MULTISCREEN

ALL IS UNDER CONTROL

DVB / DTH / OTT / Mobile / IP / Video monitoring and compliance recording

For Headend / Satellite / Cable, IPTV, CDN operators

Reliability 24/7 • Control of thousands of TV channels • Flexible configuration

STREAM LABS

BROADCAST SOLUTIONS.
YOUR BEST MATCH.

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Stream MultiScreen system is intended for simultaneous visual and instrumental monitoring for unlimited number of channels in real-time. Having been based on successful combination of versatile features including multi-channel (unlimited number of sources) and multi-format (HD/SD-SDI, IP, DVB-ASI, Composite combined in a single server) abilities with high-level reliability Stream MultiScreen system has been implemented in the projects of the largest Headend operators, Satellite and Cable operators, TV Channels and OTT operators.

The number of physical inputs\interfaces per 1 server (unlimited number of servers to combine for large systems):

· up to 40 Composite (NTSC, PAL, SECAM);
· up to 7 RF Analog (NTSC, PAL, SECAM);
· up to 32 SD-SDI (SMPTE-259M, 10 bit, 270 Mbit/s);
· up to 32 HD-SDI (SMPTE-292M, 10 bit, 1,5 Gbit/s);
· up to 32 DVB-ASI (ETSI EN 50083-9). Bitrate range 0..214 Mbit/s;
· up to 32 AES/EBU (24 bit/ 192 kHz) channels;
· up to 12 DVB-T/T2 (ETSI EN 300 744, 302 755)
· up to 12 DVB-S/S2 (ETSI EN 300 421, EN302-307, EN301-210)
· up to 12 DVB-C/C2 (ETSI EN 300 429 Annex A/B/C);
· up to 12 IP/Gigabit Ethernet (ETSI TS 102 034).
· up to 125 FM Radio

Output signals

· up to 6 DVI-D, HDMI v.1.3, v1.4, DisplayPort (can be mixed);
· 3,5" mini jack, stereo, not balanced;
· Encoding any input AV signal to IP (Option): MPEG-2 transport stream.
· Streaming Mosaic to IP (Option): MPEG-2 transport stream, H264/AVC, HD up to 1080p.
· Re-stream any incoming TS to IP
· Mosaic over HLS (HTTP Live Streaming)
· Any video channel over HLS (HTTP Live Streaming)

Supported video standards:

· MPEG-1 (ISO/IEC 11172-1);
· MPEG-2 (ISO/IEC 13818-1);
· MPEG-4.2 (ISO/IEC 14496-2);
· MPEG-4.10 (H.264, ISO/IEC 14496-10).
· HEVC (H.265) 4□.

Supported audio standards:

· MPEG-2 Layer II (ISO 11172-3);
· Dolby Digital (AC-3, ATSC A.52b);
· AAC/ADTS/ADIF (ISO/IEC 13818-7, ISO 14496-3);
· SMPTE 302M
· HE-AAC

Data containers:

· MPEG-2 TS (ISO/IEC 13818-1), MPTS or SPTS;
· DVB T2-MI Streams (ETSI TR 101 290-1, A14-1), Option: can be monitored using Stream Labs' DVB T2 MI splitter;

Mobile and internet (OTT) broadcasting protocols support.

· FLASH RTMP streams (Real Time Messaging Protocol). The support of H.264 video and AAC and MP3 audio streams;
· HLS (HTTP Live Streaming Monitoring); supports encrypted streams;
· MMS&MMSH (Microsoft Media Server Protocol & MMS over HTTP);
· RTSP (RFC 1889, 2326, 3550).

