



The MCM-9000 provides a complete monitoring solution for all the transmission layers starting from the TS packet header all the way down to the encoded video content and quality. In addition, MCM-9000 creates a visual mosaic from the monitored services with rich data overlay, supplying the operator with a strong tool for error detection and alerting.

The created mosaic is an HD video stream, encoded and transmitted as standard H.264 SPTS – enabling remote monitoring, mobile devices access and very flexible installation topology.

The device monitors complete ETR-101-290 compliance with a rich variety of properties: video freeze, black video, audio silence, audio levels, quantizer levels, color space, resolution change, service bitrate, PMT structure and more.

FEATURES

- Flexible deployment, due to the unique mosaic over SPTS. Mosaic streaming over regular LAN/WAN network is available.
- High density solution; concurrent monitoring of up to 250 SD per server.
- Ability to mix a variety of sources
H.264/MPEG-2/HD/SD/RADIO/DATA
- Simultaneous, real-time analysis of all sources on all channels
- Unique alarm trigger settings for individual channels or groups of channels
- Source recording, triggered by any of the event detection rules
- On screen DVB subtitling, Teletext subtitles and Closed-captions rendering

PRODUCT DETAILS

The MCM-9000 provides three levels of monitoring: transport level monitoring based on ETR-101-290 compliance, content level monitoring, and template based monitoring for detection of configuration changes in the monitored stream.

Analysis

Transport layer monitoring: ETR-101-290, ATSC A/78A
Video content monitoring: freeze frame, black frame
Audio content monitoring: audio levels, audio Silence
Subtitles content monitoring: display and validity

Stream Capture

Automatic stream capture on error or external trigger

Data Traffic Monitoring and Logging

Logging of individual PIDs and service bitrates
Interval based statistics trap generation

SPECIFICATIONS

Supported Video Compression Formats

MPEG-2 Video up to MP@5.1
H.264 Video up to Hi@4.1
Color Space YUV420, YUV422, YUV422-10bit

Audio Layer Analysis

Audio codec MPEG2 / AAC / HE-AAC / A-52
Audio channel mode 1 / 1+1 / 2 / 5.1
Loudness monitoring.. EBU-R-128/ITU-1770-2/ATSC A/85
Silence detection Mono, stereo, dual mono, surround
Clipping detection User adjustable threshold

Video Layer Analysis

Video codec MPEG2 / H.264
Video encoding Level and profile
Video resolution 480i, 576i, 1080i, 1080p
Video aspect ratio 4:3 / 16:9
Video frame rate 25 / 29.97 / 30 / 50 / 59.94 / 60
Video content Black / Freeze / Black with logo
Video quality Blocking detection

Transport Protocols

Multicast & Unicast..... TS over UDP
TS over RTP
TS over H RTP

Subtitling Analysis

DVB subtitles Overlay display
CC errors Separate rules
Closed Caption CEA-708,CEA-608
Multi language support Support for up to 8 PIDs

Notifications

SNMP Configurable SNMP TRAPS
SYS LOG Configurable sys-log notifications
SMTP Email notifications
Overlay Overlay error display on the mosaic
Centralized Error Display Group error channels
to a single display

Management

Web Complete configuration via web
Remote JSON WEB services
CLI Network & software management
Stacking Group multiple units to a single logical one

Transport Layer Analysis

ETR, First priority TS sync loss
Sync byte error
PAT error
Continuity count error
PMT error
PID error
ETR, Second priority Transport error
CRC error
PCR repetition error
PCR discontinuity
PCR accuracy error
PTS error
CAT error
ETR, Third priority NIT actual/other error
SDT actual/other error
EIT actual/other error
RST Error
TDT Error
Table analysis TS PSI
TS DVB_SI

Scrambling Analysis

Scrambling verification
Crypto period measurement
ECM/EMM existence tests
ECM Private data change notification

Mosaic Layouts

User defined layouts, 1-84 channels per layout
Round-robin layout display
Up to 32 audio streams loudness display per service
Overlay display of errors and events (user customized)
DVB/Teletext/CC subtitling overlay
Encoded as standard HD service (Multicast SPTS and HLS)
Selectable encoding H.264 MP@L4 / MPEG-2MP@HL
Viewable on standard STB, mobile devices and web
browsers

Channel Statistics

Service structure tree-view (per PID)
Display of each PID's bitrate
Display of service bitrate
Display of service properties
Graphical display of audio loudness and True-peak

License Management

Same license for all services (SD/HD/Radio)
Dynamic license sharing between devices
Field upgradable – via FTP, for all licensed features

Software Maintenance

Field upgradable – via FTP
Supports dual software image
Export/import complete system configuration to XML

Hardware Requirements

Operates on standard off the shelf hardware
Intel CPU based platforms
No software installation required

ORDERING INFORMATION

Base Device:
MCM-9000 Flexible license model