

# *Computing*

---

# *Surface*

## *The CS-2 Bay*

The information supplied in this document is believed to be true but no liability is assumed for its use or for the infringements of the rights of others resulting from its use. No licence or other rights are granted in respect of any rights owned by any of the organisations mentioned herein.

This document may not be copied, in whole or in part, without the prior written consent of Meiko World Incorporated.

© copyright 1995 Meiko World Incorporated.

The specifications listed in this document are subject to change without notice.

Meiko, CS-2, Computing Surface, and CSTools are trademarks of Meiko Limited. Sun, Sun and a numeric suffix, Solaris, SunOS, AnswerBook, NFS, XView, and OpenWindows are trademarks of Sun Microsystems, Inc. All SPARC trademarks are trademarks or registered trademarks of SPARC International, Inc. Unix, Unix System V, and OpenLook are registered trademarks of Unix System Laboratories, Inc. The X Windows System is a trademark of the Massachusetts Institute of Technology. AVS is a trademark of Advanced Visual Systems Inc. Verilog is a registered trademark of Cadence Design Systems, Inc. All other trademarks are acknowledged.

**Meiko's address in the US is:**

**Meiko  
130 Baker Avenue  
Concord MA01742**

**508 371 0088  
Fax: 508 371 7516**

**Meiko's address in the UK is:**

**Meiko Limited  
650 Aztec West  
Bristol  
BS12 4SD**

**Tel: 01454 616171  
Fax: 01454 618188**

Issue Status:	Draft	<input type="checkbox"/>
	Preliminary	<input type="checkbox"/>
	Release	<input checked="" type="checkbox"/>
	Obsolete	<input type="checkbox"/>

Circulation Control: *External*

## *Contents*

---

<b>1.</b>	<b>Overview .....</b>	<b>1</b>
<b>2.</b>	<b>Service Access .....</b>	<b>3</b>
	Front Panel (Air Grill) Removal .....	3
	Rear Panel Removal .....	4
<b>3.</b>	<b>Power Connections .....</b>	<b>5</b>
<b>4.</b>	<b>Module Installation .....</b>	<b>7</b>
	Introduction .....	7
	Removal and Installation Instructions .....	7
	Illustrations .....	9

---

## *Overview*

---

*1*

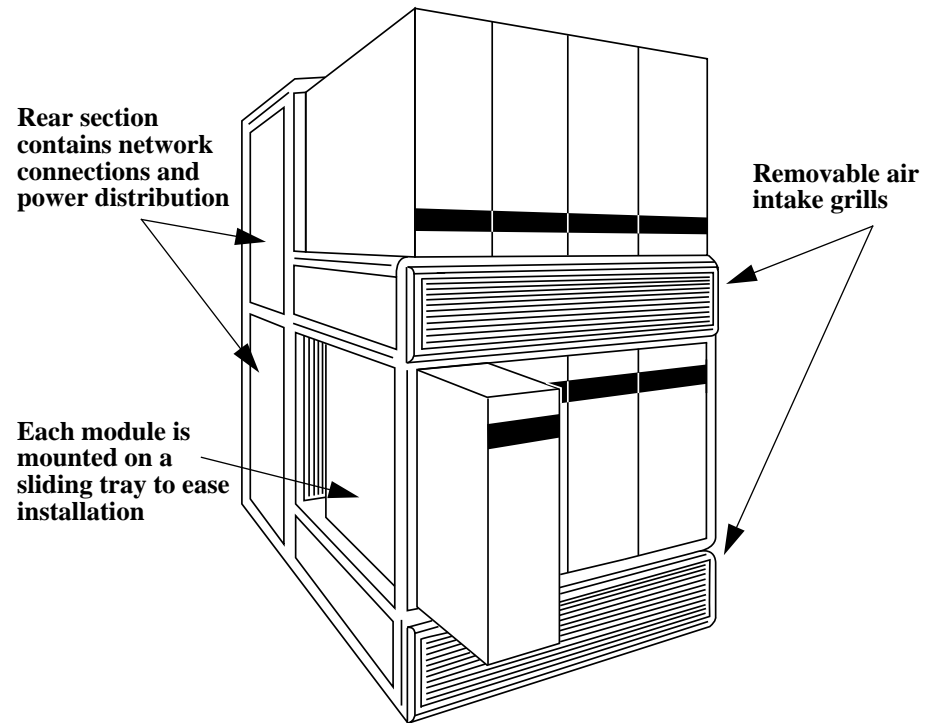
The CS-2 Bay is a tubular structure that forms a platform for the CS-2 modules. It includes the interconnect for the modules' control and data networks, and the power distribution circuits.

