



## Meinberg Radio Clocks

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## LANTIME M900: NTP Timeserver Platform for Customized Time and Frequency Synchronization Systems

The Meinberg LANTIME M900 Timeserver can be used all around the world to synchronize even the largest networks in computer centers, industrial network infrastructures and telecom environments. The M900 is Meinbergs system platform for customized solutions and offers a wide range of possible configurations, including a wealth of choices for time and frequency inputs and outputs as well as redundancy enhancements for fail-safe synchronization needs.

### Key Features

- Available Reference Sources:
  - \* [1][GPS](#): Satellite receiver for the Global Positioning System
  - \* [2][GLN](#): GLONASS Satellite receiver
  - \* [3][MGR](#): GPS Satellite receiver for mobile applications
  - \* [4][PZF](#): DCF77 correlation receiver for middle europe
  - \* [5][MSF](#): Long wave receiver for Great Britain
  - \* [6][WWVB](#): Long wave receiver for the US time signal
  - \* [7][TCR](#): Time code receiver for IRIG A/B, AFNOR or IEEE1344 codes
  - \* MRS (GPS, PPS, 10MHz, PTP, NTP): Multi Reference Source - several reference sources, adjustable following priority of signal
- Synchronization of NTP and SNTP compatible clients
- Web based status and configuration interface [8][\(Demo\)](#) and console based graphical configuration utility
- Supported networking protocols: IPv4, IPv6, HTTPS, HTTP, SSH, TELNET, SCP, SFTP, FTP, SYSLOG, SNMP
- 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 installing firmware updates, locking frontpanel menu access and backup/restore of configuration and log files
- Antenna connected with up to 300m of standard coaxial cable RG58
- Our LANTIME time server can be provided with a large number of additional output options: IRIG Time Code, frequency synthesizer and programmable pulse outputs are only a few of the many expansion options for your NTP server.
- Up to 9 network interfaces

## Description

The LANTIME M900 offers a lot of space for output modules and several power supply options in its 3U rackmount chassis. This allows for a large number of different outputs like 1PPS, 10MHz, IRIG, serial timestrings or up to 7 Ethernet ports to support large network infrastructures. Meinberg will create an individual solution based on your specific requirements, please contact us.

As an alternative to GPS a number of other reference time sources are available for inclusion in the M900 system, for example DCF77 (PZF), IRIG (TCR), MSF or NTP (from an upstream server).

An LC-Display shows the status of the reference time source as well as the time service. 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 configuration and control of the system can be carried out via a powerful yet easily understandable web user interface, a text-based console setup tool is available for easy access to most configuration options and status information when you logged in via SSH, Telnet or the serial front port.

The M900 platform can be combined with all available Meinberg oscillator options, ranging from the cost effective TCXO up to a Rubidium based oscillator with extremely stable holdover capabilities, ensuring a tightly synchronized network environment in the absence of any external reference, even if this situation lasts for days, weeks or even months.

**Please note that the following technical specifications for pulse, frequency and serial outputs are based on a sample configuration and can be modified in order to fulfill your individual requirements.**

## Characteristics

<b>Display</b>	LC-display, 4 x 16 characters
<b>Control elements</b>	Eight push buttons to set up basic network parameters and to change receiver settings
<b>Status info</b>	Four bicolor LEDs showing status of: <ul style="list-style-type: none"> <li>- reference time</li> <li>- time service</li> <li>- network</li> <li>- alarm</li> </ul>
<b>Frequency outputs</b>	10 MHz via female BNC connector, TTL into 50 Ohm Accuracy depends on oscillator (standard: TCXO), look at <a href="#">[9]oscillator options</a>
<b>Pulse outputs</b>	Pulse Per Second (PPS) via BNC connector (TTL level), pulse width 200ms
<b>Accuracy of pulse outputs</b>	Depends on oscillator option:
<b>Interface</b>	Two independent serial RS232-interfaces, menu configurable
<b>Optional Output Signals</b>	<b>Additional Output Options::</b> The LANTIME M300 comes with many additional outputs options: PPS, 10MHz, programmable pulse outputs (PPS, PPM, PPH, DCF_MARK ...), IRIG modulated and unmodulated time code, T1 / E1 telecom signals, Frequency Synthesizer - to name just a few. Contact us for your specific device configuration.
<b>Data format of interfaces</b>	Baud rates: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Data formats: 7N2, 7E1, 7E2, 7O1, 8E1, 8N1, 8O1 Time strings: <a href="#">[10]Meinberg Standard-Telegram</a> , SAT, Uni Erlangen (NTP), SPA, RACAL, Sysplex, NMEA0183 (RMC, GGA, ZDA), Meinberg GPS, COMPUTIME, ION oder <a href="#">[11]Capture-Telegramm</a>
<b>Alarm output</b>	Synchronous state of the module, relay output (changeover contact)
<b>Network Interface</b>	1 x 10/100 MBit with RJ45 (up to 8 additional LAN interfaces possible)
<b>Power supply</b>	100-240 VAC (50/60 Hz) / 100-240 VDC Redundant Power Supplies and other DC input voltage ranges available upon request
<b>Power consumption</b>	25W
<b>Universal Serial Bus (USB) Ports</b>	1x USB Port in front panel: <ul style="list-style-type: none"> <li>- install firmware upgrades</li> <li>- backup and restore configuration files</li> <li>- copy security keys</li> <li>- lock/unlock front keys</li> </ul>
<b>Single-Board-Computer</b>	i386 compatible 500Mhz CPU, 128 MB RAM

