



## Product Brief

Product code: WSM120

# Mividi IP Streaming & SDI Video Multi-viewer

The Mividi WSM120 provides an affordable multi-viewer monitoring solution for IP streaming and SDI video. It supports IPTV (UDP), HTTP Live Streaming (HLS), MPEG-DASH, RTMP (Flash), RTSP, SRT streaming formats, and can monitor video sources via NDI and SDI. It can be used for live broadcast as well as VOD monitoring.

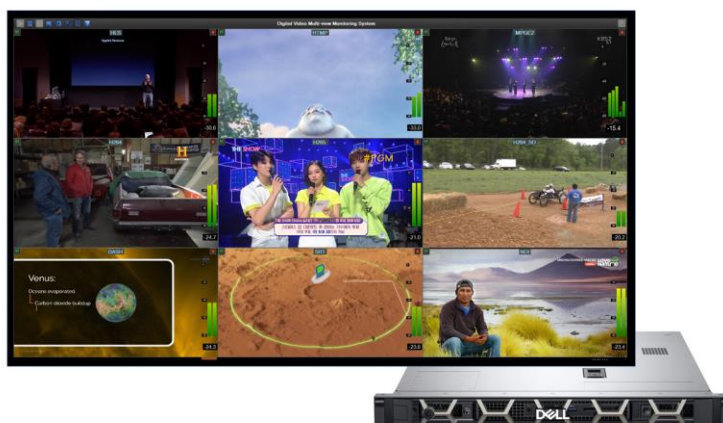
## IP Streaming and SDI Video Monitoring Solution

The Mividi WSM120 is a multi-viewer monitoring system designed for monitoring IPTV and Internet streaming video services. It supports most common IPTV and Internet Streaming media protocols including UDP, RTP, HTTP, HLS (HTTP Live Streaming), MPEG-DASH, RTMP, RTSP and SRT. It's also capable of taking uncompressed video input via SDI.

The system provides a real-time view of multiple video services coming from different streaming servers. Streams with different streaming protocols can be monitored in the same time. It can simultaneously display up to 60 SD or 30 HD video services using a single computer. Additionally, the system supports video rotation when more video displays are needed.

The system can be used for monitoring both live broadcast and VOD streaming services. Hundreds of VOD streams can be bundled together and the monitoring software will play the VOD services using their playlist URLs one by one. The test can be looped around and visual alarms are triggered when the video streaming service is interrupted or errors in the streams are detected.

The system displays video content and audio VU bars, and calculates audio loudness level. The monitoring software runs on standard Windows 10 or Windows Server 2012, 2016 or 2019. The cost for setting up such a monitoring system is low, and it is easy to use and maintain.



## IP and SDI Hybrid Support

The Mividi WSM120 supports hybrid inputs of IP and SDI. The IP streams are received through regular 1G or 10G NICs, and the SDI video sources are input via PCIe SDI input cards. Different types of streams can be played and monitored at the same time.

The system supports most common IP streaming protocols, including TS over UDP, RTP, HLS, TS over HTTP, MPEG-DASH, RTMP, RTSP, and SRT. NDI streams also supported. Single program TS (SPTS) or multi-program TS (MPTS) are supported. Video programs as well as audio-only programs are supported.

To play a video program on a multi-viewer panel, a user can enter the IP address and port for UDP or RTP streams, or the URL address of the video program on the configuration panel, and then map the stream to a player panel for video display. For video services that include multiple alternate bitrate streams, the software allows a user to specify a specific stream to play and be monitored. On each video display panel (PIP), the video source can be quickly switched by changing the streaming URL.

## Live Broadcast and VOD Monitoring

The Mividi WSM120 supports both live broadcast and VOD monitoring. To set up live broadcast video monitoring, simply map a URL to a display panel. When multiple URLs are mapped to a display panel, the system will start to rotate among multiple streams. Similarly, multiple VOD stream URLs can be mapped to one display panel and VOD streams can be played in turn. When all VOD streams are finished, they can be replayed in an infinite loop.

The system supports MPEG-2, AVC and HEVC video encoding formats, as well as commonly used audio formats including MP3, AAC, AAC plus, and AC3. It supports ATSC closed captioning and DVB subtitles. When there are multiple audios present in the stream, users can select specific audio streams to display.

A single computer can play up to 60 SD or 30 HD programs simultaneously. Additionally, the software provides a video rotation feature. When more videos need to be displayed beyond the computer capability, videos can be played in turn with user configuration time duration.

The system can capture multi-viewer display screen, encode and stream captured desktop screen video to a remote location using HTTP or UDP protocols for remote view of the multi-viewer output.

## Flexible Multi-viewer Display

The WSM120 supports multi-viewer display of videos and audio PCM levels of IPTV or Internet video streaming video services. 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.

