ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Kratos / RT Logic RTL-DFP-PCI* at our website: *Click HERE*

T500GT

RT LOGIC
A KRATOS Company

Gateway Protocol Translator

The RT Logic 500 IP Gateway Protocol Translator (T500GT) is the next generation system for interconnecting control centers to baseband ground station antenna sites. The T500GT deterministically transports Telemetry (TM), Telecommand (TC), mission data, IRIG, and digitized analog signals between locations linked by commercial or private IP-based networks. Both serial-to-packet and packet-to-serial protocol conversions are supported, enabling the T500GT to perform protocol conversions between serial-interface devices and IP-based networks.

Applications

Control centers, ground stations, test sites, vehicle factories, and payload processing facilities are migrating from dedicated serial interconnections to commercially available IP networks. A system is needed that supports both legacy protocols and emerging net-centric protocols such as SLE. The T500GT connects existing serial-based ground telemetry systems to an IP network and acts as a bi-directional, ground-based data conduit from the satellite modem to the end user.

The T500GT understands the format and protocol of TM and TC streams, allowing it to efficiently translate to and from packets. Each protocol is uniquely handled to protect against lost or stale data, and to ensure on-time delivery. Protocol conversions are encapsulated and interoperable, allowing easy tailoring of the T500GT. The T500GT also supports classic TT&C front-end processing, such as command formatting, CCSDS/TDM frame synchronization, and IRIG time stamping.

Two major variants of the T500GT are described by this data sheet: the local/remote version of the T500GT is typically used when the remote baseband equipment requires a serial interface for telemetry and command streams, whereas the T500GT-SA is used when the remote baseband equipment supports a direct network connection for telemetry and command data streams.



Key Features

Network Compatibility

- ✓ WAN (IP)
- ✓ Automatic WAN Fault Detection and Recovery
- ✓ TCP/IP, UDP/IP, and PGM Protocols
- ✓ NASA
- ✓ USN
- ✓ CCSDS SLE Networks
- ✓ Commercial Ground Networks

Format Support

- ✓ Conventional and CCSDS Telecommand: Command Formatting and Barker/Fill Insertion
- ✓ Conventional and CCSDS Telemetry

Performance

- ✓ 5 Mbps Command Rate
- ✓ 20 Mbps Telemetry and PCM Simulator Rate in Low-Rate Mode
- ✓ Up To 100 Mbps Telemetry and PCM Simulator Rate in High-Rate Mode
- ✓ 800 Mbps Maximum Aggregate Archive Rate

Inputs/Outputs

- ✓ PCM Data/Clock
- ✓ Commands-Network, Telemetry, Binary, Dibit
- ✓ Network: Dual 10/100/1000 Ethernet

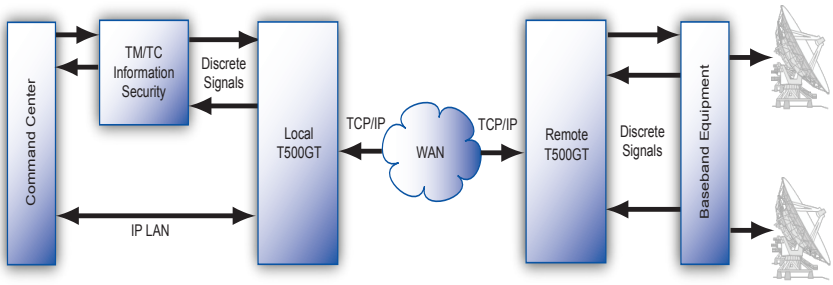
FEC Support

- ✓ BER, Reed-Solomon, CRC

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

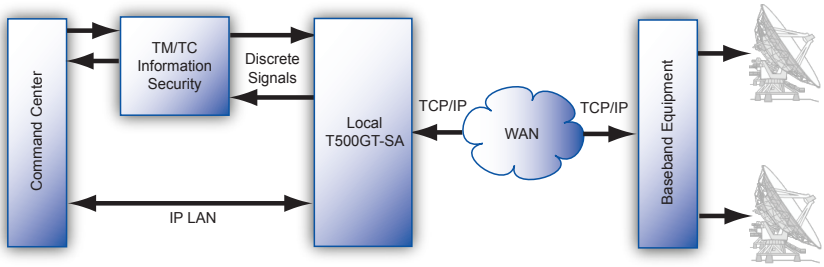
T500GT

The T500GT local/remote configuration (T500GT) uses a pair of T500GTs, one on each side of the IP network. The T500GT pair encapsulates the network, making it transparent to the on-time delivery of deterministic digital/digitized signals. Variable network latency is factored out by rate buffers and a deterministic data time-tagging scheme that embeds time-tags from an Inter-Range Instrumentation Group/Global Positioning System (IRIG/GPS) time source.



T500GT-SA

The T500GT Stand-Alone configuration (T500GT-SA) uses a single T500GT to perform the appropriate protocol conversion (serial-to-IP or IP-to-serial) to "package" the data streams as required for the remote baseband system. Remote ground facilities supported by the T500GT-SA include commercial baseband systems, the National Aeronautics and Space Administration (NASA) network, Universal Space Network (USN), test facilities, and custom



remote antennas. As a Consultative Committee for Space Data Systems (CCSDS) Space Link Extension (SLE) edge device, the T500GT transports CCSDS Telemetry/Telecommand (TLM/TC) frames using a NASA/ESA interoperable version of SLE.

Modular Design

The T500GT is a high-performance, real-time, high-rate digital processing system and protocol translator with dynamically reconfigurable algorithms. The T500GT has a full range of firmware and software personality options for processing low to high-rate CCSDS/TDM telemetry, multiplexing/demultiplexing, Time-Data Correlation (TDC), IRIG time-stamping/generation, PCM simulation, derandomization, error detection and correction (BER, Reed-Solomon, CRC), archive, digital/analog recording, playback, and custom functions.

Specifications

Base Platform Includes:

- ✓ 1RU Rackmount Server, Linux OS
- ✓ Telemetrix® Software Framework
- ✓ Rear Rack I/O Panel and Interconnect Cables
- ✓ Hot-Swappable RAID Drives
- ✓ Redundant Hot-Swappable Power Supplies
- ✓ Dual 10/100/1000 Ethernet NICs
- ✓ Java/Web Browser GUI for Setup/Control

Power (Typical)

- ✓ 110/220 VAC, 50/60Hz, 700 Watts

Options

- ✓ 2RU, 4RU, 5RU Servers
- ✓ Disk Configurations
- ✓ Fiber NICs
- ✓ Choice of Server Manufacturer

Environmental

- ✓ 10 °C to 35 °C Operating

Regulatory

- ✓ FCC, CE

12515 Academy Ridge View Colorado Springs, CO 80921, U.S.A.
Tel: 719.598.2801 Fax: 719.598.2655
www.rtlogic.com
Copyright© Real Time Logic, Inc.
RTL-DST_T500GT_2015-3

RT LOGIC
A KRATOS Company

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP