DECchip 21040 PCI Evaluation Board

Read Me First

Order Number: EC–N3103–72

Revision/Update Information: This is a new document.

Digital Equipment Corporation
Maynard, Massachusetts

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1 Introduction to the DECchip 21040 PCI Evaluation Board Kit

The DECchip 21040 PCI Evaluation Board Kit was designed to introduce you to the DECchip 21040 and to help you learn more about designing your products with this chip. This evaluation board is intended to demonstrate the functionality of the DECchip 21040 Ethernet LAN Controller for a peripheral component interconnect (PCI) bus. By using the DECchip 21040 Evaluation Board (also called the EB40) and the documentation, you will be able to do the following:

- Validate the functionality and features of the DECchip 21040
- Use the evaluation board as a sample design
- Learn more about the DECchip 21040

This document provides an overview of the kit contents, and gives some information about how to begin using the EB40.

2 Kit Contents

The DECchip 21040 PCI Evaluation Board Kit contains the following:

- The DECchip 21040 PCI Evaluation Board (EB40)
- The DECchip 21040 PCI Evaluation Board Design Package, including:
  - Hardware design package (provided on a 3½-inch diskette)
  - A diagnostic program to exercise or verify the EB40 (provided on a diskette)
  - DECchip 21040 PCI Evaluation Board documentation
- Driver executables, including:
  - Novell NetWare Client/Server
  - NDIS2 for DOS
  - Windows NT for both x86 and Alpha AXP systems

3 System Requirements

The EB40 is intended for use in systems with a 5-volt signaling (logic levels) environment. An onboard voltage regulator supplies the 3.3 volts for the DECchip 21040. This evaluation board can be plugged into any bus master PCI slot. You will also need a 3½-inch floppy diskette drive.

4 Documentation Provided

The following documentation is included in the DECchip 21040 PCI Evaluation Board Kit:

Title	Order Number
DECchip 21040 Literature	
DECchip 21040 Ethernet LAN Controller for PCI Product Brief	EC–N0281–72
DECchip 21040 Ethernet LAN Controller for PCI Data Sheet	EC–N0280–72
DECchip 21040 Ethernet LAN Controller for PCI Hardware Reference Manual	EC–N0752–72
Connecting the DECchip 21040 Ethernet LAN Controller to the Network: An Application Note	EC–N0737–72
Ethernet Address ROM Programming: An Application Note	EC–N3214–72
DECchip 21040 Drivers and Source Code Order Information Sheet	EC–N2687–72
DECchip 21040 PCI Evaluation Board Literature	
DECchip 21040 PCI Evaluation Board Design Package Read Me First	EC–N3103–72
DECchip 21040 PCI Evaluation Board User's Guide	EC–N0753–72
DECchip 21040 PCI Evaluation Board Schematics	EC–N3213–72

5 How to Use the Documentation

The following table provides some guidelines to help you determine which documentation and software you need for the task you want to accomplish.

If you want to . . .	Start with the . . .
Install the EB40	• DECchip 21040 PCI Evaluation Board User’s Guide
Install a driver	• DECchip 21040 PCI Evaluation Board User’s Guide • Readme.txt provided on the diskette with the driver
Design new hardware with the DECchip 21040	• DECchip 21040 Ethernet LAN Controller for PCI Data Sheet • DECchip 21040 Ethernet LAN Controller for PCI Hardware Reference Manual • Connecting the DECchip 21040 Ethernet LAN Controller to the Network: An Application Note • Design package
Obtain driver sources	• DECchip 21040 Drivers and Source Code Order Information Sheet

Note

The EB40 design implements the LED for the DECchip 21040 pin EXT_RX (#67) as a LinkFail indicator. *Connecting the DECchip 21040 Ethernet LAN Controller to the Network: An Application Note* shows this pin connected as a LinkPass indicator. Users of the DECchip 21040 are advised to implement this function per their own product specification.

6 The Design Package Database

The DECchip 21040 PCI Evaluation Board Design Package is provided on a 3½-inch diskette, which contains the following information:

- Schematics for the EB40 (in PostScript form)
- Vendors’ parts list
- Gerber files
- Diagnostic program

6.1 Diagnostic Program

A diagnostic program (TDIAG.EXE) is included in the kit to exercise or verify the integrity of the EB40. This program provides basic loopback functions in various burst length modes.