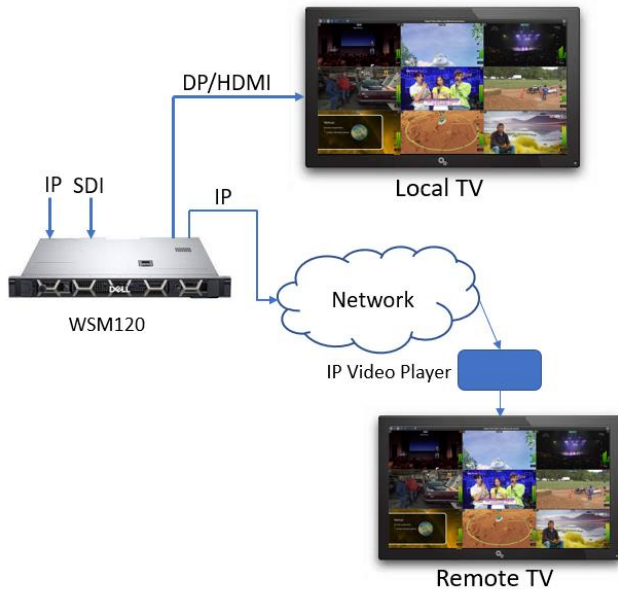
Each monitoring system can support up to 60 SD or 30 HD video programs. Users can create arbitrary number of playing panels (PIP) within the limit of hardware resource and software license. The location and size of each panel can be configured. In addition, multiple display styles are provided for users to choose.

A single monitoring server can connect to four TV monitoring screens for multi-screen display. The player panels (PIPs) can be arbitrarily configured in terms of size and location. Audio-only program display is also supported.

To increase the performance of computer server, the software utilizes GPU acceleration. Users can enable GPU decoding for some input channels while disable for other channels at the same time.

The screenshot displays the Mividi Multi-view Monitoring System interface. The main window is titled "C:\Users\Public\AppData\Local\TSM100\VideoWall\App.xml (MIVIDI Multi-view Monitoring System)". It features a multi-panel display with several panels labeled p1 through p7. Each panel shows a video stream with its URL and UDP address. A central configuration window titled "Map Program To Panel" is open, showing a table of stream mappings and various options for panel configuration.

Input	Stream ID	Program	Program Name	Panel	Live
1	UDP 229.1.1.2.5555	3		p1	✓
2	UDP 229.1.1.2.5555	4		p2	✓
3	UDP 229.1.1.2.5555	5		p3	✓
4	UDP 229.1.1.2.5555	6		p4	✓
5	UDP 229.1.1.2.5555	11		p5	✓
6	UDP 229.1.1.3.5555	1		p6	✓
7	UDP 229.1.1.4.5555	1		p7	✓
8	UDP 229.1.1.5.5555	11		p8	✓
9	UDP 229.1.1.5.5555	20		p9	✓
10	UDP 229.1.1.5.5555	51			✓
11	UDP 229.1.1.6.5555	1			✓



## Local and Remote View of Output

Users can connect the outputs of a graphic card to local TV monitors for multi-viewer display. Our recommended graphic cards are Nvidia Quadro or RTX series, although other type of cards can be used. The Nvidia cards normally contain 3-4 DP (Display Port) output which can be easily converted to HDMI if your TV monitors do not take DP inputs. One to four TV screens may be connected to a single server.

In addition to local display, the WSM120 software can also capture the display screen and generate an IP stream for remote view of the multi-viewer output. Multiple streams may be generated for multiple display screens. Different streaming formats are supported based on the need of remote users, including UDP, RTP and TS over HTTP.

## Cloud Ready

The Mividi WSM120 runs on Windows Server OS and is ready to be deployed in cloud VM. Since video decoding and rendering requires significant computer resources, it's recommended to use a dedicated cloud VM to run the application. The performance of cloud server may also change widely depending the type of CPUs. If you've considering using the software in cloud, we may be able to provide more information on the performance of different types of cloud servers.

