



## Meinberg Radio Clocks

Lange Wand 9

31812 Bad Pyrmont, Germany

Phone: +49 (5281) 9309-0

Fax: +49 (5281) 9309-30

<https://www.meinbergglobal.com>

[info@meinberg.de](mailto:info@meinberg.de)

## LANTIME M900/PTP: Customizable IEEE 1588 Grandmaster and NTP Server with integrated satellite receiver in modular 3U case

The LANTIME M900 is based on a 3U BGT chassis that serves as the platform for an extremely flexible and expandable time server to meet the most complex and demanding requirements.

### Key Features

- Selectable Reference Sources: GPS: Satellite receiver for the Global Positioning System GNS: Combined GPS/GLONASS/Galileo/BeiDou satellite receiver, can also be used for mobile applications MRS: (GPS, PPS, 10MHz, PTP, NTP): Multi Reference Source - several reference sources, adjustable following priority of signal
- Synchronization of IEEE1588-2008 (PTPv2) compatible clients
- Synchronization of NTP and SNTP compatible clients
- Web-based status and configuration interface 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 support for SNMP v1, v2c und v3 with dedicated SNMP daemon for configuring/status monitoring of system using SNMP traps
- USB Port for installing firmware updates, locking frontpanel menu access and backup/restore of configuration and log files
- Included GPSANTv2 antenna uses downconverter technology to enable long transmission routes of up to 1100 m (1200 yards)
- Up to three IEEE 1588 PTPv2 interfaces, available via front panel

## Description

The M900 can be configured with a wide variety of reference clock options, oscillator options (including rubidium), output options and power supply options. Complex systems can easily be configured with redundant receivers, redundant power supplies and multiple output signals.

The M900 can be equipped with up to 8 independent IEEE 1588 ports to synchronize large groups of PTP clients. The modular design offers very good scalability. If your PTP client population grows, you can simply add another PTP module.

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

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### Supported PTP Profiles

**Default:**

- IEEE 1588v2 (PTPv2)

**Power:**

- IEC 61850-9-3
- IEEE C37.238-2011
- IEEE C37.238-2017

**Telecom:**

- ITU-T G.8265.1 Frequency
- ITU-T G.8275.1 Phase/Time
- ITU-T G.8275.2 Phase/Time

**Broadcast:**

- SMPTE ST 2059-2
- AES67 Media Profile

**AVB/TSN:**

- IEEE 802.1AS
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<b>Status Indicators</b>	Four bicolor LEDs indicating: <ul style="list-style-type: none"> <li>- Reference time status</li> <li>- Time service status</li> <li>- Network link status</li> <li>- Alarm states</li> </ul>
<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>Frequency Outputs</b>	10 MHz via female BNC connector, TTL into 50 Ohm Accuracy depends on oscillator (standard: OCXO-HQ), look at [1] <a href="#">oscillator options</a>
<b>Pulse Outputs</b>	Pulse Per Second (PPS) via BNC connector (TTL level), pulse width 200 ms
<b>Accuracy of Pulse Outputs</b>	< ±100ns (OCXO HQ, OCXO DHQ, Rubidium)
<b>Interface</b>	Two independent serial RS-232-interfaces, menu configurable
<b>Serial Time String Output</b>	Baud rates: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Data formats: 7N2, 7E1, 7E2, 7O1, 8E1, 8N1, 8O1 Time strings: [2] <a href="#">Meinberg Standard Time String</a> , SAT, Uni Erlangen (NTP), SPA, RACAL, Sysplex, NMEA0183 (RMC, GGA, ZDA), Meinberg GPS, COMPUTIME, ION oder [3] <a href="#">Capture String</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>Universal Serial Bus (USB) Ports</b>	1x USB port on front panel for: <ul style="list-style-type: none"> <li>- installing firmware upgrades</li> <li>- performing backups and restoration of configuration files</li> <li>- copying security keys</li> <li>- locking &amp; unlocking front buttons</li> </ul>
<b>Power Consumption</b>	Max. 25W with single power supply. Max. 50W with redundant power solution.
<b>Operating Voltage</b>	100-240 V AC (50-60 Hz) / 100-240 V DC Redundant Power Supplies and other DC input voltage ranges available upon request
<b>Form Factor</b>	Rackmount 3U chassis for standard 19" racks
<b>CPU</b>	* AMD Geode
<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 (including SFTP, SCP), HTTP, HTTPS, syslog, SNMP
<b>Internet Protocol (IP)</b>	IPv4, IPv6
<b>Network Autoconfiguration Support</b>	IPv4: Dynamic Host Configuration Protocol - DHCP (RFC 2131) IPv6: Dynamic Host Configuration Protocol - DHCPv6 (RFC 3315) and Autoconfiguration Networking - AUTOCONF (RFC 2462)
<b>Network Time Protocol (NTP)</b>	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (RFC 5905) SNTP v3 (RFC 1769), SNTP v4 (RFC 4330) MD5 Authentication and Autokey Key Management
<b>Parallel Redundancy Protocol (PRP)</b>	PRP (IEC 62439-3)
<b>Time Protocol (TIME)</b>	Time Protocol (RFC 868)
<b>IEC 61850</b>	Synchronization of IEC 61850-compliant devices 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>Supported Temperature</b>	Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
<b>Supported Humidity</b>	Max. 85 % (non-condensing) at 40 °C
<b>Contents of Shipment</b>	Included in delivery is a Meinberg outdoor antenna incl. mounting kit, pre-assembled antenna cable (except TCR and RDT models).
<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 from 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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<b>RoHS Status of Product</b>	This product is fully RoHS-compliant.
<b>WEEE Status of Product</b>	This product is handled as a B2B (Business to Business) category product. To ensure that the product is disposed of in a WEEE-compliant fashion, it can be returned to the manufacturer. Any transportation expenses for returning this product (at end-of-life) must be covered by the end user, while Meinberg will bear the costs for the waste disposal itself.
<b>Additional Information</b>	Additional information about the Meinberg LANTIME family of NTP time servers and other LANTIME models can be found on the [4] <a href="#">LANTIME overview page</a> .

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#### Manual

There is no online manual available for this product.: [5][Contact us](#)

#### Links:

[1] <https://www.meinbergglobal.com/english/specs/gpsopt.htm>

[2] <https://www.meinbergglobal.com/english/specs/timestr.htm>

[3] <https://www.meinbergglobal.com/english/specs/capstr.htm>

[4] <https://www.meinbergglobal.com/english/products/ntp-time-server.htm>

[5] <mailto:info@meinberg.de>