

# ViBE XT1000

## XTREAM TRANSCODER



WITH THE HIGHEST TRANSCODING DENSITY IN THE MARKET AND ANY-TO-ANY FORMAT SUPPORT, ViBE XT1000 DELIVERS SIGNIFICANT CAPEX & OPEX COST SAVINGS AND ACCELERATES TIME TO MARKET FOR OPERATORS FACED WITH FAST CHANNEL LINEUP GROWTH AND A RISE IN MULTI-SCREEN APPLICATIONS.

Now more than ever, digital TV delivery is changing at a rapid pace, with an increasing number of channels to broadcast, more formats to support and an explosion in the range of second screen devices such as tablets, smartphones and connected TVs. While currently faced with tight budget restrictions, TV operators have to tackle these challenges to continue to increase their subscriber base, develop new business in the WebTV industry and sustain average revenue per user.

To help today's broadcasters meet the challenge, Thomson Video Networks has introduced ViBE XT1000, a cost-effective transcoder for live content. The product provides high-density and scalability for traditional broadcast over cable, IPTV, DTH and DTTV as well as on WebTV/multi-screen devices.

### ANY-TO-ANY FORMAT

ViBE XT1000 receives compressed video over IP streams and transcodes audio and video content from any to any format. For video, the product supports MPEG-2, MPEG-4/AVC in SD and HD resolutions.

Additionally, a wide range of audio codecs is also addressed, including MPEG-1 LII, Dolby® Digital, Dolby® Digital Plus, AAC-LC and AAC HE-v1/v2 in mono, stereo and surround modes.

### HIGHEST DENSITY AND SCALABILITY

Leveraging on extensive experience and numerous innovations in video compression algorithms, ViBE XT1000 provides best-in-class transcoding density, with up to 180 SD or 54 HD channels in 2RU.

Designed with power consumption efficiency in mind, ViBE XT1000 supports operator business growth. Its modular architecture accommodates up to nine hot-swappable Audio/Video processing modules. One module supports 20 SD or 6 HD channels (or a mix) through per-channel software licensing.

On the benefit side, the high-density transcoder significantly reduces occupied rack space and also minimizes power consumption per transcode operation.

Its flexible Web graphical user interface facilitates the configuration and supervision of hundreds of channels transcoding simultaneously.

### BEYOND TRANSCODING

ViBE XT1000 is much more than a basic high-density transcoder. The product embeds efficient and advanced features, bringing added value to your system.

By way of example, the transcoder allows the insertion of user-defined text and logos. It also provides manual and automatic loudness control on transcoded audio channels.

For satellite, terrestrial and cable applications, ViBE XT1000 supports internal statistical multiplexing in order to meet end-user demand for video quality while optimizing bandwidth.

For WebTV applications, ViBE XT1000 supports adaptive bitrate encoding. Video can be delivered to an external packager or internally scrambled and packaged (Apple HLS, Microsoft HSS and MPEG-DASH formats supported).