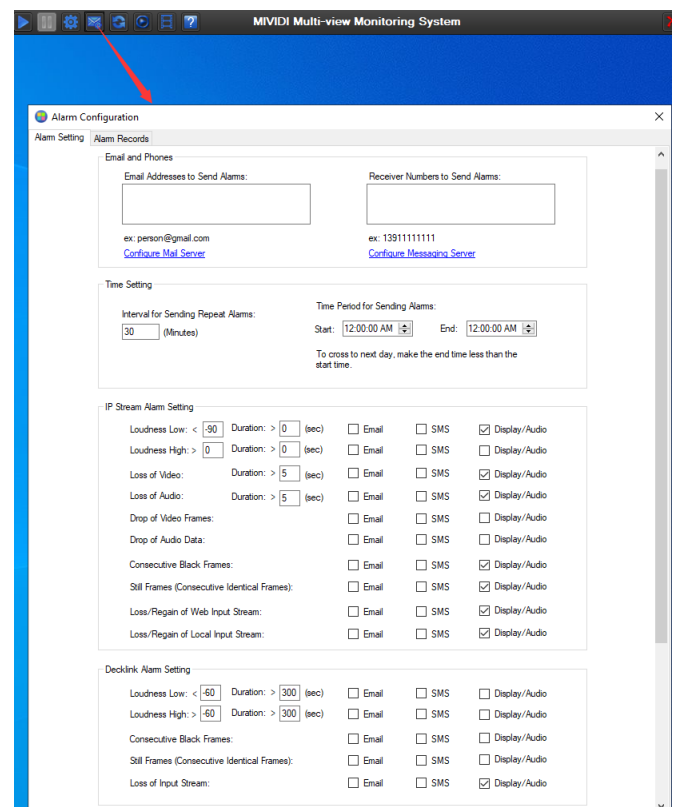
## Error Detection and Alarms

In addition to decoding and rendering video and audio streams, the system will also monitor a number of error conditions in the input streams, including:

- Loss of input stream;
- Loss of or failed to decode audio or video data;
- Drop of video or audio frames;
- Black and frozen frames;
- Loss of audio sound or loudness level is not within user specified range

Users can specify the test thresholds depending on input video streams. Multiple configuration profiles can be created for different type of video programs. For example, one test profile can be created for all news channels and other profile can be created for movie channels.

The system provides visual, email and messaging alarms when errors are detected in input streams. The alarm methods are configurable by selecting specific alarm triggers, time periods and email and message frequency.



# Features

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- Supports multiple IP streaming protocols:
  - UDP/RTP Unicast or Multicast
  - TS over HTTP
  - HLS (HTTP Live Streaming)
  - MPEG-DASH
  - RTMP (Flash media)
  - RTSP
  - SRT (Secure Reliable Transport)
  - NDI
- Support uncompressed video via SDI input
- Supports MPEG-2, AVC/H.264, HEVC/H.265 video formats
- Supports MP3, AAC, AAC+, AC3, eAC3 and other audio formats
- Supports SPTS (Single program transport stream) or MPTS (Multi-program transport streams)
- Support video services with multiple ABR streams and un-mixed audio, video streams
- Different Services can be monitored on one or more TV monitors with DP or HDMI inputs, including:
  - Video Signal
  - Audio Levels and Loudness
  - DVB-Subtitles, Closed Captioning and WebVTT
  - Teletext (Subtitles, Newsflash, Interrupted, Subpages)
- Supports live broadcast as well as VOD streaming monitoring.
- Supports round-robin rotations of video programs
- Flexible and easy Multi-view configuration
  - Monitoring panel can be divided into arbitrary number and sizes
  - Support full screen display and sound output
  - Set each display panel with a user-friendly name
  - Fast map of URLs to display panels
  - Multiple analog and digital clock display to show different time zone
  - Adjustable audio channel display, including 5 channels, stereo and no audio display.
  - Multiple display style selections
- Visual and audio alarms for following error conditions:
  - Loss of input signals
  - Loss of or failed to decode audio or video data
  - Video and audio frame drops
  - Black or frozen frames
  - Loss of audio sound or loudness level is below user specified threshold
- User configurable error thresholds
- Error alarms can be sent by email, SMS, visual display and audio alarm sound
- Captures and encodes multi-view screen, and streams the encoded data to a remote location using HTTP or RTP protocols for network-wide monitoring.

## 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	SD	HD	HD
	MPEG-2	AVC/H.264	MPEG-2	AVC/H.264
i7 or i9 (8 cores)	60	60	30	30
Dual Xeon (10 cores)	60	60	35	30

(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. Also require a proper Nvidia graphic card)

### Inputs

IP:	<ul style="list-style-type: none"><li>• UDP/RTP Unicast or Multicast</li><li>• HTTP or HLS (HTTP Live Streaming)</li><li>• RTMP (Flash media)</li><li>• RTSP</li><li>• MPEG-DASH</li><li>• SRT</li></ul>
SDI:	<ul style="list-style-type: none"><li>• Blackmagic Decklink SDI</li></ul>

### Output

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

### OS & Hardware Requirements

OS:	Windows 10 or Windows Server 2012, 2016, 2019
RAM:	8 GB minimum
Hard drive:	500 GB minimum
Graphic Cards:	Nvidia® with minimum of 2GB graphic memory
Network Connectivity:	1 GB or 10GB NIC

## Purchase Information

Product Code: WSM120

Purchase options:

- Software only
- Fully built systems

Please contact Mividi [info@mividi.com](mailto:info@mividi.com) for more details.

## For Product Information

Mividi offers a series of products for testing and improving video service quality for broadcasters, IPTV, cable and Internet video service providers. Related products include IP video monitoring system TSM100, HLS Analyzer, Integrated Multi-view Monitoring System, SCTE35 and Ad Insertion Monitoring System.

To contact a customer service representative regarding Mividi products, please email to [info@mividi.com](mailto:info@mividi.com) or visit <https://www.mividi.com>.

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