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IMS-HPS100: PTP / SyncE / Hardware NTP Interface with Dual Core CPU

This product is only compatible with Meinberg's line of modular **IMS LANTIME** systems.

Visit the [1][IMS Information Page](#) to learn more.

High Precision Synchronization

The new generation of the Meinberg time stamping unit provides a future-proof platform for your IEEE 1588 / SyncE / Carrier Grade NTP infrastructure. The high-performance dual-core processor, the 1-step master clock and the 1GE interface with SFP slot supports a very large number of PTP clients.

The HPS offers the ability to support up to 2048 PTP-Clients in Unicast (at 128 Sync/Delay Requests per second), as well as more than 250,000 DelayRequests per second in Multicast or Hybrid mode or more than 400,000 NTP requests per second due to a powerful FPGA-based Packet Generator engine.

An NTP software service (ntpd) can also be started on the HPS board. This service can process up to 15,000 NTP requests per second. The ntpd software service can also run parallel to the PTP service.

IMS-HPS Performance Level Options

* PL-A

Unicast Clients: 8; Delay Req./s *: 1024; NTP Req./s: 1600

* PL-B

Unicast Clients: 256; Delay Req./s *: 32768; NTP Req./s: 51200

* PL-C

Unicast Clients: 512; Delay Req./s *: 65536; NTP Req./s: 102400; PTPv1 **;
Dual Instance ***

* PL-D

Unicast Clients: 1024; Delay Req./s *: 131072; NTP Req./s: 204800; PTPv1 **; PTP Monitoring ****;
Dual Instance ***

* PL-E

Unicast Clients: 2048; Delay Req./s *: 262144; NTP Req./s: 409600; PTPv1 **; PTP Monitoring ****;
Dual Instance ***

* Delay Req./s in Multicast / Hybrid Mode

*** PTPv1 mode selectable via Web Interface*

**** Configuration of two independent PTP grandmaster instances per port
(IPv4 and IPv6 mode or Layer 2 and Layer 3 operation)*

***** PTP Monitor via Web Interface*

Key Features

- High Performance Dual Core CPU Compatible with the Meinberg IMS Platform
- High Power Dual Core CPU
- USB 2.0 full-speed, Micro USB
- LED status indicators for init, error and PTP mode
- Data Link Layer: Layer 2 / Layer 3 / E2E / P2P
- 1-Step or 2-Step Master/Slave operation
- SyncE - Synchronous Ethernet
- 8 ns Time Stamp Accuracy
- Multi-Profile Support (Default, Power, Telecom, SMPTE)
- Gigabit Ethernet SFP/RJ45 Combo Port
- 2 SMA Outputs for 1PPS, 10MHz or 2048kHz

Description

The ability to select Master and Slave operation for either Default, Power, Telecom or SMPTE profile makes this product the most flexible PTP solution on the market, suitable for a wide range of applications.

A lot of IEEE 1588 slave devices or NTP clients from different market segments can be synchronized, even over IPv6 networks, for example eNodeBs for LTE base stations, Linux servers running high-frequency trading applications, IEEE 1588 compatible IEDs in Smart Grid environments or IP-interconnected Audio

Characteristics

Supported PTP Profiles	Custom Profile
	Default:
	* Default E2E IEEE1588-2008
	* Default P2P IEEE1588-2008
	Power:
	* Utility IEC 61850-9-3 Power Profile
	* IEEE C.37.238-2011 Power Profile
	* IEEE C.37.238-2017 Power Profile
	Telecom:
	* ITU-T G.8265.1 Telecom Frequency Profile
	* ITU-T G.8275.1 Telecom Phase
Operating Mode	
	* PTP V2
	* PTP V1 (Performance Level C, D and E)
	* Monitor (Performance Level D and E)
	* NTP
NTP Mode	NTP Server Mode (8 ns timestamp accuracy) NTPD Software Service (15,000 req./s). The ntpd software service can run parallel to the PTP service.
1588 Clock Mode	1-Step or 2-Step Master/Slave operation
PTP Modes	Multicast/Unicast Layer 2 (IEEE 802.3) Multicast/Unicast Layer 3 (UDP IPv4/IPv6) Hybrid Mode E2E / P2P Delay Mechanism Up to 128 messages/second per client

Synchronous Ethernet	Master and Slave Capability Compliant to ITU-T G.8261, G.8262 and G.8264 Ethernet Synchronization Messaging Channel (ESMC)
Processor Type	825 MHz Cortex A9 Dual Core on SOC
Network Protocols	IPv4, IPv6 DHCP, DHCPv6 DSCP IEEE 802.1q VLAN filtering/tagging IEEE 802.1p QOS
Output signal	2x SMA (50 Ohm) connectors Configurable signals: 1 PPS, 10 MHz, 2048 kHz
Available Network Connectors	Combo Port: * 1 x 100/1000BASE-T RJ45 1 x GBIT SFP - Slot * The two network connectors are dedicated to a single physical interface.
Supported Models	Can be used in all [1] IMS LANTIME models (MRI, ESI or IO slot).
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
Warranty	Three-year warranty
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.

Manual

The English manual is available as a PDF file: [2][Download \(PDF\)](#)

Links:

[1] <https://www.meinbergglobal.com/english/products/modular-sync-system.htm>

[2] <https://www.meinbergglobal.com/download/docs/manuals/english/ims-hps100.pdf>