

# GTWIF

## Giga Transceiver Workstation InterFace Card

The primary function of the GTWIF is to handle communication between the RTDS Simulator and the host computer. The communication medium used between the GTWIF and the host computer is a standard Ethernet (10/100baseT) TCP/IP based local area network. An additional function of the GTWIF is to synchronize the calculations taking place on the processor cards within a rack. When an RTDS Simulator consists of three or more racks, a special purpose hub, referred to as a Global Bus Hub (GBH) is required to exchange synchronization signals between GTWIF cards.

The GTWIF includes six Gigabit Transceiver (GT) optical ports through which inter-rack data is exchanged. The links run at 2GBd over 62.5/125  $\mu$ m multi-mode fiber using a proprietary protocol.

The GTWIF allows a 60 ns backplane transfer rate when using PB5 or GPC processor cards (1.32 or newer). The increased backplane transfer rate allows the size of the network solution to be increased.

However, the GTWIF can still support the 3PC (including all peripherals) and the IRC version 3 at the previous backplane transfer rate.



### GTWIF provides the following functions:

- Loading, starting, and stopping cases
- Timestep generation
- Inter-rack synchronization together with the Global Bus Hub (GBH)
- Coordination of all backplane transfers during simulation
- Rack hardware diagnostics
- All communication with RSCAD (diagnostic and simulation data)

### GTWIF Specifications

- 10/100 Base Tx Ethernet communications
- VxWorks OS running on a PPC405
- Global bus for multi-rack simulation
- Proprietary bus controller for VME backplane
- 6 2GBd optical ports for Inter-Rack communication
- 2 2GBd optical ports for future expansion
- USB accessible from the front panel for system diagnostics and configuration
- LED displays on the face plate for simulation and configuration information

### Hardware Exchange Program

Customers covered under the extended warranty and maintenance program will benefit from the option to exchange older WIC, WIF, and IRC cards to receive a reduction in the purchase price of GTWIF cards.