

RECENT DEVELOPMENTS

what's new and exciting from our R&D department

At RTDS Technologies, we are continuously developing our hardware and software capabilities in response to needs expressed by our clients.

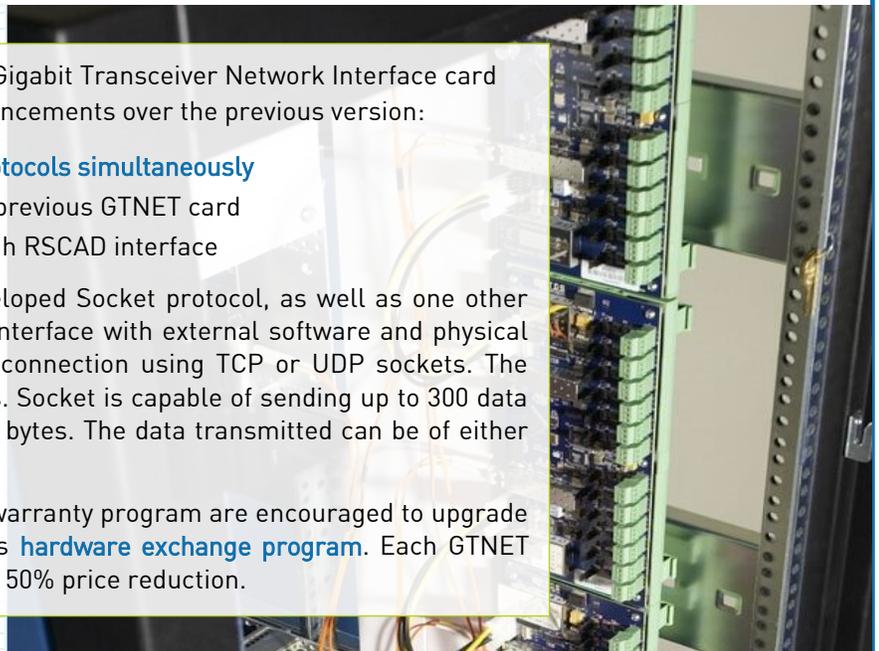
GTNETx2

The GTNETx2 card is the latest generation of the Gigabit Transceiver Network Interface card (GTNET). It features significant performance enhancements over the previous version:

- Capable of operating **2 network protocols simultaneously**
- Runs 5 to 10 times faster than the previous GTNET card
- Firmware upgrades directly through RSCAD interface

The GTNETx2 comes loaded with the newly developed Socket protocol, as well as one other protocol of the user's choice. Socket is used to interface with external software and physical equipment over a Local or Wide Area Network connection using TCP or UDP sockets. The communication is bidirectional and asynchronous. Socket is capable of sending up to 300 data points per packet, with each point defined over 4 bytes. The data transmitted can be of either integer or floating-point (IEEE 754) type.

Users who participate in the extended hardware warranty program are encouraged to upgrade their GTNET cards under the RTDS Technologies **hardware exchange program**. Each GTNET card can be exchanged for one GTNETx2 card at a 50% price reduction.



FIBER ENHANCED BACKPLANE

The fiber enhanced backplane was recently developed in order to **reduce the communication time** required by the RTDS Simulator. It provides offloading of some backplane data transfers by using fiber cables to transfer data directly between component models and the network solution. This reduces the simulation timestep and/or provides additional time for more calculations. The ability to perform more calculations has allowed us to increase the size of the network solution. Customers will now be able to **simulate 90 single-phase nodes (30 three-phase buses) per network solution** instead of the previous limit of 72 single-phase nodes (24 three-phase buses).

This feature paves the way for emerging power system components that require more data transfers and impose more load on the backplane. Using the fiber enhanced backplane, limits on the number of data transfers can be increased, which is a huge benefit to our customers who have reached these limits in their more complicated simulation cases. **The fiber enhanced backplane can reduce transfer time by up to 38%**. Transfer time is reduced most significantly for heavier simulation cases utilizing more processor cards.

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MMS VOYAGEUR

The 61850 MMS Voyageur program was recently developed to support communication testing of IEC 61850 server devices such as protection relays.

MMS Voyageur is available in RSCAD as a stand-alone program. It is used for IEC 61850 MMS-compliant data communication between the client software and external devices. It can be configured through self-description or through RSCAD's SCL file editor. The continuous innovation of RSCAD, which adds this powerful new feature, is **available free of charge as part of our maintenance and support program**.

MMS Voyageur is capable of testing the connection setup with the server device, presenting the server data model for viewing its contents, and invoking available services. Supported functions of the program include browsing models from the SCL file, performing control operations on the server device, creating dynamic data sets, reading and writing server data values, and much more. All typical communication procedures performed by a SCADA system or other testing system can be achieved using MMS Voyageur.

MMS Voyageur can **maintain connections to many server devices at one time**, and the user may run multiple instances of the program on the same host computer. It can also be used with RunTime scripts in order to automate and enhance testing.

IEC 61850-9-2 NON-LE MODE

The GTNET-SV protocol provides IEC 61850-9-2 sampled value messaging for power system voltages and currents. RTDS Technologies has recently developed a non-LE mode, which is **based on IEC 61869-9 and the Chinese National Standard for sampled value merging units**.

When non-LE mode is in operation, **one GTNET-SV protocol can publish 1 data stream for up to 24 voltages or currents**, which are sent out from the GTNET card at a rate of 80 samples per cycle. Because the GTNETx2 card is capable of operating 2 network protocols simultaneously, there is the potential to install two GTNET-SV protocols on one card, and to double the capability. This would allow the user to publish 2 data streams with 24 voltages or currents each.

