MIL-STD-1553

MIL-STD-1553 is a military standard widely used in avionic systems. It defines the mechanical, electrical, and functional characteristics of a serial data bus. The standard has become one of the basic tools being used today by the Department of Defense for weapon systems integration. Some of the key MIL-STD-1553 elements are the bus controller (BC), the embedded remote terminal (RT), which is a sensor or subsystem that provides its own internal 1553 interface, and the stand-alone bus monitor (BM).

OUR SOLUTION

OPAL-RT provides an MIL-STD-1553 driver for serial communication of data between the simulator and all devices in a typical 1553 bus network. The solution is based on a GE/Abaco QPCX-1533 PCI board and can be configured to interface with and access all functionalities, for any type of device:

- Remote Terminals (RT): passive devices used as interfaces between the bus and the hardware that should interact and connect to it.
- Bus Controller (BC:a unique device that manages transfers to the bus and preserves the deterministic aspect of 1553 transactions.
- Bus Monitor (BM), a passive device that simply listens to the 1553 transactions.

The validation of a single device, in a loopback configuration, is also possible without the need for extra RT, BC or BM devices.

KEY FEATURES

- Supports BC, RT and BM capabilities
- Simulates bus failure for a given remote controller
- Run-time activation/deactivation of a simulated remote controller
- Management of chained BC operations
- Error injection and detection
- Monitoring of RT/SA messages, including mode codes
- Automatic bus redundancy when bus failure occurs
- Configurable transactions and network control codes
- Message time-tagging
- On board test bus
- High speed encoders/decoders

SPECIFICATIONS

Standard	**MIL-STD-1553**
Supported Devices	Bus controller, remote terminal, bus monitoring
Operation modes	Single, Dual, Multi-Function
Number of channels	2
Form factor	PCI
Communication link [1]	SCSI

OPAL-RT SOFTWARE COMPATIBILITY

SOFTWARE	MIL-STD-1553
RT-LAB	☑
HYPERSIM	☐

THIRD-PARTY HARDWARE†

NAME	REQUIRED	SKU	DESCRIPTION
GE/Abaco QPCX-1553	☑	QPCX-1553-1MW Or QPCX-1553-2MW	MIL-STD-1553 multi-function, 1 or 2 channels, variable voltage PCI interface
MIL-STD-1553 Cable Extension 3FT	☐	CA-2009-36	Cable Extension 3FT, 3-SLOT SOLDER/CLAMP PLUG TO PLUG 30-02001 TWINAX

†Certain systems may not have PCI slots available for these boards. Check with your local OPAL-RT representative to ensure compatibility before ordering and/or installing.