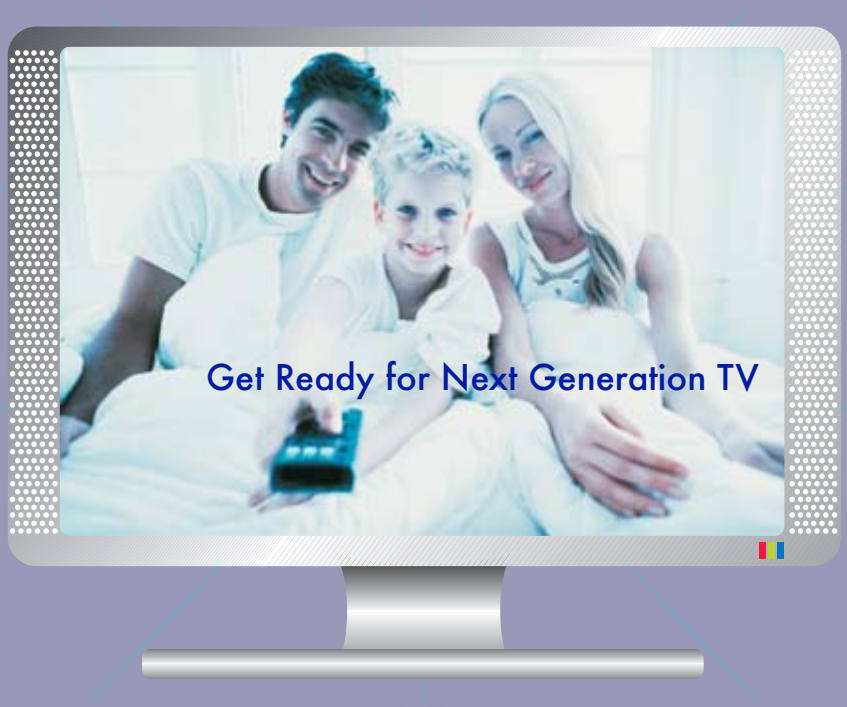
Sensor

NEWS FROM PIXELMETRIX



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HIGHLIGHTS

SEE US HERE

➡ NAB 2011
April 11-14, Las Vegas
Booth SU7813

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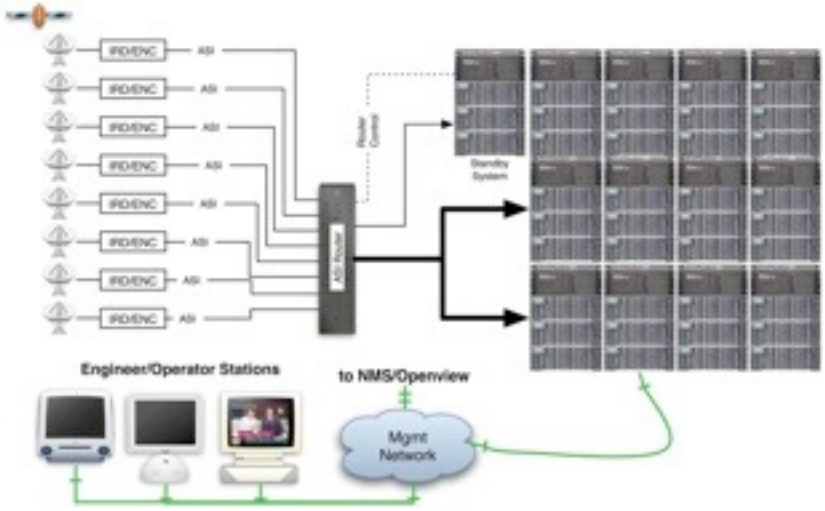
Round the Clock, 90 Days, Keep Disasters at Bay
DVStor² – Transport Stream Recording & Playout

What happens when a feed fails? Content dictates a viewer's experience; thus any disturbance to that experience places service providers into dire need of an effective disaster recovery strategy.

Pixelmetrix introduces DVStor² – the ultimate solution offering a highly scalable, stable compliance recording with hot standby redundant switchover and a flexible, fail-safe architecture.

