MULTI-PURPOSE TIME SERVER
DTS 4135.TIMESERVER

The DTS 4135.timeserver is a combined time distribution and synchronization device with network interface. With its high-precision and intelligent concept for redundant operation, it offers a high degree of reliability and availability.

HIGHLIGHTS

HIGH-PERFORMANCE NTP SERVER

The DTS 4135 can reply to more than 3'000 NTP and SNTP requests per second (up to 15'000 clients depending on NTP client configuration).

REDUNDANT LINK

For utmost availability, two DTS 4135 can be connected to offer redundant master-slave operation with automatic switch over in case of an error.

HIGH ACCURACY

The DTS 4135 can receive all GNSS signals (GPS, Galileo, GLONASS, BeiDou), guaranteeing utmost accuracy and availability. For GNSS security, multiple constellations can be used in parallel.

OSCILLATOR OPTIONS

The DTS 4135 offers two different oscillator options (see page 3 for variants).

LEGACY OUTPUTS

The DTS 4135 supports legacy outputs such as IRIG, DCF, pulse, and frequency.
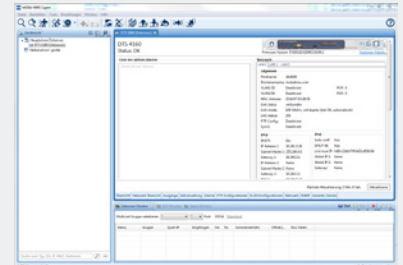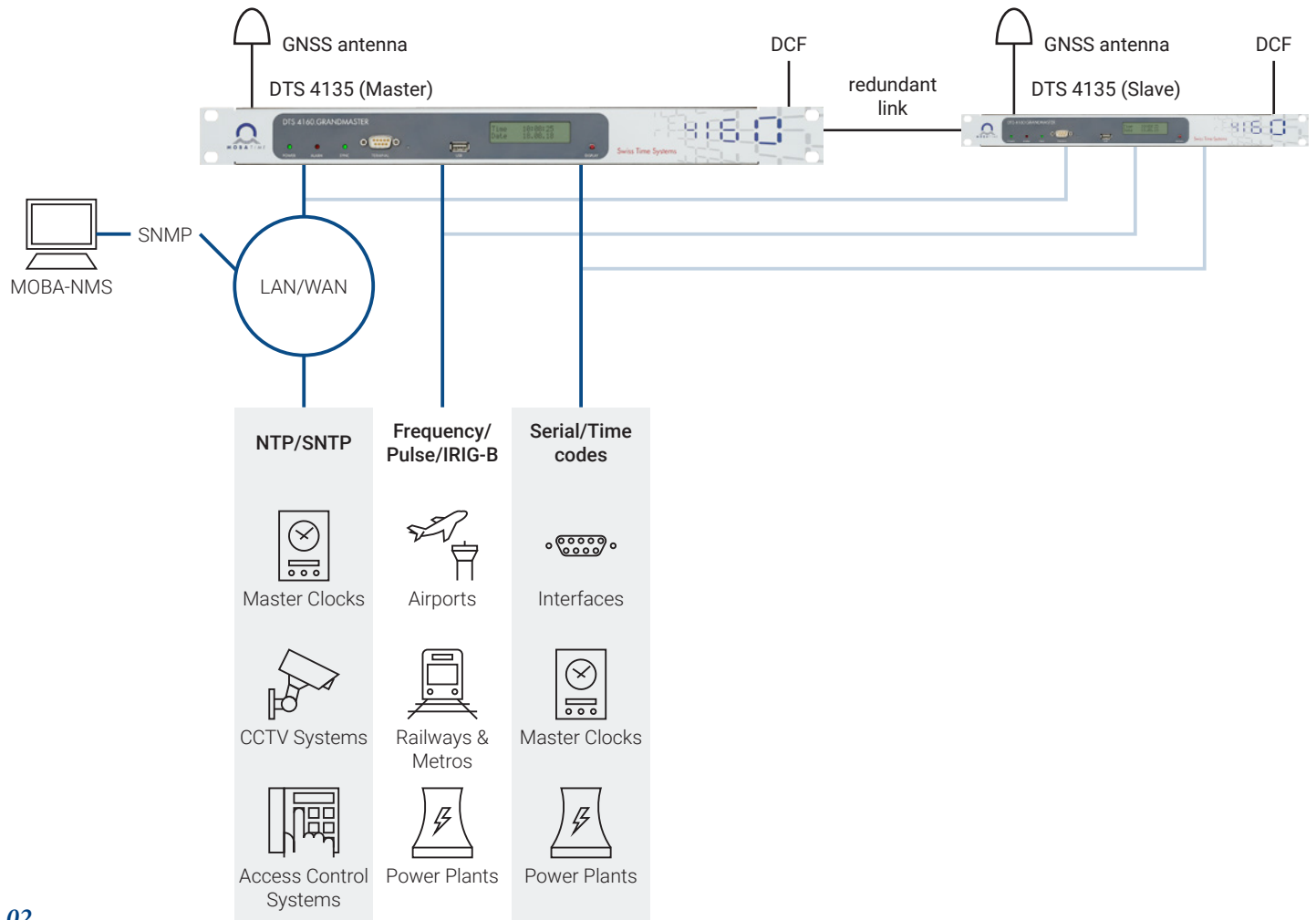

