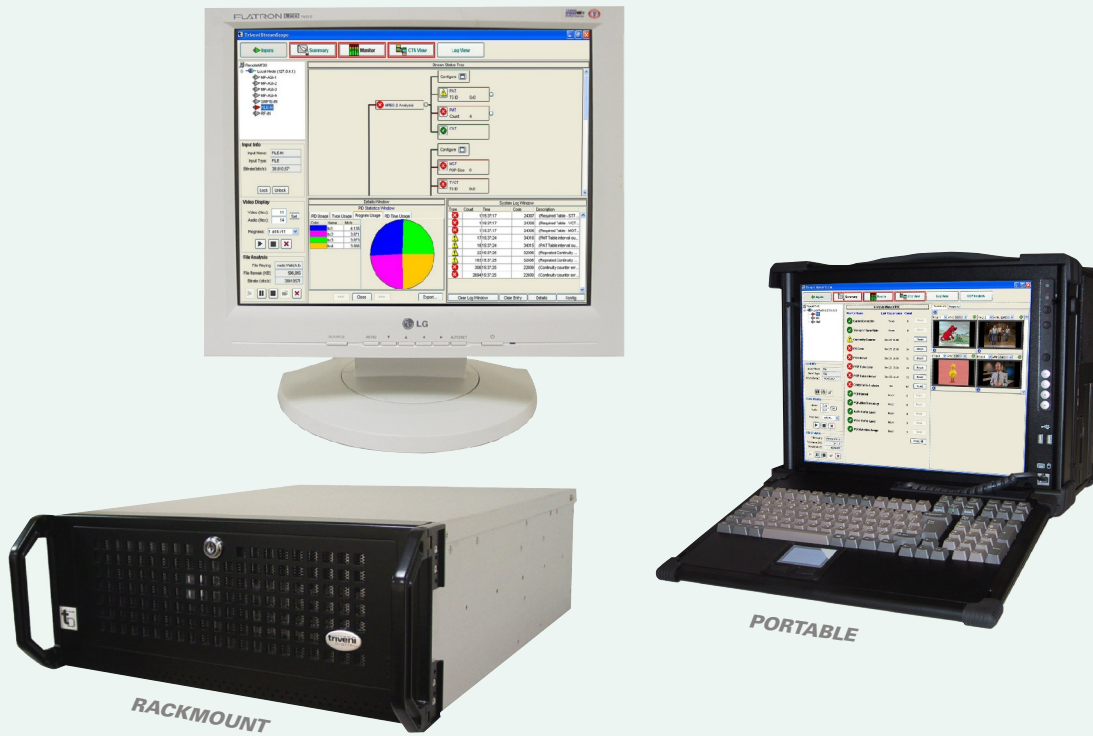


# StreamScope™ MT-40



## Real-Time DTV Transport Stream Monitor and Analyzer

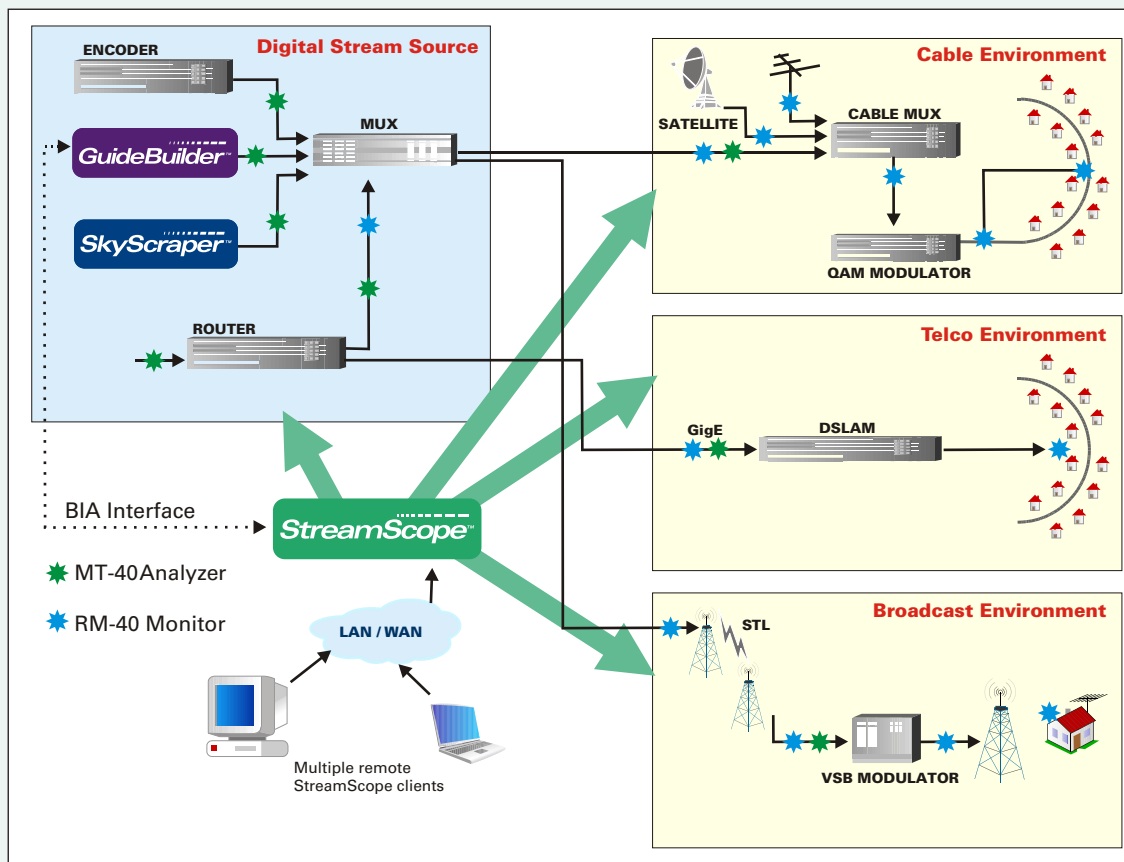
**triveni**  
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# Ensuring Integrity of DTV Streams

The StreamScope MT-40 is a monitor and complete analyzer for digital television (DTV) transport streams. The MT-40 is a powerful and user-friendly instrument that verifies DTV streams carried by service providers such as broadcasters, cable, telcos, satellite, MobileTV and IPTV operators.

In a single, affordable instrument with an easy-to-use graphical interface, the MT-40 can monitor, alarm, troubleshoot, record and measure DTV transport streams in order to ensure their integrity, reliability and compliance with standards (ATSC, ATSC A/78, SCTE).

In the face of emerging digital data broadcast and enhanced high-definition DTV applications along with complex and evolving standards, the StreamScope product family plays an increasingly vital role ensuring the integrity and reliability of the transport streams on which service providers' reputations and diverse new revenue opportunities depend.



## HIGHLIGHTS

- Real-time monitoring and analysis of broadcast, cable and telco DTV transport streams
- ATSC, SCTE, MPEG-2 and MPEG-4 compliance analysis
- SD or HD Video Thumbnails
- Full-feature connectivity to remote users
- ATSC A/78 (Transport Stream Verification) support
- Interface to StreamScope RM-40
- Real-time PCR analysis, video and audio buffer analysis with graphs
- Analysis and logging of SCTE 35 (Digital Cue Tones) and SCTE 18 (EAS) messages
- Stream recording and playout
- Unique value-added PSIP and PSI cross-table consistency checking
- IGMPv3 for IP multicast support
- SNMP support for remote management
- Electronic Program Guide (EPG) display

