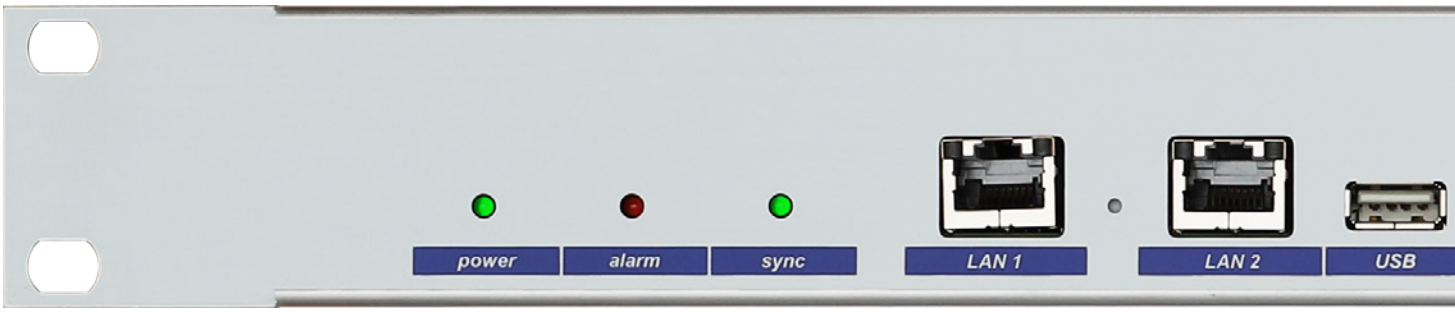
MOBATIME

SWISS TIME SYSTEMS

MULTI-PURPOSE TIME SERVER

DTS 4138.TIMESERVER

The DTS 4138.timeserver is a combined time distribution and synchronization device with dual 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 4138 can reply to more than 1'500 NTP and SNTP requests per second (up to 7'500 clients depending on NTP client configuration).

REDUNDANT LINK

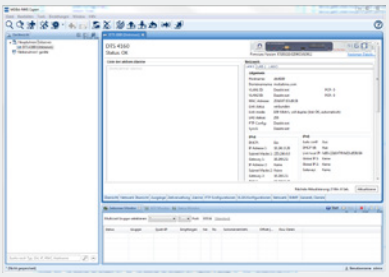
For utmost availability, two DTS 4138 can be connected to offer redundant master-slave operation with automatic switch over in case of an error.

HIGH ACCURACY

The DTS 4138 can receive all GNSS signals (GPS, Galileo, GLONASS, BeiDou), guaranteeing utmost accuracy and availability. For GNSS security, multiple constellations can be used in parallel.

LEGACY OUTPUTS

The DTS 4138 supports legacy outputs such as IRIG, DCF, pulse, and frequency.

