

ViBE Single Pass Encoder

MPEG-2 – DVB Single Pass Encoder



Grass Valley™ products from Thomson offer the most comprehensive, multi-format solutions for acquisition, production, storage, playback, and transmission—and a strong foundation for centralized, proactive status and activity monitoring.

Based on Thomson's next-generation 3G video compression chip technology, the Grass Valley ViBE Single Pass Encoder offers unprecedented compactness and compression performance that result in best-in-class picture quality at the lowest bit rates.

Offering up to four encoders in a 1 RU chassis (up to 10 encoders in a 5 RU chassis), and compatible with all ViBE extension boards and ViBE front ends, the ViBE Single Pass Encoder ensures high video quality even with the most demanding material.

Like the rest of the ViBE line, the ViBE Single Pass Encoder offers embedded network interfaces and supports remote control and command through the Grass Valley XMS 3500 management software.

Applications

- Contribution
- Primary distribution
- General broadcasting

About the ViBE Line

The Grass Valley ViBE line is the most efficient and compact digital content delivery platform available, combining encoding, decoding, MPEG processing, multiplexing, and network adaptation functions in a modular chassis. Available in 1 RU and 5 RU versions, it features best-in-class video compression as well as solutions for transport over IP, ATM, PDH, or SONET/SDH backbones.

Grass Valley Transmission Products

Designed for cable, direct-to-home satellite, telecommunications, and terrestrial television operations, Grass Valley transmission products provide turnkey solutions for digital content delivery. Whether it's moving digital information from studios, to broadcast centers, or to a local head end, they provide the best video quality at the lowest bit rate—all using open architectures that support a myriad of conditional access systems, middleware, and other devices.

key features

- MPEG-2-DVB MP@ML and 422P@ML SD video compression
- Single pass encoding, CBR mode or VBR mode with Flexstream™
- Four latency modes, down to 100 ms
- MPEG-1 Layer II audio compression
- Dolby® Digital 2.0 (AC3 stereo) audio compression
- Dolby® Digital 5.1 or Dolby® Digital E in transparent mode
- DVB Common Scrambling with BISS mode 1 and E
- SPTS or MPTS generation with radio

Specifications

Inputs

Video

- SDI: 4:2:2 acc. to SMPTE 259M/ITU-R BT 656-4 (50/60 Hz)
- BNC: 75Ω

Audio

- Separate AES/EBU or embedded
- Acc. to ITU-R BS.647-2 / AES 3, SMPTE 272M / ITU-R BT. 13052
- Supported input rates: 32, 44.1 and 48 kHz
- Processing: 48 kHz
- Two stereo or four mono sounds
- Lemo-type with XLR extender, 110Ω balanced

Outputs

- Two identical ASI transport streams, according to EN50083-9
- Output bit rate: 0.5 – 130 Mb/s
- Burst mode on BNC 75Ω
- SPTS or MPTS format, 188 or 204 Byte formatted
- SI/PSI per according to EN300 468
- Audio AES sync for external audio encoder
- BNC 75Ω

Encoding and Processing

Video

- MPEG-2 DVB MP@ML, 0.2 to 15 Mb/s
- MPEG-2 DVB 422P@ML, 0.2 to 50 Mb/s
- CBR and VBR modes
- Four latency modes (1.2s to 100 ms)
- Automatic format detection
- I-Frame synchronization
- Adaptive GOP (M/N: 3/45)
- Adaptive pre-filtering
- Sub sampling: H 720 to 352 px, V 576 (50 Hz) 480 (60 Hz)
- Motion estimation 126/255 px
- Half pixel resolution
- Scene cut detection
- 3/2 pull down
- Auto-switching on test patterns (standard or custom)

Audio

- Two balanced AES/EBU or embedded channels
- MPEG-1 Layer 2, 48 kHz sampling
- Rates: 32 to 384 kb/s
- Modes: mono, stereo, joint stereo, dual mono
- Dolby® Digital 2.0 (AC3 stereo) encoding (option)
- Rates: 56 to 640 kb/s
- External audio synchronization
- Adjustable lipsync
- Audio tones (1 and 2 kHz)

VBI Processing

- CEEFAX B (24 lines per picture), WSS, AFD, VITS, D/VITC
- Closed Caption (line 21 and 284, 60 Hz only)
- EBU data line (line 16 – VPS, 50 Hz only)
- Transparent lines according to DVB A056 (up to eight per picture)
- Transmission possible on 4 PID

Scrambling

Acc. to ETR 289, DVB Common Scrambling BISS mode 1 & E

System

Compliance with:

- ViBE Composite Video and Analog Audio Interface boards (AV_ENC, AA_ENC)
- ViBE Advanced Pre-processing board (ADV_PROC)
- ViBE Audio Extension board (up to 12 additional stereo) for radio services
- ViBE Decoder for CODEC application
- ViBE Front Ends (ASI, PDH, IP)

Configuration

- Max. four SP Encoder boards per 1 RU ViBE chassis
- Max. 10 SP Encoder boards per 5 RU ViBE chassis

Control and Monitoring in ViBE Chassis

- Management through XMS 3500 management software
- SNMP agent
- Web browser

Upgrade

- Upgrade via ViBE Ethernet 10/100Base-T or RS-232 maintenance ports
- Licensed software keys for option setting
- Hot pluggable boards

Physical Characteristics

- **Power Consumption:** 15W
- **Dimensions (HxDxW):** 128 mm x 270 mm x 20 mm
- **Weight:** 0.360 kg

Environment

Temperature:

- Operating: 5° to 40°C
- Storage: -5 to 45°C

Humidity: 90% HR

Compliance

- ISO/IEC 13818-1/2/3
- CE marked in accordance with the 93/68/EEC (22/07/93) Directive
- Safety: IEC 60950 and EN 60950, UL 60950 and CSA C22.2 No.60950
- EMC: EN 55022, EN 55024, EN61000-3-2

Options

- Dolby® Digital 2.0 audio encoding
- Dolby® Digital 5.1 (AC3 surround) or E Pass through
- Linear PCM audio in transparent mode
- Statistical multiplexing with Flexstream
- Audio Lemo to XLR extender
- Audio Extension board available for additional audio or radio services

Customer Service Commitment

The Thomson Broadcast and Media Solutions support team delivers complete service solutions that enhance the Grass Valley line of video compression and networking products. With years of experience designing and installing turnkey systems, we are able to offer flexible service contracts covering customers' first and second line support requirements for our products, as well as integrated third party products with graduated response times (up to 24/7 support). Our four choices of service level agreements, Topaz, Ruby, Emerald, and Diamond, along with DSNG dedicated Comet and Comet Plus agreements, satisfy market demands and meet customers needs.

Thomson Broadcast and Media Solutions support contracts include:

- Contract management:
 - Service Level Agreements (SLA) – front line customer support contracts (Topaz, Ruby, Emerald, Diamond)
 - 2nd Level Support Contracts (SLC) for distributors and partners
 - Dedicated contracts – software upgrades, product coverage, help desk (Token), DSNG (Comet and Comet plus)
- Product repairs and customer logistic management
- Spare parts and hardware upgrades
- Onsite and factory operational, technical and maintenance training courses

For more information, contact Service Sales in your region.

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