VAX Replacement System With 9 Option Slots and Embedded Ethernet

Model NuVAX 4400

Your VAX has been a dependable workhorse for decades, but,

- *What do you do if it stops running?*
- *Can you obtain spare parts?*
- *Do you have knowledgeable staff to troubleshoot the old system?*

You want to get rid of the high maintenance overhead, but how do you connect a new system to your expensive, hard-to-replace externally connected equipment?

You might be able to replace it all –
system, software and external equipment –
for a significant capital investment;

Or, save time and money and choose NuVAX 4400:

- *Retain your investment in software.*
- *Preserve your investment in external equipment.*
- *Migrate to a brand new system with a new warranty.*

NuVAX 4400 is a modern, industry-standard system that replaces the VAX chassis, CPU, memory, and mass storage. Your current VAX disk images can be transferred onto a NuVAX system and run your existing operating system and applications.*

You can select from a variety of new technology controllers such as the DRV11-WA and DRQ3B to replace popular legacy Qbus interfaces. When a new interface is not available for your application, you can choose to retain your interface in a Qbus chassis connected to the NuVAX, or we can design a replacement.

Eliminate

- *Obsolete disks and tapes*
- *High maintenance costs*
- *Aging, unreliable equipment*

Preserve

- *Existing applications*
- *Specialized Qbus I/O interfaces*
- *Packaging and cables*

Improve

- *Performance up to 70 VUPS*
- *New equipment, new warranty*
- *High performance disk*

Qbus Support

- *Support for multiple Qbus devices*
- *Follows all Qbus rules and specifications*
- *Both Qbus PIO and DMA data transfers are supported as well as all four Qbus interrupts*
- *Qbus PIO and DMA data transfers occur at maximum Qbus speeds; throughput is limited only by the Qbus device(s)*

VAX Compatibility

- *Software compatible with existing applications*
- *Hardware compatible*
- *Diagnostic compatible*

*Initial configuration requires an Ethernet connection to a Windows PC running the NuVAX Manager program.

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Specifications

Physical	Standard 4U rack-mount chassis (20 inch depth)
Processors Supported	MicroVAX II, MicroVAX 3300, 3400, 3500, 3600, 3800, 3900 and 4000
Disks Emulated	RQDX3, KDA50
Tapes Emulated	TQK50, TQK70
VAX Memory	Up to 128 MB
Hard Drive	Removable 320GB SATA drive - one system drive*, optional data drive
Performance	Standard – up to 24 VUPS Accelerated – up to 70 VUPS**
Embedded Ethernet	Two ports: one reserved, and one DEQNA / DELQA emulation
RS232 Serial Port	COM1: Console (TT0) only
Serial Speeds	50, 75,110,134.5, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 7200, 9600, 19.2K, 38.4K bits/sec.
USB	Not supported
Keyboard, mouse, VGA	Not supported
Printer	LPV11
Power	400 Watt ATX-12V 2.01 PS/2 Full Range Active-PFC
Available Slots for I/O	9
VAX/VMS License	Qualifies for transfer
Operating Environment	
Temperature	10° to 40° C (50° to 104° F)
Relative Humidity	20 to 80% non-condensing
Storage Environment	
Temperature	-40° to 60° C (-40° to 140° F)
Relative Humidity	10% to 90% non-condensing

*   Virtual drives are limited to 2GB maximum size.

