



DVStor-DAS 24 Bay Module

SPECIFICATIONS

DVSTOR 1U SYSTEM

CPU Platform

- Dual Core Pentium processor
- 1024 MB DDR-RAM

Auxiliary Interfaces

- VGA out, 1024 x 768 resolution
- 10/100/1000 BaseT LAN port for remote control
- 1 serial, 1 USB port
- PS/2 keyboard/mouse
- 52x Slim CDROM drive
- 100 GB - 1.5 TB

Recording and Playout Interfaces

- DVB/ASI Physical interface
- 75Ω BNC (3x) connector
- 80 Mbps Transmit rate
- 80 Mbps Receive rate
- 1 bps transmit rate resolution
- 10 ppm transmit rate stability
- 70 ns maximum transmit jitter
- 17 dB input return loss

Chassis Specifications

- 1U rack-mount
- Heavy duty steel chassis
- Dimensions
44mm(H) x 440mm(W) x 482.6mm(D)
- Weight: ~9kg

Electrical/Temperature

- 100 – 240 Vac, 50 – 60 Hz
- 80A max In-rush current
- Operating temperature: +10°C to 40°C
- Storage temperature: 0°C to 50°C

Regulatory

- CE Mark

DVSTOR 4U SYSTEM

CPU Platform

- Dual Core Pentium processor
- 1024 MB SDRAM

Auxiliary Interfaces

- VGA out, 1024 x 768 resolution
- 10/100/1000 Base LAN port for remote control
- 1 serial, 1 parallel, 2 USB ports
- PS/2 keyboard/mouse
- 52x CDROM drive
- 750 GB – 6 TB

Recording and Playout Interfaces

- DVB/ASI-C Physical interface
- 75Ω BNC (3x) connector
- 80 Mbps Transmit rate
- 80 Mbps Receive rate
- 1 bps transmit rate resolution
- 10 ppm transmit rate stability
- 70 ns maximum transmit jitter
- 17 dB input return loss

Chassis Specifications

- 4U rack-mount
- Standard: EIA 19-inch EIA (Electronic Industries Association)
- Heavy duty steel chassis
- Dimensions
Without mounting bracket:
178mm(H) x 422mm(W) x 531mm(D)
With side mounting brackets:
178mm(H) x 490mm(W) x 531mm(D)
- Weight: ~23kg (1 TB configuration)

Power Supply

- Dual ATX 300W 4U redundant power supplies

Electrical/Temperature

- 90 – 264 Vac, 47 – 63 Hz
- 5.0 A at 115 Vac, 2.5 A at 230 Vac, Max
- Operating temperature: +10°C to 40°C
- Storage temperature: 0°C to 50°C

Regulatory

- UL listed
- CE Mark

Product Structure

- Base DVStor 1U/4U

Software Options

- CCA
- USB HDD Backup option
- ASI - IP Hybrid

Hardware Options

- DVD-RW options
- IEEE-1394 Firewire option
- Direct Attached Storage (4U only)

COMPLIANCE RECORDING APPLICATION OVERVIEW

DVStor uses in-place real-time transrating of the video down to VHS quality, leaving audio and other data in the transport stream untouched. This allows for maximum compression, thereby reducing the need for costly external storage.

Content is stored in a sliding window fashion. This is in contrast with existing DTL solutions and the incumbent VHS tape stacks. When coupled with a DAS (Direct Attached Storage) option, DVStor can store media in excess of a year without the need for human intervention.

DVStor can be set up in N+1 redundant hot-standby mode for maximum reliability. With the DAS option, the dual-redundant DVStors can access a secure RAID-6 storage solution which is fail-safe with hot-swappable spare hard disks and dual-redundant power supplies.

