

Because every fraction of a second counts ■

**hopf**



**Time & Frequency**  
Made in Germany **Solutions**

We are **hopf**

**hopf**



COMPANY

**hopf** is the leading center of expertise for time and frequency solutions, time reference systems and time distribution applications. Since 1972, German quality and innovation have distinguished our well established products which are used and trusted in numerous industries in more than 130 countries around the world.

Our in-house development, production and sales as well as our lean organization and short lines of communication guarantee the consistent **high quality of our products at competitive prices.**

Our innovative products are **used by well-known companies across the globe** to implement highly-precise signals for synchronization and time stamping of industrial automation applications, public safety solutions, computer networks in data centers and financial markets or to successfully implement business-critical projects in the energy and public infrastructure sectors.

By constant communication with our customers, continuous cooperation, support in all matters and through a network of like-minded partners, **we remain at the cutting edge of customer needs worldwide.**

**Our customers are our partners –  
whatever we can do for them, we do!  
And that's quite a lot after more than 50 years.**

## ■ Time Reference Systems

Master clock systems and network time server appliances for the output of highly-precise signals for synchronization and time stamping of mission-critical public infrastructure and industrial applications, energy protection, smart grid and substation automation applications as well as communication technology for Information Technology (IT) and Operation Technology (OT) networks

## ■ Time Distribution Systems

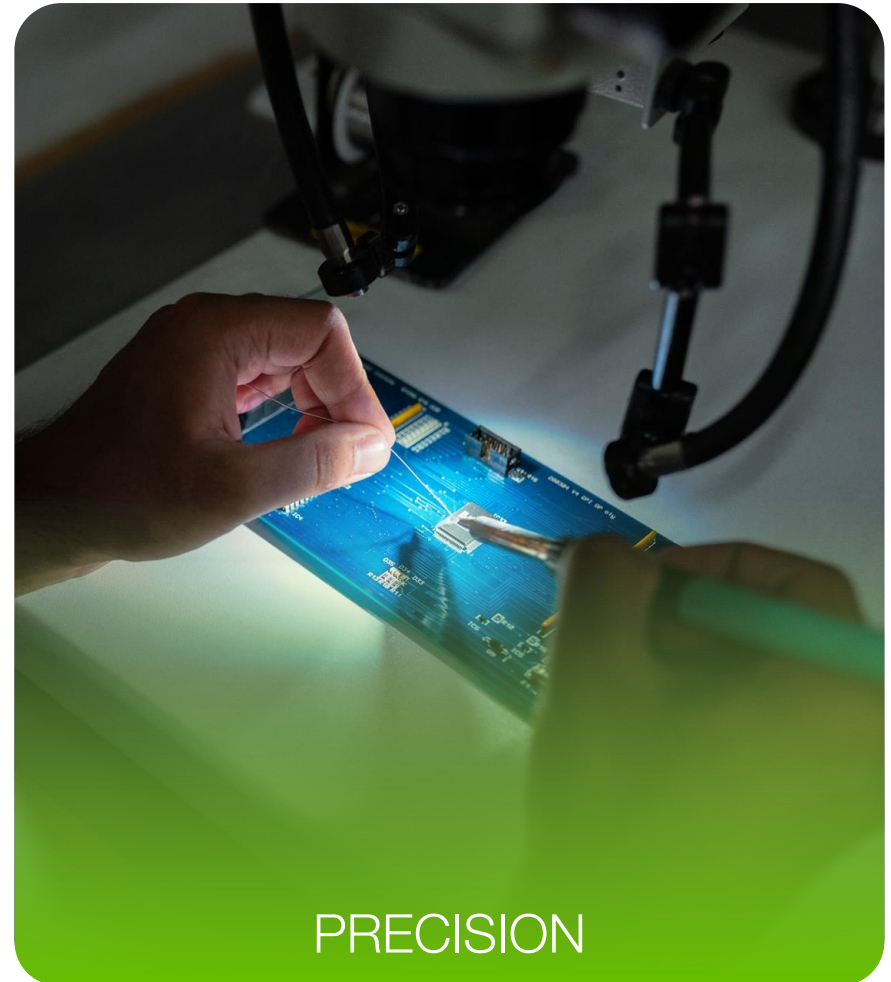
Signal and protocol converters for distribution and conversion of electrical and optical signals or time protocols

