
VAXstation
3520/3540

EK-333AA-AD-001

VAXstation 3520/3540

DWFQA (Q-bus Adapter) Module Addendum

This addendum describes the options available through installation of the Q-bus Adapter Module as well as the location of the option modules in the VAXstation 3520/3540 workstation.

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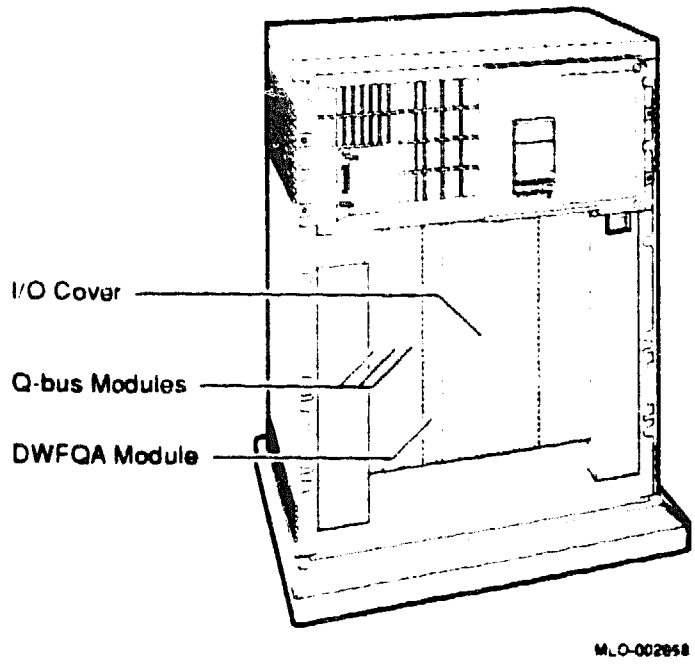
Product Description

The DWFQA (Q-bus adapter) module makes it possible to use Q-bus communications and tape data storage options with the VAXstation 3520/3540. The Q-bus adapter achieves this by providing a communications link between the M-bus and Q-bus modules. The DWFQA module supports four Q-bus option modules with the workstation, though no more than three can be installed at any one time. The DWFQA module occupies slot 9 of the system backplane. The various Q-bus option modules occupy slots 10 through 12.



Q-bus Option Modules

The following Q-bus options work with the DWFQA module:

- The DSV11 controller is a quad-height module providing two synchronous line interfaces allowing high-speed connection to SNA networks, X.25 networks, and DECnet networks. The DSV11 supports EIA–232D/V.24 (RS232), RS–423A, RS–422A, and V.35 standard on both lines. The two lines are independent and can be used at different speeds and with different protocols simultaneously. Refer to the *DSV11 User Guide* for more information.

- The CXY08 asynchronous multiplexer performs data concentration, real-time processing, and interactive terminal handling. The CXY08 module is quad-height, with a BA213-style handle. The CXY08 option also includes two cable assemblies. The module provides eight full-duplex serial data channels. Each cable assembly has a four-channel distributor. All eight channels provide enough modem control to allow autoanswer dialup operation over the public-switched telephone network. Refer to the *CXY08 Technical Manual* for more information.
- The TK70 is a 13-centimeter (5.25-inch) magnetic streaming tape drive subsystem that provides up to 296 megabytes of backup data storage on a tape cartridge. The TQK70 controller is a tape mass storage control protocol (TMSCP) device that provides the interface between the TK70–AA tape drive and the Q-bus. Refer to the *TK70 Tape Drive Subsystem Owner's Manual* for more information.
- The TS05 is a 26.25-centimeter (10.5-inch) 1600-bit, 9-track, industry standard magnetic streaming tape drive that provides 40.5 megabytes of backup data storage. The TSV05 controller is a modular, microprocessor-based quad-height module. It is capable of block-mode direct memory access (DMA). The TSV05 is a tape mass control protocol (TMSCP) device that provides the interface between the TS05 tape drive and the Q-bus. Refer to the *TSV05 User Guide* for more information.

VMS and ULTRIX Support for Q-bus Options

While all of the Q-bus option modules listed above are supported on VMS (Virtual Memory System), not all of the options are supported on ULTRIX systems. The following table lists which options are supported on VMS and which are supported on ULTRIX.

Note *VMS 5.2 or ULTRIX UWS 2.1 is required for DWFQA support.*

Table 1 Q-bus Option Module Support on VMS and ULTRIX

Option Module	VMS	ULTRIX
DSV11	Yes	No
CXY08	Yes	Yes
TQK70	Yes	Yes
TSV05	Yes	Yes

Digital does not support third-party options for the Q-bus adapter. However, the DWFQA module should work with such options if third-party manufacturers adhere to the conditions listed below:

- The DWFQA module does not fully support block-mode DMA nor extended block-mode (hog-mode) DMA. Because of the M-bus architecture, the maximum achievable DMA rates range from 480 to 650 kilobytes per second.
- The DWFQA module has the highest M-bus priority.
- Third-party options must adhere to Q-bus timing specifications of 8.2 microseconds.
- Diagnostics for supported options are stored in four ROMs for a total of 256 kilobytes.
- Digital does not support the BA213 expander box on DWFQA.