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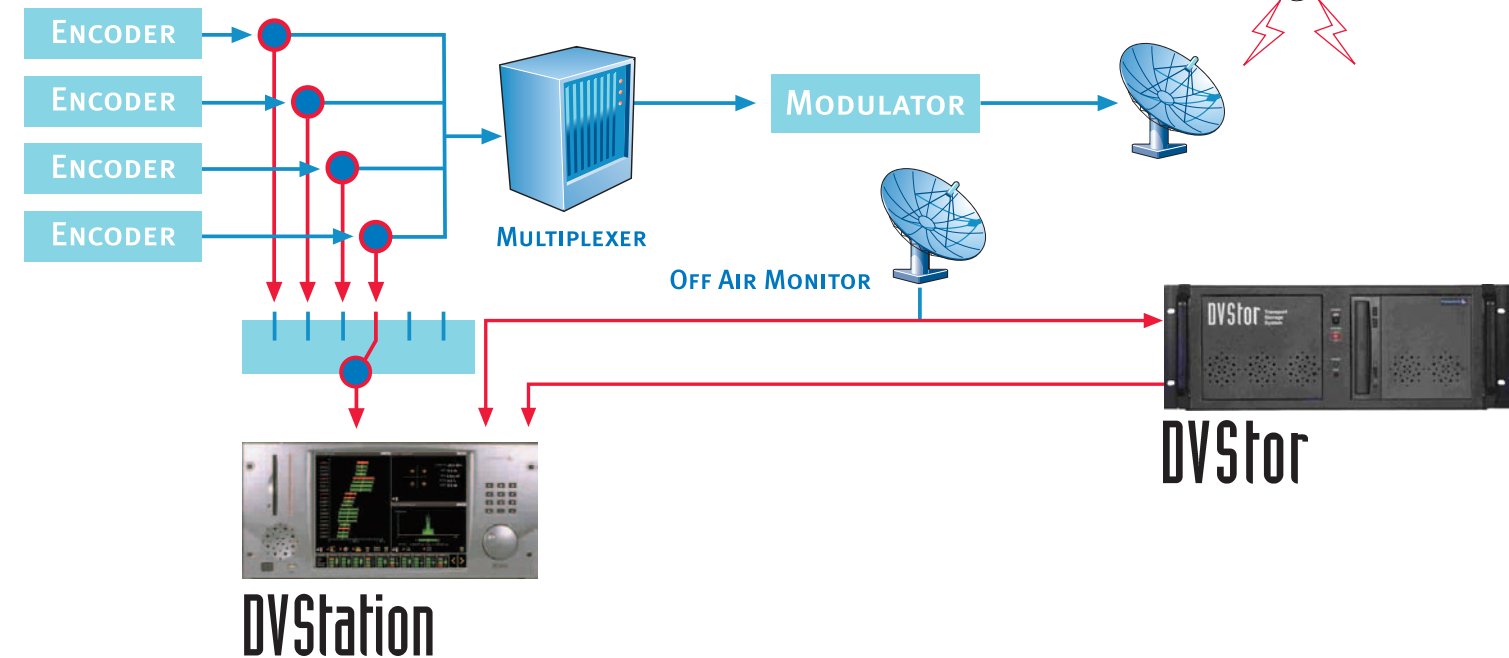
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DVStor - Compliance Recording



DVSTOR KEY FEATURES

- ASI Recording (Manual/Scheduler)
- ASI Playback (Time/File/USB HDD)
- IP Playback (Time/File/USB HDD)
- Transrating
- PID filtering (Recording/Playback)
- Daisy-chaining of DVStors
- DAS support

OVERVIEW

Broadcasters and content providers across the globe are being required to maintain all content put on-air for a time window ranging from 30 days to one year. The DVStor does away with banks and banks of VHS tape used during the time of analog broadcast, allowing a seamless solution that does not require human intervention.

DVStor records transport streams from ASI or IP inputs. The DVStor optionally transrates up to three SD services or one SD and one HD service each. With support for MPEG-2 and H.264 in SD or HD formats, transrating reduces the bit rate being used for the video stream, and hence the storage requirements for the stream.

DVStor augments the DVStation family of preventive monitoring systems by providing long-term, continuous loop recording and playback of MPEG-2 and H.264 transport streams. Ideal for applications needing more than the built-in 96 MB capture buffer available on the DVStation family, DVStor provides up to 6 TB of storage - providing almost four and a half days of continuous recording of a typical satellite transponder.