## ■ Accessories

Antenna systems with mounting material, surge protective devices, and cabling for receiving highly-precise time signals from terrestrial and GNSS-based signal sources

## ■ Secondary Clocks

Analogue and digital clock displays announcing information about time and date for public infrastructure facilities



# Our claim



CUSTOMER FOCUS

- Maximum Quality
- High Reliability
- Well-balanced cost-benefit ratio
- Flexible and highly customizable solutions
- Excellent customer service and support based on more than 50 years of experience



# 8100 Product Series



The 8100 product series are modular time reference systems supporting the Global Navigation Satellite Systems (GNSS) GPS, Galileo, GLONASS, and BeiDou for precise and reliable time synchronization at highly competitive pricing which is especially well suited for critical infrastructure applications.



## Key Features

- › 1U fully modular subrack for 19-inch rack mounting
- › LCD information display and LEDs for system status
- › Redundant power supply option
- › Hot-plug capable field-replaceable units (FRU)
- › Extended temperature range for reliable operation between – 40° and +70°C
- › GPS, Galileo, GLONASS, and BeiDou time sources for reliable satellite synchronization
- › Synchronization of IEC 61850 compatible devices
- › Typical NTP time stamp accuracy <30 µs
- › Precision Time Protocol (PTP) Grandmaster with peak time stamp accuracy ±100 ns, support for IEC 61850-9-3:2016 Power Utility Automation Profile, IEEE C37.238-2017 Power Profile

## Enhanced IT/OT Security

- › Separation of the diagnostic and operational / productivity network for enhanced security
- › Role based access control (RBAC) with support of LDAP and RADIUS authentication according to IEC 62351-8:2020
- › Built-in firewall for provision of barrier against network-based intrusions
- › Certificate signed configuration files and firmware packages

## System Configuration and Monitoring

- › huma® web edition, HTTPS web interface
- › Integrated event log
- › Diagnostics and monitoring via SNMP v2c and v3 read operations
- › Event notification using SNMP traps, email messaging and / or external SYSLOG server



# 8030HEPTA Product Series



The 8030HEPTA product series are network time server systems in 1U subrack for 19-inch rack mounting supporting various time synchronization sources. The network appliances feature precise and reliable time synchronization at highly competitive pricing for business critical applications in the energy and automation industry.



## 1 network time server module

### integrated into the base system by default

- 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- Network Time Protocol Version 4 (RFC5905)

## 2 extension slots for isolated and mutually independent modules for enhanced security

- Network time server 8030NTS/M
- IRIG-B modulated / AM
- IRIG-B demodulated / DCLS
- PPS / cyclic pulses
- DCF77 (77,5kHz / pulse)
- Serial time datagram

## Integrated features

- System monitoring / Alarming
- Static Routing Table
- IEEE 802.1Q Tagged VLAN
- Network Interface Bonding / Teaming

## Optional activations

- IEC 62439-3 Parallel Redundancy Protocol (PRP)
- IEEE 1588 Precision Time Protocol (PTP) Grandmaster
- SIMATIC NET SINEC H1 time datagram

## Time source options

- GPS
- GNSS
- IRIG-B
- NTP / PTP

## Power supply options

- 100 – 240VAC
- 100 – 250VDC, redundant
- 18 – 36VDC, redundant
- 36 – 76VDC, redundant

# 8030NTS Product Series



The 8030NTS product series are network time server systems in housing for DIN rail mounting supporting various time synchronization sources. The network appliances feature precise and reliable time synchronization at highly competitive pricing for business critical applications in the energy and automation industry.



