

# Acuity 1000 Vision Accelerator

## Product Summary

The Acuity 1000 Vision Accelerator is an intelligent frame grabber with an on-board vision acceleration ASIC, high-speed image memory, and dedicated digital I/O. It supports a variety of machine vision cameras through interchangeable plug-in camera interface daughtercards. Image acquisition to the on-board memory and low level image data reduction by the ASIC substantially off-load both the host PC CPU and the host PCI bus.



## Vision Acceleration ASIC Delivers High Performance

The key to the board's high performance is an RVSI

designed vision processing acceleration ASIC specifically architected for machine vision. This chip represents the latest generation of Acuity vision processing hardware and shrinking processing functionality used to occupy multiple printed circuit boards into a single silicon die.

The ASIC accelerates most low level image processing/analysis operations by approximately one to two orders of magnitude over a high performance embedded CPU. All full frame image processing/analysis operations may be performed in only a fraction of a frame time allowing multiple operations per frame. Such acceleration makes it possible to use the vision system in high throughput applications, deploy more intelligent tools for increased robustness at run time and for enhanced ease of use during setup/training.



## Features

- Short single slot PCI card
- High performance vision accelerator substantially off-loads host PC
- ASIC accelerates all vision processing for speed and robustness
- Supports a variety of analog & digital cameras
- On-board digital I/O for triggering, strobe control, & other interfacing
- Analog outputs for light control
- Visionscape™ software environment for application development & deployment
- Now features DMx Auto ID+™ and DMx Verifier+™



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## Interchangeable Camera & I/O Interface Modules for Flexibility

The board design is modular with interchangeable plug-in camera & I/O interface daughtercards:

- CAMI/O 300 analog camera interface supporting four RS-170/CCIR cameras.
- CAMI/O 400 digital camera interface supporting many digital cameras including high resolution, line-scan and TDI cameras.
- CAMI/O 640 non-standard analog camera interface supporting four independent channels, high or standard resolution, progressive or partial scan, asynchronous reset, shuttered, etc.

In contrast to multimedia or scientific frame grabbers, the CAMI/O modules offer a variety of machine vision features such as integrated trigger/strobe support and fast camera switching, which allows images to be acquired from different channels on successive frames. The CAMI/O 300 board supports both synchronous acquisition on all four channels as well as fully asynchronous acquisition with RVSI cameras. The CAMI/O 640 board supports fully asynchronous acquisition on four independent channels with a variety of cameras.

## On Board I/O, Communications, & Display

All CAMI/O modules feature extensive on-board I/O capabilities including 4 dedicated triggers, 4 dedicated strobe outputs, 16 user programmable opto-isolated field I/O points, and 8 analog outputs (accessible through an external isolation/termination board).

## Visionscape™ Software

The Visionscape™ Software for the Acuity family of vision processors encompasses proven complete solutions for many applications and vertical markets as well as intuitive point-and-click graphical environments for vision application development and deployment.

## Host-PC Requirements

Pentium class CPU (200MHz or higher), one open half length PCI slot, Microsoft Windows NT 4.0 operating system.

### Acuity CiMatrix

5 Shawmut Road  
Canton, MA 02021  
Tel. 781-821-0830  
Fax 781-828-8942  
1-800-646-6664  
www.rvsi.com

### RVSI Asia

230 Victoria Street  
#05 10-11 Bugis Junction Towers  
Singapore 188024  
Tel. 011 65 336 5122  
Fax 011 65 336 2366

### RVSI Europe

RVSI House  
Claybrook Drive  
Redditch  
Worcestershire,  
B98 0FH England  
Tel 011 44 1 527 505000  
Fax 011 44 1 527 505001

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