

Release Notes



MTM400A
MPEG Transport Stream Monitor
071-2494-00

www.tektronix.com



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Release Notes

The MTM400A MPEG Transport Stream monitor is the next-generation version of the MTM400 monitor. This document briefly describes the enhancements implemented with the MTM400A monitor and lists known operational issues with software version 3.0. Also included are instructions for upgrading the instrument firmware using files downloaded from the Tektronix Web site: www.tektronix.com.

Enhancements

The following significant software enhancements have been implemented in the MTM400A monitor and in version 3.0 of the RUI (Remote User Interface):

- New user-interface with significant usability enhancements, including the FlexVu™ display
- Graphical EPG view
- Graphical multiplex bit rate distribution history
- Historic trend graphs for RF and IP metrics

RUI Operational Requirements

Listed below are the system requirements for operating version 3.0 of the RUI:

- Operating System: Windows XP SP2 or Vista
- Intel Pentium 4
- 512 MB of RAM minimum
- Internet Explorer 7
- Sun Java Runtime Environment (JRE), v1.6.0_03

Operational Issue Improvements

The following operational issues existing in the MTM400 monitor have been fixed or improved in the MTM400A monitor and version 3.0 of the RUI:

- QAMB interface card firmware changed to allow wider frequency range from 88 MHz minimum to 57 MHz minimum (center frequencies).
- Intermittent failure to lock with QAMB2 interface card.
- Intermittent unstable power reading from COFDM interface card fixed. Stability of COFDM MER reading improved. Poor COFDM MER accuracy at various frequencies fixed.
- Step in reported MER when COFDM sensitivity is changed.
- In some cases, the MTM400 forgot the IP address during initial IP address setting if no interface card was installed.
- A spurious PAT/PMT inconsistency error where one of the PMT tables began in the last byte of a packet.
- Rare crash attempting thumbnails generation on a corrupt stream.
- Failure to offer thumbnails unless a user had purchased at least one other option.
- Corrected SNMP ObjectID OID, it is now specific to the MTM400.
- Failure to display status of large polling scripts.
- Failure to expose the per PID count of continuity errors via SNMP.
- The MTM400A monitor can now generate thumbnails for a program after it momentarily switches to encrypted transmission.
- Fixed issue where after an interface card is removed, at the next boot the unit would erroneously report that it is using the ASI input when it was using none.

Updating MTM400 Monitors

You can update your existing MTM400 monitor to operate with firmware version 3.0. If you are not upgrading your firmware to version 3.0 but you require MPEG-2 thumbnail support, you can download and install the MTM400 Thumbnails Support Package, Tektronix part number 066-0945-01, from the Tektronix Web site: www.tektronix.com.

Known Issues

The following operational issues are known to exist with the MTM400A monitor.

General Issues

The following are known general issues:

- MTM400 monitors only: This firmware version requires that the MTM400 monitor have BIOS version 2.07. You can upgrade your MTM400 monitor BIOS to version 2.07 using the upgrade hex file located on the firmware CD. Instructions describing how to perform the BIOS upgrade are located on the product documentation CD.
- MTM400A monitors are shipped from the factory in DVB mode and will apply DVB default limits for tests. When setting up in other regions, the factory default button on the Stream Configuration screen should be selected to apply the correct default for the region in use.
- When analyzing complex streams or under suboptimal network conditions, Timing Graphs have straight lines between bursts of data. This is due to the client PC not being able to retrieve data before the MTM400A monitor removes it from its internal buffer.

This issue can be alleviated by setting the MTM400A monitor buffers to a larger size. To do this, open the Configuration dialog and select the Test Parameters page. Select the Configuration... button and type "length" into the search query. For accuracy and jitter graphs, change the PCR accuracy/jitter history length to be 256. For PTS graphs, change the PTS Arrival History length to 80.

- The MTM400A monitor may perform a controlled reboot when exposed to a poor quality RF signal. The workaround is to improve the quality of the signal.
- Spurious warnings can appear in the logs during transport stream transitions while signal lock is reestablished. There is currently no workaround.
- If an ASI input is removed for several hours, the stream may not be detected when it is reconnected. If this occurs, reboot the unit.
- The MTM400A supports 10/100 full or half duplex. However, it is important to use automatic negotiation. Where you 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.

Configuration Files

The following are known issues with using configuration files:

- When validating a configuration file using the “config.xsd” file, Disabled PID Events may be rejected.
- Copying the current configuration slot can cause a reboot of the MTM400A monitor when using very complex configuration files. The workaround for this is to physically disconnect the stream input from the rear of the unit while copying the slot.
- In some instances, loading a v2.0.7 configuration file will prevent a user from changing parameters on the new interface cards. Selecting the factory default will clear this condition.

FlexVu™ Display

The following are known issues with the FlexVu™ display:

- If you have more than one MTM400A with different interface cards, the FlexVu™ panels will not restore correctly as you switch between them.
- When a FlexVu™ display is restored, not all graph settings are restored, for example, trend graph time range.

