

MPEG Transport Stream Monitor for IPTV

► MTM400A



► MTM400A MPEG transport stream monitor.

MTM400A Simplifies DTV and IPTV Monitoring

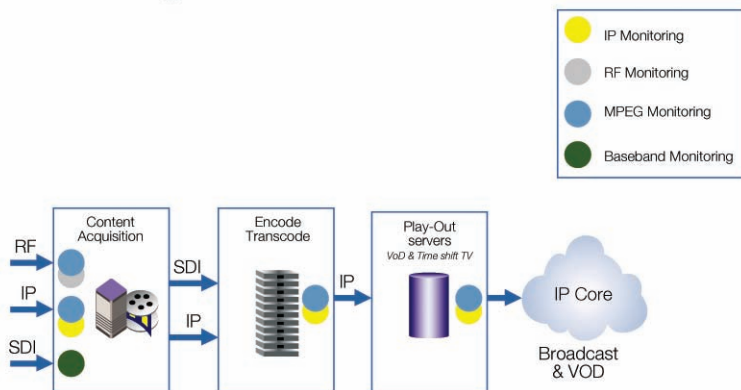
As the worldwide DTV market continues to evolve; a shifting of consumer viewing behavior combined with increasing competitive pressure is driving an explosion in broadcast channel count and overall capex investment. A key operational challenge for **telecommunication operators** is how to efficiently deliver superior **quality of service** (QoS) levels to maintain differentiation in this competitive market. The MTM400A supports this by providing an intuitive and simplified presentation of video

quality and diagnostic information, to enable delivery of superior QoS levels in an increasingly complex broadcast environment.

The figure below shows the typical monitoring points for an IPTV super headends (SHE) and regional hub offices (VHO).

The MTM400A is a powerful solution for monitoring IPTV national and regional headends at both the ingest and IP broadcast point.

Typical Monitoring Points for IPTV Headend



► Figure 1: Typical Monitoring Points for IPTV Headend.

► Features & Benefits

FlexVuPlus™ uniquely empowers operations staff with the simplest information necessary to prove their service is delivering above their defined thresholds for superior **quality of service (QoS)**

Powerful diagnostic user interface provides intelligent hierarchical views of network information, media and data, allowing engineers to rapidly identify the root cause of underlying service problems

Unique dual-level alarming and trend information proactively identifies impending problems before they become visible to the viewer

Multi-layer, multi-channel, remote monitoring and measurement at IP, RF, and transport layers to DVB (TR 101 290), ATSC, DigiCipher® II (DCII) and ISDB-T (terrestrial and mobile) standards

Simultaneously monitor up to 500 IP sessions including all essential parameters including continuity count, sync byte and packet inter-arrival Time (PIT). The gigabit ethernet interface designed for monitoring networks which carry both multi-program transport streams (MPTS) or single-program transport streams (SPTS) over gigabit ethernet networks

Comprehensive user-defined template monitoring ensures right content at the right place at the right time while content ratings checking ensures only appropriate content broadcast

Simultaneous connection of multiple remote users and network management systems (NMS) provides early visibility of problems to key individuals throughout the organization, supporting quicker corrective action

Embedded architecture designed specifically for continuous 24x7 operation maximizes service assurance, thus minimizing cost of customer complaints and equipment maintenance (disk free operation)

Remote recording allows capture and analysis of stream events for expert offline analysis to diagnose difficult and intermittent problems, requiring no engineer site visits

Highly scalable and field upgradeable monitoring solution to tailor capital expenditure with operational growth

► Applications

The MTM400A is a powerful solution for monitoring IPTV national and regional headends at both the ingest and IP broadcast point

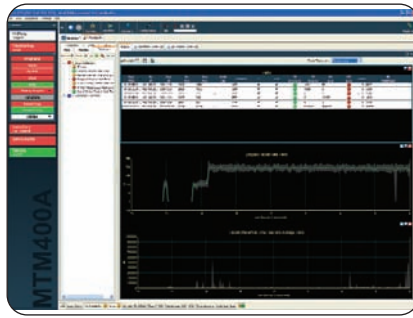
MPEG Transport Stream Monitor for IPTV

► MTM400A



► Figure 2: FlexVuPlus™ configurable windows.

