



# NTS-150

## GPS Network Time Server

### KEY FEATURES

- Stratum 1 Network Time Server
- 10/100Base-T Autosensing Ethernet Interface
- Synchronize Thousands of Clients
- 12 Channel GPS Receiver
- Single Satellite Timing Mode
- NTP Broadcast Mode
- SymmTime NTP Client Software
- SNMP Enterprise MIB
- MD5 Security Protocol
- Upgradable Flash Memory
- Robust Chassis Design
- Telnet Remote Control
- Optional Time Display
- Two-Year Warranty

### KEY BENEFITS

- Improve Network Log File Accuracy to Speed Network Fault Diagnosis and Forensics
- Accurately Synchronize Mission Critical Network Operations and Applications
- Cost-Effective Solution to Synchronize The Workstations, Servers, Routers, etc. on a Network
- Reliable and Secure Time is Acquired From Atomic Clocks Aboard the Global Positioning System (GPS) Satellites
- Window or Roof Mounted GPS Antenna Choices for Easy Installation
- Thousands of Client Computer Clocks Can Be Synchronized Typically to Within 1 to 10 Milliseconds
- Easy to Install Server Appliance

Symmetricom's Stratum 1 level NTS-150™ 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. A GPS antenna and cable is included.

The near plug-and-play operation of the quality rack mount unit with an autosensing, high bandwidth 10/100Base-T interface makes installation quick and ongoing maintenance and support costs virtually nonexistent. The high reliability of the NTS-150 is backed by Symmetricom's long-standing experience building dedicated network time servers.

The NTS-150 Network Time Server supports a wide variety of time and network protocols to seamlessly integrate into your network. SNMP with MIB II support offers a standard

interface for network management systems. MD5 security protocol is included to authenticate NTP client-server communication. FTP is supported for easy firmware upgrades.

A comprehensive RS-232/telnet command set provides versatile control of the NTS-150. An intuitive, Windows®-based start-up program is provided to quickly configure the NTS-150 for immediate use on your network. Telnet is supported for remote status and control over the network. The optional UTC time display shows full date information to the second for visual reference.

Symmetricom also offers the full featured NTS-200 and SyncServer® S100 network time servers. Some of the additional features found in these servers include back-up time references, including other NTP servers or ACTS dial-up to provide the confidence that the network has accurate time; HTTP web interface for remote access via common browser, and a display and keypad to quickly and easily review or configure the unit from the front panel without having to communicate via the RS-232 port or telnet.



NTS-150 GPS Network Time Server with and without time display



## NTS-150 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)
- Telnet (RFC 859)
- 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: Bi-directional RS-232, 9600, N, 8, 1; 9-pin D

### SERVER PERFORMANCE

- The NTS-150 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. The NTS-150 can also be configured to serve GPS time in lieu of UTC time. GPS time does not account for leap second offsets to UTC.

### MANAGEMENT/USER INTERFACE

- RS-232: Local terminal access for status and control
- Telnet: Full status and control, password protected
- Simple Network Management Protocol (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 are possible via FTP to flash memory
- 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
- Optional UTC time display: 2 line, 32 character backlit LCD

### 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 12 V 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-150. Included with the NTS-150 is Symmetricom's SymmTime™ NTP client for Windows® 95/98/NT/2000/XP. Comprehensive time client, server & management software for easy distribution, management and monitoring of time across the network is also available.

### PRODUCT INCLUDES

- NTS-150 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, SymmTime NTP client for Windows 95/98/NT/2000/XP, Enterprise MIB software, Windows-based start-up program, power cord, and rack mount ear kit. (Roof mount antenna includes a 1' (30 cm) mounting mast and two clamps.)

### OPTIONS

- Optional UTC time display
- 48Vdc Power supply
- Extended cable lengths
- GPS antenna in-line amplifier for cable runs to 300' (90 m)
- GPS antenna down/up converter for cable runs to 1500' (457 m)
- Lightning arrestor
- GPS Antenna splitter kit
- 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



**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