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INSTRUMENTAL MONITORING OF UNLIMITED NUMBER OF CHANNELS

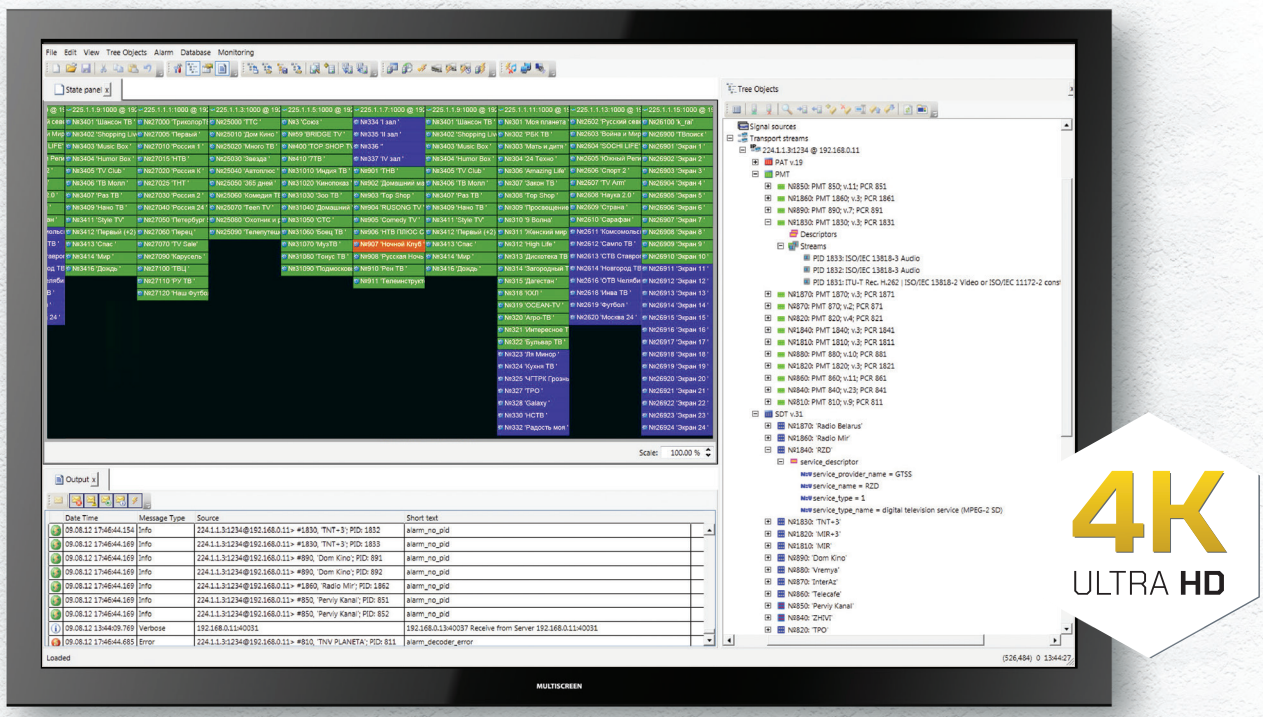
The system performs the intellectual analysis, generates warning events, logging and video/audio indication for the following video and audio stream parameters:

QoE:

- Video loss
- Frozen video
- Black frame
- Audio loss
- Audio signal level: overload
- Audio signal level: silence
- R-128 Loudness Level
- Loudness Splash
- Loudness Short Term
- Loudness True Peak
- Clipping audio
- Wrong field order detection

QoS:

- Video aspect ratio
- Teletext page loss
- Sync loss
- Signal loss
- Service lost
- PID lost
- ETR 290 (level 1 and level 2)
- EIT actual section loss
- EIT error
- EIT other error
- PID scrambled
- Transport Stream Bitrate
- Service Bitrate
- Teletext and subtitling (only MPEG-2 TS)
- HLS Transport error
- HLS Low Throughput



SNMP COLLECTOR MODULE ALLOWS TO RECEIVE DATA IN STREAM MULTISCREEN MONITORING SYSTEM FROM ANY EXTERNAL DEVICE FOR SNMP PROTOCOL. INTEGRATION WITH WISI ALLOWS TO GET ALERTS FOR RF LEVEL, EBNO LEVEL, SNR LEVEL, BER LEVEL.

Features and Benefits

- EPG monitorning
- Round Robin
- Ability of on-the-fly change of video windows arrangement in displayed configuration
- Visual warning
- SNMP Traps / SNMP Get / SNMP collector
- Selective continuous loop recording or scheduled/ according to controlled channels rules recording
- Loudness measurement (ITURBS.1770 and EBU R128)
- Penalty screen
- DVB subtitles
- Mail alerts
- Audio alerts
- Multiple walls
- Video on demand
- Recording video with problems
- SCTE-104 over SD\HD-SDI logging and reporting
- SCTE-35 over MPEG2-TS Digital Program Insertion Cueing
- Message logging

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Built-in editor supports the following features:

- Free positioning and size of video windows. The maximal size of video window is the size of the screen. Supports 16:9 and 4:3 aspect ratio. Automatic definition of aspect ratio for transport streams;
- Free positioning of audio PPM indicators (vertical, on the right, on the left, horizontally, over the video or outside of it);
- Any position of the text in the window, size, color and transparency;
- It is possible to automatically extract program names from PSI tables for transport streams;
- Use any number of layers while placing objects (video windows and signatures, audio PPM, clocks (analog, digital), automatically updated text signatures etc.);
- It is possible to set a border (thickness, color) for any graphic object of the system.

