

AVIONICS INTERFACE PCIe BOARD



PCIe HyperBoard™

Multi-Standard Avionics Interfaces PCI Express Card, including MIL-STD-1553, H009, WB-194, ARINC 429, Avionics and Discrete I/Os, RS-485

Compact, Robust, Reliable, Low-Energy Consumption

Specifications

Compatibility

- MIL-STD-1553B Notice 2
- MIL-STD-1760
- H009, WB194, ARINC 429, RS-485, IRIG-B
- PCI Express Bus Interface
- 3U PCIe Form Factor

Environmental

- Industrial grade: -40°C to +85°C
- 5% to 90% relative humidity (non-condensing)

Power

- 3.3 VDC, ±12VDC, 18W while all channels transmitting simultaneously

Available Configurations

- 1X, 2X, 4X or 8X dual-redundant MIL-STD-1553B (or other) channels with 64K word RAM per channel
- Can be configured for MIL-STD-1760, H009, or 16PP194 applications

Software Provided

- PCI Express Driver for Windows
- API high-level libraries with source code included for Windows
- COMposer GUI (Graphical User Interface) for 1553 bus simulation and analysis

More products from Sital

- MIL-STD-1553 IP Cores
- MIL-STD-1553 Transceiver

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Key Features and Benefits

- Sital's PCIe HyperBoard Board can be designated with various configurations and bus interfaces:
 - Supports MIL-STD -1553, H009, and WB-194
 - Up to 8 dual-redundant MIL-STD-1553B or 4 H009, and 4 16PP194 channels
- Can be ordered in two configurations – standard and tester
- **Standard configuration:**
 - All channels are compatible with MIL-STD-1553B Notice 2 and MIL-STD-1760
 - Each channel can be configured as BC, RT or Monitor MT
 - Provided with Windows API/library/driver
- **Tester configuration:**
 - Available for all protocols supporting concurrent BC, Multi-RT and Monitor, with error injection and enhanced monitoring
 - Provided with Windows API/library/driver and COMposer GUI software
- 64K word RAM per channel
- 4 x RS-485 or ARINC-429 I/Os (factory set)
- External Time Tag Clock input and output (through IRIG B)
- 8X digital discrete I/Os
- 32-bit PCI 33/66MHz compatible
- Low power consumption and low heat dissipation

The PCIe HyperBoard is a PCI Express-compatible, multi-standard board that contains up to eight channels of MIL-STD-1553. It is compatible with MIL-STD-1553B and MIL-STD-1760 and its channels can also be configured independently to provide H009 and 16PP194 protocols in conjunction with MIL-STD-1553.

The board includes four channels that can be configured for RS-485/RS-422, IRIG-B time-tagging or two each ARINC-429 transmitter and receiver channels.

The board is provided with software drivers for Windows along with a high-level API/driver to ease application development.

Please contact Sital for drivers for other operating systems.



More information is available at www.sitaltech.com

Email: info@sitaltech.com

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PCle HyperBoard™ - 8-channel Multi-Standard, Compact PCIe Board

Deliverables:

PCleHyperBoard™

- **PN: BRD1553PCle-STD-8**

Standard Configuration

- PCIe air-cooled
- 8X MIL-STD-1553/1760 channels
- USB-2.0 interface

- **PN: BRD1553 PCIe -TST-8**

Tester Configuration

- 8X 1553
- 4X H009 channels
- 4X WB-194 channels
- 2X TX+RX ARINC 429

- **PN: BRD1553 PCIe -TST-4**

Tester Configuration

- 4X 1553

- Other configurations and protocols are available. Please contact Sital

Connections

- Standard PCIe connection for PCI Express bus
- All other signals via 2 x 26 pins D-type connectors

Software

- Software drivers and API for Windows. Consult Sital for other operating system drivers.
- COMposer GUI software for test and simulation

Warranty and Support

- 3-year limited hardware warranty
- 1-year technical support including free software upgrades

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PCle HyperBoard™ Functionality

The PCI Express HyperBoard is based on Sital's proven MIL-STD-1553, H009 and 16PP194 IP cores instantiated on an FPGA, along with discrete component transceivers. The board provides flexibility to provide various configurations and protocols with the same hardware.

The board can be used for on-board avionics systems or for lab testing equipment.

Customers can designate the appropriate configuration for their specific requirement. For example, all 8 channels may be configured for MIL-STD-1553. Alternative configurations can consist of 4 channels of MIL-STD-1553 and 2 channels of H009, or 8 channels of MIL-STD-1553, with 4 of the channels providing capability to provide 16PP194 protocol.

Other configurations and protocols are available upon request.

The board can also serve as a fully-functional tester with 1, 2, 4 or 8 channels of the various protocols supporting concurrent BC, Multi-RT and enhanced monitoring, along with error injection.

The board also includes an IRIG-B input and output enabling externally synchronized time-tagging. These ports can also be used either as RS-485 I/O. Alternatively, the board can be configured to provide up to four ARINC-429 channels: 2 transmitting channels and 2 receiving channels.

The board also includes a USB-2.0 interface.

Software Drivers, API

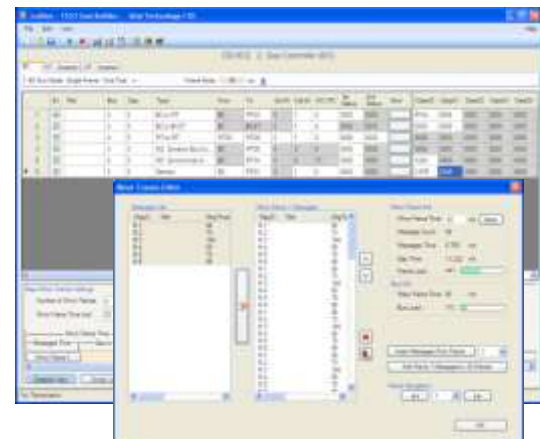
All Sital boards are provided with drivers for Windows software and include a high-level API/library that is provided as source code.

COMposer

Sital's COMposer Windows GUI software is a Windows® application that enables testing and verification of basic operation of the board and its 1553 connections. It allows the user to configure the channels as BC, RT and/or Monitor, define 1553 messages and frames, monitor the traffic on the bus and validate the correct operation of the board.

COMposer enables Sital's users to set-up a working environment for their MIL-STD-1553 application quickly and easily, and to display monitored data in engineering units, in numeric or graphical format, or as avionics instruments.

Each channel is independently controlled and configured, so customers can create a complete test scenario without the need for any additional test equipment.



About Sital

Sital Technology provides world-class products and expertise for communication bus applications in the avionics, aerospace and automotive industries. Sital embeds its vast experience and proficiency in its products which include Mil-Std-1553 and other avionics IP cores, components, boards and testers, as well as CAN bus devices and applications. With its highly-experienced staff of experts, the company's Projects Division undertakes design, integration and turn-key engagements on behalf of the world's leading commercial and military avionics companies, space agencies, and automobile designers and manufacturers. Sital's bus technologies and expertise improve robustness and efficiency as they lower cost, space and resource utilization.

Sital's formidable customer list includes leading military and commercial organizations throughout the world among them: NASA, Boeing, Lockheed-Martin, Honeywell, Raytheon, General Motors, British Aerospace, Orbital Science, Thales, ECIL(India), Aselsan, Elbit, Rafael and IAI.

- Sital may change the specifications and functionality of the board without notice.