THOMSON
▶ *VIDEO NETWORKS*

ViBE EM4000
MULTICHANNEL MPEG-4 HD BROADCAST ENCODER

THE COMPRESSION PERFORMANCE OF THE VIBE EM4000, WHICH INCORPORATES A NEW GENERATION OF THOMSON MUSTANG COMPRESSION TECHNOLOGY, ALLOWS FOR SIGNIFICANT OPERATIONAL COST
SAVINGS THROUGH BETTER USE OF BANDWIDTH, WHILE DELIVERING A PREMIUM VIEWING EXPERIENCE.

Thomson Video Networks boasts a long tradition of manufacturing premium, high-quality video compression products (ViBE encoder line). The company provides its customers with top-notch expertise, thanks to the use of the most advanced compression technologies available, combined with nearly 20 years of know-how in encoder algorithm optimization.

At the heart of the ViBE EM4000 is a decupled processing engine empowering Mustang 2.0, the next evolution of compression algorithms from Thomson Video Networks.

The Thomson Mustang 2.0 increases HD MPEG-4 AVC encoding efficiency thanks to improved motion estimation, refined multi-pass encoding and advanced pre-processing. The Mustang algorithm also benefits from the technical experience accumulated by Thomson Video Networks over the years, and thus provides the latest encoding solutions.

The ViBE line is perfect for satellite and terrestrial broadcast applications, as well as various other kinds of content aggregation.

PICTURE PERFECT VIDEO DELIVERY

Providing the most advanced video compression solution on the market today, the ViBE EM4000 encoder is the new benchmark in HD MPEG-4, video encoding and audio compression. Additionally, it is designed to receive 3G video (SMPTE 424M and 372M).

Combining compression efficiency and advanced pre-processing, the ViBE EM4000 delivers clearer pictures with increased depth and clarity. As a result, the user can deliver video content across all networks in a way that sustains the viability of one's business model, letting the audience enjoy a premium viewing experience.

The audio encoding features of the ViBE EM4000 encoder are equally impressive. With integrated Dolby Digital Plus 5.1 surround sound encoding, it is possible to deliver audio that matches the high quality of the video. In addition to Dolby Digital Plus, the ViBE EM4000 encoder features the latest AAC audio compression for ultra-low bandwidth utilization.

SIMPLIFIED AND EVOLVING HEADENDS

Thanks to advanced integrated features, the ViBE EM4000 helps reduce the headend footprint, and simplifies operations. With the first versions, the ViBE EM4000 provides two or four HD channels per rack unit including eight multichannel (5.1) audio services and Dolby E to Dolby Digital transcoding.
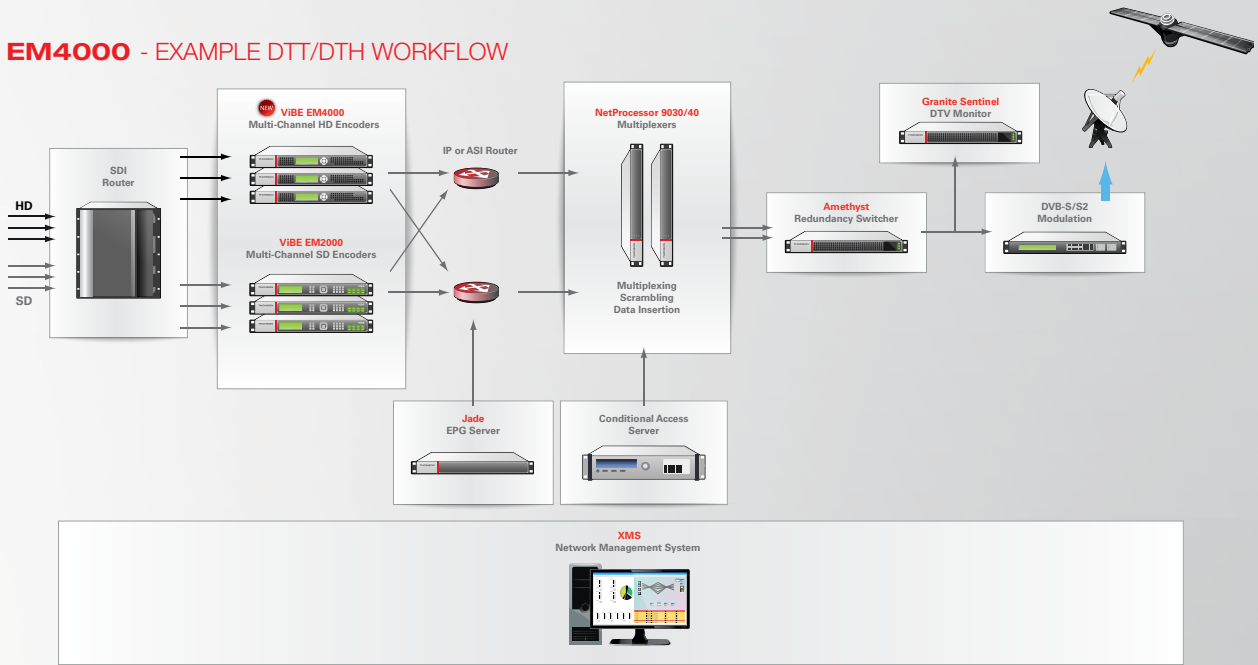In addition, it benefits from an optional dual power supply.

