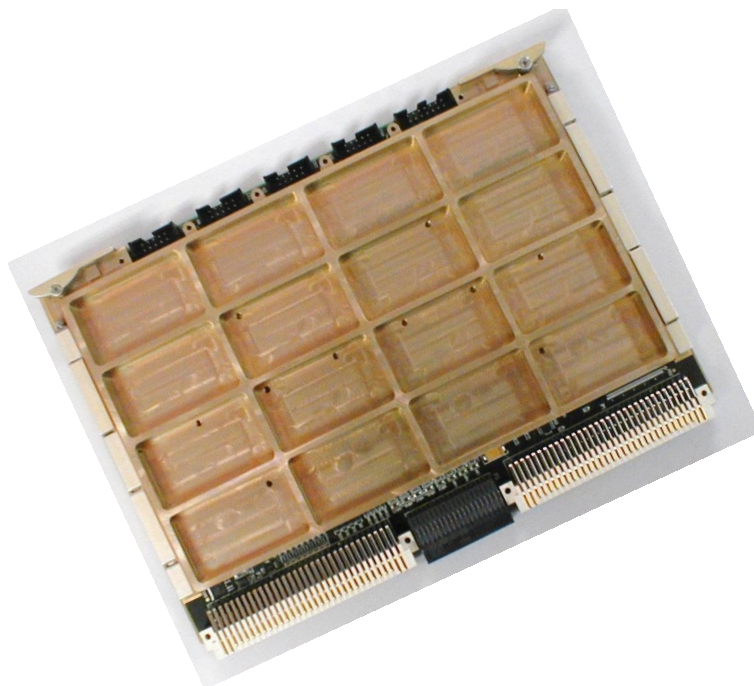


# CPU-iMX27-VME

Video / Audio Processing Board

The CPU-iMX27-VME processor board contains many features that make it ideal for processing video and audio streams. It features four Freescale i.MX27 processors which are symmetrically configured. Each processor has its own memory, network interface and I/O interfaces. To facilitate data flow, the board also contains a six port Ethernet switch with two external Gigabit connections available to the user. An embedded Linux operating system, web server/configuration manager and streaming video software are pre-loaded.



## Main Features

- 4 Freescale i.MX27 processor chips @ 400 MHz. Each processor supporting independent:
  - NAND Flash
  - NOR Flash
  - SDRAM
  - 100 Mbit Ethernet to the switch
  - Video encoder and decoder
  - Audio encoder and decoder
  - RS-232 ports
  - GPIO with protection
- Independent Techwell video processor
- High current camera power controller with protection
- Linux Embedded Operating system
- Gstreamer application software
- Web interface software and server
- -40 to +85°C operation

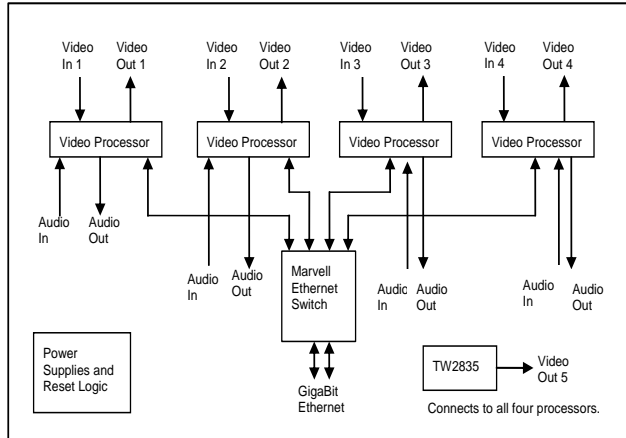
## Benefits

This VMEbus based multi-processor board is capable of running simultaneous applications on all four processors, relieving many data flow bottlenecks associated with the high bandwidth requirements of video and audio processing. Since it interfaces to the web and has a full set of upload and management routines, it is very easy to setup, manage and reprogram. To aid in the extension of system features, common software interfaces were used throughout.

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# CPU-iMX27-VME



SIMPLIFIED BLOCK DIAGRAM

## FREESCALE I.MX27 PROCESSOR

- ARM926EJ-S® core 32-bit RISC engine
- 16K instruction cache and 16K data cache
- Thumb® 16-bit compressed instruction set for a leading level of code density

## SDRAM

- 128 Mbytes - DDR2 333

## FLASH

- 1 GB of NAND
- 32 Mbytes of NOR

## VIDEO ENCODER

- SAF7113 9 bit video input processor
- 2 selectable camera inputs / channel
- Composite video input

## VIDEO OUTPUT

- Focus Enhancements FS473
- Composite video output

## ETHERNET INTERFACE

- Marvell 88E6046 Gigabit Ethernet 10/100/1000 Mbps capable

- 2 user accessible Gigabit ports

## INDEPENDENT TECHWELL VIDEO PROCESSOR

- Techwell TW2835
- Receives all 4 on-board channels
- Features include: combination of all channels into a single stream, video scaling, enhancement, motion detection, cursor overlay and much more

## VMEBUS INTERFACE – 5 ROW

- A24/D16 Slave, Interrupter

## SOFTWARE

- Embedded Linux with many utilities
- gstreamer video management
- Web utilities for managing data streams, board configuration and software updates

## MECHANICAL AND ENVIRONMENTAL DATA

- 6U VMEbus form-factor
- Single slot implementation
- Operating Temperature: -40 to +85C
- Storage Temperature: -45 to +100C
- Shock: 40G ½ sine, 20 mS
- Random Vibration: 0.1g<sup>2</sup>/Hz 5-1000Hz
- Sine Vibration: 5g 32-2000Hz
- Humidity: Commercial 95% non-condensing
- Reliability data: 217-F, GB, 25C estimated to exceed 300,000 hours

## ORDERING INFORMATION

CPU-iMX27-VME -A - Air Cooled  
CPU-iMX27-VME -C - Conduction Cooled  
CPU-iMX27-Linux-SRC – Source Code Package