VITEC MULTIMEDIA PRODUCTS TECHNOLOGY

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DIGITAL VIDEO EXPERTS

VM2 Pro

Advanced MPEG Encoder

SDI & YUV capture and compression board for developers
MPEG-4 - MPEG-2 - MPEG-1

Specifically designed for developers

The VM2Pro capture and compression board makes high quality MPEG-4 -2 -1 encoding a reality for video ingest and professional applications. The VM2Pro board, based on VITEC's Award Winning technology, fully benefits from VITEC's proprietary MPEG compression chip, the VM2000™. VITEC has developed this next generation of MPEG compression chip using a revolutionary concept : hybrid technology. The VM2000™ utilizes the full potential of your computer's processor, along side it's own powerful coprocessor and software capabilities. This combination results in a cost effective solution with unparalleled scalability.

This approach presents several significant advantages over the full hardware compression solutions, even those which include a full processor on board. These solutions can quickly become outdated with a simple advance in technology, whereas the VM family's technology will continue to evolve, while never outpacing the hardware design.

Key benefits of the hybrid architecture

- **Increasing Performance And Features Over Time**
  When a faster PC is used, VM will run with higher quality and new features. This is not the case with other products of the market.

- **Easy And Economic Upgrades**
  No need to buy a new board each time a new compression algorithm comes to the market (ex : MPEG-4). Just buy and download a new software upgrade and run it with the VM board. The overall cost over time is much lower.

- **Extended Product Life**
  A developer doesn't need to buy a new board and invest time and money in a new development each time the next generation of encoding algorithm comes to the market.

- **Consistent Installed Base**
  A VAR or SI can upgrade its installed base of equipment by a simple upgrade and keep a constant hardware base, which is much easier for maintenance.

- **Cost Effective**
  The hybrid approach requires far less silicon than the full hardware solution and consumes less power.

TECHNICAL SPECIFICATIONS

Inputs	Video formats	NTSC/PAL/SECAM
	Video Inputs : analog	YUV, Y/C, composite (3 BNC)
	Video Inputs : digital	SDI (1 BNC)
	Audio Inputs : analog	Analog balanced audio (2 XLR)
	Audio Inputs : digital	Digital audio AES/EBU (1 XLR) & SDI embedded (BNC)
	Preview on VGA	yes

Video Encoding	MPEG-1	SIF, QSIF
	MPEG-2	FD1, 2/3D1, HD1, SIF, QSIF
	MPEG-4	FD1, 2/3D1, HD1, CIF, QCIF
	MPEG-4 ISMA Level 1	yes
	MPEG-4 profile	ASP / level 0-5 (1 object)
	Elementary streams MPEG-1 & -2	yes
	Elementary streams MPEG-4	no
	MPEG-1 System stream	yes
	MPEG-2 PS and TS	yes
	4:2:2 profile MPEG-2	up to 50 Mbit/s with I frames only
	4:2:2 profile MPEG-2	up to 25 Mbit/s with IBP & Motion estimation
	4:2:0 profile MPEG-2	up to 15 Mbit/s with IBP & Motion estimation
	MPEG-4 System stream	yes
	VCD 2.0, XVCD compliance	yes
	DVD, SVCD compliance	yes
	ISMA 1.0 Profile 0&1 (for MPEG-4)	yes
	Frame rate	29.97 (NTSC) 25 (PAL/SECAM)
	Adjustable frame rate	yes
	Bitrate MPEG-1	128 Kbit/s to 3 Mbit/s
	Bitrate MPEG-2	1 to 15 Mbit/s
	Bitrate MPEG-4	64 Kbit/s to 6 Mbit/s
	Bitrate regulation mode MPEG-1	CBR, VBR
	Bitrate regulation mode MPEG-2	CBR, VBR
	Bitrate regulation mode MPEG-4	CBR, VBR, CFR
	VBR with Average and Max settings	yes
	VBR with Fixed Quantizer	yes
	Adjustable GOP definition	IIII, IP, IBP, IBBP, …
	IBP distance settings, closed GOP	yes
	Scene Change Detection	yes

Audio Encoding	MPEG-1 Layer 1 & 2	yes
	PCM	yes
	AC-3	yes
	MPEG-4 AAC Low Complexity	yes
	Sample rate	22, 32, 44.1, 48 KHz
	Bits per sample	16 bits
	Bitrate MPEG-1 audio	32 to 384 Kbit/s
	Bitrate AC3	96 to 640 Kbit/s
	Bitrate AAC-LC	20 to 128 Kbit/s
	Audio Mode	Mono, Stereo, Dual Stereo, Joint Stereo

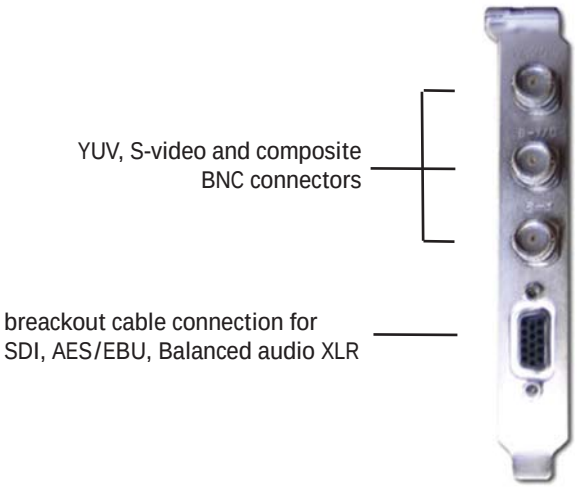
Signal calibrat°	Brightness, Contrast, Saturation	yes
	Hue Adjustments	yes
	Audio Level Adjustments	yes

Still image	Resolution	720x576, 352x288 (PAL/S) 720x480, 352x240 (NTSC)
	Field or Frame (2 fields) Capture	yes

Advanced Features	DUAL encoding	yes
	Audio deembedding from SDI	yes
	CC, WSS, TC	yes
	Embedded color bar pattern	yes
	Still image capture while encoding	yes
	Audiometer overlaid on preview	yes
	Status overlay on preview window	yes
	Pause/Resume mode	yes
	Split mode (back to back files)	yes
	Skip frame mode (captures and compresses 1 frame among N)	yes
	Drop frame mode (reduced frame rate & accelerated playback)	yes
	24/7 Very Long Encoding	yes
	Uncompressed video capture	yes

Developers resources	Operating Systems	Windows XP, 2000
	Development tools	Low level SDK/API LiveWire framework Demo application Source code

Recommended configuration	P4 - 3,4 GHz, 256 MB RAM
PCI compliance	PCI 2.2 5V (and 3V3 on request)
Size : dimensions of the board	167 x 100 mm (6,57" x 3,94")
Power consumption	7,3 W (typical)



THE EUROPEAN INFORMATION TECHNOLOGY PRIZE
Winner

VM2Pro is fully compliant to the Livewire architecture

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