



VM4-C9

Advanced H.264 Encoder



VM4-C9

The VM4-C9 family is the most cost effective solution for hardware H.264 encoding

Designed for demanding video applications, the VITEC VM4-C9 delivers extremely high quality HD and SD H.264 encoding up to 1080p30 (SDI & HDMI). Video inputs include HD-SDI 3Gb/s and HDMI digital as well as a composite analog video input. Audio inputs include SDI embedded, HDMI embedded and analog audio. With its small size and low power consumption (8W), the VM4-C9 is perfect for industrial and medical applications.

Using new framework called "Dorsalista" the VM4-C9 card + SDK allows you to develop your application on Windows or Linux operating systems. For Linux, the current SDK support is Ubuntu v14.04. Other Kernels and versions can be generated on demand. A powerful and easy to use software development kit (SDK) includes several sample applications in 32 bits (QT, C Sharp) with the source code associated.

VM4-C9 is available in two versions:

- 1 x SD version: VM4-C9 SD
- 1 x HD version: VM4-C9 HD

VITEC's VM4-C9 board can be upgraded directly via end-user software without any hardware manipulation, with additional upgrades for streaming and OSD capabilities available.

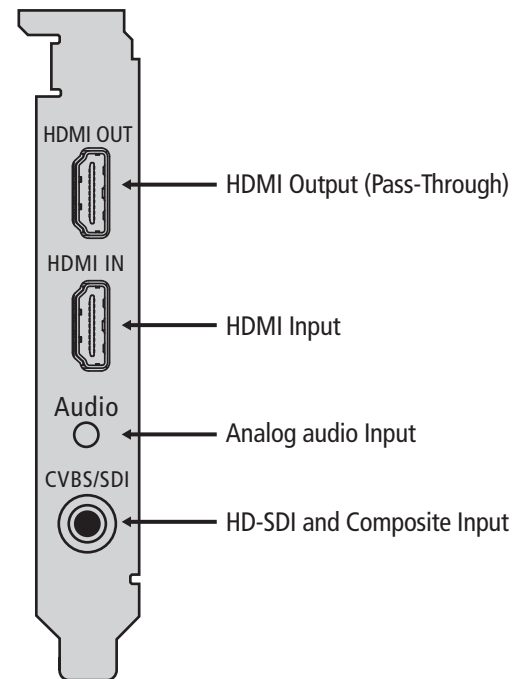
Specifications:

- HD H.264
- Streaming
- HD-SDI
- HDMI In & Out
- Composite

Applications:

- Industrial
- Medical
- Broadcast
- Enterprise
- Military

Bracket Description:



Part Number	Description	SD	HD	OSD (Overlay)	Streaming
16206	VM4-C9 SD	Yes	No	No	No
16207	VM4-C9 SD +	Yes	No	Yes	Yes
16208	VM4-C9 HD	Yes	Yes	No	No
16209	VM4-C9 HD +	Yes	Yes	Yes	Yes



Technical Specifications	VM4-C9 SD (+)	VM4-C9 HD (+)
Video Specifications		
Inputs	Composite, SDI, HDMI	Composite, SDI, HDMI
Input resolution	Up to FD1	Up to 1080p60 (SDI & HDMI)
Output	HDMI	HDMI
H.264	Yes (4:2:0)	Yes (4:2:0)
Bitrate H.264 SD	500 Kbit/s to 6 Mbit/s	500 Kbit/s to 6 Mbit/s
Bitrate H.264 HD	1 Mbit/s to 15 Mbit/s	1 Mbit/s to 15 Mbit/s
Bitrate Regulation	CBR/VBR	CBR/VBR
H.264 Profile	Up to MP@L3	Up to HP@L4.1
H.264 Tools	Deblocking filter, CABAC, MBAFF, Multislices, Adaptive noise filter	Deblocking filter, CABAC, MBAFF, Multislices, Adaptive noise filter
Aspect ratios	4/3 & 16/9	4/3 & 16/9
Transport Mux	Yes	Yes
MP4 Mux	Yes	Yes
GOP Definition	I, IP, IBP, IBBP,...	I, IP, IBP, IBBP,...
IP distance settings	Yes	Yes
MPEG-2 (4:2:0) SD	1 Mbit/s to 15 Mbit/s	1 Mbit/s to 15 Mbit/s
Transport Mux	Yes	Yes
Bitrate Regulation	CBR/VBR	CBR/VBR
MPEG-1	128 Kbit/s to 3 Mbit/s	128 Kbit/s to 3 Mbit/s
System mux	Yes	Yes
Bitrate Regulation	CBR/VBR	CBR/VBR
Audio Specifications		
Inputs	Analog Audio, SDI Embedded, HDMI Embedded	Analog Audio, SDI Embedded, HDMI Embedded
Number of channels	Analog (2), HDMI (8), SDI (16)	Analog (2), HDMI (8), SDI (16)
Formats	AAC-LC, MPEG-1 Layer 2	AAC-LC, MPEG-1 Layer 2
AAC Bitrate	64 to 128 kbit/s	64 to 128 kbit/s
MPEG-1 Layer 2 Bitrate	32 to 640 kbit/s	32 to 640 kbit/s
Sampling Frequency	48 Khz	48 Khz
Bits per sample	16 bits	16 bits
Video Format supported		
1080p (1920 x 1080)	N/A	30, 29.97, 25, 24, 23.976 fps
1080i (1920 x 1080)	N/A	30, 29.97, 25, 24 fps
720p (1280 x 720)	N/A	60, 59.94, 50 fps
NTSC (720 x 480)	29.97 fps	29.97 fps
PAL (720 x 576)	25 fps	25 fps
Still Image while Encoding		
JPEG compression	Yes	Yes
Resolution	Native resolution	Native resolution
Deinterlacing	Yes	Yes
Advanced features		
Preview on VGA	Yes (Windows Only)	Yes (Windows Only)
Closed captioning	Yes	Yes
Ancillary data and VBI	Yes	Yes
SMPTE RD-11	Yes	Yes
VITC	Yes	Yes
Brightness, Contrast, Saturation, Hue adjustments	Yes (Analog)	Yes (Analog)
Audio level adjustments	Yes	Yes
Pause/Resume mode	Yes	Yes
Split mode	Yes	Yes
Multiboarding	Yes	Yes
Options		
Streaming	TS over UDP/RTP, RTSP (Unicast, Multicast)	TS over UDP/RTP, RTSP (Unicast, Multicast)
On Screen Display (OSD)	Yes	Yes
Developers Ressources		
Operating systems	Windows 7 (32 bits / 64 bits) Linux Ubuntu	Windows 7 (32 bits / 64 bits) Linux Ubuntu
Development kits	Dorsalista Framework Demo application source code	Dorsalista Framework Demo application source code
System Configuration		
Minimum configuration	Core2Duo - 1, 8 Ghz, 2 GB RAM	Core2Duo - 1, 8 Ghz, 2 GB RAM
PCIe compliance	PCIe (1 x lane)	PCIe (1 x lane)
Dimensions of the board	117 x 99,5 mm / 4.60" x 3.92"	117 x 99,5 mm / 4.60" x 3.92"
Power consumption	8 W	8 W



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