Release Notes

Tektronix

MTM400
MPEG Transport Stream Monitor

071-1564-04

Contacting Tektronix

Tektronix, Inc.
14200 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
USA

For product information, sales, service, and technical support:
- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

Release Notes

This document describes enhancements and known issues of the MTM400 MPEG Transport Stream Monitor (version 2.3.8). Also described is how to upgrade the MTM400 firmware using files downloaded from the Tektronix Web site.

NOTE. If you have downloaded the latest firmware for the MTM400 from the Tektronix Web site, refer to the Firmware Installation instructions on page 8.

Enhancements

The enhancements described below were added with the latest release:

Gigabit Ethernet (GbE) Interface

An optional Gigabit Ethernet (GbE) interface card has been added that provides the following features:

- Optical or Electrical Gigabit Ethernet interface.

- Easy to use traffic browse interface, allows selection of flow of interest and records bit rates and IP errors for all flows.

- Supports common optical wavelengths [optional] including:

    - 850 nm, multimode fiber

    - 1310 nm, single mode fiber

    - 1550 nm, single mode fiber

- Supports the following protocols:

    - UDP

    - RTP

    - VLAN

    - IGMP

    - ARP

    - PING

■ Supports IP metrics testing. Each test includes alarm and warning limits, logging, SNMP traps, TTL outputs, audible alarm, MPEG stream recording [optional], and relay closure outputs.

  ■ Lost packets (RTP only)

  ■ Out of order packets (RTP only)

  ■ Errored packets

  ■ Irregular delivery of packets (Packet interarrival time)

■ Remote ping capability, allows elements on the video network that are isolated from the control/corporate network to be pinged.

■ Supports graphs of session bit rate and PIT min/max/mean.

■ Supports reading or setting of all parameters, metrics, and traffic browse information from the network interfaces.

General Features

The following general feature enhancements have been added for this release.

■ The Transport ID is now displayed in decimal and hexadecimal on all screens.

■ Program Numbers are displayed in decimal and hexadecimal on the Summary Screen.

■ The ability to switch between decimal and hexadecimal displays for PID and Program numbers on the Detail Screens has been added.

■ Minimum and maximum bit rate values are displayed on the bit rate bars in the Programs, PIDs and PID Groups screens.

■ Program Numbers, PIDs and the Transport ID are displayed in both decimal and hexadecimal in log entries.

■ IP/MAC Notification Table (INT) and Update Notification Table (UNT) have been added to the SI Screen in DVB mode.

Bug Fixes

The following bugs were fixed in this release:

- The PAT Maximum Section Repetition Interval test now contributes to the 1.3a PAT test. Without this the Any Stream Error could turn red with no sub-tests appearing red in the Tests screen in ATSC mode.

- Resolved a potential issue when monitoring a PAT version change in DCII streams.

- Resolved the issue with the 1.6 PID test not using the correct bit rate if the integration count parameter is reduced while monitoring.

- Resolved the issue of the 1.6 PID firing incorrectly for PIDs with very low bit rates (<3 Kbps).

- Corrected digital_copy_control_descriptor interpretation for ISDB-T in the SI View.

- Renamed signal_id to signal_level in emergency_information_descriptor for ISDB-T in the SI View.

- Resolved the issue where the template service name checking did not operate correctly if ampersands (&) appeared in the service name.

Known Issues

The known issues with the firmware are described on the following pages:

Upgrade Issues

The MTM400 instrument firmware will interrogate and determine the software installed on an interface card. If the software is incompatible with the firmware in the MTM400, the software will be automatically upgraded; this may take up to 20 minutes. When this process starts and finishes, entries are added to the device log.

⚠ **CAUTION.** *During a software upgrade, the interface card will not respond. Do not power cycle the MTM400. In rare instances this can damage the interface card firmware.*

In cases where you believe that the interface card has failed or is being upgraded, check the device application log screen. This will show if the card is being programmed.

Upgrading should only happen if you have a unit with an RF card running under version 2.1.0. Cards that have already been run with version 2.3.4 will have already been updated.

Where a GbE interface card is being installed as an option, ensure that the MTM400 is upgraded to version 2.3.8 *before* installing the card.

