

VMIX104

PAL/NTSC Video Overlay Controller for PC/104



The VMIX104 is a low-power, real-time Video Overlay controller. It is capable of displaying up to four simultaneous live PAL/NTSC video images and it provides a high degree of video overlay functionality.



The VMIX104 undertakes the processor-intensive video processing functions so that the device can be hosted by a low-end PC/104 computer over a standard 8/16-bit PC/104 bus. A stand-alone version, the VMIX104I with on-board MPU, which does not require host PC104 CPU is available as an option. The VMIX104I communicates with a host over an RS232 port. Built-in multiplexers allow the selection of four sources from up to eight input cameras. Any of the selected inputs may be resized, cropped and repositioned on the output image, and text and graphics can be overlaid or alpha-blended into the live video. Overlay text can be in the form of any Truetype font.

Alpha-blend
text and graphics
onto
live video

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The processed image is output as a high-quality composite PAL/NTSC signal suitable for driving a wide range of display devices. The VMIX104 is supported by a suite of drivers for Windows NT/2000/XP and Linux.



Applications

Control Rooms

POS Monitoring

Medical Operating Theatre

Remote video Inspection

Remote Vehicle Application

Traffic Monitoring and Control

Loss Prevention

Multiple
PAL/NTSC
Inputs.
Composite
and S-Video
Output

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Features

Multiplex up to 4 concurrent sources from 8 cameras

Alpha-blending of overlay and live video

Truetype font Text Overlay

Composite PAL/NTSC Video Output

Resize and Reposition 4 Live Video Windows

Text and Borders for each Video Window

Optional Stand-alone Operation (via Rs—232)

Drivers for Windows NT/2000/XP-E and Linux

Compact 3.6 x 3.8in PC/104 form factor

Single +5V power supply

Position, size,
crop and zoom up
to four live video
windows

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Operation Summary

Four real-time video channels can be simultaneously displayed on the screen. The channels can be individually sized and positioned, and can overlap one another. The windows can have text and borders



Truetype fonts can overlay the live video or be alpha-blended into the live video. Overlay pixels can have up to 64 colours.



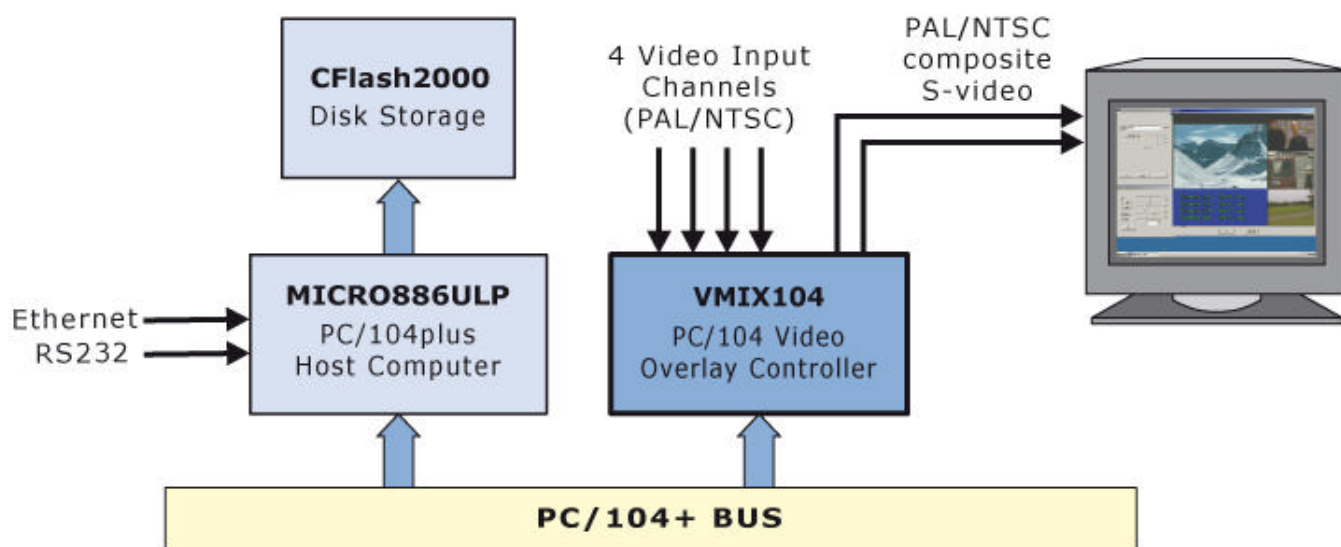
Individual windows can be cropped and scaled. Bitmap graphics can be overlaid on the live video or blended in varying levels of alpha-blending