# Comprehensive Stream Examination

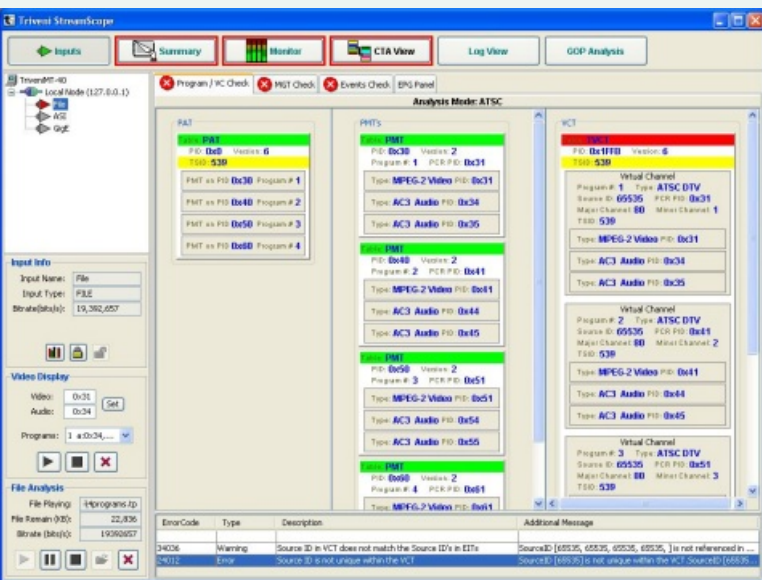
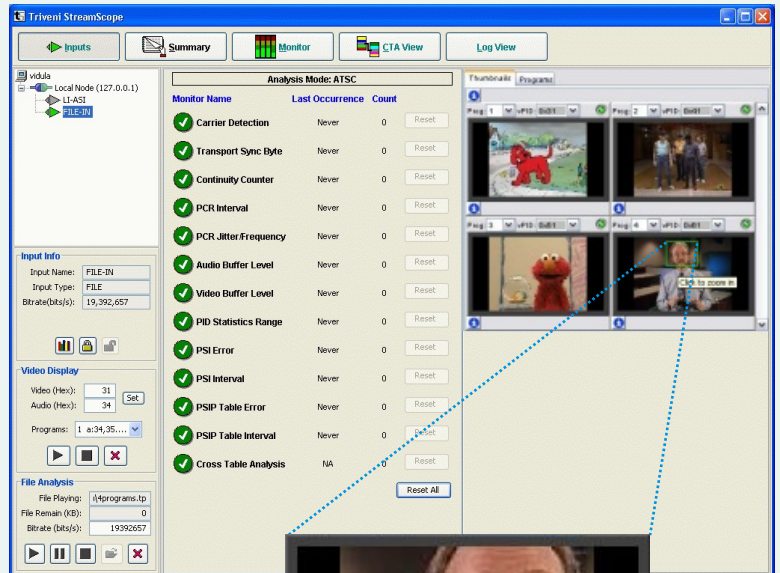
MT-40's **"Summary"** view shows the source of transport stream, a glance at the errors in the stream (if any), and the composition and thumbnails of MPEG-2 or MPEG-4 programs in the stream. Also indicated clearly in the view is the mode of analysis (ATSC, ATSC A/78 or MPEG) currently used to monitor stream compliance.

The transport stream status section lists the several types of potential transport stream problems, when they last occurred, and how often they occur. Even without detailed knowledge of ATSC, ATSC A/78 or SCTE standards, you will be able to identify where a problem exists, and communicate them to engineers or equipment vendors. Advanced users can drill-down further for detailed analysis using the **"Monitor"** view and troubleshoot the cause.

The **"Thumbnails"** tab in the **"Summary"** view displays the thumbnails for every unencrypted video PID (or unencrypted program) in an input. Thumbnails are displayed on local as well as remote clients. This feature supports both HD and SD signals, overlaying display of frame properties and zooming functionality.

The **"Programs"** tab in the **"Summary"** view shows a summary of the same programs identified in the **"Thumbnails"** tab. The **"Programs"** tab summarizes the below information for each of the MPEG-2 (or MPEG-4) programs in the stream.

