



GE MDS *PRODUCT RELEASE NOTE*

RELEASE NOTE: TD220MAX Firmware Version 1.2.15
RELEASE DATE: August 20, 2018

FIRMWARE

©2018 GE MDS LLC, 175 Science Parkway, Rochester, NY 14620 USA
Phone +1 (585) 242-9600, FAX +1 (585) 242-9620, Web: www.gemds.com

MDS TD220MAX FIRMWARE – VERSION 1.2.15

Overview

This section describes Software/Firmware updates for the MDS TD220MAX product.

Product: MDS TD220MAX
Version: 1.2.15
Release Date: 20-AUG-2018

Package Element	Version
Bootloader	0.0.2
Kernel	0.0.5
RootFS	1.2.15* CM ACSES 4.7.0*
MCU	1.0.10*
DSP	1.1.4

* = updated

Important Notes:

- **None**

New Features

1. Wabtec ACSES CM release 4.7.0 integrated for use when authorized.
2. MCU upgraded from 1.0.9 to 1.0.10 (as with any MCU change, first power on will take a few minutes to initialize)
 - Add command TXSTATUS to report the radio state during Radio Test, Force Key tests
3. New login 'integrator' provides a command line for provisioning and low-level radio polling with DSP commands.
4. After three login attempts fail there is a five-minute lockout on both serial console and telnet logins. Add 'Console Access Locked for 5 minutes' and 'Login Attempt Failed' event log events.
5. Add PTP Unicast Event Rate setting to the PTP Configuration menu, cfgscript, and SNMP. When PTP Profile is 'ITU-T G.8265.1 (Telecom profile)' the setting controls the total event message (Sync and Delay_Req) rate.
6. Add PTP Unicast Lease setting to the PTP Configuration menu, cfgscript, and SNMP. When PTP Profile is 'ITU-T G.8265.1 (Telecom profile)' the setting is used for the lease duration request.
7. New settings and menus have been added to support integration testing:
 - System Configuration setting Free Run allows bench testing with the td220x_poller program when no timing source is available
 - Maintenance menu Radio Test supports Receive, Force Key, and built-in Poll tests
 - Main menu Communications Manager (if authorized) provides version information, provisioning, configuration, process status, and log management

8. Add Transmitter Serial Number setting to the STFP Logger menu, cfgscript, and SNMP. When enabled, STFP log messages whose payload length allows include the Transmitter Serial Number after the payload bytes and before the message integrity bytes.
9. Timing source fallback options have been added. The System Configuration menu Timing Source setting now includes options "GPS w/ PTP fallback" and "PTP w/ GPS fallback". When the radio reboots using one of these options, the active timing source is set to the first source named in the option. If that source doesn't become valid and the fallback source is valid, the active timing source changes to the fallback. These options don't provide a *preferred* source though. If the original timing source becomes valid, the radio will not switch back unless the current source fails. This fallback behavior occurs during normal runtime (not just at boot-up) any time the active timing source fails.
10. Add Statistics, GPS Status menu before Clock Source Status, matching the menu item order of TD220X.
11. Add TFTP Block Size setting to allow faster file transfers. The new Transfer Options menu replaces the TFTP Timeout setting in the Event Log, Reprogramming, and Configuration Scripts menus.
12. Add Device Information, UTC Time Offset setting to allow UI, event log, and cfgscripts to use local time.

Changes to Existing Features

1. PTP functionality has been upgraded and now operates as a multicast slave by default. The PTP Configuration menu allows selecting a profile to operate as a unicast slave in accordance with ITU-T Telecom profile G.8265.1.
2. Radio Configuration, Duty Cycle Power Limit between 3 to 8 Watts inclusive allows a 50% duty cycle.
3. Linux cron service started at system power-on to support periodic monitoring of BCM.
4. Security update – Factory and engineering access is now disabled by default. Factory access may be authorized temporarily and will end when the unit reboots. Additionally:
 - Factory and engineering passwords changed
 - Enabling factory access logs an alarm
5. Remove Security Configuration, Wireless Security menu. AES over-the-air encryption fails for payloads > 5 bytes.
6. The minimum length for user passwords increased to 8 characters.
7. Prevent user password change from accepting the default value.
8. 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.
9. Change Maintenance, Radio Test, TX Key Timeout default value from 5 to 20 seconds. For Output Power > 2, show Time Remaining countdown rather than TX Key Timeout setting.
10. Reduce flicker in Radio Test menu by using pre-allocated resources.
11. Change Statistics, Clock Source Status field name from 'Valid Time Of Day' to 'Valid Timing Source'.
12. Clarify 'Time Synchronization Invalid' event for PTP with the specific cause: 'strobe' for pulse alarm, 'unavailable' for valid offset but invalid port state, and offset value otherwise.
13. Made GPS and PTP events non-alarming.
14. Add event 'File' to log both CM menu and integrator command line file changes in the event log. Log 'Clock Source' when the PTP master clock changes.
15. Expose TFTP transfer and cfgscript processing errors to the UI.
16. Merge the original (less fields) GPS GGA sentence parsing from TD220X release 2.0.18 as a fallback.
17. SNMP:
 - Add td220maxEthClearStats, td220maxDutyCyclePowerLimit, and td220maxTransmitterSerialNumber
 - Deprecate td220maxTxSlots, td220maxTXSlot, and td220maxTxKeyTimeout
 - Correct td220maxRpgActiveImage access to read-only
18. Cfgscript:
 - Remove PTP Event Port, PTP General Port, PTP Domain Address, Duty Cycle Window, Duty Cycle Transmit Limit, and TX Key Timeout

