

Changelog DTS 480xV2 (DTS 4801v2, DTS 4802v2, DTS 4803, DTS 4806)

All notable changes to this project will be documented in this file.

The format is based on [Keep a Changelog](#)

Possible log types:

- [Update instructions] for essential requirements and information about the firmware update procedure
- [Added] for new features
- [Changed] for changes in existing functionality. Improvements should appear under the 'changed' section
- [Deprecated] for once-stable features removed in upcoming releases
- [Removed] for now removed features in this release
- [Fixed] for any bug fixes
- [Security] for security related changes or vulnerabilities

[02260528.04.07070162] - 2026-05-28

Update instructions

- **Downgrade:** Do NOT downgrade from this firmware version

Changed

- lines: Disable clock line(s) on application shut-down
- lines: dtsdriver: Make impulse output logic more robust
- Update openssl to version 3.6.2
- Update openssh to version 10.3.P1
- Update zlib to version 1.3.2

Fixed

- lines: dtsdriver: Fix invalid negative impulse generation as first pulse after start-up. This edge case only occurred, if a single scheduled pulse is required after start-up.
- lines: Wait on time ok before enable line output
- lines: Fix loosing two pulses after start-up if multiple pulses are scheduled. This edge case only occurred under certain internal timing conditions.

[02260504.03.07070161] - 2026-05-04

Update instructions

- **Downgrade:** Do NOT downgrade from this firmware version

Fixed

- jail: Set read permission for dts user on Language files during startup and update
- lines: Fix incorrect impulse line time set - jumps one hour back if stored (introduced in firmware v02260319.03.07070160)
- dtsmenu: Allow only one active dtsmenu (introduced in firmware v02260319.03.07070160)
- dtsmenu: Fix wrong behavior of menu when storing in output menus

[02260319.03.07070160] - 2026-03-19

Update instructions

- **Downgrade:** Do NOT downgrade from this firmware version

Added

- dtsmenu: Added new main menu entry as number '4' for user management
- Added linux pam to handle user logins
- Log dts user activities to `/var/log/auth.log`
- Add selftest running on device start-up. For result consult `/var/log/selftest-report.txt` and for detailed log `/var/log/selftest.log`
- rootfs: Add ubi health daemon, which monitors UBI partition
- rootfs: Add gpiolib library
- rootfs: Add strace utility
- dtsapp: Add dtsutil library

- build: On local machine builds allow adding a user for development and firmware tests
- gitlab-ci: test: Add automated firmware test checking root user lock state
- gitlab-ci: test: Add automated firmware test checking local user authentication (passwd, shadow db)

Changed

- log: Improve log rotation script checklogfile.sh according shellcheck
- log: Set correct name for snmp subagent log files
- Update ntp to version 4.2.8p18
- Update openssl to version 3.2.1
- Update openssh to version 9.6.P1
- Update buildroot to version 2023.11.1
- Update busybox to version 1.36.1
- sshd: Replace dropbear with openssh as sshd service
- pure-ftpd: Disable name resolution for ftp service
- dtsmenu: Use full binary path running ntpq commands
- dtsmenu: User password change is enforced during terminal login
- configure: If found, remove user password from `dtsdevice.config` during startup / configuration load
- mib: Change status for dts480xPassword to obsolete
- snmp: User password is no longer accessible / can't be changed by snmp
- gitlab-ci: Update toolchain docker image to ubuntu:24.04
- Update snmp subagent to version 2.3.1
- gcc: Update toolchain to arm gcc version 13.3.rel1:v2.6.2
- u-boot: Extend u-boot version string with build version data and device identification
- m4-firmware: Update to version 1.9.7

Removed

- dtsmenu: Remove user password parameter from general configuration page
- configure: Remove user password parameter from general configuration
- dtsdevice.conf: Remove password for dts user from device configuration
- Remove dropbear as sshd service
- log: Remove obsolete permission adjustments during log rotation
- u-boot: Remove autoboot password protection. No longer required with disabled autoboot

Fixed

- rootfs: Fix double started inetd instances during service restart

- rootfs: Fix attempt start crond twice
- DTS 4803: Fix invalid extra sine wave at end/start of each IRIG telegram (fixes issues synchronize digital clocks)
- DTS 4803: Fix missing day of week in IRIG telegram

Security

- dtsmenu: Show warning screen after login if default password is detection
- dtsmenu: Show warning below alarm line if default password is detected
- dtsmenu: Exit with failure in case dtsmenu has command arguments
- Make ICMPv4/v6 (ping) network services configurable, factory defaults is enabled
- Make DAYTIME/TIME network services configurable, factory defaults is disabled
- rootfs: Permanently lock root user account
- Harding linux filesystem and kernel settings according lynis audit recommendations
- u-boot: Disable autoboot interruption entirely
- u-boot: reset the board if bootcmd fails
- u-boot: Set boot retry time to 0

[02250501.03.05050159] - 2025-05-01

Update instructions

- **Downgrade:** Do NOT downgrade from this firmware version
- **DTS 4803:** Former version has to be at or above 01241015.03.05050157

Added

- Production: Add update support for product branding with `ProductVersionNew.txt`

Removed

- dtswtest: Remove `ProductVersion.txt` handling during dtshwtest application start

Fixed

- LOG: Fix log rotation for all log files (missing `stat` command in filesystem). (Introduced in firmware v00230405.02.02020156)

- LAN: Fix orange LAN control LED blinking in case of inactive LAN-Link (Introduced in firmware v01241015.03.05050157)
- DTS 4801: For interoperability add ALARM_IF_488 pin initialization (only used during production)
- Fix u-boot image update. Remove write protection from u-boot partition before update. (Introduced in firmware v01241015.03.05050157)

[01241028.03.05050158] - 2024-10-28

Update instructions

- **Downgrade:** Do NOT downgrade from this firmware version
- **DTS 4803:** Do NOT update to this firmware version with USB-Stick!

