



Meinberg Funkuhren

Lange Wand 9 31812 Bad Pyrmont, Germany Phone: +49 (5281) 9309-0

Fax: +49 (5281) 9309-30 https://www.meinbergglobal.com

info@meinberg.de

microSyncHR: Powerful IEEE 1588 PTP Grandmaster and High-performance NTP Server

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With unprecedented levels of efficiency and versatility, the microSyncHR sets new standards for compact yet powerful synchronization solutions.

Meinberg's microSyncHR is a feature-rich synchronization device, offering a high level of efficiency and versatility and impresses with its compact design and high port density.

Key Features

- Selectable Reference Time Sources: GPS: Satellite receiver for the GPS constellation (using Meinberg's downconverter technology for reliable GNSS signal transmission over long distances) Recommended for fixed-site applications GNS-UC: Satellite receiver for the GPS and Galileo constellations (using Meinberg's downconverter technology for reliable GNSS signal transmission over long distances) Recommended for both fixed-site and mobile applications GNS: Multi-GNSS satellite receiver with support for all four of the main constellations: GPS, GLONASS, Galileo, and BeiDou Recommended for both fixed-site and mobile applications
- High Performance NTP Server (NTP & SNTP v2, v3, v4)
- meinbergOS Web interface for configuration and status monitoring
- Powerful IEEE 1588 PTP time server incl. IEC/IEEE 61850-9-3 & IEEE C.37.238
- Fully integrated version of the PTP monitoring solution, PTP Track Hound
- Half rack solution for a space efficient design
- Different oscillator options for advanced holdover performance
- All microSync models offer a wide range of multiple output signals, allowing devices to be synchronized over a network via NTP or PTP or directly "on the wire" using a variety of electrical and optical signals.



Description

Providing two IEEE 1588 ports, the microSyncHR models are powerful GNSS synchronized PTP Grandmasters offering a high level of accuracy and supporting all major PTP profiles: Default, Power, Telecom (Frequency and Phase profiles), SMPTE, AES67/RAVENNA or IEEE 802.1AS profile.

All microSyncHR variants offer key features like multiple programmable output signals (two over fiber optical ST connectors), four Gigabit Ethernet interfaces and the ability to synchronize both NTP and PTP devices.

The sheer diversity of outputs and interfaces allows the microSyncHR to be deployed in a large range of industries and applications. Depending on industry requirements customers can choose from different variants to best suit their needs.

The different variants are defined by the BNC connectors which can provide several I/O options.

meinbergOS Operating System

Equipped with a fully-featured version of the powerful, synchronization-centric meinbergOS operating system, the microSyncHR offers up all of the security and flexibility that the microSync family is known for. These include the new features introduced in the latest meinbergOS versions, specifically LDAP, TACACS+, and RADIUS authentication, native PRP for NTP and PTP traffic, industry-specific network functionality such as IEC 61850 MMS support, detailed analysis features for GNSS reception and clock performance, and also a fully integrated version of Meinberg's PTP monitoring solution, PTP Track Hound.

The version of PTP Track Hound in the meinbergOS firmware is pre-activated with a Capture license, which means that in addition to evaluating PTP traffic locally via its own PTP-capable network interfaces, it can also forward traffic data to one or several central PTP Track Hound Professional instances for combined analysis. **Configuration and Monitoring with meinbergOS WebUI**meinbergOS Versions >=2024.12.0 offer a web interface that can be used to perform all configuration and monitoring tasks efficiently and easily. You can access the web interface directly via a standard web browser, provided that the system is accessible via HTTP(S) on the network.