⚠ **CAUTION.** *Do not install a GbE card in an MTM400 with a software version earlier than version 2.3.8.*

Upgrading the MTM400 to version 2.3.8 will recover the unit, but there is a small chance of damaging the firmware in the interface card by power cycling the instrument while it is in this state. This issue applies to COFDM, 8VSB, GbE, 8PSK and QAM B2 interface cards. L-Band, QAM A, QAM C and QAM B1 cards are unaffected.

Gigabit Ethernet Interface Card

The following are know issues with the Gigabit Ethernet (GbE) interface card:

- The card cannot ping itself. For example, a ping to 127.0.0.1 will time out.

- The card should typically be set in Auto 10/100/1000 Copper or Optical mode for most applications. When in 10/100 Forced mode, the network switch must also be in link forced mode. If the switch is in Auto Negotiate mode on the network side, the link may resolve to half duplex.

- Operation in environments employing RTP extensions is not guaranteed.

⚠ **CAUTION.** *High power optical SFPs (for example, 1550 nm) must not be looped back without optical attenuation or damage to the receiver can occur.*

New Interface Cards

The parameters on the user interface may not update to reflect changes performed by external SNMP control.

In some instances loading a version 2.0.7 configuration file will prevent a user from changing parameters on the new interface cards. Selecting factory default will clear this condition.

If an interface card is removed, at the next boot the unit will erroneously report that it is using the ASI input, however it is not. The user must select another interface and then switch back to ASI.

User Interface

The user interface Java components allocate some memory to allow flicker-free screen displays. Flicker can still be an issue on large displays. The traffic browser screen for the GbE card is the first affected, however other screens like the pie chart on the summary page can also be affected.

Typically screen flicker can be fixed by making the window size smaller; in some cases Internet Explorer must be restarted. The same affect has been seen when using one instance of Internet Explorer to control a number of MTM400s.

ASI Input

If an ASI input is removed for several hours, the stream may not be detected when it is reconnected. The workaround is to reboot the instrument.

MTM400 Network Interface

The MTM400 supports 10/100 full or half duplex. However, it is important that auto negotiation is used. Where users have configured switches to force full duplex or on older hubs that only support half duplex and do not negotiate, network responses can be slowed by a number of corrupted packets on the network.

BIOS	This software requires that the MTM400 have BIOS version 2.07. The upgrade hex file is on the firmware CD and instructions about how to perform the upgrade are on the customer documentation CD.
MLM1000 Integration	Users requiring upgrade should contact Tektronix Support.
Java Virtual Machine	The downloaded RUI application uses the Microsoft Java Virtual Machine. You can verify the MS Java installation by typing "jview" at the command prompt - the version should be at least 5.00.3809.
	If the version is incorrect, the installation file is available from the Tektronix Web site. Search for "MTM400 Microsoft Virtual Machine" and follow the instructions included with the download.
	The Sun virtual machine disables the MS virtual machine by default. The MS virtual machine can be reenabled by clearing the Internet Explorer checkbox in the browser tab (or advanced tab, applet item depending on version) of the Sun Java control panel.
Applying Defaults	The units ship from the factory in DVB mode and will apply DVB default limits for tests. When commissioning to other regions, the factory default button on the Stream Configuration screen should be selected to apply the correct default for the region in use.
Templates Status	Services and PIDs can have the constraint "MustBePresent" applied to them. If an element was present previously, but is no longer present, the appropriate state is set correctly. However, the other states associated with the service or PID are remembered from their last recorded values. The correct behavior should be for these other states to be specified as Unknown.
Chinese Template Matching	The template service name matching function will not work when the unit is used in implied GB2312 encoding mode.
Template Resets	After a "reset all", only the root and leaf nodes return to a green state.
Service Log	On some units, the service log may display the wrong time and date.
Service Log Timing	The Service log runs as a low-priority background test, the accuracy of the sample periods is ±1 second. No data is lost as the next sample point contains the data from the missing sample. The output file contains the actual length of the sample period so that accurate measurements are still possible.

WebMSM This version of the firmware should be used with version 2.3.8 of the WebMSM Web Monitoring System Manager.

Firmware Upload Very infrequently the MTM400 may lock up after downloading the new firmware. The lock up can be remedied by cycling power on the instrument. However, to prevent instrument damage, you must be absolutely sure to allow 15 minutes from the start of the firmware download before removing power from the instrument (as stated in the firmware upgrade instructions, Tektronix part number 075-0802-XX).

