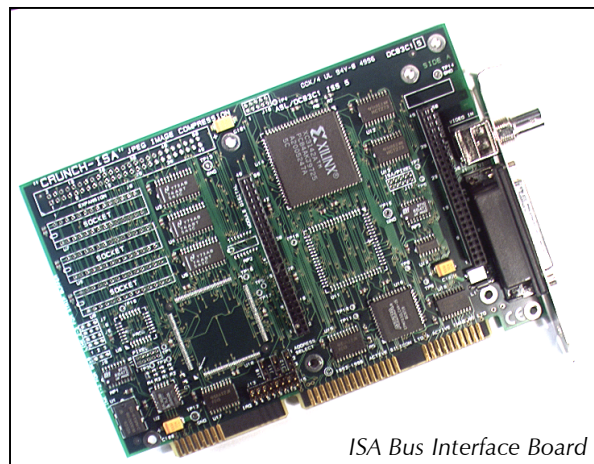## 16 BIT ISA BUS INTERFACE BOARD

- 16 bit ISA Bus Interface Board for analogue Snapper modules.

- Combined with **Snapper-8** provides a high quality monochrome frame grabber supporting standard video formats as well as variable cameras.

- 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.

- Application code 100% compatible with PCI version.

- Half length single slot 16 bit ISA board.

- Software Development Kit (SDK) available for rapid system development and integration.
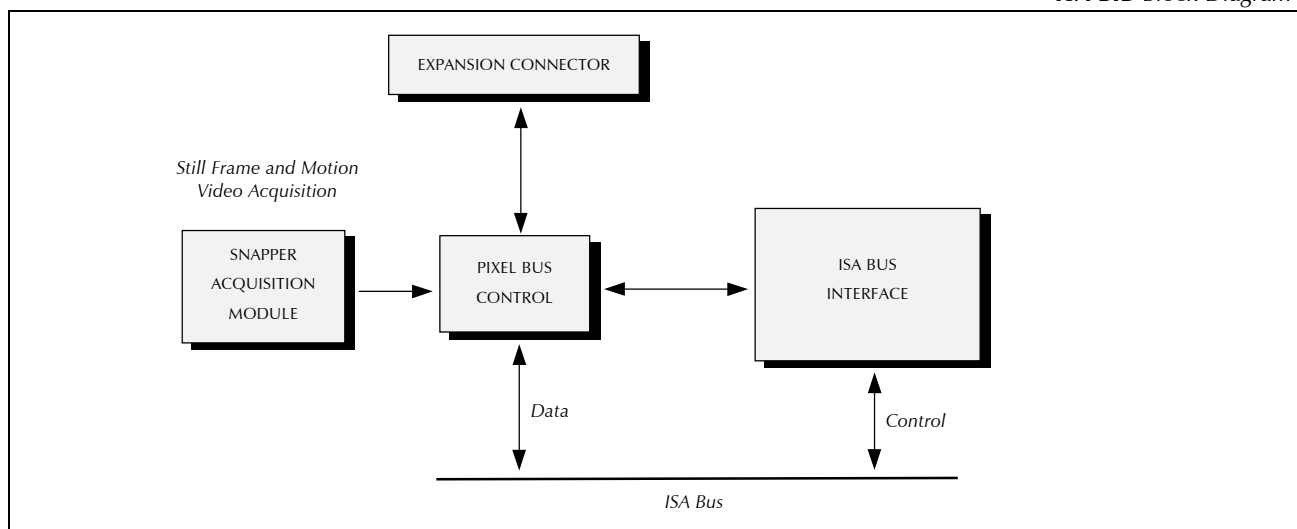
ISA Bus Interface Board

OVERVIEW

ISA-BIB is an ISA Bus Interface Board designed to be used with a Snapper module to provide a high quality frame grabber. When combined with **Snapper-16,** the result is a high quality S-Video/composite frame grabber supporting CCIR and EIA 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, external trigger and internal sync generation. The same applies to **Snapper-8**, but for only one video channel. 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 / system integrators wishing to design their own plug-on modules, thus saving having to design their own ISA interface and write an interface library.

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.

ISA-BIB *Block Diagram*

SPECIFICATION

Interface:	PC 16 bit ISA (Industry Standard Architecture).
Address Range:	Board mapped to I/O space. Selectable 300..3E0 requiring 32 bytes of address space.
Interrupts:	Interrupt level selectable from 3,4,5,7,9,10,11 and 12.
Data Formats:	Each ISA bus read/write involves transferring 16 bits of data:

- Monochrome data (8 bit grayscale) is read as two pixels per read.
- 24 bit RGB data is read as one pixel every two reads resulting in 32 bit data format RGBX.
- 16 bit YCbCr/YUV (4:2:2) is read as YCb followed by YCr.

Connectors: A BNC which connects to Analogue Input 1 on the Snapper Module.
A 25 way D type socket connects signals to the Snapper Module with the following pinout:

Pin Number	Generic Name	Snapper-8	Snapper-16	Snapper-24
1	Analogue GND	**GND**	**GND**	**GND**
2	Analogue 2	N/C	**Luma 2**	**Green 1**
3	Analogue 4	**Mono 2**	**Chroma 1**	Red 2
4	Analogue 6	N/C	Chroma 3	Blue 2
5	Analogue 8	N/C	N/C	Green 3
6	Analogue 10	**Mono 4**	N/C	Red 4
7	Analogue 12	N/C	N/C	Blue 4
8	+12V out	+12V out	+12V out	+12V out
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	**Mono 1**	***Luma 1***	**Red 1**
15	Analogue 3	N/C	***Luma 3***	**Blue 1**
16	Analogue 5	N/C	Chroma 2	Green 2
17	Analogue 7	**Mono 3**	N/C	Red 3
18	Analogue 9	N/C	N/C	Blue 3
19	Analogue 11	N/C	N/C	Green 4
20	CSYNC	**CSYNC**	N/C	**CSYNC**
21	Trigger +	**Trigger +**	**Trigger**	**Trigger +**
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:

1. The signal names in bold 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**).

2. *Luma 1, 2* and *3* accept composite or monochrome inputs.

PHYSICAL AND ENVIRONMENTAL DETAILS

Dimensions:	120mm high by 177mm long (197mm long including BNC socket).
Approximate weight:	150g.
Maximum component height:	13mm including Snapper module. (End bracket 15.5mm above the board).
Snapper connectors:	Two 50 way, 0.1" pitch connectors, each arranged as two rows of 25.
Power consumption:	+5V @ 0.3 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:	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
ISA-BIB	16 bit ISA Bus Interface Board.
-	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

- **ISA-BIB** has a PCB mounted BNC connector, 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.

SPECIAL NOTES

- **ISA-BIB** does not have any built-in data mapping or packing functions, therefore when used with early versions of **Snapper-24** and **Snapper-8**, grayscale data is read as one pixel per ISA bus read, rather than two pixels per ISA bus read as is the case with **Snapper-16**. Note that application software written using the **Snapper SDK** is 100% compatible between hardware revisions.

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