Sensor

Get Ready for Next Generation TV

Issue 84 - January 2011

HIGHLIGHTS
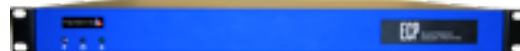
▸ Electronic Couch Potato™ (ECP)

▸ DVProbe-S2

▸ DVStation-Mini² TSP Lite

▸ DVStation-Mini² VSB

▸ Tech Talk
  - SNMP Consolidation

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   April 11-14, Las Vegas
   Booth SU7813

For True Viewer Experience
Electronic Couch Potato^{TM}

Concerned with channel availability, true channel change time, channel performance from end user's perspective, and getting the right content on the right channel?

Begging to turn that customer's frown into a grin? We have the solution for you - the Electronic Couch Potato™ (ECP).

Unlike traditional service analysis performed to only check the service health, the ECP evaluates signals ready to be consumed by a subscriber: signals out of the STB.

Read on...

For True Viewer Experience
Electronic Couch Potato^{TM}

The ECP connects after the STB and provides feedback on various service quality parameters to a central site. It can emulate an end-user changing channels on a STB via a built-in infrared (IR) transmitter. As a programmable test robot, it provides feedback on various service quality parameters from a remote end point of the content delivery chain to a central Consolidator. This flexibility means numerous, customer-specific applications, such as the **Automated Channel Package Audit** and **Parental Control Audit**, can be quickly developed and easily implemented.

With valuable insight into viewer experience, television operators can optimize service delivery and minimize end-user problems while controlling OPEX.

Since its launch, the Electronic Couch Potato has been power-packed with new enhancements.

Automated Channel Package Audit

Multi-channel operators must prove to content owners that the correct channels appear in the correct tiers, yet challenges abound. As multi-region networks with central headends and channel options multiply, error-prone manual scanning is tedious and ineffective.

Automated Channel Package Audit performs automatic, unattended verification of channel packages, eliminating the need for time-consuming manual audit. The ECP, deployed at a central or regional headend, continuously scans through all channels and confirms the availability of subscribed-to channels.

For True Viewer Experience
Electronic Couch Potato^{TM}

Parental Control Audit

You can lock the set of X-rated DVDs from your kids in the cabinet, but how would you lock a channel? With Parental Control Audit, the ECP can now provide automatic verification of parental controls on adult channels.

Set to scan through the channels, the ECP first checks for a locked screen message on adult channels, then verifies the correct playout with a PIN code input via the IR controller.

Product of the Year Award

The Electronic Couch Potato outshined competitors with its unique solution set that benefits the end users and the operators. Despite the stiff competition, the ECP clinched the Highly Commended Product of the Year Award for Best Monitoring & Network Management Solution from Cable & Satellite International at IBC 2010.

New Decade Enters, New Probe Blooms
DVProbe-S2 Features Contribution Monitoring for Satellite Network

The tug of war between efficiency and complexity is not new. With the prevalence of DVB-S2, satellite operators embrace the ability to utilize their transponders more efficiently, but they wince at the increased complexity of monitoring transmissions.

Coming to their rescue, Pixelmetrix presents DVProbe-S2, a compact yet powerful solution for monitoring digital satellite transmission.

As a future-proof satellite downlink monitoring solution, the DVProbe-S2 decodes advanced modulation formats in DVB-S/S2 networks and performs in-depth transport stream analysis and monitoring. Moreover, it supports DVB-S2, DVB-DSNG and DVB-S modulations as well as H.264 SD/HD services.

One key feature is remote downlink monitoring. The DVProbe-S2 offers visibility into contribution links at remote downlink centers, with comprehensive RF integrity and in-depth TS analysis checks. It also provides signal integrity measurements of individual transponders on the L-Band feed in parallel with TS monitoring.

Satellite truck monitoring is another vital feature, enabling DVProbe-S2 to seek and monitor ad-hoc connections effectively, verifying RF and TS integrity.

The DVProbe-S2 provides continuous, real time measurement, SNR and MER symbol rate offset and center frequency offset measurements are available. Other checks performed include bit error ratio measurement, carrier level measurements and detection of short duration losses of FEC lock.

