

## ▶ Video Capture and Compression CCPMC Adapter

The C²I² Systems Video Capture and Compression CCPMC Adapter generates a compressed video data stream from a standard RS-170 video source using MPEG4 compression implemented in hardware.

This compressed video data stream can be output directly on one of four high-speed serial output channels or passed to a host computer via the PCI bus.

### Architecture

RS-170 (NTSC) Video is decoded by a Techwell TW9900 Video Decoder and the resulting IUT-R BT.656/601 video is compressed by an INTIME IME6500 MPEG4 Codec. The IME6500 features an integrated RISC processor core as well as a DSP core to enable real-time operation, as well as uploadable firmware allowing customised solutions for specific applications.

The MPEG4 data stream is available via the PCI host interface, and can also be transmitted via one of the four RS-422 or RS-485 High-Speed Serial channels which operate at a maximum of 20 Mbps each. When not used for video transfer, High-Speed Serial channels are available for data transfer via the PCI host interface. The dedicated Communications Processor contained within the Motorola PowerQUICC II processor ensures that all four High-Speed Channels operate at full capacity while the main processor transfers video.

### Features

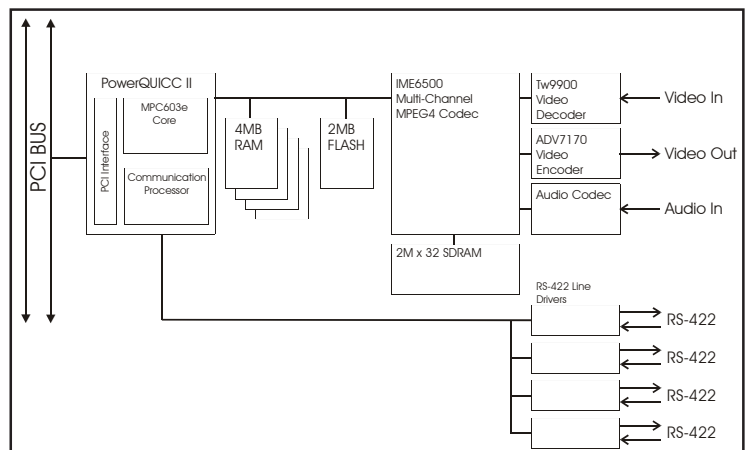
- Unbalanced 75 ohm or balanced 150 ohm Video I/O
- IME 6500 Multi-Channel MPEG4 Codec with uploadable microcode for high flexibility
- 720 x 480 pixels at 30 fps (NTSC)
- 720 x 576 pixels at 25 fps (PAL)
- User-selectable compression ratio
- Video output for monitoring
- Four 20 Mbps High-Speed Serial channels

### Conduction Cooling

The conduction-cooled Video Capture and Compression PMC Adapter conforms to the CCPMC (Conduction-Cooled PCI Mezzanine Card) Standard, namely ANSI/VITA 20-2001.

### Applications

- Remote Control
- Surveillance and Property Management
- Armoured Fighting Vehicles (AFV)
- Unmanned Aerial Vehicles (UAV)
- Multimedia Broadcast



**Video Capture and Compression Block Diagram**



► **Video Capture and Compression CCPMC Adapter**

**Video Capture and Compression CCPMC Adapter Specifications**

<b>Bus Interface</b>	32-bit, 33/66 MHz PCI-bus Electrically : 3,3 V and 5 V signaling, PCI Rev. 2.2 (some versions only 3,3 V) Mechanically : Single CMC formfactor IEEE P1386-2001		
<b>Serial Interface</b>	RS232/422/485 (all ports individually configurable with jumpers)		
	RS232	TxD, RxD, RTS, CTS, CD, CLK_IN, CLK_OUT	
	RS422/485	TxD, RxD, CLK_IN, CLK_OUT	
<b>Serial Channels</b>	4 x SCCs (Serial Communication Controllers) for high-speed serial links - Synchronous or asynchronous 2 x SMCs (Serial Management Controllers) for UART serial links - Front-panel, asynchronous, RxD and TxD only, no flow control		
<b>CPU</b>	Motorola PowerQUICC II Integrated PowerPC Microprocessors		
<b>EEPROM</b>	EEPROM for board ID (Plug-and-Play) and configuration options		
<b>Bit Rates</b>	<b>User-programmable up to :</b>	<b>RS232 Mode</b>	<b>RS422/485 Mode</b>
	Synchronous Mode	1 Mbps	20 Mbps
	Asynchronous Mode	1 Mbps	6,25 Mbps
<b>Termination</b>	100 R (all ports individually switchable with jumpers) for RS422/485		
<b>I/O Addresses</b>	Automatic assigned to the slot by PCI Rev. 2.2 Plug-and-Play		
<b>I/O Options</b>	Front-panel and rear connector I/O options with various rear connector PMC Jn4 I/O pin assignments. Conduction-cooled version has rear connector I/O only.		
<b>Interrupts</b>	PCI INT A		
<b>DMA</b>	Automatic depending on PCI slot		
<b>Dimensions</b>	Air-cooled	: 149,00 mm x 74,00 mm with envelope according to CMC specification	
	Conduction-cooled	: 143,65 mm x 74,00 mm (VITA 20) with envelope according to VITA 20 specification	
	Outside Dimensions	: 160,00 mm x 75,00 mm x 15,00 mm	
<b>Mass</b>	80 g ± 10 g		
<b>Power Requirement</b>	+3,3 V at 750mA +5 V at 1 mA (5 V PCI versions only) +12 V at 1 mA		
<b>MTBF</b>	Figures according to MIL-HDBK-217F, Parts Count Method (Predicted) : Ground, Mobile T <sub>j</sub> = 65 C T <sub>a</sub> = 45 C 21 700 hrs Naval, Sheltered T <sub>j</sub> = 60 C T <sub>a</sub> = 40 C 35 800 hrs Airborne, Inhabited Cargo T <sub>j</sub> = 75 C T <sub>a</sub> = 55 C 26 200 hrs		
<b>Software Drivers</b>	Various software drivers offered including for VxWorks, Linux, Windows NT, Windows 2000* and Windows XP* operating systems as standard; others are costed options. (*Standard PC HAL only)		
<b>Protocols</b>	HDLC, SDLC, Async, BiSync		
<b>Supporting Software</b>	Sample driver usage software (C/C++ source code)		
<b>Options</b>	<ul style="list-style-type: none"> <li>Solaris, QNX, AIX Drivers</li> <li>SS7, ISDN Protocol (Basic Rate and Primary Rate)</li> <li>Ethernet / Fast Ethernet Option</li> </ul>		

**Environmental Specifications**

	Commercial	Industrial	Ruggedised/Conduction-Cooled
<b>Temperature</b>			
- Operating	0 C to +55 C	-15 C to +75 C	-30 C to + 85 C
- Storage	-40 C to +85 C	-40 C to +85 C	-55 C to +125 C
<b>Humidity</b>	0% - 90%	0% - 95%	0% - 95%
<b>Shock</b>	N/A	30 g peak for 11 ms	40 g peak for 11 ms
<b>Vibration</b>			
- Sine	2 g (peak) 10 Hz to 100 Hz	10 g (peak) 5 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz
- Random	0,04 g <sup>2</sup> /Hz at 15 Hz to 2 kHz	0,1 g <sup>2</sup> /Hz at 15 Hz to 2 kHz	0,1 g <sup>2</sup> /Hz at 15 Hz to 2 kHz