Mividi Integrated Multi-viewer Monitoring System IMS-120

The Mividi IMS-120 provides a comprehensive solution for broadcast video monitoring. It combines multi-viewer monitoring, comprehensive TS analysis, error logging and alarms, and TS recording in a single Windows based system.

Comprehensive Broadcast Monitoring in a Single System

Mividi IMS-120 is a video broadcast monitoring system for viewing video and audio services, analyzing transport streams, logging errors, generating alarms, and recording stream data. The IMS-120 was developed to automate monitoring and error diagnosis at digital head-ends for broadcast, cable and IPTV system. It is a single Windows based system that can complete tasks previously done by several different pieces of equipment, which provides a cost-effective tool for both monitoring and trouble-shooting video broadcast services. It will pay for itself in manpower savings over a short period of time.

The Mividi IMS-120 supports DVB and ATSC broadcast standards, supports MPEG-2, MPEG-4 AVC, and Chinese AVS video compression formats, as well as commonly used audio formats.

The system provides a real time view of multiple services coming from multiple transport streams. It can simultaneously display up to 50 SD video or 20 HD video programs in DVB-ASI or IP input transport streams, analyze and record the streams. Any transport stream errors are logged in a database for review and report. Alarms can be triggered by a variety of errors that can be selected by users.

The monitoring system runs on Windows 7, 8 or Windows Server 2008. An optional web server can be used to connect to multiple monitoring servers in different locations to access test results and control these servers remotely via the Internet.

Multi-viewer Monitoring

The IMS-120 supports Multi-viewer display of videos and audio PCM levels from SPTS and MPTS. It also calculates audio loudness and displays the loudness value along with video images. Additionally, the system can decode and display DVB subtitles and ATSC closed captioning data.

Each monitoring system can support up to 50 SD or 20 HD video programs. A single monitoring server can connect to four display panels for multi-panel display. The display panels can be arbitrarily configured in terms of size and location. Audio-only program display is also supported.

The system takes transport stream input using IP or DVB-ASI interface. It can simultaneously monitor many different streams. Different IP data transport protocols are supported, including UDP, RTP, HTTP, and HLS (HTTP Live Streaming).

Multi-viewer Display Panel

Comprehensive TS Analysis

The Mividi IMS-120 provides comprehensive TS analysis for both DVB and ATSC streams. It supports MPEG-2, AVC, and Chinese AVS video encoding formats, as well as commonly used audio formats including MP3, AAC, AAC plus, and AC3. It can also decode DVB SI and ATSC PSIP metadata tables and perform standard compliance checks on these data.

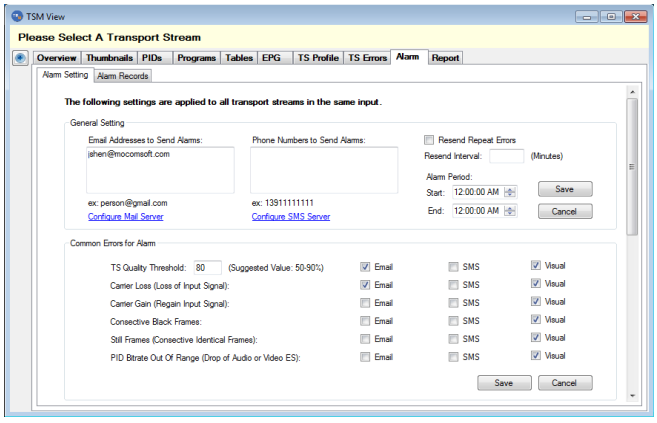
The system performs detailed TS error checks based on DVB test guideline TR 101 290 and reports all three priority level errors. It analyzes transport stream program structure, measures PID bitrate, performs PCR, and buffer analysis, and detects any black frames and frame freeze.

In addition to MPEG transport layer testing, the system also performs IP and HTTP layer testing, including MDI measurement on IP streams and detailed HTTP session and downloading parameters on HTTP and HLS input streams.

Error Logs and Alarms

The system provides multiple ways of sending error alarms, including email, visual displays on a multi-viewer screen, and audio sound. The alarms can be triggered by errors selected by users, such as loss of input, audio or video components, black or frozen frames, etc.

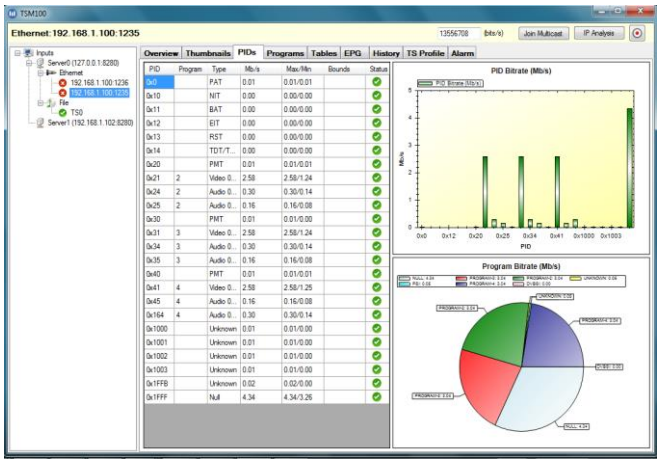
All errors and alarms are logged in the database and can be reviewed at a later time. Reports can be generated to summarize TS status over a period of time.



