

VSP2000

12-Channel Video Surveillance Processor



The VSP2000 is a high performance Multi-channel Video Surveillance Processor. It integrates motion detection for up to 12 PAL/NTSC video sources on a single PC/104plus card.



Live video
display
from 12
PAL/NTSC
sources

The VSP2000 is able to monitor all the attached cameras in parallel and detect motion in any of the scenes being viewed. Information on the location and direction of detected motion can be signalled to a PC/104plus host computer.

The VSP2000 uses the high speed PC/104plus bus to stream and overlay all 12 video channels to the host VGA display for live viewing. Areas of motion can be highlighted in real time on the host display and a buzzer output is provided for an audible alert.

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To support archiving of surveillance footage, the VSP2000 provides a composite PAL/NSTC output of the sequenced video channels which can be fed to a recording system such as the MPEG4000.



Applications

Control Rooms

Video Surveillance

Campus Video Security

Video Motion Detection

Remote Video Surveillance

Perimeter Fence Monitoring

Traffic Monitoring and Control

Multi-camera Security Application

Motion detection

on 12 video

channels

for

Situational

Awareness

applications

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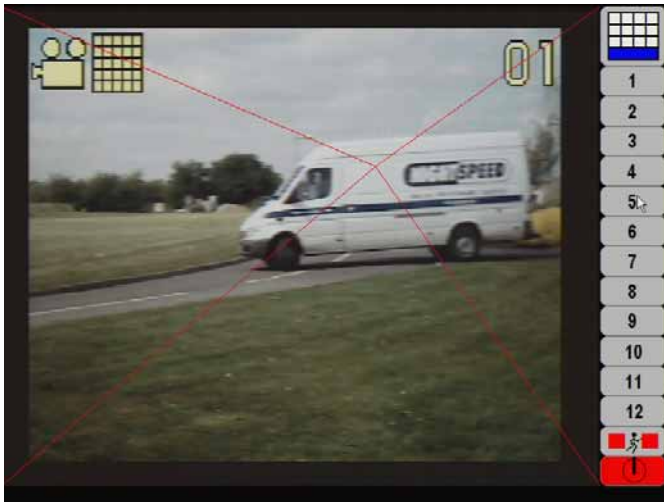
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Crosshairs on Centroid of Motion

Features

- Time-sequenced Record Output
- 12 Live PAL/NTSC Video Inputs
- Fixed Font On-Screen Text Overlay
- Visual and Audible indication of Motion
- 12 Concurrent Channels Motion Detection
- High Performance PC/104plus Bus Master Drivers for Win-NT/2000/XP-E and Linux
- 12 Real-time Video Windows to System VGA
- Re-sizing and Positioning of Video Windows
- Motion Detection from PAL/NTSC Video inputs

Visual and
audible motion
alerts and
direction of
movement data
on all channels



Analogue PAL/NTSC Input

Analogue PAL or NTSC video from up to 12 cameras can be fed into the VSP2000 simultaneously. Each video input is fitted with ESD and over-voltage protection. The video signals are digitised and stored in on-board frame stores in real time at full frame rates. An on-board RISC processes each channel to detect motion in the video content.

Display Overlay to VGA

The real-time video content of the frame store is streamed over the 32-bit PC/104plus bus to the VGA buffer of the host PC/104plus computer for display on the VGA screen.

The 12 video channels are re-sized and fitted in a rectangular window which is overlaid on the host VGA monitor. The combined overlay window can be rearranged, scaled and repositioned under software control for the best user presentation, and displayed together with other system status information.

Video Motion Detection

An on-board RISC checks the 12 video sources independently to detect change in the video content. Area, speed and extent of change to be regarded as

motion can be set under software for each channel. Changes which meet the pre-set levels of video data are flagged by the RISC as motion and signalled to the host PC/104plus computer.



Enlarged view of Main Interest

Video Motion Signalling

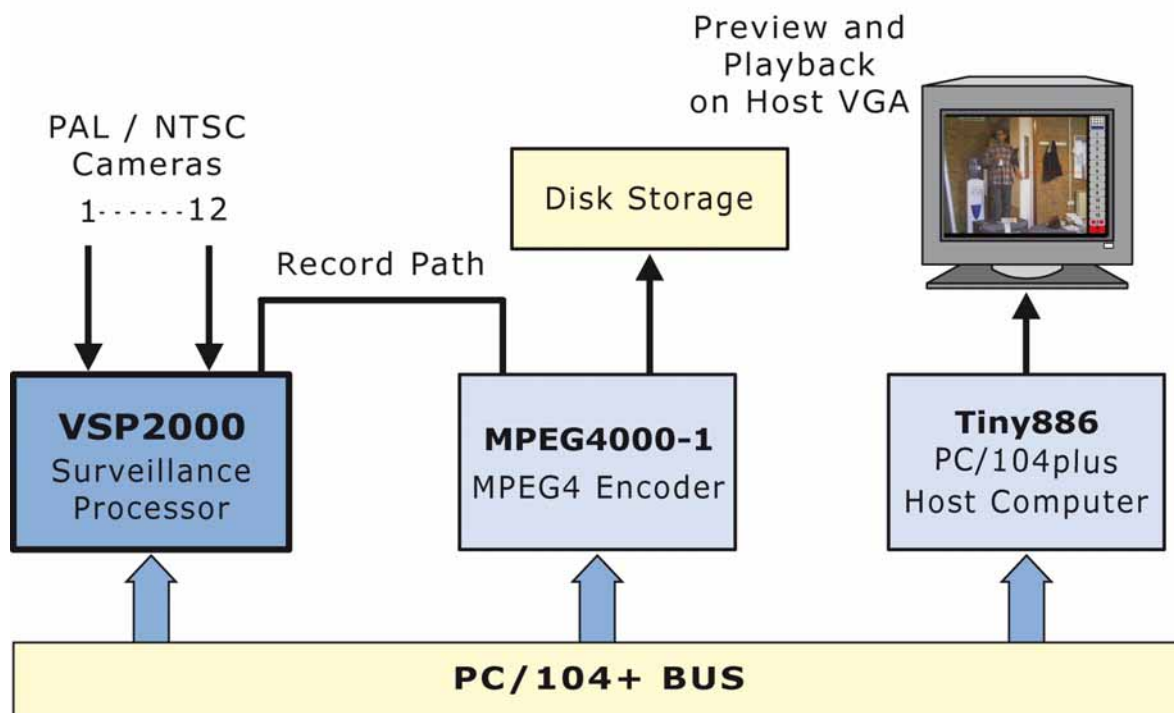
The RISC processes each video channel independently and detection of motion is signalled on a per-channel basis. Motion is signalled at the lowest level by means of an interrupt. The VSP2000 software drivers signal the occurrence of motion, direction of motion and other details to the application program for further action.

