Software Product Description

PRODUCT NAME: DRB32 VMS DRIVERS, Version 3.0 **SPD 27.69.02**

DESCRIPTION

DRB32 VMS DRIVERS, Version 3.0 supports the DRB32 options (DRB32-M, DRB32-E, and DRB32-W) under the VMS Operating System. The DRB32-M is a general purpose parallel port that provides a 32-bit high speed interface between the VAXBI and a user's peripheral. In DMA mode, the DRB32-M can transfer up to 960K bytes of data without processor intervention. The DRB32-M also supports programmed I/O data transfers between a VAX processor and an external device. The DRB32-E an external cable driving option allows for communications with a device outside the system cabinet. The DRB32-W a DR11-W compatible option provides DR11-W like transactions, so that existing DR11-W applications may utilize the higher band-width provided by the VAXBI.

DRB32 VMS DRIVERS, Version 3.0 provides device drivers and other programs that support the DRB32 under VMS V5.0 on VAXBI systems. Included in the kit are:

- Two working example device drivers; one for the DRB32-M/DRB32-E, and one for the DRB32-W
- Example programs that demonstrate the use of the drivers and provide test and installation verification procedures
- Sources to all the above, and command procedures to compile or assemble, and link them, along with command procedures that load the device drivers

DRB32-M/DRB32-E Driver Features

- Simple interface for user programs, via the $QIO VMS system service. This service can be called from any VMS-supported programming language.
- Allows users to pre-lock buffers in memory, reducing driver overhead when processing user requests
- Allows users to transfer very large amounts of data, much larger than the DRB32's 982K bytes, by making use of the DRB32's double-buffering capability in longword mode transfers.
- Allows users to set up an attention AST, which gives a user program asynchronous notification of external device events
- Allows a user program to implement its own data transfer protocol, between the user program and the external device. The driver imposes no restrictions on this protocol.
- "Pipelines" user I/O requests. This keeps the DRB32 and the external device as busy as possible by overlapping driver and user program overhead with data transfers.
- Allows programmed I/O to either the DRB32's data port, control port, or both. This allows a user program to read or write a longword or word at a time from or to the user device.
- Allows a suitably privileged user program to change the DRB32's configuration. The user program can select the data path width, the Interrupt Priority Level at which the DRB32 will interrupt the processor, whether or not the DRB32 receives and checks parity from the external device, and whether or not the DRB32 will operate in internal loop-back mode.

DRB32-W Driver Features

The DRB32-W driver is a modified version of the VMS DR11-W driver, with a nearly identical user QIO interface. Existing programs for the DR11-W may require modification to use the DRB32-W driver. The sources to this driver are provided, so that the user has an example of how to modify the DR11-W device handling to use the DRB32-W. Systems that are upgraded to the T1023-YA version of the DRB32-W board will be able to use the word counter functionality included in the example driver source, UQWDRIVER, if so desired. An explanation of how to implement that functionality is also included in the source code.

HARDWARE REQUIREMENTS

VAX configuration as specified in the System Support Addendum (SSA 27.69.02-x).

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SOFTWARE REQUIREMENTS*

VMS Operating System

OPTIONAL SOFTWARE*

In order to modify the test programs provided with the DRB32 VMS DRIVERS layered product, VAX FORTRAN and VAX C are required.

No optional software is necessary to modify the device drivers on the kit.

* Refer to the System Support Addendum (SSA 27.69.02-x) for availability and required versions of prerequisite/optional software.

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