



LAN Ethernet/NTP

NTP – Time over Ethernet **ToE**

The innovative way to distribute time to clock systems, IT infrastructures, buildings and security technology

Nowadays, state-of-the-art devices in nearly all application fields are equipped with an Ethernet LAN connection. LAN cabling is available in all newer buildings. We use these opportunities to distribute high-precision time in an easy way, without additional cabling, by providing our DTS products and LAN clocks.

DTS (Distributed Time System) devices are our master clocks and time servers to distribute the exact time in LAN/WAN applications via NTP protocol. The NTP (Network Time Protocol) ensures that all components in a LAN/WAN are synchronized accurately to the same time.

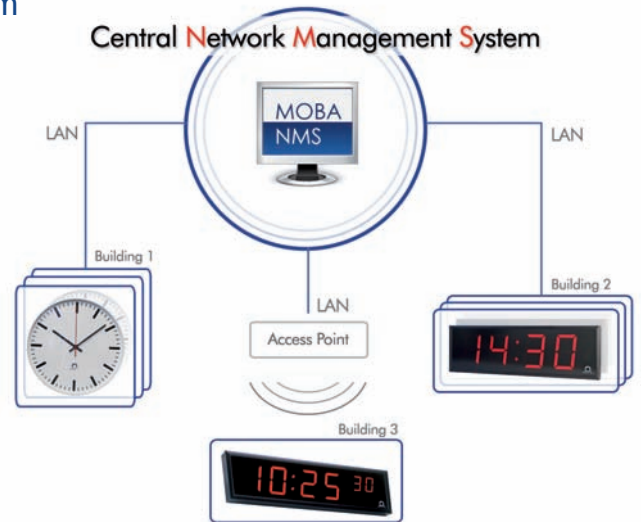
ToE Management and Time Sources

MOBA NMS - Network Management System

Network management software used to administrate **MOBATIME** network devices. With this application you have full control over all **MOBATIME** devices in your network!

Main Features

- Central device management for all **MOBATIME** network master clocks, time servers and slave clocks (analog, digital).
- Designed to handle/configurate more than 1000 devices per network at the same time.
- Compared to a web-based configuration on each single device, **MOBA NMS** manages all devices centrally.
- Device auto detection for multicast and unicast (IP range scan) communication.
- Read and change device configuration with a comfortable user interface.
- Display device status, time, error and alarm information of each device. Error and alarm information are additionally shown at group level.
- Create logical groups and move/sort devices per drag and drop for easier management and supervision.
- Save and load created configurations with all logical groups and devices.



- Java-based (Eclipse RCP) and therefore operating system independent (Windows, Linux).
- Intuitive GUI design with well known features (like drag and drop etc.).
- Available for download with integrated online self update feature.

Time Servers and Master Clocks

The **MOBATIME** time servers (e.g. the Net Master Clock DTS 480x.masterclock or the DTS 413x.timeserver) can be used as NTP network time servers. They provide an NTP time reference for devices and systems connected to the network. The time server synchronization can be realized with DCF 77 or GPS time signal receivers and/or by means of another NTP server in the LAN. See corresponding product brochures for detailed information regarding these innovative servers and their use.

DTS 4135.timeserver:

- Precise, powerful NTP time server, synchronized by DCF 77, GPS or IRIG-B/AFNOR.
- Possibility to work in redundant operation via optical link (master-slave), without any time leaps.
- Intelligent concept for redundant and monitored power supply.
- NTP time source for clocks and time distribution systems.
- Max. number of NTP or SNTP requests: > 250 requests/sec.



- Outputs: 2 x IRIG-B/AFNOR, 2 x serial, 2 x high precision pulses; allows flexible use in all sorts of environments.
- Version DTS 4136.timeserver with oven heated quartz provides even higher accuracy of time signal in case of loss of external time reference (DCF, GPS).

DTS 480x.masterclock:

- Network master clock as NTP time source, with 1 or 2 slave clock lines for **MOBALine**, polarized impulses (max. 700 mA) or optional IRIG, AFNOR, DCF-FSK. This allows the management of numerous and different time codes with only one master clock.
- Serial interface RS 232, 422, 485 for the synchronization of external devices.
- Master clock for monitored slave clocks with supervised illumination control via RS 485 (only DTS 4801).



- NTP time server : Unicast and multicast addressing possible; IP v6 compatible.
- LAN/WAN monitored and synchronized master clock in connection with Master Time Center MTC and CAN module (Communication and Alarm Network).

ToE system components

Main features:

- Components can be addressed by both unicast and multicast.
- Management of installation, commissioning, operation, monitoring, maintenance and updating by **MOBA NMS**.
- Self-setting movements and clocks.
- Configuration, powering and monitoring over Ethernet. Only one network connection per multi-sided clock necessary.

Slave clocks and movements with NTP synchronization

NTP movements SAN 40/SEN 40 for clocks up to 40 cm respectively NBU 190 for clocks up to 80 cm

These newly developed self-setting movements are synchronized directly from the network via NTP and powered by PoE (NBU 190: PoE and/or 24 VDC). See corresponding product brochures for detailed information.



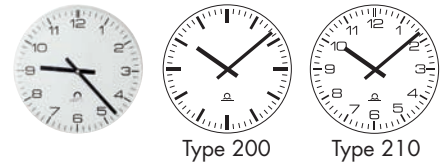
NCI Network Clock Interface

The NCI is synchronized via the NTP protocol by a NTP multicast compatible time server and generates the usual *MOBALine* and DCF time codes in local time format. In that way slave clocks with *MOBALine* or DCF 77 input plus all master clocks with DCF 77 input can be synchronized.



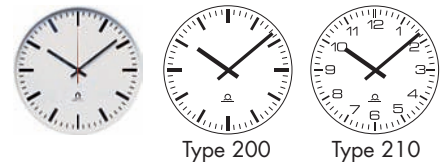
ECO indoor slave clocks for NTP synchronization

With NTP movement SAN 40/SEN 40, powered by PoE, up to Ø 40 cm. Available with dial types 200 and 210.



SLIM-metallic indoor slave clocks for NTP synchronization

With NTP movement SAN 40/SEN 40, powered by PoE, up to Ø 40 cm. Available with dial types 200 and 210.



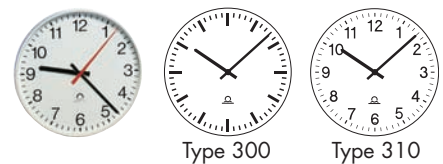
MODERNA indoor slave clocks for NTP synchronization

With NTP movement SAN 40/SEN 40, powered by PoE, up to Ø 40 cm. Available with dial types 360 and 310.



STANDARD indoor slave clocks for NTP synchronization

With NTP movement SAN 40/SEN 40, powered by PoE, up to Ø 40 cm. Available with dial types 300 and 310. Clocks with Ø 50 to 80 cm are equipped with the NTP movement NBU 190.



Analog slave clocks 40,50, 60 and 80cm

Clocks in the STANDARD, PROFILINE and METROLINE ranges are equipped with the NTP movement NBU 190 and can be connected to the Ethernet LAN.



Digital clocks with direct NTP control

Even LED digital clocks, e.g. those in the ECO-DC, DC, DK and DSC model ranges, can be fitted on request with an NTP input. In that way they can be connected directly to the Ethernet LAN.

See corresponding product brochures for detailed information.