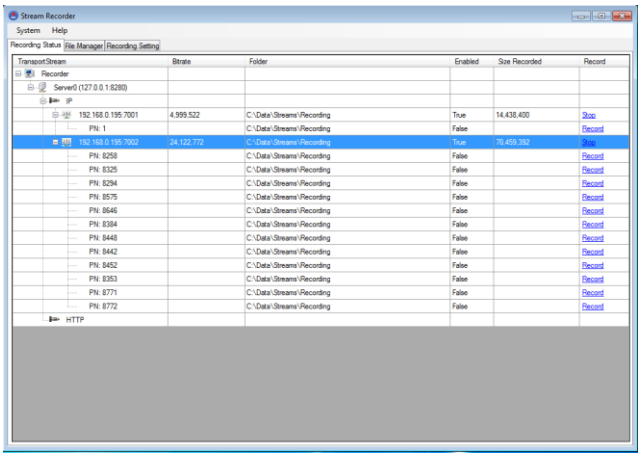
Alarm Configuration

Transport Stream Recording

The system can be used to record full transport streams or selected programs. Both auto-recording and manual recording are supported. A remote user interface for managing recorded files is also provided for playing recorded files, searching specific recordings, and cleaning the hard disks. Additionally, the system may be linked to a file storage server in order to support high bandwidth data recording.



TS Analysis View

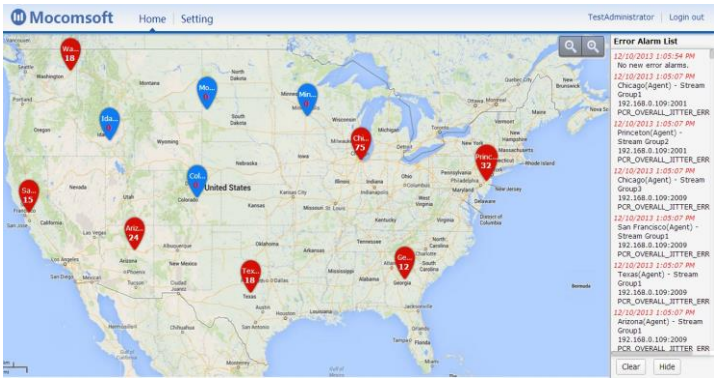


Stream Recorder Configuration

Remote Access

The TS analysis, error logging, alarm configuration, and TS recording UI applications can all be run on remote computers for remote access to the testing data. In addition, an optional web server can be used to link multiple monitoring servers in different locations for single point data access and system management. The web server can be accessed using a standard web browser, and it is an ideal choice for network-wide video service monitoring.

The system provides multiple ways of viewing the conditions of video services remotely. Video key frames are decoded and may be displayed in a remote monitor. Additionally, the full multi-view display screen can be captured and streamed to a remote location for display.



Nework-wide Video Monitoring

Features

- Transport stream multi-view software application
- Input:
  - IP using UDP, RTP, TS over HTTP or HLS (HTTP Live Streaming) protocols
  - DVB-ASI
- Supports MPEG-2, AVC/H.264 or Chinese AVS transport streams
- Supports both DVB and ATSC systems
- Different Services can be monitored on one or more flat panel monitors with HDMI/DVI inputs, including:
  - Video Signal
  - Audio Levels and Loudness
  - DVB-Subtitles and Closed Captioning
  - Teletext (Subtitles, Newsflash, Interrupted, Subpages)
- Besides visualization of all services, different measurements can be enabled:
  - Comprehensive transport analysis, including TR 101 290 priority level 1, 2, and 3 errors
  - IP transport layer analysis including MDI measurements
  - HTTP session analysis
  - DVB SI and ATSC PSIP table decoding
  - Black frame and freeze detection
  - Silence detection
  - Input loss detection
  - PID loss detection
  - Service loss detection
- All errors are logged, and reports can be automatically generated and exported
- Error alerts can be communicated via multi-viewer visualization, SNMP trap, e-mail, and audio
- Supports remote visualization via key frame thumbnail extraction or http streaming of multi-viewer monitoring screens.
- Supports network-wide monitoring using a webserver to collect test results from multiple TS monitoring servers.

Applications

- Broadcast monitoring
- Satellite center & cable head-end monitoring
- Mobile production and ENG (Electronic News Gathering)
- Internet broadcast monitoring

Specifications:

Maximum Numbers of Streams

CPU	SD MPEG-2	SD AVC/H.264	HD MPEG-2	HD AVC/H.264
i7 (6 cores)	30	25	12	8
Dual Xeon (6 cores)	50	40	20	15

(Audio, Teletext, and DVB subtitle decoding do not use a lot of CPU power. Performance may vary depends on the stream bitrate and detailed encoding parameters.)

Inputs

File:	Transport stream file
DVB-ASI:	DVB-ASI, 200 Mbps per port
IP:	UDP/RTP Unicast or Multicast TS over HTTP or HLS (HTTP Live Streaming)

Output

DVI or HDMI:	Up to four monitors via Nvidia® graphics card
Audio:	3.5 mm mini jack

OS & Hardware Requirements

OS:	Windows 7 or Windows Server 2008
RAM:	4 GB minimum
Hard drive:	500 GB minimum
Graphic Cards:	Nvidia® with minimum of 2GB graphic memory
Network Connectivity:	1 GB NIC adapter
Conformities:	UL, CSA, CE, RoHS

Purchase Information

Product Code: IMS-120

Purchase options:

- Software only
- Fully built systems

Price: The product is priced according to the number of services to be monitored. Please contact Mividi info@mividi.com for a quote.

Optional Software Modules:

- Transport stream recorder
- Web server for remote access.

For Product Information

Mividi offers a series of products for testing and improving video service quality for broadcasters and Internet media providers. Related products include IP video monitoring system TSM-100, HLS Analyzer, Multi-view Monitoring System for Internet Media, and SCTE35 and Ad Insertion Monitoring System.

To contact a customer service representative regarding Mividi products, please email to info@mividi.com or visit http://www.mividi.com.

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