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PENT/CPCI-735/HD-AccKit

Installation Guide

P / N 214921 Revision AC
November 2001

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Contents

Using This Manual

Other Sources of Information

Safety Notes

Sicherheitshinweise

1 Installation

Introduction 1-3

Action Plan 1-4

Environmental Requirements 1-5

Hard-Disk Drive Installation 1-6

Installation Procedure 1-6

Removal Procedure 1-8

Setting IDE Device Operation Mode 1-9

Installing a PENT/CPCI-735/736 Family Board with the Accessory Kit 1-9

Booting a PENT/CPCI-735/736 Family Board 1-10

Product Error Report

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Using This Manual

This Installation Guide is intended for users qualified in electronics or electrical engineering. Users must have a working understanding of Peripheral Component Interconnect (PCI), Compact Peripheral Component Interconnect (CPCI), and telecommunications.

Conventions

Notation	Description
1234	All numbers are decimal numbers except when used with the notations described below
00000000_{16}	Typical notation for hexadecimal numbers (digits are 0 through F), e.g. used for addresses and offsets
0000_2	Same for binary numbers (digits are 0 and 1)
x	Generic use of a letter
n	Generic use of numbers
n.nn	Decimal point indicator is signalled
Bold	Character format used to emphasize a word
`Courier`	Character format used for on-screen output
`Courier+Bold`	Character format used to characterize user input
Italics	Character format for references, table, and figure descriptions
<text>	Typical notation used for variables and keys
[text]	Typical notation for buttons
...	Repeated item
. . .	Omission of information from example/command that is not necessary at the time being
..	Ranges
:	Extents
|	Logical OR

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Notation	Description
Note:	No danger encountered. Pay attention to important information marked using this layout.
Caution 	Possibly dangerous situation: slight injuries to people or damage to objects possible
Danger 	Dangerous situation: injuries to people or severe damage to objects possible

Revision History

Order No.	Revision	Date	Description
214921	AA	May 2001	Preliminary Installation Guide
214921	AB	August 2001	Modified “EMC” page xi, “Operation” page xii and“Environment” page xii, removed cross-references from “Action Plan” page 14, changed format of last sentence in “Environmental Requirements” page 15 to note, corrected “Removal Procedure” page 18, changed reference to IDE devices from 1 and 2 to 0 and 1 in “Setting IDE Device Operation Mode” page 19, editorial changes.
214921	AC	November 2001	Editorial changes

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Other Sources of Information

For further information refer to the following document:

Company	www.	Document
Force Computers	forcecomputers.com	PENT / CPCI-735 / 736 Family Installation Guide (P / N 215993)

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Safety Notes

This section provides safety precautions to follow when installing, operating, and maintaining the PENT / CPCI-735 / HD-AccKit. For your protection, follow all warnings and instructions found in the following text. This Installation Guide provides the necessary information to install and handle the PENT / CPCI-735 / HD-AccKit. As the product is complex and its usage manifold, we do not guarantee that the given information is complete. If you need additional information, ask your Force Computers representative.

The PENT/CPCI-735/HD-AccKit has been designed to meet the standard industrial safety requirements. It must not be used except in its specific area of office telecommunication industry and industrial control.

Only personnel trained by Force Computers or persons qualified in electronics or electrical engineering are authorized to install, uninstall or maintain the PENT/CPCI-735/HD-AccKit. The information given in this manual is meant to complete the knowledge of a specialist and must not be taken as replacement for qualified personnel.

EMC

The PENT/CPCI-735/HD-AccKit has been tested on a board in a Standard Force Computers system and found to comply with the limits for a Class A digital device in this system, pursuant to part 15 of the FCC Rules respectively EN 55022 Class A and EN 55024.

These limits are designed to provide reasonable protection against harmful interference when the system is operated in a commercial environment.