MultiMonitor - client application for Operators of master Control Room

- Video by demand from remoted sites
- Control for a couple of Hundred or Thousand TV channels
- Database for all events
- Audio and visual alert operator

The quantity of channels provided by operators is constantly growing. As a general rule, the Satellite, Cable or OTT operators have a limited space for monitoring system. And while the channels' quantity grows, the operators need more displays and racks, and the most important issue - the dramatic space extension.

'Stream MultiMonitor allows to control instrumentally the quality of any number of channels in one system, that leads to less required space, less personnel, less money for total upgrade of the monitoring system and no need in total reconstruction of the studio!'

Client-server architecture

The number of servers connected to one Stream MultiMonitor client application is unlimited. Operating in configurator mode, the client software Stream MultiMonitor allows to control all available signal sources on the remote Stream MultiScreen servers: cards inputs, IP-interfaces including actual PAT, PMT and SDT tables. Using special parameters set, built-in editor can create the new configuration for selected channels displaying in a couple of clicks. Automatically created configuration is available for manual editing then.

Screen View Coder/Screen AV Coder - Image Encoding Module

Stream MultiScreen can encode the image displayed on the screen of the monitoring system. All the layout visualization is encrypted as it appears: the video window, the PPM indicators, the reports of alarm events and text plates. Image is encoded with MPEG-2 Video codecs or H.264 and packed into a transport stream MPEG-TS. TS is then transmitted over IP.

ScreenView Coder will lighten the work of the operator with Stream MultiScreen monitoring system in remote mode when the primary server is in another city, or the master control room (MCR) where operators sit is located at a considerable distance from the server room with the equipment. Moreover, any person (the management staff or the advertising department managers, etc.) located in the same network where the server Stream MultiScreen broadcasts its transport stream by standard means, such as VLC Player, can receive this TS and view what is being currently broadcasted onair\ by satellite \ in the cable network.

ScreenView Coder is useful for the construction of combined instrumental and visual monitoring and logging systems. In many cases it allows eliminating the duplication of capture cards in recording systems, which in its turn enables the development of more optimal, both from the technical and financial side, solutions.

ScreenView Coder inputs

- Stream MultiScreen visualization layout. Simultaneous encoding of up to 4 visualization layouts.
- Physical inputs from capture cards: CVBS\SD-SDI\HD-SDI.

ScreenView Coder features

- Source: layout visualization server Stream MultiScreen. Supported by the simultaneous encoding of up to four layouts visualization.
- Video encoder: MPEG-2 SD / HD or H.264 SD / HD; the bit rate of 0.2 - 30 Mbit/s.
- Support of tables' generation NIT, PAT, PMT, SDT.
- Ability to specify the service name in the table SDT.
- Output: TS / IP, Multicast and Unicast supported protocols.
- Support of single-program and multiprogram transport streams (SPTS and MPTS).
- Graphical user interface for configuring the encoder.

