Meinberg Radio Clocks
Lange Wand 9
31812 Bad Pyrmont, Germany
Phone: +49 (5281) 9309-0
Fax: +49 (5281) 9309-30
http://www.meinberg.de
info@meinberg.de

LANTIME M200/GPS: Compact NTP Time Server with integrated GPS Reference Clock

LANTIME M200 time servers can be installed to provide accurate time to small and medium sized computer networks. This entry level time server synchronizes all systems either NTP- or SNTP-compatible utilizing a built-in Meinberg GPS radio clock as its primary reference time source. A stable and precise oscillator is capable of bridging interferences or a temporary loss of reception.

Key Features

- Synchronization of NTP and SNTP compatible clients
- Web based status and configuration interface [1](Demo) and console based graphical configuration utility
- Supported networking protocols: IPv4, IPv6, HTTPS, HTTP, SSH, TELNET, SCP, SFTP, FTP, SYSLOG, SNMP
- 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

Description

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

A large LC display shows the state of the internal GPS receiver and the NTP subsystem. Three LEDs (green/red) indicate the status of the three main components: Reference Time (GPS), Time Synchronization Service (NTP) and Network (Link status). A fourth red LED is labelled ALARM and can be configured to signal any event that is covered by the notification handling routines.

The configuration of the system can be done by using a standard web browser for accessing 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 send 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 servers 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 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.

The LANTIME M200 GPS is equipped with a high precision "TCXO" oscillator (please check our oscillator options page for technical specifications). The oscillator determines the holdover characteristics (e.g. when the GPS signal is disturbed or jammed).

Characteristics

Type of receiver	6 channel GPS C/A-code receiver
Type of antenna	Remote powered [2]GPS antenna/converter unit, up to 300m distance to antenna with RG58 and up to 700m distance with RG213 cable
Display	LC-display, 2 x 40 characters, with backlight
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
Network Interface	RJ-45 Network Connection 10/100 MBit
Power supply	Standard: 100-240 VAC available DC variants: 100-240 VDC, 12VDC, 24VDC and 48VDC
Power consumption	20W
Universal Serial Bus (USB) Ports	1x USB Port in rear 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 (no RFC) 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)
Form Factor	Desktop housing (335 x 45 x 240 mm)
Ambient temperature	0 ... 50°C / 32 ... 122°F
Humidity	Max. 85%
Scope of supply	Included in delivery is our [2]GPS antenna incl. converter unit, 20m GPS antenna cable (RG58) and product documentation.
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 [3]LANTIME NTP Time Server Family Page .

Manual

The english manual is available as a PDF file: [4]Download (PDF)

Links:

[1] http://www.meinberg.de/cgi-bin/main.cgi
[2] http://www.meinberg.de/english/products/gpsant.htm
[3] http://www.meinberg.de/english/products/ntp-time-server.htm
[4] http://www.meinberg.de/download/docs/manuals/english/m200_gps.pdf