



# Pixim<sup>®</sup> Design Resources

## Pixim Reference Designs Speed Time-to-Market for Security Camera Developers

The family of Pixim Reference Boards speeds time-to-market for security camera developers creating products based on any of Pixim's chipsets – the Orca™ D1400, D1500, D1600 and D2500 chipsets. Complete electrical and mechanical documentation with schematics and layout files, as well as production-ready, fully automatic camera control firmware and on-screen menus are included with Pixim's Camera Development Kits.

Depending on the respective Pixim chipset selected, the Pixim reference design provides access to such features as the advanced exposure controls, multiple automatic white balance modes, AC line lock, an on-screen display with push-button or remote control of menus, extensive wide dynamic range (WDR) controls, composite video output, activity detection alarms, optional progressive output with various digital video data formats, digital pan-tilt-zoom controls, true day/night control functionality for mechanical IR filter switchers and much more.

## Pixim Camera Development Kits

Pixim provides Camera Development Kits (CDKs) for the Orca product family to allow customers to experiment with the respective reference camera and get a head start on product development.

Each CDK allows camera manufacturers to configure hardware interfaces, camera menus, and properties on cameras using the Pixim chipsets. Hardware definitions, color palettes, menu definitions, strings, multiple languages, and fonts can be designed by the manufacturer to customize the camera's look and feel.

Camera manufacturers can define the properties that can be controlled by the user through on-screen menus and sliders, pushbuttons, and/or DIP switches. In many cases a single hardware design can support multiple camera SKUs with few or no changes to the hardware.

Pixim provides developers with example property sets and on-screen display (OSD) menu configurations that can be used to develop the look and feel of a custom camera system. Designers can adapt and extend these examples, or use the examples as references to create entirely new cameras. The CDKs also provide comprehensive production software to help customers optimize their camera manufacturing flow for fastest time to market.

## Key Features Common to all Pixim Board Reference Camera Designs

- › 1/3" Digital Pixel System<sup>®</sup> Orca RGB image sensor and processor
- › 720 (H) x 540 (V) active picture elements
- › NTSC/PAL selectable video standard
- › Internal sync or external AC line lock, with the ability to use line lock in asystem using a separate 24VAC power supply board
- › Minimum illumination 0.8 lux (RGB) at f/1.2 at 30 fps 50 IRE
- › Up to 36dB Auto Gain Control (AGC)
- › SNR > 50dB max
- › 1/60 - 1/30,720 sec fully automatic global electronic shutter
- › 0.45 Gamma (auto and manual)
- › Wide Dynamic Range (WDR) 102dB typical (120dB max)
- › White balance control ATW: 2000K to 11000K; AWB push-to-set
- › Horizontal and vertical reverse image flip
- › Video output signal 1.0 V p-p into 75 ohm load
- › Operating temperature -10°C to 60°C
- › Power consumption 2.2W max
- › Reference cameras are shipped with a DC 12V ± 10% power supply

## Color Board Camera Reference Designs

Product Number	BDB-2500-38	BDA-2500-32	BDJ-2500-S	BDE-2500-38
<b>Description</b>	Board Camera Reference Design for NTSC, PAL and TCP/IP cameras	Board Camera Reference Design for NTSC, PAL and TCP/IP cameras	Single-Board Camera Reference Design for NTSC, PAL, and TCP/IP cameras	Board Camera Reference Design for NTSC, PAL and TCP/IP ambient light rejection cameras
<b>Application</b>	Minidome, box, ATM, PVM, etc.	Minidome, embedded, hidden, mobile, etc.	Minidome, box, ATM, PVM, door camera, taxi cam, etc.	Machine Vision, Analytics, Security
<b>Dimensions</b>	38 mm x 38 mm dual stack	32 mm x 32 mm dual stack	32 mm x 55 mm single-board	38 mm x 38 mm dual stack
<b>Lens</b>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ M12 threaded or 14 mm bayonet</li> <li>➤ Manual &amp; DC Iris supported</li> <li>➤ Day/Night &amp; color-only Auto Iris lens options</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ M12 threaded or 14 mm bayonet</li> <li>➤ Manual &amp; DC Iris supported</li> <li>➤ Day/Night &amp; color-only Auto Iris lens options</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ M12 threaded or 14 mm bayonet</li> <li>➤ Manual &amp; DC Iris supported</li> <li>➤ Day/Night &amp; color-only Auto Iris lens options</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ M12 threaded or 14 mm bayonet</li> <li>➤ Manual Iris supported</li> </ul>
<b>Mounting holes</b>	1.98 /3.6 mm & 34.4 /36 mm	2/2.5 mm & 29.5/30 mm	X = 2.0 mm & 53 mm Y = 2.0 mm & 30 mm	1.98/3.6 mm & 34.4/36 mm
<b>Output</b>	Composite NTSC/PAL switchable; ITU656 digital	Composite NTSC/PAL switchable; ITU656 digital	Composite NTSC/PAL switchable; ITU656 digital	Composite NTSC/PAL switchable; ITU656 digital

## Day/Night Camera Reference Designs

Product Number	BD-2500-DN-CS	BDB-2500-DN-M12	BDA-2500-DN-L	BDJ-2500-DN-L
<b>Description</b>	True Day/Night Box Camera Reference Design for NTSC, PAL and TCP/IP cameras	True Day/Night Board Camera Reference Design for NTSC, PAL and TCP/IP cameras	True Day/Night Board Camera Reference Design for NTSC, PAL and TCP/IP cameras	True Day/Night Board Camera Reference Design for NTSC, PAL and TCP/IP cameras
<b>Application</b>	Indoor, Outdoor, Perimeter	Indoor, Outdoor, Perimeter	Indoor, Outdoor, Perimeter	Indoor, Outdoor, Perimeter
<b>Dimensions</b>	Box Camera: 48 mm x 43 mm x 68 mm	38 mm dual stack	32 mm dual stack	32 mm x 55 mm single-board
<b>Lens</b>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ C/CS mount support</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ M12 x 0.4 threaded w/set screw</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ 14 mm w/set screw</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3 mm)</li> <li>➤ 14 mm w/set screw</li> </ul>
<b>IR Filter Switch Mechanism</b>	Latching Solenoid	Latching Solenoid	3.5 - 8 mm switching DC Lens w/solenoid	3.5 - 8 mm switching DC Lens w/solenoid

## Additional Pixim Design Resources

Product Number	BD-2500 Color Box Camera	BD-2500-MPEG4 Demo Camera	ED-2500-CDK Eclipse™ Camera Reference Design	BD-2500-E Ambient Light Rejection Camera
<b>Description</b>	C/CS Mount Color Box Camera	MPEG4 IP Camera	Eclipse Technology reference	C/CS Mount Monochrome Box Camera
<b>Application</b>	Indoor, Outdoor, Perimeter	Networked Security	Camera development	Machine Vision, Analytics
<b>Lens</b>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3mm)</li> <li>➤ C/CS with Back Focus Ring</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3mm)</li> <li>➤ C/CS with Back Focus Ring</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3mm)</li> <li>➤ C/CS with Back Focus Ring</li> </ul>	<ul style="list-style-type: none"> <li>➤ 1/3 inch (6.3mm)</li> <li>➤ C/CS with Back Focus Ring</li> </ul>
<b>Other</b>	12 VDC, 24VAC optional	Frame Rate: 30 fps at 720x480 resolution	Interfaces: CVBS, S-Video, Serial, Auto Iris (DC and Video), RS232 12VDC, 24VAC, POE options Operating System: Linux	12 VDC, External IR Illuminator

