

SWISS TIME SYSTEMS

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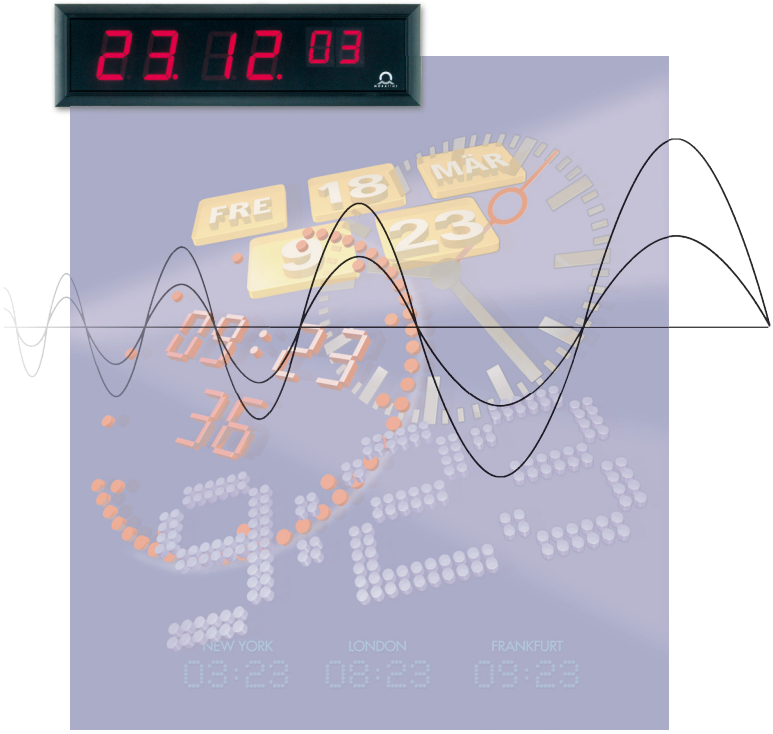
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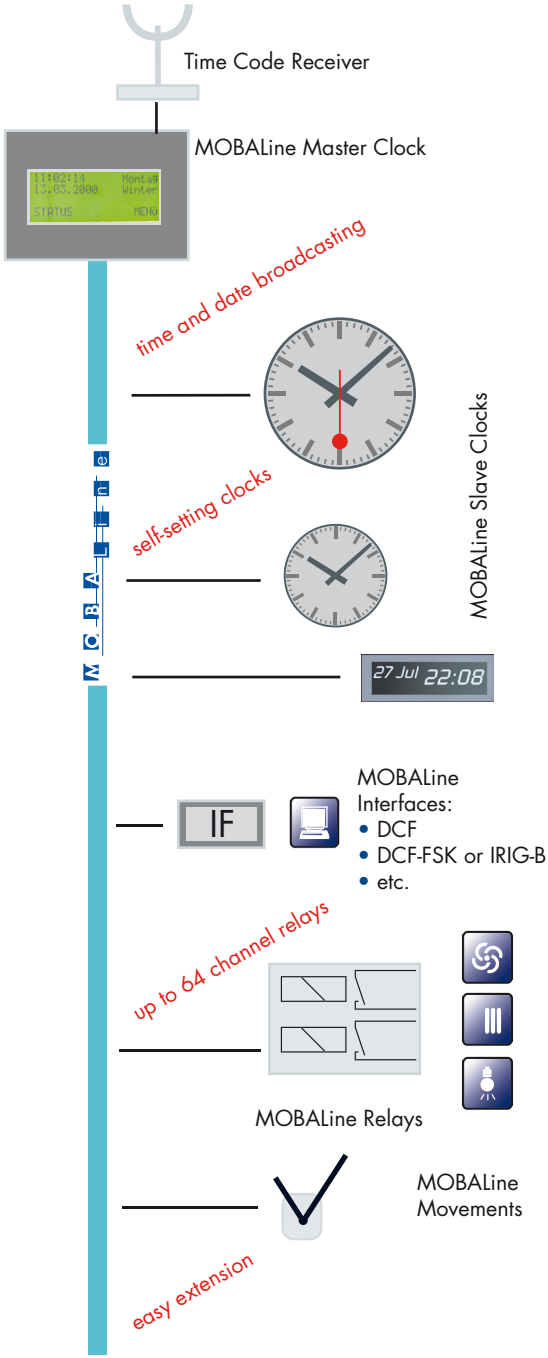
MOBALine -
Makes time distribution easy



MOBALine is a two wire transmission system for maintenance-free self-setting clocks and remotely synchronized computer based systems.

MOBALine controls:
- self-setting analog and digital clocks
- relays; switching of remotely located electrical loads such as light, heat, bells, ...

MOBALine sets time of:
- any system designed to be synchronized by DCF 77, DCF-FSK or IRIG-B time code.


Time Code Receiver
MOBALine Master Clock
11:02:14 Montag
13.05.2000 Winter
STATUS MENU
time and date broadcasting
self-setting clocks
MOBALine
MOBALine Slave Clocks
27 Jul 22:08
IF
MOBALine
Interfaces:
• DCF
• DCF-FSK or IRIG-B
• etc.
up to 64 channel relays
MOBALine Relays
MOBALine
Movements
easy extension

WTD Wireless Time Distribution

Wireless Time Distribution for digital and analog clocks (radio frequency 868 MHz)

WTD Stand-alone solution



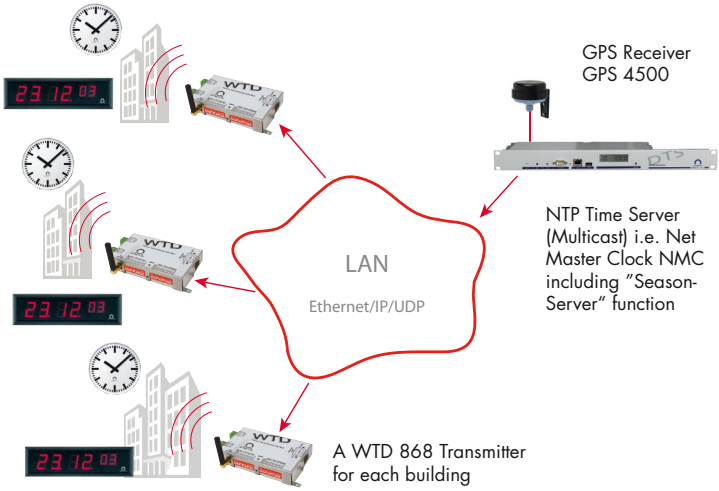
Synchronization of the transmitter by DCF 77 time code from a GPS or DCF time signal receiver.