Ref: PPN30155

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The terms Preventive Monitoring, DVStation, DVStation-Remote, DVStation-Pod, DVStation-IP, DVStation-Mini, DVStor, DVStor-IP, DVStor-Gen, DVShift,

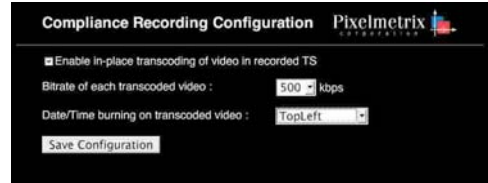
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TRANSRATING SUPPORT

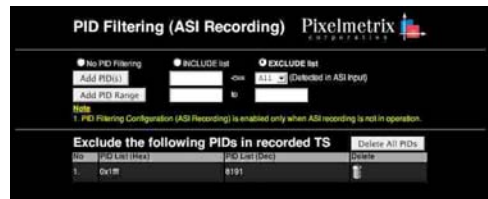
Transrating support is now standard on both the new DVStor platforms, 1RU and 4RU, at no extra cost. Transrating changes the bit rate of the recorded video stream in real-time to a user-configurable value ranging from 250 to 1000 Kbps. Up to three SD services or one SD and HD service each, can be processed simultaneously. Audio streams and metadata are maintained as is.

When transrating is enabled, the DVStor 1RU can store up to 31 days with 1.5 TB of storage, and 93 days with 6 TB of storage in a 4RU DVStor. At typical satellite transmission rates (40 Mbps), the DVStor 1RU and 4RU platforms can store up to 3 and 12 days respectively.



NULL PACKET REMOVAL

In MPEG transport systems, null packets are inserted to smoothen out the bandwidth being used by the channel. The DVStor notes the presence of null packets in the stream and removes them when recording for efficient storage space. On playback, the null packets are reinserted seamlessly.



SECURE MANAGEMENT INTERFACE

By default, DVStor constantly records all MPEG-2 transport stream traffic. Additionally, recorded segments or a subset of a recorded segment can be locked out to prevent data being inadvertently overwritten. Unauthorized access is protected by a user-password system.

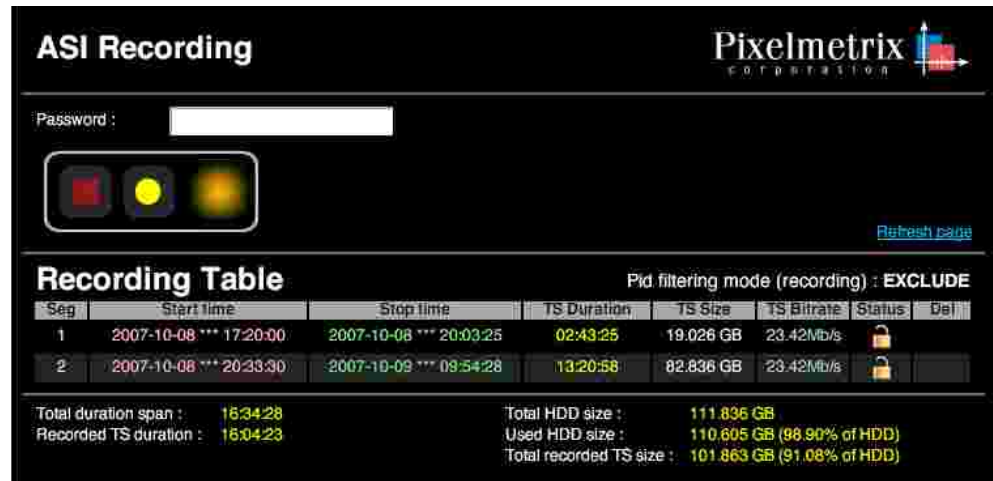
DVStor also uses a multi-level authentication system that allows administrator unlimited access and other users to access playback and retrieval functions.



RUGGED, STABLE AND EASY SET-UP

Built on a dual core Intel® Pentium®-based processing engine, the DVStor utilizes a Linux based operating platform for maximum stability with a focus on performance. The rugged industrial chassis features two hot swappable power supplies with automatic input voltage selection. RAID-6 is employed on the storage sub-system to ensure maximum redundancy with up to two hot spares available.