NETWORK MANAGEMENT SYSTEM

MOBA-NMS

The DTS 4135.timeserver can be fully monitored, configured and controlled using the Mobatime Network Management System software (MOBA-NMS).

APPLICATIONS

GNSS antenna

DTS 4135 (Master)

DCF

redundant link

GNSS antenna

DTS 4135 (Slave)

DCF

SNMP

MOBA-NMS

LAN/WAN

NTP/SNTP

Master Clocks

CCTV Systems

Access Control Systems

Frequency/ Pulse/IRIG-B

Airports

Railways & Metros

Power Plants

Serial/Time codes

Interfaces

Master Clocks

Power Plants

TECHNICAL DATA

Variants

DTS 4135	TCXO
Aging	+/- 3.0*10^{-10}/day +/- 2*10^{-8}/year
Holdover[1]	< +/- 5.9 µs/day
ITU-T	G.811[2], G.812 IV[3], G.813

DTS 4136	OCXO
Aging	+/- 1*10^{-10}/day +/- 1.5*10^{-8}/year
Holdover[1]	< +/- 3.2 µs/day
ITU-T	G.811[2], G.812[3]

[1] After 30 days of synchronization; for more detail, see product manual
[2] Typically fulfilled while GNSS synchronization is active
[3] For more information, see product manual

MECHANICAL DATA AND ENVIRONMENT

General data

Dimensions: 483 x 44 x 125 mm (19", 1U)
Weight: 1.8 kg
Housing material: Stainless steel
Protection degree: IP 20
Operating temperature: 0−50 °C
Operating humidity: 10−90 % relative, no condensation
Power supply: 90−240 VAC, 0.25 A; 2x 24−28 VDC, 2 A (redundant, monitored)
MTBF: > 250,000 h

STANDARDS

Conformity

The DTS 4135.timeserver conforms to the following agency approvals[1]:

CE, UKCA, CB, RoHS, WEEE
EMC: EN 50121-4, EN 61000-6-3, EN 61000-6-2
Safety: IEC 62368

[1] For full list, see product manual

REFERENCE SIGNAL INPUTS

- 1x DCF current loop (e.g. GNSS 4500)
- External NTP / SNTP server (4 NTP sources possible)
- IRIG-B 12x/AFNOR (analog)

REFERENCE SIGNAL OUTPUTS - NETWORK

- NTP server (<3'000 requests/second)
- NTP mode: Server, Peer, Broadcast, Multicast / SNTP / MD5 and SHA1 authentication for NTP
- TIME (RFC 868), DAYTIME (RFC 867)

REFERENCE SIGNAL OUTPUTS - NON-NETWORK

- 2x IRIG-B, precision output (AM/DC)
- 2x serial output with configurable time telegrams, RS-232/422/485
- 1x DCF77
- 2x line for technical pulses (DCF, frequency or impulses)

NETWORK INTERFACE

- 1x 10/100BaseT

NETWORK FEATURES

- NTP V4/V3 server (RFC 5905/1305) / SNTP (RFC 4330)
- IP configuration: IPv4 (DHCP, static IP), IPv6 (autoconfiguration, DHCPv6, static IP)

ALARMS

- Electrical output: relay contact
- Alarm input (18 − 36 VDC, max. 6 mA) for external closing contact, function configurable
- Network outputs: SNMP notifications (Traps) V2c, Mail (RFC 4954, 2195)
- Alarm LED

OSCILLATOR STABILITY

- Holdover (after 24h synchronization) at room temperature according to oscillator (see variants)