The Bay includes the following features:

- Modules are mounted on sliding trays to enable easy installation and removal.
- Power distribution box.
- Enclosed cable ducts for the data network cables.
- Service access panels to front and rear.
- Air channels to maximise flow of cooling air through the modules.

The Bay is a scalable structure which can be adapted to suit a number of machine configurations, from the 4 module Half Bay configuration, to the 24 module 3 Bay system. Larger systems are configured as a number of interconnected Bays. Figure 1-1 shows a Single Bay system.

**Figure 1-1 A Single Bay**



The Bay includes service access panels at its front and rear.

You will need to remove the access panels when removing or installing modules. You may also need to remove the access panels when routing peripheral cables from a module; typically these cables will be routed from the front of a module to the rear of the Bay via the ducts beneath the module.

### ***Front Panel (Air Grill) Removal***

The lower (charcoal colored) grill covers the air intake and cable guide for the lower modules; the upper grill (purple colored) covers the air intake and cable guide for the upper row of modules, and also hides the baffles which route the warm air exhaust from the lower modules through to the rear of the Bay.

At each end of the grill, and partly hidden from view, is a single captive screw. Use a screwdriver to rotate this screw a quarter turn and remove the grill by pulling away from the Bay. When installing the grill ensure that the locating pins at its ends mate with the holes on the Bay; this will ensure the correct location of the captive screws. Secure the grill in position by a quarter turn of the captive screws.

### ***Rear Panel Removal***

Two rear panels are fitted to the rear of each Bay. To remove a rear panel locate the two captive screws along its top edge and rotate each by a quarter turn. Pull the top edge of the panel away from the Bay and lift the bottom edge from its guide. Installation is the reverse of removal; ensure that the small holes along the bottom edge of the panel mate with the pins on the Bay.

Figure 4-1 on page 10 shows the location of the rear access panels and of the retaining screws.



## *Power Connections*

---

## **3**

The Bay has no power requirements itself but does include a power distribution circuit to provide power to the modules.

Each CS-2 Bay requires the following power connections:

- EUR: 415V, 30Amp, 3 Phase (5 wire).
- US: 208V, 45Amp, 3 Phase (5 wire).

Each CS-2 Bay is supplied with a 3-phase distribution panel and 3m detachable flying lead that is terminated by a 3 phase plug (pin style to IEC 309-1 and IEC 309-2):

- EUR: series 1, 240–415V, 30Amp, 3 pole+Neutral+Earth
- US: series II, 120–208V, 60Amp, 4 pole-5 wire.

Matching female sleeve connectors are required at the customer site.



### *Introduction*

To ease installation and removal each module is located on a sliding tray.

Connection of the module to the CS-2 data network is via Beta Flex connectors fitted to the bay. Connection to the control network and power distribution is via cable connection to the module's power supply. Additional connections from the module's boards to external peripherals may be made from the front of the module to the rear of the Bay via cable ducts beneath the module.

### *Removal and Installation Instructions*

The following steps should be used to remove a module from the Bay. Reverse the procedure when installing a module.

Your attention is drawn to the illustrations at the end of this chapter.

