

# NTP Server LANTIME M400/GPS

## NTP Time Server with GPS Reference Clock for Industrial Applications

The LANTIME M400 Time Server offers an unparalleled flexibility and versatility and provides accurate time to your network in a compact and full-featured DIN railmount package for industrial applications such as power generation, transmission and distribution (substation automation), process control and industrial automation systems.

The ultra compact form factor enables this product to become the ideal time and frequency source in installations where every millimeter counts. It is available in two different sizes: the standard M400 chassis (105 x 189 x 146mm) with one option slot and the XL version (105 x 189 x 166mm) that offers an additional slot to provide even more outputs and interfaces.

<http://www.meinberg.de/english/products/lantime-m400-gps.htm>

### Key Features:

- Synchronization of NTP and SNTP compatible clients
- Web based status and configuration interface and console based graphical configuration utility
- Supported net protocols: IPv4, IPv6, NTP, SNTP, DAYTIME, DHCP, HTTP, HTTPS, FTP, SAMBA, SFTP, SSH, SCP, SYSLOG, SNMP, TIME, TELNET, W32TIME
- Alert-Notification system of status change by Email, WinMail, SNMP or an external connected display
- Full SNMP v1,v2,v3 support with own SNMP-daemon for status and configuration and SNMP Trap messages
- USB port for performing updates, lock front panel, and backup/restore configuration and log files.
- Antenna connected with up to 300m of standard coaxial cable RG58

### Description:

An backlight LC Display (4 x 16 characters) shows the status of the reference time source as well as the time service. Together with eight push buttons it can be used to configure and monitor the timeserver. Additionally three bi-color (green/red) LEDs clearly indicate the state of the three main components (time source, network time service, network) and a red alarm LED signals major system failures.

The security-related features of the LANTIME M400 time server satisfy highest demands. The time synchronization data can be reliably signed and secured by symmetric keys (MD5) and the NTP autokey procedures. This protects the clients against manipulated time and man-in-the-middle attacks and allows them to verify that the NTP packets they received were sent by the LANTIME.

Additionally the whole LANTIME configuration can be done by using encrypted channels (e.g. SSH, HTTPS or SNMPv3). Every unused/unneeded protocol can be disabled in order to reduce possible points of attack.

In order to support network management systems the M400 offer an extensive SNMP interface, which can be accessed by SNMP V1, V2.c and V3. It allows the monitoring of all relevant system parameters (including operating system parameters, network



Meinberg's first Railmount NTP Server with backlight display (4 x 16 LCD) and front panel buttons - replacing the LANTIME AHS and DHS models

interface statistics, detailed GPS and NTP status information as well as the complete system configuration) and can be used to alter the LANTIME configuration via SNMP set commands, too.

LANTIME time servers are designed to be deployed in IPv6 networks, the NTP time synchronization as well as the configuration interfaces (Web-based, SSH and SNMP) comes with IPv6 support. You can assign several IPv6 addresses and the system supports automatic configuration by IPv6 autoconf.

Because of its modular system architecture it is possible to equip the M400 with up to nine additional ethernet ports (XL model) and a number of different reference time sources. Optionally several additional frequency-, serial string- and pulse outputs are available.

For applications with higher stability/holdover requirements there are several oscillator options available (up to "OCXO HQ").

- Three-Year Warranty
- Lifetime technical support via telephone or E-Mail including Firmware Updates

## Specifications: LANTIME M400/GPS

### Front Panel:

Backlight LC- Display (4 x 16 characters)

3 x Bicolor LEDs: Ref. time,  
Time Synchronization Service (NTP) and  
Network-Link status

1 x Red alarm LED (configurable)

Function buttons – F1, F2, OK, ESC and 4-way navigation button

### Bottom Panel:

1 x RS232 interface, 9pin D-Sub male connector  
for initial setup and configuration

1 x USB (Rev. 1.1) front panel interface to:

- install firmware upgrades
- backup and restore configuration files
- copy security keys
- lock/unlock front panel keys

### Network Interface:

1 x 10/100base-T Ethernet Interface

### Option:

1 x PTPv2 IEEE 1588-2008 - 10/100 MBit with RJ45

### Outputs (all I/O connectors are accessible from the bottom):

1 x PPS (Pulse Per Second), BNC connector  
1 x 10 MHz TTL, BNC connector  
1 x RS232 serial time string

### Standard power supply:

Supports both - AC and DC 100-240 V

### Synchronization Source Input:

1 x Meinberg GPS antenna input, N-Norm female connector, isolated



GPS Antenna/Converter Unit with mounting kit

### Options:

Also available as PTP Master and MRS and with:

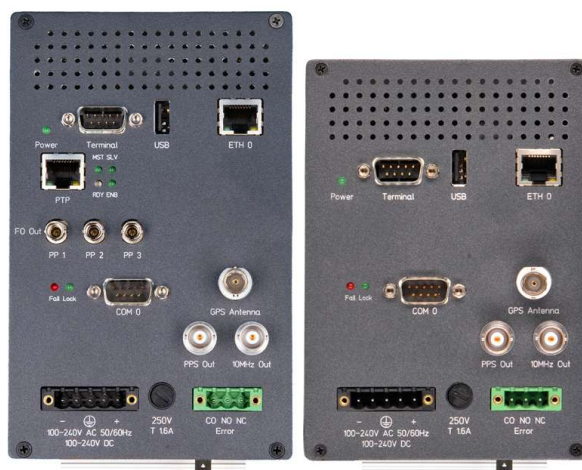
- up to 5 (9 XL - form factor) network interfaces
- IRIG out (DCLS, AM)

### System Components:

- GPS C/A code receiver
- TCXO-HQ Timebase
- Single board computer with Linux operating system, supporting the following protocols:
  - NTP/SNTP v4, Time protocol (RFC 868),
  - Daytime protocol (RFC 867),
  - SNMP v1,2,3, SNMP Traps, SSH v2,
  - IP v4, IP v6, DHCP client, HTTP(S),
  - Email, FTP, Telnet, Syslog
- 500 MHz CPU for medium and large networks (up to 10,000 requests per second)
- Integrated power supply (100 – 240 VDC/VAC) optional: 19-72 VDC
- Aluminium profile case for 35mm DIN mounting rail  
Standard: 105 mm wide x 189 mm high x 146 mm deep  
XL: 105 mm wide x 189 mm high x 166 mm deep

### Ambient Conditions:

- Temperature: 0 °C ... +50 °C
- Humidity: max. 85 %



DIN Railmount form factor for electrical cabinet installation – I/O connectors XL and standard case