



GATEWAYS

Zealand Ltd.
12109742

DB-88E6218/RD-88E6208

Rapid Development Kit

Getting Started Guide

Doc. No. MV-S800063-00, Rev. A
February 13, 2003

12qru965pi-fih8wgkl
MARVELL CONFIDENTIAL

MOVING FORWARD
FASTER®





Document Status

Advanced Information	This document contains design specifications for initial product development. Specifications may change without notice. Contact Marvell Field Application Engineers for more information.
Preliminary Information	This document contains preliminary data, and a revision of this document will be published at a later date. Specifications may change without notice. Contact Marvell Field Application Engineers for more information.
Final Information	This document contains specifications on a product that is in final release. Specifications may change without notice. Contact Marvell Field Application Engineers for more information.
Revision Code:	
Preliminary	Technical Publication:

Preliminary Information

This document provides Preliminary information about the products described. All specifications described herein are based on design goals only. Do not use for final design. Visit the Marvell® web site at www.marvell.com or call 1-866-674-7253 for the latest information on Marvell products.

Disclaimer

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of Marvell. Marvell retains the right to make changes to this document at any time, without notice. Marvell makes no warranty of any kind, expressed or implied, with regard to any information contained in this document, including, but not limited to, the implied warranties of merchantability or fitness for any particular purpose. Further, Marvell does not warrant the accuracy or completeness of the information, text, graphics, or other items contained within this document. Marvell makes no commitment either to update or to keep current the information contained in this document. Marvell products are not designed for use in life-support equipment or applications that would cause a life-threatening situation if any such products failed. Do not use Marvell products in these types of equipment or applications. The user should contact Marvell to obtain the latest specifications before finalizing a product design. Marvell assumes no responsibility, either for use of these products or for any infringements of patents and trademarks, or other rights of third parties resulting from its use. No license is granted under any patents, patent rights, or trademarks of Marvell. These products may include one or more optional functions. The user has the choice of implementing any particular optional function. Should the user choose to implement any of these optional functions, it is possible that the use could be subject to third party intellectual property rights. Marvell recommends that the user investigate whether third party intellectual property rights are relevant to the intended use of these products and obtain licenses as appropriate under relevant intellectual property rights.

Marvell comprises Marvell Technology Group Ltd. (MTGL) and its subsidiaries, Marvell International Ltd. (MIL), Marvell Semiconductor, Inc. (MSI), Marvell Asia Pte Ltd. (MAPL), Marvell Japan K.K. (MJKK), Marvell Semiconductor Israel Ltd. (MSIL), and SysKonnect GmbH.

Copyright © 2003. Marvell. All rights reserved. Marvell, the Marvell logo, Moving Forward Faster, Alaska, and GalNet are registered trademarks of Marvell. Discovery, Fastwriter, GalTis, Horizon, Libertas, Link Street, NetGX, PHY Advantage, Prestera, Raising The Technology Bar, UniMAC, Virtual Cable Tester, and Yukon are trademarks of Marvell. All other trademarks are the property of their respective owners.

Marvell

700 First Avenue

Sunnyvale, CA 94089

Phone: (408) 222 2500

Sales Fax: (408) 752 9029

Email commsales@marvell.com

Table of Contents

Section 1. Introduction..... 4

Section 2. Rapid Development Kit Components 5

Section 3. Bringing Up the System..... 6

3.1 VxWorks6

3.2 uClinux.....6

Section 4. Build Method..... 7

4.1 VxWorks7

4.2 uClinux.....7

Section 5. Revision History 8



Section 1. Introduction

Thank you for purchasing the Marvell® Rapid Development Kit for the DB-88E6218 and RD-88E6208 boards. This kit is designed to help reduce the time and effort required by users in bringing to market a product with industry-leading features and robustness. A careful look at what we have to offer in this kit will help you understand the benefits of Marvell's software offering. This particular guide helps you understand the tools you have at your disposal. It introduces you to the capabilities of each software component in the Rapid Development Kit. It also describes how to build and install new software.

Use of the source code, binaries, and other deliverables provided in the Rapid Development Kit first requires acceptance of the **Marvell Software License agreement** provided with the kit.

In addition to the VxWorks BSP for the DB-88E6218 board, the kit also has demo BSPs in VxWorks and uClinux for the RD-88E6208 platform.