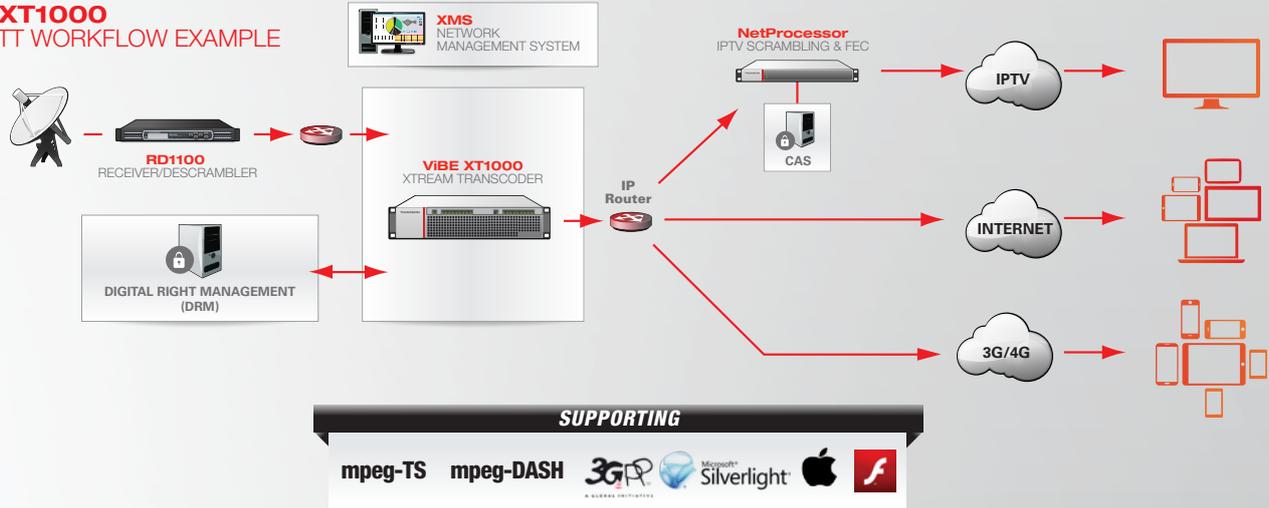
### DESIGNED FOR RELIABILITY

Built on a highly resilient 2RU platform equipped with hot-swappable redundant components (PSU, fans, and IP switch) and powered by the Thomson MediaFlex<sup>OS</sup> video operating system, ViBE XT1000 provides load balancing and internal failover capabilities. Service downtime is minimized in the event of a module replacement or firmware upgrade.

## KEY FEATURES

- › Scalable high-density live transcoding
  - Up to 54 HD channels
  - Up to 180 SD channels
- › Any-to-any video format
  - MPEG-2 (HD and SD)
  - MPEG-4 AVC (HD, SD and low res)
- › CBR, VBR/statistical multiplexing and ABR
- › HD/SD down and up conversion
- › Logo and text insertion
- › Any-to-any audio format
- › Audio down-mixing
- › Automatic Loudness Control
- › MPEG transport stream input/output
- › RTMP, HLS, HSS and MPEG-DASH outputs
- › Highly resilient platform
  - Internal failover powered by MediaFlex<sup>OS</sup>
  - Redundant components (PSU, fans, etc)
  - Hot-swappable components
  - Field upgradability
- › Low power footprint

**ViBE XT1000**  
IPTV/OTT WORKFLOW EXAMPLE



**SPECIFICATIONS**

**Video Features**

- Any-to-any video transcoding
- Up to 54 HD or 180 SD channels

**Video Encoding**

- › MPEG-2 MP@ML
- › MPEG-2 MP@HL
- › MPEG-4 AVC BP@L3
- › MPEG-4 AVC MP@L3
- › MPEG-4-AVC HP@L4

**Video Processing**

- › Picture resizing (up/down)
- › Picture cropping/clipping
- › Aspect ratio conversion
- › Smart de-interlacing
- › Logo overlays
- › Crawling text overlays

**Video Decoding**

- › MPEG-2 MP@ML
- › MPEG-2 MP@HL
- › MPEG-4 AVC MP@L3
- › MPEG-4-AVC HP@L4

**Resolutions and frame rates**

- › Up to 1920x1080i@30fps
- › Up to 1280x720p@60fps
- › Min. resolution: 64x64 pixels
- › 2x2 pixel step resolution
- › Frame rate from 5 to 60 fps

**Audio Features**

- Any-to-any audio transcoding
- Stereo & multichannel supported
- Audio pass-through supported

**Audio Encoding**

- › MPEG-1 Layer II
- › AAC-LC, HE-AAC V1/V2
- › Dolby® Digital
- › Dolby® Digital Plus

**Audio Processing**

- › Re-sampling (8 to 48 kHz)
- › Stereo/mono conversion
- › Surround down-mixing
- › Static gain adjustment
- › Automatic Loudness Control (EBU R128 and A-weighting)
- › Delay adjustment

**Audio Decoding**

- › MPEG-1 Layer II
- › AAC-LC, HE-AAC V1/V2
- › Dolby® Digital
- › Dolby® Digital Plus

**Advanced Features**

- Broadcast Subtitles**
- › DVB subtitle pass-through and burn-in
- › Teletext pass-through
- › Closed Caption pass-through

