two or four dual-redundant channels, the QPCX-1553 includes an abstract API (Application Programming Interface) software that reduces application development time. Standard features include 1 Mbyte of RAM per channel, 45-bit message time-tagging, triggers, extensive BC & RT link-list structures, error injection/detection, automatic/manual RT Status Bit, Mode Code responses, advanced BC functionality, IRIG-B signal Receiver/Generator with GPS synchronization, on-board Test Bus, UUT transformer connection, 1760 startup time with Busy bit set and hardwired RT address lines. With the highest speed encoder/decoder in the industry, the QPCX-1553 Bus Monitor provides unparalleled error detection and 100% monitoring of fully loaded buses.

### Multi-function Interfaces

QPCX-1553 multi-function interfaces are easily configured to operate with simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor functionality and includes variable voltage transceivers.

### Dual-function Interfaces

Dual-function QPCX-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.

### Single-function Interfaces

Single-function QPCX-1553 interfaces have all the features and functionality of the multi-function versions, but with only one operational mode enabled at a time. Each interface can emulate either a Bus Controller or 31 Remote Terminals or Bus Monitor with fixed voltage transceivers.

### Software

Our high-level "abstract" 1553 API is provided in source code, along with integrated support for Microsoft® Windows® 7, Windows XP, Windows 2000, Windows Me, Windows NT, Windows 98, Windows 95, Linux®, LabWindows/CVI, Visual Basic and other operating systems. To access 1553 functionality without software development, BusTools/1553, GE Intelligent Platform's MIL-STD-1553 bus analysis, simulation and data logging/monitoring solution is available.



# QPCX-1553 High-Density PCI Interface

## Specifications

### Physical

- PCI card (6" x 3 7/8")

### Environmental

- Standard operating temp. range: 0°C to +55°C
- Optional extended temp. range available

### Software

- API - Includes high-level API libraries for Windows 7, Windows XP, Windows 2000, Windows Me, Windows NT, Windows 98, Windows 95, Linux, LabWindows/CVI and Visual Basic
- Contact the factory about other OS support
- GUI - Optional BusTools/1553 GUI bus analyzer
- LabVIEW - Support optional

### Connections

- Transformer or direct coupling (software selectable)
- Programmable input and output triggers
- Ten programmable avionics level I/O discretes
- UUT transformer stub connection
- Hardwired RT Address Line option

### Multi-function Operational Modes

- Simultaneous BC, 31 RTs and BM
- Variable voltage transceivers

### Dual-function Operational Modes

- BC and 31 RTs or BC and BM

### Single-function Operational Modes

- BC or 31 RTs or BM
- Fixed voltage transceivers

### Power (4 channels, 50% duty cycle)

- +5 VDC @ 1300 mA
- +3.3 VDC @ 325 mA

### PCI Signaling Voltage Compatibility

- Universal (5V or 3.3V)
- 66 MHz
- Board compatible with PCI-X 1.0 and PCI slots

### On-board Shared RAM

- 1 Mbyte per dual-redundant channel

### 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
  - 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
- Late response
- Bit count error
- Early response
- High word
- No response
- Low word
- Incorrect RT address
- Inverted sync
- Parity error
- Manchester
- Extensive programmable error injection (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
- 45-bit, microsecond resolution timetagging
- IRIG/GPS synchronization
- IRIG-B Receiver (AM or DC/TTL)/Generator (DC/TTL)

## Ordering Information

<b>QPCX-1553-1SAW</b>	MIL-STD-1553 single-function, single dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen.
<b>QPCX-1553-1MW</b>	MIL-STD-1553 multi-function, single dual-redundant channel, variable voltage PCI interface board with IRIG-B Rec/Gen.
<b>QPCX-1553-1DAW</b>	MIL-STD-1553 dual-function, single dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen
<b>QPCX-1553-2DAW</b>	MIL-STD-1553 dual-function, two dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen
<b>QPCX-1553-4DAW</b>	MIL-STD-1553 dual-function, four dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen
<b>QPCX-1553-2SAW</b>	MIL-STD-1553 single-function, two dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen.
<b>QPCX-1553-2MW</b>	MIL-STD-1553 multi-function, two dual-redundant channel, variable voltage PCI interface board with IRIG-B Rec/Gen.
<b>QPCX-1553-4SAW</b>	MIL-STD-1553 single-function, four dual-redundant channel, fixed voltage PCI interface board with IRIG-B Rec/Gen.
<b>QPCX-1553-4MW</b>	MIL-STD-1553 multi-function, four dual-redundant channel, variable voltage PCI interface board with IRIG-B Rec/Gen.

## Options

<b>-K suffix</b>	Conformal coating
<b>-R suffix</b>	Front I/O, transformer coupled, ruggedized, extended temperature
<b>-NCBL suffix</b>	does not include transition cable

## Optional Software

<b>BT-1553</b>	MIL-STD-1553 Bus Analysis & Data Logging software for Windows (multi-function boards only)
<b>LV-1553</b>	Lab/View support for MIL-STD-1553

## GE Intelligent Platforms Contact Information

Americas: **1 877 429 1553** Global regional phone numbers are listed by location on our web site at [defense.ge-ip.com/avionics-contacts](http://defense.ge-ip.com/avionics-contacts)

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