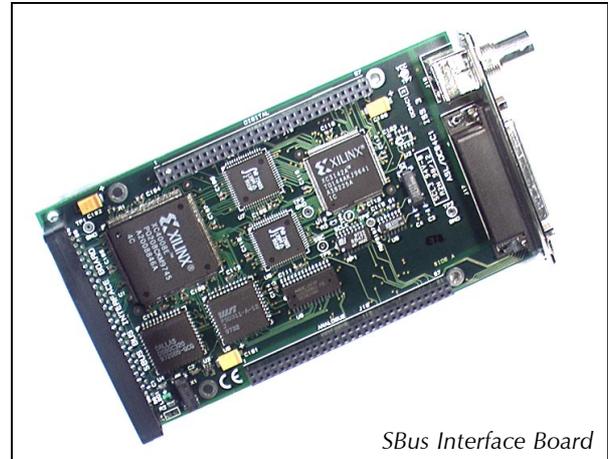


32 BIT SBUS BUS INTERFACE BOARD

- High speed data transfer bursting at 100 Mb/sec, with 25 Mb/sec sustainable on typical SPARCstations.
- On board Data Mapper directly supports many pixel formats, thus accelerating display applications.
- Combined with **Snapper-16** provides a high quality S-Video / Composite Frame Grabber.
- Combined with **Snapper-24** provides a high quality RGB colour frame grabber supporting standard video formats as well as variable scan cameras.
- Combined with **Snapper-DIG16** provides a 16 bit AIA compliant digital camera interface.
- Software Development Kit (SDK) available for rapid system development and integration.



SBus Interface Board

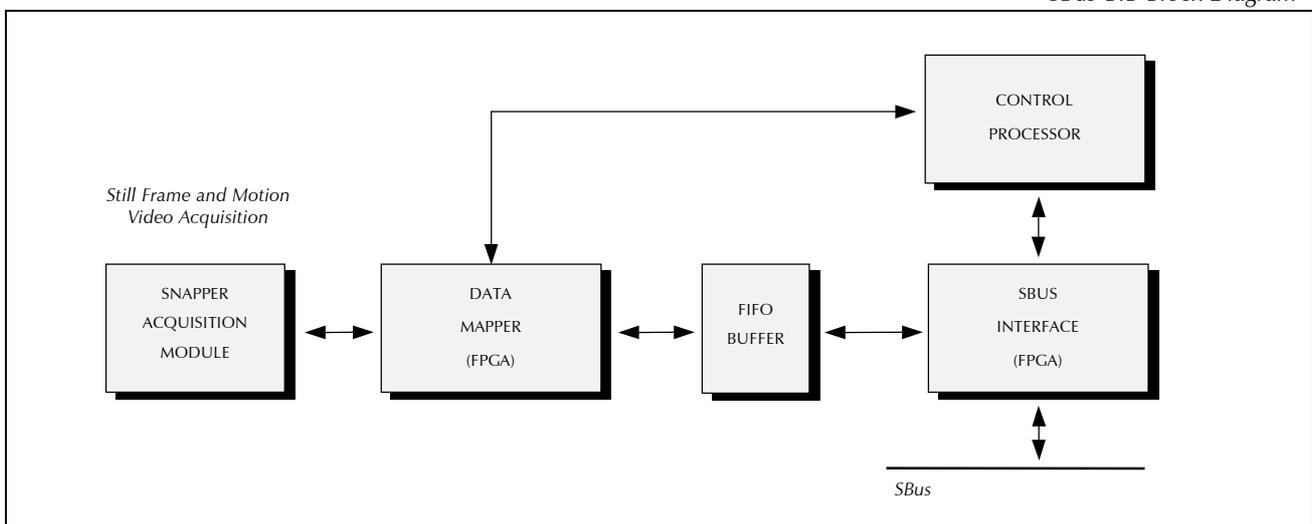
OVERVIEW

SBUS-BIB is an SBUS Bus Interface Board designed to be used with an analogue Snapper module to provide a high quality frame grabber capable of real-time display using standard SPARCstation graphics 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. (The **SBUS-BIB-NC** does not have an integrated connector and is designed to be used with **Snapper-DIG16**).

When combined with **Snapper-16**, the result is a high quality S-Video/composite frame grabber supporting CCIR and EIA (RS-170/170A) colour video, hardware region of interest readout and external trigger input. Combined with **Snapper-24**, the result is a high quality RGB colour frame grabber supporting standard video formats, variable scan cameras, external trigger and internal sync generation. The same applies to **Snapper-8**, but for only one video channel. 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.

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.