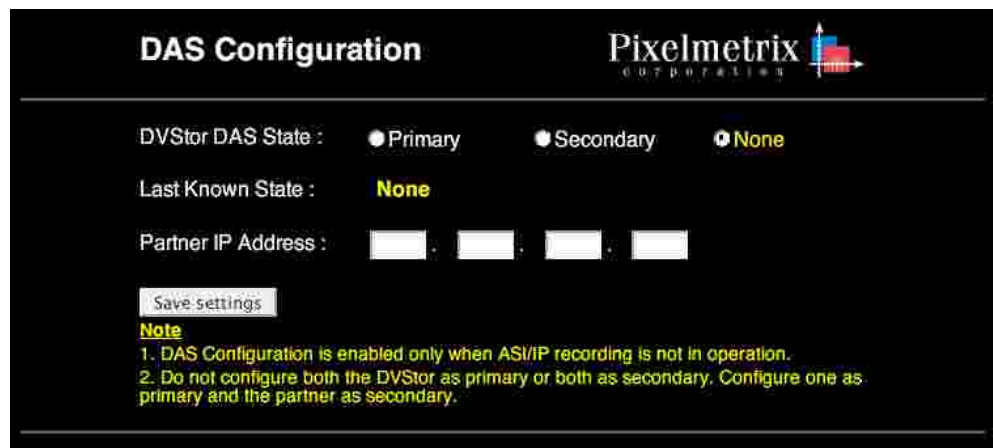
The installation and integration of the DVStor with an existing transmission monitoring system is easy. Simply connect the Ethernet and ASI cables, set the IP address and select a time sync source. That's it! Once operational, the recording and playback control is managed using the HTML interface on the DVStor.



SUPPORT FOR EXTENDED STORAGE

The DVStor also offers the capability to extend available storage by daisy chaining or supplementing with an external Direct Attached Storage (DAS) when more than 6 TB is required. Daisy chaining can be enabled on both 4RU and 1RU platforms with easy configuration settings. By specifying the recording duration and defining the IP address of the subsequent daisy-chained DVStor, recording is triggered when storage space fills up.

On the 4RU platform, optional DAS modules can be connected through an SCSI interface, with support for four modules of up to 15 TB each, for a maximum of 60 TB. With RAID-6 and redundant power supplies, the DVStor-DAS modules complement the fail-safe architecture of the DVStor 4RU platform.



TRANSPORT STREAM GAP COMPRESSION

Should the input signal be interrupted due to transport stream sync loss or loss of signal, DVStor automatically suspends recording until normal signal condition is restored. Each recording segment is identified in the user interface by its corresponding start and stop time.

REDUNDANT FAIL-OVER OPTION

DVStors can be installed in redundant fail-over configuration with a one-to-one or n-to-one setup. One fail-over DVStor can monitor a number of other DVStors, and upon failure of any one of the monitored machines, the fail-over machine will take up archival duty steadily. Playback of the content is equally seamless, regardless of whether there was a failure in the time segment.

NETWORK TIME SYNCHRONIZATION

DVStor can be synchronized with Network Time Protocol (NTP) servers in the network to allow for accurate time-stamping. Time synchronization also allows the DVStor to be controlled by other machines in the network using SNMP or other automation procedures.

SNMP SUPPORT

DVStor can be monitored using SNMP, with extensive support for SNMP v2. Recording status can be reported with SNMP traps.

DVSTATION INTEGRATION OVERVIEW

The DVStation monitoring system continuously tracks both errors and performance information of any multitude of signals. Error parameters tracked include signal loss, problems with SI tables or missing content such as lost subtitles or incorrect language components. Additionally, you can configure the system to periodically log key performance parameters such as picture quality, bandwidth, PCR jitter or even RF signal to noise ratios.

Each log entry has a time stamp identifying the exact time the problem occurred. Furthermore, time synchronization between different DVStation mainframes, whether separated by a short distance or across the world, is possible through the DVStation time code receiver. This is achieved by activating the NTP time sync service or using the optional GPS receiver.

DVStor is further integrated with DVStation through the DVStation capture system. Each port on the DVStation is equipped with a 96 MB capture buffer. Captured transport stream data can be uploaded to the DVStor for one-time or continuous playback.

If more than 96 MB of transport stream is to be captured, then DVStor can be set up to record in the event of an error - DVStor can store up to 12 days of content off a satellite transponder, for example.

FLEXIBLE PLAYOUT

DVStor can play out the recorded streams over either ASI or IP.

LIGHTWEIGHT STREAMING SERVER APPLICATION OVERVIEW

DVStor also makes a lightweight streaming server to troubleshoot video equipment. DVStor can play back any recorded transport stream. With a loop function, the DVStor can provide a continuous video source over either ASI or IP.

