NETWORK MASTER CLOCK SERIES

DTS 480X.MASTERCLOCK

The DTS 480x.masterclock was developed especially for network environments. It is able to control conventional impulse clocks, self-setting MOBALine, DCF active or IRIG-B/AFNOR slave clocks and is used as an NTP time reference (time server) for computer systems and network clocks.

HIGHLIGHTS

CLOCK LINE OUTPUTS

The DTS 480x series master clocks provide different types of clock lines. They are able to control self-setting MOBALine/IRIG-B/AFNOR or serial synchronized clocks as well as conventional impulse clocks.

DTS 4801: 1x MOBALine/impulse/DCF active
1x serial

DTS 4802: 2x MOBALine/impulse/DCF active

DTS 4803: 1x MOBALine/impulse/DCF active
1x AFNOR/IRIG-B
1x serial

DTS 4806: 6x MOBALine/impulse/DCF active

TIME SOURCE

The DTS 480x.masterclock can be synchronized by a time signal receiver (DCF 4500 or GNSS 4500) and/or by NTP time servers (LAN/Internet).

NTP SERVER

The DTS 480x can reply to more than 3'000 NTP and SNTP requests per second (up to 180'000 clients depending on NTP client configuration).

LEGACY OUTPUTS

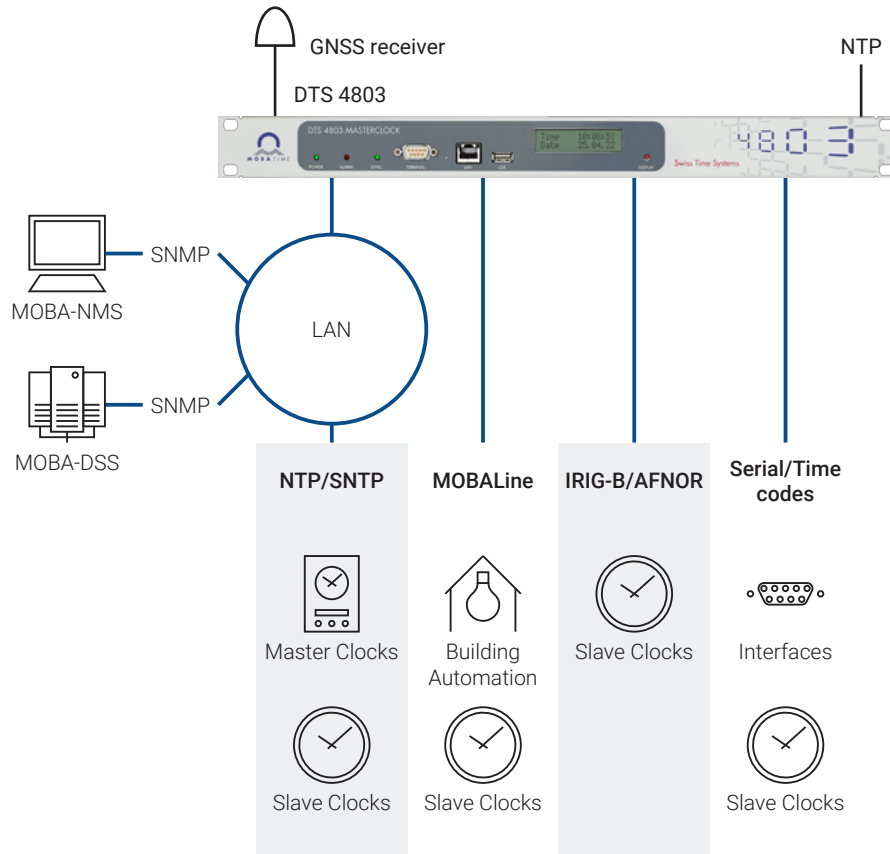The DTS 480x supports legacy outputs such as IRIG and pulse.
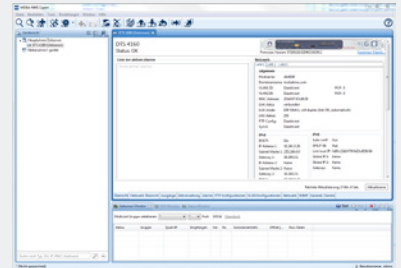
NETWORK MANAGEMENT SYSTEM

MOBA-NMS

The DTS 480x.masterclock can be fully monitored, configured and controlled using the Mobatime Network Management System software (MOBA-NMS). The optional Device Supervision Service (MOBA-DSS) allows for constant supervision of devices in the network.