## 1 network time server module

### integrated into the base system by default

- 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- Network Time Protocol Version 4 (RFC5905)

### 1 extension slots for isolated and mutually independent modules for enhanced security

- Network time server 8030NTS/M
- IRIG-B modulated / AM
- IRIG-B demodulated / DCLS
- PPS / cyclic pulses
- DCF77 (77,5kHz / pulse)
- Serial time datagram

### Integrated features

- System monitoring / Alarming
- Static Routing Table
- IEEE 802.1Q Tagged VLAN
- Network Interface Bonding / Teaming

### Optional activations

- IEC 62439-3 Parallel Redundancy Protocol (PRP)
- IEEE 1588 Precision Time Protocol (PTP) Grandmaster
- SIMATIC NET SINEC H1 time datagram

### Time source options

- GPS
- GNSS
- IRIG-B
- NTP / PTP

### Power supply options

- 100 – 240VAC
- 100 – 250VDC
- 18 – 36VDC
- 36 – 76VDC



# 6890 Product Series



The 6890 product series are fully featured network time server systems for NTP (Network Time Protocol) supporting the Global Navigation Satellite Systems (GNSS) GPS, Galileo, GLONASS, and BeiDou for precise and reliable time synchronization at highly competitive pricing.

## Network time server in compact housing for DIN rail mounting

- 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- Network Time Protocol Version 4 (RFC5905)

## Integrated features

- System monitoring / Alarming
- Static Routing Table
- IEEE 802.1Q Tagged VLAN
- Network Interface Bonding / Teaming

## Optional activation

- IEC 62439-3 Parallel Redundancy Protocol (PRP)

## Redundant power supply

- PoE (Power over Ethernet)
- 24VDC

## Extension modules

- 2 channel IRIG-B / 1 channel PPS output



# 8024 Product Series

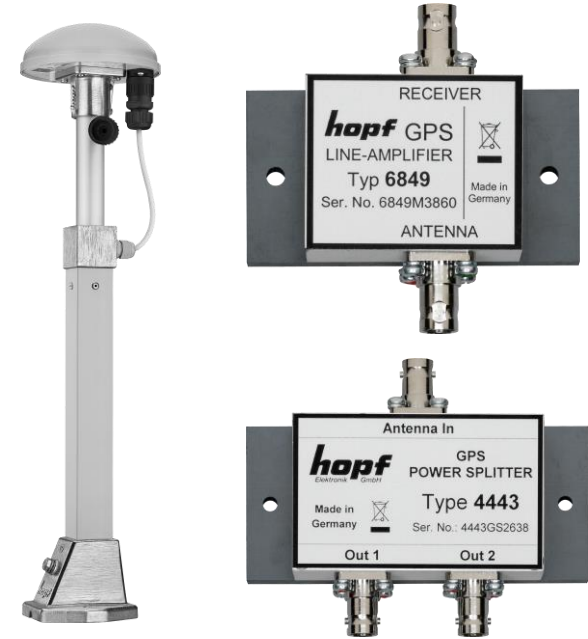
**hopf**

Cost-effective clock system with GPS only or GNSS (GPS, Galileo, GLONASS) receiver module and expansion slot for output modules in housing for DIN rail mounting

- **Serial time datagrams**
  - hopf Standard (6021)
  - hopf Master/Slave
  - hopf Binär
  - IEC-103 (ASDU Type 6)
  - Trimble Time String (TSIP)
  - SINEC H1 Extended (Meinberg Standard String)
  - SAT 1703 / SICAM RTU
  - ABB Melody
  - ABB Freelance
- **IRIG-B**
  - modulated / AM (B12x)
  - demodulated / DCLS (B00x)
  - IEEE 1344 / IEEE C37.118
  - AFNOR NF S87-500
- **DCF77 (77,5kHz / pulse)**
- **PPS, cyclic pulses**
- **Power supply options**
  - 100 – 240VAC
  - 100 – 250VDC
  - 18 – 36VDC
  - 36 – 76VDC
- **Time distribution over multimode fiber optic**
  - modulated / AM (B12x)
  - demodulated / DCLS (B00x)
  - IEEE 1344 / IEEE C37.118
  - AFNOR NF S87-500



- GPS / GNSS / DCF77 antenna systems
  - Mounting kit for flat roof and wall mounting
  - Mounting kit for pole mounting with upright or angled bracket
  - Antenna available with heating for harsh environment with ice and snow
- Surge protective devices
- Amplifier for looping into the antenna cable
- Signal splitter devices
- LSZH (low loss zero halogen) antenna and patch cable



