



NTS-200

High-Performance GPS Network Time Server

KEY FEATURES

- High-Bandwidth NTP Capability
- 10/100Base-T Autosensing Ethernet
- 12 Channel GPS Receiver
- Single Satellite Timing Mode
- Web-Based Status and Control Interface
- WinSync NTP Client Software
- SNMP Enterprise MIB
- MD5 Security Protocol
- Upgradable Flash Memory
- Stratum 1 Operation Via GPS Satellites
- Stratum 2 Operation Via NTP Servers
- Two-Year Warranty

KEY BENEFITS

- Improve Network Log File Accuracy to Speed Network Fault Diagnosis and Forensics
- Thousands of Client Computer Clocks Can Be Synchronized Typically to Within 1 to 10 Milliseconds
- Reliable and Secure Source of Time for Your Network
- Accurate Time References to: The Atomic Clocks aboard the Global Positioning System (GPS) Satellites and Up to Ten Back-up NTP Servers
- Web Interface for Easy Control
- Very Easy to Install and Maintain
- Accurately Synchronize Mission Critical Network Operations and Applications Across Thousands of Network Clients
- Secure Source of Time Inside Your Firewall
- Window or Roof Mounted Antenna for Easy Installation

Symmetricom's high-performance NTS-200™ Network Time Server is used to synchronize clocks on servers and workstations across entire enterprise networks. Accurately synchronized clocks are critical for network log file accuracy, billing systems, electronic transactions, database integrity, software development, and many more essential applications. The NTS-200 provides reliable and secure network synchronization technology by combining a high-speed/high-capacity network interface, versatile GPS timing receiver technology, web-enabled user interface, and a wide range of network protocol support for seamless integration into an existing network.

The high-bandwidth capability of the NTS-200 is important as modern broadband networks grow larger and faster and the need for accurate, reliable, and secure time becomes more critical. The high availability and throughput of the 100Base-T interface translates into the support of tens of thousands of network clients with no degradation in timing accuracy.

Ease of use and remote access are key attributes of the NTS-200 state-of-the-art user interface. Designed with the network administrator in mind, the NTS-200's built-in

web pages offer current status information and full control of the server via a standard browser interface. Many network protocols are supported for easy management. The rack-mounted unit is easily installed and quickly brought online with a few front panel keystrokes. An autosensing 10/100Base-T Ethernet interface easily integrates with existing network equipment.

The Stratum 1 level NTS-200 derives accurate time directly from the atomic clocks aboard the GPS satellite system. By using an integrated, 12-channel GPS receiver, every visible satellite can be tracked and used to maintain accurate and reliable time. Even in urban canyon environments where satellite visibility can be limited, the automatic, single satellite tracking mode provides accurate time from as few as one intermittent satellite and can also track satellites using a window mounted antenna.

If the GPS reference signal is lost entirely, the NTS-200 can automatically revert to a Stratum 2 mode and retrieve time from other user designated internal or external network time servers. This prevents disruption of time service to the network and the network administrator is notified immediately via SNMP of the change in time reference status.



NTS-200 High-Performance GPS Network Time Server

NTS-200 Specifications

NETWORK PROTOCOLS

NTP v2, v3 & v4
NTP broadcast mode
SNTP Simple Network Time Protocol
TIME (RFC 868)
DAYTIME (RFC 867)
MD5 Authentication (RFC 1321)
HTTP (RFC 2068 & 2616)
Telnet (RFC 854)
FTP (RFC 959)
SNMP (RFC 1157)
MIB II (RFC 1213)
DHCP (RFC 2132)

INPUT/OUTPUT CONNECTIONS

- Network: 10/100Base-T Ethernet autosensing; RJ-45
- Serial: Bidirectional RS-232, 9600, N, 8, 1; 9-pin D

SERVER PERFORMANCE

- Stratum 1, GPS reference. The NTS-200 can support an estimated 48,000 NTP clients while maintaining client synchronization accuracy of 1-10 milliseconds to UTC (typical). The number of clients is a computed value based on a sustainable requests per second metric for a given accuracy level.
- Stratum 2, designated NTP server reference: The NTS-200 optionally operates as a Stratum 2 clock, obtaining its time from user designated network NTP servers. Stratum 2 mode can be used as the primary mode of operation or as a back up mode in case the GPS reference signal is lost. Time stamp accuracy depends on NTP reference server(s). NTP request handling capacity remains the same regardless of stratum level.