The System Configuration Tests

After your workstation has been installed and turned on, it is important to run the configuration tests to identify your system modules and their locations.

There are two commands for identifying your system modules: Typing **TEST 50** at the console prompt (CPU0C >>>) displays each M-bus module in your system. Typing **TEST 50 0** at the console prompt (CPU0C >>>) displays each Q-bus module in your system.

Note *When you run the configuration test, check to be sure that all the modules ordered for your workstation are listed in the display that appears on your screen.*

When you type **TEST 50** at the console prompt (CPU0C >>>) and press the RETURN key, a display similar to that shown below appears at the bottom of your screen.

```
KA60 V1.1

MID   MODTYPE    ID         SLOT   ERR
 0    01010001   L2002        9
 1    00020010   L2007AA      8
 2    00000000      *         7
 3    01010108   L2001        6
 4    01010004   L2003        5
 5    00000000      *         4
 7    01010002   L2004        3

CPU0C >>>_
```

- The M-bus Module ID (MID) numbers are listed in column 1 of the above display.
- A special ID (or part) number appears in column 3 of the above display
- The number of the system unit slot that contains the module is listed in column 4

A row of zeros in the MODTYPE column and an * symbol in the ID column indicate that a slot is empty. In the sample display, slots 4 and 7 are empty.

The ID or part numbers that appear in column 3 identify the modules in your system. The following table lists available modules and their part numbers.

Table 2 Module ID or Part Numbers

ID or Part Number	System Module
L2002	DWFQA
L2003	I/O
L2007AA	8-megabyte memory
L2007BA	16-megabyte memory
L2007CA	32-megabyte memory
L2001	Dual processor
L2004	Graphics

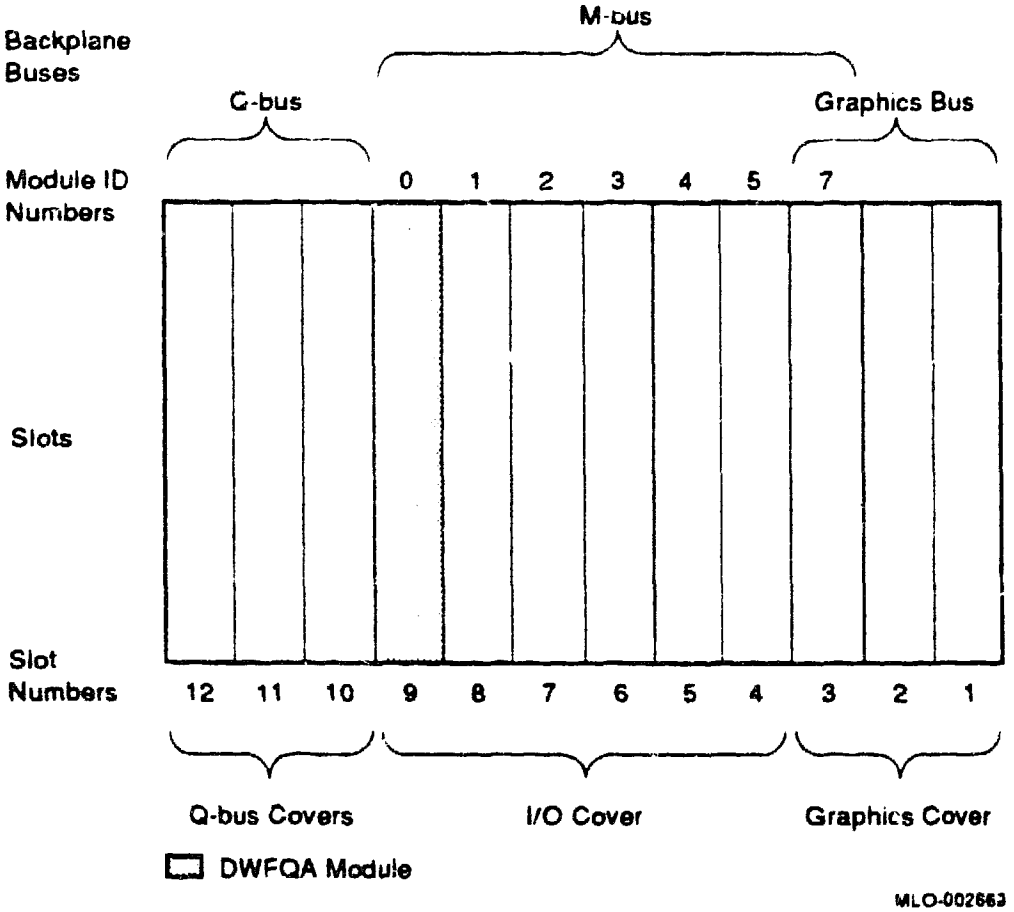
When you type **TEST 50 0** at the console prompt (CPU0C >>>) and press the RETURN key, a display similar to that shown below appears at the bottom of your screen.

```
  0       01010001       L2002            9
1    QAM      00000001
2    TQK70    00000001    00000001    x2.0
              CSR =  00001940
              VEC =  000000B0
```