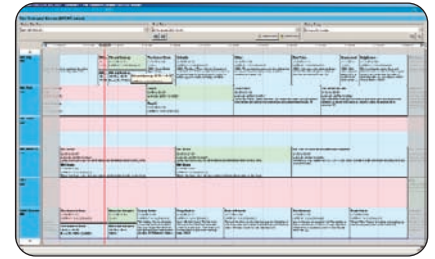
The MTM400A provides a complete solution for real-time transmission monitoring of MPEG transport streams over RF, IP, and ASI interfaces. Powerful confidence monitoring capability and deep diagnostic measurements are both combined within a single integrated solution. For extended confidence monitoring FlexVuPlus uniquely provides configurable summary displays that include video thumbnail and electronic program guide (EPG) views. This empowers operational staff with the simplest information necessary to ensure their service is delivering above their defined thresholds for superior QoS. Deep diagnostic options provide engineers with intelligent hierarchical views of network information, media and data allowing them to rapidly identify the root cause of underlying service problems.



► Figure 3: IP Trending view.

Remote Interface

The **Remote User Interface (RUI)** is capable of providing simultaneous measurement results to multiple key resources, supporting improved organizational efficiency and workflow to minimize network downtime. It is also capable of being integrated into wider network management platforms to support wider distributed network intelligence. The confidence monitoring capability uniquely simplifies DTV monitoring with the FlexVuPlus summary panels. For diagnostic monitoring, a context sensitive analysis paradigm provides a rich multi-layer environment presenting complex information with an intuitive hierarchical approach. The supporting extensive navigation options ensure that you can identify the route cause of error alarms with minimal mouse clicks.



► Figure 4: EPG View.



► Figure 5: Video Thumbnail view.

Confidence Monitoring

- FlexVu uniquely presents simplified presentation of video quality and diagnostic information to enable delivery of superior QoS levels in an increasing complex broadcast environment
- At-a-glance service view with video thumbnails and interactive electronic programming guide (EPG); empowering operations staff with the simplest information to monitor service delivery
- Comprehensive seven-day trending of IP and RF broadcast streams supports proactive network optimization to minimize downtime

Diagnostic Monitoring

- Powerful user interface provides intelligent hierarchical views of network information, media and data allowing engineers to rapidly identify the root cause of underlying service problems
- Accelerate time to insight with context sensitive navigation and filtered logging to isolate root cause of test failure

► Ordering Information

MTM400A

MPEG Transport Stream Monitor

Includes: 1RU chassis fitted with transport stream processor card, manual, rack slides, power cord, and license key certificate.

Options

- Opt. 01** – Triggered recording capability up to 160 MB.
- Opt. 02** – Transport stream service information analysis (PSI/SI/PSIP/ARIB view).
- Opt. 03** – Template testing (for user-defined service plan testing).
- Opt. 04** – In-depth PCR analysis with graphical result views.
- Opt. 05** – Bit rate testing functionality.
- Opt. 06** – Service logging.
- Opt. 07** – IP/RF Polling functionality.
- Opt. CF** – COFDM Interface.
- Opt. QB2** – QAM Annex B Level 1 and Level 2 Interface.
- Opt. EP** – 8PSK/QPSK Interface.
- Opt. VS** – 8VSB Interface.
- Opt. QA** – QAM Annex A interface.
- Opt. QC** – QAM Annex C interface.
- Opt. GE** – Gigabit Ethernet Interface with 10/100/1000BASE-T RJ45 electrical port.
- Opt. SX** – 1000BASE-SX Short Wavelength Optical port with LC connector Multi Mode 850 nm (requires Opt. GE).
- Opt. LX** – 1000BASE-LX Long Wavelength Optical port with LC connector Single Mode 1310 nm (requires Opt. GE).
- Opt. ZX** – 1000BASE-ZX Optical port with LC connector Single Mode 1550 nm (requires Opt. GE).

International Language Options

- Opt. L0** – English User Guide.
- Opt. L5** – Japanese User Guide.

Complementary Products

- MTS4SA** – Standalone Deferred Time Software package.
- Opt. TSCL** – DVB/ATSC/ARIB TS Compliance Analyzer Software (TS file size limited to 192 M bytes). For full details see separate data sheet.

Service

- Opt. R3** – Repair service three years (including warranty).
- Opt. R5** – Repair service five years (including warranty).

