MSXB 033:
Digital Backplane Interface Board

Analog Accelerator Series
Microstar Laboratories, Inc.

Version 1.1

Microstar Laboratories, Inc.
2265 116 Avenue N.E.
Bellevue, WA 98004
Tel: (425) 453-2345
Fax: (425) 453-3199

Part Number MSAMXB033-0900-01

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The Microstar Laboratories Digital Backplane Interface Board, part number MSXB 033, interfaces the Digital Backplane with a Data Acquisition Processor. The Digital Backplane Interface Board must be installed in the Digital Backplane to connect the backplane to a Data Acquisition Processor.

Installation

A Digital Backplane often is used in conjunction with Industrial Enclosures. When a digital Industrial Enclosure system is shipped from Microstar Laboratories, a Digital Backplane Interface Board is already installed.

If you need to install a Digital Backplane Interface Board, it can be installed into any free slot of the Digital Backplane.

To install the Digital Backplane Interface Board:

1. Push the board firmly into the slot and make sure the board is securely connected to the Digital Backplane.
2. Secure the front panel of the board to the Industrial Enclosure with the two screws provided with the board.

Warning: Never install a board into the Digital Backplane or remove a board from the Digital Backplane while the Digital Backplane is powered.

Hardware Configuration

The Digital Backplane Interface Board connects to a Data Acquisition Processor through connector J2. There are three standard cabling methods:

- Use cable MSCBL 054, a shielded cable. Cable MSCBL 054 attaches connector J2 of the Digital Backplane Interface Board to a Digital Filter Adapter Board, which resides in the PC and connects to the DAP.
- Use cable MSCBL 056, an unshielded ribbon cable. Cable MSCBL 056 attaches connector J2 of the Digital Backplane Interface Board to a Digital Filter Adapter Board, which resides in the PC and connects to the DAP.
- Use cable MSCBL 058, an unshielded ribbon cable. MSCBL 058 attaches connector J2 of the Digital Backplane Interface Board to the Data Acquisition Processor digital port.

The following diagram shows the connector locations on the Digital Backplane Interface Board:

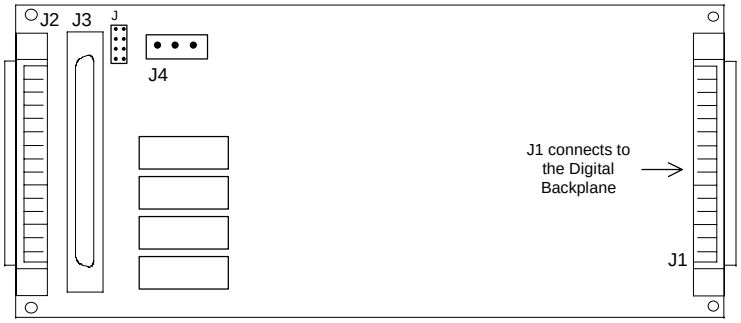

Figure 1. MSXB 033: Digital Backplane Interface Board

Daisy-Chaining Digital Backplanes

Connector J3 provides the option of connecting another Digital Backplane in a daisy-chain by using the MSCBL 064 panel-mount cable.

To use this feature, the MSCBL 064 panel-mount cable is installed into the adjacent slot on the right side of the Digital Backplane Interface Board. A short ribbon cable from the panel-mount cable attaches to connector J3. Then, using cable MSCBL 054, attach the panel-mount cable to the Digital Backplane Interface Board of the second digital backplane system.

The following diagram shows the daisy-chain configuration:

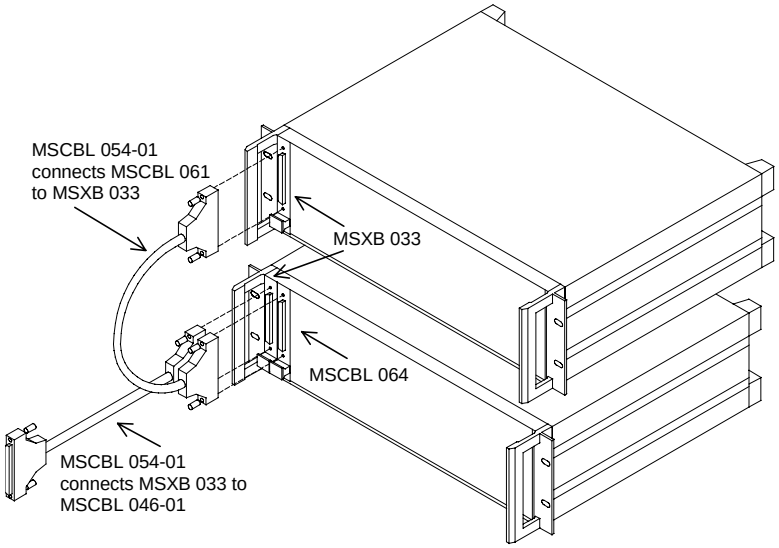

Figure 2. An Example of a Daisy-Chained Digital Backplane System

The system shown in Figure 2 can also use cable MSCBL 058 to connect directly to the DAP, instead of using a digital filter adapter cable, part number MSCBL 046. Since MSCBL 058 is not shielded, it cannot be used with CE-compliant systems.

The number of connected backplanes is limited by cable length. Microstar Laboratories suggests that the combined cable length from the DAP to the last backplane be no longer than 72".

Power Consumption

The Digital Backplane provides power to each slot by means of a +5V voltage supply. If the total power consumption of all external boards installed in the Digital Backplane does not exceed the power available from the Data Acquisition Processor, the Digital Backplane can draw power from the Data Acquisition Processor. If the total power consumption exceeds this limit, external power must be supplied to the Digital Backplane. Please refer to the Digital Backplane and accessories documentation for more information on power consumption.

There are two models of the MSXB 033 Digital Backplane Interface Board designed to meet the power consumption requirements of different systems:

- If the power consumption of the backplane system does not need external power, model number MSXB 033-01-E3B is used, which distributes the Data Acquisition Processor +5V power supply directly to Digital Backplane.

- If the backplane system requires external power, model number MSXB 033-02-E3B must be used. In this model, the Data Acquisition Processor +5 volt power supply is separated from the backplane's +5 volt power supply. An external +5 volt supply must be connected directly to the Digital Backplane.