The ViBE EM4000 encoder is built on a future-proof platform dedicated to content and format evolution.

The ViBE EM4000 allows to save power thanks to front-to-back cooling air flow and less than 70W per channel power consumption (quad channel model).

KEY FEATURES

› Superior HD MPEG-4 video compression based on professional compression architecture.

› Advanced pre-processing, including motion-compensated filtering.

› Future-proof platform for easily adding features.

› Up to 4 HD channels premium encoding per RU

› Unmatched support for multi-channel audio compression.

› Dolby Digital, Dolby Digital Plus and AAC/HE-AAC Support.

› 3G capable input.

› WAN + LAN statistical multiplexing with Thomson Flextream™ technology.

› Control, monitoring, and redundancy via Thomson Video Networks XMS™ Management System.

› Dual power supply (option).

ViBE EM4000 - EXAMPLE DTT/DTH WORKFLOW

SPECIFICATIONS

Video and Audio Input
› Dual or quad HD-SDI (SMPTE 292M) serial digital video, featuring frame synchronizer to cope with unclean input switching
› Dual 3G-SDI ready (SMPTE 424M/372M)

Outputs
› MPTS and multi SPTS (IP streaming)
› Dual Gigabit Ethernet interfaces
› Advanced Pre-Processing
› Pixel based motion compensated noise reduction
› 2D Smart adaptive filtering for very low bitrate applications
› Cut, fade, and flash detection

Video Encoding
› MPEG-4 AVC:
  — High Profile@Level 4
  — Main Profile@Level 4
› CBR, VBR, or capped VBR (seamless bitrate changes)
› Video formats:
  1080i@ 25 Hz
  1080i@ 29.97 Hz
  720p@ 50 Hz
  720p@ 59.94 Hz

Ancillary Data Processing
› AFD
› HD teletext subtitling (OP47)
› Closed captioning and extended data service
› VITC and D/VITC

Audio Encoding
› MPEG-1 Layer II, 32 to 192 kbps
› Dolby Digital 2.0: 96 to 448 kbps
› Dolby Digital 5.1: 384 to 640 kbps
› Dolby Digital Plus 5.1: 192 to 448 kbps
› AAC-LC/HE-AAC/HE-AACv2 2.0: 32 to 128 kbps
› AAC-LC/HE-AAC 5.1: 96 to 448 kbps
› Dolby E to Dolby Digital transcoding
› Dolby E to Dolby Digital Plus transcoding
› Dolby Digital or Dolby Digital Plus pass-through with error masking

Control and monitoring
› Via XMS™ management system including N+P redundancy
› Embedded Web server
› SNMP agent
› Front panel

Physical Characteristics
› 1 RU x 19"
› Power consumption: 200-270 W
› 100-240V AC input voltages
› Optional Dual Power supply
› Environmental Conditions
› Operating temperature: 5° to 40°C (41° to 104°F)
› Storage temperature: -10° to 70°C (23°to 113°F)
› Maximum humidity: 90% HR

Compliance
› CE marked in accordance with the 93/68/EEC (22/07/93) directive
› Safety: IEC 60950 and EN 60950, UL 60950
› EMC: EN 55022, EN 55024, EN61000-3-2

ORDERING INFORMATION

Hardware Elements
ViBE-4000-2BB-IN
› EM4000 platform with single PSU, IP output, capability for two HD channels

ViBE-4000-4BB-IN
› EM4000 platform with single PSU, IP output, capability for four HD channels

EM4000-OPT-DUALPSU
› Double PSU HW option

Video SW licenses
EM4000-LIC-HDAVC
› One channel HD MPEG-4 encoding license

Audio SW Licenses
EM4000-LIC-MPEG1L2
› MPEG1LII stereo

EM4000-LIC-DE
› Dolby E decoding

Audio SW Licenses (Cont.)
EM4000-LIC-DD51
› DD or DD+ surround encoding

EM4000-LIC-DD20
› DD-DD+ stereo encoding

EM4000-LIC-AAC
› AAC/HE-AAC stereo encoding

EM4000-LIC-HEAAC51
› AAC/HE-AAC surround encoding

Featured SW Licenses
EM4000-LIC-FLEXALL
› WAN + LAN Flextream™ statistical Multiplexing

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.

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