

LANTIME M300/RDT

Remote Disciplined Time Server



The Meinberg LANTIME M300/RDT time server provides accurate time to networks of any size. It synchronizes all systems either NTP- or SNTP-compatible. Itself it is synchronized by up to 7 external NTP time servers (Stratum 2 mode) or by any external Meinberg Radio clock (Stratum 1 mode).

[LANTIME M300 Webpage](#)

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.
- Two (up to six) independent RJ-45 network interfaces 10/100 Mbit
- **System Options:**
 - one or three network interfaces with 10/100/1000 Mbit (Gigabit support),
 - redundant power supplies.

Description:

In RDT systems an external time source can be used for the NTP time service (e.g. Meinberg satellite receiver) or the RDT System will be synchronized by other external NTP time server. The RDT system is a perfect solution to expand an existing network structure in which Stratum 1 NTP server already exists. The RDT system will be synchronized by an external NTP and then distributes the correct time to its clients via network interfaces.

Moreover, a RDT system can also operate as a stratum 1 NTP server similar to time servers from our LANTIME M-series. In this case the RDT requires a serial time telegram and a PPS pulse from an external clock (e.g. Meinberg GPS satellite receiver). As a serial time telegram the Meinberg Standard Time String with CET / CEST or UTC can be used. The Uni-Erlangen-Telegram transmits the offset to UTC as a minute value. The NMEA (National Marine Electronics Association) time telegram can also be used as reference time.

Setting of the message type is automatically done by starting the system.

Note: The RDT system does not have an internal reference clock (Meinberg receiver) and can not provide and distribute the common standard signals (PPS, 10MHz ...), like a LANTIME system with an integrated GPS receiver.

The GNU/Linux operating system of the LANTIMEs SBC (Single Board Computer) has been optimized to ensure a high level of security and reliability.

The configuration of the system can be done by using a standard web browser to access the extensive but straightforward html interface. Alternatively a text based and menu driven setup utility can be started from the shell prompt after logging into the unit via Telnet or SSH.

The security-related features of LANTIME time servers 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 LANTIME time off servers er 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 interface statistics, detailed IRIG 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.

A large display shows the state of the internal IRIG/AFNOR receiver and the NTP subsystem.

```
RDT: serial Refclock    Mon, dd.mm.yyyy
NTP: Offset RDT: -50us  UTC  14:33:10
```

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.

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

LANTIME M300/RDT Specifications



Front Panel:

- 1 x RS232 front panel 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
- 3 x Bicolor LEDs: Ref. time (e.g. GPS), Time Synchronization Service (NTP) and Network-Link status
- 1 x Red alarm LED (configurable)
- 1 x LC-Display, 40 character x 2 rows

Network Interfaces:

- 2 x LAN interface (standard), RJ45 connector, status LEDs for link, activity, speed (10/100 Mbit)

Synchronization Source Input:

- 1 x PPS input, TTL or RS232 level
(on Ref Clock 0 connector or via BNC connector)
- NTP input for external Stratum 1 NTP Servers

Signal Outputs:

- 2 x serial RS232 interface for external reference clocks, via 9pin Dsub female connectors

(reference clocks must send Meinberg Standard Time String once per second)

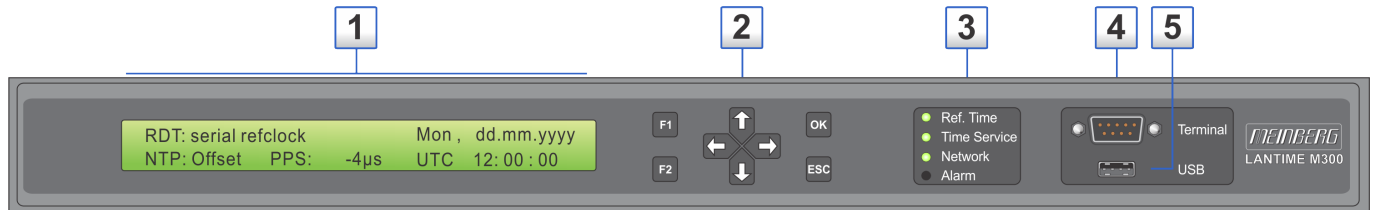
System Components:

- Single board computer with Linux operating system
 - NTPv4, SNTP, symmetric Keys, Autokey,
 - Broadcast, SNMPv1,2,3, SNMP Trap, SSH2,
 - IPv6, DHCP, HTTP(S), eMail, FTP, Telnet, Syslog
- Power supply: 100-240 V AC (50-60 Hz)
- Power consumption: max. 20 W
- 19" metal chassis, 1 U/84 HP
- (483 mm wide x 43 mm high x 285 mm deep)

Package dimensions:

60 cm x 40,5 cm x 27 cm / approx. gross weight per box: 7.5 kg.
(23.6 inch x 15.9 inch x 10.6 inch / approx. gross weight per box: 16.5 pound).

Front and Rear View



ENGLISH

1. LC Display, 2 x 40 characters
2. Function buttons: 4-way navigation; F1, F2, OK, ESC
3. Status LEDs: Ref. Time, Time Service, Network, Alarm
4. Terminal / VT100, 38400 Baud, 8N1, 9pin. D-SUB male
5. USB connector

DEUTSCH

1. LC Display, 2 x 40 Zeichen
2. Funktionstasten: 4 Wege Navigation; F1, F2; OK, ESC
3. Status LEDs: Ref. Time, Time Service, Network, Alarm
4. Terminal / VT100, 38400 Baud, 8N1, 9pol. D-SUB Stecker
5. USB Anschluss



ENGLISH

1. Power supply connectors
2. Refclock 0, 9pin. D-SUB, female
3. Refclock 1, 9pin. D-SUB, female
4. PPS input, BNC
5. Network connectors ETH0 - ETH5, 10/100 MBit RJ45

DEUTSCH

1. Spannungsversorgung
2. Refclock 0, 9pol. D-SUB Buchse
3. Refclock 1, 9pol. D-SUB Buchse
4. PPS Eingang, BNC
5. Netzwerk Anschlüsse ETH0 - ETH5, 10/100MBit RJ45

LANTIME M300/RDT with LNE-2 Option (six additional physical network interfaces)