One vital feature of the DVStor² as a disaster recovery system lies in the ability to detect loss of signal on input streams. As DVStor² continually records and analyzes transport streams, it can trigger the play out of the recorded transport stream over either the IP or the optional ASI port upon detecting an input failure.

The DVStor² can control an external ASI switch to change from the live feed to the recorded signal, such as prerecorded time-shifted content. As transport streams are modified on the fly, neither the viewers nor the downstream equipment can discern between a live transmission and a recorded version.

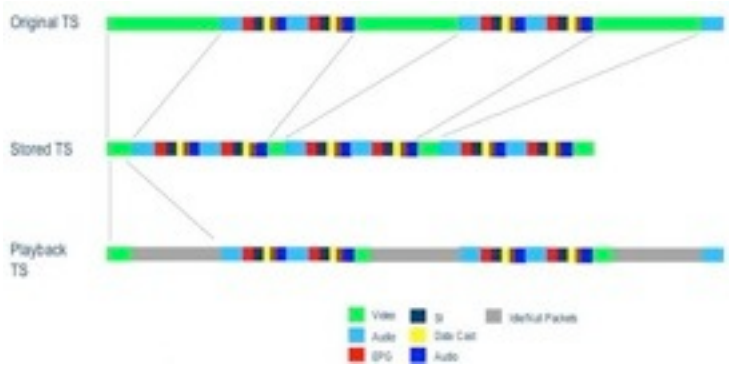


DVStor² eliminates the need for costly external storage by offering maximum compression. Video services can be transcoded in-place without modifying the transport stream structure. Efficient storage space is further achieved as DVStor² notes the presence of null packets in the stream, removes them when recording and reinsert them on playback.

The call for added storage escalates in urgency as the number of channels soars in tandem with increased bandwidth. The DVStor² is available in capacities ranging from 1TB to 48TB of storage space. With support for Direct Attached Storage (DAS), the storage capacity can even be boosted up to 120TB, which is one of the highest storage densities in the industry. This literally means storing media in excess of a year without the need for human intervention.

Complete metadata and EPG decode also allow easy troubleshooting. By providing a full recall of all content, captions and metadata, the DVStor² can archive the entire transport stream in full resolution and exactly as broadcasted. It can either continuously record in a loop or record only segments with errors. Moreover, it can generate video thumbnails that allow operators to have a bird's eye view of the transmission. So, even after a disruption, operators can access the recorded TS, point to a suspect video thumbnail and quickly locate the error.

In addition to the disaster recovery and troubleshooting features, DVStor² is an ideal system for legally mandated compliance recording. For quality audit purposes, DVStor² is deployed to archive TS round the clock for up to 90 days off a satellite transponder and time code burn-in on playout or export, which makes the DVStor² a long-term test source for validating broadcast equipment.



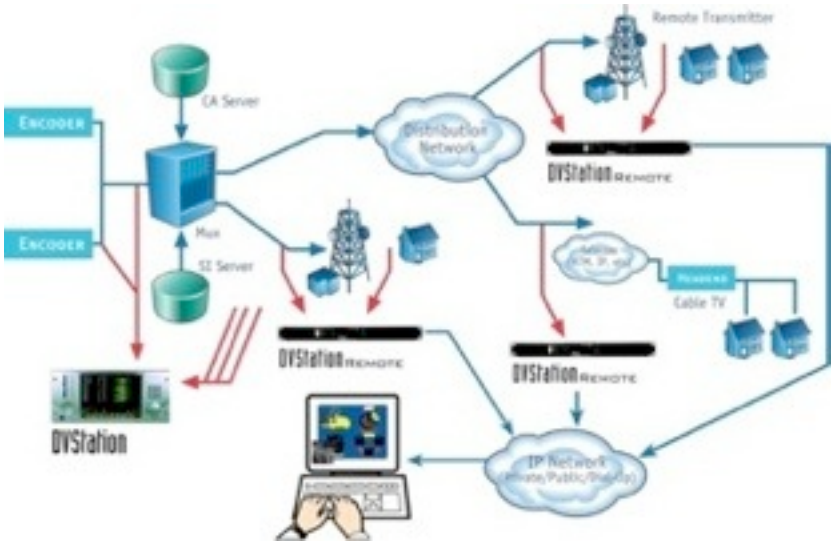
Unsurprisingly, the DVStor² also offers maximum protection of the archived content. Given a secure, fail-safe RAID-6 redundancy with hot-swappable spare hard disks and dual-redundant power supplies, the DVStor² offers a redundant fail-over configuration using either one-to-one or N-to-one set-up that streamlines the entire content playback.