Gigabit Ethernet (GigE)

The following are known issues with the GigE interface card:

- The GigE interface card may not maintain IGMP sessions where broadcast membership queries (to 0.0.0.0) are used. The workaround is to use device specific queries.
- 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 the link forced mode. If the switch is in Auto Negotiate mode on the network side, the link may resolve to half duplex.
- The GigE interface cards can recover streams up to the full ASI bitrate and output these for analysis. However, the MTM400A is rated to 155 Mbps, so, in some cases, very fast streams from the GigE card will cause the MTM400A to reboot.



CAUTION. High power, optical small form-factor pluggable (SFP) modules, for example, 1550 nm, must not be looped back without optical attenuation. This could damage the receiver.

Interface Card Software Version

The MTM400A monitor firmware will interrogate and determine the software installed on an interface card. If the software on the interface card is incompatible with the firmware in the MTM400A monitor, the interface card software will be automatically upgraded; this can take up to 30 minutes. When the upgrade process starts and finishes, entries are added to the device log.



CAUTION. *During the software upgrade, the interface card will not respond. Do not cycle the power to the MTM400A monitor. In rare instances, this can damage the interface card firmware.*

If you believe that the interface card has failed or is being upgraded, check the device application log screen, which will show if the card is being programmed.

RF Interface Cards

The following are known issues with the RF interface cards:

- In some circumstances, the QAM Annex B (Option QB2) BER indicated is pessimistic.
- The RF LEDs on the rear panel equate to the FEC lock on the Input Card screen. If new firmware is uploaded, the L-Band interface may not be selected on start-up. If this occurs, select another interface, and then reselect the L-Band interface.
- The mechanisms that channel polling employs to prevent false error reporting mean that in noisy environments there can be a delay before a channel lock is obtained. In some circumstances, the QAMB interface card is unable to achieve a satisfactory and stable lock on some channel polls. All observed instances have corrected themselves on the next poll of that channel.

Service Log

The following are known issues with the Service log:

- On some units, the Service log may display the wrong time and date.
- The Service log runs as a low-priority background test; the accuracy of the sample periods is approximately one 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.

Templates

The following are known issues with the template feature:

- 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.
- The template service name matching function will not work when the unit is used in implied GB2312 encoding mode.
- After a “reset all” instruction, only the root and leaf nodes return to a green state.

Thumbnails

The Thumbnail screen will continue to be updated as long as decodable pictures are being received. Once the stream of pictures stops, the thumbnail display pauses on the last decoded picture. For example, in encrypted channels that broadcast unencrypted taster sessions, the last decoded frame of the taster session will remain on the display.

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.
- Disabling incorrect table ID on DIT and SIT reserved PIDs is intermittent; if this becomes an issue, contact Tektronix Technical Support.

Firmware Installation

NOTE. *If your instrument requires an upgrade, contact Tektronix Support.*

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 MTM400A monitor 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 MTM400A firmware zip file to a directory on your hard drive. The zip file contents include a file with a hex extension.
2. Start the Internet Explorer Web browser. In the address bar, enter the IP address or system name of the MTM400 or MTM400A monitor to be upgraded. Allow the RUI (remote user interface) to start.
3. When the RUI starts, 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. MTM400 monitors only: In the Device information screen, note the BIOS Version. If this is less than 2.07, you need to upgrade the BIOS; the BIOS upgrade process is described in the Signal Interface Hardware Upgrade Instructions, Tektronix part number 075-0768-06.
6. Now you must prepare the instrument for the upgrade. If the instrument is under active control of a management system, for example, to scan multiple channels, disable the system. If the instrument is just being monitored by a management system, it does not need to be disabled. However, you should follow the maintenance procedure for your management system to avoid false alarms.
7. Disconnect the input to the instrument. If you are operating the instrument remotely, 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 the Clear Log option 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 one.
12. Select the latest hex file; do not select 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 side, you must wait about three minutes for the code to be unpacked, tested, and loaded into the permanent memory of the instrument. During this time, the four Device view buttons will turn gray. When all four buttons have returned to green, yellow, or red, the upgrade is complete.
14. Close all instances of the Internet Explorer; this will also close the instrument RUI.
15. Restart Internet Explorer. In the address bar, enter the IP address or system name of the MTM400 or MTM400A monitor you are upgrading. Allow the instrument RUI to start. When a security warning appears, accept it. If the instrument does not have the right version of Java 2 installed, the screens displayed will instruct you how to install a valid version or even automatically upgrade you if you have an out of date installation of Java 2.
16. In the Test screen, Device tests, select the Log tab on the right-hand side. 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, repeat the upgrade procedure before contacting Tektronix Technical Support. Upgrade firmware is now available within the Connect dialog.
17. Depending on the installed interface card and the firmware version before the upgrade, the card firmware may need to be upgraded; this will happen automatically. During the upgrade, the interface card is not available; the user interface will stop at the initial physical interface detection screen and wait for the upgrade to complete.



CAUTION. *To prevent problems, do not cycle power to the instrument while it is programming the interface card unless instructed to do so by Tektronix Technical Support.*

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

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