New Decade Enters, New Probe Blooms
DVProbe-S2 Features Contribution Monitoring for Satellite Network
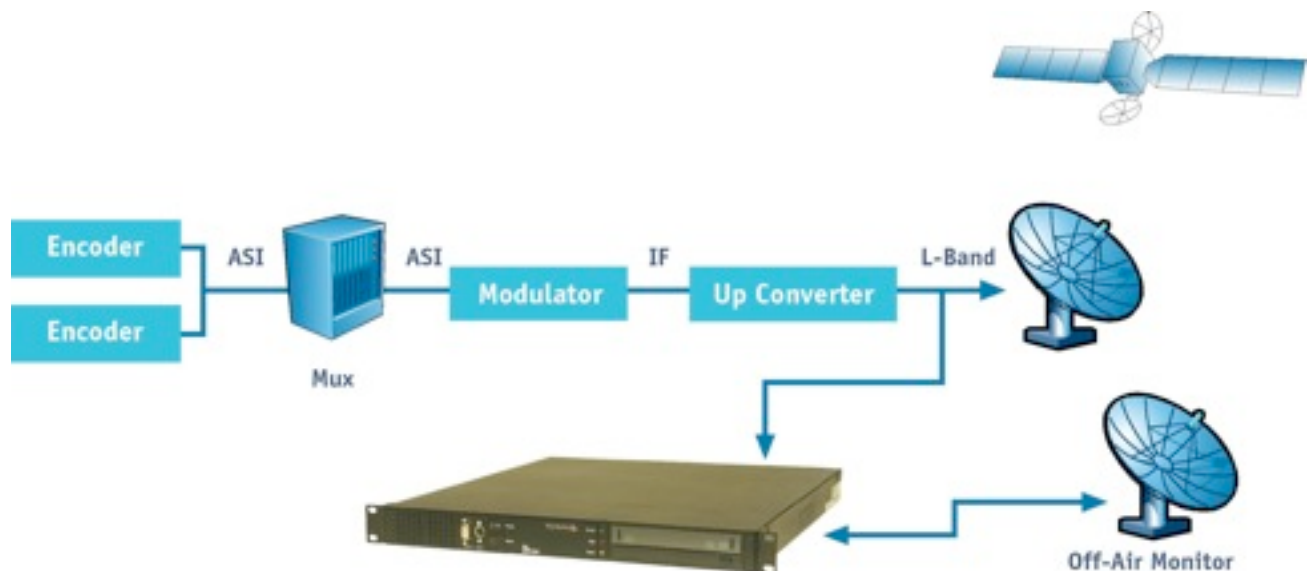
Key Features At a Glance:

- Both pilot and no pilot mode
- Modulation fidelity analysis via SNR and MER
- Constellation visualization
- Long-term logging of all measurements
- Multiple configuration profiles and round-robin scheduler for monitoring multiple transponders

In order to simplify and clarify issues for broadcast engineers, visualization is indispensable. A high-resolution graphical display of the constellation scatter plot enables the engineer to classify noise impairments such as Gaussian and phase noise.

Multi-user remote access, over LAN, internet or modem connection, is also available. Even if you are out for a lunch break, leave it to the DVStation Alarm sub-system to trigger actions on errors such as log entries, audible alarms, SNMP traps, contact closures, transport stream recording and user-programmable actions.