In essence, the DVStor² is the perfect fit for content disaster recovery, transport stream recording and playback. Ensure maximum reliability. Let the DVStor² dispel all your worries.

TSP Upgrade Made Easy
TSP120 for Contribution Monitoring

Many cost-conscious customers would prefer to avoid expensive forklift upgrades before embracing new technology. Now, TSP120 allows Pixelmetrix customers to keep the existing monitoring in place by making the upgrade easy and effortless. You can access the dramatic new features of TSP120 without rebooting the system. Simply plug in the TSP120 card and you're up and running.

Pixelmetrix TSP120 is the ideal solution for satellite operators. It allows in-depth transport stream monitoring for high bit-rate transponders, complete with extensive SI/PSI information analysis for unsurpassed visibility into the TV broadcast structure.



A notable key feature of the TSP120 is complete TS analysis supporting video services with MPEG-2 and H.264 – including High Profile 4:2:2. In addition, the TSP120 offers verification of SLA commitments.

Providing the highest port density monitoring solution with the Pixelmetrix DVStation-210, the TSP120 also features an internal 3-input ASI router. One ASI input is active at a time with the option to sequentially monitor all three ASI inputs automatically.

Content streaming at full broadcast quality is another enhancement, enabling video backhaul using the Forward port on the TSP120/REM-TSP120 for quality verification. Augmenting the video streaming function from the management port, the TSP120 has an on-board RJ-45 connector to stream video to a dedicated media network. Thus, keeping high bitrate video traffic off of your management network and avoiding congestion.

Furthermore, alarm thresholds can be set for measurements including bandwidth of individual PIDs, packet interval, PCR jitter, TR101-290 tests, and incorrect content, subtitles, services. Any broadcast that deviates from your expectations will prompt a monitoring system alert.

With a number of enhancements, the TSP120 makes transport stream monitoring and analysis more comprehensive than ever before for satellite operators and content providers. For complete visibility into the broadcast workflow, just plug in the TSP120.

Key Features

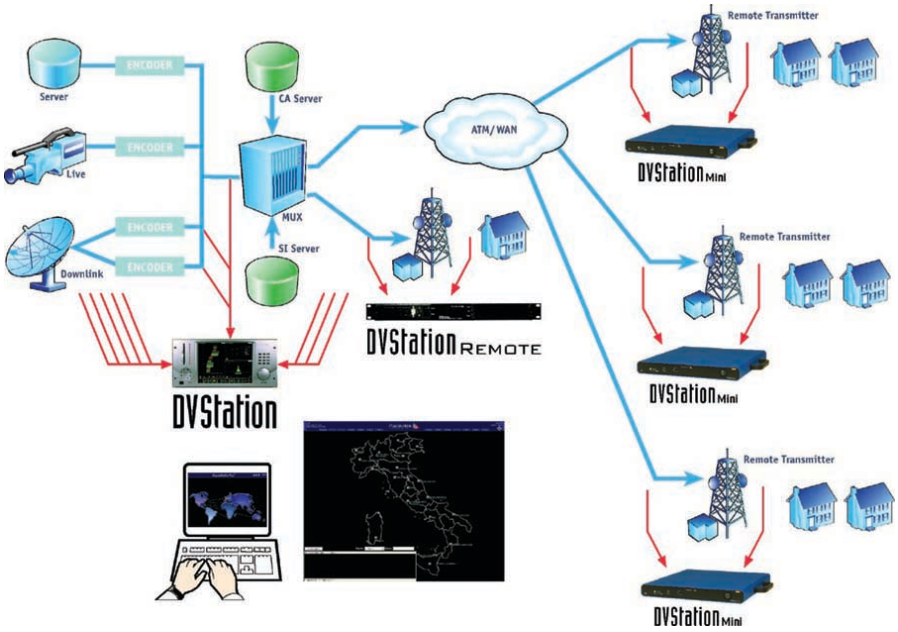
- Real time comprehensive transport stream monitoring
- Freeze-frame and blackout checks for unencrypted video services
- Service thumbnail view for remote confidence monitoring
- Round-robin checks using configuration profiles
- Video back-hauling for quality verification
- Transport stream capture
- Multiple ASI input ports
- On-air service validation
- HTML, SNMP, CORBA, X-Windows and VNC Interfaces

