LANTIME M900/GPS/PTP: Upgradeable 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:

  * [1]GPS: Satellite receiver for the Global Positioning System

  * [2]GLN: Combined GPS/GLONASS satellite receiver (L1 frequency band), can also be used for mobile applications

  * [3]MRS: (GPS, PPS, 10MHz, NTP): Multi Reference Source - several reference sources, adjustable following priority of signal

- Synchronization of IEEE1588-2008 (PTPv2) compatible clients
- **Supported PTP Profiles:**
  - Default Profile (Multicast, Unicast or Hybrid)
  - ITU-T G.8265.1 Telecom Profile
  - IEEE C37.238-2011 Power Profile
- Synchronization of NTP and SNTP compatible clients
- Web based status and configuration interface [4](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
- Up to eight 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 popu-lation 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 tighly 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

Display	LC-display, 4 x 16 characters
Control elements	Eight push buttons to set up basic network parameters and to change receiver settings
Status info	Four bicolor LEDs showing status of: - reference time - time service - network - alarm
Frequency outputs	10 MHz via female BNC connector, TTL into 50 Ohm Accuracy depends on oscillator (standard: OCXO-HQ), look at [5]oscillator options
Pulse outputs	Pulse Per Second (PPS) via BNC connector (TTL level), pulse width 200ms
Accuracy of pulse outputs	< ±100ns (OCXO HQ, OCXO DHQ, Rubidium)
Interface	Two independent serial RS232-interfaces, menu configurable
Data format of interfaces	Baud rates: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Data formats: 7N2, 7E1, 7E2, 7O1, 8E1, 8N1, 8O1 Time strings: [6]Meinberg Standard-Telegram , SAT, Uni Erlangen (NTP), SPA, RACAL, Sysplex, NMEA0183 (RMC, GGA, ZDA), Meinberg GPS, COMPUTIME, ION oder [7] Capture-Telegramm

Alarm output	Synchronous state of the module, relay output (changeover contact)
Network Interface	1 x 10/100 MBit with RJ45 (up to 8 additional LAN interfaces possible)
Power supply	100-240 V AC (50/60 Hz) / 100-240 V DC Redundant Power Supplies and other DC input voltage ranges available upon request
Power consumption	Max. 25W with single power supply. Max. 50W with redundant power solution.
Universal Serial Bus (USB) Ports	1x USB Port in front panel: - install firmware upgrades - backup and restore configuration files - copy security keys - lock/unlock front keys
Single-Board-Computer	i386 compatible 500Mhz CPU, 128 MB RAM
Operating System of the SBC	Linux with nano kernel (incl. PPSkit)
Network protocols OSI Layer 4 (transport layer)	TCP, UDP
Network protocols OSI Layer 7 (application layer)	TELNET, FTP, SSH (incl. SFTP, SCP), HTTP, HTTPS, SYSLOG, SNMP
Internet Protocol (IP)	IP v4, IP v6
Network Autoconfiguration Support	IPv4: Dynamic Host Configuration Protocol - DHCP (RFC 2131) IPv6: Autoconfiguration Networking - AUTOCONF
Network Time Protocol (NTP)	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (RFC 5905) SNTP v3 (RFC 1769), SNTP v4 (RFC 2030) MD5 Authentication and Autokey Key Management
Time Protocol (TIME)	Time Protocol (RFC 868)
Daytime Protocol (DAYTIME)	Daytime Protocol (RFC 867)
IEC 61850	Synchronization of IEC 61850 compliant devices by using SNTP
Hypertext Transfer Protocol (HTTP)	HTTP/HTTPS (RC 2616)
Secure Shell (SSH)	SSH v1.3, SSH v1.5, SSH v2 (OpenSSH)
Telnet	Telnet (RFC 854-RFC 861)

Simple Network Management Protocol (SNMP)	SNMPv1 (RFC 1157), SNMPv2c (RFC 1901-1908), SNMP v3 (RFC 3411-3418)
Form Factor	Rackmount 3U chassis for standard 19" racks
Ambient temperature	0 ... 50°C / 32 ... 122°F
Humidity	Max. 85%
Scope of supply	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.
Technical Support	Meinberg offers free lifetime technical support via telephone or e-mail.
Warranty	Three-Year Warranty
Firmware Updates	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.
RoHS-Status of the product	This product is fully RoHS compliant
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.
Additional Information	Additional information about the Meinberg LANTIME family of NTP time servers and other LANTIME models can be found on the [8]LANTIME NTP Time Server Family Page .

Manual

The english manual is available as a PDF file: [9]Download (PDF)

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/cgi-bin/main.cgi
[5] http://www.meinberg.de/english/specs/gpsopt.htm
[6] http://www.meinberg.de/english/specs/timestr.htm
[7] http://www.meinberg.de/english/specs/capstr.htm
[8] http://www.meinberg.de/english/products/ntp-time-server.htm
[9] http://www.meinberg.de/download/docs/manuals/english/m900_ptpv2.pdf