

PRISM Transcoder

Transcode digital media content for compatibility with any device, anywhere



VITEC PRISM is a high-performance, real-time IP video transcoding system that enables content to be adapted to an optimal format for efficient delivery to any device within your ecosystem.

High Performance Transcoding System

The PRISM high-efficiency transcoding engine harnesses a wide range of advanced video codecs and streaming protocols for exceptional broadcast-quality output, all integrated into a 1-RU physical server that can be deployed in IT rooms, data centers or portable server racks.

A wide range of pre-processing tools — including adaptive de-interlacing, video resizing, frame rate conversion and bit-rate reduction — enables efficient delivery over LAN, WAN, Wi-Fi, CDN or the Internet to any fixed end-point or mobile device.

PRISM incorporates a built-in segmenter for the creation of bandwidth-efficient Adaptive Bit Rate (ABR) streams and is capable of generating up to 8 video profiles for a single source.

Each video stream is fully synchronized, to deliver exceptional picture quality in any network condition with dynamic, frame accurate and seamless transition between profiles on the viewer's screen.

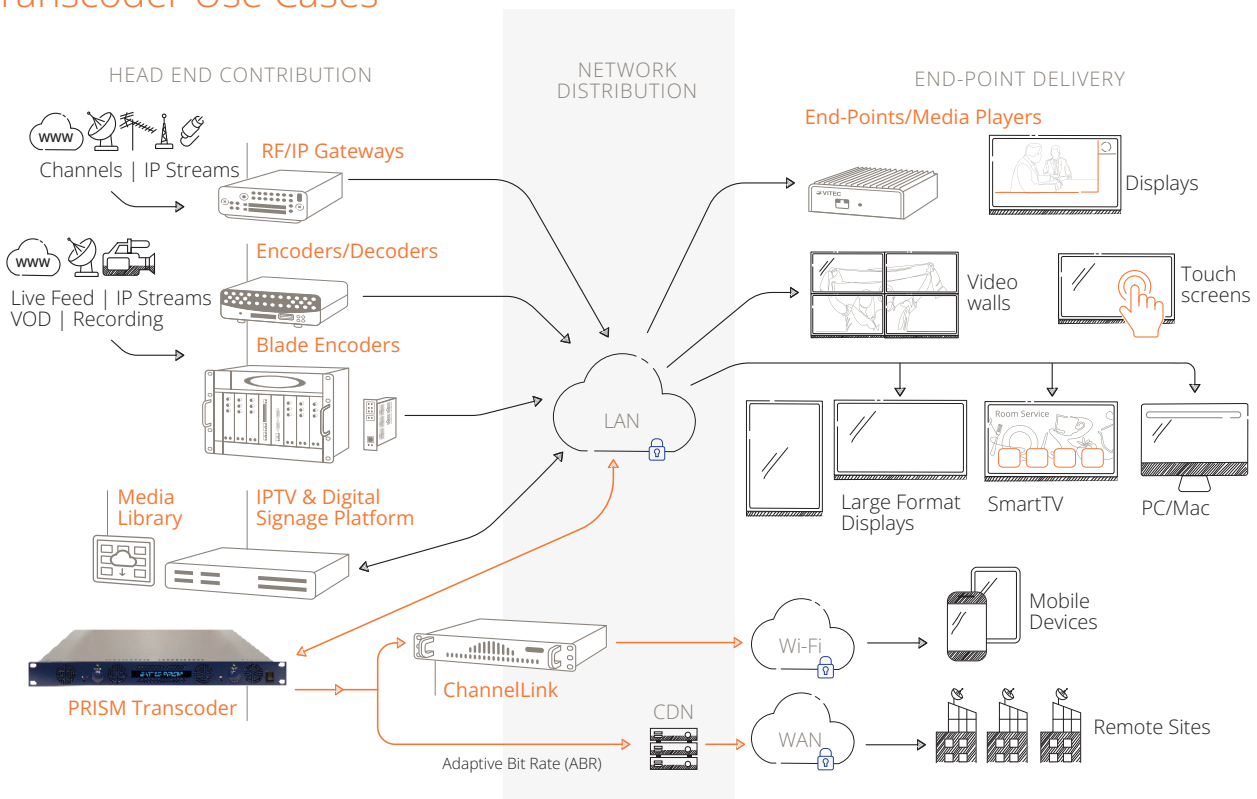
PRISM uses file-to-file transcoding to convert video files, and live transcoding to convert IP video streams. Save time and simplify video conversion by placing content in a watch folder for automatic transcoding.

PRISM also passes through KLV (Key-Length-Value) STANAG metadata, enabling government and military facilities to re-purpose incoming ISR (Intelligence, Surveillance, Reconnaissance) and FMV (Full Motion Video) content with additional compression, while maintaining CoT (Cursor-on-Target) data on the output stream.

Features & Benefits

- Enable real-time delivery of high-quality video and audio content to any device, keeping end users up-to-date and entertained, wherever they are.
- Transcode high bit rate MPEG-2 content to efficient H.264/HEVC streams, and convert newly HEVC-formatted streams to existing H.264 streams.
- Save 50% bandwidth whilst maintaining quality using the HEVC (H.265) codec, which is especially important for 4K content.
- Increase reliability with PRISM high availability and channel redundancy, providing continued availability of streams using a failover mechanism.
- Apple™ HLS, RTMP/S, SRT, UDP, RTP
- Adaptive bit rate (HLS and MPEG-DASH) with up to 8 unique profiles per channel.
- Easily distribute production-quality video from NDI®-enabled live production environments to your IPTV system and vice versa.
- Stream video to multiple screens via Over-the-Top (OTT) Web Streaming IPTV services.
- Securely stream live events to Facebook Live and reach a broader audience with RTMPS support.
- Ensure video traceability and brand your video content with customizable text, image and time watermarking.

