VITEC MULTIMEDIA PRODUCTS TECHNOLOGY

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DIGITAL VIDEO EXPERTS

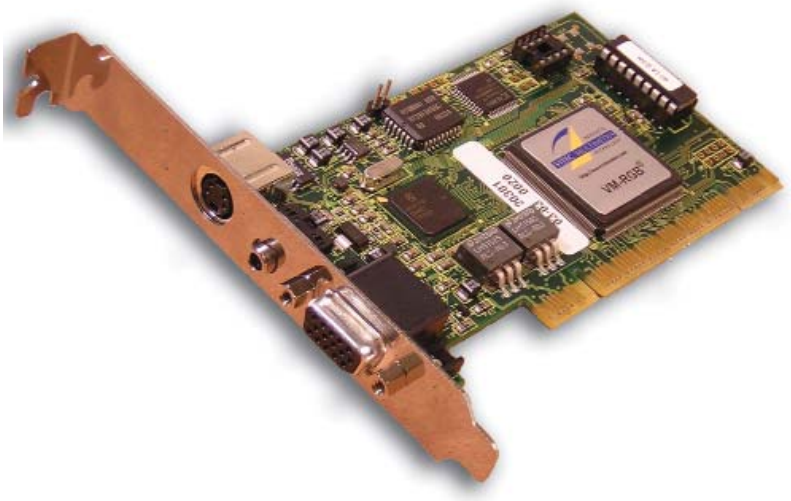
VM-RGB

Hybrid encoders

RGB capture and compression boards

MPEG-4 MPEG-2 MPEG-1

VM-RGB is a real time video capture board which has an analog RGB input in addition to the traditional S-Video and composite inputs. It is able to capture uncompressed video and also MPEG compressed video.



Innovative software framework for developers : LiveWire™

The VM family boards come with an SDK. This SDK uses the new LiveWire™ development framework which provides a set of ready to use connectable components leading to a drastic cut of product development time. LiveWire™ has many advantages. It :

- ensures highly flexible, scalable, truly customizable solutions,
- is designed to allow well-structured parallel development,
- allows to concentrate on solution specific tasks,
- overcomes the limitations of existing technologies such as DirectShow and COM in general,
- allows live reconnection of functional components without interruption of active processes,
- is compatible with Win32, COM, scriptable languages (Visual Basic, Java Script,...),
- takes advantages of XML based technologies and uses the Apache Xerces XML parser,
- provides different levels of SDK abstraction, from high level API for scripting languages through Win32 API for limited backward compatibility to the low level set of COM Interfaces for advanced development in C++.

LiveWire™ parts :

- LiveWire™ Core
- LiveWire™ Components
- LiveWire™ XML-based Profiles
- LiveWire™ Custom Components Wizard for MS Visual Studio C++
- LiveWire™ Multiplatform Shell
- LiveWire™ SDK
- LiveWire™ Tutorial and Samples

To start using LiveWire™ based products, all you have to do is to create an instance of Assembly Container, initialize it with XML-based Configuration Profile and run. Different sophisticated profiles can be created without extensive programming, using Integrated Property Page or directly by editing the XML file in the text editor of your choice. Components parameters persistence comes then automatically.

Very little programming is needed to use advanced features, such as Command Scheduling and Atomic Command Blocks. With a few extra lines of code you can complete an application capable of running execution scripts with frame accurate precision.

Custom LiveWire™ components creation is simplified by Wizard and they can be easily integrated into existing Assemblies.

The most important advantage of the SDK is the layered structure of the LiveWire™ framework which allows a quick development cycle.

TECHNICAL SPECIFICATIONS

2 VM-RGB boards	VM2-RGB MPEG-2-1 FD1, SIF	VM4-RGB MPEG-4-2-1 FD1, FD1, SIF
Inputs / Outputs		
Video Formats	NTSC/PAL/SECAM	NTSC/PAL/SECAM
Video Inputs	1 RGB, 1 S-Video/composite	1 RGB, 1 S-Video/composite
Audio Inputs	1 Mini Jack Stereo	1 Mini Jack Stereo
Preview on VGA	yes	yes
Video Encoding		
MPEG-1	SIF, QSIF	SIF, QSIF
MPEG-2	FD1, 2/3D1, HD1, SIF, QSIF	FD1, 2/3D1, HD1, SIF, QSIF
MPEG-4	-	FD1, 2/3D1, HD1, CIF, QCIF
MPEG-4 ISMA level 0 and level 1	-	yes
MPEG-4 profile	-	ASP / level 0-5 (1 object)
Elementary streams MPEG1&2	yes	yes
Elementary streams MPEG-4	-	no
MPEG-1 System stream	yes	yes
MPEG-2 PS and TS (SPTS)	yes	yes
MPEG-4 System stream	-	yes
VCD 2.0, XVCD compliance	yes	yes
DVD, SVCD compliance	yes	yes
Frame rate	29.97 (NTSC) 25 (PAL/SECAM)	29.97 (NTSC) 25 (PAL/SECAM)
Adjustable frame rate	yes (skip N frames)	yes
Bitrate MPEG-1	128 Kbit/s to 3 Mbit/s	128 Kbit/s to 3 Mbit/s
Bitrate MPEG-2	1 to 15 Mbit/s	1 to 15 Mbit/s
Bitrate MPEG-4	-	64 kb/s to 6 Mbit/s
Bitrate regulat° mode MPEG-1	CBR, VBR	CBR, VBR
Bitrate regulat° mode MPEG-2	CBR, VBR	CBR, VBR
Bitrate regulat° mode MPEG-4	-	CBR, VBR, CFR
VBR with Average and Max settings	yes	yes
VBR with Fixed Quantizer	yes	yes
GOP definition	IIII, IP, IBP, IBBP, …	IIII, IP, IBP, IBBP, …
IBP distance settings, closed GOP	yes	yes
Scene Change Detection	yes	yes
Audio Encoding		
MPEG-1 Layer 1 & 2	yes	yes
PCM	yes	yes
AC-3	yes	yes
AAC Low Complexity	no	yes
Sample rate	32, 44.1, 48 KHz	22, 32, 44.1, 48 KHz
Bits per sample	16 bits	16 bits
Bitrate MPEG-1 audio	32 to 384 Kbit/s	32 to 384 Kbit/s
Bitrate AC3	96 to 640 Kbit/s	96 to 640 Kbit/s
Bitrate AAC-LC	-	8 to 384 Kbit/s (96 Kbit/s for CD quality)
Audio Mode	Mono, Stereo, Dual Stereo Joint Stereo	Mono, Stereo, Dual Stereo Joint Stereo