WTD, the most important features and advantages:

- High flexibility for realizing new time systems or the extension of existing clock systems in a convenient way.
- Versatile application e.g. in historic buildings under monument protection, low cost wireless installation for small clock systems e.g. in schools, simple retrofitting of existing clock systems in buildings and open-plan offices, extension of existing wired clock systems.
- Use of unlimited number of slave clocks within the range of a transmitter.
- High reliability in time synchronization over distances of up to 200 m.
- Simple and economic installation – therefore essential cost savings.

Extension of WTD system through LAN

An unlimited number of WDT 868-Transmitters can be synchronized by NTP Time Server through LAN.



Some WTD products:



Transmitter WTD 868-T
Input: LAN, DCF 77, GPS
Output: Radio transmitted time code (868 MHz)



Receiver Interface:
WTD 868-RM or WTD 868-RD
Input: Time code from a WTD 868-Transmitter or Repeater
Output: - RM: MOBALine
- RD: DCF 77



DC 57, 100 & 180:
Digital indoor clocks equipped with exernal WTD 868-RD receiver interface.



Slave clocks for WTD with or without second display:
- FLEX
- ECO

NTP - Time over Ethernet ToE

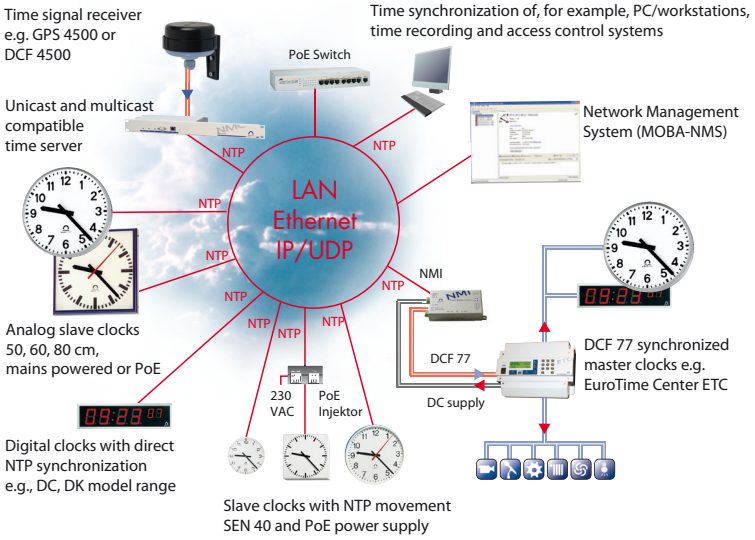
The innovative way to distribute time to clock systems, IT infrastructures, buildings, and security technology



Considerable advantages can be gained by using networks for time synchronization of clocks, clock systems and time servers.

- Installation costs for networked clock systems can be drastically reduced.
- The entire network, including all components and systems, is absolutely synchronized to the same time.
- By including a time server (e.g. MOBATIME DTS master clock or or DTS time server) the exact atomic clock time signal received via the DCF 77 or GPS can be fed directly into the network in the form of NTP time information.
- A considerable advantage is gained by the option of being able to integrate modern computer master clocks directly into the network. Via Ethernet LAN and NTP an almost unlimited number of slave clocks can be synchronized, no additional time signal receivers are necessary.
- A LAN-based time system can be configured and monitored from any computer in the network. Malfunctions, error messages and alarms are signalled via alarm relays, using SNMP traps or e-mails. If the clocks have the new LAN-compatible MOBATIME clock circuitry on the network it is even possible to ascertain whether all the clocks are functioning correctly using the MOBATIME software Network Management System (MOBA-NMS).

Example of a LAN based time distribution

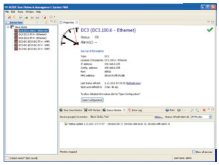


NTP slave clocks and NMIs with NTP multicast don't need an IP address.

Some LAN products:













NTP movement SAN 40 / SEN 40
for clocks up to 40 cm in size

Indoor and Outdoor slave clocks with LAN movement:
- FLEX
- ECO
- MODERNA
- Metroline
- Profiline

Network Management System:
- MOBA-NMS

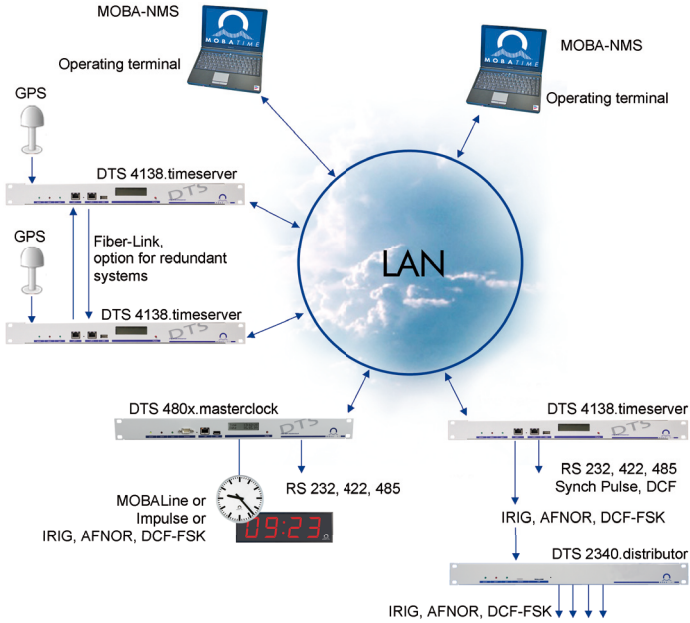
Network Management Interface:
- NMI

MOBATIME timeservers:
- DTS time server
- DTS master clock

Digital clocks with direct NTP control

DTS Distributed Time System

Time system with persuasive future prospects



The DTS concept is specially designed for medium and large networks and offers a range of persuasive features:

- The system can be decentralized:
  "Function where it is required"
- Security and reliability is provided by redundancy in operation and in power supply, as well as by alternative alarm reports (alarm relay, e-mail or SNMP)
- Maximum precision of the DTS 413x.timeserver time reference
- Simple, convenient and centralized operation, configuration, programming, administration, and monitoring via LAN
- Network functions for highly precise time distribution to all NTP clients in the LAN/WAN network, as well as to sub-systems, such as slave clock lines, or switching and control systems of buildings and to IT Security services