#### **1. Switch-off the module.**

Use the power switch located at the rear of the module's power supply. In the case of processor modules you must first shutdown each processor via its system console. You should also use Pandora to Configure-Out the processors in the module and to change the link state of its network switches.

## **2. Open the Beta Flex Connectors.**

Modules connect with the data network via Beta Flex connectors that are mounted on the bay. These connectors are electro-mechanical devices that are opened and closed by the application (or removal) of a controlling electric current.

---

**Warning – Before installing or removing a module you must ensure that the Beta Flex connectors are open; failure to do so may result in permanent damage.**

---

Use the Beta Phase controller box to open and close the connectors. From the rear of the Bay connect the controller to a suitable mains outlet and to the 37-way connector located directly behind the module (refer to Figure 4-3). Use the controller's Activate button to open in a single operation all the Beta Flex connectors used by that module — pressing the same button a second time will close those connectors. Status lights on the box show the condition of each connector; red indicates open, amber indicates power is being applied, green indicates no power (connector closed). When using the Beta Phase Controller it is safe to hold the connectors open for prolonged periods.

## **3. Disconnect control bus and power cables.**

From the rear of the Bay the module's control bus and power cables are readily accessible. Remove the power supply and the external CAN connections (if any).

## **4. Disconnect peripheral cables from front of module.**

Some switch and processor boards may have cable connections to their front panels. Remove the front of the module and its LED board (by simply pulling forward) and remove any cable connections. Unscrew the cable retainer on the front face of the sliding tray and allow the cables to hang clear of the module and the tray (refer to Figure 4-2).

## **5. Slide-out module tray.**

The slide tray is held closed by two captive retaining screws (refer to Figure 4-2). Release these screws and carefully pull the tray and the module forward.

---

**Warning – Never extend more than one module at any one time.**

---

---

**6. Release the module from the slide tray.**

The module is held in position by two captive screws on the underside of the sliding tray (refer to Figure 4-2). These screws must be released before the module is lifted clear of the tray.

When re-installing a module you must ensure that the four feet on its base mate with the holes provided in the sliding tray. Correct alignment ensures that the captive screws are easily secured.

**7. Lift module clear of tray.**

The module is heavy and must be lifted by two people or by using the Genie lifting equipment that is supplied by Meiko (large multi-module systems only).

When using the Genie fork lift you must first attach the two lift clamp assemblies (black steel boxes) to either side of the module. Undo the screw that holds the telescopic section of the lift-clamp closed. Insert the rear locating pins into the holes at the rear edge of the module (the open end of the box section should face the front). Align the front locating pins with the holes at the front of the module and tighten the holding screw. Locate the forks of the genie lift into the two box sections in the lift-clamps, and raise the module by turning the lift's handle anti-clockwise.

---

**Warning – Your attention is drawn to the operating instructions that are supplied with the Genie lift.**

---

## *Illustrations*

Figure 4-1 shows a Single Bay with its front, side, and top panels removed. This illustration shows the Bay's tubular construction, and the position of the sliding trays, the rear access panels and their retaining screws, and the air and cable ducts below the modules.