2 VM-RGB boards		VM2-RGB MPEG-2-1 FD1, SIF	VM4-RGB MPEG-4-2-1 FD1, FD1, SIF
Signal calibrat°	Brightness, contrast, Saturation, Hue adjustments	yes	yes
	Audio Level Adjustment	yes	yes
Still image	Typical Resolutions (can be adjusted)	720x576, 352x288 (PAL/S) 720x480, 352x240 (NTSC)	720x576, 352x288 (PAL/S) 720x480, 352x240 (NTSC)
	Field or Frame (2 fields) Capture	yes	yes
Advanced features (Windows only)	Still image capture while encoding	yes	yes
	Audiometer overlaid on preview	yes	yes
	Status overlay on preview window	yes	yes
	Pause/Resume mode	yes	yes
	Split mode (back to back files)	yes	yes
	Skip frame mode (reduced frame rate & regular playback)	yes (Win + Linux)	yes (Win + Linux)
	Drop frame mode (reduced frame rate & accelerated playback)	yes	yes
	24/7 Very Long Encoding	yes (Win + Linux)	yes (Win + Linux)
	Uncompressed Capture Mode	yes	yes
Developers resources	Operating Systems	Windows XP, 2000 Linux RedHat, SuSE, …	Windows XP, 2000 Linux RedHat, SuSE, …
	Development Kits	Low level SDK/API LiveWire framework Demo applic. source code	Low level SDK/API LiveWire framework Demo applic. source code
Recommended Configuration		> P4 - 1.8 GHz 256 MB RAM	> P4 - 3 GHz 256 MB RAM

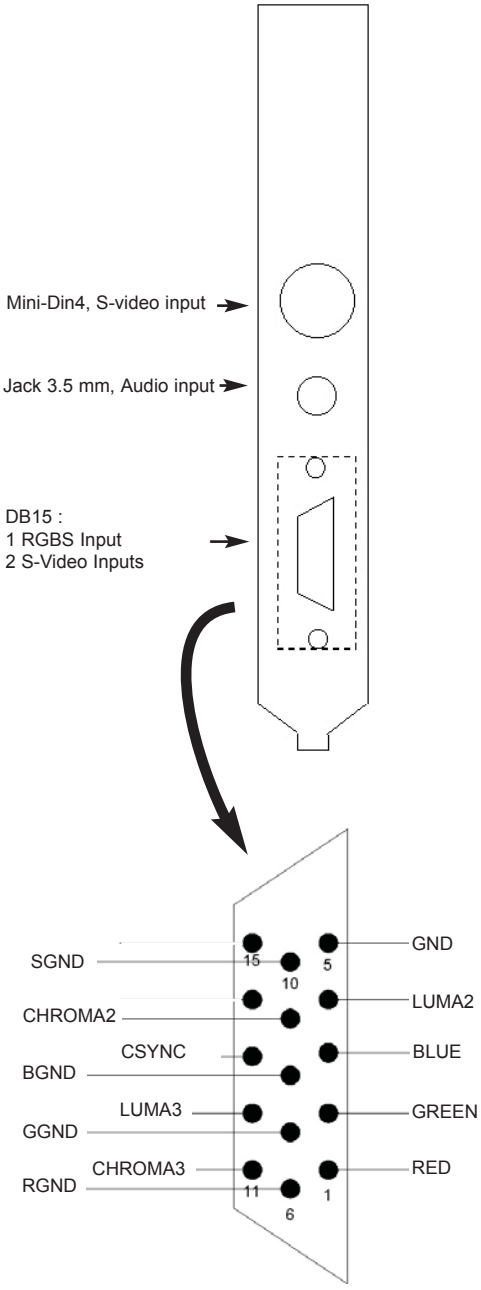
TECHNICAL SPECIFICATIONS

Hardware features

- VM-RGB is a PCI rev2.2 board (5V),
- The power consumption is 2.6 W (0.5 A on the +5V and 0.01 A on the +12V),
- The size of the board is : 134 mm length and 120 mm height,
- The audio input supports stereo unbalanced analog signals (line in level). The input impedance is 50 Ohm,
- Connectors: there are 3 connectors on the bracket of the board : 1 Mini-Din 4 for S-Video input 1, 1 jack 3.5 mm for the audio input and 1 DB15 with the RGBs input and 2 additional S-Video inputs,
- The synchronization signal can be supplied inside the G signal or as a separate signal. This feature is controlled by software.

Special Features

An impedance of 75 Ohm can be connected or disconnected by software between a given video input and the ground (GND). Independent commands support this feature for the RGBs input and for each of the 3 S-Video inputs. This allows to connect a video device on several equipments without any signal distortion (only one load of 75 Ohm is allowed per video signal).



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