Satellite operators echo the need to measure signal integrity – DVProbe-S2 responds. With remote downlink and satellite truck monitoring, DVProbe-S2 helps operators ease the transition to DVB-S2 by effectively performing RF and TS integrity checks.
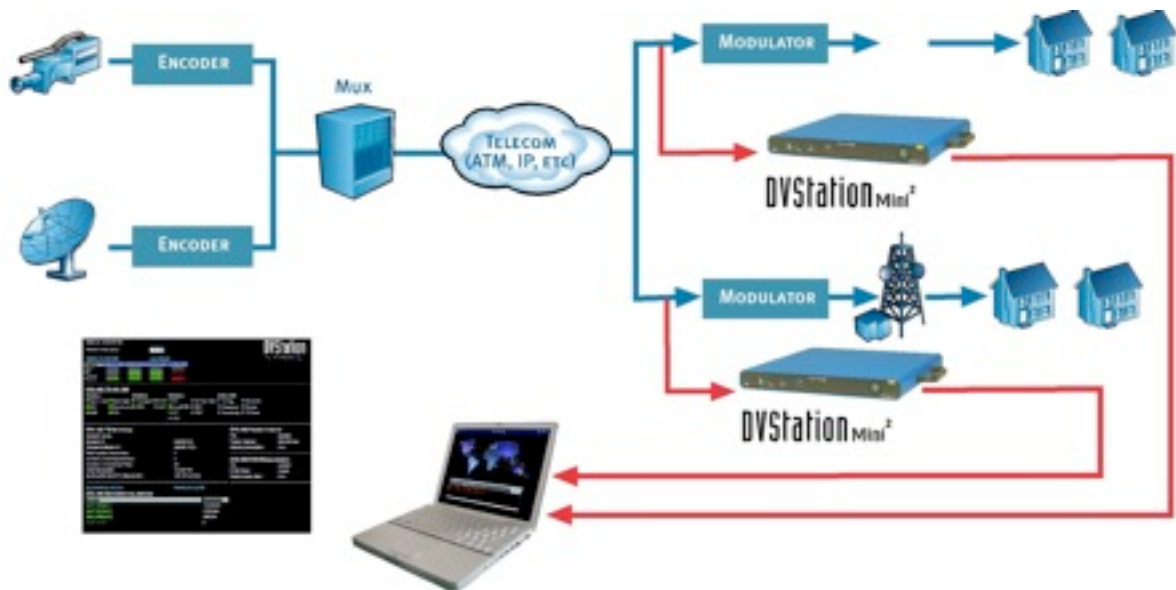
100% Monitoring for Less
DVStation-Mini² TSP Lite for Terrestrial & Cable Network Monitoring

It's no longer necessary to sacrifice quality for cost or vice versa. Now, with the advent of DVStation-Mini² TSP Lite, terrestrial and cable operators summoning "less for more" can rest assured.

For terrestrial operators, DVStation-Mini² TSP Lite is a flexible and compact transmitter ingress monitoring solution with in-depth transport stream analysis.

For small-scale content providers, DVStation-Mini² TSP Lite can verify service level agreements, ensuring validity of feed for all transmissions.

With a wide support of video encoding standards, particularly H.264 SD and HD video streams, the DVStation-Mini² TSP Lite allows capturing a segment of the live transmission for later analysis. Just as it is vital to test the compliance of signals before it is aired, broadcasters could use post-analysis to prevent similar errors from repeating in the future.

The DVStation-Mini² TSP Lite can also check for erroneous content on air. The optional On-Air Content Validation (OCV) automatically identifies discrepancies between the expected baseline and actual broadcast content, whether they are missing services, extra services, incorrect service names, loss of subtitles, wrong language or incorrect age rating.

Like other members of the DVStation-Mini family, the DVStation-Mini² TSP Lite displays video thumbnails and critical audio and video parameters in a concise and clear format. A simple user interface minimizes the learning curve, while its robust software allows users to drill down to examine errors.
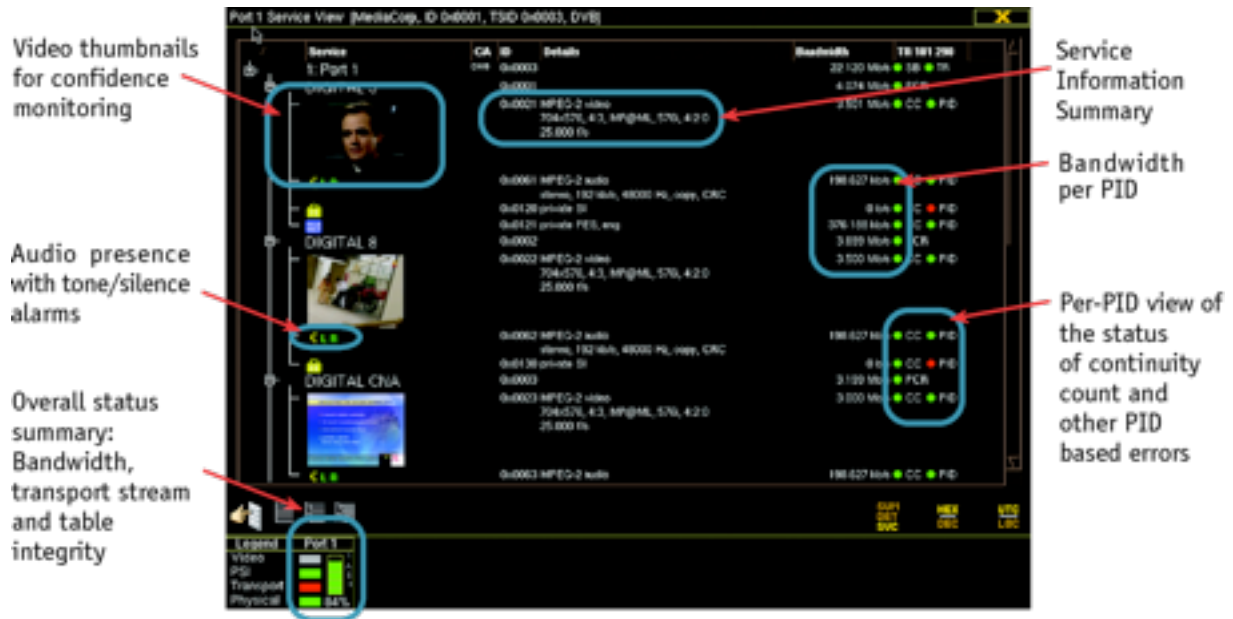

