FIREBIRD CAMERA LINK
Dual Deca Frame Grabber

Active Silicon
COMPUTER IMAGING PRODUCTS

- **Camera Link Frame Grabber**
- **Supports dual Base, dual Medium, dual Full and dual 80 bit (Deca) modes, with PoCL**
- **RISC based DMA engine technology**
- **8-lane Gen2 PCI Express interface**

FEATURES

- Supports the latest v2.0 Camera Link interface.
- RISC based DMA engine gives ultimate performance.
- High speed PCI Express 8-lane Gen2 interface.
- Comprehensive I/O.
- Supports PoCL (Power over Camera Link).
- Standard half-length PCI form factor.
- Supported by the proven Phoenix software SDK.

OVERVIEW

FireBird Camera Link Dual Deca is a member of Active Silicon's new state-of-the-art FireBird frame grabber family.

FireBird is designed for ultimate performance providing the very fastest image acquisition without any CPU intervention using the latest FPGA families, DDR3 memory, and a fast Gen2 PCI Express interface.

FireBird supports the latest version 2.0 Camera Link specification, including both 80 bit modes: 8 bit 10-tap and 10 bit 8-tap modes – often referred to as Camera Link "Deca", at clock rates up to 85 MHz. Developed for high-end multiple camera applications, the **FireBird Camera Link Dual Deca** supports capture from two simultaneous Camera Link cameras which could be two Medium, two Full or two Deca cameras.

FireBird is supported by Active Silicon's Phoenix SDK, allowing easy migration for existing customers using Phoenix frame grabbers. The Phoenix SDK is available as a separate item, and allows rapid system development and integration. It provides comprehensive example applications and optimized libraries, and is available for a variety of operating systems via a common API, including Windows and Linux (32 bit and 64 bit environments) as well as Mac OS X, VxWorks and QNX. Drivers for third party applications are also available such as Common Vision Blox, Image-Pro Plus, StreamPix, LabVIEW etc. As well as functions that control the hardware, the libraries include general purpose functions for the manipulation and display of images. A separate datasheet describes the SDK in detail.

SPECIFICATION SUMMARY

Camera Link Interface:	**FireBird** is fitted with the 26 way 3M MDR connectors and screwlocks as specified in the Camera Link v2.0 specification. LEDs by each connector show the link status.
Camera Clock:	**FireBird** supports effective clock rates from DC to the Camera Link maximum of 85MHz, using the Camera Link Strobe (STB) and Data Valid (DVAL) signals.
PoCL:	**FireBird** supports Power over Camera Link (PoCL) functionality and is able to provide power to PoCL enabled cameras via the Camera Link data cable therefore removing the need for a separate power supply. In addition to this the **FireBird** implements *SafePower,* an intelligent sense mechanism which detects the presence of a PoCL camera before applying power to it. This safety mechanism ensures that power is not applied to conventional non-PoCL cameras. **FireBird** can supply up to 4W at a nominal 12V to a Base mode PoCL camera, or 8W to Medium/Full/80 bit cameras, as required by the Camera Link specification. Both Camera Link connectors support PoCL, which with *SafePower* allows the use of any combination of PoCL and conventional cameras.
Buffer Memory:	512 Mbytes of DDR3 memory is fitted for buffering between the CoaXPress interface and the PCI Express bus.
PCI Express:	8-lane Gen2 interface to support up to 40 Gbps transfer from **FireBird** to the PC.
I/O:	The following I/O lines are provided for triggers, shaft encoders, exposure control and general I/O: • 4 opto-isolated inputs. • 4 opto-isolated outputs. • 4 TTL inputs, 5V tolerant. • 4 TTL outputs, 5V logic. • 4 RS-422 inputs. • 4 RS-422 outputs. All these I/O signals are provided on a 50 way header on the **FireBird** board.

PHYSICAL AND ENVIRONMENTAL DETAILS

Dimensions:	PCB: 168mm by 111mm. Overall: 174mm by 111mm. Width: Dual-Slot.
Approximate weight:	244g.
Power consumption (typical):	+3.3 V +12 V TBD W TBD W
Storage Temperature:	-15°C to +70°C.
Operating Temperature:	0 °C to +55°C (ambient environment).
Relative Humidity:	10% to 90% non-condensing (operating and storage).

ORDERING INFORMATION

PART NUMBER	***DESCRIPTION***
AS-FBD-2XCLD-2PE8	**FireBird Camera Link Dual Deca** frame grabber.
AS-PHX-SDK-xxx-CD	Software Development Kit for *xxx* operating system. For a full list of all supported operating systems please refer to the SDK datasheet, or contact your distributor.
AS-CBL-CL-MP-D-xM	Camera Link cable *x* metres in length, suitable for both PoCL and conventional cameras. Standard stock lengths are 1m, 3m, 5m, and 7m. Higher flex rating and longer length cables also available – contact your distributor for details.

An initial order for the **FireBird** with an SDK and cable is supplied in a presentation case.

THE FIREBIRD RANGE

The following products will be available in the range:

- High performance CoaXPress frame grabbers.
- Low cost CoaXPress frame grabbers.
- Camera Link frame grabbers, including Deca and dual-Deca support.
- 3G-SDI frame grabbers.

These will be available in various form factors including standard PC, PC/104-Express and XMC.

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