The PENT/CPCI-735/HD-AccKit generates, uses and can radiate radio frequency energy and, if not installed properly and used in accordance with this Installation Guide, may cause harmful interference to radio communications. Operating the system in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

If boards are integrated into open systems, always cover empty slots.

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Installation

Electrostatic discharge and incorrect board installation and removal can damage circuits or shorten their life. Therefore:

- **Before installing or removing the hard disk, check “Action Plan” on page 1-4.**
- **Before removing the CPU board in order to install the hard disk and before installing the board with the hard disk, read the CPU board’s Installation Guide and ensure that you apply all safety notes given by that guide.**
- **Before touching integrated circuits, make sure that you are working in an ESD-safe environment.**
- **Make sure that the board is connected to the CompactPCI backplane via all connectors and that power is available on all power pins.**

Operation

While operating a board with the PENT/CPCI-735/HD-AccKit ensure that the environmental requirements as given in Table 1 “Environmental Requirements” on page 1-5 are met.

When operating the CPU board in areas of strong electromagnetic radiation, ensure that the board is bolted on the CompactPCI rack and shielded by enclosure.

Expansion

Check the total power consumption of all components installed (see the technical specification of the respective components).

Ensure that any individual output current of any source stays within its acceptable limits (see the technical specification of the respective source).

Only replace components or system parts with those recommended by Force Computers. Otherwise, you are fully responsible for the impact on EMC and the possibly changed functionality of the product.

Environment

Always dispose of old hard disks according to your country’s legislation.

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Sicherheitshinweise

Dieser Abschnitt enthält Sicherheitshinweise, welche bei der Installation, dem Betrieb und der Wartung des PENT / CPCI-735 / HD-AccKit zu beachten sind. Beachten Sie zu Ihrem Schutz alle folgenden Warnhinweise und Anleitungen. Dieses Installationshandbuch enthält alle notwendigen Informationen zur Installation und zum Betrieb des PENT / CPCI-735 / HD-AccKit. Da es sich um ein komplexes Produkt mit einer aufwendigen Bedienung handelt, kann keine Garantie dafür übernommen werden, dass die enthaltenen Informationen vollständig sind. Für weitere Informationen wenden Sie sich bitte an Ihren Vertreter der Firma Force Computers.

Das PENT/CPCI-735/HD-AccKit erfüllt die gültigen industriellen Sicherheitsanforderungen. Dieses Produkt darf ausschließlich für Anwendungen innerhalb der Telekommunikationsindustrie und der industriellen Steuerung verwendet werden.

Lediglich von Force Computers eingewiesene oder im Bereich Elektrotechnik oder Elektronik qualifizierte Personen sind zur Installation, zum Betrieb und zur Wartung dieses Produktes befugt. Die in dieser Dokumentation enthaltenen Informationen sollen lediglich als Hilfestellung für entsprechend qualifiziertes Fachpersonal dienen. Keinesfalls kann es dieses ersetzen.

EMV

Die PENT/CPCI-735/HD-AccKit wurde auf einem Board in einem Force Computers Standardsystem getestet und entspricht den Grenzen eines Klasse-A-Produktes gemäß Abschnitt 15 der FCC-Richtlinien, insbesondere EN 55022 Klasse A und EN 55024.

Diese Grenzen sind dafür vorgesehen, einen vernünftigen Schutz gegen störende Einflüsse bei einem Betrieb in einer kommerziellen Umgebung zu gewährleisten.

Das Board erzeugt elektromagnetische Strahlung. Wird das System unsachgemäß installiert oder in anderer Weise als in diesem Installationshandbuch beschrieben betrieben, kann es in der Umgebung von Rundfunksendern und in Wohngegenden zu Störungen kommen. In diesem Fall ist der Benutzer verpflichtet, entstehende Störungen auf seine Kosten beheben zu lassen und die Kosten von Messungen selbst zu tragen.

Werden Boards in offene Systeme eingebaut, müssen freie Steckplätze mit einer Blende abgeschirmt werden.

