ViBE EM1000
ViBE EM2000

MPEG-2/MPEG-4 SD ENCODERS

THOMSON

▶ *VIDEO NETWORKS*

BASED ON THE MOST ADVANCED VIDEO COMPRESSION ENGINE ON THE MARKET TODAY, THE VIBE EM1000 AND THE VIBE EM2000 ESTABLISH A NEW BENCHMARK FOR STANDARD-DEFINITION (SD) SINGLE- OR MULTI-CHANNEL ENCODING, AND ARE PERFECT FOR SATELLITE AND TERRESTRIAL BROADCAST APPLICATIONS—AS WELL AS FOR IPTV AND CABLE OPERATIONS.

ViBE EM1000 & VIBE EM2000 – PREMIUM MPEG-4 & MPEG-2 COMPRESSION

The Thomson ViBE EM1000 and ViBE EM2000 are based on the world's first professional-grade MPEG-4 compression chipset. At the heart of this new encoder line is a dedicated application-specific integrated circuit (ASIC) with greatly increased processing power, providing premium compression and true multi-pass encoding.

Together, these technologies deliver MPEG-4 AVC compression at a greater-than 50 percent efficiency compared to existing MPEG-2 systems.

This type of efficiency is also available to operators who require MPEG-2 encoding. By using their unique feature set and techniques developed from MPEG-4 encoding, the ViBE EM1000 and ViBE EM2000 encoders greatly improve bandwidth efficiency. In MPEG-2 applications, the ViBE EM1000 and the ViBE EM2000 can create enough bandwidth within a satellite transponder to carry at least an additional channel.

ViBE EM1000 & VIBE EM2000 – A FLEXIBLE PLATFORM

Based on the most advanced video compression engine on the market today, the ViBE EM1000 and the ViBE EM2000 establish a new benchmark, not only in performance, but also in terms of density, versatility, and power consumption. This encoder line can be configured as a single-channel or multi-channel unit, where the latter offers the advantage of both a reduced footprint and lower power consumption per channel. Each channel can be independently configured for MPEG-2 or MPEG-4 encoding, extending the possibilities for hybrid applications.

This flexible approach makes the ViBE EM1000 and ViBE EM2000 encoders perfect for applications ranging from small regional systems to large national headends covering all types of networks.

Combining compression efficiency, pre-processing, and high density, they deliver clearer pictures with increased depth and clarity. As a result, you can deliver video across all networks, sustaining the viability of your business model—and let your customers enjoy a premium viewing experience.

The ViBE EM1000 and ViBE EM2000 encoders also deliver significant savings in audio bandwidth utilization through the support of the latest audio compression formats, including Dolby Digital and AAC.

Up to eight stereo pairs of audio are supported, enabling multiple languages or additional radio services.

KEY FEATURES

› MPEG-4 AVC Main & High Profile@Level 3

› MPEG-2 Main Profile@Main Level

› High efficiency, low bit-rate operation for bandwidth-critical networks

› Improved high bit-rate operation where premium picture quality is paramount

› Dual-pass encoding, CBR mode, or VBR mode with Thomson Flextream™

› Microsoft Mediaroom conformance

› ASI and Gigabit Ethernet interfaces

› SDI and analog video inputs

› Control and monitoring via Web browser or Thomson XMS™ Management System

› Single- or multi-channel (up to four SD channels) configuration offering industry-leading density

› Low power consumption

› Robust optional features, including:

  — Picture-in-picture

  — Up to eight stereo audio pairs per video channel

  — Advanced pre-processing

  — Hybrid and/or Distributed Flextream statistical multiplexing

  — Fixed key scrambling

  — Logo insertion

  — DVB subtitling transcoding

  — MPEG compressed input

SPECIFICATIONS

Video and Audio Inputs
› SDI and CVBS (PAL, NTSC, SECAM) video input
› Embedded, digital, and balanced analog audio inputs
› ASI input for data such as DVB subtitling injection
› ASI and dual Gigabit Ethernet for MPEG-2/MPEG-4 compressed sources

Outputs
› Dual ASI and Gigabit Ethernet
› SPTS or MPTS format (built-in multiplexer)