19. Add letter keys to navigate multipage views like the event log: (U)p, (D)own, Pg-U(p), Pg-D(n), (H)ome, (E)nd.
20. Make range validation feedback consistent: 'Invalid <x>. Enter a value from <a> to .'
21. Increase the default TFTP Block Size from 512 to 1024 bytes.

Defect Fixes

1. Prevent ptpmgr crash/ptpd2 restart when PTP Domain Number or Profile Domain Number changes.
2. Restart ptpd2 if the state becomes FAULTY. This may occur if the master is unreachable for some hours.
3. Prevent console output 'flash erase successful' when upgrading a unit from 1.2.5 or below.
4. Prevent garbled status during TFTP transfers.
5. Report 'File not found' when TFTP send fails due to missing local file.
6. Prevent TFTP cfgscript, CM file, and event log sends stopping when only partially complete.
7. Prevent the Maintenance, Ping Utility menu showing 'WARNING: failed to install socket filter: Protocol not available'.
8. Initialize the Statistics / Logging, Wireless Packet Statistics last frequency and power stats from the configured values. Subsequently processing STFP messages will update the last stats.
9. SNMP:
 - Use correct access level for SNMP-initiated cfgscript actions; previously these actions silently failed
 - Add td220maxEventInfo OID and update trap interface code to the correct OID (using DisplayString so the extra info displays as ASCII rather than hex bytes)
 - Add td220maxEvtObj value clockSource(57) corresponding to 'Clock Source set to' events
 - Remove trap OID trailing '.1' element to match td220max_comm.mib OID td220maxEvtObj
 - Correct the description of td220maxGPSPSPolarity
 - Correct the spelling of td220maxStfpEpochSize value 'thirty'
10. Cfgscript:
 - 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.
 - Show Active Image as an integer value rather than boolean
11. Cfgscript, Event Log: Allow date and time to be set in Device Information menu so mobiles have the correct time.
12. Add an additional condition to prevent 'Telnet User' event being used for serial console logins.
13. Stop beacon processing from disabling transmitter when using Radio Test, Force Key.
14. Query modem transmitter state during Radio Test, Force Key test. Set Test State to 'disabled' when the transmitter state goes to disabled. This provides two feedback mechanisms to the user, the Test State (at all power settings) and the Time Remaining (power > 2).
15. Changing the IP address now shows the correct value at the login prompt without having to reboot.
16. Improve reboot reliability by adding a fallback when an attempt to reboot fails.
17. Prevent authcode logins reporting 'No directory'. Resolve authcode logins showing two 'MDS TD' lines.
18. Update the Authorized Features status when an Authorization Key is entered.
19. Prevent 'Complete = 100%' partial draw in Reprogramming menu.
20. Prevent View Event Log showing 'Initializing' send log status.
21. Limit PTP log size.

Known Errata

1. None

Operational Notes and Limitations

1. Compatibility with TD220, TD220PLUS, TD220X
 - This firmware is for use on TD220MAX units only.
 - TD220MAX is not over-the-air compatible with TD220 or TD220PLUS products.
 - TD220MAX releases 1.2.5 and above are over-the-air compatible with TD220X releases 2.0.16 and higher.
2. At first power on with upgraded firmware, the Starting Information screen may show Device Status "Initializing" for up to five minutes. The radio will start operating when it reaches "Operational" status.
3. The ethernet port operates in 10Mb half-duplex mode.