APPLICATIONS

TECHNICAL DATA

MECHANICAL DATA AND ENVIRONMENT

General data

Dimensions:
DTS 4801/4802/4803:
483 x 44 x 125 mm (19", 1U)
DTS 4806: 483 x 44 x 224 mm (19", 1U)
Weight:
DTS 4801/4802/4803: 1.35 kg
DTS 4806 Standard: 3.5 kg
DTS 4806 Extended: 4 kg
Housing material: Stainless steel
Protection degree: IP 20
Operating temperature: 0–50 °C
Operating humidity: 10–90 % relative,
no condensation
Power supply:
DTS 4801/4802/4803:
90–240 VAC or 24–28 VDC, 1.5 A
DTS 4806:
100–240 VAC or 24–72 VDC, 6.3 A

STANDARDS

Conformity

The DTS 480x.masterclock conforms to
the following agency approvals[1]:

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

[1] For full list, see product manual
[2] Not included in CB certificate

REFERENCE SIGNAL INPUTS

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

REFERENCE SIGNAL OUTPUTS - NETWORK

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

REFERENCE SIGNAL OUTPUTS - NON-NETWORK

- Serial interface RS-232 (DTS 4801: RS-232/485), serial message programmable by script file
- 1x DCF77 (current loop)
- MOBALine/24V impulse/DCF active/DCF impulse clock line(s):
  DTS 4801/03: 1
  DTS 4802: 2
  DTS 4806: 6
- 1x IRIG-B/AFNOR clock line (DTS 4803 only)

NETWORK INTERFACE

- 1x 10BaseT/100BaseTX

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
- Network outputs: SNMP notifications (Traps) V2c, Mail (RFC 4954, 2195)
- Alarm LED

OSCILLATOR STABILITY

- Holdover (after 24h synchronization) at room temperature <+/- 100ms/day (<1ppm)

ACCURACY (TYPICAL VALUES)

- GNSS to NTP server: < +/- 0.5 ms
- DCF 77 to NTP server: < +/- 5 ms
- NTP client to NTP server: < +/- 0.5 ms
- GNSS or NTP client to clock line: < +/- 0.5 ms + accuracy of the clock line

MANAGEMENT & SUPERVISION

- MOBA-NMS; monitoring possible with MOBA-DSS (included in MOBA-NMS EXPERT)
- 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

DTS 4806.MASTERCLOCK — POWER | ALARM | SYNC | TERMINAL | LAN | USB | Time 10:08:25 Date 18.08.18 | DISPLAY | Swiss Time Systems | 4806

| **1** | **2** | **3** | **4** | **5** | **6** |

DTS 4801/4802/4803

| **7** | **8** | **11** | **12** | **13** |

DTS 4806

| **7** | **8** | **9** | **10** | **11** | **12** | **14** | **15** |

1	**Status LEDs**	Power (green), alarm (red), synchronization (green)	
2	**Terminal**	RS232 interface for local management, D-Sub 9 connector	
3	**LAN**	RJ45 10/100MBit	Maintenance/NTP
4	**USB**	USB host for USB flash drives	For firmware updates and log files
5	**Display**	LCD, 2 lines with up to 16 (DTS 4806: 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 or 100−240 VDC 0.5 A (DTS 4806: 2.6 A)
8	**DC power supply**	2-pin terminal	24−28 VDC, 1.5 A DTS 4806: 24−72 VDC, 6 A 28 VDC required for MOBALine
9	**Backup battery connection**	2-pin terminal	24 VDC lead-acid battery
10	**Alarm contact**	2-pin terminal	Normally closed Max. load: 30 W (125 VDC or 1 A) / 60 VA (150 VAC or 1 A)

11	**Serial output**	5-pin terminal	DTS 4801/4803: RS-232/485 DTS 4802/4806: RS-232
12	**Alarm input (4x)**	8-pin terminal	18−36 VDC, 6 mA
13	**DCF input**	12-pin terminal	Input for radio receiver with current loop output (e.g. GNSS 4500, DCF 4500)
	DCF output		Impulse/DCF
	Slave clock output 1		MOBALine/impulse/DCF active
	Slave clock output 2		DTS 4801: not used DTS 4802: MOBALine/impulse/DCF active DTS 4803: IRIG-B/AFNOR
	DC output		For powering GNSS 4500
	Alarm relay		Normally closed Max. load: 30 W (125 VDC or 1 A) / 60 VA (150 VAC or 1 A)
14	**Slave clock output (6x)**	2-pin terminals	MOBALine/impulse/DCF active
15	**DCF input**	6-pin terminal	Input for radio receiver with current loop output (e.g. GNSS 4500, DCF 4500)
	DC output		For powering GNSS 4500
	DCF output		Impulse/DCF

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

Product specifications are subject to change without notice.

MOBATIME