

# Software Product Description

**PRODUCT NAME: IXV11/VMS Driver,  
Version 2.1**

**SPD 28.28.02**

## DESCRIPTION

The IXV11/VMS Driver allows programs written in any language supporting the MicroVAX/VMS \$QIO System Service to communicate with user devices connected to the IXV11/IXV1S modules.

The IXV11/IXV1S Module Family is a group of industrial digital input/output, analogue input/output, and counter interfaces for Digital Equipment Corporation's Q-bus machines.

These interfaces are:

- Digital Input Module supported:

IDV11-A/	16-bit opto-coupler	(M5026)
IDV1S-A	isolated digital input	(M5026-P0)

- Digital Output Modules supported:

IDV11-B/	16-bit opto-coupler	(M6029)
IDV1S-B	isolated digital output	(M6029-P0)
IDV11-C/	16-bit relay output	(M8005)
IDV1S-C	16-bit relay output	(M8005-P0)

- Analog Input Modules supported:

IAV11-A/	isolated multi-channel	(A410)
IAV1S-A	A/D converter	(A410-P0)
IAV11-AA/	16-channel A/D converter	(A410-YA)
IAV1S-AA		(A410-PA)
IAV11-C/	16-channel flying capacity	(A029)
IAV1S-C	multiplexer for IAV11-A/ IAV11-AA	(A029-P0)
IAV11-CA/	16-channel semiconductor	(A029-YA)
IAV1S-CA	multiplexer for IAV11-A/ IAV11-AA	(A029-PA)

- Analog Output Module supported:

IAV11-B/	4-channel group	(A6007)
IAV1S-B	isolated D/A converter	(A6007-P0)

- Counter Module supported:

IDV11-D/	opto-coupler isolated	(M7197)
IDV1S-D	5-channel counter	(M7197-P0)

The following driver software functionality is available for control of the IXV1x interfaces. The driver allows any of the IXV1x interfaces to be either allocated by a single process or shared among several processes.

- Digital Input/Output requests support the following modes of operation:

- Read data from one or several IDV1x-A modules.
- Write data to one or several IDV1x-B or IDV1x-C modules.
- Read or write fractions of a 16-bit value.
- Interrupts can be handled in a user process by AST routines.

- Analog Input/Output requests support the following modes of operation:

- Read data from one or several (up to 128 different) channels on IAV1x-A, -AA and IAV1x-C, -CA modules.
- Write data to one or several (up to 4 different) channels on IAV1x-B modules.
- Automatic gain selection can be enabled.
- Multiple reads on one channel can be initiated with one request.
- Conversion can be started internally or externally.

Although the number of different channels is limited to 128, it is possible to read each channel more than once with one request. Therefore the actual number of values that can be read is limited only by the length of the control buffer.

- The Counter functions support the following modes of operation:

- Start or stop one or more (up to 5) counter channels simultaneously on one IDV1x-D module.

- Counting upwards or downwards can be selected per channel.
- Every channel can be preset with an initial value.
- A counter overflow and/or underflow may be handled in a user AST routine.
- Count of external events controlled by internal or external start signal.
- Count of selectable internal time intervals upon external control signal (time measurements).
- Concatenating consecutive counter channels.

**Note:** This software product is supported in Europe only.

### HARDWARE REQUIREMENTS

VAX, MicroVAX, or VAXstation configuration as specified in the System Support Addendum (SSA 28.28.02-x)

- One IxV11 interface
- Hardware capable of reading one of the distribution media upon which the product is offered

### SOFTWARE REQUIREMENTS

- VMS Operating System
- Any programming language supporting VMS \$QIO System Service, such as:
  - VAX Ada
  - VAX BASIC
  - VAX C
  - VAX FORTRAN
  - VAX Pascal

Refer to the System Support Addendum (SSA 28.28.02-x) for availability and required versions of prerequisite /optional software and for information regarding components of VMS DECwindows.

### ORDERING INFORMATION

Software Licenses: QL-VHZA\*-\*\*

Software Media: QA-VHZA\*-\*\*

Software Documentation: QA-VHZAA-GZ

Software Product Services: QT-VHZA\*-\*\*

\* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

### SOFTWARE LICENSING

This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

### LICENSE MANAGEMENT FACILITY SUPPORT

This layered product supports the VMS License Management Facility.

License units for this product are allocated on a per-CPU basis and are not dependent on CPU Capacity or User/Activity.

For more information on the License Management Facility, refer to the VMS Operating System Software Product Description (SPD 25.01.xx) or the *License Management Facility* manual of the VMS Operating System documentation set.

For more information about Digital's licensing terms and policies, contact your local Digital office.

### SOFTWARE PRODUCT SERVICES

A variety of service options are available from Digital. For more information, contact your local Digital office.

### SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

<sup>TM</sup> The DIGITAL Logo, CI, DEC, DECwindows, MicroVAX, TK, VAX, VAX Ada, VAX BASIC, VAX C, VAX FORTRAN, VAX Pascal, VAXcluster, VAXft, VAXserver, VAXstation, and VMS are trademarks of Digital Equipment Corporation.

# System Support Addendum

**PRODUCT NAME:** IXV11/VMS Driver,  
Version 2.1

**SSA 28.28.02-A**

## HARDWARE REQUIREMENTS

### *Processors Supported:*

VAX:	VAX 4000 Model 300	VAXserver 4000 Model 200, VAXserver 4000 Model 300
MicroVAX:	MicroVAX II, MicroVAX 3300, MicroVAX 3400, MicroVAX 3500, MicroVAX 3600, MicroVAX 3800, MicroVAX 3900	VAXserver 6000-210, VAXserver 6000-220, VAXserver 6000-310, VAXserver 6000-320, VAXserver 6000-410, VAXserver 6000-420, VAXserver 6000-510, VAXserver 6000-520
VAXstation:	VAXstation II, VAXstation 3200, VAXstation 3500, VAXstation 3520, VAXstation 3540	

### *Processors Not Supported:*

VAX:	VAX 4000 Model 200  VAX 6000 Model 200 Series, VAX 6000 Model 300 Series, VAX 6000 Model 400 Series, VAX 6000 Model 500 Series  VAX 8200, VAX 8250, VAX 8300, VAX 8350, VAX 8500, VAX 8530, VAX 8550, VAX 8600, VAX 8650, VAX 8700, VAX 8800, VAX 8810, VAX 8820, VAX 8830, VAX 8840  VAX 9000 Model 210, VAX 9000 Model 400 Series  VAXft 3000 Model 310  VAX-11/725, VAX-11/730, VAX-11/750, VAX-11/780, VAX-11/782, VAX-11/785
MicroVAX:	MicroVAX I, MicroVAX 2000, MicroVAX 3100
VAXstation:	VAXstation I, VAXstation 2000, VAXstation 3100 Series, VAXstation 8000
VAXserver:	VAXserver 3100, VAXserver 3300, VAXserver 3400, VAXserver 3500, VAXserver 3600, VAXserver 3602, VAXserver 3800, VAXserver 3900

### *Other Hardware Required:*

- One IxV11 interface
- Hardware capable of reading one of the distribution media upon which this product is offered.

### *Disk Space Requirements (Block Cluster Size = 1):*

Disk space required for installation: 1,000 blocks  
(500 Kbytes)

Disk space required for use (permanent): 350 blocks  
(175 Kbytes)

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

## OPTIONAL HARDWARE

IXV11/IXV1S interfaces in any combination — Their number is primarily limited by the hardware of the host system. The driver is able to support up to 26 IXV11/IXV1S interfaces (excluding multiplexers).

## CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VAXcluster\* configuration without restrictions. The *HARDWARE REQUIREMENTS* sections of this product's Software Product Description and System Support Addendum detail any special hardware required by this product.

\* V5.x VAXcluster configurations are fully described in the VAXcluster Software Product Description (29.78.xx) and include CI, Ethernet, and Mixed Interconnect configurations.

## SOFTWARE REQUIREMENTS

VMS Operating System V5.0 - V5.4

*VMS Tailoring:*

The following VMS classes are required for full functionality of this layered product:

- VMS Required Saveset
- Programming Support
- System Programming Support

For more information on VMS classes and tailoring, refer to the VMS Operating System Software Product Description (SPD 25.01.xx).

## OPTIONAL SOFTWARE

Any programming language supporting VMS \$QIO System Service, such as:

- VAX Ada V1.5 - V2.1
- VAX BASIC V3.2 - V3.4
- VAX C V2.4 - 3.1
- VAX FORTRAN V5.0 - V5.5
- VAX Pascal V3.7 - 4.2

## GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

## DISTRIBUTION MEDIA

TK50 Tape Cartridge

## ORDERING INFORMATION

Software Licenses: QL-VHZA\*-\*\*

Software Media: QA-VHZA\*-\*\*

Software Documentation: QA-VHZAA-GZ

Software Product Services: QT-VHZA\*-\*\*

\* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

This layered product is supported in Europe only.

The above information is valid at time of release. Please contact your local Digital office for the most up-to-date information.

<sup>TM</sup> The DIGITAL Logo, CI, DEC, DECwindows, Micro-VAX, TK, VAX, VAX Ada, VAX BASIC, VAX C, VAX FORTRAN, VAX Pascal, VAXcluster, VAXft, VAXserver, VAXstation, and VMS are trademarks of Digital Equipment Corporation.