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IMS - LANTIME M1000S: Compact Modular Synchronization Solution - 1U ETSI Rackmount

Versatile and Modular Solution for Time and Frequency Synchronization Applications in 1U housing

[1]

The compact 1RU form factor, the hotplugging and hotswapping capabilities and the large selection of different modules for input/output sync signals, network synchronization interfaces and clock modules with different GNSS/radio receiver and oscillator options offer an unmatched reliability, scalability and flexibility. As every Intelligent Modular Synchronization (IMS) system, the M1000S can play almost any role in your synchronization infrastructure: Edge Grandmaster Clock, PRC, PRTC, Secure Sync Gateway, Protocol/Sync Signal Translator and many more.

The 1U chassis has two power supply slots, optional two clock module slots, a CPU slot and four (three in case of a second reference clock) slots for additional input and output modules. Adding a second clock module and a second power supply transforms the IMS - M1000S into a fully redundant solution. Both, wide range AC and a 20-60 V DC power supply model can be mixed and matched as required.

The IMS LANTIME S models are an alternative for application environments where a display with function keys is not required for onsite configuration. This allows the S housing variants to be installed in racks which are only accessible from one side.

Key Features

- Optimized space usage
- Synchronization of NTP and SNTP compatible clients
- Web-based status and configuration interface and console-based graphical configuration utility
- IMS - Intelligent Modular System platform
- Up to 4 PTP (IEEE 1588-2008) modules
- Redundant power and receiver option (eg GPS / GLONASS combination)
- Hot Plug
- Arbitrary combinations of modules
- 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 16 additional LAN ports

Description

As a cost effective alternative to the LANTIME M1000 standard model, the M1000S has all connectors and control elements on its front panel, allowing to mount it inside racks that are only accessible from one side.

The M1000S provides the following slot types:

* IMS-CLK: Up to two reference clock modules (redundant mode)

* IMS-PWR:Up to two high efficiency redundant power supplies (AC and DC versions available)

* IMS-CPU: Central processor module providing NTP / SNTP time synchronization and management and configuration interfaces

* IMS-ESI: Input references for 2048 kHz, 2.048MBit/s and variable frequencies:

* IMS-MRI: IRIG, 1PPS, 10MHz input module:

* IMS-IO: A variety of output signals for all types of synchronization tasks:
Pulses, frequencies, time codes, serial time messages) and of course more network interfaces (IEEE-1588, NTP/Management ports)

NTP Time Server for large Networks
With up to 25,000 NTP requests per second, the system is able to provide time for hundreds and thousands of NTP clients. The LANTIME module supports the following protocols: IPv4, IPv6, NTP / SNTP (v2, v3, v4), PRP (IEC 62439-3), HTTP (S), SSH, Telnet, SNMP (v1, v2, v3), FTP, SFTP, DHCP/DHCPv6. For each system, up to 99 logical network interfaces are available (99 IPv4 and 99 IPv6 addresses).

Scalable NTP Time Server System
All modules are hot-plug capable and the modules can be configured via the central web interface (from the CPU module). Almost infinite number of combinations of input and output modules are available to meet almost any synchronization task. Because of simple extension by upgrading the system with new modules the scalability of the M1000S system is ensured.

Slots for Input Signals:
IMS-MRI:Standard reference inputs
IMS-ESI: Extended reference inputs

Both of these reference input interfaces may also be used as I/O slot.

The Active Cooling Module allows the installation of the M1000S safely within the temperature specification. The ACM is easily field-replaceable and allows for a hot-plug replacement without the need to power down the unit.

available IMS modules

Characteristics

Supported Reference Signals	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.
Frequency Outputs	Frequency Synthesizer for arbitrary frequencies between 0.125 Hz and 10 MHz, adjustable phase, output via external modules such as [2]IMS-BPE modules
Accuracy of Pulse Outputs	< ±50ns (OCXO SQ, OCXO MQ, OCXO HQ, OCXO DHQ)
Network Interface	**Base Chassis:** CPU-C05F1 1 x 10/100 MBit, RJ45 CPU-C15G2 1 x 100/1000BASE-T RJ45 1 x 1000BASE-T SFP

Network Expansion - LNE Options:

Up to 16 additional network interfaces (GbE Gigabit Support) with 10/100/1000 MBit RJ45 connector or 1000BASE-T SFP (Multimode / Singlemode).

Power Consumption	Pmax = 50 W when using a single PWR module Pmax = 100 W when using two PWR modules
Operating Voltage	Maximum power range: AD10: 90 - 265 V AC, 47-63 Hz / 90-250 V DC DC20: 20 - 60 V DC DC10: 10 - 36 V DC Redundant power supplies available
Form Factor	19 inch rackmount case, black 1U/84HE
CPU	**CPU-C15G2** * Intel® Atom
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 (including SFTP, SCP), HTTP, HTTPS, syslog, SNMP
Internet Protocol (IP)	IPv4, IPv6
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
Parallel Redundancy Protocol (PRP)	PRP (IEC 62439-3)
Time Protocol (TIME)	Time Protocol (RFC 868)
IEC 61850	Synchronization of IEC 61850-compliant devices 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)

Physical Dimensions	483 mm x 44 mm x 266 mm (300 mm)* - width x height x depth ** The sizes in brackets take into account the connections and module handles.*
Supported Temperature	Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
Supported Humidity	Max. 85 % (non-condensing) at 40 °C
Contents of Shipment	The scope of delivery includes a CAB-CONSOLE-RJ45 cable for initial start of operation.
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 from 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 Product	This product is fully RoHS-compliant.
WEEE Status of Product	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.
Additional Information	Additional information about the Meinberg LANTIME family of NTP time servers and other LANTIME models can be found on the [3]LANTIME overview page .

Manual

There is no online manual available for this product.: [4]Contact us

Links:

[1] https://www.meinbergglobal.com/english/products/
[2] https://www.meinbergglobal.com/english/products/ims-output-modules.htm
[3] https://www.meinbergglobal.com/english/products/ntp-time-server.htm
[4] mailto:info@meinberg.de