- PIDs of video and audio (including secondary audio) streams
- SCTE 35 Cue Tone PIDs
- Bitrates for each stream
- Warnings of buffer over/underflow
- Indication of PCR jitter/offset



## Cross-Table Consistency Analysis

MT-40s **"CTA"** view analyzes the contents of PSIP and MPEG PSI tables in a stream, to ensure they are consistent with each other. These metadata tables provide information to DTV receivers about how to decode the stream while they contain a complex system of references to each other and to the programs in the stream. Inconsistencies in metadata tables could impair tuning to a program or appearances of onscreen Electronic Program Guides (EPGs).

MT-40's Cross-Table Analysis:

- Finds conflicts and data errors, displaying them "at a glance"
- Displays PSIP and MPEG data in an easy-to-use manner
- Produces reports that you can print or save to file
- Shows reconstructed EPG from the PSIP data in the stream



# Simultaneous, Remote, Multipoint Monitoring

## Remote Monitoring

MT-40 provides the capability of monitoring and analyzing the entire DTV infrastructure from any or all locations. Each MT-40 in the monitoring fleet is capable of monitoring all of its inputs simultaneously. The monitoring and analysis results are displayed within a client user interface, which may be run on the MT-40 unit as a local client, or may be run remotely from any other computer with a network connection to the MT-40 unit as a remote client. The client user interface may also connect to multiple MT-40s while the monitoring results are collected and displayed within a single, unified view.