**   Not all applications or peripherals will work at accelerated speeds.

Ordering Information

All NuVAX 4400 systems come standard with a KWV11-C. Qbus interconnect is offered separately for either BA23/123 or BA200/400 enclosures.
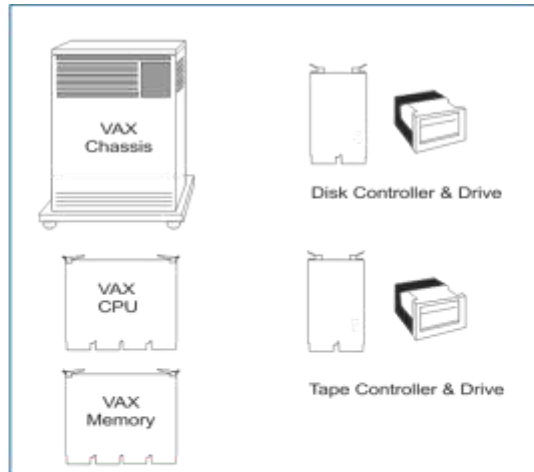
Description	Model
System with KWV11-C clock	MVX-4400-BA
Data Drive (optional)	DRV-0020-B
Interconnect kit for BA23/123	CAQ-2101-AA
Interconnect kit for BA200/400. Includes DEC M9405-PA.	CAQ-2102-AA
Interconnect kit for BA23/123. Connects to existing DEC M9405.	CPX-2102-AA

Option modules are listed below and described on the following pages.

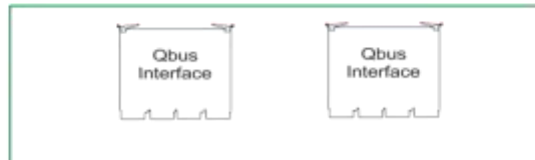| DEC Module	DEC Interface	Option Module	Page
M3104	DHV11	CCI-0008-AA	4
M3106	DZQ11	CCI-0008-AA	4
M3107	DHQ11	CCI-0008-AA	4
M3119	CXY08	CCI-0008-AA	4
M7516	DELQA	Embedded	2
M7651	DRV11-WA	DQP-1100-AA	4
M7651 + M9056	DRV11-WA + Long Line	DQP-1100 AB	4
M7658	DRQ3B	DQP-1500-AA	5
M7658 + APG-63(V)1	DRQ3B + DRPI	DQP-1501-AA	5
M7941	DRV11	DQP-1300-AA	5
M8049	DRV11-J	DQP-1400-AA	6
M8634	IEQ11-A	DQP-3100-AA	6
None	Unibus Adapter + 2 KW11-K	AQP-2303-AA	6
Custom	We can design an option module to migrate your Qbus controller into NuVAX.		

Update Your Equipment

Option Modules

Option modules are plug-and-play replacements for popular legacy Digital interfaces. Option modules install in a MVX-4400 system and offer the same functionality as the Digital equivalent, thus allowing users to migrate from their Qbus systems to NuVAX 4400 systems and maintain their investment in software and user equipment.

New Technology

- *State-of-the-art design*
- *New equipment, new warranty*

Software Compatible

- *Application compatible*
- *Diagnostic compatible*

Hardware Compatible

- *Signal compatible*
- *Connector and switch compatible*
- *Use existing user cables and externally connected equipment*

Module Interconnect

Option modules install into a single slot and connect to the NuVAX bus adapter, and optionally, to other option modules by way of Module Interconnects.

Option modules for the NuVAX 4400 are described on the following pages.

Model	**CCI-0008-AA**	Description	**DHV/DHQ Interface, 8-port**	
DEC Module	M3104, M3106, M3107, M3119			
Function	8-port RS232 asynchronous communication controller with modem control and external DB25 user connection.			
Power	1.8 amps @ +5V			
User Connection	Eight DB25-P connectors	Signals:	Tx, Rx, RTS, CTS, DSR, GND, DCD, DTR	
Line Parameters	Data bits: 5 ,6, 7, 8 Stop bits: 1, 1.5, 2	Parity: Odd, even, no parity Baud Rates: Up to 38.4K bps		
Part No: CCI-0008-AA	Package includes controller and DB25 octopus cable.			

Model	**DQP-1100-AA/AB**	Description	**DRV11-WA Interface**
DEC Module	M7651 + M9056 for differential		
Function	16-bit parallel user interface for PIO and DMA transfers between a Qbus system and external equipment. It can also serve as a link between a Qbus system and another computer with a DRV11-WA or DR11-W compatible interface. The board supports 22-bit addressing and data transfers at rates up to 400 Kbps in burst mode.		
Power	0.5 amps @ +5V, 0.3 amps @ +3.3V		
User Connection	Two 40-pin connectors, two 60-pin connectors for differential		
Part No: DQP-1100-AA	Standard package includes controller, Module Interconnect, Cable Adapter Panel, 8', 100-pin Connection Cable, and test cable.		
Part No: DQP-1100-AB	Package includes controller, Module Interconnect, Differential Cable Adapter Panel, 8' 100-pin Connection Cable, test cable.		