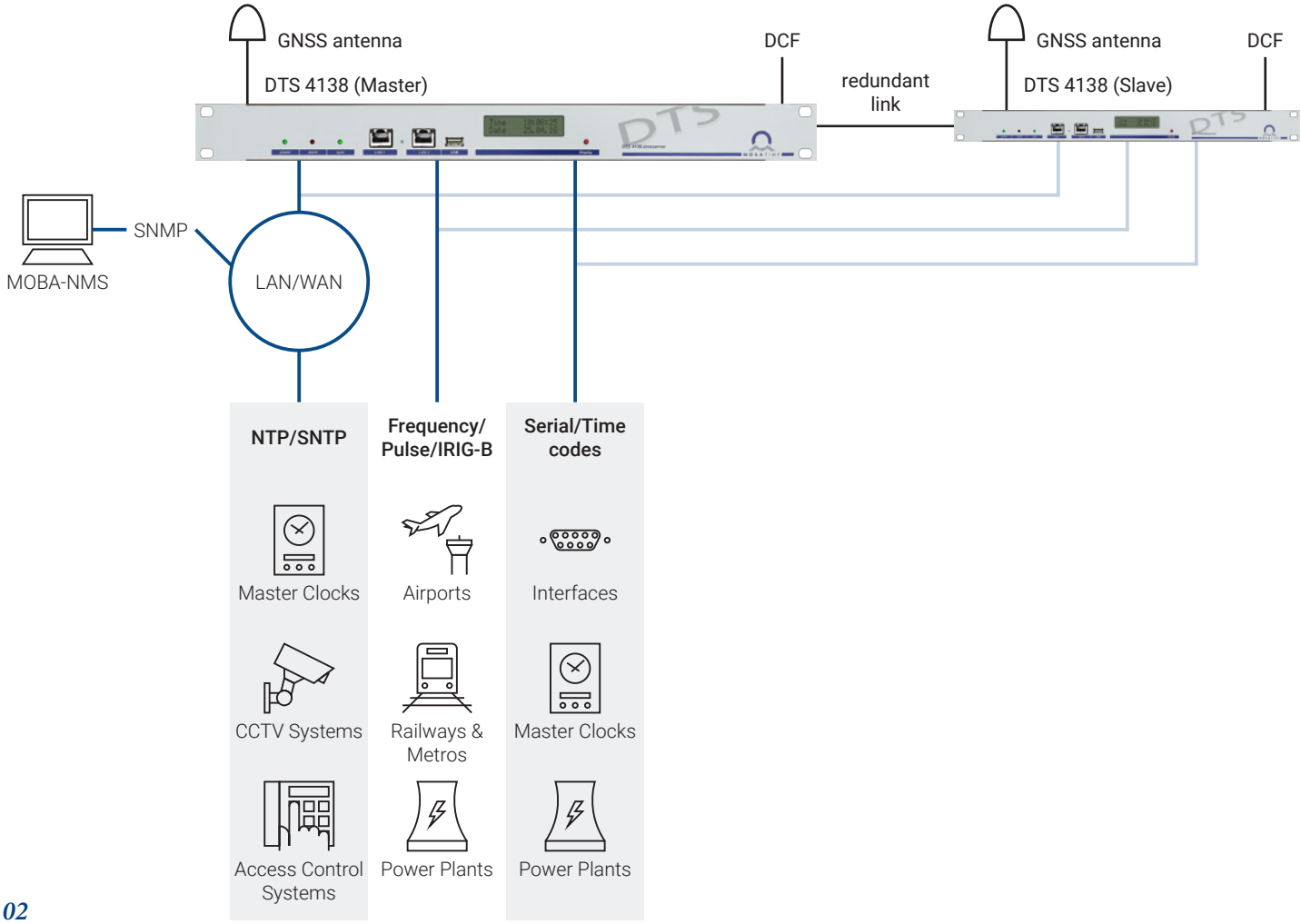


NETWORK MANAGEMENT SYSTEM

MOBA-NMS

The DTS 4138.timeserver can be fully monitored, configured and controlled using the Mobatime Network Management System software (MOBA-NMS).

APPLICATIONS



TECHNICAL DATA

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: 0–60 °C
Operating humidity: 10–90 % relative, no condensation
Power supply: 2x 24–28 VDC, 2 A (redundant, monitored)
MTBF: > 250,000 h

STANDARDS

Conformity

The DTS 4138.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 (<1'500 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

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

NETWORK INTERFACE

- 2x 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 < +/- 10ms / <0.1ppm

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): < +/- 100 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 2 3 4 5

6 7 8 9 10 11 12 13

1	**Status LEDs**	Power (green), alarm (red), synchronization (green)	
2	**LAN (2x)**	RJ45 10/100MBit	Maintenance/NTP
3	**USB**	USB host for USB sticks	For firmware updates and log files
4	**Display**	LCD, 2 lines with up to 16 characters (with backlight)	For status, time and network configuration info
5	**Display button**	For display illumination and paging through information displays	
6	**DC power supply (2x)**[1]	2-pin terminals	24–28 VDC 2 A
7	**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

8	**IRIG input**	BNC (female), 50 Ω	IRIG-B12x (AM), AFNOR A/C (AM)
	IRIG output[2]	BNC (female), 50 Ω	IRIG-B1xx (AM), AFNOR A/C (AM)
9	**Serial output**	5-pin terminal	RS-232/422/485 RS-422: output only
10	**Pulse Out**	4-pin terminal	RS-422 (<5 MHz, 2.048 MHz, 2 Hz, 1 PPS) Current loop (2 Hz, 1 PPS)
11	**IRIG digital output**[2]	4-pin terminal	IRIG-B00x (DC), AFNOR-A/C (DC) (digital, 50 Ω, TTL)
12	**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
13	**DTS Link**	SFP	Redundant link

[1] Redundant, monitored
[2] Signal configuration is identical for analog and digital IRIG (8, 11)

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

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