For installation information and other functionality information, see the readme.txt provided with TDIAG.EXE.

6.2 Copying and Unpacking the Hardware Design Package from the Diskettes

The 3½-inch diskette that contains the hardware design files was archived using PKZIP. Each ZIP archive includes a category of design package files described in the table in Section 6.3. You can access and read these files on a personal computer with a 3½-inch diskette drive. Use PKUNZIP to unpack the files in each archive.

6.3 Files on the Diskette

The hardware design package diskette contains the following files:

Archive/File Name	Contents	Comments
README.TXT	Provides a general description of the diskette contents	This file does not need to be unpacked.
SCHEM.ZIP	Contains the schematics, mechanical drawings, and the unit assembly drawings	These files are in PostScript form and scaled to print on 8.5 x 11 paper.
GERBER.ZIP	Contains the Gerber files	–
DIAG	Contains the diagnostic program	Specifies a directory of files relating to the diagnostic program, including a readme.txt. These files do not need to be unpacked.
EB40VPL.TXT	Contains a parts list for the EB40	This file does not need to be unpacked.

7 DECchip 21040 Software Kit—Drivers

This kit includes driver diskettes containing the executable files of drivers for the DECchip 21040. The following drivers are included in the kit:

- Novell NetWare Client and Server
- NDIS2 (DOS)
- Windows NT (for Alpha AXP and x86)

Each driver is stored in its own subdirectory on the diskette. For installation information, see the readme.txt file supplied with each driver. Release information is contained in release.txt files. Figure 1 shows the directory structure for all files on diskette 1.

Figure 1 Directory Structure for DECchip 21040 Driver Diskette 1

```
                             Top Directory
                                 ||
             ------------------------------------------------------------
            |                                 |                          |
          NDIS                              NETWARE                README.TXT
  ---------------                    --------------------------
 |               |                  |                           |
INSTALL.TXT    MSLANMAN.DOS        CLIENT                     SERVER
INSTALL.PS     ------------       ----------                ----------
RELEASE.TXT      |               README.TXT                README.TXT
DC21040.DOS    DRIVERS           DC21040.COM               DC21040.LAN
!DEC4250.CFG  ---------          !DEC4250.CFG              !DEC4240.CFG
PROTOCOL.INI     |               NET.CFG                   RELEASE.TXT
OEMSETUP.INF     |               LSL.COM
                 |               IPXODI.COM          3_11            4_0
                 |               NETX.EXE            -------------------
                 |               LOGIN.EXE             |               |
       -------------             BNETX.EXE     MSM31X.NLM        MSM.NLM
      |             |            EMSNETX.EXE   ETHERTSM.NLM      ETHERTSM.NLM
  ETHERNET         NIF           XMSNETX.EXE   PATCHMAN.NLM      AUTOEXEC.NCF
  --------      -----------      RELEASE.TXT   AUTOEXEC.NCF
      |         DC21040.NIF                    MONITOR.NLM
  DC21040                                      LSLENH.NLM
  ---------
  README.TXT
  DC21040.DOS
  PROTOCOL.INI
```

Figure 2 shows the directory structure for all files on diskette 2.

Figure 2 Directory Structure for DECchip 21040 Driver Diskette 2

```
                  Top Directory
                      ||
     ----------------------------------------------
      |                            |                  |
     AXP                          x86           README.TXT
   ----------                 ----------
   README.TXT                 README.TXT
   DC21040.DBG                DC21040.DBG
   DC21040.SYS                DC21040.SYS
   OEMSETUP.INF               OEMSETUP.INF
   !DEC4250.CFG               !DEC4250.CFG
   REGINI.EXE                 REGINI.EXE
   DISK2                      DISK2
```

Additional drivers and updates will be made available on a regular basis. To register your evaluation board and be notified of these updates, complete the customer reply card included in the kit, or send the following information to the address listed below:

name
address
product purchased
serial no.
date purchased

Mail the above information to:

Digital Equipment Corporation
77 Reed Road, HLO2-2/M10
Hudson, MA 01749
USA