Release Notes

Tektronix

**MTM400A
MPEG Transport Stream Monitor**

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Release Notes

This document briefly describes the enhancements implemented with the MTM400A MPEG Transport Stream monitor and lists known operational issues with software version 3.1. 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 3.1 of the RUI (Remote User Interface):

General Features

- Thumbnail display for H.264/AVC streams

- Ability to stream live audio/video (SD) to VLC media player or other destinations, for example, set top boxes

- Support for the new Brazilian ISDB-TB standard

- Ability to learn test limits from reference streams and apply them to streams under test

- PTS/PCR variation graph for detecting potential receiver buffer problems

- The TR101 290, 1.6 PID test can be applied to a user PID, with an increased timeout

- Export of full SI information to XML format

- Improved speed when downloading recordings

Remote Access

- SNMP PID to service lookup

- SNMP PID to PMT type lookup

- SNMP access to IP traffic grid

- SNMP trap destination address setting via the user interface

GbE Interface Option

- Ability to assign session aliases

- IGMPv3 support

- Ability to copy subscription configuration from flows on the link

- IPv6 with MLD v1 and 2 support

- TTS (timestamp transport stream) support

- 188/192/204/208 byte packet support

- MDI (media delivery index) metrics across all sessions

- Cross-session bit rate testing

- Selected and all-session bit rate trend graphs

User Interface

- Font type and size configurable

- Option to hide status bar and toolbar

- Option to hide configuration information text

- Option to hide and reorder table columns

- Option to place *FlexVu*Plus/Analysis tabs on the left side of the screen

- File menu name changed to Analysis menu

- Customize and Hide Toolbar buttons positions swapped to reduce confusion

- Table column management and content filter added for Program, PID, Log and Device Information tables

- Copy to Clipboard added for most tables

RUI Operational Requirements

Listed below are the system requirements for operating version 3.1 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_10

Operational Issue Improvements

The following operational issues existing in the MTM400 monitor have been fixed or improved in the MTM400A monitor and version 3.1 of the RUI:

General

- Infinite restart loops avoided by preventing Scheduler from changing the analysis standard

- Memory leak/crash caused by thumbnail processing in Mpeg2 video with no I-Frames

- Updated ISDB-T NIT Mode/Guard Interval Consistency Test to conform to ARIB TR-B14 V1.6 (from 1.5)

- Updated SFN MIP Coding Error Test to pass, if P15 and P16 are not zero - these are now used for DVB-H

- A spurious PAT/PMT inconsistency error where one of the PMT tables began in the last byte of a packet

- Thumbnails generation stability improved for a corrupt streams

- 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

Interface

- Improved RF interface stability with variable and just decodable signal level

- Failure of GbE interface to operate with Cisco switches operating at Version 2

- In some cases, the MTM400 forgot the IP address during initial IP address setting if no interface card was installed

- Fixed issue where after an interface card was removed, the unit would erroneously report at the next restart that it was using the ASI input when it was using none

User Interface

- Client stabilized if closed during the restart phase of a firmware upgrade

- Tooltips that obscure information on the user interface are now shown only when the cursor is over the Value header cell

- Japanese text wrapping

- VCT summary view text wrapping problems improved

- Missing ATSC EPG

- Failure to display event information for some ISDB-TB EPG events

- Sorting of numbers in tables

- Tabbing order of the Connect dialog box

- Missing taskbar icon for the Connect dialog box

Updating MTM400 Monitors

The MTM400 monitor must be running version 3.0.60 before upgrading to version 3.1. For upgrading procedures, refer to MTM4UP Upgrade Instructions, Tektronix part number 075-0973-01.

Known Issues

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

General Issues The following are known general issues:

- If the PC running the client has two monitors, there may be occasional issues with repainting screens from the RUI on the second monitor. This can be resolved by restarting the RUI. This issue is due to a Java Runtime Environment problem; it may be fixed in a future release from Sun Microsystems.

- 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 restart 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, restart 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 restart 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*Plus™ panels will not restore correctly as you switch between them.

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

■ A defect has been identified that may cause corruption during the upgrade process. If you wish to upgrade your unit, a software utility, which will minimize the probability of corruption, is provided in addition to the MTM400A v3.1 firmware.

While the probability is small, if the upgrade process corrupts the GbE interface card, the MTM400 monitor will need to be returned to Tektronix for repair. This return will be carried out free of charge to all affected MTM400 monitor customers, no matter whether they are in or out of warranty. If your MTM400 experiences this defect when upgrading to MTM400 software version v3.1, please contact your Tektronix service office or request contact from: www.tek.com/service/product-support.

■ If a selected session is extremely bursty (for example VBR or CBR with jitter), the GbE interface can lose lock. This can cause TS Availability, Sync, Sync Byte and Continuity Errors to be reported in the Transport Stream Analysis, but no errors to appear in the Traffic Table. If the card was set to Smoothed mode when lock was lost, the setting will automatically be changed to As Received mode.

- If a selected session stops and starts quickly, the Transport Stream Analysis may report TS Availability and Continuity Errors, but no errors will appear on the Traffic Table.

- It has been reported that the Total Bit Rate Trend Graph can occasionally (approximately 30 minute intervals) misrepresent and show dips in the bit rate.

- 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 bit rate 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 restart.

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 using either the MTM400A RUI or the Command Line Firmware Upgrade program.

CAUTION. If you have the GE option (GbE interface) installed, you must use the Command Line Firmware Upgrade process, page 12. For other interface options, you can use either upgrade process.

Firmware Installation using the RUI

CAUTION. To prevent upgrade problems that might require the monitor to be returned to Tektronix service for reprogramming, you must

- Disconnect all transport stream inputs and outputs from the monitor before performing the firmware upgrade procedure.

