

TELEMETRIX 508+ NETWORK INTERFACE SYSTEM (T508+)

OVERVIEW

The RT Logic Telemetrix® 508+ (T508+) interconnects satellite control centers with remote ground antenna sites. Capitalizing on the proven Telemetrix architecture, the T508+ is configurable to the Air Force Satellite Control Network (AFSCN) or customer-owned/leased networks, such as Universal Space Network (USN).



Full support is provided for ground antenna monitoring, control, and command/telemetry processing. The built-in simulator supports system checkout/rehearsals.

APPLICATION

The core function of the T508+ is to encapsulate the remote network's protocol specifics for the user. Whether utilizing a customer-owned network, leasing time from a commercial venture, or interfacing to the AFSCN, the basic operation of the T508+ remains the same. The T508+ can even be configured to support multiple network types from the same unit.

The Telemetrix 508+ supports a variety of command input/output interfaces, including ternary, serial dibit, AFSCN command data packets, and TCP/IP network packets. Conversion from one input source to another output source is supported on a stream-by-stream basis.

The T508+ performs multiple telemetry processing functions as well. Options include bit synchronization, data format conversion, data/clock polarity control, and telemetry stream regeneration from TCP/IP packets.

FEATURES

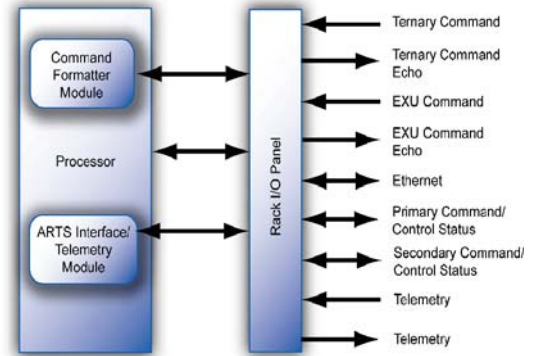
- Ground Antenna Networks
 - AFSCN
 - USN
 - Custom Networks
- Telemetry Processing
 - Data Format/Polarity Conversion
 - Clock Recovery/Telemetry Stream Regeneration
- Command Processing
 - Data Format Conversion (Ternary, Binary, Dibit, Packets)
 - Command Echoes
 - Barker Insertion
- Antenna Pointing
 - Angle Generation
 - Antenna Pointing Angle Transmission
- Simulation Support For Checkout/Rehearsals
 - AFSCN RGF Simulator
 - PCM Telemetry Simulator
- Java-Based GUI And CORBA, C++, And TCP/IP Client Objects For Monitor And Control
- Full Product Documentation/Customer Support

RGF SUPPORT

The T508+ is used within mission control centers to interface the Telemetry, Tracking, and Command (TT&C) system with the Remote Ground Facility (RGF) being used to support spacecraft contacts.

The T508+ performs the unique protocol processing required to interact with the specific remote ground antenna facility. For example, the AFSCN utilizes an ADCCP-based serial communications protocol and has specific directives/status messages. Commercial networks such as USN use a TCP/IP interface. The T508+ can switch between contacts to work with different networks.

The T508 RGF simulator application provides a high-fidelity simulation of an AFSCN contact. The simulation capability includes emulation of the RGF's behavior and generation of a simulated telemetry stream. Events can be generated in the RGF status data messages to exercise the TT&C application software and operator responses. The simulated telemetry stream is programmable to mimic the specific spacecraft's telemetry frame characteristics.



STANDARD T508+ CONFIGURATIONS

- T508SC-100: Single-contact T508+ network interface system with 2U chassis, processor, CCS/ Ternary/Dibit conversion firmware and software.
- T508DC-100: Dual-contact T508+ network interface system with 2U chassis, processor, CCS/ Ternary/Dibit conversion firmware and software.

SPECIFICATIONS

- Networks
 - AFSCN
 - USN
 - Custom
- Inputs
 - Telemetry: PCM Data/Clock (TDM, CCSDS)
 - Commands: Network, Ternary, Or Dibit
 - RGF Control/Status
- Outputs
 - Telemetry: Data/Clock Or Frames
 - Commands: Network, Ternary, Or Dibit
 - RGF Control/Status
- Encryptors/Decryptors
 - KI-17
 - Mykotronx
 - Elwell (KGT-61, KGR-62, KGR-61, KGT-62)
 - KGR-28, KIT-123
- Built-In Simulators
 - AFSCN RGF
 - Telemetry
- Control Monitoring
 - CORBA IDL API
 - TCP/IP API
 - TT&C Application Client Objects
 - Java/Windows GUI
 - Front Panel LCD
- Dimensions
 - 2U Rack Mount: 3.5 x 16 Inches (H x D)
 - Rear Rack I/O Panel
- Power (Typical)
 - 120/240 VAC, 300 Watts
 - 50/60 Hz
- Operating Environment
 - 0 °C To 50 °C
 - 10% To 90% Relative Humidity



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