Model Comparison

Features	Products		
	TSP090	TSP100	TSP120
H.264 support			✔
TR101-290, ATSC A/78, ARIB TR-B14 checks	✔	✔	✔
Bandwidth Measurement	✔	✔	✔
PCR Measurement	✔	✔	✔
Table Decode	✔	✔	✔
Video Thumbnail Display	✔	✔	✔
PID View	✔	✔	✔
Remote Service View		✔	✔
Content Streaming			✔
Video Display on Local Console (MPEG-2 only)		✔	✔
Packet Interval Measurement		✔	✔
Transport Stream Capture		✔	✔*
On-air Service Validation		✔	✔
Data Carousel Monitoring		Option	Option

*The TSP120 has 256MB of transport stream capture storage per instance compared to 96MB for the TSP100.

DVStation-Mini² DVB-T
for Comprehensive RF & TS Analysis & Monitoring

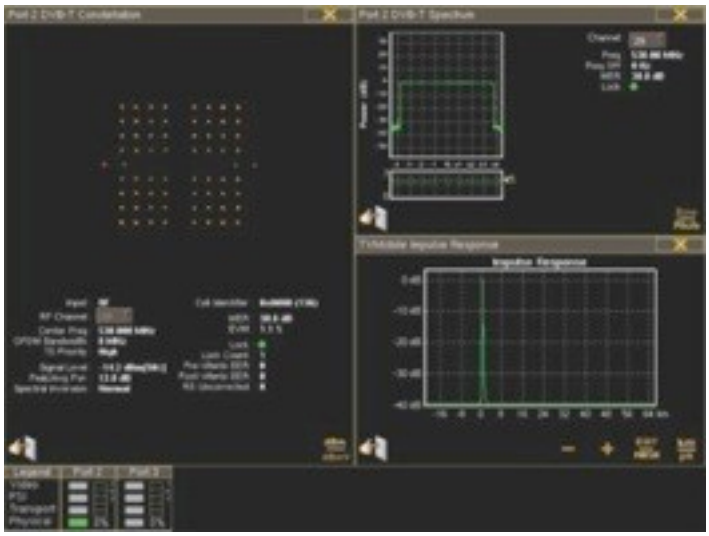


Poor customer viewing experiences can negatively impact brand and revenue. The good news is that addressing the crisis does not mean a hefty price tag.

Pixelmetrix presents the DVStation-Mini² DVB-T, a cost-effective RF and TS analyzer and full-featured monitoring probe, to terrestrial operators who are seeking to ease the DTV transition.

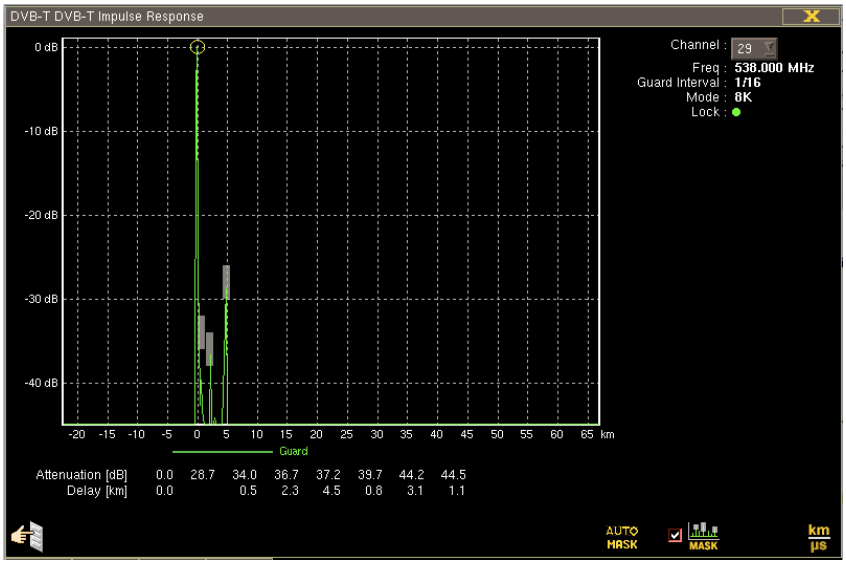
The DVStation-Mini² DVB-T, an extension of the DVStation-Mini line up, provides unparalleled visibility into QoS monitoring for numerous points within a DTT network.

