Flexible Mini PCI to PCI Bus Adapter

Hardware Manual

June 01, 2011

Revision 1.1

Contents

Figures

Tables

1 About this Document

1.1 Purpose

This document describes Hardware installation, features, specification and operation for AMFELTEC Flexible MiniPCI to PCI Bus Adapter (SKU-036).

1.2 Feedback

AMFELTEC Corp. makes every effort to ensure that the information contained in this document is accurate and complete at time of release. Please contact AMFELTEC Corp. if you find any errors, inconsistence or have trouble understanding any part of this document.

To provide your feedback, please send an email to support@amfeltec.com

Your comments or corrections are greatly valued in our effort for excellence and continued improvement.

1.3 Revision History

Rev. No.	Description	Rev. Date
1.0	Initial Release.	December 10, 2009
1.1	Update hardware installation instruction	June 01, 2011

2   General Description

2.1   Introduction

Flexible MiniPCI to PCI Bus Adapter (Adapter) (Figure 1) is designed to support expansion of modern motherboards with limited numbers of PCI or PCI Express Connectors. Adapter converts the standard MiniPCI motherboard slot into up-to two independent 32-bit PCI slots (placed on the backplane).

Figure 1: Flexible MiniPCI to PCI Bus Adapter

It includes one MiniPCI Host card (Figure 1) and PCI Backplane (that include 2 32-bit PCI slots) (Figure 2). The MiniPCI Host card has to be plugged into an upstream 126-pin MiniPCI motherboard connector. PCI Backplane connects to the main MiniPCI Host card via 12" Flex PCI Express cable. The expansion 32-bit PCI add-in board has to be plugged into the standard 32-bit PCI connectors on the PCI Backplane.

Because of the flexible nature of the connection (unlike traditional rigid risers), expansion PCI add-in boards can be positioned away from the MiniPCI connector on the motherboard inside a computer chassis.

 PCI Backplane has four mounting holes allowing them to be securely fixed inside a computer chassis.

Figure 2: MiniPCI Host card

The Adapter functions right out of the box, no additional software needs to be installed. The Mini PCI Host card has LEDs for displaying downstream PCI express Link status as well as expansion PCI Backplane "PRESENT" status.
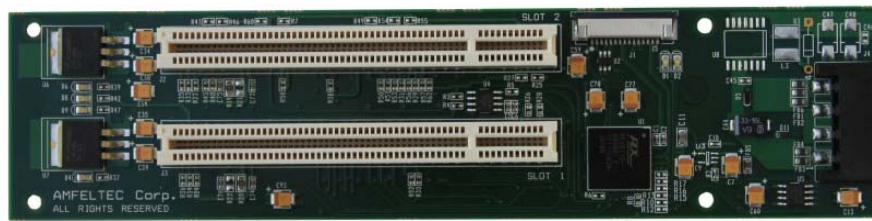

Figure 3: PCI Backplane

3   Requirements/Features

3.1   Power Source

The power (12V, 5V, 3.3V) for each PCI expansion board is supplied via 32-bit female PCI connector. PCI backplane has standard 4-pin "Hard drive" power connector for getting power (12V and 5V) from standard ATX power supply or from any external Power supply.

3.2   Software

There is no software needed for normal operation.

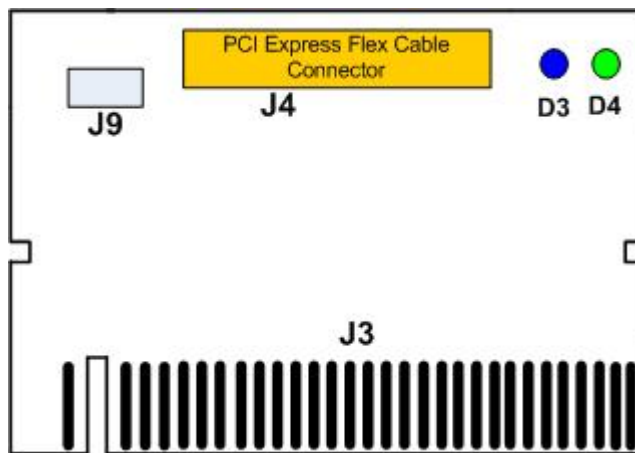# 4   Hardware Description

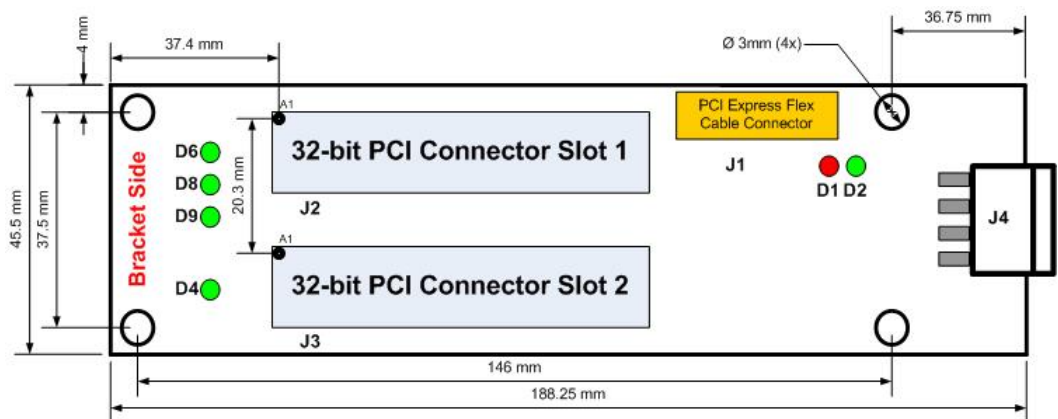## 4.1   Board Layout

Figure 4: MiniPCI Host card layout

Figure 5: PCI Backplane board layout

4.2 LEDs

Name	RefDes	Color	Usage
PRESENT	D3	Blue	"PRSNT" signal from PCI Backplane
LINK UP	D4	Green	PCI express link status between PCI Backplane and MiniPCI Host card