Available products:



DTS 413x.timeserver:

- Precise, powerful NTP time server, synchronized by GPS
- Possibile to work in redundant operation via optical link (Master-Slave)
- Intelligent concept for redundant and monitored power supply
- NTP time source for clocks and time distribution systems
- Max. number of (S)NTP client requests: > 250 requests / sec.
- Inputs for redundant power supply
- Please see detailed product description for outputs

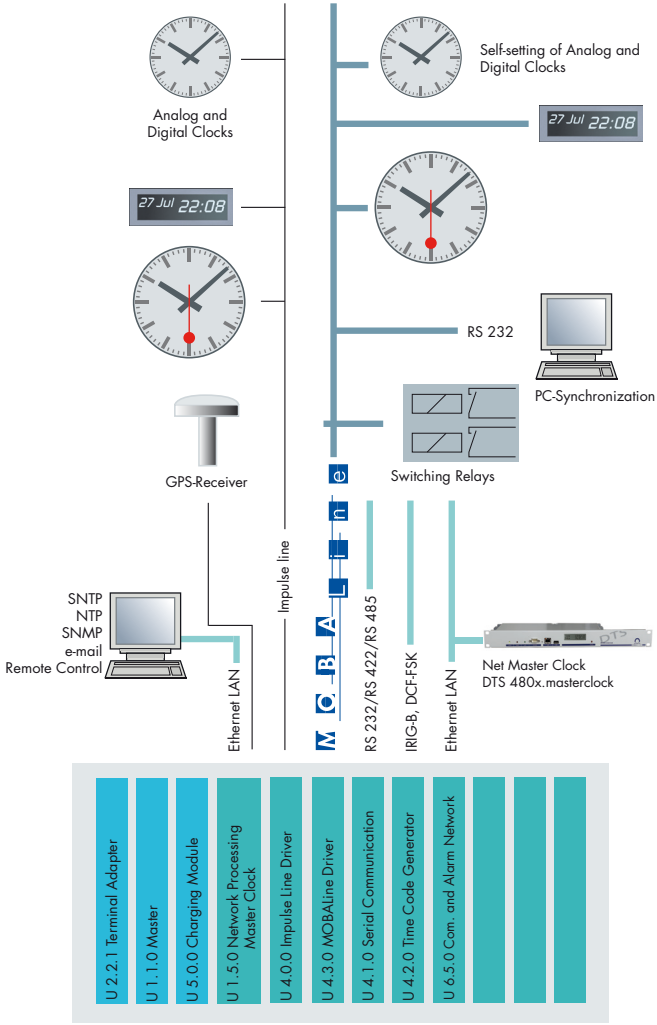


DTS 480x.masterclock:

- Network master clock with 1 or 2 slave clock lines for MOBALine or polarized impulses (max. 700 mA) or optional IRIG, AFNOR, DCF-FSK
- Serial interface RS 232, 422, 485 for the synchronization of external devices
- Master clock for monitored slave clocks with monitored illumination control via RS 485
- NTP time source for clocks and time distribution systems
- NTP timeserver
- LAN/WAN monitored and synchronized master clock in connection with Master Time Center MTC and CAN module (Communication and Alarm Network)
- Please see detailed product description for outputs

Master Time Center MTC

Time Distribution



The Master Time Center controls clocks, synchronizes computers to the exact time, supplies serial time information in various formats and provides a reliable time reference for the computer network. The MTC has been optimized to offer the best possible reliability and flexibility, in order to produce specific and versatile system solutions.

Master Time Center MTC

Mains Frequency Supervision

- Precise measurement and log of mains frequency (50/60 Hz)
- Signaling of deviations
- Various programmable alarm limit values
- Values displayed on terminal, built-in LCD or remote LED display

Further Applications

- Airports
- Hospitals
- Railways
- Industrial Companies
- Public Buildings
- Government Buildings

Customer-specific designed systems with high requirements regarding the different kinds of time signals, accuracy of the time signals, reliability and availability of the time signals (e.g. redundant design).

- Power plants and distribution stations
- Research station
- Radio- and TV stations and -studios
- Air traffic control (Skyguide)

CompuTime Center CTC
Master Clock



The reliable, modern and modular concept with its configuration flexibility makes the CTC suitable for a wide range of applications. The different types of outputs provide the facility of controlling traditional or self-setting slave clocks as well as computer based systems.

CTC's Application Boards

Impulse Line Driver
selectable pulse-periods, up to 1A per line

MOBALine Driver
for self-setting clocks, computer interfaces and switching relays

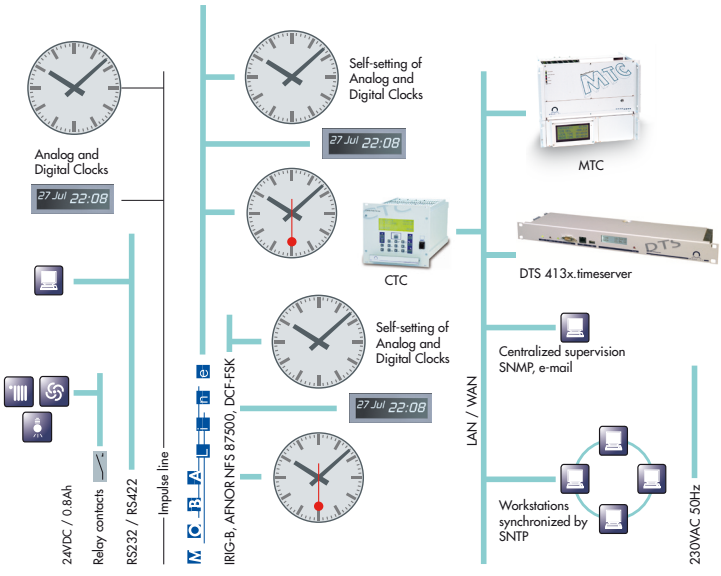
Serial Communication
programmable serial time-strings on RS 232/422

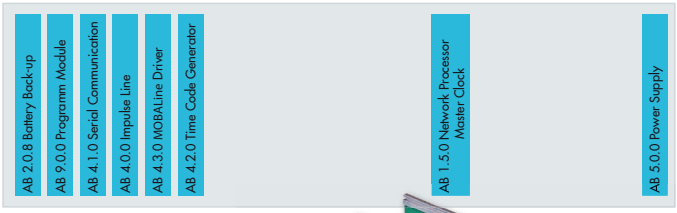
Program Module
4 independent relays. Contact load up to 1250 VA