- Clear the Device Log immediately before uploading the 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. From the MTM400A RUI, open the Device window and in the Device Event Log view, click **X** to clear the log.

3. Close the RUI browser window and the opening browser window (if still open).

4. Restart Microsoft Internet Explorer.

5. In the address bar of the Web browser, enter the network identity or IP address of the monitor, for example: http://TSMonitor01 or http://193.159.202.1.

6. Press **Enter**. A Java applet is downloaded from the monitor and launched. The file size is approximately 2 MB; the download time will depend on the network speed and traffic.

7. After the Java applet is downloaded, the Connect to MTM Device dialog box is displayed.

8. In the Connect to MTM Device dialog box, select **Administrator** from the Login Type drop-down list, and then enter the password. The default password for Administrator login type is tek.

NOTE. *You must log in to the monitor using the Administrator login type. The User login type does not have sufficient permissions to perform software option upgrades.*

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9. In the Connect to MTM Device dialog box, click **Upload Firmware** to open the Upload Device Firmware window.

10. In the Upload Device Firmware window, click **Browse** and navigate to the directory location where you copied the upgrade file. Select the unzipped firmware file, for example:

    MTM400 v3.1.x.xxx Build xxx.hex

CAUTION. *Do not remove power from the monitor during the reprogramming process. If power is removed during reprogramming, the monitor might be rendered unable to restart, which will require that the monitor be returned to Tektronix for repair.*

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11. Click **Start** to upload the firmware. The firmware upgrade process may take a few minutes to complete.

NOTE. *You must allow at least 20 minutes for the process to complete.*

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12. When the firmware upload is complete, the message **Firmware upload complete** appears.

    As stated in the message, the uploaded firmware will be checked, and if valid, reprogramming will start.

13. Close the Upload Device Firmware dialog box.

14. Click **Connect** in the Connect to MTM dialog box.

The Initializing progress window is displayed.

If an interface card is installed in the monitor, it will be checked automatically and reprogrammed if necessary. During this process, an interim progress screen may be displayed before the RUI opens.

15. When the reprogramming process is complete, close the RUI, and if necessary, close the associated Web browser window.

Firmware Installation using Command Line

The MTM400A firmware can be upgraded using the command line firmware upgrade program available from the Tektronix Web site.

⚠ *CAUTION. If you have the GE option (GbE interface) installed, you must use the Command Line Firmware Upgrade process.*

Use the following steps to upgrade the firmware from the command line:

⚠ *CAUTION. To prevent upgrade problems that might require the monitor to be returned to Tektronix service for reprogramming, you must*

- Disconnect all transport stream inputs and outputs from the monitor before performing the firmware upgrade procedure.

- Clear the Device Log immediately before uploading the 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 and the command line firmware upgrade program, mtmfwuploader.exe.

2. From the MTM400A RUI, open the Device window and in the Device Event Log view, click **X** to clear the log.

3. Close the RUI browser window and the opening browser window (if still open).

4. From the Windows desktop, open the Command window, **Start > Run > cmd**.

5. In the command window, change to the hard disk directory containing the firmware file and the upgrade program.
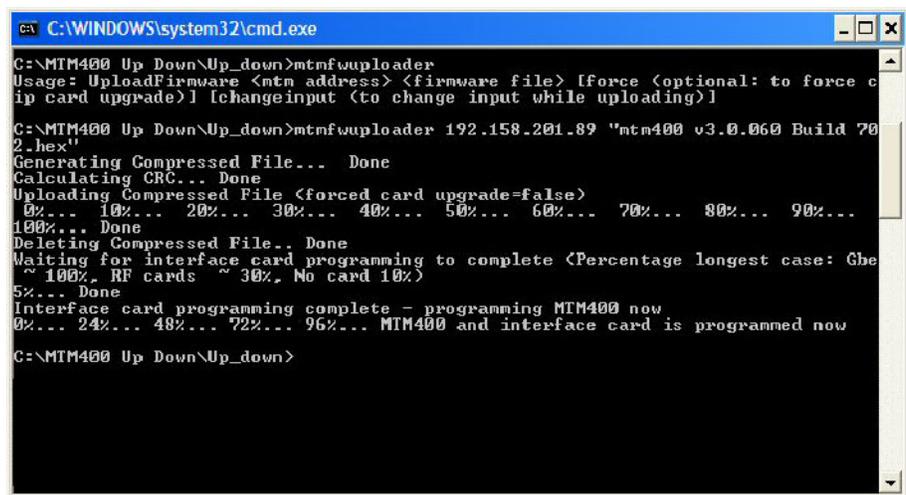
6. Enter the program command in the following format:

    mtmfwuploader.exe <mtm address> <firmware file>

for example,

    mtmfwuploader.exe 10.0.0.1 "mtm400x v3.1.063.hex"

NOTE. *When the firmware upload file name has spaces in it, enclose the name in quotation marks, as shown in this example.*

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7. Execute the command by pressing the Enter key on your keyboard.

The firmware upload program will run.

8. The firmware upload is complete when the following message is displayed: "mtm400 and interface card is programmed now."

Troubleshooting. The progress indicator following the "Waiting for interface programming to complete" message, may go beyond 100%. If this happens, note the following steps:

1. Ensure that the signal input is disconnected and retry the process.

2. Observe the SFP LINK LED on the GbE interface card rear panel.

⚠ **CAUTION.** If, with no input, the SFP LINK LED stays on, restarting the instrument could result in firmware corruption.

3. If the LED is still on after 15 minutes, try turning the instrument off and then on again.

4. If the upgrade is still unsuccessful, contact Tektronix support (www.tektronix.com).

▪▪ **End of document** ▪▪