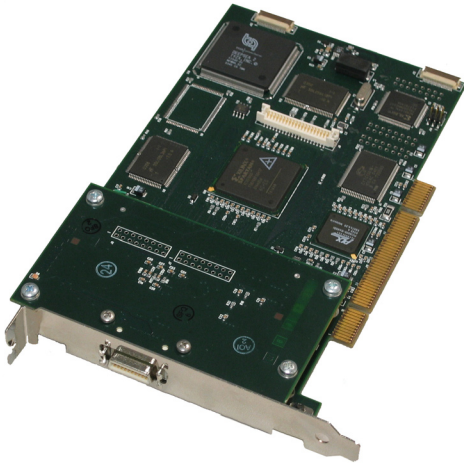




TYZX | *systems that see*

DeepSea™ 3D Vision

DeepSeaV2 Development System



TYZX DeepSeaV2 Development System provides real-time performance to application developers and researchers who require the advantages of stereo vision technology and demand the highest possible performance levels. Just as important, 3DAWARE offers a growth path to affordable, embedded systems to make application deployment practical.

The DeepSeaV2 Development System includes:

- DeepSeaV2.3 Stereo Processor
- TYZX DeepSea Stereo Camera
- SEER Development Software and demonstration applications

The DeepSea stereo processor is a ½-length PCI card that connects directly to the TYZX Stereo Camera and provides depth and color information to a conventional PC. At its core is the high performance DeepSea 2 chip that performs TYZX's patented, pipelined, implementation of the Census stereo correlation algorithm.

The DeepSea chip performs nearly 50 GigaOps/sec. providing dense, 16-bit depth estimates for every pixel.

Images from the Stereo Camera's two imagers are sent via a dedicated LVDS interface to the Stereo Processor. On-board firmware rectification corrects incoming images for lens distortion and alignment while maintaining the lowest possible system latency. The output of the system is a stream of images containing both depth and monochrome or color data at 60 frames-per-second.

The TYZX Stereo Camera is lightweight and low power, employing inexpensive off-the-shelf digital CMOS imagers and miniature lenses for low-cost deployment.

Though powerful, the DeepSea card requires very little power and contains the complete stereo computation engine, leaving the PC's processor and memory essentially unburdened and available for application processing tasks.



3D Vision Applications

TYZX 3D Vision enables Systems that See, Interpret and Respond to the real world. Applications include:

- Surveillance and People Tracking
- Autonomous mobile robot navigation
- Gesture tracking
- Automotive Occupant Sensing and Collision Avoidance

And many others...

DeepSea Stereo Engine Specifications

- **Maximum Frame Rate:** 200 fps
- **Color Imagery:** 30 bit YUV, 512 x 512
- **Depth Imagery:** 16 bit Z, 512 x 2048
- **Depth resolution:** 52 disparities plus 5 bits subpixel localization
- **Interface:** PCI card direct DMA transfers
- **Rectification:** firmware, 8 bit bilinear interpolation
- **Minimum latency:** 13 scan lines
- **Performance:** up to 2.6 billion pixel-disparity evaluations per second.

About TYZX

TYZX is a 3D vision company providing a platform of hardware, software and services for building products that see and interact with the world in three dimensions. TYZX delivers high volume, cost-effective 3D vision solutions to industry leaders in automotive, consumer electronics, robotics and security markets. Founded in 2002 and based in Menlo Park, Calif., Tyzx is privately funded. For more information, visit www.tyzx.com or email info@tyzx.com

Protected by U.S. Patents: 6,215,898; 6,456,737; and patents pending.

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