Copy the contents of the Rapid Development Kit CD to your computer according to the following instructions:

BSP	Instructions
DB-88E6218 VxWorks	Copy the contents of the DB-88E6218 directory on the CD to the following directory for VxWorks: (WINDBASE)\target\config\DB-88E6218. Read the readme.txt file found at (WINDBASE)\target\config\DB-88E6218\Doc. It explains the layout of the BSP directory and also provides details about setting up the network configuration and loading multiple interfaces once the system has been brought up.
RD-88E6208 uClinux Demo	Copy the contents of the RD-88E6208\Demo-Linux directory to your Linux PC. Read the readme.txt file as well as the uClinux installation guide (SW_uClinuxInstallationGuide.pdf) found in the following directory of your CD: RD-88E6208\Demo-linux\docs.
RD-88E6208 VxWorks Demo	Copy the contents of the RD-88E6208\Demo-VxWorks directory on the CD to the following directory for VxWorks: (WINDBASE)\target\config\RD-88E6208 Read the readme.txt file found at (WINDBASE)\target\config\RD-88E6208\Doc. It explains the layout of the BSP directory and also provides details on setting up the network configuration and loading multiple interfaces once the system has been brought up.

Section 2. Rapid Development Kit Components

The components of the Rapid Development Kit are as follows. If any of these components are missing, contact your Marvell Field Application Engineer:

Switch API	This API is the user-level interface to the switch. The API is developed to support applications such as Quality of Service, NAT, and routing, without the developer having to know details of the registers and tables on the hardware
Switch Source Code	<p>The source code for the Switch API and driver can be found in</p> <p><code>'(WINDBASE)\target\config\DB-88E6218\Doc\Sample Switch Software\QDDriver1.3e'</code></p> <p>Along with the driver and the API for the switch are sample source files that can be used to quickly start your development efforts. These are provided for reference only. The source files utilize the switch APIs. The relevant files can be found in</p> <p><code>'(WINDBASE)\target\config\DB-88E6218\Doc\Sample Switch Software\QDDriver1.3e\Sample'</code></p>
Switch Driver	This software layer receives requests from the Switch API and invokes the low-level SMI layer drivers to access hardware registers.
SOHO Product Software Architecture Specification	This document explains the functionality of the switch. In particular, it explains the Marvell API layer, the driver layer, as well as a BSP-dependant SMI driver component. For further details see the SOHO Product Software Architecture Specification provided with this kit.
UniMAC Driver	This component allows customers to access the underlying hardware interfaces through a single API for a unified 802.3 MAC device. The actual physical interface is transparent to the user. This also allows for dynamic configuration and movement of the different ports between different networks (subnets). The UniMAC driver is OS-independent. For further details see the UniMAC User Guide, which is a part of the Rapid Development Kit.
UniMAC User Guide	This document explains the functionality of the UniMAC driver and API. For further details see the UniMAC User Guide (MV-S800058-00) provided with this kit in <code>'(WINDBASE)\target\config\DB-88E6218\Doc\'</code> .
BSP for DB-88E6218	A complete BSP for VxWorks is provided for the DB-88E6218 board. This BSP is based on Tornado 2.1.1 for ARM.
Demo BSPs for RD-88E6208	Demonstration quality BSPs are provided for the RD-88E6208 boards, for both VxWorks and uClinux operating systems. The Tornado version to use is Tornado 2.1.1 for ARM.
BSP Reference Manuals	<p>This document explains the functionality of the BSP. For further details see the BSP User Manual provided with this kit in</p> <p><code>'(WINDBASE)\target\config\DB-88E6218\Doc\'</code> - VxWorks for DB88E6218,</p> <p><code>from root..' \RD-88E6208\Demo-linux\Docs'</code> - uClinux for RD-88E6208</p> <p><code>'(WINDBASE)\target\config\RD-88E6208\Doc\'</code> - VxWorks for RD-88E6208</p>
Rapid Development Kit Getting Started Guide	This document.

If any of these components are missing, contact your Marvell Field Application Engineer.

Section 3. Bringing Up the System

3.1 VxWorks

Install the BSP under the WINDBASE/target/config directory of your PC. This PC will function as the Windows Host system that talks to the DB-88E6218/RD-88E6208 board or Target system. This BSP is released in a zip file. Unzip the file to receive the BSP.

The root directory contains the following sub-directories:

VxWorks_Images Use these images to install a pre-built image and debug your system.

Doc Includes:

- BSP User Manual
- readme.txt
- License agreement
- UniMAC User Guide
- Switch User Guide
- Switch Source code

QDdrv Includes:

- Internal switch library QDLib.a
- Directory under which the switch driver header files are located

To bring up the target system using the pre-built image supplied along with the Rapid Development Kit, do the following:

1. Set up the host system so it has an IP address of 10.4.0.250.
(On startup the boot code searches for this IP address to download an image.) You can change this via the armboot boot program.
2. Make sure the TFTP server is running on the host system.
3. Connect through the serial interface and set the baud rate to 38400.
4. At the ARMBoot Application prompt (serial interface) type: ARMboot-> tftp 100000 vxworks.st_rom.bin
When the prompt returns with Done, type: ARMboot-> go 100000
This starts the VxWorks image on the target with IP address of 10.2.50.127



Note

For further details see section 4.3 (System Software Preparation) of the BSP User Manual supplied with the Rapid Development Kit.

