

DAPserver Manual

Hardware and Software Configuration

Version 2.00

Microstar Laboratories, Inc.

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1. Introduction

The DAPserver from Microstar Laboratories is a single-box solution for data acquisition and signal conditioning. With Windows or Linux preloaded, the DAPserver acts as a stand-alone server hosting as many as four Data Acquisition Processor (DAP) boards. Its Eurocard subrack can hold up to nine analog or digital expansion boards.

Special features of the DAPserver:

- Industry-standard 19-inch 4U rackmount
- 4 full-size PCI slots compatible with any DAP models
- 10-slot Eurocard subrack for expansion boards and signal conditioning
- Intel Pentium M 1.8GHz processor
- Option for an “R” version optimized for rugged environments
- Certified to CE standards

About This Manual

This manual provides a quick reference for DAPserver users. It contains hardware and software information. For detailed information about the single-board computer, the DAP board, the expansion boards, or the DAPL software, please refer to the appropriate manuals.

2. Hardware Configuration

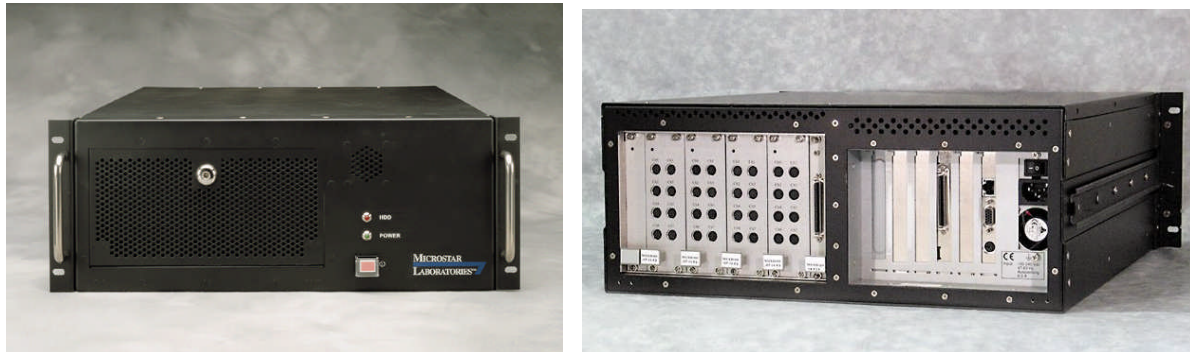


Figure 1. Front and back view of the DAPserver. Note that the expansion boards in the Eurocard subrack can vary.

Specifications

The DAPserver contains two subracks – PC and Eurocard. The PC subrack includes the components found in a common PC. It has 4 PCI slots for installing DAP boards. The Eurocard subrack holds a backplane and an interface board for connecting to various 3U expansion boards and the DAP board.

PC Subrack

Single-board computer (SBC)	Half-size PCI, model SBC82810VEA ¹
Processor	Intel Pentium M 1.8 GHz
Memory	512MB PC3200 DDR
Backplane	5-slot PCI backplane (1 occupied by SBC)
I/O Port	2 x Fast Ethernet with RJ-45 connectors, 1 x DVI, 1 x PS/2 keyboard + mouse, 2 x USB
Hard Drive	250GB SATA or 500GB SATA
Dimensions	7.2"W x 18.5"D x 6.2"H

¹Refer to the manual SBC82810.pdf for more information.

Eurocard Subrack

Slots	10 total, 9 available for expansion boards
Interface board	Analog or digital
Backplane	10-slot analog or digital backplane
Dimensions	8.4"W x 10"D x 5.4"H

General

Power Supply	300W switching power supply
Operating Temperature	0 – 50 °C
Color	Black
Dimensions	19" W x 20" D x 7"H with handles installed 17.2"W x 20"D x 7"H without handles
Weight	36 lbs (before installing expansion boards)

Configuration Options

The DAPserver can support analog or digital expansion boards by providing the appropriate backplane and interface board. The available models are listed below:

DAPserver400	Analog backplane and analog interface board
DAPserver400R	Analog backplane and analog interface board.
DAPserver402	Digital backplane and digital interface board
DAPserver402R	Digital backplane and digital interface board

The suffix “R” in the model number denotes a design for rugged environments. Additional screws are used to assemble and mount the Eurocard subrack. A type of silicon is used to secure various components and cables on the single-board computer.

The backplane is a 10-slot half-size backplane. The interface board connects to the backplane and occupies 1 slot. There are 9 slots available for expansion boards.

