



XVME-987 QNX[®] Board Support Package

XycomVME's QNX[®] Board Support Package is a comprehensive software package that simplifies the process of designing VMEbus application programs for XycomVME's VMEbus PC hardware in a QNX environment. The package consists of example programs, Data and Interrupt Servers, and a 32-bit Application Program Interface (API) used to develop VMEbus programs.

FEATURES

- High performance kernel-mode Data and Interrupt Servers for Tundra Universe PCI-to-VME bridge chip designed to manage the XVME-CPU VMEbus interface
- 32-bit API for
 - VMEbus read and write routines with DMA support
 - Dual-access memory management functions
 - Support for read-modify-write operations
 - Virtual memory mapping operation for VMEbus address space
 - VMEbus interrupt generation routines
 - Routines for handling VMEbus interrupts

BENEFITS

Get a Comprehensive Package

With the example programs, the Data and Interrupt Servers, and the 32-bit API bundled together, XycomVME's QNX Board Support Package is a comprehensive solution for your VME board support needs.

Simple Configuration

The example programs, which use many of the API library routines, provide users with consolidated options for configuring VME systems. These example programs include all source code and mak.files.

Save Development Time

The 32-bit API provides a library of routines and header files, which allow users to get their applications up and running quickly by simplifying the design and implementation of applications for XycomVME's VMEbus PC processors. The development time and effort required to handle VMEbus data and interrupts in applications are significantly reduced.

A Range of Boards Supported

The QNX Board Support Package supports a range of XycomVME's VME processor modules, including:

- XVME-653: Pentium[®] CPU with onboard Ethernet
- XVME-654: AM5x86[™] CPU with onboard Ethernet
- XVME-660: Pentium[®] III CPU with onboard SCSI, Ethernet, PMC and IP sites
- XVME-661: Pentium[®] III CPU with Dual Ethernet, PMC site and Compact Flash

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| vmemon - VMEbus Monitor Program |
| Copyright (c) Xycom, Inc. 1998 |
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Read or Write VMEbus (R/W, default = R):r
Enter the type of VME access (default = 2):
  1 = SHORT I/O
  2 = STANDARD ADDRESS
  3 = EXTENDED ADDRESS :
Enter memory address (hex, default = 0):
Enter the width of the transfer (8/16/32, default = 8):