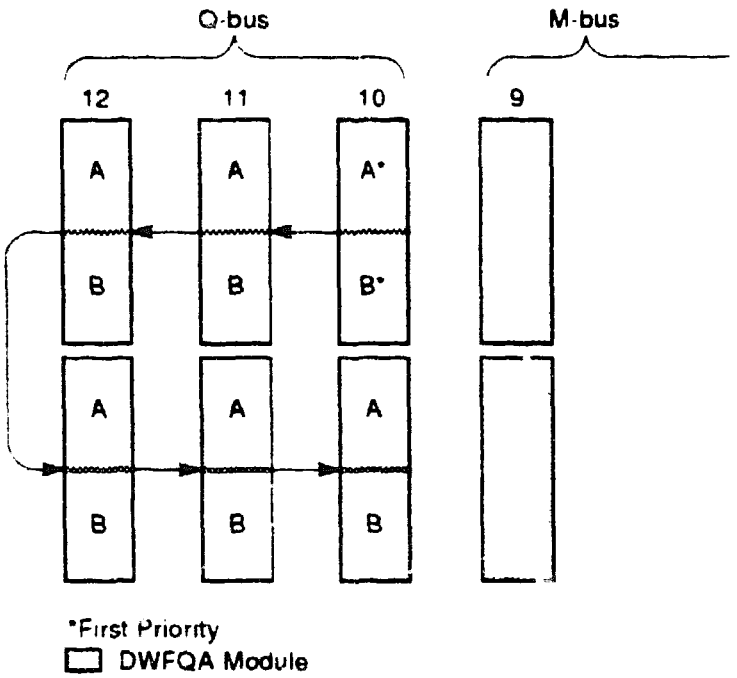
The sample display shows that a DWFQA (QAM) and TQK70 module have been installed on the system.

Backplane Configuration

The following figure shows the configuration of the various system buses and modules on the system backplane.



Q-bus grant continuity runs along the top half of the backplane across slots 10 through 12, then along the bottom of the backplane, across slots 12 through 10, as the following figure demonstrates:



If any empty slots exist in the Q-bus section of the backplane, the empty slot must have a Q-bus grant module installed to provide Q-bus continuity.

For more detailed information on the system modules, refer to the *VAXstation 3520/3540 Maintenance Guide*.

Ordering and Installing

Tables 3 through 5 list the part numbers for factory and field installation of the VAXstation 3520/3540 options, as well as order numbers for the documentation and hardware kits. To have the options installed on your system, contact your Digital service representative.

Table 3 lists part numbers for Digital service representatives who need to order individual items for replacement on your system.

Table 3 System Field Replaceable Units (FRUs)

Item	Part Number
Q-bus adapter module, DWFQA	L2002–00
Synchronous I/O interface module, DSV11	M3108–PA
Asynchronous interface module, CXY08	M3119–YA
Tape drive TK70, 296 megabytes	TK70E–SA
TK70 tape drive controller module, TQK70	M7559–00
Tape drive TS05, 40.5 megabytes	TS05–AA/AB
TS05 tape drive controller module, TSV05	M7530–PA

Table 4 lists kit part numbers, which allow you to order complete option sets for your workstation.

Table 4 Hardware Option Kits

Item	Factory Number†	Field Number‡
DWFQA Q-bus adapter (L2002)	DWFQA–AA	DWFQA–AF
DSV11, synchronous I/O interface module	DSV11–SA	DSV11–SF
CXY08, asynchronous interface module	CXY08–AA	CXY08–AF
TK70 tape drive, 296 megabytes (includes drive, TQK70 controller, adapter module, brackets, mounts, screws)	VS60B–AA	VS60B–AF
TS05 tape drive, 40.5 megabytes (includes drive, TSV05 controller, H9642 cabinet)	TSV05–SE/SF	TSV05–SE/SF

†This is the part number used for ordering options installed in the factory.

‡This is the part number used for ordering options installed at your site by your Digital field service representative.

Note *Number TSV05–SE is for 110 V; Number TSV05–SF is for 240 V.*

Table 5 Hardware Documentation

Item	Order Number
VAXstation 3520/3540 DWFQA (Q-bus Adapter) Module Addendum	EK-333AA-AD-001
VAXstation 3520/3540 Operator's Guide	EK-251AA-UG-001
VAXstation 3520/3540 Hardware Installation Guide	EK-250AA-IN-001
VAXstation 3520/3540 Maintenance Guide	EK-258AA-MG-002
VAXstation 3520/3540 Release Notes	EK-313AA-RN-001
VAXstation 3520/3540 Options Addendum	EK-361AA-AD-001
DSV11 User Guide	EK-DSV11-UG
CXY08 Technical Manual	EK-CXY08-TM
TK70 Tape Drive Subsystem Owner's Manual	EK-OTK70-OM
TSV05 User Guide	EK-TSV05-UG