3.2 uClinux

See the SW_uClinuxInstallationGuide.pdf file for instructions. This can be found in the following directory on your CD:

RD-88E6208\Demo-linux\Docs

Section 4. Build Method

4.1 VxWorks

To build a new VxWorks image do the following:

1. Make sure you have Tornado 2.1.1 for ARM installed on your system.
2. Open up a DOS command prompt.
3. Go to the BSP root directory under WINDBASE/target/config.
This has your target system's BSP-related files.
4. Make the modifications to the files that you wish to change.
5. Run **torvars.bat** from your BSP directory to set up the environment variables before you build.
The torvars.bat file is located in your Tornado build tree under '(WINDBASE)/host/x86-win32/bin/torvars.bat'
6. Type **make clean** followed by **make <imagetype>** at the DOS command prompt. You can specify the image-type you require. For example, **make vxWorks.st_rom** makes a compressed standalone VxWorks image (with target shell and symbol table).

For further details see the VxWorks Programmers Guide.

4.2 uClinux

See the SW_uClinuxInstallationGuide.pdf file for instructions. This can be found in the following directory on your CD:

RD-88E6208\Demo-linux\Docs

Section 5. Revision History

Table 1: Revision History

Revision #	Date	Comments
A	13 February 2003	Initial Release

12qru965pi-fih8wgkl * IJW Software New Zealand Ltd.
MARVELL CONFIDENTIAL, UNDER NDA# 12109742

12qru965pi-fih8wgkl * IJW Software New Zealand Ltd.
MARVELL CONFIDENTIAL, UNDER NDA# 12109742



MOVING FORWARD
FASTER®

Marvell Semiconductor, Inc.

700 First Avenue
Sunnyvale, CA 94089

Phone 408.222.2500
Fax 408.752.9028

www.marvell.com

US and Worldwide Offices

Marvell Semiconductor, Inc.

700 First Avenue
Sunnyvale, CA 94089
Tel: 1.408.222.2500
Fax: 1.408.752.9028

Marvell Asia Pte, Ltd.

151 Lorong Chuan, #02-05
New Tech Park
Singapore 556741
Tel: 65.6756.1600
Fax: 65.6756.7600

Marvell Japan K.K.

Shinjuku Center Bldg. 50F
1-25-1, Nishi-Shinjuku, Shinjuku-ku
Tokyo 163-0650
Tel: 81.(0).3.5324.0355
Fax: 81.(0).3.5324.0354

Marvell Semiconductor Israel, Ltd.

Moshav Manof
D.N. Misgav 20184
Israel
Tel: 972.4.999.9555
Fax: 972.4.999.9574

Worldwide Sales Offices

Western US Sales Office

Marvell
700 First Avenue
Sunnyvale, CA 94089
Tel: 1.408.222.2500
Fax: 1.408.752.9028
Sales Fax: 1.408.752.9029

Central US Sales Office

Marvell
11709 Boulder Lane, Ste. #220
Austin, TX 78726
Tel: 1.512.336.1551
Fax: 1.512.336.1552

Eastern US/Canada Sales Office

Marvell
Knox Trail Office Bldg.
2352 Main Street
Concord, MA 01742
Tel: 1.978.461.0563
Tel: 1.978.461.1406
Fax: 1.978.461.1405

Europe Sales Office

Marvell
3 Clifton Court
Corner Hall
Hemel Hempstead
Hertfordshire, HP3 9XY
United Kingdom
Tel: 44.(0).1442.211668
Fax: 44.(0).1442.211543

Marvell

Fagerstagatan 4
163 08 Spanga
Stockholm, Sweden
Tel: 46.16.146348
Fax: 46.16.482425

Marvell

5 Rue Poincare
56400 Le Bono
France
Tel: 33.297.579697
Fax: 33.297.578933

Israel Sales Office

Marvell
Ofek Center Bldg. 2, Floor 2
Northern Industrial Zone
LOD 71293
Israel
Tel: 972.8.924.7555
Fax: 972.8.924.7554

China Sales Office

Marvell
5J, 1800 Zhong Shan West Road
Shanghai, China 200233
Tel: 86.21.6440.1350
Fax: 86.21.6440.0799

Japan Sales Office

Marvell
Helios Kannai Bldg. 12F
3-21-2 Motohama-cho, Naka-ku
Yokohama, Kanagawa
Japan 231-0004
Tel: 81.45.222.8811
Fax: 81.45.222.8812

Taiwan Sales Office

Marvell
12F-1, 128 Sec. 3
Ming Sheng East Road
Taipei 105
Taiwan, R.O.C.
Tel: 886.2.8712.5700
Fax: 886.2.8712.5707

For more information, visit our website at:
www.marvell.com