

VCStm

Video Camera System

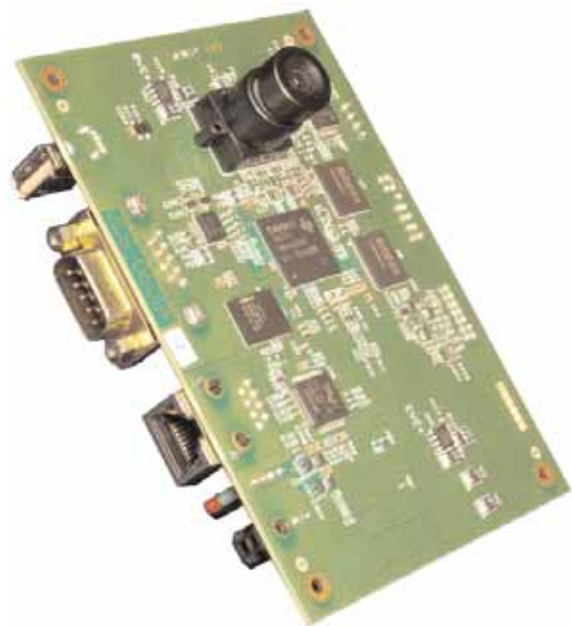
Key features :

- 1 x Digital Video Processor Da Vinci™,
- Power supply Power Over Ethernet (POE) or External 5 V,
- Linux embedded,
- Led: status indicator,
- Compact size,
- Communication interface: Ethernet / RS-232C / USB,
- CMOS Lens on board 1/4" 640 x 480,
- Power consumption: < 3 w.

VCStm is a flexible and compact programmable module optimized for counting applications in indoor environments such as:

- Counting for security in public areas, like railway stations,...
- Queing measurement, ideal in airports, malls,...
- Tracking,
- Motion detection,
- Direction control.

It can also be used for any other smart camera applications which require intensive processing power and low consumption.



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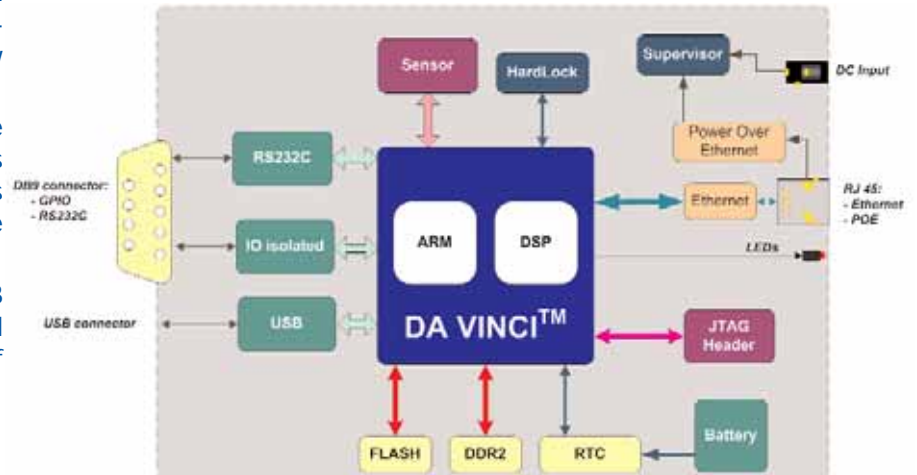


VCS™ ARCHITECTURE

The architecture of VCS includes a powerful **DaVinci™** Digital Video Processor, an Ethernet interface, a Flash memory and an USB 2.0 interface.

The Digital Media Processor is the **DaVinci™ TMS320DM6446** from Texas Instruments. It is highly integrated SoCs based on an ARM926 processor and the TMS320C64x+™ DSP core.

The Digital Video Processor has a 64 MB DDR2-SDRAM running at 333 MHz and 32 bits, which provides a throughput of 1.3 GB/s.