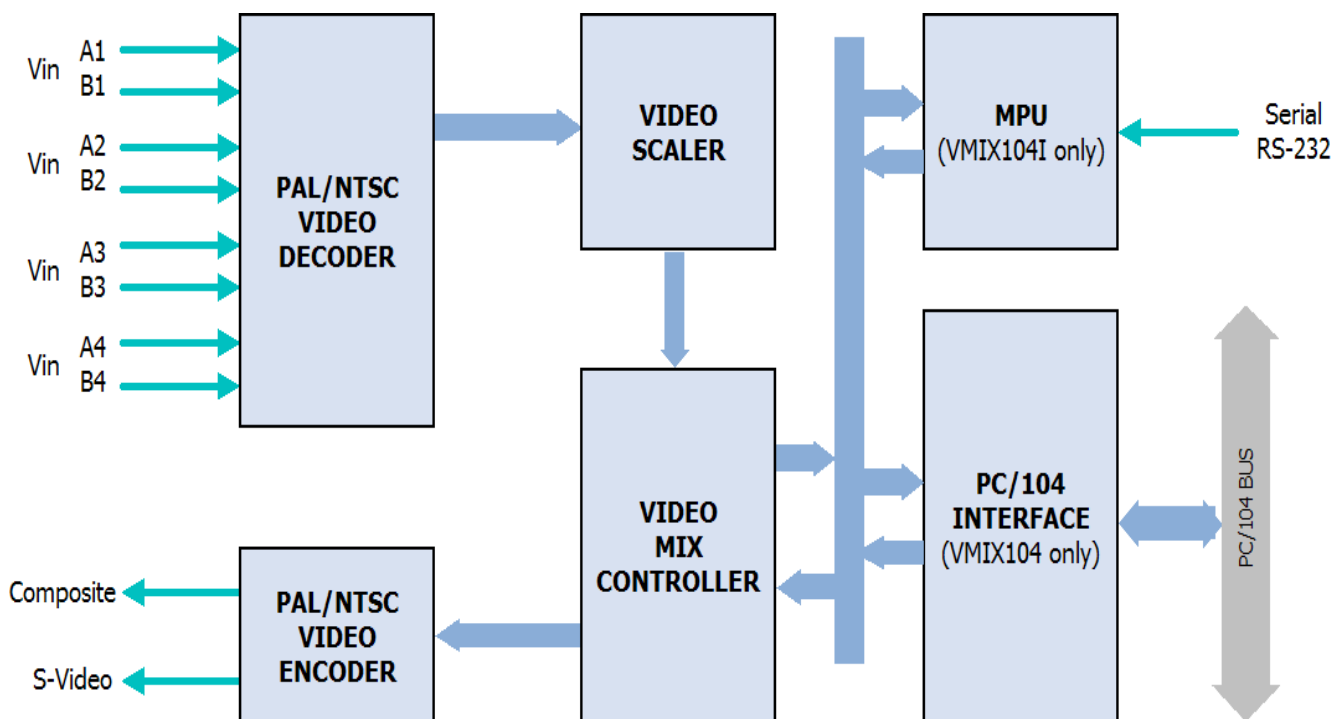
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Operation Summary



VMIX104 Typical Application



VMIX104 Block Diagram



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Technical Specification

PC/104 Bus Interface

Standard 8/16-bit PC/104 (not required for VMIX104I)

Analogue Video Input

Four concurrent composite PAL or NTSC video input channels
Digital Line-Lock technology for reliable locking to any video source
Two composite video inputs per channel (up to 8 cameras)
Video multiplexer on each channel
Four 10-bit video Analogue-to-Digital converters