MANAGEMENT/USER INTERFACE

- Alphanumeric front panel display & keypad
Display: 2-line, 32 character backlit LCD
Keypad: Up, Down, Left, Right, Setup, Save. Keypad control can be locked for maximum security.
- Web interface: Browser-compatible
HTML interface includes Time, GPS, Satellite, and Network status and Control pages. Control pages are password protected. HTTP access can be disabled for maximum security.
- Telnet: Full status and control, password protected. Telnet access can be disabled for maximum security.
- Simple Network Management (SNMP): Provides the network administrator with the NTP time server protocol status; network status, statistics and Management Information Base (MIB) II.
- FTP: System software upgrades possible via FTP to Flash memory. FTP access can be disabled for maximum security
- RS-232: Local terminal access for status and control. Status LED: Tri-color LED indicates normal operation and major and minor alarms
- Activity LED: Bi-color LED indicates 100Base-T, 10Base-T, or no connection

GPS RECEIVER/ANTENNA

- 12 channel parallel receiver
- Minimum satellites for time: 1 intermittently
- GPS time traceable to UTC (USNO)
- Accuracy: <1 microsecond to UTC. Network factors can reduce client synchronization accuracy to 1-10 ms (typical).
- Includes 12V L1 GPS antenna (window or roof mount) with 50' (15 m) of Belden 9104 coaxial cable.
- Maximum Belden 9104 cable length: 150' (45 m). For longer cable runs see Options.

MECHANICAL/ENVIRONMENTAL

- Size: 1.73" x 17" x 10.63" (4.4 cm x 43.2 cm x 27 cm) 1U rack mount
- Power: 100-240 Vac, 47 to 440 Hz, <20 watts
- Operating temperature: 0°C to +50°C
- Storage temperature: -50°C to +85°C
- Humidity: To 95%, noncondensing
- Certifications: FCC, CE, UL, PSE

CLIENT SOFTWARE

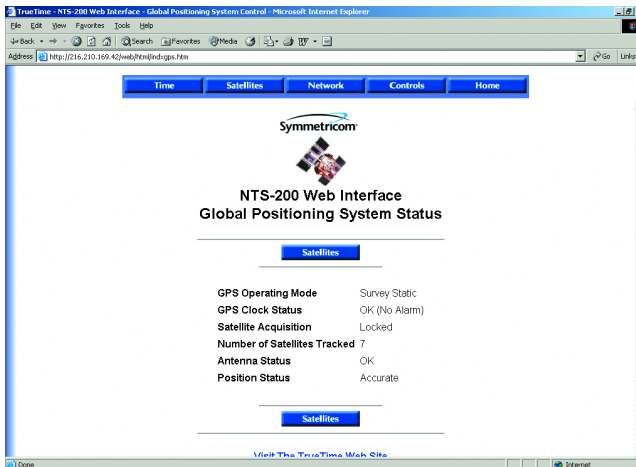
- An NTP client/daemon is required for client-side synchronization with any network time server, including the NTS-200. Included with the NTS-200 is Symmetricom's WinSync NTP client for Windows® 95/98/NT/2000. Comprehensive time client, server & management software for easy distribution, management and monitoring of time across the network is also available.

PRODUCT INCLUDES

- NTS-200 Network Time Server, two-year warranty, L1 GPS antenna (window or roof mount, specify at time of order), 50' (15 m) Belden 9104 coaxial cable, category 5 patch cable, manual, WinSync NTP client for Windows 95/98/NT/2000, Enterprise MIB software, power cord, and rack mount ear kit. (Roof mount antenna includes a 1' (30 cm) mounting mast and two clamps).

OPTIONS

- GPS antenna in-line amplifier for cable runs to 300' (90 m)
- GPS antenna down/up converter for cable runs to 1500' (457 m)
- -48Vdc Power supply
- Comprehensive time client, server & management software for easy distribution, management and monitoring of time across the network is also available.
- NTP Network Time Displays, 2" or 4" (5 cm or 10 cm), 6 digit, red LEDs



Sample of the standard web interface for the status and control of the NTS-200



SYMMETRICOM, INC.
TT&M DIVISION
3750 Westwind Boulevard
Santa Rosa, California
95403
tel: 707.528.1230
fax: 707.527.6640
ntp-systems@symmetricom.com
www.ntp-systems.com

SYMMETRICOM, INC.
CORPORATE
2300 Orchard Parkway
San Jose, California
95131-1017
tel: 408.433.0910
fax: 408.428.7896
info@symmetricom.com
www.symmetricom.com



©2004 Symmetricom. Symmetricom and the Symmetricom logo are registered trademarks of Symmetricom, Inc. All other trademarks are the property of their respective companies. All specifications subject to change without notice. DS/NTS200/D/1104/PDF