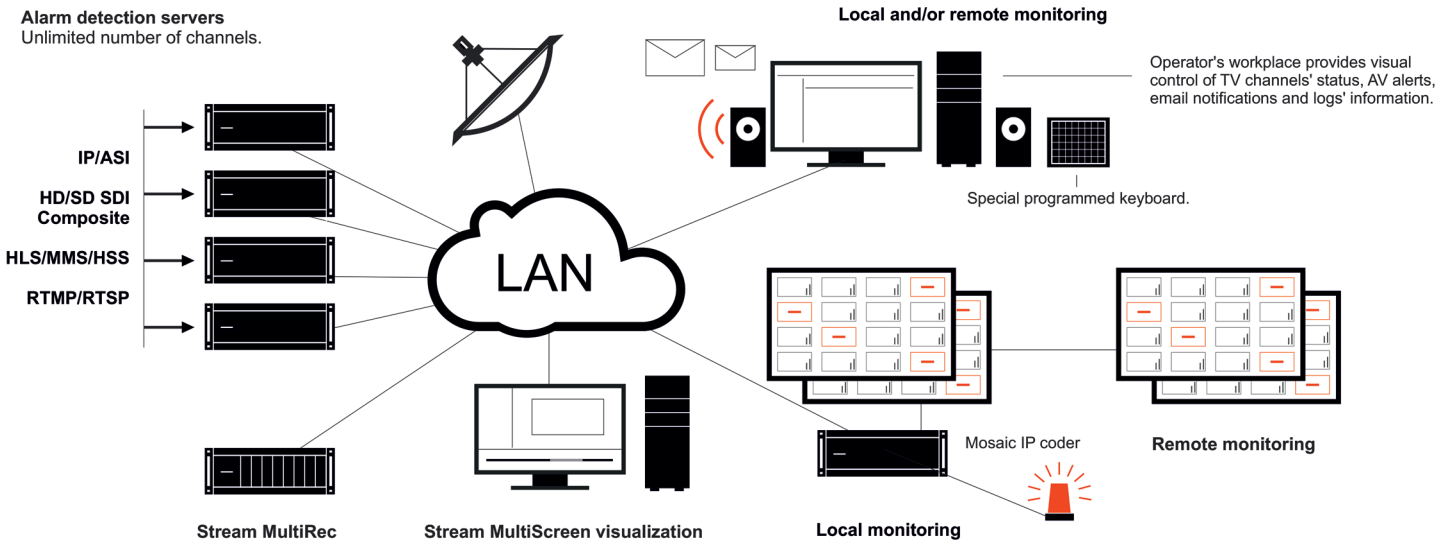
The system logs all warning events to the database built on Microsoft SQL Express and provides the network services for quick search of the events by means of various filters. The list of the monitoring parameters and the correspondent threshold values are set to every channel separately. It is also possible to configure the graphical (video window frame width and color) and audio indication of the warning event and assign the priority for event types. One can set up the logging of the warning events info to the database with no indication at all.

Free of charge client application Stream MultiMonitor provides the interface for working with Stream MultiScreen database allowing to control the state of all monitored signal parameters for all available Stream MultiScreen servers. In some particular configurations MultiMonitor also allows to dynamically change the set of the visually controlled channels on LCD panels. Being unique this functionality allows to solve the problem of monitoring of the large number of channels with minimum efforts.

Stream MultiRec

An advanced video/audio logging software for digital non-stop recording for full-time TV channels.

- Itegration with Multiscreen;
- Time-shift Service;
- Non-stop recording or upon a record-list;
- Individual schedule creation for each channel;
- Rules set-up for the schedules;
- Display of the entire recording history for every channel using special timeline with different colors, marking the recording events such as the start/stop, turning off the alarm, equipment malfunction and on;
- The timeline not only allows to visually monitor the process of writing data to the storage, but also provides the convenient interface for searching, data selection and downloading them for later viewing;
- Separate application for visual monitoring of several recording servers Stream MultiRec with details for each recorded channel.
- Re-encoding incoming TS to lower bitrate and resolution
- Streaming recorded video from storage for confirmation of recording



What do we use for inputs?

For operation with Composite, SD/HD SDI, DVB-ASI input signals in Stream MultiScreen systems we use multi-channel input cards (Stream Labs' production). The combination of these cards allows to build monitoring servers with almost any types of input interfaces and for any tasks. Severs can be in 19-inch rack mountable with Dual PSU.

- Stream MS416 – 16 independent analog inputs and 16-line stereo-audio inputs. Supports NTSC/PAL/SECAM standards of analog video;
- Stream MS2/4 – 2/4 independent software switchable inputs DVB-ASI/SD-SDI;
- Stream MS2+/4+ – 2/4 independent software switchable inputs DVB-ASI/SD-SDI/CVBS. 4-line stereo-audio inputs;
- Stream MH4LM – 4 independent software switchable inputs DVB-ASI/SD-SDI/HD-SDI/CVBS. 4-line stereo-audio inputs.
- Stream MH8 – 8 independent software switchable inputs DVB-ASI/SD-SDI/HD-SDI/CVBS. 8-line stereo-audio inputs.

It is also possible to use any DirectShow API support input cards.
The combination of these cards allows to build monitoring servers with almost any types of input interfaces and for any tasks.