Address 0 1 2 3 4 5 6 7 8 9 A B C D E F ASCII
STD:00000000 67 A7 FF FF 64 40 EE FF E5 4C FF FF 05 40 FF FF g...4G...L...0...
STD:00000010 0D 40 FF FF 54 40 FF FF 45 4C FF FF 44 A4 FF FF .G.TG..EL..D...
STD:00000020 74 40 FF FF 41 64 FF FF 3C 8A FF FF C6 01 FF FF 0G..Ad..A.....
STD:00000030 05 4C FF FF 3D CD FF FF 3C A0 FF FF 45 C7 FF FF .L...A...E...
STD:00000040 C7 6A 44 00 4F 66 00 08 65 0C 00 00 4D 44 00 00 .3D.0...c...MD...
STD:00000050 46 C5 00 00 54 24 88 00 4F 60 00 00 E5 C6 00 00 F...Tf..0.....
STD:00000060 5C 84 00 00 00 00 00 00 00 00 00 00 00 00 00 00 \.....
Press 0 to QUIT or any other key to read another block from the VMEbus
Press 0 to QUIT or any other key to set up another VMEbus transfer
# pntsc con1>vmemon1.txt
  
```



DATA AND INTERRUPT SERVERS

Data and Interrupt Servers access the XVME-CPU VMEbus control and status registers and the VMEbus. The Data Server handles all VMEbus read, write, and virtual memory functions. The Interrupt Server processes VMEbus interrupt requests and generates VMEbus interrupts.

APPLICATION PROGRAM INTERFACE (API)

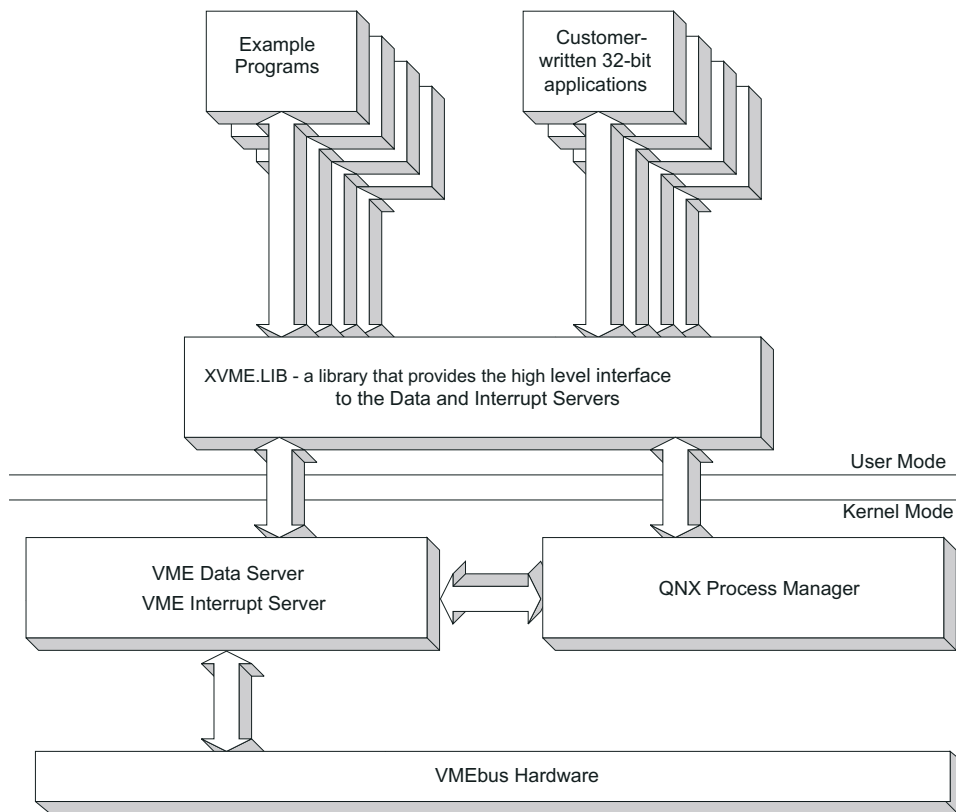
The 987/4 software support library provides a 32-bit, high-level API between an application and the Data and Interrupt Servers. This interface is a comprehensive set of functions that simplifies the development of VMEbus application programs. Simply link in the correct library routine when developing an application. All source code for the library routines is provided so that each can be customized if needed.

Routine	Description
auxintAlloc	Allocates an auxiliary interrupt object
auxintDisable	Disables an auxiliary interrupt
auxintEnable	Enables an auxiliary interrupt
auxintFree	Frees up the auxiliary interrupt object allocated by the auxintAlloc
auxintWait	Waits for an auxiliary interrupt
daAlloc	Returns a user mode pointer to access an allocated dual access memory region
daFree	Frees up the dual access memory region allocated by daAlloc
daMove	Copies data from dual access memory to dual access memory
daRead	Dual access memory read
daRMW	Performs read/modify/write operation on dual access memory
daWrite	Dual access memory write
ioRead8	Reads an 8-bit value from an I/O port
ioRead16	Reads a 16-bit value from an I/O port
ioRead32	Reads a 32-bit value from an I/O port
ioWrite8	Writes an 8-bit value to an I/O port
ioWrite16	Writes a 16-bit value to an I/O port
ioWrite32	Writes a 32-bit value to an I/O port
univRead8	Reads an 8-bit value from the configuration space of the Universe chip
univRead16	Reads a 16-bit value from the configuration space of the Universe chip
univRead32	Reads a 32-bit value from the configuration space of the Universe chip
univWrite8	Writes an 8-bit value to the configuration space of the Universe chip
univWrite16	Writes a 16-bit value to the configuration space of the Universe chip
univWrite32	Writes a 32-bit value to the configuration space of the Universe chip
vmeAlloc	Allocates a VMEbus memory region and returns a user mode pointer for accessing
vmeFree	Frees up the VMEbus memory region allocated by vmeAlloc
vmeMove	Copies data from VMEbus memory to VMEbus memory
vmeRead	VMEbus memory read
vmeRMW	Performs read/modify/write operation on VMEbus memory
vmeWrite	VMEbus memory write
vmeintAlloc	Allocates a VME interrupt object
vmeintDisable	Disables a VME interrupt
vmeintEnable	Enables a VME interrupt
vmeintFree	Frees up the VME interrupt object allocated by vmeintAlloc
vmeintGenerate	Generates a VMEbus interrupt
vmeintWait	Waits for a VME interrupt
vmeintWaitEx	Waits for a VME interrupt



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BOARD SUPPORT PACKAGE COMPONENTS



ORDERING INFORMATION

Standard Configurations	
Order Number	Description
XVME-987	QNX Board Support Package

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