Time Code Generator
2 independent Audio Frequency Time Code outputs IRIG-B, AFNOR, DCF-FSK

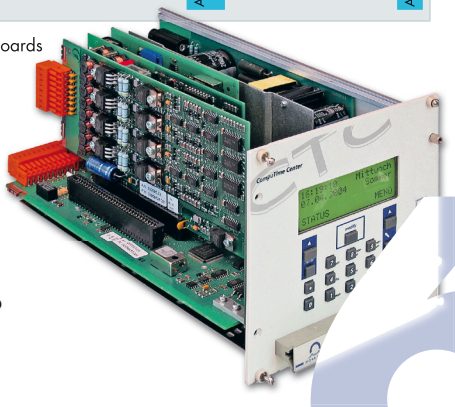
Network Processor Master ClockModule
Different services on a TCP/IP Ethernet LAN network: Time synchronization with (S)NTP (Server and Client), alarm reporting with SNMP traps or e-mails. 10/100Base-T connection by RJ45 plug.
Master clock functions, for direct GPS 4500 connection.

CTC à la carte





CTC's Selection of Application Boards



The CTC's modular design allows numerous different configurations according to your requirements

User-friendly

Easy and intuitive programming, configuration and supervision due to CTC's user friendly interface.

ETC Master Clocks



ETC 12 & ETC 12 R

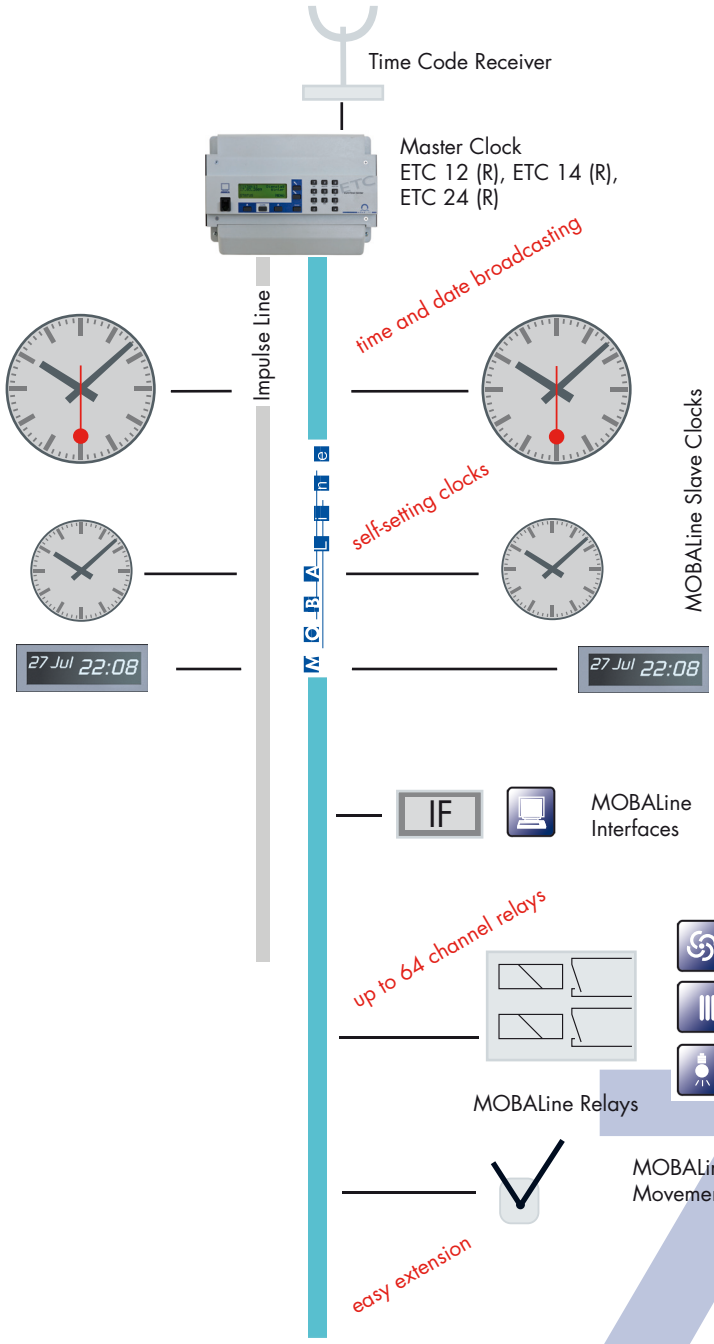
- 1 line selectable for minute, half-minute, second impulses (polarized, 24 V / 500 mA) or DCF time code
- Radio synchronization by DCF time code
- 2 programmable channel relays with switch over contacts
- Control of up to 80 slave clocks. 80 time zone definitions
- Menu guided, self-explaining operation control

ETC 14 & ETC 14 R

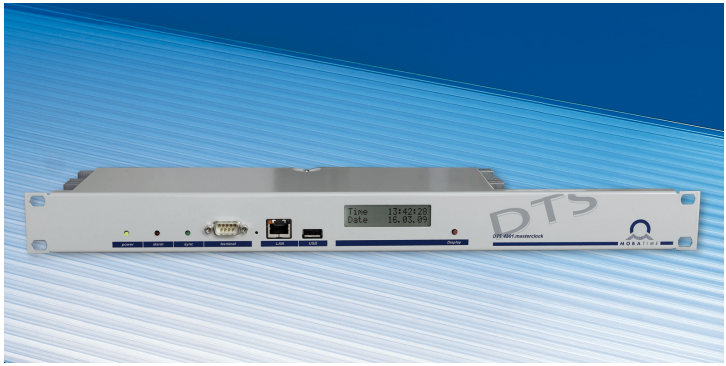
- 1 line selectable for MOBALine (500 mA eff.), minute, half-minute, second impulses (polarized, 24 V / 700 mA) or DCF time code
- Synchronization by DCF, GPS time code or Serial (RS 232, RS 422) ASCII time string
- 4 programmable channel relays with switch over contacts
- Control of up to 100 slave clocks. 80 time zone definitions
- World time function available in connection with IF 480WT
- Menu guided, self-explaining operation control

