

H9A10/H9A15 Marquee Cabinet Service Access - Certified Integration Partner (CIP) Advisory

EK-MARQE-CN. B01

Purpose of this CIP Advisory

The purpose of this document is to provide CIP users of the DIGITAL H9A10 and H9A15 MARQUEE cabinets with important information regarding methods of stabilizing the cabinets, disconnecting multiple power cords, and proper electrical grounding.

Marquee Cabinets - Approved Options List

H9A10 and H9A15 MARQUEE cabinets are approved for service access only. Skilled service persons are required to extend stabilizer legs prior to extending any system box or other slide-mounted drawer, to know the proper disconnect procedures for multiple (H7600-xx) power cords and to assure proper grounding is maintained in the presence of high leakage currents. Caution labels appear on the product to remind the service person of these requirements. Table 1 lists System Box, Storage Shelf, Peripherals and Accessories

Table 1 System Box, Storage Shelf and Memory Channel Information

System Boxes:	AS4000	BA30X Series
	AS4100	BA30X Series
	AS1200	PB700 Series
	AS800	PB800 Series
	DS20	PB700 Series
Location:	System boxes are typically mounted from the bottom up. See drawings B-IB-H9A10-5-0 and B-IB-H9A15-3-0 at http://www.digital.com/alphaserver/products/m-series.html	

Storage Shelf

Typically BA356-SB/-SE, but any storage shelf using the BA35X-HH, 180W power supply (30-41819-xx) can be used. Only "Listed Accessories approved for use with 300 Series Storage Shelves" are permitted to appear within the shelf. Each device will have wording to this effect on its label.

DS-SWXRA-GH, -GK, Raid Array 3000, consisting of Listed Accessory 70-33523-01, approved for use with UPS unit manufactured by Exide Electronics Inc., model PRC-1000a, or Listed Accessory, 70-33523-02, approved for use with the UPS unit manufactured by Exide, model PRC-1000i. UPS units are intended for this option and up to four storage shelves, as supported by this option. They do not replace H7600-xx.

(continued)

Table 1 System Box, Storage Shelf and Memory Channel Information (continued)

Storage Shelf 2T-BA370-AS, -AR, RAID Array 7000, consisting of UL Listed Accessory, CSA Certified, TUV GS-approved shelf assembly with slide-mounted front or fixed rear rack mount kits. Units may appear with up to two UL, CSA, TUV Bauart approved battery back-up options (70-32188-xx) for the cache modules. Up to two BA370's may be present in the H9A10 and up to three in the H9A15. Single unit configurations must be top-front mounted and must also contain a single ballast kit, unless an AS4000 is part of the configuration. A single unit with ballast or two units w/o ballast may supercede system box ballast rules. These options facilitate back-to-back mounting. The rear unit requires re-usable support brackets, 2T-BA370-FI, during assembly. These support brackets are removed once the rear unit has been secured in place. Rear extenders, H9C10-xE/H9C15-xE are pre-requisite. RAID Array 7000 products intended for Japan must use H7600-DB and require 240V~ service (not 202V~).

Location: Storage shelves are typically mounted from the top of the cabinet down. They may be mounted back-to-back but only in accordance with drawings B-IB-H9A10-5-0 and B-IB-H9A15-3-0 . In each case, the cabinet's top flushing fan assists with cooling. Storage shelves may also be mounted between system boxes (chimney blocks), but only with horizontal flushing fan assemblies mounted in every other rear position. See <http://www.digital.com/alphaserver/products/m-series.html>

Peripherals

Model	Location
CCMHA-AA	Memory Channel may be mounted in any available position but cannot be counted as a system box for ballast weight purposes. See B-IB-H9A10-5-0 and B-IB-H9A15-3-0 for details.
DS-TL891	Tape library can be mounted in any available position and can count as a PB800 system box for ballast purposes when used with PB800 Series. This tape library can be used with any other system box, but cannot count as ballast. It can only be counted for ballast when used with PB800.
DS-TL890	This option is mounted on its own chassis slide and positioned atop the DS-TL891 to expand the number of tape cartridges within the library. Up to four DS-TL89X units can be stacked. This unit cannot be counted for ballast purposes

Accessories

Model	Description
H9C10-MC	ballast weight kit
H9C10-NF	H9A10 Cab Front Door Kit (Gray)
H9C10-TF	H9A10 Cab Front Door Kit (Blue)
H9C10-NT	H9A10 Cab Front Trim Kit (Gray)
H9C10-TT	H9A10 Cab Front Trim Kit (Blue)

Table 1 System Box, Storage Shelf and Memory Channel Information (continued)