ACCURACY (TYPICAL VALUES)

- Internal
  - Redundant connection to internal time: < +/- 1 µs
  - NTP to internal time: < +/- 100 µs
- Time signal output
  - GNSS to NTP: < +/- 100 µs
  - GNSS to DCF: < +/- 10 µs
  - GNSS to pulse: < +/- 10 µs
  - GNSS to IRIG (AM): < +/- 200 µs
  - GNSS to IRIG (DC): < +/- 10 µs
  - IRIG to DCF: < +/- 50 µs
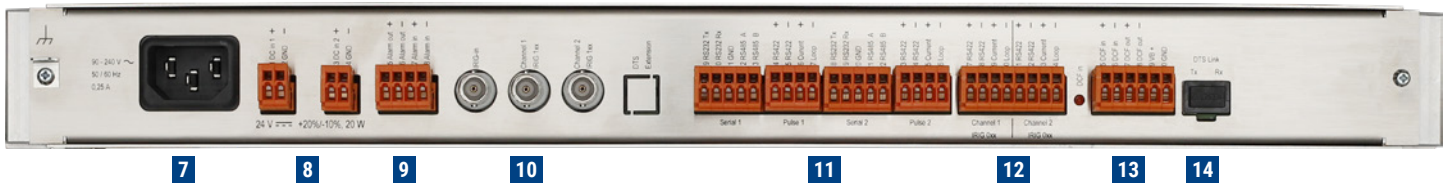 - GNSS to serial output: < +/- 10 ms (Jitter <10 ms)

MANAGEMENT & SUPERVISION

- MOBA-NMS; monitoring possible
- Terminal menu: Serial connector (RS-232), SSH, Telnet
- SNMP (v1/v2c/v3), SNMPv3 with authentication and encryption
- System firmware download via SCP, SFTP or FTP
- LEDs: Alarm, Power, Sync

SECURITY

- Configuration and log files are stored on non-volatile memory in order to survive power failures
- See Mobatime security guideline (available on request)
- SNMPv3, SCP, SSH, NTP authentication

INTERFACES

1	Status LEDs	Power (green), alarm (red), synchronization (green)	
2	Terminal	RS232 interface for local management, D-Sub 9 connector	
3	LAN 1	RJ45 100/1000MBit	Maintenance/NTP
4	USB	USB host for USB sticks	For firmware updates and log files
5	Display	LCD, 2 lines with up to 20 characters (with backlight)	For status, time and network configuration info
6	Display button	For display illumination and paging through information displays	
7	Mains power supply[1]	C14 plug	90–240 VAC, 50/60 Hz 0.5 A
8	DC power supply (2x)[1]	2-pin terminals	24–28 VDC 2 A
9	Alarm contacts	4-pin terminal	Normally closed Max. load: 30 W (30 VDC or 1 A) / 60 VA (60 VAC or 1 A)
			Alarm input (18 – 36 VDC, max. 6 mA) for external closing contact

10	IRIG input	BNC (female), 50 Ω	IRIG-B12x (AM), AFNOR A/C (AM)
	IRIG output[2]	2x BNC (female), 50 Ω	IRIG-B1xx (AM), AFNOR A/C (AM)
11	Pulse Out[3] (2x)	4-pin terminal	RS-422 (10 MHz, 2.048 MHz, 2 Hz, 1 PPS) Current loop (2 Hz, 1 PPS)
	Serial output (2x)	5-pin terminal	RS-232/422/485 RS-422: output only
12	IRIG digital output[2] (2x)	8-pin terminal	IRIG-B00x (DC), AFNOR-A/C (DC) (digital, 50 Ω, TTL)
13	DCF In/Out	6-pin terminal	DCF current loop input for the connection of a GNSS 4500
			DCF output, current loop passive
			DC output (28 VDC, max. 100 mA), e.g. GNSS 4500
			LED showing DCF signal
14	DTS Link	SFP	Redundant link

[1] Redundant, monitored
[2] Signal configuration is identical for analog and digital IRIG (11, 13)
[3] Signal configuration is identical for both pulse outputs (see manual) (11, 12)
[4] For available accessories, see product manual

Do you have any questions?
We are happy to help.

Product specifications are subject to change without notice.

Moser-Baer AG | Spitalstrasse 7 | CH-3454 Sumiswald
Tel. +41 34 432 46 46 | Fax +41 34 432 46 99
info@mobatime.com | www.mobatime.com

MOBATIME