ETC 24 & ETC 24 R

- 2 lines selectable for MOBALine (700 mA eff. totally), minute, half-minute, second impulses (polarized, 24 V / 1000 mA totally) or DCF time code
- Synchronization by DCF, GPS time code or Serial (RS 232, RS 422) ASCII time string
- 4 programmable channel relays with switch over contacts
- Control of up to 160 slave clocks. 80 time zone definitions
- World time function available in connection with IF 480WT
- Menu guided, self-explaining operation control


Time Code Receiver
Master Clock
ETC 12 (R), ETC 14 (R),
ETC 24 (R)
Impulse Line
time and date broadcasting
self-setting clocks
MOBALine
MOBALine Slave Clocks
27 Jul 22:08
27 Jul 22:08
IF
MOBALine
Interfaces
up to 64 channel relays
MOBALine Relays
MOBALine
Movements
easy extension

Net Master Clock
DTS 480x.masterclock
NTP Time Server and Master Clock



The Concept

The DTS masterclock is designed especially for network environment. It is able to work as an accurate time server, master clock or submaster clock, synchronized from LAN.

Synchronization sources: DCF, GPS, LAN (NTP).

Time signal outputs:

DTS 4801:
- 1 MOBALine or impulse line (700mA eff.)
- 1 RS 485 line for monitored self-setting slave clocks
- 1 DCF / pulses / frequency output

DTS 4802:
- 2 MOBALine or impulse lines (totally 700mA eff.)
- 1 RS 232/485 for script file programmable serial telegrams
- 1 DCF / pulses / frequency output

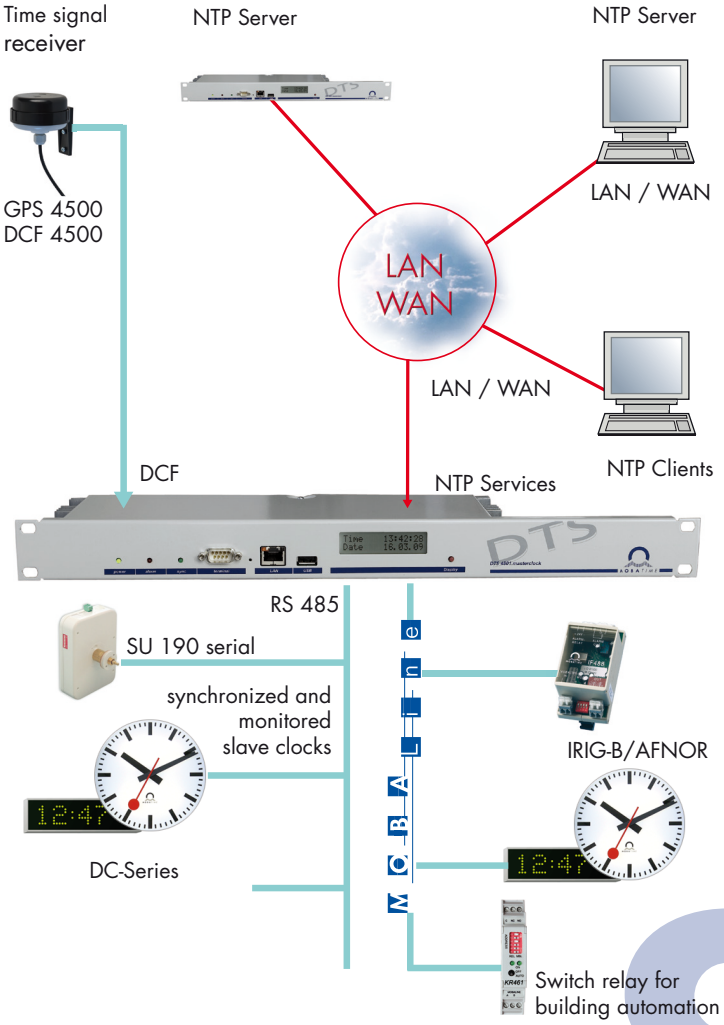
Operating control: PC terminal software over RS 232 (front Sub-D 9 pin) or Telnet, SSH or SNMP over the LAN

Power supply: 85 - 250 VAC, 50 - 60 Hz or 24 - 28 VDC / 1.5 A

DC output: 28 VDC, max. 400 mA, to supply SU 190 movements and / or GPS 4500

Dimension: 19" rack mounting, 1 HU
W x H x D: 483 x 44 x 125 mm

Application example: DTS 4801.masterclock as NTP Time Server synchronized from GPS or synchronized from an other NTP Time Server (LAN / Internet).



DTS 4801.masterclock, e. g. to control and monitor up to 31 self-setting slave clocks and to synchronize self-setting MOBA*Line* slave clocks (optional IRIG-B/AFNOR).

DTS 4135.timeserver

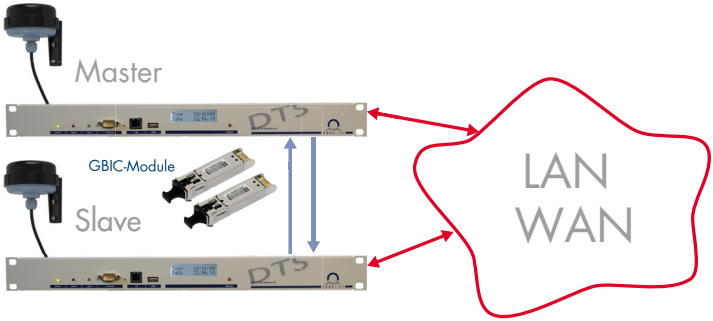
The time server in the new NTP-based Distributed Time System by MOBATIME



The DTS 4135.timeserver sets new standards as a time reference for all NTP clients in medium and large networks (LAN Ethernet/IP/UDP). It is highly precise and with its intelligent concept for redundant operation, it offers a high degree of reliability and security against failure.
The DTS 4135.timeserver can either be synchronized with a time signal receiver (DCF 4500 or GPS 4500), IRIG-B/AFNOR or with another (S)NTP time server in the LAN.
The DTS 4135.timeserver can synchronize all slave clocks with NTP movement, either with direct NTP input or by means of NMI (Network MOBALine Interface).
Other devices, e.g. master clocks, can be controlled via DCF current loop outputs.
Additional outputs:

- 2x IRIG-B/AFNOR, DCF-FSK outputs
- 2x serial outputs

DTS 4135.timeserver redundancy concept



Two DTS 4135.timeservers are synchronized via a fiber-optic connection for redundant operation, using two GBIC mini modules for the fiber-optic link. The two time servers automatically regulate their role as master or slave via this connection after start-up. The slave is synchronized by the master. In the case of a GPS failure, automatic switchover from master to slave will occur, whereby limits for the switchover can be configured.

