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IMS - LANTIME M4000: Ultra-Versatile Platform for Telecom Synchronization Application

The Meinberg LANTIME M4000 has been designed to fulfill the synchronization requirements of modern 4G/5G/LTE networks. It is capable to act as a Primary Reference Time Clock (PRTC) and, because of its unmatched flexibility, can be deployed in different scenarios. The modularity of the IMS platform (Intelligent Modular System) allows the M4000 to be configured for all areas of a mobile backhaul network: in the core, metro or access network areas.

Key Features

- Optimized for ETSI Rack (300mm / 21 inches) or 19 inch Rackmount
- Carrier Grade NTP Time Server with Hardware Time Stamping
- SyncE - Synchronous Ethernet In/Out
- Web GUI, CLI, SNMP, RADIUS, TACACS+ (Demo)
- GBit PTP Interface (SFP/RJ45)
- GNSS (GPS, GLONASS, Galileo, BeiDou) synchronized PRTC (compliant to ITU-T G.8272)
- Up to 10 PTP (IEEE 1588-2008) modules
- Redundant power and receiver option (eg GPS / GLONASS combination)
- IEEE 1588 Grandmaster (multi-profile, incl. ITU-T G.8275.1 and G.8265.1)
- E1/T1 BITS and Clock In/Out (ITU-T G.703) 1PPS In/Out 10 MHz In/Out PTP and NTP Input
- Meinberg's LANTIME time server is available with a variety of additional output options: IRIG Time Code, frequency synthesizer and programmable pulse outputs illustrate some of the many expansion options for your NTP server
- Up to 24 additional LAN ports
- Optimized for ETSI Rack (300mm / 21 inches) or 19 inch Rackmount

Description

Depending on the installed modules and the selected synchronization sources, the 4U rackmount LANTIME M4000 can play different roles. By supporting multiple input sources utilizing Meinberg

Characteristics

Reference Options	The following reference sources can be used to synchronize the system:

* **GPS** - Global Positioning System

* **GLONASS** - Russian GNSS

* **GALILEO** - European GNSS

* **BeiDou** - Chinese GNSS

* **PZF** - German DCF77 longwave radio signal

* **PTP/IEEE1588** - Precision Time Protocol

* **NTP** - Network Time Protocol

* **SyncE** - Synchronous Ethernet

* **Timecodes** - IRIG/AFNOR timecodes (AM/DCLS)

* **PPS** -Pulse Per Second

* **10MHz** - 10MHz reference frequency

* **2.048kHz** - 2.048kHz reference frequency

* **E1/T1** - Telecom Synchronization Input with full SSM/BOC support

The priority of all input signals can be freely configured in addition to a bias value and a precision level specification for each source.

Display	LC-Display, 4 x 16 characters
Control elements	Eight push buttons to set up basic network parameters and to change system settings.
Status info	Four bicolor LEDs showing status of: - reference time - time service - network - alarm

Frequency outputs	Accuracy depends on oscillator (standard: OCXO-SQ), see [1]oscillator list
Accuracy of pulse outputs	< ±100ns
Network Interface	**Basic Chassis:** 1 x 10/100 MBit with RJ45 connector **Network Expansion - LNE Options:** Up to a maximum of 24 additional 10/100/1000Mbps (GbE Gigabit support) network interfaces with RJ45 connector.
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
Power supply	100-240 V AC (50-60 Hz), 100-200 V DC 20-60 V DC, 10-36 V DC Redundant power supplies available
Power consumption	50W (max. 100W)
CPU	* AMD Geode
Operating System of the SBC	GNU/Linux 4.x
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: Dynamic Host Configuration Protocol - DHCPv6 (RFC 3315) and Autoconfiguration Networking - AUTOCONF (RFC 2462)
Network Time Protocol (NTP)	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (RFC 5905) SNTP v3 (RFC 1769), SNTP v4 (RFC 4330) MD5 / SHA-1 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)
Ambient temperature	0 ... 50°C / 32 ... 122°F
Humidity	Max. 85%
Scope of supply	Product documentation and software on USB storage device.
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.

Manual

There is no online manual available for this product: [2]Contact us

Links:

[1] https://www.meinbergglobal.com/english/specs/gpsopt.htm
[2] mailto:info@meinberg.de