Fixed

- DTS 4806: Enable housing fan during startup

[01241015.03.05050157] - 2024-10-15

Update instructions

- **DTS 4803:** Do NOT update to this firmware version with USB-Stick!
- **Downgrade:** Do NOT downgrade from this firmware version

Added

- MIBS: Add SNMP modes: make V1 and V2c de-selectable
- MIBS: Add ntp query access control
- Logging segmentation fault to dts.log
- Logging boot reason to dts.log
- Add GPS 4500 and GNSS 4500 info (TDOP, satellite system, telegram version)
- DTS 4803: Add irig signal level configuration
- DTS 4803: Add irig alarm signal level low detection
- gitlab-ci: Validate firmware images containing MOBA-NMS string required for firmware update
- gitlab-ci: Publish a firmware release with GitLab pipelines

Changed

- DTS 4803: Correct md5 validation during firmware update via USB flash drive for rootfs firmware image file
- DTS 4803: Set factory defaults for irig to 2Vpp (voltage peak-peak) and alarm level to 1Vpp
- DTS 4803: Change irig alarm signal level low value configuration from Ueff (effective) to Upp (peak-peak)
- DTS 4803: Update M4 firmware to version 1.9.3
- Update dropbear to version 2024.85
- Update kernel to 5.4.193
- Update u-boot to 2020.07
- Production: Add Product IDs (0041, 0081) for colibri i.MX7 SoMs without WinCE license
- Update snmp subagent to v2.3.0
- Improve handling of snmp alive notification timeout
- Update season table to version 12
- Preserve user season table (usersn.tbl) during firmware update

Removed

- Remove irig option mounted from dts system status bits (Bit 13)
- Remove compatibility check for maximum supported hardware version

Fixed

- export_data_offsets.sh: fixes from CppCheck
- DTS 4803: Disable irig output if irig mode is configured as 'off'
- Release all resources after shadow file read operation (may fix login issues for dts user after changing the password or a parameter in general section)
- Menu text German fixed
- Fix SNMP IPv6
- Fix startup without IP address
- Fixes from CppCheck, clean-up compiler warnings

Security

- Disabled FTP service in factory defaults configuration
- Disabled telnet service in factory defaults configuration
- Disabled ntpq service (no ntpq queries allowed) in factory defaults configuration
- Disabled SNMPv1/v2 (allow SNMPv3 only connection) in factory defaults configuration
- Don't allow command injection in host- and domain name

- Set umask for dtsapp to 0022 (full access for owner, group and others have read-only permission)
- Explicit set permission for /etc/shadow file to 600 (read-write for root user only) after password change
- Dropbear: Enable [aes128-gcm@openssh.com](#) (enc)
- Dropbear: Enable [aes256-gcm@openssh.com](#) (enc)
- Dropbear: Disable [chacha20-poly1305@openssh.com](#) (enc)
- Dropbear: Disable ssh-rsa (key)
- Dropbear: Disable diffie-hellman-group14-sha1 (kex)
- Dropbear: Disable diffie-hellman-group14-sha256 (kex)
- See also "Changed" (updates Kernel, u-boot, dropbear,..)

[00230405.02.02020156] - 2023-04-05

This firmware version is only released for the DTS 4803.masterclock

Added

- Initial version with IRIG-B on DTS 4803.masterclock

[00020419.01.02020155] - 2019-06-24

This version was never official released

Changed

- Updated season table to V11 (Myanmar +6.5)

Fixed

- MOBALine high-z if voltage is out of range (T1159)
- Reset Display if button pressed (T1195)
- Terminal menu bugfixes (T1290, T1300, T1258, T1305)

[00020419.01.02020154] - 2019-06-24

Changed

- Improve sync char search for NMEA-ZDA packet
- Increase timeout for process supervision (softdog)

Fixed

- SNMP: Fix settings for line 2 voltage

[00020419.01.02020153] - 2019-04-02

Added

- Add alarm bit for polarity fault
- DCF-Impulse mode

Changed

- Update wide-dhcpv6
- Improve default config

Fixed

- NTP max freq adjust
- ntp drift and offset correction
- Max. line current not displayed (T1021)
- Clock line not waiting (T1047)
- Default DCF-Impulse mode (T986)
- Leap-Second handling for DCF-Impulse mode (T1075)
- System voltage options not available for dts 4801/02 (T1026)
- Fix unwanted reboot after snmp restart (T1004)
- Other fixes: T1104, T1076, T1054

[00231018.01.02020152] - 2018-12-17

Added

- Initial version with DTS 4806.masterclock support

Fixed

- Fix password change for dts user

[00171018.01.02020151] - 2018-10-17

Fixed

- Fix for SAM 00 (old version) movements
- Fix log file rotation

[00310518.02.02020150] - 2018-06-07

Added

- Initial firmware for DTS 4801/02.masterclock version 2 (DTS 480xV2)