Redundant power supply

The DTS 4135.timeserver has monitored power inputs.
Possible power variants:

- 24 VCD, non-redundant
- 230 VAC, non-redundant
- 24 VDC + 24 VDC, redundant
- 230 VAC + 24 VDC, redundant

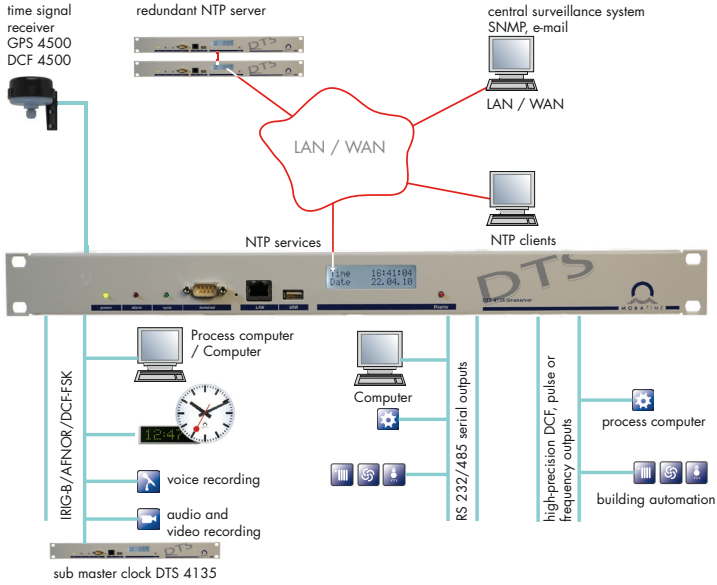
Redundant outputs

Redundant outputs (IRIG-B/AFNOR, serial interfaces, DCF and/or pulse/frequency) can be achieved by using an ECO (External Change Over) unit.



DTS 4135.timeserver

Master Clock and NTP time server



DTS 4135.timeserver, e.g. as NTP server and master clock for precision IRIG-B/AFNOR outputs, RS 232/485 serial telegrams and technical pulses/frequencies.

The most important technical data:

Accuracy

GPS (DCF input) to NTP server: typical < +/- 100 µs
GPS (DCF input) to DCF output: typical < +/- 10 µs

External time source

External NTP / SNTP server (4 NTP sources possible), and / or GPS (DCF 77) time signal receiver (current Loop, e.g. GPS 4500) or AFNOR time signal (analog, BNC)

Power supply

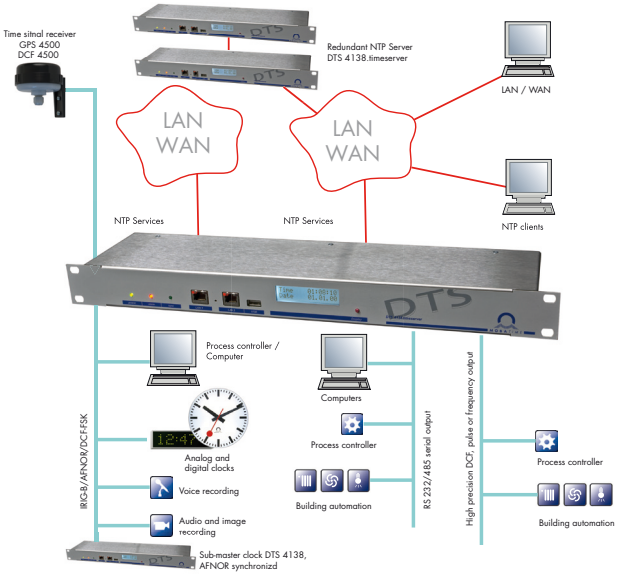
AC input: 85 - 265 VAC / 50 - 60 Hz / max. 15 VA
2 x DC input: 24 VDC + 20 % / - 10 % / max. 10 W

Dimensions

19" rack, 1 rack unit, W x H x D mm 483 x 44 x 125

DTS 4138.timeserver

Multipurpose time server



The DTS 4138.timeserver sets new standards as a time reference for all NTP clients in medium and large networks (LAN/Ethernet/IP/UDP). It is highly precise and with its intelligent concept for redundant operation, it offers a high degree of reliability and availability.

Main difference between DTS 4135 and DTS 4138 at a glance:

- no serial interface
- 2 LAN ports
- only one of the following outputs each:
  - IRIG-B / AFNOR / DC-FSK
  - RS 232 / 485
  - high-precision DCF, pulse or frequency

10

GPS Receivers

Satellite Time Signal Receiver



GNSS 3000

- The GNSS 3000 is a time signal receiver intended for receiving time siganls from navigation satellites
- It can receive and process GLONASS and GPS signals

GPS 4500

- DCF 77 serial time code output (UTC or MET time) for Master Clocks, Master Time Center MTC and almost any device compatible with DCF 77 time code
- Power supply from connected device or external 10-40 VDC

DCF 77 and MSF 60
Time Code Receiver



DCF 77 reception
The DCF 77 signal transmitter is located in Mainflingen near Frankfurt. The time information transmitted from the atomic clock has a range of some 1500 km.

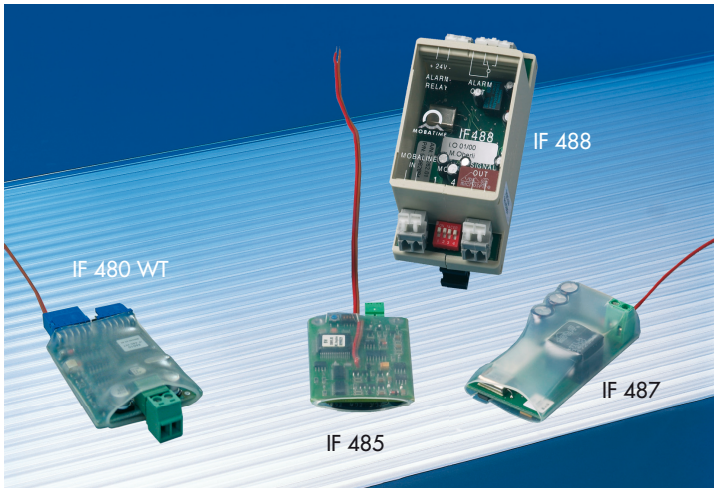
MSF 60 reception
The MSF 60 transmitter is located in Anthorn UK. The time information from atomic clock has a range of some 1500 km.