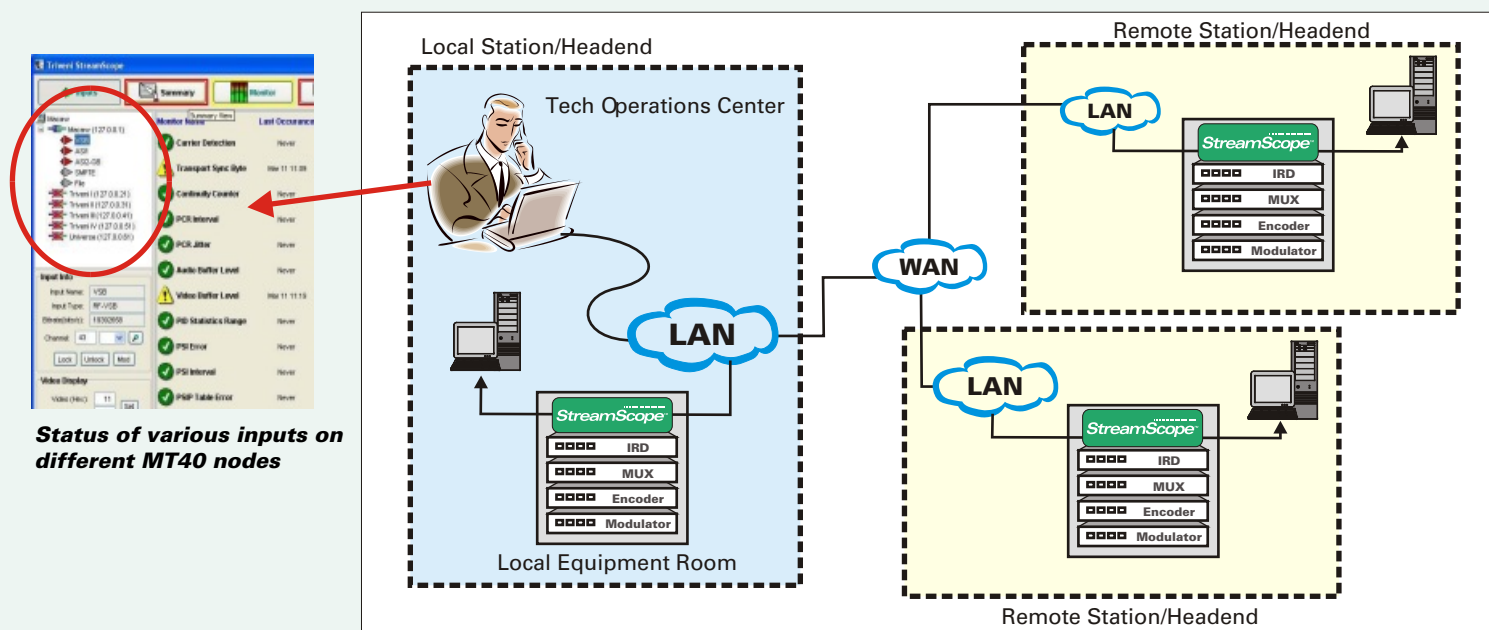
## Flexible Inputs

The MT-40 is capable of monitoring the different types of physical transports found within a DTV plant, as well

as those encountered in the field. VSB and 64/256 QAM inputs allow monitoring the signal that leaves the DTV plant. DVB-ASI, SMPTE-310 and Gigabit ethernet inputs provide monitoring capabilities for the signals within the DTV plant. The Gigabit ethernet input allows the capture and in-depth analysis of any transport within the IP stream, as well as the play-out of a pre-recorded transport. QPSK inputs provide monitoring capabilities of satellite signals (including DCII modulation) beamed at DTV plants.

## Recording and Playback

Easy-to-use button-controls support manual recording and play back of transport streams for display or analysis. The standard MPEG file format achieves compatibility with a variety of other servers, players, and analyzers.



## SNMP

The Simple Network Management Protocol (SNMP) feature with a well-defined MIB in MT-40 supports both trap notifications to NMS and facilitates SNMP manager MIB browsing. The MT-40 SNMP agent can be configured to report only preferred errors as "trap notifications". This preference may be based on severity of errors or their time interval of occurrence. The MT-40 SNMP agent's trap notifications about system anomalies and observed transport stream errors are compatible with most of the SNMP managers in the field today.

# MT-40 Technical Specifications

## System Specifications

### Rackmount Model:

- 4U rack chassis w/ rackrail kits
- 7"(H) x 19"(W) x 21"(D), 35 lbs (approx.)
- 550Watt cold swap power supply
- Intel® Pentium-D Dual-Core CPU 950 3.4GHz
- 2GB (2x1GB) DDR2 PC5300 667MHz
- 160GB hard disk drive, Floppy, DVD-Burner
- 10/100/1000 BaseT RJ-45 gigabit ethernet port
- Microsoft® Windows® XP Professional

### Portable Model:

- Carry bag & shipping hard case
- 13.6"(H) x 16"(W) x 9.6"(D), 30 lbs
- 460Watt ATX power supply
- Intel® Pentium D 3.4Ghz
- 2GB (2x1GB) DDR2 memory
- 320GB hard disk drive, Floppy, DVD-RW
- 10/100/1000 BaseT RJ-45 gigabit ethernet port
- Microsoft® Windows® XP Professional SP2

### DTV Inputs (optional)

- 8-VSB & 64/256 QAM RF (standard) 75 F
- DVB ASI 75 BNC
- Quad DVB ASI 75 BNC
- SMPTE-310M 75 BNC
- Gigabit ethernet, SFP (1 copper and 1 optical)
- QPSK (w/ DCII) RF 75 F

## Environmental

- 100-240VAC @ 50-60Hz, 5-10A AC
- Operating temperature -10° to 55°C
- Non-operating temperature -40° to 65°C
- Humidity 10% to 90%

## Output

- TV-Out (S-Video)
- Dual DVI-I
- Stereo audio down-mix 1/8" (3.5 mm) mini
- DVB ASI (optional) 75 BNC

## Data Communications (standard)

- 8-alarm relay (optional) 37-pin D type
- 10/100/1000 BaseT RJ-45 gigabit ethernet port
- Serial COM ports (2) 9-pin D type
- Parallel port 25-pin D type
- USB ports (2) 4-pin USB
- Mouse, keyboard PS/2



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