**WebTV Subtitles**

- › WebVTT
- › DFXP
- › SMPTE-TT

**Ad Insertion**

- › SCTE-35 pass-through
- › ESAM compliant

**WebTV Content Protection**

- › AES scrambling
- › Apple HLS encryption
- › Microsoft PlayReady DRM

**Input/Output Formats**

**Live Input**

- › MPEG-2 TS over IP (RTP or UDP)
- › Multicast or unicast
- › IGMPv2 and v3
- › MPTS or SPTS
- › Constant and variable bitrate

**Broadcast Live Output**

- › MPEG-2 TS over IP (RTP or UDP)
- › Multicast or unicast
- › MPTS or SPTS
- › CBR and VBR
- › Internal statistical multiplexing

**WebTV Live Output**

- › ABR encoding support
- › MPEG-2 TS over IP (with EBP)

- › Adobe RTMP

- › WebTV packaging
- Apple HLS
- Microsoft HSS
- MPEG-DASH

**Physical Interface**

- › Built-in redundant IP switch with
- 1+1 GigE ports for supervision
- 2+2 10GigE optical ports for media
- 4+4 GigE ports for media

**Physical Characteristics**

- › 2RU x 19" (H x W x D)
- 88.1 x 483.4 x 580.2 mm
- 3.5 x 19 x 22.8 inches
- › 21 kg max. (46.2 lbs)
- › Hot-swappable Dual AC PSU
- › Hot-swappable fans
- › Hot-swappable AV processing modules
- › Hot-swappable IP switches

**Environmental Conditions**

- › Operating temperature: -5° to 55°C (23° to 131°F)
- › Relative operating humidity: 5% to 93% (non condensing)
- › Storage temperature: -40° to 85°C (-40° to 185°F)
- › Relative storage humidity: 5% to 93% (non condensing)

**ORDERING INFORMATION**

**Base System**

**XT1000-2U-AC**

- › XT1000 platform with dual PSU, IP input/output. Ready to host up to 9 A/V processing modules.

**Hardware Option**

**XT1000-OPT-AVP**

- › Audio/Video processing module. Supports 20 SD channel or 6 HD channel transcoding.

**Video Licenses <sup>(1)</sup>**

**XT1000-LIC-DEC-HD**

- › One HD channel decoding

**XT1000-LIC-DEC-SD**

- › One SD channel decoding

**XT1000-LIC-ENC-HD**

- › One HD channel encoding

**XT1000-LIC-ENC-SD**

- › One SD channel encoding

**XT1000-LIC-ENC-LR**

- › One low res. channel encoding

<sup>(1)</sup> Both MPEG-2 and MPEG-4/AVC formats are supported

**Audio Licenses**

**XT1000-LIC-DEC-AUD20**

- › One MPEG-1 LII/AAC stereo decoding

**XT1000-LIC-DEC-DD20**

- › One DD or DD+ stereo decoding

**XT1000-LIC-DEC-AAC51**

- › One AAC surround decoding

**XT1000-LIC-DEC-DD51**

- › One DD or DD+ surround decoding

**XT1000-LIC-ENC-AUD20**

- › One MPEG-1 LII/AAC stereo encoding

**XT1000-LIC-ENC-DD20**

- › One DD or DD+ stereo encoding

**XT1000-LIC-ENC-AAC51**

- › One AAC surround encoding

**XT1000-LIC-ENC-DD51**

- › One DD or DD+ surround encoding

**Licenses for**

**Advanced Features**

**XT1000-LIC-ALC20**

- › Automatic Loudness Control for one audio stereo

**XT1000-LIC-ALC51**

- › Automatic Loudness Control for one audio surround

**XT1000-LIC-FLX**

- › Internal statistical multiplexing for one video output

**XT1000-LIC-SCR-OTT**

- › OTT encryption for one WebTV output (HLS, HSS, MPEG-DASH)

**PROFESSIONAL SERVICES**

Our professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock; system planning, design, and commissioning; professional training courses; and technical maintenance programs and service agreements.

**THOMSON**

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