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Installation

Elektrostatische Entladung und unsachgemäße Installation und Ausbau des Boards kann Schaltkreise beschädigen oder ihre Lebensdauer verkürzen. Deswegen sind folgende Punkte vor der Installation zu überprüfen:

- **Lesen Sie vor Einbau oder Ausbau der Hard Disk den Abschnitt “Action Plan” auf Seite page 1-4.**
- **Bevor Sie das Board ausbauen um eine Hard Disk zu installieren und bevor sie das Board mit der Hard Disk wieder einbauen, lesen Sie das zu dem Board gehörende Benutzerhandbuch und beachten Sie die dort aufgeführten Sicherheitshinweise.**
- **Bevor Sie integrierte Schaltkreise berühren, vergewissern Sie sich, dass Sie in einem ESD-geschützten Bereich arbeiten.**
- **Vergewissern Sie sich, dass das Board über alle Stecker an die CompactPCI Backplane angeschlossen ist und Strom an allen Power Pins anliegt.**

Betrieb

Während des Betriebs müssen die Umweltschutz- und die Stromsversorgungsbedingungen gewährleistet sein.

Wenn das Board in Gebieten mit starker elektromagnetischer Strahlung betrieben wird, stellen Sie sicher, dass das Board auf dem Compact PCI Rack verschraubt ist und mit einem Gehäuse geschützt ist.

Es ist sicherzustellen, dass Anschlüsse und Kabel des Boards während des Betriebs nicht versehentlich berührt werden können.

Erweiterung

Beachten Sie den Gesamtstromverbrauch aller installierter Komponenten (siehe technische Daten der entsprechenden Komponente).

Vergewissern Sie sich, daß jeder individuelle Ausgangsstrom jedes Stromverbrauchers innerhalb der zulässigen Grenzwerte liegt (siehe technische Daten des entsprechenden Verbrauchers).

Benutzen Sie bei der Erweiterung ausschließlich von Force Computers empfohlene Komponenten und Systemteile. Ansonsten sind Sie für die Auswirkungen auf EMV und die möglicherweise geänderte Funktionalität des Produktes verantwortlich.

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Umweltschutz

Alte Hard Disks müssen stets gemäß der in Ihrem Land gültigen Gesetzgebung entsorgt werden.

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1

Installation

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Introduction

The IDE hard-disk accessory kit PENT/CPCI-735/HD-AccKit provides a local mass storage device. It is installed on top of boards of the PENT/CPCI-735/736 Family. As the hard disk of the accessory kit is a 2.5'' hard disk, the PENT/CPCI-735/736 Family boards fit into one Compact-PCI slot.

The accessory kit contains:

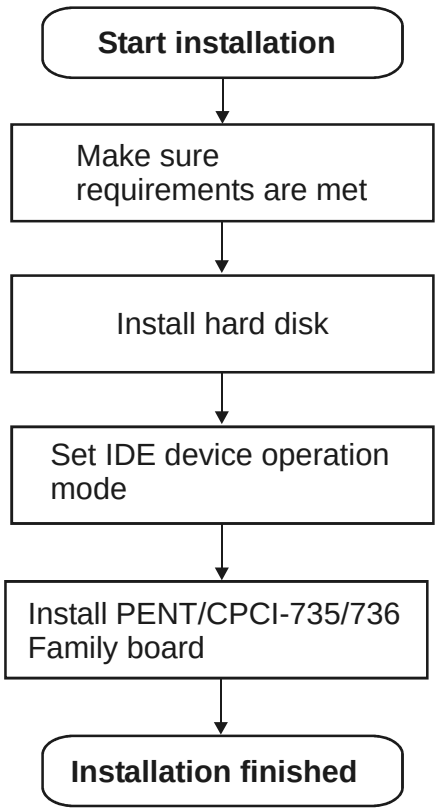
- 2.5'' hard disk (1x)
- Standoffs (4x)
- Screws, 2.5 mm (4x)
- Ribbon Cable (1x)

Check that all the items listed were shipped together with the accessory kit. If a component is missing, contact your local Force Computers representative.

