TriMeleon® DT1302 CPCI

Video Compression/Decompression Board

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TriMeleon DT1302

The TriMeleon DT1302 board is a high performance CompactPCI expansion board for video and security applications. It is appropriate for applications performing general object surveillance and analysis of technical and other processes, just to mention some of its many possibilities.

Hardware

The board integrates the Philips TriMedia® Multimedia Processor with up to 32 Mbytes SDRAM running on 143 MHz.

It provides four individual video decoders for up to four SVHS cameras. This allows multiplexing of 4 digitized video streams of unsynchronized cameras at the highest possible rate of 16 fps and supports the individual adjustments of camera parameters such as gain, brightness, contrast, hue and saturation for maximum picture quality.

Each video decoder can be programmed to multiplex two CVBS cameras, therefore allowing the connection of up to 8 CVBS cameras.

The applied video encoder provides an PAL or NTSC compatible video output in CVBS and Y/C or RGB format.

Eight digital sensor inputs are provided at the front side connector for the use of external devices.

Software

For many standard cases, off-the-shelf software components like Motion-JPEG, H.261 or H.263+ video compression are available at DResearch Digital Media Systems.

A hardware abstraction layer library ensures cross compatibility to other TriMedia based boards.

Own application software can be built using a Software Development Kit. Starting with ANSI C, time critical inner loops are spotted and optimized in a compile–profile cycle or accelerated with processor specific commands.

Features

- Philips TriMedia Processor @ 143 MHz
- 16 or 32Mbytes SDRAM @ 143 MHz
- 4 or 8 analog video inputs, PAL or NTSC, 4 Y/C or 8 CVBS
- Analog video output, PAL or NTSC, CVBS and Y/C or RGB
- 8 sensor inputs, 4 actuator outputs

Applications

Application fields of the TriMeleon DT1302 board include, among others:

- image processing
- video phone applications
- security applications

Related Products

- MJPEG

  PAL : 25 frames/sec
  NTSC : 30 frames/sec

- H.263

  15...25 CIF frames/sec

TriMedia

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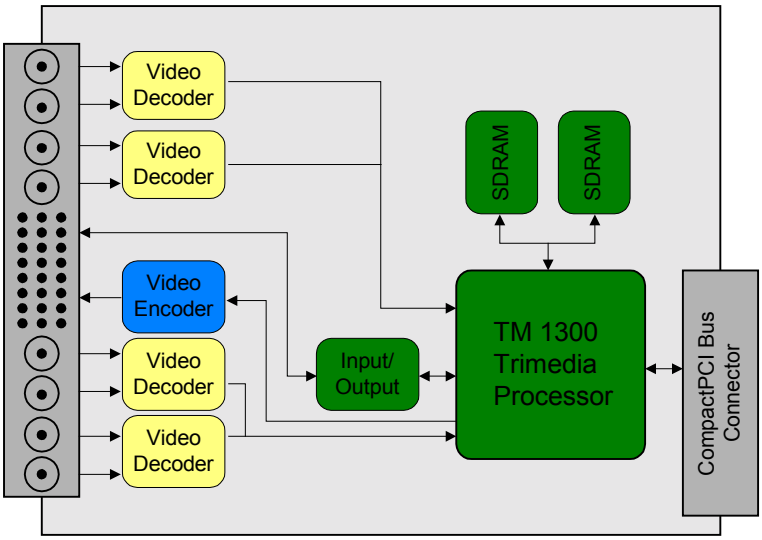
System Structure

Video

The TriMeleon DT1302 performs the video digitization and compression. The tremendous CPU performance allows implementation of computational intensive compression algorithms to achieve previously unattained image quality at the highest possible compression rates.



Sensor Inputs & Actuator Outputs

Eight sensor inputs can be used to send control information to the TriMeleon DT1302. Once an input changes, e.g. a hardware sensor detects some motion, an interruption is sent to the TriMedia which then performs the necessary actions.

Technical Specification

NTSC/PAL S-Video CVBS Video Capture Interface	
Input voltage	0.5V .. 1.4V peak to peak
Input impedance	75 Ω
Channel crosstalk	-50 db max.
Input Resolution	8 Bit
Formats supported	PAL BGHI, PAL N, PAL M, NTSC M, NTSC N, NTSC 4.43, NTSC-Japan, SECAM

NTSC/PAL S-Video CVBS RGB Video Output	
Output voltage (peak to peak)	CVBS: 1.23V, Y: 1V, C: 0.89V, RGB: 0.7V
Output impedance	75 Ω
Output Resolution	CVBS and Y/C: two times oversampled with 10 Bit resolution, RGB: two times oversampled with 9 Bit resolution
CompactPCI	33 MHz, BusMaster, 132 Mbyte/sec, CompactPCI PICMG 2.0 Rev 3.0 compliant
Power Consumption	max. 2 A @ 5V

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