Characteristics

Supported PTP Profiles

Default Profiles:

- E2E IEEE 1588-2008 Profile
- P2P IEEE 1588-2008 Profile

Power Profiles:

- IEEE C37.238-2011 *
- IEEE C37.238-2017 *
- IEC/IEEE 61850-9-3 Power Utility Profile *

Telecom Profiles:

- ITU-T G.8265.1 *
- ITU-T G.8275.1 *
- ITU-T G.8275.2

Broadcast Profiles:

- DOCSIS 3.1
- SMPTE ST 2059-2 *
- AES67 Media

AVB/TSN:

- IEEE 802.1AS

Automotive Profile:

- AUTOSAR
- * including profile extensions

Operating Mode

- * PTP V2
- * PTP V1 (Option: Performance Level C only)
- * NTP

Synchronous Ethernet

Master and Slave Capability

Compliant to ITU-T G.8261, G.8262 and G.8264 Ethernet Synchronization Messaging Channel (ESMC)

Network Protocols

IPv4, IPv6

NTPv3, NTPv4

PTPv2

IEC 62439-3 (PRP) DHCP, DHCPv6

DSCP

IEEE 802.1q VLAN filtering/tagging

IEEE 802.1p QOS SNMPv1/v2/v3

Remote Syslog Support (UDP)

LDAP, TACACS+, RADIUS authentication



Optical Outputs	2 x programmable pulse outputs, fiber-optic ST connectors
nterface	Single serial RS-232 interface
Available PTP Performance Level	microSyncs are provided with a license that allows a specific performance level to be achieved with the IEEE1588 implementation. There are three Performance Levels available: Performance Level Max. Unicast Clients Max. Delay Requests per Second / Hybrid Mode PL-A 8 1024 PL-B 256 32768 PL-C 512 65536
Network Interface	4x SFP connectors with support for up to Gigabit Ethernet
	LAN 0, LAN 1: 10/100/1000Base-T (RJ45) or 1000Base-FX (FO) Management, NTP
	LAN 2, LAN 3: 10/100/1000Base-T (RJ45) or 1000Base-FX (FO) Management, NTP, PTP (Master and Slave)
Universal Serial Bus (USB) Ports	USB Type-A, usable for the following purposes:
	* Backing up and restoring a microSync configuration (or rolling a shared configuration out to multiple devices)
	* Backing up log files
	* Uploading and downloading cryptographic certificates
	* Installing firmware updates
	* Restoring factory settings using a specially prepared 'USB key'
BNC Connectors	4 x BNC female connectors for different output signals - e.g. programmable pulses, frequency synthesizer, AM time code
Multi-Function Connector	16pin DMC X1 DC power supply connector programmable pulses Error/Relay
	16pin DMC X2 programmable pulse (TTL, isolated) programmable pulse (RS-422) Time Code DCLS (TTL, isolated)



Oscillator Options	OCXO SQ 1 Day Holdover Performance: ± 65 μs 1 Year Holdover Performance: ± 4.7 s
	OCXO HQ 1 Day Holdover Performance: ± 10 μs 1 Year Holdover Performance: ± 788
	ms OCXO DHQ
	1 Day Holdover Performance: ± 4.5 µs 1 Year Holdover Performance: ± 158 ms
Power Consumption	Maximum 30 W
Operating Voltage	20 V - 60 V DC
Form Factor	Housing Type 9.5" (Half-Rack), 1U 223 mm x 251 mm x 43,7 mm / 8.78 inch x 9.88 inch x 1.72 inch (width x depth x height)
	Housing Material: Steel
Atmospheric Pressure	615 to 1,600 hPa
Operating Altitude	Up to 4,000 m (13,123 ft) above sea level
IP Rating	IP30
Supported Temperature	-20 °C to 55 °C (-4 °F to 131 °F)
Storage Temperature	-30 °C to 70 °C (-22 °F to 158 °F)
Supported Humidity	5 % to 95 % at 40 °C, non-condensing
Compliances	
	* CB Scheme
	* CE
	* FCC
	* UL
	* CSA
	* WEEE, Waste of Electrical and Electronic Equipment
	* RoHS, Restriction of Hazardous Substances
	* REACH, Registration, Evaluation, Authorization and Restriction of Chemicals
Contents of Shipment	The product is shipped with a suitable antenna in a waterproof housing and with all necessary accessories for outdoor installation and a pre-assembled antenna cable.



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

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

Links:

[1] https://www.meinbergglobal.com/english/products/

[2] mailto:info@meinberg.de