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Action Plan

To install the hard disk on the board and to prepare the board for further installation, the following steps are necessary and described in detail in the sections of this chapter.



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Environmental Requirements

The environmental values are given for the PENT / CPCI-735 / 736 Family boards with installed hard disk and must be tested and proven in the used system configuration. The conditions listed below refer to the surroundings of the board within the user environment.

Note: Operating temperatures refer to the temperature of the air circulating around the board and not to the component temperature.

Table 1: *Environmental Requirements*

Requirement	Operating	Non-Operating
Temperature	+5°C to +55°C (may be further limited by type of hard disk)	–40°C to +65°C
Forced Air Flow	300 LFM	–
Temp. Change	+/– 0.3°C / min	+/– 3°C / min
Rel. Humidity	8% to 90% non-condensing at +40°C	5% to 95% non-condensing at +40°C
Altitude	–300 m to +3,000 m	–300 m to +12,000 m
Vibration 10 to 15 Hz 15 to 150 Hz	 2 mm amplitude 2 g	 5 mm amplitude 5 g
Shock	5 g / 11 ms halfsine	15 g / 11 ms halfsine

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Hard-Disk Drive Installation

For successful installation of the PENT/CPCI-735/HD-AccKit, follow the instructions below.

Installation Procedure

In order to install the PENT/CPCI-735/HD-AccKit, proceed as follows:

Caution



Before touching integrated circuits, make sure that you are working in an ESD-safe environment.

1. Remove CPU board from CompactPCI rack according to CPU board's Installation Guide
2. If necessary, remove PMC module from slot 2 of CPU board according to CPU board's Installation Guide
3. Screw four standoffs into mounting holes of hard-disk drive

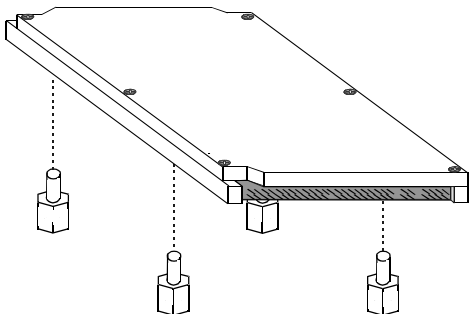


Figure 1: *Connecting Standoffs to Hard Disk*

4. Connect ribbon cable to hard disk connector

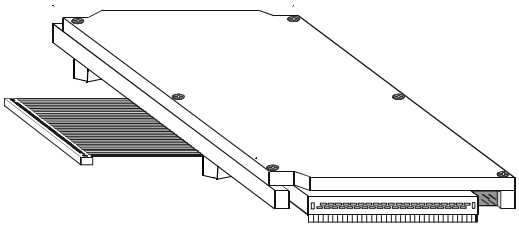


Figure 2: *Ribbon Cable, Connected to Hard Disk*

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Note: Make sure not to bend any pins.

5. Connect ribbon cable to board's IDE connector
   Make sure that the ribbon cable is properly connected to both the hard disk and the PENT/CPCI-735/736 Family board.

