



NTP Network Time Server for high reliability applications

# Thunderbolt NTP TS200

## Thunderbolt NTP TS200 Time Server

The Protempis Thunderbolt® NTP TS200 Time Server is designed for demanding applications that require high accuracy NTP time stamping. The TS200 supports synchronization of thousands of workstations, routers, switches and other network elements for logging and security forensics. VOIP IPBX systems also require very accurate NTP timestamps to ensure CDR events are correctly registered and reported.

The Thunderbolt NTP TS200 GNSS receiver supports multiple constellations, enhancing redundancy and satellite availability.

## Industrial Applications

Automation systems and industrial environments that use SCADA or other network monitoring, measurement and control systems require high precision NTP reference to ensure reliable and accurate operations. The NTP TS200 is optimized to deliver extremely stable and accurate time of day (TOD) synchronization for a variety of time-sensitive applications such as data centers, SCADA systems and PMU synchronization.

## Ideal for Demanding Environments

The Thunderbolt NTP TS200 leverages Protempis' decades of experience in GNSS systems with millions of timing devices integrated into telecommunications, digital broadcasting, computer networks and other industrial applications. The NTP TS200 Time Server offers extended operating temperature ranges to ensure suitability for use in demanding environments. The NTP TS200 supports a large number of clients making it suitable for medium and large scale deployment. The low cost per client of the TS200 helps reduce the total cost of deployment while maintaining superior reliability.

## Integration & Installation

The Protempis Thunderbolt NTP TS200 Clock offers AC and DC power options for easy deployment in all types of network environments. Matching the NTP TS200 with Protempis rugged antennas such as the Protempis Bullet™ 360 provides reliable reference acquisition in challenging RF signal environments. Bullet 360 rugged antennas provide multi-GNSS capabilities so that critical applications can obtain high-precision timing signals with the best reliability in the industry.



## Key Features

- NTP v4 Time Server
- Holdover <math><1 \times 10^{-10}</math> /24hrs
- Supports 2.5K transaction/second
- Multi-Constellation (GPS, GLONASS, Beidou, Galileo and QZSS)
- Accurate NTP timestamps
- IPv4 and IPv6 Support
- VLAN support
- Dedicated management port (1xRJ45)
- Electrical and Optical (100/1000 Base-T, 1000 Base SX, 1000 Base LX)
- Supports Optical Fiber
- Network Management: SNMP, Web UI, CLI
- Rack Mountable
- Industrial Temperature -40°C to +85°C

### Disclaimer

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## General Specification

Inputs: .....GNSS (GPS, GLONASS, Galileo, Beidou and QZSS)  
Outputs: .....NTP, PPS, 10MHz

### Ethernet Ports:

1x Mgmt. 10/100/1000 Base T RJ45  
1x 1G 100/1000 Base T, 1000 Base SX, 1000 Base LX SFP  
1x 1G 10/100/1000 Base T RJ45

Serial Management .....9-Pin Comm EIA-232  
GNSS Antenna .....SMA

### Protocols:

NTP, SNTP, IPv4, IPv6, Telnet, SFTP, SSH, RADIUS,  
TACACS+, SNMP, DAYTIME, TIME, NEMA TOD  
Network Management .....SNMPv2/v3, HTTPS, CLI

### User Interfaces:

CLI .....Monitoring and Management  
Web UI .....Monitoring and Management

## Performance

Time of day accuracy .....15ns (1-sigma) from UTC  
Frequency accuracy ..... $1.16 \times 10^{-12}$  (one day aver.)  
Holdover ..... $< 1 \times 10^{-10}$  /24hrs

### Time accuracy

NTPv4 Stratum-1 server configuration .....2500 tps  
Surveyed accuracy .....<3m Horizontal, <5m Vertical

## Physical Characteristics

Dimensions in cm (L x W x H) .....20.8 x 20 x 4.4  
(19" half-rack x 1U)  
Weight .....< 3Kg (6 lbs.)

## Power

DC Power, dual feed .....-36VDC to -72VDC  
AC Power .....110V / 220 V (adapter incl.)  
Current consumption .....330mA (max)  
Power consumption .....5W average, 10W maximum

## Regulatory & Standards

### Operating Conditions

Temperature .....-40°C to +85°C  
Humidity .5%-95% RH non-condensing (+60°C)  
Storage Temperature .....-55°C to +105°C

### Safety & Environmental:

UL EN 62368-1  
CE, VCCI CISPR32 Class A  
GR-63; Level 3  
ETSI (EN55032/EN55024) EN 300019, Class T3.2  
Electrical .....EMC, ESD Immunity & susceptibility  
FCC Part 15 Class B / ICES 003 Class-B  
Korea KN32 / KN35 Class A  
EN.....301 489-1, EN 301 489-19 EN 303 413  
IEEE .....613-1  
Telcordia .....GR-1089  
IEC:60950-1

### Synchronization

IETF .....NTPv4 (RFC5905)

### Product Compliant with the following directive:

2014/53/EU (RED Directive)  
2011/65/EU (RoHS2 Directive)  
2012/19/EU (WEEE Directive)

Please go to [www.protempis.com](http://www.protempis.com) for the latest documentation and tools, part numbers and ordering information.

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