

# Piccolo Series

## Color/Monochrome Image Acquisition Cards



### Piccolo:

- Single channel real-time video capture
- BNC, DB-9, S-Video connectors
- 4 TTL I/O lines



### Piccolo Pro2:

- Connection of up to 4 cameras
- High frame rate
- 13 TTL I/O lines



### Piccolo Pro3:

- Modular architecture: 4, 8, 12 or 16 cameras
- High frame rate: 16 new images every second
- Up to 20 digital TTL I/O lines

## Introduction

### General

**Piccolo:** The Piccolo is a low-cost frame grabber card ideal for single camera applications. It provides a robust BNC connector, an S-video connector and a DB-9 connector for video input and I/O connections.

**Piccolo Pro2:** The Piccolo Pro2 is a cost effective frame grabber card optimized for video surveillance applications. The synchronization stage, PCI management hardware and the MultiCam driver have been optimized to allow high-speed acquisition of full-resolution images from multiple unsynchronized cameras. The Piccolo Pro2 provides 4 BNC connectors (video input) allowing connection of up to four cameras.

**Piccolo Pro3:** The Piccolo Pro3 is able to acquire images from up to 16 cameras due to its modular architectural design. The Piccolo Pro3 baseboard and each extension module (up to 3) provide 4 BNC and a CTL connector (with 5 TTL I/O lines).

### Image Acquisition

**Color Image:** Color video format is compatible with the following composite video input formats: NTSC-M, NTSC-Japan, PCL-B, PAL-D, PAL-G, PAL-H, PAL-I, PAM-M, PAL-N and SECAM. **Monochrome Image:** The monochrome video acquisition is compatible with CCIR and EIA (RS-170).

**Optional Scaling:** The acquire images or portions of images can be optionally scaled:

- Acquisition of a programmable area of interest
- Scaling of the image (down to 1:16)
- Adjustment of hue (for NTSC signals), contrast (0 to 200%), brightness and saturation (0 to 200% for U and V signals)

### Multiple Cameras

The Piccolo Pro2 and Piccolo Pro3 can acquire images from unsynchronized cameras within very short switching times. The switching time is < 33ms for NTSC and <40ms for PAL, therefore a total of 16 images can be acquired per second (typical).

### Image Transfer

The Piccolo series supports PCI bus mastering. Images are transferred to the PC memory using DMA (Direct Memory Access) in parallel with the acquisition and processing. Several Piccolo series boards can be simultaneously be in operation within a single PC is supported.

### Watchdog

A hardware watchdog is available on the Piccolo Pro3. The watchdog is able to monitor the PC's application operation and will automatically reset the PC after a programmable inactivity time-out. This ensures a reliable operation of remote systems.

### Bitmap Image Formats

Before storing the acquired images to its located memory buffer, a pixel format conversion takes place in real-time. Numerous color or monochrome formats can be chosen. RGB32, RGB24, RGB16, RGB15, Y8, YCrCb 4:2:2, YCrCb 4:1:1, Planar YCrCb 4:2:2, Planar YCrCb 4:1:1

## Physical Information

### Piccolo

PCI board, 125 mm x 70 mm  
Power consumption: 1W (200mA@+5V)

### Piccolo Pro2

PCI board, 125 mm x 107 mm  
Power consumption: 350mA@+5V, 6mA@+12V, 30mA@-12V

### Piccolo Pro3

PCI board, 125 mm x 107 mm  
Power consumption: 1.3W

### Piccolo Pro3 Module

63 mm x 107 mm  
Power consumption: 600mW

## Ordering Information

- **Piccolo**  
True-color image acquisition card
- **Piccolo Pro2**  
Supports up to 4 cameras with 4 BNC connectors.
- **Piccolo Pro3**  
Piccolo Pro3 baseboard, supports up to 4 cameras with 4 BNC connectors
- **Piccolo Pro3 Module**  
Piccolo Pro3 extension module, supports up to 4 cameras with BNC connectors

1

Software Solutions

2

PXI/CompactPCI Platforms

3

PXI-Based Instruments

4

PXI/CompactPCI Modules

5

PCI DAQ Cards

6

PCI DIO Cards

7

PCI/104-Plus Products

8

ISA DAS/DIO Cards

9

Wiring Termination Boards

10

Motion Control Cards

11

Machine Vision Products

12

Remote I/O Modules