

MS670-BA MOS Memory Option

digital

Installation Guide

Order Number: EK-MS670-IN-001

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Description

This chapter describes the BA440 enclosure and the MS670 memory module. The BA440 enclosure is incorporated in the VAX 4000, model 300 system pedestal. The BA440 enclosure is an improved version of the BA200-series enclosure. Some of the features of the BA440 enclosure are listed below.

- Strong visual similarity to the BA200-series of enclosures, yet improves ease of use for the customer and service engineer.
- Top and bottom hinged front doors (instead of a front panel) for easier access to system components, and for system security.
- New single power supply provides more power, and is easy to install and repair.
- New backplane to accommodate the new high-density connector scheme (GMI) required for the MS670 memory module (specific to BA440 enclosure).
- New card cage to accommodate the new double-sided MS670 memory modules (specific to BA440 enclosure).
- New storage mounting area to accommodate "plug-in" mass storage devices (ISAs — Integrated Storage Assemblies).
- Strengthening members placed in the mass storage mounting area to: reduce shock and vibration to the storage devices; reduce the need for shock mounts and sway space; eliminate the need for shipping brackets.
- Individual control panel for each mass storage device to allow for easier installation and swapping of devices.
- The addition of a fan tray at the bottom of the enclosure to provide a better exhaust route for warm air.

The system pedestal has a unique backplane and card cage so that it can accommodate the new higher-density and double-sided MS670 memory modules. All mass-storage devices will also "plug" directly into this backplane.

The system pedestal houses up to three half- or full-height DSSI fixed-disk drives, such as the RF31 disk drive and the RF71 disk drive.

1.1 BA440 System Enclosure

The BA440 enclosure has a 12-slot backplane. The backplane houses seven Q-bus modules, one KA670 CPU module, and four MS670 memory modules in the maximum configuration. Other configurations may employ fewer than four memory modules.

The backplane implements the CD rows and the Q22 AB rows of the seven backplane slots dedicated for Q-bus. The other five slots are reserved for the KA670 CPU and the four MS670 memory modules.

In addition, the BA440 enclosure contains a console module (H3604) that fits over the KA670 CPU module (module designation L4000-AA/BA) and all four memory module slots.

The console module has a ribbon cable that connects between the console module and the KA670 CPU. A power connector (H3604 power paddle card) connects the console module to the system backplane.

The console module forms an electrical seal that complies with regulations for electromagnetic interference (EMI) for keeping radio frequency interference (generated by the system) in the enclosure, and keeping external radio frequencies from entering the enclosure. The module is designed to help guarantee proper airflow.

For more information on the BA440 enclosure, see *Entry Systems Service Information Kit* (QZ-K19AA-GZ).

1.2 MS670 Memory Module

The MS670 memory module is designed for systems that use the KA670 CPU in a BA440 enclosure.

The MS670-BA (module designation L4001-BA) is a standard, fingerless, quad-size circuit board that provides 32 Mbytes of MOS memory. Memory is arranged in a 39-bit wide array — 32 bits of data and 7 bits of error correction code (ECC). The MS670 memory module uses 1 Megabit dynamic RAMs (DRAMs) in SOJ (small outline J) surface mount

packages. The SOJ package allows the memory chips to be mounted on both sides of the memory module, thereby allowing for double the capacity per memory module.

You can use up to four MS670 memory modules in a KA670-based system. Memory modules connect to the KA670 CPU through 50-pin high-density connectors on the modules which plug into the backplane.

The operating system support and diagnostic support are listed below.

Operating System Support

VMS	Version 5.3-2 and later
VAXELN	Version 4.1

Diagnostic Support

MDM	Release 131 and later
KA670-A ROM-based diagnostics	Version 3.1 and later