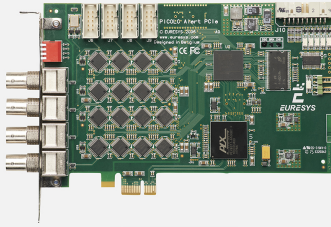


# Piccolo Alert PCIe

PCIe video capture card with four BNC connectors for up to 16 standard PAL/NTSC cameras



## At a Glance

- 4x BNC connectors on the bracket, expandable to 16 with three [1203] VEB modules (sold separately)
- PCIe x1 bus
- Sixteen shared video decoders, 100/120 images per second (200/240 fields per second)
- Real-time acquisition from 4 cameras, fast switching between up to 16 cameras
- Independently-programmable frame rate and acquisition parameters for each video input

## Benefits

### Video input configurations

- Four cameras can be connected using the BNC connectors on the bracket: Acquisition at 30 (NTSC) or 25 (PAL) frames per second per camera
- Sixteen cameras can be connected using the BNC connectors on the bracket and three [1203] VEBs: Acquisition at 7.5 (NTSC) or 6.25 (PAL) frames per second per camera

### Windows and Linux drivers available

#### MACHINE VISION FOR THE GENERAL MANUFACTURING INDUSTRIES

##### Low cost image acquisition from industrial analog cameras for inspection machines

Take advantage of the lowest-cost industrial cameras available on the market with the Domino and Piccolo series cards.

#### LIFE SCIENCES & MEDICAL

Endoscopy applications

##### Standard and high-definition image acquisition

Dental applications

Video-guided surgery applications

#### MICROSCOPY

##### High-definition image acquisition

Offline inspection stations

Laboratory and measuring microscopes

## ITS (INTELLIGENT TRANSPORTATION SYSTEM) & TRAFFIC MANAGEMENT

### Video acquisition from multiple cameras

## Specifications

### Mechanical

Form Factor	PCI Express card
Format	Standard profile, half length, 1-lane PCI Express card
Dimensions	L 167.65 mm x H 106.65 mm L 6.6 in x H 4.38 in

### Host bus

Standard	PCI Express 1.0
Link width	1 lane
Link speed	2.5 GT/s (PCIe 1.0)
DMA	32-bit
Peak delivery bandwidth	256 MB/s
Effective (sustained) delivery bandwidth	180 MB/s (Host PC motherboard dependent)
Power consumption	Max. 9.5 W (2.9 A @ +3.3 V)

### Camera / video inputs

Interface standard(s)	NTSC-M, PAL-B/G, RS-170, CCIR
Connectors	<ul style="list-style-type: none"><li>• VIDEO 1 to VIDEO 4: BNC female connectors on the bracket for composite video inputs</li><li>• VEB LINK 0 to VEB LINK 3: 10-pin shrouded header connectors on the PCB for VEB modules</li></ul>
Termination resistor	Selectable using switches on the bracket
Native resolution	Square pixels, broadcast and custom resolutions
Frame rate	<ul style="list-style-type: none"><li>• Up to 25/30 images per second, 50/60 fields per second per input</li><li>• Total 100/120 images per second with up to 16 cameras</li></ul>
Number of cameras	16
Number of cameras (at full frame rate)	4
Line-scan cameras supported	No

### Video delivery

Raw video format(s)	<ul style="list-style-type: none"><li>• Packed RGB color formats: RGB15, RGB16, RGB24, RGB32</li><li>• Planar RGB color formats: RGB24PL</li><li>• Packed YUV color formats: YUV411, YUV422, YUV444</li><li>• Planar YUV color formats: YUV411PL, YUV422PL, YUV444PL, YUV411PL, YUV422PL</li><li>• Monochrome formats: Y8</li></ul>
Deliverable video resolution (SD)	Frame, field, CIF, QCIF and custom image formats

### Area-scan camera control

Trigger	<ul style="list-style-type: none"><li>• Hardware trigger for up to four cameras</li><li>• With configurable noise removal filter and optional delay</li></ul>
Strobe	<ul style="list-style-type: none"><li>• Hardware strobe signal for up to four cameras</li><li>• With programmable position and duration</li></ul>

## General Purpose Inputs and Outputs

Number of lines	9 I/O lines: <ul style="list-style-type: none"><li>• 4 contact closure inputs (IN)</li><li>• 5 solid-state relay outputs (OUT)</li></ul>
Connectors	I/O: 20-pin dual-row 0.1" shrouded header on the PCB
Usage	General purpose IO
Electrical specifications	<ul style="list-style-type: none"><li>• IN: Polarity-free inputs, compatible with TTL, 12V and 24V signals, opto-couplers, relays and switches</li><li>• OUT: Opto-isolated potential-free and polarity-free solid-state outputs, compatible with signals up to 30V, with 4 <math>\mu</math>s fall time, isolated up to 500V</li></ul>
Watchdog	Yes

## Software

Host PC Operating System	<ul style="list-style-type: none"><li>• Microsoft Windows 10, 8.1, 8, 7 for x86 (32-bit) and x86-64 (64-bit) processor architectures</li><li>• Linux, from kernel version 2.6 to 4.13, compatible with a wide range of distributions, for x86 (32-bit) and x86-64 (64-bit) processor architectures</li></ul>
APIs	<ul style="list-style-type: none"><li>• MultiCam 32- and 64-bit binary libraries (Windows and Linux), for ISO-compliant C/C++ compilers</li><li>• DirectShow 32- and 64-bit filters (Windows only), for Microsoft Visual C++ compilers</li></ul>

## Environmental conditions

Operating ambient air temperature	0 to +50 °C / +32 to +122 °F
Operating ambient air humidity	10 to 90% RH non-condensing
Storage ambient air temperature	-20 to +70 °C / -4 to +158 °F
Storage ambient air humidity	10 to 90% RH non-condensing

## Certifications

Electromagnetic - EMC standards	<ul style="list-style-type: none"><li>• European Council EMC Directive 2004/108/EC</li><li>• United States FCC rule 47 CFR 15</li></ul>
EMC - Emission	<ul style="list-style-type: none"><li>• EN 55022:2010 Class B</li><li>• FCC 47 Part 15 Class B</li></ul>
EMC - Immunity	<ul style="list-style-type: none"><li>• EN 55024:2010 Class B</li><li>• EN 61000-4-2</li><li>• EN 61000-4-3</li><li>• EN 61000-4-5</li><li>• EN 61000-4-6</li></ul>
Flammability	PCB compliant with UL 94 V-0
RoHS	European Union Directive 2011/65/EU (ROHS2)
REACH	European Union Regulation 1907/2006
WEEE	Must be disposed of separately from normal household waste and must be recycled according to local regulations

## Ordering Information

Product code - Description	<ul style="list-style-type: none"><li>• 1641 - Picolo Alert PCIe</li></ul>
Optional accessories	1203 - VEB



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