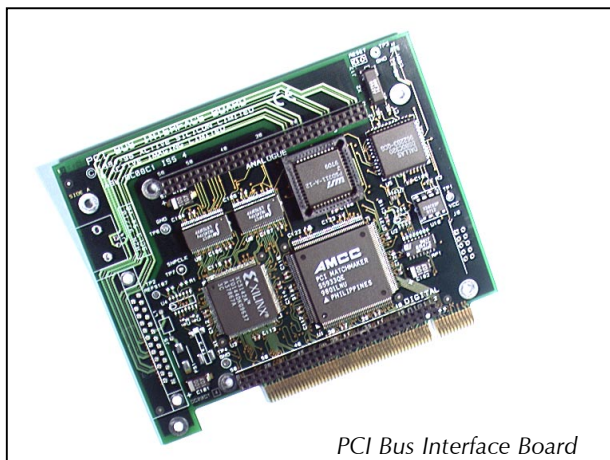## 32 BIT PCI BUS INTERFACE BOARD

- High speed data transfer bursting at 132 Mb/sec.
- On board Data Mapper directly supports many pixel formats, thus accelerating display applications.
- Combined with **Snapper-DIG16** provides a 16 bit AIA compliant digital camera interface.
- Software Development Kit (SDK) available for rapid system development and integration.
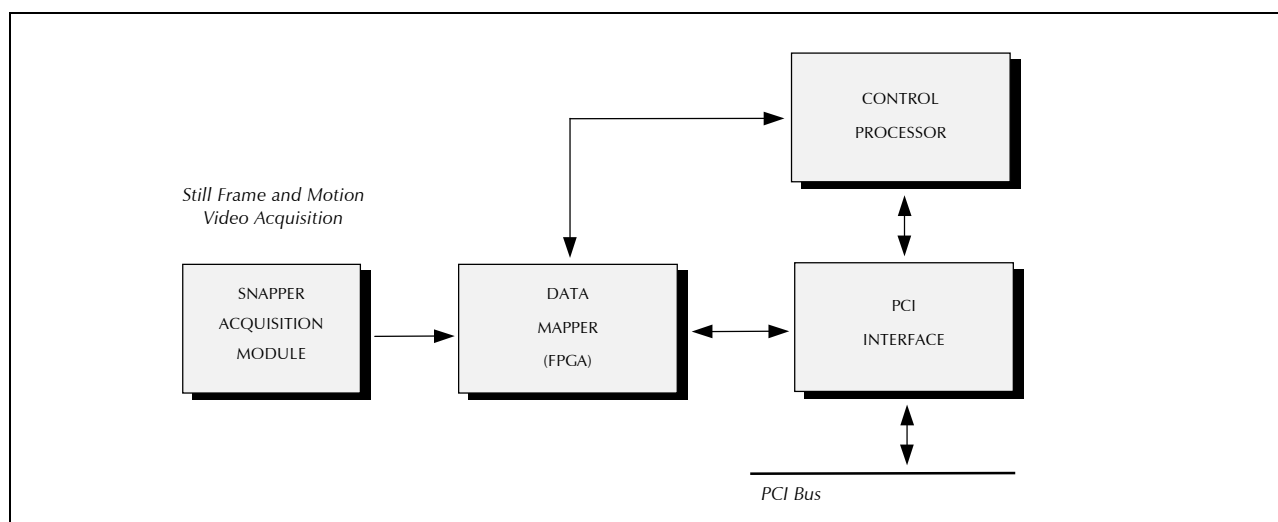
PCI Bus Interface Board

OVERVIEW

PCI-BIB-NC is a PCI Bus Interface Board designed to be used with the **Snapper-DIG16** digital Snapper acquisition module to provide high quality frame grabbers capable of real-time display using standard SVGA cards. This host based methodology allows images to be smoothly integrated with standard GUIs - in other words multiple image windows can be supported, with the usual resizing, overlapping and scrolling. This results in single monitor display solutions without the need for the VGA feature connector approach with its inherent inconvenience and resolution limitations.

Combined with **Snapper-DIG16**, the result is a high quality digital data acquisition system including compatibility with the AIA digital camera standard. For further information on the range of Snapper modules available, please refer to the individual Snapper datasheets.