More importantly, the DVStation-Mini² TSP Lite allows operators to ensure and optimize service quality at an affordable cost. As a self-contained solution, DVStation-Mini² TSP Lite eliminates the need for additional hardware.

100% Monitoring for Less
DVStation-Mini² TSP Lite for Terrestrial & Cable Network Monitoring

Terrestrial operators and cable content providers can rely on the DVStation-Mini² TSP Lite to optimize TS monitoring while saving cost.

Illuminating the Terrestrial Broadcast World
DVStation-Mini² VSB for ATSC DTV Terrestrial Broadcast Network

Ensuring signal quality and content integrity are operators' primary concerns. Pixelmetrix ushers in the DVStation-Mini² VSB, an end-to-end preventive monitoring solution specifically for ATSC DTV terrestrial broadcast networks.

This solution encompasses both 8VSB modulation quality monitoring as well as transport stream analysis. Between the two input ports it hosts, the RF input is where the signal demodulation can be performed. As for transport stream analysis, it can be carried out on RF and ASI/SMPTE-310 input ports simultaneously.

What essentially make the DVStation-Mini² VSB the ideal system for operational monitoring and troubleshooting are the RF measurements and rich graphical displays. 8VSB analysis includes RF level, signal quality, symbol rate accuracy and frequency, and BER. A graphical display shows actual constellation points in the I/Q plane, with RF measurements integrated into the DVStation-Mini² on-screen status-at-a-glance display.

Illuminating the Terrestrial Broadcast World
DVStation-Mini² VSB for ATSC DTV Terrestrial Broadcast Network
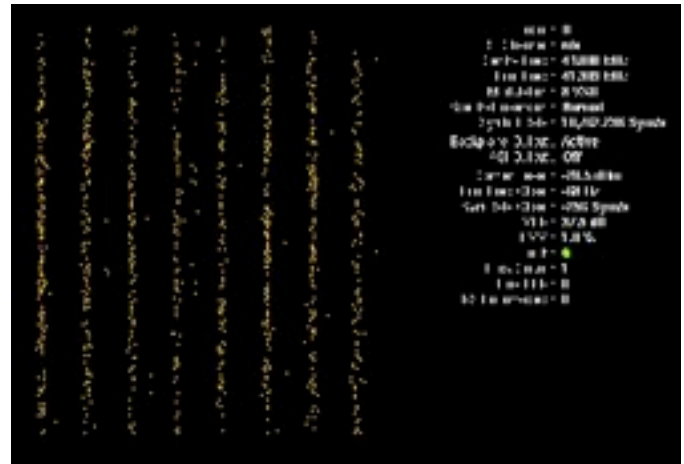
Alarms and remote access are incorporated to offer operators more flexibility. User-definable alarms allow RF, modulation and transport stream parameters to be monitored unattended by triggering actions, while multi-user remote access is available for all configuration parameters and SNMP NMS.