Figure 4-1 Skeletal Illustration of a Single Bay

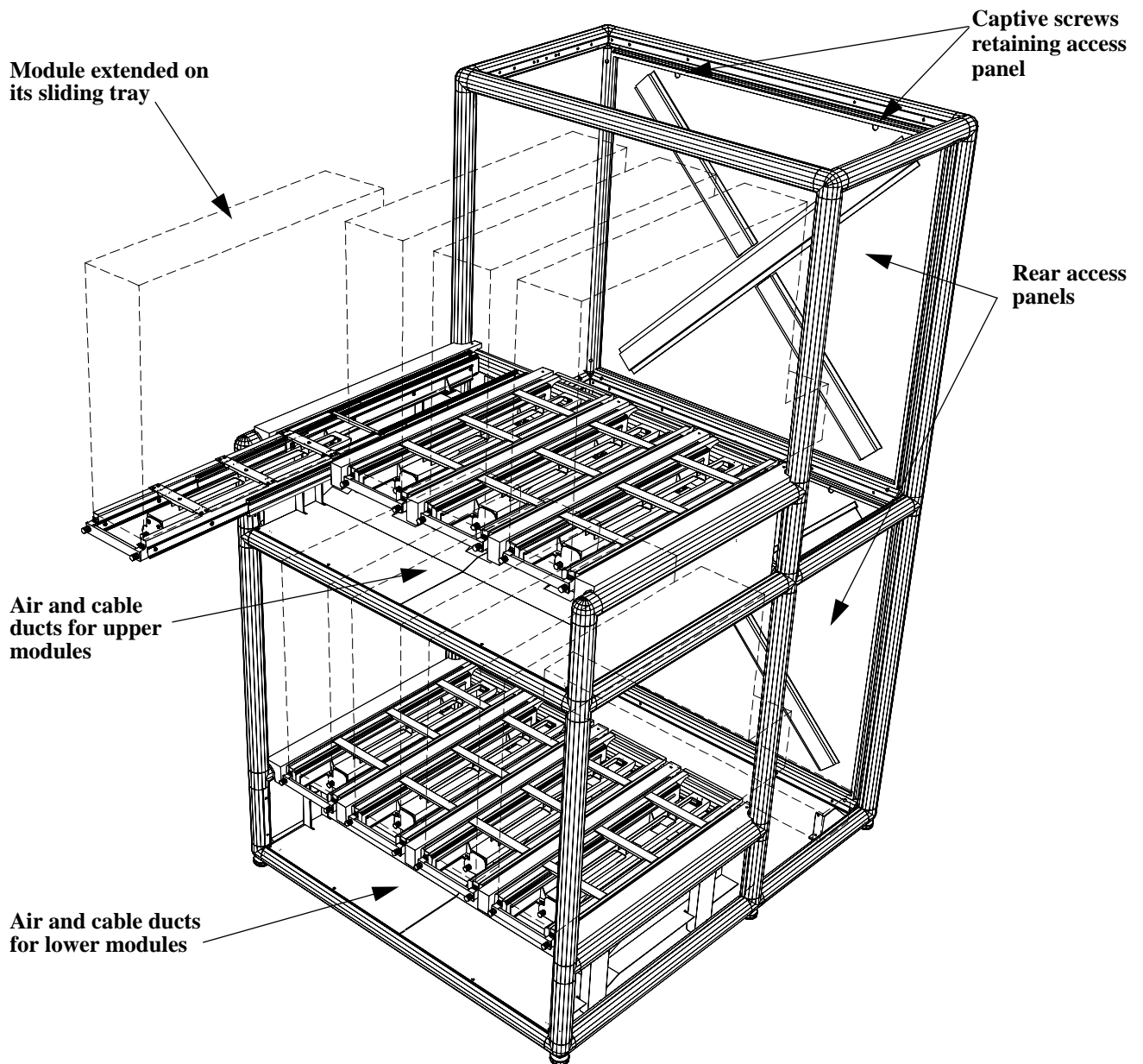


Figure 4-2 shows a module's sliding tray when extended and viewed from its underside. It shows the two captive screws that are used to hold the module in place, and the two screws that hold the tray closed. Cables that are connected to the front of the module's boards are routed behind the retaining bar and via cable ducts to the rear of the Bay.