Accessories	
Model	Description
H9C15-NF	H9A15 Cab Front Door Kit (Gray)
H9C15-TF	H9A15 Cab Front Door Kit (Blue)
H9C15-NT	H9A15 Cab Front Trim Kit (Gray)
H9C15-TT	H9A15 Cab Front Trim Kit (Blue)
2T-SW8XF-SR	Rear Mount Horizontal Flushing Fan (120V)
2T-SW8XF-ER	Rear Mount Horizontal Flushing Fan (IEC)
H9C10-XE	H9A10 Cab Rear Door Extender
H9C15-XE	H9A15 Cab Rear Door Extender

MARQUEE Cabinet Requirements for Ballast Weight Kits

- The number of ballast kits required is determined by the number of system boxes.
- No substitutions allowed, except as noted within this document.
- Ballast kits are to be installed from the bottom up.
- See B-IB-H9A10-5-0 and B-IB-H9A15-3-0 for details.
- On the Internet, see <http://www.digital.com/alphaserver/products/m-series.html> for details and installation.
- Single BA370 Units must be top-front mounted and require a single ballast kit for either H9A10 or H9A15. Two units, or a single unit with AS4000 will not require ballast. Two BA370's or a single unit with ballast may replace system box ballast rules.
- Refer to Table 2 and Table 3 .

Table 2 Model H9A10-MX Cabinet Requirements for Ballast Weight Kits

Model	Type of System Box		
H9A10-MX	AS4x00 / BA30X	AS1200 / PB700	AS800 / PB800
Number of System Boxes	Number of Ballast Kits Required		
1	None	1	2
2	None	1	1
3	None	N/A	None
4	N/A	N/A	None
5	N/A	N/A	None

Table 3 H9A15-MX Cabinet Requirements for Ballast Weight Kits

Model	Type of System Box		
H9A15-MX	AS4x00 / BA30X	AS1200 / PB700	AS800 / PB800
Number of System Boxes	Number of Ballast Kits Required		
1	1	2	N/A *
2	None	1	2
3	None	None	None
4	None	N/A	None
5	N/A	N/A	None
6	N/A	N/A	None

* Minimum of two AS800 system boxes plus two ballast kits required for H9A15.

Single AS800 system box is limited to H9A10 only.

Marquee Cabinet - AC Input Rules

Some system boxes can have up to three power supplies. Where multiple power cords come from the same system box, they should be plugged into the same H7600-xx assembly.

H7600-AA has its outlets segmented for over-current protection. J1, J2, J3 are protected by one pole of the circuit breaker and J4, J5 protected by the other pole of the same circuit breaker. Multiple power cords from the same system box should be plugged into the same segment of outlets.

H7600-DB has all its outlets protected by the same circuit breaker where one pole breaks phase and the other breaks neutral. It makes no difference which outlets receive which power cords, but attention should still be paid to having all power cords from the same system box go to the same H7600-DB.

Up to six AS800 system boxes can appear in a cabinet. For H7600-AA, plug two system boxes into the J4, J5 segment with a third system box, fan tray and any two storage shelves into the J1, J2, J3 segment. Repeat for the second H7600-AA as needed. For H7600-DB, split the system boxes evenly (up to three for each H7600-DB) and do likewise for any storage shelves.

Storage shelves with two power supplies should be treated just like a shelf with a single supply. Both power cords from the same shelf should be plugged into the same H7600 and same segment for H7600-AA. These power supplies are for redundancy, so their total AC current will be the same as if a single supply were present. They may not share loading well, so the split in AC-input current will be unequal between them. This could cause problems unless treated as above.

The number of available outlets maybe extended with up to four H7601-AA, or up to two H7601-AB Power Strip Assemblies, to facilitate redundant power supplies for the maximum number of storage shelves. Cabinet loading is not increased and ratings are not affected. Placement of AC power cords becomes critical to avoid nuisance trips of H7600 circuit breakers. See Figure 1 and Figure 2 for power cord diagrams.

These rules assume no UPS unit is present and will change when UPSs are qualified for use within MARQUEE cabinets.

RAID Array products are designed for cross plugging where UPS units, either internal or external to the cabinet, provide AC power to each side. For BA370, cross plugging requires H7600-DB's and 240V~ service for Japan. Refer to Table 4.

For high availability configurations (clusters) see "Marquee Cabinet AC Power Wiring Rules" at <http://www.digital.com/alphaserver/products/m-series.html>