Full hardware interface information is available to OEMs and system integrators wishing to design their own plug-on modules. By using this off-the-shelf hardware with its full software support on multiple operating systems, product design time can be significantly reduced.

The Software Developer's Kit (SDK), available as a separate item, allows rapid system development and integration. It provides comprehensive example applications and optimised libraries, and is available for a variety of operating systems including Windows 3.1x/95/98/NT, MacOS 7/8, MS-DOS, Solaris 2, LynxOS and VxWorks. 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.

PCI Bus Interface Board

```
                                            ┌──────────────┐
                                            │   CONTROL    │
                                            │  PROCESSOR   │
                            ┌───────────────►              │
                            │               └──────┬───────┘
  Still Frame and Motion    │                      ▲
  Video Acquisition         │                      ▼
┌────────────┐       ┌──────┴──────┐        ┌──────────────┐
│  SNAPPER   │       │    DATA     │        │     PCI      │
│ ACQUISITION├──────►│   MAPPER    │◄──────►│  INTERFACE   │
│  MODULE    │       │   (FPGA)    │        │              │
└────────────┘       └─────────────┘        └──────┬───────┘
                                                   ▼
                                            ─────────────
                                               PCI Bus
```

SPECIFICATION

Interface:	32 bit, 33MHz, PCI (Peripheral Component Interconnect) bus using 5V signalling environment.
Control Modes:	Master and slave modes supported. Master mode allows data transfers with minimal processor intervention.
Address Range and Interrupts	Automatically mapped to I/O space. Board requires 64 bytes of address space. Interrupts automatically selected by host operating system.
Compliance:	Fully compliant to PCI Local Bus Specification Revision 2.1.
Data Rates:	The **PCI-BIB-NC** is capable of reading 32 bit data from the **Snapper-DIG16** or other custom module at full PCI clock rates, resulting in a sustained data rate of 132 Mbytes/sec. The PCI interface itself contains a small FIFO (eight 32 bit words) and is capable of 132 Mbytes/sec transfer rate.
Data Mapper:	16 bit grayscale data packed to 32 bits and conversion to formats including 32 bit RGBX, XBGR, BGRX, XRGB or to 16 bit RGB as RGB16 or RGB15. 16 bits, consisting of two 8 bit grayscale pixels, packed to 32 bits and conversion to all of the above colour modes. 8 bit grayscale packed to 16 and 32 bits and conversion to all of the above colour modes. Various other packing options for digital cameras (e.g. 12 bit to 8 bit, then packed to 32 etc).
Connectors:	There are no connectors fitted to the **PCI-BIB-NC**. When used with the **Snapper-DIG16** module, the AIA connector is fitted to the module.

PHYSICAL AND ENVIRONMENTAL DETAILS

Dimensions:	107mm high by 132mm long .
Approximate weight:	80g
Maximum component height:	13mm including Snapper module. (End bracket 15.5mm above the board).
Snapper connectors:	Two 58 way, 0.1″ pitch connectors, each arranged as two rows of 29.
Power consumption:	+5V @ 0.8 Amp. +12V can be used to supply camera, maximum 0.4A.
Storage Temperature:	-15°C to +70°C.
Operating Temperature:	0°C to +55°C.
Relative Humidity:	10% to 90% non-condensing (operating and storage).
EMC Approvals:	$C\epsilon$ mark for compliance with EN 55022:1994 (class B) and EN 50082-1:1992 in accordance with EU directive 89/336/EEC. FCC Class A.

Full mechanical drawings are available on request.

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
PCI-BIB-NC	PCI Bus Interface Board for **Snapper-DIG16**. The **PCI-BIB-NC** option has no video connectors fitted. This is because the digital camera connector is on **Snapper-DIG16** itself.
-	For cable requirements see the **Snapper-DIG16** datasheet.
-	Software Developer's Kit. For a full list of all supported operating systems, support contracts and other options, please refer to the SDK datasheet, or contact Active Silicon directly. Currently supported operating systems include Windows NT, Windows 95, Windows 98, Windows 3.1x, MS-DOS, Solaris 2, VxWorks, LynxOS and MacOS.

ORDERING NOTES

- Please contact Active Silicon for latest information on other Snappers, Bus Interface Boards, and supported operating systems.