Contact Microstar Laboratories if you are interested in customizing the DAPserver for your application.

Accessories for “R” Models

The “R” models have two additional pieces of hardware – the sliding rails and the cable-tie bar.

- Sliding rails – The two rails can be bolted to the sides of the DAPserver for rack mounting.
- Cable-tie bar – It must be installed on the back of the DAPserver for keeping the wires and cables in the back rigid resulting in a neat and professional look. **Do not handle the DAPserver by the cable-tie bar.**

The rails and the cable-tie bar are not installed on the chassis for shipping.

Using the expansion boards

Up to 9 analog or digital expansion boards can be installed in the Eurocard subrack of the DAPserver. The models installed depend on the requirements of the application. Refer to the manual of the expansion boards in your DAPserver for more information..

3. Software Configuration

The software and manuals for the DAP and expansion boards are on the DAPtools Professional CD. You can find the contents of the CD in C:\CD\Microstar Laboratories. The manuals are in the Doc directory.

The DAPserver has DAP Measurement Studio or DAPstudio pre-loaded. DAPstudio is a development environment that requires no coding. It gives you the tools to quickly build an elegant user interface for the DAP. To run DAPstudio, go to Start Menu > Programs > Microstar Laboratories > DAP Measurement Studio > DAPstudio.

The Professional software package also provides drivers for the programming environment below. You can install each driver by going to C:\CD\Microstar Laboratories\Setup.exe.

- Visual Studio C++, Visual Basic, C#, and VB .NET
- Agilent VEE (formerly known as HPVEE)
- Delphi
- LabVIEW
- Matlab
- ActiveX control OCX

Windows XP or Linux is pre-loaded on the DAPserver.

4. Getting Started

Each DAPserver is shipped with the following items:

Item	Quantity
Drivers CD for single-board computer	1
Windows XP Installation CD	1
DAPtools Professional CD	1
Keyboard/Mouse Y-cable	1
Chrontel CH7305 converter for CRT port	1
Power cord	1
Handles	2
Round shielded cable (MSCBL040 or MSCBL054)	1
QC document of each DAP board installed (if any)	1
Bag of screws and plastic bars	1
Slide rails ¹	2
Cable-tie bar ¹	1

¹For "R" models only

To avoid damage during shipping, the DAPserver is shipped with some of its accessories uninstalled. Follow the instructions below to get started:

- Install the handles to the front sides of the DAPserver. For the "R" models, the slide rails and cable-tie bar are included in the package. You can find screws for installing the parts in the zip bag. Note that these parts are optional. They do not need to be installed for the DAPserver to function properly.
- Connect the power cord.
- Connect a PS/2 mouse and a keyboard to the corresponding connectors on the Y-cable. Connect the cable to the back of the PC.
- Use the Chrontel converter to connect a CRT monitor.
- For a DAPserver with an analog interface board MSXB029 in the Eurocard subrack, connect the DAP board to the MSXB029 with the MSCBL040. For a DAPserver with a digital interface board MSXB033, use the MSCBL054 to connect the MSXB033 to the MSCBL076-01 in the PC subrack.
- Connect signals to the expansion boards in the Eurocard subrack. For pinout of the expansion boards, refer to the appropriate manuals.

Installing/Removing a DAP board

If you need to install a DAP board, follow the steps below. Static control is required for handling all electronic equipment. **Always use proper grounding precautions when handling a DAP board. Never install or remove a DAP board while the DAPserver is on.**

1. Power off the DAPserver. Remove the cover and install the DAP board into an available slot. Make sure the board is plugged in completely. Turn on the DAPserver.
2. If the Hardware Wizard appears, direct it to C:\CD\Microstar Laboratories for the driver.
3. Run Setup.exe in C:\CD\Microstar Laboratories to install DAPcell Server.

Installing/Removing an expansion board

If you need to install an expansion board, follow the steps below. Static control is required for handling all electronic equipment. **Always use proper grounding precautions when handling an expansion board. Never install or remove an expansion board while the DAPserver is on.**

1. Power down the DAPserver. Remove the blank panel of the slot you want to install the expansion board. Remove adjacent slot(s) if the front panel of the expansion board occupies more than one slot.
2. Check that the addressing of the expansion board does not have conflicts with other board(s) in the Eurocard subrack. Each expansion board should have a unique address range.
3. Slide the expansion board along the card guide. Push it in to make sure that the board connects to the backplane properly.