Video Input Formats

Standard CCIR601-NTSC, CCIR-PAL
NTSC-M, NTSC-Japan
PAL-B, PAL-D, PAL-G, PAL-H, PAL-I, PAL-M, PAL-N

Video Input Adjustments

Contrast (or luma gain) adjustable from 0 - 200% of original value
Saturation (or chroma gain) adjustable from 0 - 200% of original value
Brightness (or luma level) can be adjusted from 0 - 255 steps

Video Windowing

4 Video Windows with Text/Graphics Overlay to PAL/NTSC Output
Title and Border for Video Windows
Video Windows are re-sizeable to full screen
Pan, zoom and scaling on input video
Arbitrary sizing, cropping and positioning of video windows
Vertical and horizontal mirroring per channel

Text/Graphics Overlay

Overlay of computer generated bitmap on live video
Overlay of Truetype font text
720x576 bitmap overlay buffer
64 colour overlay
Programmable Overlay/Blend attribute per pixel
Programmable 25%, 50%, 75% Alpha Blending

Analogue Video Output

PAL/NTSC Composite Video Output
PAL/NTSC S-Video Output
RS170 Video Output
3 10-bit video Digital-to-Analogue converters

System Requirements

X86 PC-Compatible PC/104 host computer (not required for VMIX104I)
Spare 16 bytes in I/O space (not required for VMIX104I)
+5V signalling
Single RS232 Comms Port for VMIX104I Stand-Alone version

Miscellaneous

Single +5V at less than 800mA
Operating temp 0 °C to 60 °C or -40 °C to +85 °C (extended temp option)
Standard 3.6 x 3.8in PC/104plus form factor



Software

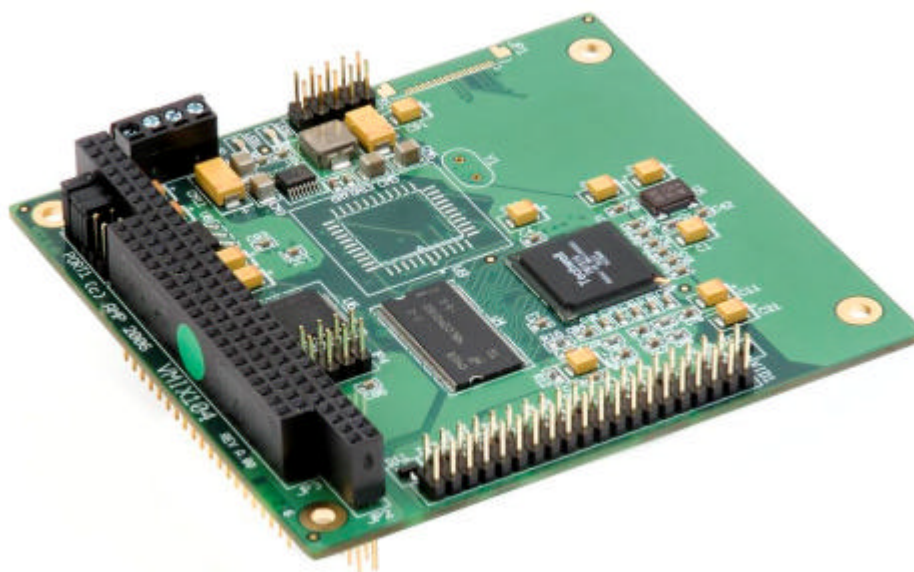
Drivers for Windows-NT/2000/XP, Linux
Sample video overlay application in C/C++ source code

Related Products

Micro886ULP	Ultra low power PC/104+ Computer
Tiny886ULP	Ultra low power PC/104+ Computer with Display
Tiny586DX	PC/104 Computer
Tiny-C3	PC/104+ Computer
Tiny-LX	Ultra low power PC/104+ Geode Computer

Ordering Information

VMIX104	PAL/NTSC Video Overlay Controller (0 to 60 °C)
VMIX104-Ext	PAL/NTSC Video Overlay Controller (-40°C to +85°C)
VMIX104I	Intelligent Stand-alone PAL/NTSC Video Overlay Controller (0 to 60 °C)
VMIX104I-Ext	Intelligent Stand-alone PAL/NTSC Video Overlay Controller (-40°C to +85°C)

**VMIX104**