Another highlight is the real-time transport stream monitoring. Tests include:

- Transport stream health check
- Bandwidth of service and individual PIDs
- PCR jitter
- Automatic On-Air Content Validation
- EIT display monitoring
- Stream capture

Along with RF and TS monitoring, EIT completes this solution for terrestrial broadcasters. As the DVStation-Mini² VSB checks for the specific minimum repetition rate and the structural integrity of each EIT table, it analyzes tables for overlaps or gaps between the program entries as well as stale program entries.

To sum it up, the DVStation-Mini² VSB is simple, reliable and affordable. Be the first to spot errors and resolve them.

Tech Talk
SNMP Consolidation for Simple Monitoring & Management

To deliver the best viewer experience for the audience, television operators must minimize end-user problems. However, with an increasing number of alarms scattered across regions, network monitoring is more complex than ever before, especially true for chasing configuration and fault issues in a system that is large, deep and complex.

Fortunately, an SNMP-managed network can empower operators to consolidate all fault issues at one central site. SNMP, short for Simple Network Monitoring Protocol, is the common protocol of remote network monitoring and configuration that enables SNMP managers to communicate with agents running on network devices from multiple vendors.

How SNMP communicates is that it enables centralized managers to first obtain data from agents and then transmit read-write data back to the agents.

To acquire information from an SNMP agent, the SNMP manager employs three commands:
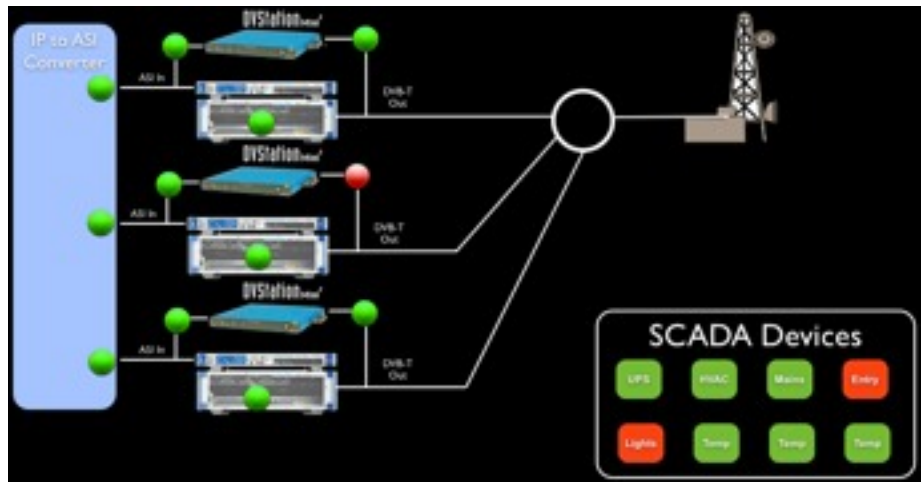
1. Get – obtains data from agents on SNMP devices
2. Set – changes the values of variables stored within the device and return the data to the agents
3. Trap – reports parameters on unsolicited events, such as in cases of failures, that occur on the SNMP device. These unsolicited notifications are known as SNMP traps.

What defines all these data in the SNMP-compliant devices is a specific text file called Management Information Base (MIB), which is a group of management objects shared between the NMS and the network element. The MIB assigns readable labels to Object Identifiers (OID) so that the manager can decode SNMP messages into readable forms.

The main advantage of using SNMP is that as a standard for data delivery, SNMP reduces the complexity of managing different types of devices. In a real-time environment like broadcasting that demands constant monitoring, it is of vital importance to use tightly integrated devices in order to detect failures instantly. An SNMP-managed network allows operators to pinpoint the fault quickly at the precise location and dispatch the engineers right away to repair or replace the failed module.

Other advantages of an SNMP-managed network monitoring system include clear presentations of data with an intuitive graphical display; a comprehensive bitmap view of broadcast operation status allows operators to check the status of devices located anywhere in the world. Moreover, an SNMP-managed monitoring system can be configured to send notifications (email/SMS/pager) throughout the day in real time.

SNMP makes real time monitoring and reporting simple and effective from the macro-level to the microscopic display of errors. For large broadcasting facilities with a multitude of network devices, SNMP is an indispensable component for consolidating all layers of errors.

DVStation

DVStor²

DVShift

DVProbe

ECP

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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.