Video Processing
› MPEG-4 AVC Main and High Profiles (MP@L3 & HP@L3)
› MPEG-2 MP@ML
› CBR, VBR, or capped VBR operation
› Full GOP adaptive
› Field/frame adaptive (PAFF & MBAFF)
› Multi-level hierarchical GOP structure (MPEG-4)
› PVR descriptor support
› Inverse telecine (3/2 pulldown)
› 720, 704, 640, 544, 528, 480, 352 pixels per line
› Content-adaptive processing (fades, scene-cuts, etc.)
› Fast channel change support
› Custom slides
› Logo insertion
› Expert modes for interoperability with legacy systems

Audio Processing
› MPEG-1 Layer II encoding
› Dolby Digital 2.0 encoding
› AAC (-LC & -HE, -HE v2) encoding
› AC3, E-AC3 pass-through
› Audio transparent
› Audio level adjustment
› Audio description support

VBI Processing
› CEEFAX B, WSS, VPS
› D/VITC, monochrome transparent lines
› AFD (SMPTE 2016 & RP186)
› CC, XDS, DTVCC, EIA608 to EIA708 translation, NABTS, GEMSTAR, AMOL 1&2
› DVB subtitling pass-through resynchronized with video
› DVB subtitling transcoding

Control and Monitoring
› XMS Management System software (system option)
› Embedded Web server
› SNMP agent for alarm collection
› Interface with Sapphire Broadcast Server for ingest solutions
› Insertion of digital cue-tones (SCTE35) from GPI, Ethernet (SCTE104)
› Pre-defined set-ups and auto modes
› Front panel configuration for simple set-up

Physical Characteristics
› 1 RU x 19" (44.5 mm high x 482.6 mm wide x 559 mm deep)
› Power consumption: 70W to 160W (configuration dependent)
  — Input voltage: 100 to 240 VAC continuous range
  — Frequency: 50 to 60 Hz
› Weight: 8.8 kg (19.4 lbs.)
› Environmental Conditions
› Operating temperature: 5 to 50°C (41 to 122°F)
› Storage temperature: -25 to 70°C (-13 to 158°F)
› Maximum humidity: 95% at 35°C non-condensing

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, FCC, ICES, VCCI, C-TICK
› Compatible with IPTV service platforms (tested with Microsoft Mediaroom/ Huawei/Alcatel MiView/Technicolor SmartVision)

Options
› Dolby Digital 2.0 audio encoding
› AAC audio encoding
› MPEG-1 Layer II audio encoding
› Statistical multiplexing with Flextream technology
› Advanced pre-processing
› Picture-in-picture
› Fixed key scrambling (BISS 1 & BISS E)
› Logo insertion
› DVB subtitling transcoding
› MPEG compressed input
› Dual power supply

ORDERING INFORMATION

Hardware
ViBE-EM2000 SINGLE
Premium, single-channel, MPEG-4/ MPEG-2 SD chassis

VIBE-EM2000-DUAL
Premium, dual-channel, MPEG-4/MPEG-2 SD chassis

ViBE-EM2000 QUAD, ViBE-EM1000
Premium, multi-channel, MPEG-4/MPEG-2 SD chassis

Software Licences
ViBE-SW-MPEG41
› Software license for MPEG-4 SD encoding

ViBE-SW-LAT1
› Software license for MPEG-4 SD encoding for CBR low latency applications

ViBE-SW-MPEG21
› Software license for MPEG-2 SD encoding

Hardware Options
VIBE-OPT-2SUPPLY
› Optional dual power supply

ViBE-OPT-MPEGIN
› Optional multi audio and video decoder for compressed sources

Software Options
ViBE-OPT-PIP
› Option to enable picture-in-picture operation

ViBE-OPT-FLEXTRE
› Option to enable Flextream integration on unique sites

ViBE-OPT-FLEXALL
› Option to enable Flextream integration between remote sites

ViBE-OPT-SCR
› Option to enable fixed key scrambling

ViBE-LIC-AAC
› Option to enable AAC audio encoding

ViBE-LIC-DOLBY
› Option to enable Dolby Digital audio encoding

ViBE-LIC-MPEG1L2
› Option to enable MPEG-1 Layer II audio encoding

ViBE-LIC-LOGO
› Option to enable logo insertion operation

ViBE-LIC-DVBSUB
› Option to enable DVB subtitling transcoding

Notes:

[1] All software licenses can be simultaneously installed in the same chassis

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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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