QAM Annex B (Option QB2) BER In some circumstances, the QAM Annex B (Option QB2) BER indicated is pessimistic.

Also the RF and FEC LEDs in the Input Card screen are swapped; that is, the FEC LED shows the RF state and vice versa.

L-Band Interface (QPSK, Option QP) If new firmware is uploaded, the L-Band interface may not be selected on startup. The workaround is to select another interface, then reselect the L-Band interface.

Configuration File Validation When validating a configuration file using the "config.xsd", Disabled PID Events may be rejected.

Specific Test Issues

The following specific test issues are known:

- ISDB-T LDT Tables are not tested.

- Continuity count errors may sometimes be reported incorrectly in tables that have been involved in previous sync loss events.

- VCT maximum section repetition interval: there is no parameter to alter the behavior of this test.

- For GbE cards, some PCR tests are disabled because they do not apply. However, the PCR graph screen will still show these items in red, as if they were failing a test.

- Disabling incorrect table ID on DIT and SIT reserved PIDs is intermittent. If this becomes an issue, please contact Tektronix technical support.

Firmware Installation

If you have received an upgrade package with hardware and a CD, specific installation instructions are included in the package documentation. However, if you have downloaded the latest firmware for the MTM400 from the Tektronix Web site, the following instructions will guide you through the process of installing the new firmware.

1. Extract the contents of the downloaded zip file to a directory on your hard drive.

2. Start Internet Explorer. In the address bar enter the IP address or system name of the MTM400 to be upgraded. Allow the MTM400 RUI to start.

3. The Hot Spot screen displays two buttons: Device and Stream. Select the Device button.

4. In the resulting Device view, select the Info button to display the Device Information screen.

5. In the Device information, note the BIOS version. If this is less than 2.07 you need to upgrade the BIOS; the BIOS upgrade process is described in *Signal Interface Hardware Upgrade Instructions*, Tektronix part number 075-0768-XX.

6. Now you must prepare the MTM400 for the upgrade. If the unit is under active control of a management system, for example, to scan multiple channels, the system should be disabled. If the unit is just being monitored by a management system, it need not be disabled. However, you should follow the maintenance procedure for your management system to avoid false alarms.

7. The input to the MTM400 should be disconnected. If you are remote from the unit, you can do this by selecting the Config button in the Stream view and changing the Interface to SMPTE (or, if you are already monitoring SMPTE, change to ASI).

8. Select the Log button in the Device view.

9. In the Log view, select Clear Log to clear the device log.

10. Select the Config button in the Device view.

11. In the Configuration view, select Upload Device Firmware... and in the Device Firmware Upload screen, use the browse button to locate the firmware files extracted in step 1.

12. Select the latest hex file (not MTM400 v2.0.6.1 BIOSLDR v2.07.hex; this is used for the BIOS upgrade process only). Note that the hex file name is now in the Device Firmware Upload screen.

13. Select the Start button. Depending on line speed, preparing the firmware file can take between five seconds and five minutes. When the progress bar reaches the right hand side, you must wait about three minutes for the code to be unpacked, tested and loaded into the permanent memory of the MTM400. During this time the four Device view buttons will go gray. When all four buttons have returned to green, yellow or red the upgrade is complete.

14. Close all instances of Internet Explorer; this will also close the MTM400 RUI.

15. Start Internet Explorer. In the address bar enter the IP address or system name of the MTM400. Allow the MTM400 RUI to start. A security warning may be displayed, accept it.

16. In the Device view, select the Log button. In the Log view, note the upgrade messages. Checkpoint 11 indicates that the upgrade was successful. Other issues have self-explanatory error messages. If there was an error, please repeat the upgrade procedure before contacting Technical Support.

17. Depending on the installed interface card and the version before the firmware upgrade, the card firmware may need to be upgraded: this will happen automatically. A message is displayed in the device log, indicating the start of the card firmware upgrade. The upgrade process can take up to 20 minutes. If the upgrade fails for any reason, the MTM400 will reboot and start the upgrade process again. During the upgrade, the interface card is not available to or visible in the Stream view.

NOTE. *Do not power cycle the MTM400 while it is programming the interface card unless instructed to do so by technical support.*

---

18. The upgrade processes are now complete. The MTM400 inputs can now be reconnected. Any remote management applications can now be restored.

⠿ End of document ⠿