Model	**DQP-1500-AA**	Description	**DRQ3B Interface**
DEC Module	M7658		
Function	High performance 16-bit parallel interface designed for real-time data collection or for high-speed inter-processor communications. It provides PIO and DMA transfers between a Qbus system and external equipment at transfer rates of up to 1.3 MHz of 16-bit words.		
Power	1 amp @ +5V, 0.3 amps @ +3.3V		
User Connection	Two 50-pin connectors		
Part No: DQP-1500-AA	Standard package includes controller, Module interconnect, Cable Adapter Panel, 8', 100-pin Connection Cable, and test cable.		

Model	**DQP-1501-AA**	Description	**DRQ3B/DRPI Interface**
DEC Module	M7658 plus APG-63(V)1		
Function	Like the DRQ3B, the DQP-1501 is a high performance, 16-bit parallel interface designed for real-time data collection or for high-speed inter-processor communications. It provides PIO and DMA transfers to the DRPI interface at transfer rates of up to 1.3 MHz of 16-bit words. Plug-and-play replacement for the APG-63(V)1 Radar Data Processor (DRPI) controller.		
Power	1 amp @ +5V, 0.3 amps @ +3.3		
User Connection	One 50-pin male ribbon connector		

Model	**DQP-1300-AA**	Description	**DRV11 Interface**
DEC Module	M7941		
Function	16-bit parallel user interface for transfers between a Qbus system and parallel line TTL-based user equipment. It can also serve as a link between a Qbus system and another computer with a DRV11 or DR11-C compatible interface. This device is not supported by VMS autoconfigure.		
Power	0.5 amps @ +5V, 0.3 amps @ +3.3V		
User Connection	Two 40-pin connectors		
Part No: DQP-1300-AA	Standard package includes controller, Module Interconnect, Cable Adapter Panel, 8', 100-pin Connection Cable, and test cable.		

Model	**DQP-1400-AA**	Description	**DRV11-J Interface**
DEC Module	M8049		
Function	Parallel interface that provides 64 input/output data lines. Interrupt ability up to 16 lines with programmable interrupt vectors and program selection of fixed or rotating interrupt priority.		
Power	0.5 amps @ +5V, 0.3 amps @ +3.3V		
User Connection	Two 50-pin connectors		
Part No: DQP-1400-AA	Includes controller, Module Interconnect, Cable Adapter Panel, 8', 100-pin Connection Cable, and test cable.		

Model	**DQP-3100-AA**	Description	**IEQ11 Interface**
DEC Module	M8634		
Function	DMA controller that interfaces a Qbus system to two independent channels that are compatible with both the IEC and IEEE instrument buses. The instrument buses conform to both the European Standard IEC 625-1 and the U. S. Standard IEEE 488.1-1987. Each instrument bus can have up to fifteen devices, including the DQP-3100, in a sequential configuration.		
Power	0.5 amps @ +5V, 0.3 amps @ +3.3V		
User Connection	IEEE IEEE-488 standard 24-pin connector IEC IEC-625 standard 25-pin connector One connector per channel.		
Part No: DQP-3100-AA	Includes controller, Module Interconnect, IEC625 to IEEE488 cables, and test cable.		

Model	**AQP-2303-AA**	Description	**Unibus Adapter + 2 KW11-K Clocks**
Function	External Unibus adapter for applications with Able Microverter. Allows Unibus controllers in an external chassis to be accessed from the NuPDP-11 system. Includes two KW11-K clocks with fixed address and vector. Clocks can be individually disabled.		
Power	2.5 amps @ +5V, 0.5 amps @ +3.3V		
Part No: AQP-2303-AA	Includes controller, Module Interconnect, Unibus module, Cable Adapter Panel and 8', 100-pin Connection Cable		