**Figure 4-2 A Module Sliding Tray Viewed from Below**

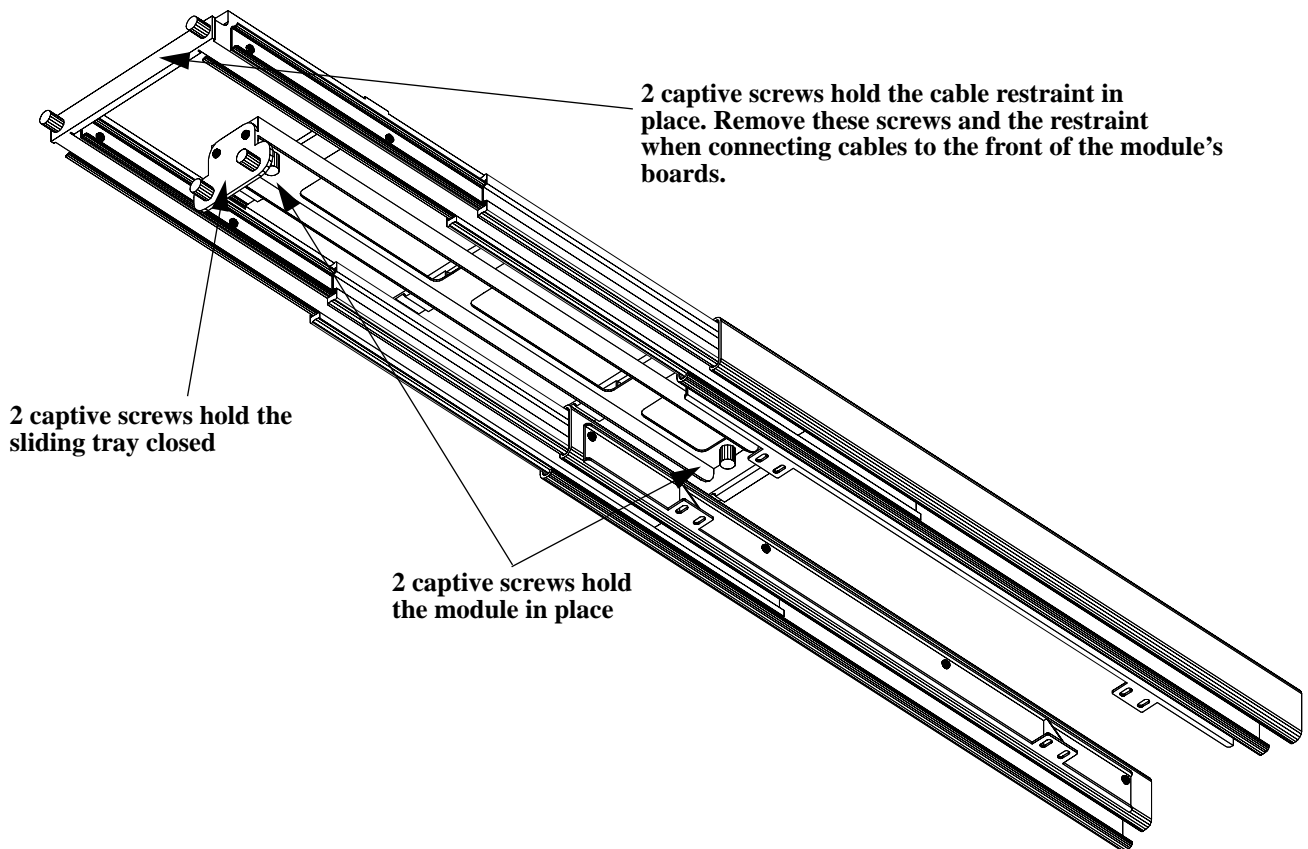
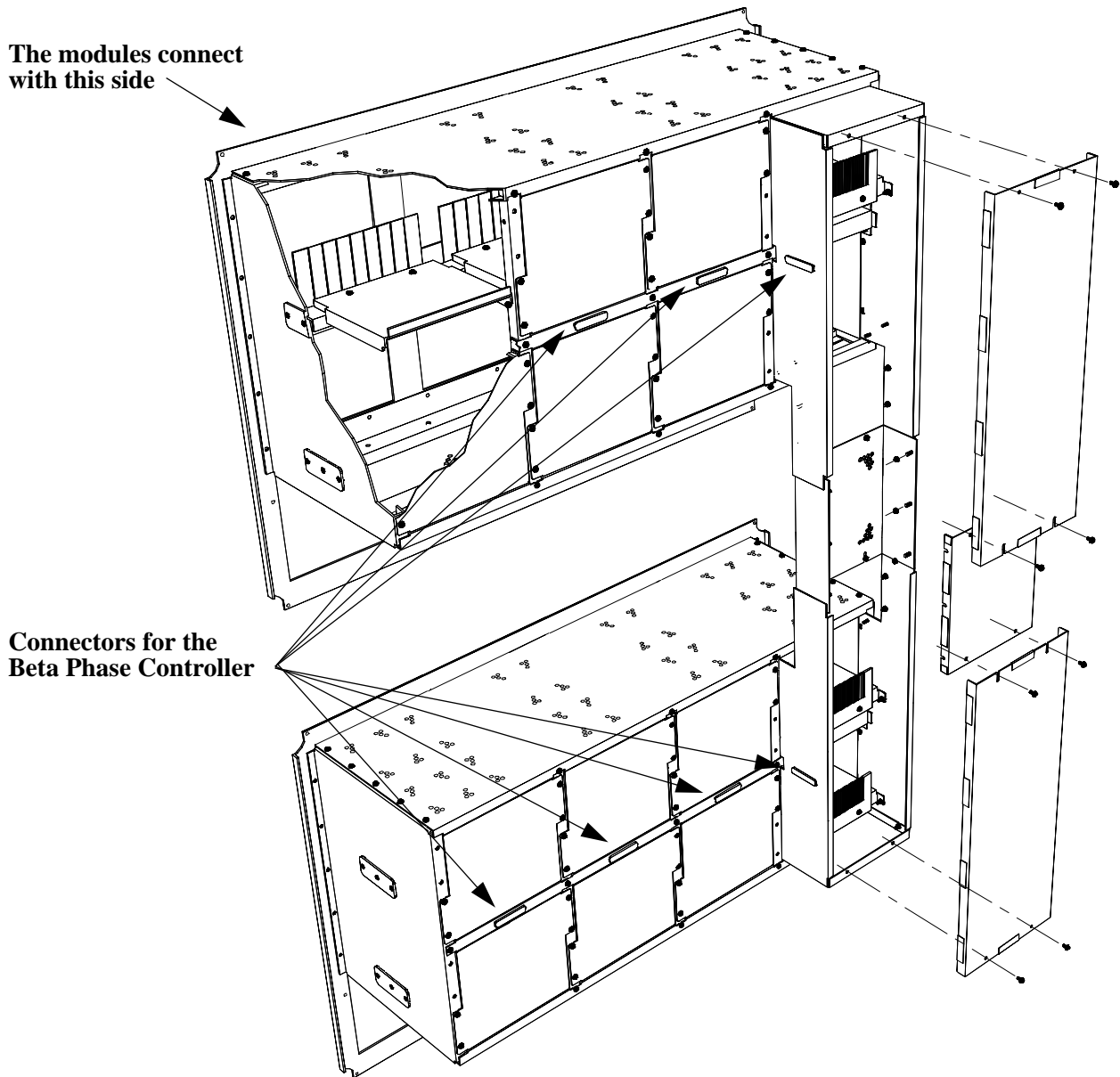


Figure 4-3 shows the backplane box for a Single Bay. This box encloses the cabling for the data network. It is located at the rear of the Bay, directly behind the rear service panels. Note the 8 connectors that are used by the Beta Phase Controller Box to open and close each module's Beta Phase connectors.

Figure 4-3 Backplane Box for a Single Bay System





The backplane box for 1, 2, and 3 Bay systems are slightly different in configuration. Figure 4-4 shows the backplane box used for a 3 Bay system.

**Figure 4-4** Backplane Box for a 3 Bay System

