Software Product Description

PRODUCT NAME: IXV/VAXELN Driver, Version 2.0 **SPD 29.18.01**

DESCRIPTION

The IXV/VAXELN driver enables a user to perform I/O to/from the IXV11/IXV1S-Modules. The driver is supplied as a subroutine library, which the user has to include in the application software at compile and link time. The user has then to build a bootable VAXELN system (using the VAXELN TOOLKIT), which is booted on a target machine in order to perform its task of a dedicated stand-alone real-time application. This type of design implies that an application calling the driver routines must run in Kernel Mode. The design also prohibits accessing a given device from more than one job; however, gaining access from different processes within the same job is possible, provided the caller ensures there is no simultaneous access to the same device. Furthermore, the job can be used as a server enabling other jobs on the system to access the IXV devices.

The VAXELN Toolkit is a VMS layered product for the development of dedicated, real-time VAXELN systems that run on VAX and MicroVAX processors. The development tools run on a ''host'' VAX processor under the VMS Operating System. A finished VAXELN system using the IXV/VAXELN driver runs directly on a ''target'' MicroVAX processor, without the presence of another operating system.

This product is supported in Europe only. The IXV11/IXV1S Module Family is a group of industrial digital input/output, analog input/output, and counter interfaces for DIGITAL Equipment'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	(A029-P0)
IAV11-CA/	IAV11-A/IAV11-AA	(A029-YA)
IAV1S-CA	16 channel semiconductor 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 IXV/VAXELN driver is functionally compatible with the respective IXV11/VMS Driver (SPD 28.28.xx) featuring (IxV11 always implies IxV1S):

- 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 modules
  - Read or write fractions of a 16 bit value
  - Interrupts can be handled in a user process by 'AST' processes (the AST concept is unknown to VAXELN but can be implemented using VAXELN multi-tasking)
- 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

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— 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.

- The Counter functions support the following modes of operation:

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

  — Counting in ascending or descending order may be selected per channel

  — Every channel may be preset with an initial value

  — A counter overflow and/or underflow may be handled in a user 'AST' process

  — 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

HARDWARE REQUIREMENTS

VAX, MicroVAX or VAXstation configuration as specified in the System Support Addendum (SSA 29.18.01-x).

SOFTWARE REQUIREMENTS*

- VMS Operating System
- VAXELN TOOLKIT
- DECnet-VAX (required for downline loading and remote debugging)
- VAX C (required if C is used for VAXELN program development or if VAXELN C Run-Time Library is used.

OPTIONAL SOFTWARE*

- VAX Language-Sensitive Editor
- Any programming language available for the VAXELN TOOLKIT

* Refer to the System Support Addendum for availability and required versions of Prerequisite/Optional Software (SSA 29.18.01-x).

ORDERING INFORMATION

Software Licenses: QL-VG3A*-**
Software Media: QA-VG3A*-**
Software Documentation: QA-VG3AA-GZ

* 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

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