<b>Operating System of the SBC</b>	Linux with nano kernel (incl. PPSkit)
<b>Network protocols OSI Layer 4 (transport layer)</b>	TCP, UDP
<b>Network protocols OSI Layer 7 (application layer)</b>	TELNET, FTP, SSH (incl. SFTP, SCP), HTTP, HTTPS, SYSLOG, SNMP
<b>Internet Protocol (IP)</b>	IP v4, IP v6
<b>Network Autoconfiguration Support</b>	IPv4: Dynamic Host Configuration Protocol - DHCP (RFC 2131) IPv6: Autoconfiguration Networking - AUTOCONF
<b>Network Time Protocol (NTP)</b>	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (no RFC) SNTP v3 (RFC 1769), SNTP v4 (RFC 2030) MD5 Authentication and Autokey Key Management
<b>Time Protocol (TIME)</b>	Time Protocol (RFC 868)
<b>Daytime Protocol (DAYTIME)</b>	Daytime Protocol (RFC 867)
<b>IEC 61850</b>	Synchronization of IEC 61850 compliant devices by using SNTP
<b>Hypertext Transfer Protocol (HTTP)</b>	HTTP/HTTPS (RC 2616)
<b>Secure Shell (SSH)</b>	SSH v1.3, SSH v1.5, SSH v2 (OpenSSH)
<b>Telnet</b>	Telnet (RFC 854-RFC 861)
<b>Simple Network Management Protocol (SNMP)</b>	SNMPv1 (RFC 1157), SNMPv2c (RFC 1901-1908), SNMP v3 (RFC 3411-3418)
<b>Form Factor</b>	Schroff 19" module case (3U)
<b>Ambient temperature</b>	0 ... 50°C / 32 ... 122°F
<b>Humidity</b>	Max. 85%
<b>Scope of supply</b>	Included in delivery is a MEINBERG outdoor antenna incl. mounting kit, pre-assembled antenna cable (except MRS, TCR and RDT models) and product documentation on USB storage.
<b>Technical Support</b>	Meinberg offers free lifetime technical support via telephone or e-mail.
<b>Warranty</b>	Three-Year Warranty
<b>Firmware Updates</b>	Firmware is field-upgradeable, updates can be installed directly at the unit or via a remote network connection. Software updates are provided free of charge, for the lifetime of your Meinberg product.

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**RoHS-Status of the product** This product is fully RoHS compliant

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**WEEE status of the product** This product is handled as a B2B category product. In order to secure a WEEE compliant waste disposal it has to be returned to the manufacturer. Any transportation expenses for returning this product (at its end of life) have to be incurred by the end user, whereas Meinberg will bear the costs for the waste disposal itself.

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**Additional Information** Additional information about the Meinberg LANTIME family of NTP time servers and other LANTIME models can be found on the [12][LANTIME NTP Time Server Family Page](#) .

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#### Manual

There is no online manual available for this product: [13][Contact us](#)

#### Links:

- [1] <http://www.meinberg.de/english/products/>
- [2] <http://www.meinberg.de/english/products/>
- [3] <http://www.meinberg.de/english/products/>
- [4] <http://www.meinberg.de/english/products/>
- [5] <http://www.meinberg.de/english/products/>
- [6] <http://www.meinberg.de/english/products/>
- [7] <http://www.meinberg.de/english/products/>
- [8] <http://www.meinberg.de/cgi-bin/main.cgi>
- [9] <http://www.meinberg.de/english/products/specs/gpsopt.htm>
- [10] <http://www.meinberg.de/english/specs/timestr.htm>
- [11] <http://www.meinberg.de/english/specs/capstr.htm>
- [12] <http://www.meinberg.de/english/products/ntp-time-server.htm>
- [13] <http://www.meinberg.de/mailto:info@meinberg.de>