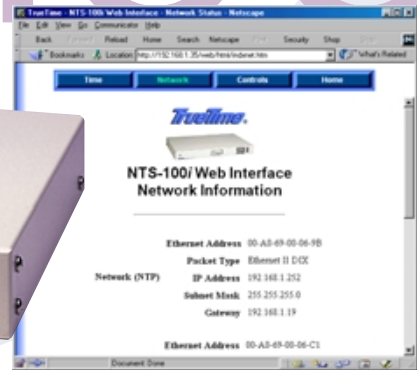


# NTS-100i



## Model NTS-100i Network Time Server

### Key Features

- Stratum 1 network time server
- GPS, IRIG-B, or dial-up time references
- 1 millisecond accuracy
- Web-based status and control interface
- WinSync NTP client software
- Telnet remote control
- SNMP Enterprise MIB support
- MD5 Security Protocol
- 1 PPS and IRIG B output

TrueTime's NTS-100i offers the total solution for enterprise-wide time synchronization over the network. The NTS-100i acquires precise time from GPS, IRIG-B, or a dial-up time service and distributes the time over the network using the Network Time Protocol (NTP). The NTS-100i can synchronize client computers typically to 1 millisecond. By installing the NTS-100i within your network firewall, you can ensure high reliability and security in delivering precise time.

The NTS-100i network time server is an essential resource for today's enterprise network. Keeping accurate time on computers across the network is critical in many applications, including file timestamping, database transactions, e-commerce, and network security. Computer clock synchronization using the NTS-100i and ethernet time clients is an automatic function that eliminates operator errors or delinquency in manually setting the time. Because you can synchronize the NTS-100i to the GPS satellite system, pre-

cise network synchronization is available across the globe. NTS-100i units deployed across widely separated local networks maintain synchronization across an organization without requiring time transfer between them.

For easy remote access and control of the NTS-100i, you can use a standard web browser such as Netscape or IE Explorer. The intuitive graphical user interface is ideal for quickly checking a wide range of status functions and swiftly making any adjustment necessary. In addition to the browser interface, the NTS-100i supports Telnet, SNMP, DHCP, MD5, and RS-232 interfaces. Status and control functions are available via Telnet. The SNMP with MIB II support offers a standard interface for status information. Password protection maintains secure remote access to the unit, and MD5 security protocol can authenticate NTP client-server communication.

The NTS-100i is a full-featured, Stratum 1 network time server easily configured into a network. The rear panel supports 10Base-T connectors for timing and control functions; a 9-pin RS-232 connector; and two BNC output connectors for IRIG-B and 1 PPS outputs. A separate BNC connector is provided for Alarm outputs. The NTS-100i also includes a front-panel keypad, a display, and a status/alarm LED. GPS-equipped units include an integrated GPS receiver, an antenna for external mounting, and a cable. Bringing the NTS-100i on-line requires only entering the IP address, subnet mask and gateway address.

# Specifications: NTS-100i

## Input Synchronization Sources

Select one at time of order:

**GPS:** Eight-channel, 1575 MHz L1 C/A code receiver. Includes L1 GPS antenna with 50' (15 m) of Belden 9104 coaxial cable. Maximum Belden 9104 cable length, 150' (45 m). For longer cable runs, see Options.

**IRIG-B:** Amplitude modulated 0.1 to 10 Vpp, 600 ohm input impedance.

**ACTS:** NIST dial-up time synchronization service\*.

## Network Protocols

Protocols supported:

NTP (RFC 1305)  
SNTP (RFC 1361)  
TIME (RFC 868)  
MD5 (RFC 1321)  
SNMP v1 Enterprise MIB II  
HTTP\*\*  
Telnet  
FTP  
DHCP  
UDP/IP

**HTTP/Telnet/DHCP:** A separate 10Base-T port is used for HTTP, Telnet and DHCP to separate security-sensitive maintenance and control functions from critical timing functions.

**Simple Network Management (SNMP):** SNMP provides the network administrator with the NTP Time Server Protocol status; network status, and statistics. This feature implements SNMP version 1 and Management Information Base (MIB) II.

## General Specifications

Timing Accuracy:

**Network:** 1-10 milliseconds typical client accuracy

**GPS:** <1 microsecond to UTC

**IRIG-B:** <10 microseconds to input code

**ACTS:** <10 milliseconds to NIST

**1 PPS:** 1 microsecond to reference input

**10 MPPS:** <1x10<sup>-7</sup> when externally synchronized

**Network Interface:** 10Base-T (Ethernet, UDP/IP, TCP/IP)  
Optional 10Base-2 or AUI can be substituted for 10Base-T if specified at time of order. Substitution applicable only for timing port and not HTTP/Telnet port.

**Serial I/O:** Bidirectional RS-232, 9600, N, 8, 1.

**Auxiliary Outputs:** Standard unit ships with IRIG-B and 1 PPS outputs.

**IRIG-B:** 1 kHz amplitude modulated carrier. 3Vpp high into 600 ohms. BNC connector.

**1 PPS:** CMOS level, 22 ohm output impedance, rising edge on time. BNC connector.

**10 MPPS:** CMOS level, 22 ohm output impedance, rising edge on time (replaces IRIG-B or 1 PPS output at time of order).

**Alarm/Status Output:** Open collector on rear panel BNC.  
(Fault is high impedance state.)

**Alphanumeric Front Panel Display:**

**Display:** 2-line, 32-character LCD.

**Keypad:** 0-9; up, down, left, and right arrows; CLR, FUNC/ENTR, TIME, STATUS, POSITION

**Internal Oscillator:**

**Accuracy:** Function of input synchronization source.

**Stability:** 25x10<sup>-6</sup> over 0°C to + 50°C when not externally synchronized.

**ACTS:** 2x10<sup>-6</sup> over 0°C to + 50°C when not externally synchronized.

## Mechanical/Environmental

**Size:** 1.75" x 17" x 10.38" (4.4 cm x 43.2 cm x 26.4 cm)

**Power:** 95-260 Vac, 47 to 440 Hz, <15 watts

**Operating Temperature:** 0°C to +50°C

**Storage Temperature:** -40°C to +85°C

**Humidity:** to 95%, noncondensing

**Certifications:** FCC, CE

## Client Software

An NTP client/daemon is required for client-side synchronization with any network time server, including the NTS-100i. Included with the NTS-100i is TrueTime's WinSync NTP client for Windows 95/98/NT/2000. Visit <http://www.truetime.net/software.html> for an extensive list of other software time clients for various operating systems.

## Product Includes:

NTS-100i Network Time Server, L1 GPS antenna, 50 ft. (15 m) Belden 9104 coaxial cable, 1 ft. (30 cm) mounting mast, two clamps, manual, WinSync NTP client for Windows 95/98/NT/2000, Enterprise MIB software, power cord, and rack mount ear kit.

## Options

- -48 Vdc power supply
- GPS Antenna Down/Up Converter for long cable runs to 1500 ft (457 m). Contact TrueTime for application specific details.
- Comprehensive time client, server & management software for easy distribution, management and monitoring of time across the network.

\* Please note that the NIST dial-up synchronization service connector provided by the TrueTime NTP module requires a user-supplied phone line

\*\* IRIG- and ACTS-specific commands are available via Telnet, serial port, or keypad control only.

*Specifications subject to change without notice.*

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