



Data Design Corporation
Gaithersburg, MD

UH101 CPCI MODULE 4 PORT USB HOST CONTROLLER

June 2005

Data Design Corporation
7851-A Beechcraft Avenue
Gaithersburg, MD 20879
WWW.DATADESIGNCORP.NET
(301) 670-1157

1.0 Introduction

The UH101 USB Host Controller is a compact PCI module providing USB peripheral connectivity to a host computer module on four front panel connectors. The module provides host USB connectivity when installed alone or in addition to existing USB host controller hardware. The UH101 uses a popular NEC host controller chip with USB 1.1 and 2.0 support using the industry standard OHCI/EHCI architecture. This same family of devices is commonly used in desktop computers. As a result, a wide variety of operating systems including Windows, Linux, and others include built-in support.

The UH101 makes USB connectivity available to CPCI computers which do not have such hardware built-in. Moreover, addition of a USB host controller to a CPCI system with existing USB support may provide additional bus resources to a peripheral device versus connection through a downstream hub. In some systems the mechanical robustness of USB connectivity installed in the CPCI chassis may also be a desirable feature. These features can be important for instrumentation and control applications for which the UH101 is particularly well suited.

1.1 Specifications Summary

Dataway Interface

Compact PCI at 32 Bits and 33 MHz
Compliant with PICMG 2.0 R3.0
Single Width 3U Compact PCI Card

USB Standards

USB 1.1 OHCI
USB 2.0 EHCI

Ambient Temperature Range

0 To 70 C

Front Panel

4 USB Type A Connectors

1.2 Setup and Installation

The UH101 is a single width 3U CPCI module. To insert the UH101 in the CPCI crate, choose any convenient slot and slide the module into the crate with its top and bottom mated to the guide rails. Be sure that the module is properly aligned with the connector at the back of the crate. Push the module toward the back of the crate with gentle pressure. When the card pushes back, push the locking lever down and press the card firmly into the crate with firm pressure on the top and bottom of the front panel. The locking lever will raise and lock into place. Fasten the retaining screws at the upper end of the front panel and at the bottom of the front panel below the lever. To remove the card, reverse the process by removing the retaining screws and pressing down firmly on the locking lever to disengage the card from the connector at the rear of the crate.

NOTE: The module should be inserted in the crate only after turning off the power to the crate. Otherwise, damage to the module or system is possible due to momentary misalignment of pins on the connector. CPCI hot swap operation is not supported.

When the UH101 is installed in a slot where it has not been before, the CPCI system will detect it as a new device at which point it will need access to driver software. The UH101 has built-in support in most popular operating systems. The primary task is to locate and install the needed drivers. The UH101 will generally be identified by the operating system as an NEC USB host controller based on the identification of the bridge chip used.

In systems running Microsoft Windows 2000 and newer operating systems, an installation wizard will identify the new hardware and either automatically locate a driver or prompt the user to locate a driver. Several drivers will be required for the UH101 hardware. Some of the drivers which are often not found on Windows 2000 installations exist on the CD provided with the UH101. To install these drivers, point the wizard to the location of the included CD. A CD drive may be located on the crate controller or it may be mounted over a network connection using the wizard's "specify a location" option. On systems with internet connectivity, it is also possible to locate and install a full suite of the latest driver support by telling the wizard to look for drivers at the Microsoft Windows Update repository.

Because there are multiple hardware and software layers associated with USB, there will be multiple steps involved in installing drivers for the UH101. Most of these will be performed automatically by Windows. As soon as Windows has finished identifying and installing the NEC device drivers, installation operations will proceed for several additional layers. These include the various OHCI components and root hub drivers. When Windows has finished installing all the drivers and support software, it is generally best to reboot the crate controller before attempting to use the new hardware, even if this is not strictly necessary.

At this point the installation is complete and the UH101 is ready to be used. Each new device added to the USB will generally require a similar installation step. Some standard peripheral devices will be installed automatically by Windows while others may require a unique driver. For the later, the peripheral manufacturer should provide appropriate drivers and associated installation instructions.

UH101 is a product of Data Design Corporation. No portion of this manual or any accompanying software may be reproduced by any means for any purpose other than for user archives and application of the UH101 product without the express written consent of the copyright owner. Certain delivered software components for the UH101 may also bear the copyright of third parties and are delivered in association with hardware components provided by such parties.

Copyright © 2005 Data Design Corporation
All rights reserved.

PRODUCT WARRANTY:

1. Product. The "Product" referred to herein is the instrumentation product *UH101*.

2. Limited Warranty. Data Design Corporation warrants that the Product will perform substantially in accordance with the accompanying documentation for a period of one year from the date of receipt. Any implied warranties on the Product are limited to one year. SOME STATES DO NOT ALLOW LIMITATIONS ON DURATION OF AN IMPLIED WARRANTY, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

3. Remedies. The entire liability of Data Design Corporation and/or its suppliers and your exclusive remedy shall be, at the option of Data Design Corporation, either (a) return of the purchase price you paid or (b) repair or replacement of the Product that does not meet the Limited Warranty and that is returned to the place of purchase with a copy of your receipt. The Limited Warranty is void if failure of the Product has resulted from accident, abuse, or misapplication. Any replacement Product will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. THE FOREGOING CONSTITUTES YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY. EXCEPT FOR THE WARRANTIES SET FORTH ABOVE, THE PRODUCT AND DOCUMENTATION ARE PROVIDED "AS IS," AND DATA DESIGN CORPORATION AND/OR ITS SUPPLIERS DISCLAIM ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

4. Limitations of Liability. The cumulative liability of Data Design Corporation and/or its suppliers to you or any other party for any loss or damages resulting from any claims, demands, or actions arising out of or relating to this warranty shall not exceed the purchase price you paid for the Product and documentation. In no event shall Data Design Corporation and/or its suppliers be liable for any indirect, incidental, consequential, special, or exemplary damages, loss of business profits, business interruption, or loss of business information, even if advised of the possibility of such damages. SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

FCC NOTICE:

Data Design is a provider of instrumentation products. The UH101 is intended for use in instrumentation systems in industrial (FCC Class A) environments. The UH101 is therefore asserted to be an FCC rules 15.103 exempt device, though it is designed to be entirely compliant with FCC rules Part 15, Subparts A and B. Operation is conditioned upon the stipulation that the device may not cause harmful interference and that the device must accept any interference without malfunction. For use of the device outside of the prescribed environment, the system integrator shall treat the UH101 as a component part and may be required to complete additional testing to verify system level compliance.

TRADEMARKS:

Commercial names and trademarks are used for identification purposes only and are recognized as the property of the respective trademark owners.

REVISION LEVEL:

Firmware Date: N/A
Software Version: N/A
Manual Release Date: June 17, 2005