SBus-BIB Block Diagram



SPECIFICATION

| | |
|------------------------|--|
| <i>Interface:</i> | Single slot SBus board. |
| <i>Data Rates:</i> | Maximum burst rate of 100 Mbytes/sec; achievable sustained rates are very dependent upon the host platform, but can be up to 40Mbytes/sec for Snapper-24 , Snapper-16 & Snapper-DIG16 , and 30Mbytes/sec for with Snapper-8 . |
| <i>Control Modes:</i> | Master and slave modes supported. Master mode allows data transfers without any processor intervention. All burst sizes are supported for standard 32 bit transfers, and the burst size is programmable to allow compatibility with all SPARCstations. |
| <i>Interrupts:</i> | SBus levels 5 and 7, software selectable. |
| <i>Configuration:</i> | Automatic - no jumpers. |
| <i>Compliance:</i> | Fully compliant to IEEE SBus Specification 1496-1993. |
| <i>Data Mapper:</i> | Comprehensive range of hardware formatting operations, including: 24 bit RGB to RGBX32, XBGR32, RGB16 and RGB15. 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). |
| <i>Data Control:</i> | The Data Mapper and Snapper interface have an independent programmable clock, thus allowing maximum Snapper data rates with various SBus clock rates. This provides optimum performance when running with SPARCstations using slow SBus clock rates such as 16.7 MHz. |
| <i>Connectors:</i> | A BNC which connects to Analogue Input 1 on the Snapper Module. |
| (SBUS-BIB only) | A 25 way D type socket connects signals into the Snapper Module with the following pinout: |

| Pin Number | Generic Name | Snapper-8 | Snapper-16 | Snapper-24 |
|------------|---------------|-------------------------|------------------------|-------------------------|
| 1 | Analogue GND | <i>GND</i> | <i>GND</i> | <i>GND</i> |
| 2 | Analogue 2 | N/C | <i>Luma 2</i> | <i>Green 1</i> |
| 3 | Analogue 4 | <i>Mono 2</i> | <i>Chroma 1</i> | Red 2 |
| 4 | Analogue 6 | N/C | Chroma 3 | Blue 2 |
| 5 | Analogue 8 | N/C | N/C | Green 3 |
| 6 | Analogue 10 | <i>Mono 4</i> | N/C | Red 4 |
| 7 | Analogue 12 | N/C | N/C | Blue 4 |
| 8 | N/C | N/C | N/C | N/C |
| 9 | Trigger - | Trigger - | N/C | Trigger - |
| 10 | VSYNC - | VSYNC - | N/C | VSYNC - |
| 11 | HSYNC - | HSYNC - | N/C | HSYNC - |
| 12 | Pixel Clock - | Pixel Clock - | N/C | Pixel Clock - |
| 13 | Control GND | GND | GND | GND |
| 14 | Analogue 1 | <i>Mono 1</i> | <i>Luma 1</i> | <i>Red 1</i> |
| 15 | Analogue 3 | N/C | <i>Luma 3</i> | <i>Blue 1</i> |
| 16 | Analogue 5 | N/C | Chroma 2 | Green 2 |
| 17 | Analogue 7 | <i>Mono 3</i> | N/C | Red 3 |
| 18 | Analogue 9 | N/C | N/C | Blue 3 |
| 19 | Analogue 11 | N/C | N/C | Green 4 |
| 20 | CSYNC | <i>CSYNC</i> | N/C | <i>CSYNC</i> |
| 21 | Trigger + | <i>Trigger +</i> | <i>Trigger</i> | <i>Trigger +</i> |
| 22 | VSYNC + | VSYNC + | N/C | VSYNC + |
| 23 | HSYNC + | HSYNC + | N/C | HSYNC + |
| 24 | Pixel Clock + | Pixel Clock + | N/C | Pixel Clock + |
| 25 | Spare | N/C | N/C | N/C |

NOTES:

The signal names in bold italics are available on the standard cables (part number CBL-25D-SNP-8 for **Snapper-8**, and CBL-25D-SNP for **Snapper-16** and **Snapper-24**).

PHYSICAL AND ENVIRONMENTAL DETAILS

| | |
|----------------------------------|--|
| <i>Dimensions:</i> | 150mm long by 84mm wide (170mm long including the BNC socket). |
| <i>Approximate weight:</i> | 140g SBUS-BIB 90g SBUS-BIB-NC |
| <i>Maximum component height:</i> | 4.8mm. |
| <i>Mounting pillar height:</i> | 13mm including Snapper module. |
| <i>Snapper connectors:</i> | Two 58 way, 0.1" pitch connectors, each arranged as two rows of 29. |
| <i>Power consumption:</i> | +5V @ 0.8 Amp. |
| <i>Storage Temperature:</i> | -15°C to +70°C. |
| <i>Operating Temperature:</i> | 0°C to +55°C. |
| <i>Relative Humidity:</i> | 10% to 90% non-condensing (operating and storage). |
| <i>EMC Approvals:</i> | CE 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 |
|--------------------|--|
| SBUS-BIB | SBus Interface Board for Snapper-24 , Snapper-16 and Snapper-8 . |
| SBUS-BIB-NC | SBus Interface Board for Snapper-DIG16 . The SBUS-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 relevant Snapper 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

- **SBUS-BIB** has one PCB mounted BNC, so for users requiring just a single composite/monochrome input, a cable is not necessary.
- Please contact Active Silicon for latest information on other Snappers, Bus Interface Boards, and supported operating systems.

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