DCF 4500 / MSF 4500
Standard receiver for usual reception conditions.

Depending on the location of the clock installation and the local reception conditions, the most appropriate receiver is used.

Interfaces

Time Code Converters



IF 480 WT

Input: MOBALine,
Output: DCF 77 time code.
Time synchronization of any DCF 77 compatible device. Selectable time zone with automatic daylight-saving-time change.

IF 485

Input: MOBALine
Output: 24 V polarized impulses, minute or second (selectable) for slave clock movement

IF 487

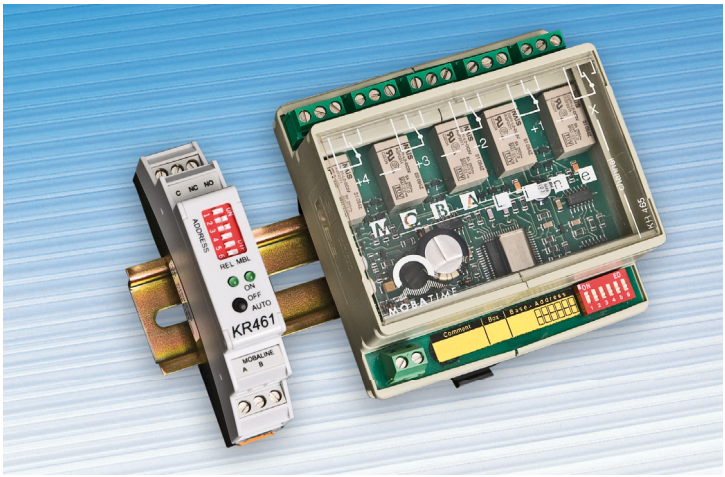
Input: IRIG-B, AFNOR, DCF-FSK (selectable)
Output: DCF 77 time code

IF 488

Input: MOBALine
Output: IRIG-B, AFNOR, DCF-FSK (selectable) with DIN-bar mounting bracket

Switching Relays

MOBALine - controlled Power Switches



Switching relays, remotely controlled by a MOBALine master clock or a Master Time Center. 64 independant channels.
Functions: on / off, signal (1-99s)
Max. contact load: 150 W, 1250 VA, 250 V.
Switching programs can be built either by means of the Windows software „Switch-Editor" or directly on the master clocks.
With the DTS 480x.masterclock, switching programs can be directly up- and downloaded via LAN after creation. The active switching program can be selected as well.

KR 461

1 relay with switch-over contact. The compact design saves space. Control LEDs available for MOBALine and switching status. Manual operation possible for testing reasons by means of the built in toggle switch (AUTO / OFF / ON).

KR 465

5 relays with switch-over contacts, controlled by separate channels.

12

Indoor Analog Clocks



ECO

Clocks at advantageous prices for multiple applications in offices and administrations.

- High quality, white plastic case with acrylic glass cover
- Dials Ø 30 and 40 cm, round
- Single-sided and double-sided clocks
- Impulse, radio-controlled (DCF 77), MOBALine or battery operated quartz movements



MODERNA

For industrial and commercial applications.

- Modern design
- Flat metal case with acrylic glass cover
- Dial dimensions 30 or 40 cm, square
- Single-sided and double-sided clocks
- Impulse, MOBALine, synchronous or battery operated quartz movements



FLEX

Sturdy and elegant analog clock FLEX with metal housing inspires you reliably through the day.

- Dial diameter: Ø 25, 30, 40, 50, 60 and 80 cm
- Single-and double-sided
- Different mounting variants (wall and ceiling set)
- Quick mounting - simply snap it on
- Impulse, radio-controlled (DCF 77), MOBALine, synchronous or battery operated quartz movements



TREND

Modern and slim design

- Dial diameter: Ø 30 and 40 cm
- Controlled and powered by two-wire MOBALine or Ethernet/NTP/PoE
- Ethernet/NTP version can be administrated and supervised by MOBA-NMS (Network Management System)

13

Outdoor analog clocks





PROFILINE ROUND and PROFILINE SQUARE

A modular concept in modern design.

- Single- or double-sided, 4-sided cubic execution
- With or without illumination
- Weather-proof housing of aluminum profile, natural anodized
- Dimensions: round Ø 50, 60, 80 cm
  square 40, 50, 60, 80 cm
  cubic 60, 80 cm
- White dial with black markers or Arabic figures
- With or without synchronous second hand
- Flat mineral protection glass or impact protection
- Minute-impulse, radio-controlled (DCF 77), MOBALine, IRIG-B, AFNOR or autonomous operation (quartz).



METROLINE

Analog clocks for indoor and outdoor use



- Single- or double-sided, round
- With or without illumination
- Weather-proof housing, light metal, colour RAL 9006, white aluminum, powder coated
- Dial diameter: round Ø 50, 60, 80 cm
- White dial with black markers or Arabic figures
- With or without synchronous second hand
- Convex acrylic protection glass
- Minute-impulse, radio-controlled (DCF 77), MOBALine, IRIG-B, AFNOR or autonomous operation (quartz).



Option: LED illumination

- Outdoor clocks with a diameter of 50, 60 or 80 cm can optionally be equipped with an LED illumination
- With a running time of 12h/day, the LED elements have a lifetime of over 100'000 hours

Indoor Digital Clocks



DC Series

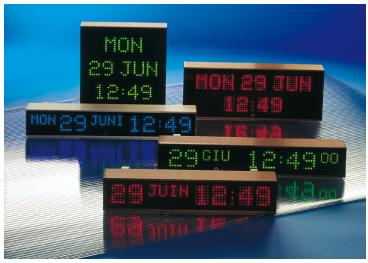
LED Digital Clocks

- 7 segment LED time display in red, green, blue and yellow
- Hour / minute or hour / minute / second, alternating time, date and temperature display (optional temperature sensor)
- Character heights 57, 100 or 180 mm; viewing distance up to 25 / 40 / 80 meters
- Impulse, radio-controlled (DCF 77), MOBALine or autonomous operation (quartz) Optional: Serial RS 232 / RS 422 or RS 485 supervised or IRIG-B, AFNOR
- Stop-watch function, up/ down counting
- Infrared remote control for easy access to all functions