Transcoder Use Cases



Technical Specification

Input Video Codec

- MPEG-2 SD and HD
- H.264 (MPEG-4 AVC) Up to 4K UHD (4096 x 2304)
- HEVC (H.265) Up to 4K UHD (4096 x 2304)
- Additional supported codecs: Google (VP9), H.263, MPEG-4 Part 2, WMV7/9, raw video (YUV4MPEG2), NDI® (NDI, NDI-HX)
- Chroma: Hardware decoding for 4:2:0, Software decoding for 4:2:2/4:4:4 content

Input Audio Codec

- MPEG-1 Layer II, AAC-LC, HE-AAC, AC-3, E-AC-3

Input Encapsulation & Streaming Protocols

- MPEG-2 Transport Stream (single program), MPEG Program Stream (.m2p, .ps), MP4, FLASH Video (F4V, FLV), Quicktime (.mov, .qt), WMA, WMV, NDI®
- UDP, RTP, SRT, RTSP, RTMP, RTMPS, HLS, HTTP, NDI®, NDI-HX

Video Pre-Processing

- De-interlacing
- Video resizing
- Aspect-ratio conversion or pass-through
- Frame rate down-conversion/doubling

High Availability

- Two PRISM Transcoders in a cluster provide high availability of live stream transcodes using a failover mechanism

Overlays

- Up to 15 overlay elements per stream
- Images: JPG, GIF (static) and PNG images burned into output stream (transparency supported on PNG alpha channel)
- Text: Single line text strings using any uploaded TrueType font (TTF) burned into output stream with configurable size, colour and transparency
- Clock: Single line day/date/time text string defined by <strftime> variables, display configuration same as text

Ancillary Data Pass-through

- Teletext & DVB Subtitles PIDs (configurable in UI)
- KLV/STANAG PIDs
- Closed captioning (CEA-608/708)

Video Encoding

- MPEG-2 MP@ML/HL, up to HD
- H.264 (MPEG-4 AVC), MP/HP, up to level 5.1, up to 4K/UHD (4096 x 2304)
- HEVC (H.265), Main / Main10, up to 4K/UHD (4096 x 2304)
- NDI®

Audio Encoding

- AAC-LC (Up to 8 channels, downmixed to stereo)
- Audio input Passthrough

Output Streaming Formats

- UDP, RTP, RTMP, RTMPS
- MPEG-2 Transport Stream (TS) or Flash Video (FLV)
- SRT (Caller & Listener modes)
- HLS (WebDAV)
 - Legacy TS
 - fMP4
- MPEG-DASH (WebDAV)
- HLS and MPEG-DASH certified by Akamai®
- NDI®

Transcoding Functions

- Live streams and files: scale, transcode, transrate, transpose, transcast
- Configure: output resolution, bit rate, interlacing, aspect ratio, frame rate, GOP length and structure
- Change audio sample rate
- Pass through video or audio
- Output only video or audio from a stream containing both
- Preserve or drop subtitles, closed captions or data streams
- Watch folder support with configurable email alert and dedicated log on failed transcode

Video Processing Capacity (1RU Server)

- 4K/UHD transcoding to 4K/UHD, up to 2 channels
- HD transcoding to HD, up to 16 channels
- HD/SD transcoding to SD, up to 40 channels

Management (per node)

- HTTPS device interface: recommended browser: Chrome®
- 4 x 100/1000BaseT network interfaces with teaming and redundancy options
- Flexible network port configuration enables streaming and administration interfaces to be on separate networks
- DisplayPort, 2 x USB
- SSDP device discovery
- RESTful API
- Event logging via Syslog (local and remote)
- Firmware upgrade & configuration backup/restore
- Activity Monitor enables more efficient transcode setup and monitoring and prevents overloading

Physical

- Enclosure includes two nodes
- Enclosure: Rack Mountable server, 1U high (includes mounting kit)
- Dimensions (WxHxD) 455 x 45 x 485 mm (18 x 1.8 x 19 in)
- Gross Weight 7.85 kg (17 lb)

Power

- High-efficiency (94+%) power supply
- Dual AC inlets
- AC Input: 100-240VAC, 50/60 Hz, 4.2A-2.1A
- Power consumption: 71.5W Typical, 108W Maximum

Environment

- Operating Temperature 5°C ~ 35°C (41°F ~ 95°F)
- Operating Relative Humidity 8% ~ 90% (non-condensing)

Regulatory

- TAA/NDAA compliant
- CE:
 - IEC 62368-1: 2014
 - EN 62368-1:2014+A11:2017
 - EN55032:2012 + corrigenda Aug 2012 & Dec 2012
 - EN55024:2010 + A1:2015
 - EN 61000-3-2:2014
 - EN 61000-3-3:2013
- UL/CSA:
 - UL62368-1:2014
 - CSA C22.2 No. 62368-1, Rev. February 17, 2012
- FCC:
 - FCC Part 15 Subpart B Class A

Ordering Information

- 18506 – PRISM Dual
- 18507 – PRISM Single
- 18838 – PRISM - License - High Availability option (HA)
- 19176 – PRISM - License - 8x AC-3/E-AC-3 decode