Record Output (PAL/NTSC)

The VSP2000 provides a single composite PAL/NTSC output which may be fed to optional downstream recording equipment. The 12 video sources can be sequenced out to the Record Output on a frame-by-frame basis. Source sequencing is flexible which allows video from channels of particular importance to be more frequently sequenced. Alternatively, any one of the 12 incoming channels can be routed to the Record Output at full frame size.

The Record Output inserts unique identification information in the VBI space of each frame as it is sequenced out. The VBI information comprises Channel Number, Date and Time information and a user-defined 8-bit number.

The embedded identification information, in particular the Channel Number, can be used by a playback system to correctly reconstruct the video sequences of any selected channel from an archived recording file.



12 Channel Record and Playback

PC/104plus Bus Interface

- Compliant with PCI Rev 2.1
- 132MBytes/sec bandwidth at 33.33 MHz bus speed
- Supports multiple VSP2000 per system

Analogue Video Input

- 12 concurrent composite PAL or NTSC video input channels
- Digital Line-Lock technology for reliable locking to any video source
- 9-bit CMOS Analogue-to-Digital converters
- 2x oversampling: 28.64MHz for NTSC, 35.47MHz for PAL

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

Motion Detection

- Real-time 12 channels Video Motion Detection
- Programmable Motion Detection Windows
- Programmable Motion Velocity
- Programmable Sensitivity
- Blind Camera Detection

Video Windowing

- Real-time 12 channels video overlay to system VGA
- Up to 12 Video Windows on system VGA with Text Overlay
- Title and Border for Video Windows
- Video Windows are re-sizable from full screen to QCIF
- Pan, Zoom and Scaling on Video Windows
- Side-by-side, Quad, Picture-in-Picture, Picture-out-Picture and other modes

Record PAL/NTSC output

- Composite PAL/NTSC output to external recording system
- Programmable channel sequencing
- Embedded VBI Channel Index code

System Requirements

- x86 PC-Compatible PC/104+ Computer
- PCI or AGP Display (for local display)
- Spare REQ/GNT on PC/104+ Bus
- 3.3V or 5V signalling PC/104+ bus

Miscellaneous

- Single +5V at less than 2A
- Operating temp 0°C to 60°C
- Standard 3.6 x 3.8in PC/104plus form factor

Software Drivers

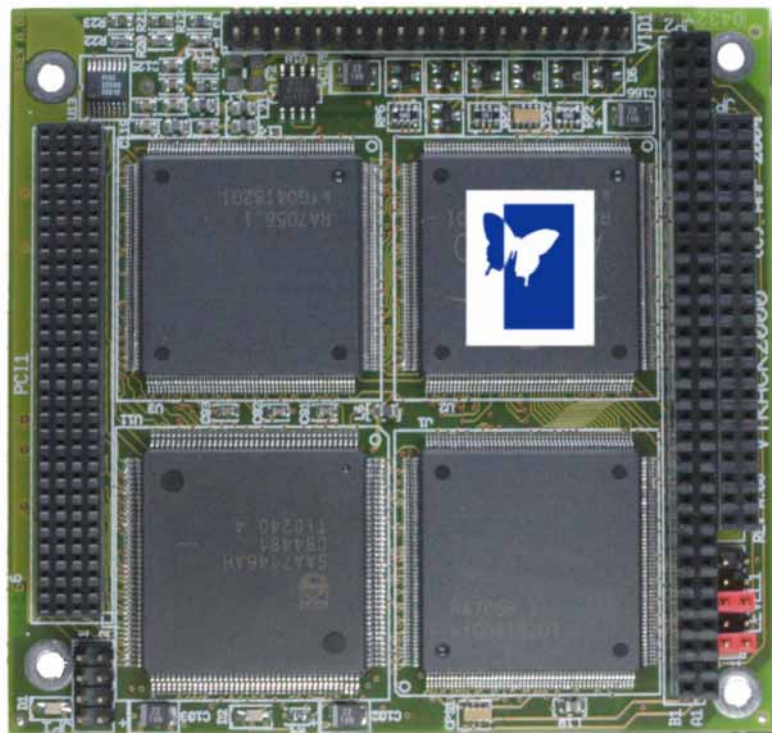
Drivers for Windows2000/XP, Linux, QNX
Sample video monitoring application in C/C++ source code

Related Products

Tiny886ULP	Ultra low-power PC/104plus computer with display accelerator
MPEG4000XLP	4-Channel MPEG4 Encoder/Decoder for PC/104plus

Ordering Information

VSP2000	12-Channel Video Surveillance Processor
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