Power Connections

- Opt. A0** – North America Power Plug.
- Opt. A1** – Universal EURO Power Plug.
- Opt. A2** – United Kingdom Power Plug.
- Opt. A3** – Australia Power Plug.
- Opt. A4** – 240 V North America Power Plug.
- Opt. A5** – Switzerland Power Plug.
- Opt. A6** – Japan Power Plug.
- Opt. A10** – China Power Plug.
- Opt. A99** – No Power Cord or AC Adapter.

Field Upgrade Kits

Upgrade Options

Field upgrade kit to add:

- MTM4UP Opt. QA** – Adds QAM Annex A Interface to an existing probe.
- MTM4UP Opt. QC** – Adds QAM Annex C Interface to an existing probe.
- MTM4UP Opt. CF** – Adds COFDM Interface.
- MTM4UP Opt. QB2** – Adds QAM Annex B Interface.
- MTM4UP Opt. EP** – Adds 8PSK/QPSK Interface.
- MTM4UP Opt. VS** – Adds 8VSB Interface.
- MTM4UP Opt. 01** – Adds triggered recording capability up to 160 MB.
- MTM4UP Opt. 02** – Adds transport stream service information analysis (PSI/SI/PSIP/ARIB view).
- MTM4UP Opt. 03** – Adds template testing (for user-defined service plan testing).
- MTM4UP Opt. 04** – Adds in-depth PCR analysis with graphical result views.
- MTM4UP Opt. 05** – Adds bit rate testing functionality.
- MTM4UP Opt. 06** – Adds service logging.
- MTM4UP Opt. 07** – Adds IP/RF Polling functionality.

Upgrade kit to add:

- MTM4UP Opt. GE** – Adds Gigabit Ethernet Interface With 10/100/1000BASE-T RJ45 Electrical Port.
- MTM4UP Opt. SX** – Adds 1000BASE-SX Short Wavelength Optical port with LC connector (Multi Mode 850 nm) for Gigabit Ethernet Interface (requires Opt. GE).
- MTM4UP Opt. LX** – Adds 1000BASE-LX Long Wavelength Optical port with LC connector (Single Mode 1310 nm) for Gigabit Ethernet Interface (requires Opt. GE).
- MTM4UP Opt. ZX** – Adds 1000BASE-ZX Optical port with LC connector (Single Mode 1550 nm) for Gigabit Ethernet Interface (requires Opt. GE).

Other:

- MTM4UP Opt. IFC** – One-time install of all selected options and calibration for one product.

MPEG Transport Stream Monitor for IPTV

► MTM400A

Contact Tektronix:

ASEAN / Australasia (65) 6356 3900
Austria +41 52 675 3777
Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Belgium 07 81 60166
Brazil & South America (11) 40669400
Canada 1 (800) 661-5625
Central East Europe, Ukraine and the Baltics +41 52 675 3777
Central Europe & Greece +41 52 675 3777
Denmark +45 80 88 1401
Finland +41 52 675 3777
France +33 (0) 1 69 86 81 81
Germany +49 (221) 94 77 400
Hong Kong (852) 2585-6688
India (91) 80-22275577
Italy +39 (02) 25086 1
Japan 81 (3) 6714-3010
Luxembourg +44 (0) 1344 392400
Mexico, Central America & Caribbean 52 (55) 5424700
Middle East, Asia and North Africa +41 52 675 3777
The Netherlands 090 02 021797
Norway 800 16098
People's Republic of China 86 (10) 6235 1230
Poland +41 52 675 3777
Portugal 80 08 12370
Republic of Korea 82 (2) 6917-5000
Russia & CIS +7 (495) 7484900
South Africa +27 11 206 8360
Spain (+34) 901 988 054
Sweden 020 08 80371
Switzerland +41 52 675 3777
Taiwan 886 (2) 2722-9622
United Kingdom & Eire +44 (0) 1344 392400
USA 1 (800) 426-2200
For other areas contact Tektronix, Inc. at: 1 (503) 627-7111
Updated 12 November 2007

For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com

Product(s) are manufactured
in ISO registered facilities.



Copyright © 2008, Tektronix. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks or registered trademarks of their respective companies.
02/08 HB/WOW 2AW-21576-0

Tektronix[®]
Enabling Innovation