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Analyzer

IP/2ASI/RF

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Analyzer

Compact broadcast MPEG TS
analyzer to monitor and collect
statistics in cable and terrestrial
television networks

MPEG TS   RFC 4445   ETR 101 290

Analyzer — Portable Small form factor Broadcast MPEG Transport Stream Analyzer with IP, ASI and RF (DVB-C, DVB-T/T2) interfaces.

Analyzer is a portable hardware device enabling remote and local broadcast stream monitoring analysis. It can be used to monitor and analyze transport streams, log errors, and send error alarms.

As a compact sized device, it can be placed in hard to reach locations, with little or no infrastructure for rack mounted equipment, such as remote head-ends, distribution hubs, broadcast towers and remote unattended and unmanned premises.

Analyzer is a complete free-standing unit with its own CPU and can be left to monitor signals by itself without the need for a host system.

For the most precise measurements, hardware-based decoding is the most efficient and accurate means to measure critical parameters such as jitter and delay. Unlike other software solutions, the precision that can be achieved with Analyzer is unparalleled.

In day-to-day field operations the Analyzer is a powerful compact tool that can receive and decode IP, ASI, and RF signals in a single package. Thus, eliminating the need for multiple portable analysis tools such as RF analyzers and dedicated devices for troubleshooting broadcast signals. Capable of analyzing RF parameters such as MER, CNR, Eb/N0 and signal strength, Analyzer is a powerful and highly portable, self-contained instrument. Analyzer is all you need to verify signal, video quality and delivery path integrity.

Ease of use and efficiency are paramount for field operations. Analyzer can be connected and configured in a matter of minutes, just assign an IP address and add a stream for analysis through a user friendly web interface.

Analyzer can simultaneously monitor up to 32 program streams. Transport stream errors are logged locally and can be sent to a remote Monitoring system. Analyzer allows you to monitor and analyze multiple transport and MPEG parameters at the lowest level. Accurately measure PCR, PTS, DTS, jitter and delay, SCTE 35 Ad insertion markers, ECM, EMM's and view and decode your EPG.

Acquire and locally store stream captures for further troubleshooting. Analyzer is integrated into the StratoView monitoring platform and can also forward SNMP traps. It can also be managed via REST API calls.

Key Features

- RF, IP, ASI interfaces
- T2-MI de-encapsulation
- Up to 100 Mbit/s summary bitrate (depends on stream content)
- Up to 16 input transport streams
- Up to 32 summary transport services
- IP multicast/unicast/SSM
- UDP/IP header summary
- 2xASI inputs

- DVB-C/T/T2
- REST API and SNMP for remote configuration, alarms and polling
- Web-interface
- Fully integrated with MultiProbe Monitoring
- ASI to IP conversion functionality
- Receive and decode EPG
- Measure full level RSSI
- Signal to noise ratio (dB), BER

Highlights

Hardware MDI measurements

Microsecond-accurate and detailed multicast packet monitoring, analysis and alarming with readout and alarming on key parameters relevant to video.

Use Media Delivery Index (MDI) to monitor the quality of delivered video as well as display system margin for IPTV systems by providing accurate measurements for jitter and delay at the network level, which are the main cases for quality loss.

Identifying and quantifying such issues in video networks is key to maintaining high quality video delivery and providing indications that warn system operators with enough advance notice to allow corrective action.

Full support for the RFC 4445.

Use Cases

- Headend Monitoring for Quality of Service
- Monitoring in unattended premises
- Convenient mobile monitoring tool from technicians on the go
- Traffic flow captures for control logging or further detailed analysis
- Converting ASI to IP Streams
- Used to send metrics to a distributed monitoring system

Graphical Visualization

Analyzer comes with built-in advanced graphing capabilities that allow the operator to use visual comparison tools to view selective synchronized metrics.

Multiple parameters may be graphed in real time and displayed simultaneously in synch for comparison purposes.

For example:

- DF and MLR
- IPAT and MLR
- PTS and PCR
- DTS and PCR
- Full bitrate and MLR
- Full bitrate and multiplexed bitrate
- Total number of continuity errors and total bitrate
- Deviation values of PCR/DTS/PTS timestamps

Characteristics and Meaning

Input	Characteristic	Meaning
Interfaces	• Signal Input Interfaces • Management Interface • Upgrade interface	2xASI, 1xGbE, 1xRF (DVB-C, DVB-T/T2) 1xGbE USB-C
Protocols	• MPEG Codecs • Network Protocols • Video Streaming Control Protocols • Traffic flows • Device Management Protocols	MPEG-2, H.264/AVC, and H.265/HEVC UDP (Multicast, Unicast) IGMP v2, v3 MPEG TS (MPTS/SPTS) SNMP, REST/XML
Events to be logged	• Events on MPEG TS transport streams • Network Protocol Events • Measurement Profiles	ETSI TR 101 290, all levels, 35 errors/states RFC 4445, EBU TECH 3337 MGB1… 5, MGF1… 4
Physical characteristics	• Dimensions (preliminary), WxDxH, mm • Weight (preliminary), kg • Power supply • Power consumption • Operating temperature range, C	170x110x40 0,5 110/220V, universal power supply included 25 W from +5 to +40

Specifications

Transport stream and PSI/SI

- Full/effective bitrate
- Media loss rate (MLR), delay factor (DF), inter-packet arrival time (IPAT)
- Combined time graphs and histograms
- Service tree: service structure, component types, component summaries
- PSI/SI tree: tables, bitrates, repetition rates, CCE stats, descriptors
- PSI/SI can be downloaded and later uploaded for offline viewing
- PCR, PTS, DTS histograms and time graphs

PIDs

- Bitrate
- Repetition rate
- Packet counter
- CCE counter
- Status (OK, Unreferenced, Absent, Obsolete)
- Last status and change time
- PES header parsing

Video and audio

- Video and audio codec information (for FTA only)
- Video keyframe decoding

CAS statistics

- ECM
- EMM
- Crypto period for each stream
- CAS provider info

Alert log

- Single events are summarized within minute intervals
- PSI/SI and service events
- Service type, service name, PID, time interval, event and count are logged
- Filtering and sorting
- Log download

SCTE-35

- Automatic SCTE-35 discovery
- Selectively disable monitoring for any SCTE-35 PID
- SCTE-35 events downloadable log
- Message parsing

Statistics

- Current and archived stats (for 7 days)
- All measured and counted values are stored in current stats
- Input and TS errors are stored in archived stats
- Min, average and max values for continued values
- Counts for countable events
- Bouncing across timeline by 1, 10, 60 minutes intervals from a chosen moment
- Manual stats reset

Summary stat tables for

- Input streams
- ETSI TR 101 290 events
- PIDs
- CAS

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