Calendar clocks DK series

- Dot matrix display in red or green
- Display of time, date, temp., up to 5 world times (alternating)
- Impulse, radio (DCF 77), MOBALine, quartz. Optional: Serial RS 232 / RS 422 or RS 485 supervised or IRIG-B, AFNOR, NTP (PoE)
- Stop-watch function
- Infrared remote control



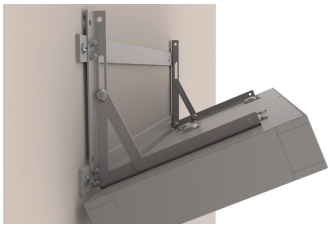
DIGI-H & DIGI-D

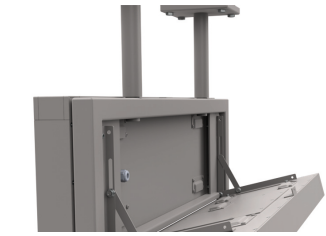
Digital Clocks

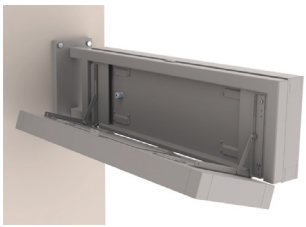
- Calendar clock with dot matrix display in red, green, blue and yellow
- Display of day of week, date, month, hour and minute
- Impulse, radio-controlled (DCF 77), MOBALine or autonomous operation (quartz)

Outdoor Digital Clocks









DSC Series LED digital clocks

- Self-setting digital clock for indoor and outdoor use with 7 segment LED display in red and green
- Bright and clear display in 100, 180, 250, 320 and 500 mm character heights
- Slim, elegant design with black powder-coated aluminum case
- Impulse, radio (DCF 77), MOBALine, quartz controlled. Optional: Serial, RS 232 / RS 422 or RS 485 supervised or IRIG-B, AFNOR or NTP
- Available for standard wall mounting, for mounting with single- or double-sided wall or ceiling suspension bracket

Movements



NU 90
Minute impulse, for clocks up to Ø 80 cm.

NU 90 SYN
Minute impulse with synchronous second hand, for clocks up to Ø 80cm.

SEI 40, SEI 40 LN (low noise)
Second impulse, slim shaped, for clocks up to Ø 40 cm.

Type range 190
Self-setting movement with input for DCF 77, MSF 60 time signal receiver or serial ASCII time telegram RS 232 / 422 (BU 190).
Available for MOBALine (MLU 190) or audio time code IRIG-B, AFNOR, DCF-FSK (ITBU 190) reception, for polarized minute impulses (IBU 190) or NTP (NBU 190).
Self-setting movement for monitored slave clocks over RS 485 bus (SU 190).
For hour, minute or hour, minute and second display up to Ø 80 cm.
Different modes of second hand selectable on DIP switches.

SAM 40, SEM 40
Self-setting MOBALine movement for clocks up to Ø 40 cm. Shafts for hour- and minute-hand (SEM: h, min. and sec. hand).

SAN 40, SEN 40
Self-setting, NTP-synchronized, for clocks up to Ø 40 cm.

MW 10, MW 20, MW 24, DMU 350
Movements for facade clocks.

Movements 192-series



For indoor and outdoor clocks with hour and minute display, up to Ø 80 cm, with or without illumination.

AD 192 / AM 192
DCF 77 / MSF 60 time signal receiver for BU 192.

BU 192
DCF 77, MSF 60 or serial ASCII controlled. Battery powered for up to 6 years. Output to control BU 192 in cascade.

FU 192
Radio controlled movement, consisting of BU 192 and AD 192 (detachable).

QU 192
Temperature compensated quartz for autonomous operation. Battery powered for up to 6 years. Output to control BU 192 in cascade.

FU 192 WWVB
Radio controlled movement for WWVB time code reception (USA, Kanada). Time zone selectable by means of DIP switches. Battery powered for up to 6 years. Output to control BU 192 in cascade.

GU 192
GPS radio clock movement with built-in satellite-antenna receiver for worldwide use. Time zone selectable by means of DIP switches or user programmable. Battery powered for up to 5 years. Output to control BU 192 in cascade.

Facade Clocks



FACADE CLOCKS for outdoor mounting

- Diameter from 40 up to 500 cm
- Self-setting motor movements
- With or without illumination
- Special design on request

Consisting of:
- 1 motorized slave clock movement for rear- or front sided wall mounting
- 1 pair of hands (hour, minute)
- 1 dial consisting of 12 hour markers, with or without illumination
  or
- 1 skeleton dial with or without illumination



FLORAL CLOCKS

A decorative way to display the time in public places, parks and gardens.

- Available for dial diameters from 2.5 meters up to 7 meters.
- Floral clock equipment consists of:
  - 1 motor movement controlled by minute impulses, connected to the mains 110/230 VAC
  - 1 pair of hands (hour, minute or hour, minute, second)
  - 1 master clock

The flower decoration of the dial shall be executed by a gardener on site.

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Company Profile

MOBATIME is the leading brand for innovative time display, time distribution and synchronization systems. Equipment and components are developed, manufactured and promoted by Moser-Baer Ltd., Switzerland. MOBATIME offers practical experience and extensive technological know-how in time systems for a wide range of application fields. This includes outdoor and indoor clocks, clock movements, master clocks and time servers.

Application Fields

- Airports
- Hospitals
- Industries
- Railway Stations
- Universities/ Schools
- Power Plants
- Underground Stations
- Public Buildings
- Radio/TV Studios

References

Railways/Metros	Switzerland · Germany · Iran · Portugal · Holland · Italy · Singapore · Hong Kong · Taiwan · India · Turkey · Brazil · …
Power Plants	Switzerland · California · Pakistan · Portugal · Ghana · Sweden · Kuwait · Norway · Australia · Russia · U.A.E · …
Airports	Zurich · Oslo · Lisbon · Kuala Lumpur · Spain · Belgium · Canada · China · India · Saudi Arabia · Germany · …
Hospitals	Bern · Zurich · Geneva · Vienna · Hanover · Abu Dhabi · Libya · Russia · Saudi Arabia · …
Radio/TV	Zurich · Bern · Geneva · Brussels · Kuwait · Jordan · Prague · U.A.E · …
Public Buildings	Switzerland · Germany · England · Italy · …
Universities/Schools	Switzerland · Germany · Turkey · Saudi Arabia · …
Industries/Services	Switzerland · Russia · Finland · Saudi Arabia · Brazil · ….

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