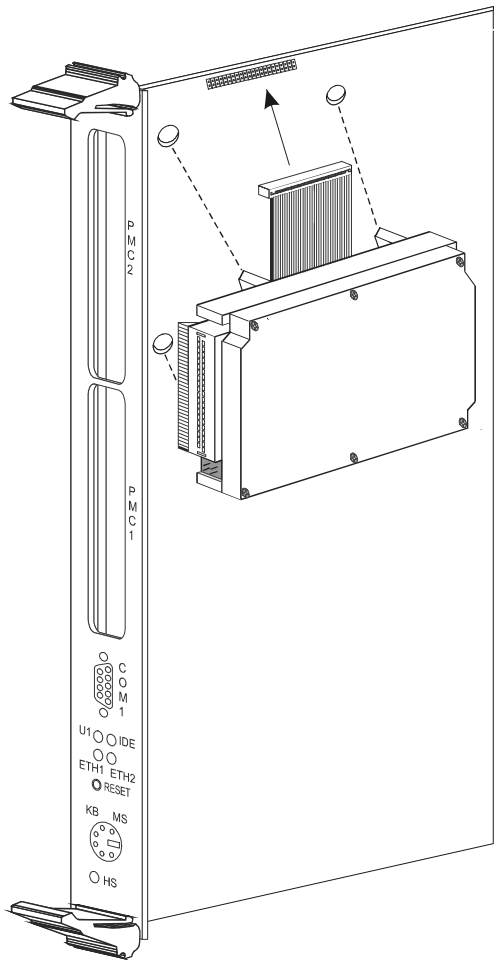


Figure 3: *Connecting Hard Disk Ribbon Cable to IDE Connector*

6. Place hard disk on board so that standoffs match mounting holes
7. Stick four screws through mounting holes of board
8. Fasten screws to standoffs

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Removal Procedure

In order to remove the PENT/CPCI-735/HD-AccKit, proceed as follows:

Caution



Before touching integrated circuits, make sure that you are working in an ESD-safe environment.

1. Remove CPU board from CompactPCI rack according to CPU board's Installation Guide

Note: When unfastening the screws be careful not to drop the hard disk.

2. Remove four screws fixing hard disk to board

Note: Make sure not to bend any pins

3. Pull ribbon cable connector carefully off the on-board IDE connector
4. Store hard disk and all removed components in a safe place as they may be needed again

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Setting IDE Device Operation Mode

The PENT/CPCI-735/HD-AccKit is connected to the primary IDE bus of the CPCI-735/736 Family board's IDE controller. One IDE bus is capable to support two IDE devices. IDE device 0 is referred to as master and IDE device 1 is referred to as slave.

Note: Neither the on-board flash disk nor the hard disk will run properly if both devices are set to IDE master or both devices are set to IDE slave. Furthermore, none of the two devices will run properly if it resides alone at the IDE bus and is set to IDE slave.

When installing the PENT/CPCI-735/HD-AccKit the factory setting of the hard disk is master mode. If another IDE device is attached to the IDE bus, it has to be set to slave mode. This is usually done by jumpers or switches. For information on how to set the jumpers or switches, refer to the documentation delivered together with the device and to section "Switch Settings" in the *PENT/CPCI-735/736 Family Installation Guide*.

Installing a PENT/CPCI-735/736 Family Board with the Accessory Kit

The settings of the PENT/CPCI-735/HD-AccKit and the PENT/CPCI-735/736 Family board are now ready. Follow the guidelines described in the *PENT/CPCI-735/736 Family Installation Guide* to install the board into your system.

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Booting a PENT/CPCI-735/736 Family Board

If you set the BIOS to its default values via the BIOS set-up menu the hard disk will be the default boot device if it is the IDE master. You may change the boot device order in the BIOS set-up menu as required. Changing the boot order will overwrite the default settings.

The PENT / CPCI-735 / 736 Family board is now ready to run with the on-board hard disk.

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Product:	Serial No.:
Date Of Purchase:	Originator:
Company:	Point Of Contact:
Tel.:	Ext.:
Address:	
Present Date:	
Affected Product: ❑ Hardware ❑ Software ❑ Systems	Affected Documentation: ❑ Hardware ❑ Software ❑ Systems
Error Description:	

This Area to Be Completed by Force Computers:

Date:

PR#:

Responsible Dept.: ❑ Marketing ❑ Production

Engineering ➠ ❑ Board ❑ Systems

☞ Send this report to the nearest Force Computers headquarter listed on the address page.

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