# Secondary Clocks



## ■ Analogue clock displays

- Standard sizes 30/60 cm (11.81/23.62 inch) diameter
- Standard synchronization via NTP
- Standard power supply PoE (Power over Ethernet)
- Available with / without seconds hand
- Outdoor displays available with / without background lighting

## ■ Digital clock displays

- Various sizes for indoor and outdoor usage available
- Standard synchronization via NTP
- Standard power supply PoE (Power over Ethernet)



# Unlimited flexibility

# hopf



 **MADE IN  
GERMANY**

# Selected projects



- Seattle City Light
- Cape Canaveral
- Shenzhen Western Power Plant
- Metro Guangzhou
- Kowloon–Canton Railway Corporation (KCRC)
- MRT Bangkok (รถไฟฟ้ามหานคร)
- NTPC (राष्ट्रीय ताप विद्युत निगम लिमिटेड)
- National Air Traffic Control Services London
- European Space Operation Center (ESOC)
- Turów Power Plant
- TEIAS (Türkiye Elektrik İletim A.Ş.)
- Australian and New Zealand Telecom
- ESKOM
- Société Tunisienne de l'Electricité et du Gaz (STEG)
- KAHRAMAA (أكملت المؤسسة العامة القطرية للكهرباء والماء)
- Oman Electricity Transmission Company SAOC (OETC)
- SOHAR Power (شركة صحار للطاقة)
- Rehab CCGT Power Plant
- Dubai Electricity and Water Authority (هيئة كهرباء و مياه دبي)
- Ministry of Electricity and Water
- Ulubelu Geothermal Power Plant

USA  
USA  
China  
China  
Hong Kong  
Thailand  
India  
Great Britain  
Germany  
Poland  
Turkey  
Australia  
South Africa  
Tunisia  
Qatar  
Oman  
Oman  
Jordan  
UAE  
Kuwait  
Indonesia





Trusted by

**hopf**






Building  
trust  
together.




This attestation is directly linked to the IQNET Member's original certificate and shall not be used as a stand-alone document

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Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH awards this **qualityaustria** certificate to the following organisation:

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DE-58511 Lüdenscheid, Nottebohmstraße 41

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complying with the requirements of standard  
**ISO 14001:2015**

This **qualityaustria** certificate confirms the application and further development of an effective

Time reference systems and electronic components

The validity of the **qualityaustria** certificate will be maintained by annual surveillance audits and one renewal audit after three years.

Registration No.: 04514/2  
Date of initial issue: 10 December 2021  
Valid until: 09 December 2024

Vienna, 10 December 2021

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH,  
AT-1010 Vienna, Zelinkagasse 10/3

**Signatures removed for security reasons**

Konrad Scheiber  
General Manager

DI Axel Dick, MSc  
Specialist representative

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH is accredited according to the Austrian Accreditation Act by the BMWFUW (Federal Ministry of Science, Research and Economy).

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The current validity of the certificate is documented exclusively on the Internet under  
<http://www.qualityaustria.com/en/cert> EAC: 29; 33; 35



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**hopf Elektronik GmbH**  
DE-58511 Lüdenscheid, Nottebohmstraße 41

**OCCUPATIONAL HEALTH AND SAFETY  
MANAGEMENT SYSTEMS**  
complying with the requirements of standard  
**ISO 45001:2018**

This **qualityaustria** certificate confirms the application and further development of an effective

Time reference systems and electronic components

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Registration No.: 00143/2  
Date of initial issue: 24 January 2019  
Valid until: 23 January 2025

Vienna, 10 December 2021

Quality Austria - Trainings, Zertifizierungs und Begutachtungs GmbH,  
AT-1010 Vienna, Zelinkagasse 10/3

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General Manager

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Elektronik GmbH

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# Get in touch!

# ***hopf***

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## Management

Erich RUPRECHT	Chief Executive Officer
Wolfgang KANOVSKY	Chief Technology Officer

