Allied Vision

Scope of this document

Bonito high-speed cameras output data rates up to 800 MByte/s per channel. This is a challenge for frame grabbers, especially if the camera operates with full resolution (2320 x 1726) and maximum frame rate. This document refers to frame grabbers tested with Bonito cameras.

Bonito Camera Link interface

The **Bonito CL-400B/C** has 2 x 10-tap Camera Link Full+ output channels (4 Camera Link connectors). Each channel supports the 80-bit interface with 10-tap configuration at 80 MHz clock frequency. Therefore, you need one frame grabber with two channels or two frame grabbers with one channel.
The **Bonito CL-400B/C 200 fps** has 1 x 10-tap Camera Link Full+ output (2 Camera Link connectors) and needs one channel.

www	The **Bonito Technical Manual** contains a detailed interface description, chapter *Camera interfaces*: http://www.alliedvisiontec.com/emea/support/downloads/product-literature/bonito.html

Bonito cameras and Power over Camera Link (PoCL)

Note	Bonito cameras are **not** conform to the PoCL standard.
	Allied Vision Technologies does **not** guarantee PoCL functionality, even with the PoCL frame grabbers listed here.
	A future firmware update of Bonito or the frame grabber might affect PoCL functionality.
	Stable camera operation with PoCL must be tested in each individual case.

The Camera Link connectors 02/04 or CL1 are prepared to be powered by frame grabber, **but not PoCL conform**. If powered via one channel only, the camera might dissipate more power than the frame grabber can provide.
To power the Bonito via frame grabber, you need PoCL capable Camera Link cables. Maximum cable length depends on the cables and on the frame grabber.

Tested frame grabbers

Frame grabbers tested with Bonito cameras are listed in the following tables:
- *Table 1: Tested frame grabbers without significant restrictions* on page 3
- *Table 2: Tested frame grabbers with restrictions* on page 4

Manu-facturer	Model	PCIe	Channels	PoCL	Remarks	Tested by
Active Silicon	FireBird 2XCLD Dual Deca	x 8	2	Yes	Line length must be divisible by 16*	AVT
Dalsa	Xcelera-CL+ PX8 Full	x 8	1	Yes	Line length must be divisible by 16*	AVT
Epix	PIXCI E8	x 8	1	Yes	No restrictions**	Vendor
Euresys	GRABLINK Full	x 4	1	No	This frame grabber is equipped with Mini Camera Link connectors (HDR/SDR-26)**	Vendor
Matrox	Radient eCL-SF (RAD2GSF 150400)	x 8	1	Yes	This frame grabber is equipped with Mini Camera Link connectors (HDR/SDR-26)**	Vendor
Matrox	Radient eCL-DF (RAD2GSF 150400)	x 8	2	Yes	This frame grabber is equipped with Mini Camera Link connectors (HDR/SDR-26)**	Vendor
National Instruments	PCIe-1433	x 4	1	Yes	Line length must be divisible by 16*	AVT
Silicon Software	microEnable IV AD4-CL	x 4	1	No	Line length must be divisible by 16*	AVT
Silicon Software	microEnable IV AD4-PoCL	x 4	1	Yes	Line length must be divisible by 16*	AVT
Silicon Software	microEnable IV VD4-CL	x 4	1	No	Line length must be divisible by 16*	AVT

Table 1: Tested frame grabbers without significant restrictions

Manu-facturer	Model	PCIe	Channels	PoCL	Remarks	Tested by
Silicon Software	microEnableIV VD4-PoCL	x 4	1	Yes	Line length must be divisible by 16*	AVT

Table 1: Tested frame grabbers without significant restrictions (Continued)

* With 2 frame grabbers, max H resolution = 1120 pixels per channel
**With 2 channels/grabbers, image capture with 386 fps @ 2320 x 1726 is possible

Manu-facturer	Model	PCIe	Channels	PoCL	Remarks	Tested by
Bitflow	Karbon-CL KBN-PCE-CL2-F-IP4	x 8	1	No	Maximum resolution ≈ 2000 x 1726 pixels. Full resolution possible with *x2 DMA mode* @ 192 fps	AVT
Bitflow	Karbon-CL KBN-PCE-CL4-F-IP4	x 8	2	No	Maximum resolution ≈ 2000 x 1726 pixels. Full resolution possible with *x2 DMA mode* @ 192 fps, only 1 channel used	AVT
Dalsa	Xcelera-CL PX4 Full	x 4	1	No	Maximum frame rate ≈ 172 fps, depending on system performance. Line length must be divisible by 16*	AVT
National Instruments	PCIe-1429	x 4	1	No	Maximum resolution ≈ 2000 x 1726 pixels	AVT

Table 2: Tested frame grabbers with restrictions

* With 2 frame grabbers, max H resolution = 1120 pixels per channel