



GE MDS *PRODUCT RELEASE NOTE*

RELEASE NOTE: TD220X Firmware Version 2.1.6
RELEASE DATE: August 20, 2021

FIRMWARE

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MDS TD220X FIRMWARE – VERSION 2.1.6

Overview

This section describes Software/Firmware updates for the MDS TD220X product.

Product: MDS TD220X
Version: 2.1.6
Release Date: 20-AUG-2021

Package Element	Version
Bootloader	0.0.3
Kernel	0.0.5
RootFS	2.1.6* CM ACSES 4.14.2*
MCU	2.2.2
DSP	0.1.8

* = updated

Important Notes:

- **This release note lists changes since the most recent production release, 2.1.0.**
- **Release file tdx-kcmd-2_1_6.mpk SHA256 sum:
5d0689350dfac215cc8654ca46d8386d925e8bd09c6df3565292a1eb7b041bb5**

New Features

1. Wabtec ACSES CM release 4.14.2 integrated for use when authorized.
2. Add 'PA Temperature Too Hot' and 'High Reflected Power' alarms.
3. Add 'Running' event to log the firmware version, timing source configuration, and CM authorization at bootup.
4. Log 'Password Changed' event when a password change is made.
5. After three login attempts fail there is a five-minute lockout on both the serial console and telnet. The event log will record 'Login Attempt Failed' and 'Console Access Locked for 5 minutes'.
6. GPS Configuration setting 'GPS Update RTC' added to menu, cfgscript, and SNMP. When the setting is enabled, the RTC syncs when GPS syncs at power-on. The event log will record 'Date/Time from Server (GPS)'.
7. Device Information menu item 'Sync RTC from Date and Time' added. The event log will record 'Date/Time from Server (menu)' when the item is selected. The Device Information menu now shows current RTC time.
8. RTC battery is checked at bootup. If the battery has failed, the event log will record 'RTC Battery Failed' and the Device Information menu will display "* BATTERY FAILED * RTC will not stay up-to-date".
9. Add Device Information, Advanced Time Configuration menu with DST and UTC settings accessible as well via cfgscript and SNMP. Enabling DST Auto Adjust applies the DST Shift to the UTC Time Offset during daylight saving time (set UTC offset to the value used during standard time). The Device Information, Time setting will now indicate whether 'daylight time' is in effect. The cfgscript, eventlog, RTC, and STFP log timestamps are adjusted.

10. Add STFP Log Server 2 setting to menu, cfgscript, and SNMP.
11. Add STFP Local Logging setting to menu, cfgscript, and SNMP. When the setting is other than 'disabled', STFP messages are logged to /var/log/stfplog which rolls over as other system logs do. (Since the integrated CM xml files are copied to /var/log at bootup, this feature defaults to disabled to leave as much space available as previous releases.) Add View STFP Log menu item to tail /var/log/stfplog. Enforce inactivity timeout from the log screen.
12. Add 'TFTP Block Size' setting to menu, cfgscript, and SNMP—it will allow faster file transfers. The new Transfer Options menu replaces the TFTP Timeout setting in the Event Log, Reprogramming, Configuration Scripts, Support Bundle, CM Provisioning, CM Configuration, and CM Log menus.
13. Add integrator commands AUTH (with options CLEAR and KEY), CFGSCRIPT, and REPROGRAM for provisioning.
14. Maintenance, Reset to Factory Defaults menu item added. This does not affect the CM flash partition.
15. Maintenance, Support Bundle menu item added for product-specific logs rather than the legacy 'mds_eng.log'.

Changes to Existing Features

1. Suppress 'LOG DUMP: DELIM/TCP Link Manager' when a unit boots up with MCM provisioned.
2. Make Date and Time selectable in the Device Information menu. Setting either value also syncs the RTC.
3. Change bootup sequence to sync initial system time from the RTC without incurring the three-minute timeout when the RTC battery is dead.
4. Use the standard ten-minute inactivity timer with the integrator login.
5. 'Telnet User' login events combine the originating address and user in one event log entry and made persistent.
6. Cfgscript header now includes serial number and the Active Image line shows an integer value rather than boolean
7. Reduce confusion by keeping Wireless Packet Statistics, Tx Last Frequency, Tx Last Power, Rx Last Frequency, and Rx Last RSSI blank (menu) or zero (SNMP) until a message has been transmitted or received. Add SNMP OIDs td220xOtaTxLastFrequency, td220xOtaTxLastPower, td220xOtaRxLastFrequency, and td220xOtaTxDutyCycleErrors.
8. Rename Wireless Packet Statistics, Tx Dropped Dc (duty cycle) to Tx Dc Errors.
9. Change SNMP Community max length to 30 and Password min and max length to 8 and 30 respectively. Update the SNMP Agent Configuration menu to confirm Community and Password entry.
10. The minimum length for user passwords increased to 8 characters.
11. Prevent user password change from accepting the default value.
12. Allow Maintenance, Ping Utility to ping 255.255.255.255. Similar to pinging 224.0.0.1 previously.
13. Change Maintenance, Radio Test, TX Key Timeout default value from 5 to 20 seconds. Change the max value from 999 to 900 seconds (15 minutes). For Output Power > 2W, show Time Remaining countdown.
14. Remove Maintenance, Radio Test, Force Key RSSI field.
15. Disable the test when any Maintenance, Radio Test menu setting is changed.
16. Accept USB flash logging trigger file 'dologging.txt' as well as 'dologging' to simplify flash drive preparation.

Defect Fixes

1. Reboot when a cfgscript import changes Timing Source or STFP Epoch Size, matching the behavior of the menu. This ensures the unit applies the cfgscript changes. Add a warning message to Maintenance, Configuration Scripts menu that retrieve may cause a reboot. Show a reboot message in the retrieve status when necessary and log 'User Selected Reboot Cfgscript setting' in the event log when due to cfgscript.
2. Show a full 'Please Wait' screen when the user selects to reboot on changing Timing Source or STFP Epoch Size.
3. Add cfgscript support for Enable External PA, GPS PPS Polarity, and GPS NMEA Baud Rate settings and SNMP support for Enable External PA and Duty Cycle Power Limit settings.
4. Prevent cfgscript import failure when TABs are between the value and comment. Expose cfgscript processing errors to the UI.

5. Change td220xEth and td220xOta SNMP OID syntax from Integer32 to Counter32 so the reported values don't become negative after 2,147,483,647 (= 0x7FFF_FFFF).
6. Add td220xEventObject values timeNotSet(45), timeByUser(46), and timeFromServer(47) corresponding to 'Date/Time Not Set', 'Date/Time Changed by User', and 'Date/Time from Server' events respectively.
7. Prevent double percent signs when reprogramming status is queried with 'snmpget td220xReprogMessage.0'.
8. Prevent misconfiguration leading to overtemp by initializing Duty Cycle Window and Duty Cycle Transmit Limit from Duty Cycle Power Limit at power-on.
9. Prevent unrecognized GPS interface at bootup by replacing subprocesses with direct functions.
10. Prevent serial console authcode logins filling the Authorization Code entry field with gibberish.

Known Errata

1. None

Operational Notes and Limitations

1. Compatibility with TD220, TD220PLUS, TD220MAX
 - This firmware is for use on TD220X units only.
 - TD220X is not over-the-air compatible with TD220 or TD220PLUS products.
 - TD220X releases 2.0.16 and higher are over-the-air compatible with TD220MAX releases 1.2.5 and above.
2. After upgrading, the Starting Information screen may show Device Status "Initializing" for up to five minutes.
3. The ethernet port operates in 10Mb half-duplex mode.