



# Meinberg Funkuhren

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# microSync Broadcast: Compact and flexible Sync Solution for Broadcast Environments

Meinberg's microSync for broadcast applications is a powerful dual-port PTP generator, supporting SMPTE ST 2059-2 profile and offering a high level of efficiency and flexibility.

It is available in a compact, space-saving half-rack design and in a 19-inch rack-mount enclosure which additionally offers redundannt power supplies and OLED display as an option.

# **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. SMPTE ST 2059-2, AES67 Media and IEEE 802.1AS Profiles
- Fully integrated version of the PTP monitoring solution, PTP Track Hound
- Half-Rack Option for a Space Efficient Design
- Different oscillator options for advanced holdover performance
- Option: OLED display with rotary knob for initial setup (RX models only)
- Video-Sync Generator and Video Input References (Black Burst, LTC and Word Clock)



# **Description**

This innovative, multipurpose synchronization solution offers a variety of outstanding features, many of which are also found in Meinberg's IMS and LANTIME product families.

Key features include a GNSS receiver, two PTP ports, two Management/NTP ports, Black Burst, LTC, Word Clock, DARS and many other sync pulses available as input or output. The microSync Broadcast variants combine a modern sync reference for IP based devices and a Signal Pulse Generator for legacy video and audio devices.

The half-rack microSyncHR (7xx) model impresses with its compact design and high port density and is a perfect solution for smaller broadcast environments like OB vans or remote production use cases. The 19-inch rackmount microSyncRX (7xx/8xx) model additionally offers redundant power supplies and OLED display as an option.

# meinbergOS Operating System

Equipped with a fully-featured version of the powerful, synchronization-centric meinbergOS operating system, a microSync in broadcast configuration 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, 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 WebUlmeinbergOS 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)

# **Display**

OLED display (present on optional microSyncRX models and all microSyncTRX models) Indicates:

- \* Time and date
- \* Status of synchronization source
- \* Firmware version
- \* Model and serial number



**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



Interface	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
	<u>LAN 0, LAN 1:</u> 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	Output Signals Black Burst Output Output signal: PAL, NTSC and Tri-Level Sync. with VITC support
	Signal level: 300 mVpp into 75 Ohm (unbalanced)
	Cignal level. Coc mypp into 10 Cimi (dilbalaniosa)
	* Format: PAL (625i) Timecode Mode: VITC
	Timecode Mode. VTC Timecode Options: SMPTE 12M / SMPTE ST309 / SMPTE ST309 MJD / ITU-R BR.1353
	* Format: NTSC (525i) Timecode Modes: VITC / VITC with daily jam / VITC with daily jam and drop frame
	Timecode Options: SMPTE 12M / SMPTE ST309 / SMPTE ST309 MJD / ITU-R BR.1353

# Tri-Level Sync:



#### \* Format:

- \* 720p 50 Hz
- \* 720p 59,94 Hz
- \* 1080p 23,98 Hz
- \* 1080p 24 Hz
- \* 1080p 25 Hz
- \* 1080p 29,97 Hz
- \* 1080p 30 Hz
- \* 1080i 50 Hz
- \* 1080i 59,94 Hz
- \* 1080pSF 23,98 Hz
- \* 1080pSF 24 Hz

Timecode Modes: VITC / VITC with daily jam \* / VITC with daily jam and drop frame \* Timecode Options: SMPTE 12M / SMPTE ST309 / SMPTE ST309 MJD / ITU-R BR.1353

\* only if 720p 59,94 Hz or 1080i 59,94 Hz is selected

# **DARS Output**

Output signal: DARS

Signal level: TTL, 2.5 Vp into 75 Ohm

Signal type: base frequencies - 44.1 kHz and 48 kHz

#### **Word Clock Output**

Output signal: Word Clock

Signal level: TTL, 2,5 Vp into 75 Ohm Base frequencies: 44.1 kHz and 48 kHz

Frequency range (44.1 kHz): 1.378125 kHz ... 1.4112 MHz

Frequency range (48 kHz): 1.5 kHz ... 1.536 MHz

Scale factor: 1/32, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8, 16, 32 Input Signals

# **Black Burst Input**

Input signal: PAL (625i) / NTSC (525i)

Input with VITC Reader

Input with Prescaler mode (Frequency only)

Signal level: 300 mVpp into 75 Ohm (unbalanced)

Time Code Formats: SMPTE ST309 / SMPTE ST309 MJD / ITU-R BT.1353

#### **Word Clock Input**

Input signal: Word Clock Input with programmable frequency range

Signal level: TTL

Frequency range: 1 kHz - 10 MHz

# **Pulse Per Second Input**

Input signal PPS (pulse per second)

Signal level: TTL

Pulse lenght: >= 5 microsec, active high



GPIO (General Purpose	GPIO / LTC
Input/Output)	Input signal: LTC Reader (25 fps)
	Output signals: LTC Out, DARS Out, Time Sync Out
	Signal level: TTL, 2,5 Vpp (MARK/SPACE) into 50 Ohm
Oscillator Options	OCXO HQ
	Holdover Performance
	1 Tag: ± 10
Power Consumption	microsyncHR
	Pmax = 30 W
	microsyncRX
	Pmax = 100 W (redundant operation)
Operating Voltage	Maximum voltage range:
	microSyncRX
	AC / DC: 90-265 V AC, 47-63 Hz / 90-250 V DC
	DC: 20-60 V DC
	microSyncHR
	DC: 10-36 V DC
Form Factor	Chassis Type: 19", 1U
	444 mm x 248 mm x 43 mm (17.48 in x 9.76 in x 1.69 in (W x D x H)
	Material: Sheet 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	0 °C to 50 °C (32 °F to 122 °F) (operation)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Supported Humidity	5 % to 95 % at 40 °C, non-condensing
Compliances	

# 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	Included in delivery is an outdoor antenna incl. mounting kit and pre-assembled antenna cable. The microSyncHR system is supplied with a power adapter (input voltage range 90 - 264 V AC, output voltage 24 V DC).
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.:  $\cite{this product.:} \cite{this product.} \cite{this pr$ 

Links:

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