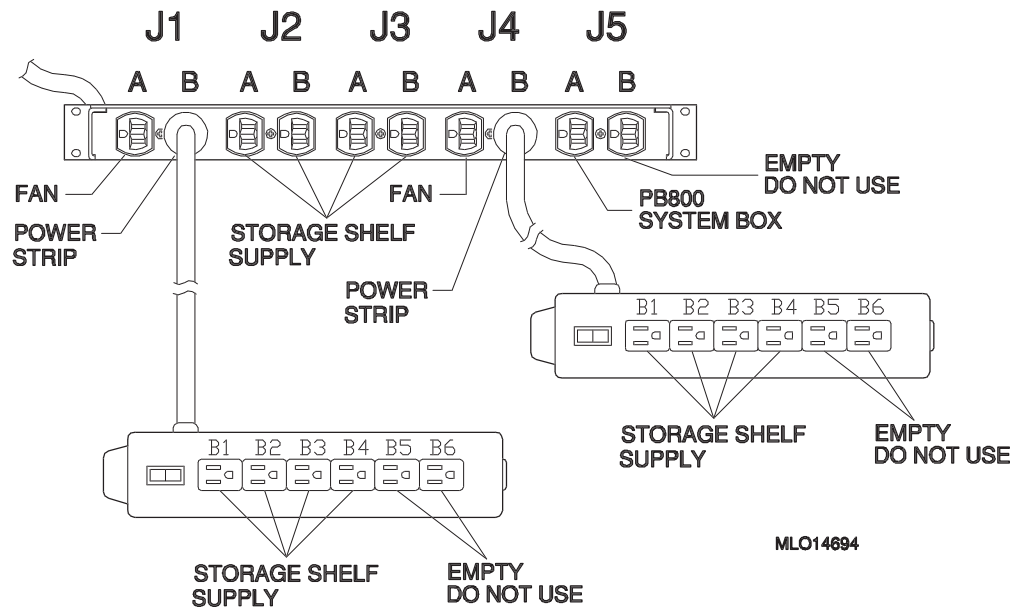
Table 4 AC Input Rules for the H9A10/H9A15 Marquee Cabinets

Model	VAC	Hz	Power Cord Amp
H9A10-MA,-MC w/H7600-AA	100-120VAC	50-60Hz	14A each power cord
H9A10-MB,-MD w/H7600-DB	220-240VAC	50-60Hz	7A each power cord
H9A15-MA,-MC w/H7600-AA	100-120VAC	50-60Hz	20A each power cord
H9A15-MB,-MD w/H7600-DB	220-240VAC	50-60Hz	9A each power cord

Marquee Cabinets - Maximum Plug Configurations

Refer to Figure 1 (H7600-AA, 100-120Vac) and Figure 2 (H7600-DB, 220-240Vac) for information on maximum plug configurations using power strips to support 2ea PB800 plus 12ea storage shelves, each with redundant (2) power supplies. Power supplies from the same shelf should be plugged in adjacent to each other (in pairs).

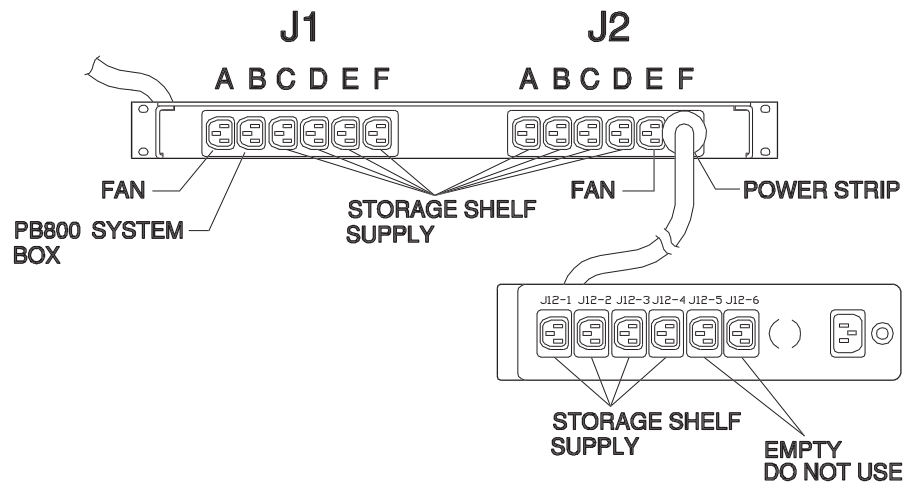
Figure 1 H7600-AA Plug Configurations



H7600-AA (100-120 Vac) w/H7601-AA Power Strip Assembly

REPEAT ON SECOND H7600-AA AS NEEDED

Figure 2 H7600-DB Plug Configurations



MLO14695

H7600-DB (220-240 Vac) w/H7601-AB Power Strip Assembly

REPEAT ON SECOND H7600-DB AS NEEDED

January 1999

The information in this document is subject to change without notice and should not be construed as a commitment by Compaq Computer Corporation. Compaq Computer Corporation assumes no responsibility for any errors that might appear in this document. The software, if any, described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license. No responsibility is assumed for the use or reliability of software or equipment that is not supplied by Compaq Computer Corporation or its affiliated companies. Restricted Rights: Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

Copyright © 1999 Compaq Computer Corporation. All Rights Reserved. The following are trademarks of Compaq Computer Corporation: DIGITAL, OpenVMS and the Compaq logo. All other trademarks or registered trademarks are the property of their respective holders.