Designed for 24/7 operational monitoring of the quality and continuity of DVB-T services, the DVStation-Mini² DVB-T combines in-depth DVB-T RF measurements and comprehensive TS analysis. Hence, raising notifications for every deviation detected.



The primary step in quality assurance of terrestrial transmission is tracking transmitter health. With a high MER resolution capability display and constellation visualization, the DVStation-Mini² DVB-T can detect age-related transmitter performance degradation.

Operating SFN networks is challenging as it demands precise synchronization between transmitter towers. Poor synchronization may result in a series of complications, namely a shrinking coverage area and potential signal loss.



In order to reduce the complexity of managing the synchronization, the DVStation-Mini² DVB-T offers effective SFN monitoring via "impulse response masks", which identify and alarm on any change in timing or amplitude of the impulse response. By defining a rectangular zone around each transmitter signal, the impulse response masks help detect any change in transmitter sync, antenna performance or even environmental changes, and prompt a system alert before issues arise.

Apart from RF measurements, the DVStation-Mini² DVB-T offers rigorous transport stream analysis and monitoring. As regional content insertion is deployed across geographically diverse DTT networks, the DVStation-Mini² DVB-T ensures TS integrity with its comprehensive TR 101 290 and SI table checks.

Furthermore, the DVStation-Mini² DVB-T supports SLA assurance by keeping track of bandwidth allocation, which is one of the critical data points that form the basis of most Service Level Agreements (SLA) between content providers and DTT network operators.

Other features include video thumbnails for MPEG-2 and H.264 video streams in SD and HD for confidence monitoring, On-air Content Validation (OCV) and DVB-H options. OCV allows automatic identification of discrepancies between the expected baseline and actual broadcast content.

With comprehensive visibility into QoS monitoring from the physical to the content layers, the DVStation-Mini² DVB-T helps operators in DTV transition stay ahead of the game and drive results to the fore.

Tech Talk
Validate Content with OCV

Detected Errors

- Incorrect service name
- Missing service
- Unexpected service
- Wrong service category
- PMT PID
- Conditional access
- Component count
- Missing component
- Unexpected component
- Component category
- Component language
- Age rating

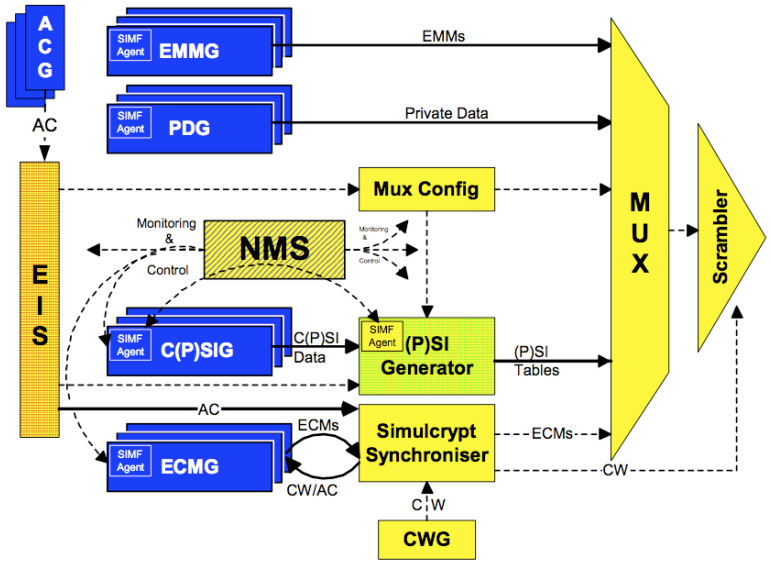
Content, what is seen and heard by the subscriber, can make or break viewer experience. Yet, many monitoring solutions available in the market today tend to neglect this layer, more accurately reflected as the true application layer. On-air Content Validation (OCV), as the name suggests, is a powerful application that automatically identifies discrepancies between the expected baseline and actual broadcast content: missing or extra services, incorrect service names, loss of subtitles, wrong language and incorrect age-rating.