DSP SPECIFICATIONS

- **High-Performance Digital Media SoC:**
 - 594-MHz C64x+™ Clock Rate.
 - 297-MHz ARM926EJ-S™ Clock Rate.
 - Eight 32-Bit C64x+ Instructions/Cycle.
 - 4752 C64x+ MIPS.
 - Fully Software-Compatible With C64x / ARM9™.
- **Advanced Very-Long-Instruction-Word (VLIW) TMS320C64x+™ DSP Core:**
 - Eight Highly Independent Functional Units:
 - Six ALUs (32-/40-Bit), Each Supports Single 32-Bit, Dual 16-Bit, or Quad 8-Bit Arithmetic per Clock Cycle.
 - Two Multipliers Support Four 16 x 16-Bit Multiplies (32 Bit Results) per Clock Cycle or Eight 8 x 8-Bit Multiplies (16-Bit Results) per Clock Cycle.
 - Load-Store Architecture With Non-Aligned Support.
 - 64 32-Bit General-Purpose Registers.
 - Instruction Packing Reduces Code Size.
 - All Instructions Conditional.
 - Additional C64x+™ Enhancements/
 - Protected Mode Operation.
 - Exceptions Support for Error Detection and Program Redirection.
 - Hardware Support for Modulo Loop Operation.
- **C64x+ L1/L2 Memory Architecture:**
 - 32K-Byte L1P Program RAM/Cache (Direct Mapped).
 - 80K-Byte L1P Program RAM/Cache (2-Way Set-Associative).
 - 64K-Byte L2 Unified Mapped RAM/Cache (Flexible RAM/Cache Allocation).
- **ARM926EJ-S Core:**
 - Support for 32-Bit and 16-Bit (Thumb® Mode) Instruction Sets.
 - DSP Instruction Extensions and Single Cycle MAC.
 - ARM® Jazelle® Technology.
 - Embedded ICE-RT™ Logic for Real-Time Debug.
- **ARM9 Memory Architecture:**
 - 16K-Byte Instruction Cache.
 - 8K-Byte Data Cache.
 - 16K-Byte RAM.
 - 8K-Byte ROM.
- **Embedded Trace Buffer™ (ETB11™) With 4KB Memory for ARM9 Debug.**
- **Endianness: Little Endian for ARM and DSP.**
- **Video Processing Subsystem.**
 - Front End Provides:
 - Preview Engine for Real-Time Image Processing.
 - Histogram Module.
 - Auto-Exposure, Auto-White Balance and Auto-Focus Module.
 - Resize Engine:
 - Resize Images From 1/4x to 4x.

SOFTWARE TOOLS

VITEC recommends the use of the Texas Instruments tools to develop software:

- Digital Video Software Development Kit with MontaVista™ Pro Linux.
- C/C++ compiler,
- Emulator via the RTDS protocol and standard JTAG connector.

TECHNICAL SPECIFICATIONS

Inputs / Outputs	Ethernet	10 Base-T or 100 Base-TX Ethernet using single RJ-45 connector
	RS-232C	Yes
	USB 2.0	Yes, Host interface

Sensor	CMOS	1/4" 640x480
	Color	Yes
	Sensitivity	>450 Lux
	Day/Night	Only Day
	Frame rate	30 fps (VGA)
Resolution	VGA / CIF	

Optical	Type	M12 x 0.5
	Resolution	Standard
	Horizontal field	Between 20° and 110°
	IR Filter	On request
	Manual Zoom	Yes
Pan / Tilt	-	

Other features	Real-time clock	Yes
	Watch dog timer	Yes
	Power supply	Power Over Ethernet or External 5 V
	Size	125 mm x 90 mm (4.92" x 3.54")
	Weight	105 g
Power consumption	<3 w	

Memories	DDR2-SDRAM	64 MB, 1.3 GB/s
	Flash	16 MB

OPTICAL OPTIONS

The board is designed for use with any standard M12x0.5 lens, there for you can easily find a lens fitting with your technical requirements:

- Angle,
- IR filter,
- Plastic / Glass quality lens.



MECHANICAL OPTIONS

VCS is highly flexible:

Two off-the-shelf mechanical interfaces are available. Nevertheless VITEC is able to design a customized box to fulfil your technical requirements.

The box protects the sensor's electronics and optics.

It allows a fixation between a height of 2.7m and 15m on a ceiling or in a cap ceiling.



Pre-fixed in a zenithal position on a ceiling.



Integrated in a cap ceiling