Instrumental in monitoring and verifying transport stream structures, channel lineup and service composition, OCV checks the transport stream structure against a reference snapshot. This helps ensure that the metadata accompanying the video and audio services are set up properly in order for the receivers to access the content itself. For example, before news content with foreign language audio and subtitles leave the headend, operators can ensure that the expected audio and subtitles accompany the particular content.

Another vital discrepancy OCV identifies is age-rating. Constantly keeping an eye on the parental-guidance code issued by broadcasters, OCV triggers instant notification whenever unexpected values are encountered, or the channel plan does not match the configured set. Expected values are user-configurable and can range from an invalid value (at zero) to a minimum age required to view the content, all of which can be set very easily via the user-friendly GUI.

Utilizing the EIS<>MUXCONFIG interface in a digital headend, the On-Air Content Validation configuration can be set up automatically by an EIS<>MUXCONFIG-compliant encoder. In charge of distributing schedule information within the headend, the Event Information Server (EIS) ensures that Program Specific Information (PSI) from the PSI/SI generator is up to date by issuing updates using the MUXCONFIG component.

On-air Content Validation (OCV) is available on all Pixelmetrix platforms for optimal viewer experience.



DVStation

DVStor²

DVShift

DVPROBE

ECP

Monitoring Line Up

The **DVStation** is a single self-contained monitoring station that can analyze thousands of parameters within hundreds of digital television signals. Through the use of plug-in modules and parallel processing, it can monitor all these parameters real-time, simultaneously and continuously.

The **DVStation-Remote** is a compact version of the flagship DVStation, ideal for smaller-sized facilities. Consisting of one to four book-sized Pod modules and a single 1U rack-mounted Remote Controller, the system is operated through a LAN or dial up telephone, allowing database or user access from a personal computer.

The **DVStation-Mini²** provides a compact and cost-effective way for terrestrial, cable and satellite operators to maintain visibility of network quality and performance. It offers comprehensive TS monitoring and is optimized for remote site deployment.

The **DVStor²** is an ASI/IP self-contained, recording and playback system. In addition to the standard Record and Playback functions, the new Delay feature makes it perfect for Disaster Recovery or Network Delay. It also offers one of the highest storage densities in the industry. RAID-6 and redundant power supplies further protect archived content.

The **DVShift** is ideal for delayed rebroadcast across time zones and provides stable, user-programmable delays from seconds to days. It is a great improvement over the conventional approach of utilizing separate audio/video delay equipment which simply does not work with the advent of multi-channel audio, multiple subtitles or closed captioning, and especially so with multimedia content such as MHP.

The **DVProbe-S2** is a compact, future-proof monitoring solution for satellite networks, while the **DVProbe-C** is developed for CATV networks, and connects directly to the QAM RF cable network.

The **DVStation-Pod** is a low-cost tool that can analyze and troubleshoot digital broadcast signals. Lightweight and portable, it easily slips into a tool case. DVStation-Pod borrows most of the advanced features of the DVStation, including its extraordinary user-friendly interface, on-board transport stream capture, internal playback and analysis, as well as error and measurement logging.

IPTV Solutions

The **DVStation-IP³** offers a one-stop monitoring engine for IP and Transport Stream Analysis, detailed service visualization and IP Headend Output verification for IPTV networks. It provides, on all services, MPEG-2 and H.264 main profile thumbnails, Media Delivery Index (MDI) which allows packet loss and jitter measurements as well as video presence, freeze or blackout displays.

The **Electronic Couch Potato™ (ECP)** is a "programmable test robot" deployed after the STB. It uses a built-in IR controller and analyzes the decoded signal to fully and truly evaluate the report the end users' experience for delivered video services.

The **DVStorIP-Gen** is a high-performance, cost-effective tool for the evaluation, compliance testing and verification of networks, monitoring and equipment analysis.

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