Table 1: MiniPCI Host card LEDs

Name	RefDes	Color	Usage
RST	D1	Red	Reset from MiniPCI Host card
Link 1 UP	D2	Green	PCI express link status between PCI Backplane and MiniPCI Host card
Power +3.3V	D6	Green	+3.3V power status on the PCI Slot 1
Power +3.3V	D4	Green	+3.3V power status on the PCI Slot 2
Power +12V	D8	Green	+12V power status
Power –12V	D9	Green	-12V power status (optional)

Table 2: PCI Backplane LEDs

4.3 Connectors

RefDes	Type	Usage
J3	Upstream MiniPCI connector (124-pin)	Connection to the upstream MiniPCI bus on motherboard
J9	Power connector	Optional
J4	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the PCI Backplane boards.

Table 3: MiniPCI Interface board connectors

RefDes	Type	Usage
J1	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the MiniPCI Interface board.
J4	Standard ATX power connector ("hard disk" type)	Incoming power for the expansion add-in PCI boards
J2,J3	Standard 32-bit PCI connectors	Connection to the expansion add-in PCI boards.

Table 4: PCI Backplane board connectors

5   Installation

5.1   Hardware Installation

Following steps provide the exact sequence need to be followed in order to properly install the MiniPCI to PCI Bus Adapter from AMFELTEC Corp.:

Warning: Before touching anything inside the computer or any components, be sure to discharge your body's static electricity by touching a grounded surface.

- Turn off host computer and unplug it from the wall outlet.

- Remove the chassis cover or side panel from host computer. Refer to the computer manual for instructions if you need them.

- If the unit is a tower unit, turn it over on its side to make access easier.

- Ground yourself to the PC case. Attach a grounding wrist strap (if available) to the computer's metal chassis and your wrist. **CAUTION**: If you choose not to use the grounding wrist strap, be sure to take adequate precautions to discharge static electricity from your body before touching any components.

- Insert PCI Express Flex Cable into the connectors on the MiniPCI Host card and on the PCI Flex Adapter.

- Install the host card into the motherboard MiniPCI slot.

- Place and retain PCI Flex Adapter inside the chassis.

- Connect power cable to Molex connector of the PCI Flex Adapter.

- Locate your expansion add-in card such way that its bracket will be on the same side as bracket side of PCI Flex Adapter (opposite from black power Molex connector) (see Figure 6). **CAUTION:** If your add-in card has not bracket connected to it, be sure that you properly detect right direction for your add-in card.

- Holding your add-in card by its edges and the mounting bracket, position the card with the contacts downward over the PCI slot and insert the card into the slot. Do not let it touch any of the components on the motherboard or PCI Flex Adapter.
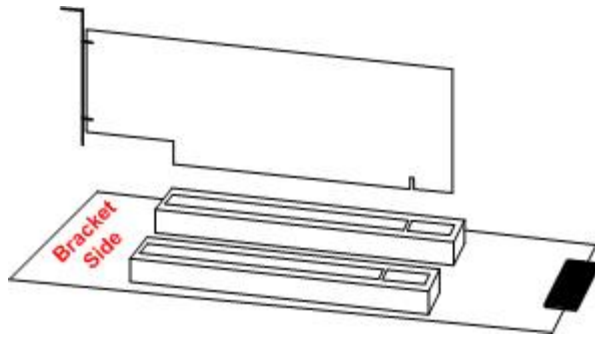
Figure 6: Inserting add-in card into PCI Flex Adapter

- Now, you can close computer cover and power-up the host computer.

BE SURE THAT TWO LEDs on the PCI Backplane: D2 (GREEN) IS ON and D1 (RED) IS OFF! (Upstream Link status and RESET signal).

BE SURE THAT GREEN LED D4 and BLUE LED D3 ARE ON!

(Downstream Link status and PCI Flex Adapter PRESENT)

6 Ordering Information

6.1 Standard package

Standard package include the following components:

- MiniPCI Interface Board

- PCI Backplane with Flex PCI Express cable

- User manual

7   Appendix A: Limited warranty

AMFELTEC Corporation does not warrant that the operation of the hardware, software or firmware products will be uninterrupted or error free. AMFELTEC products are not intended to be used as critical components in life support systems, aircraft, military systems or other systems whose failure to perform can reasonably be expected to cause significant injury to humans. AMFELTEC expressly disclaims liability for loss of profits and other consequential damages caused by the failure of any product which would cause interruption of work or loss of profits, such as shipboard or military attachment.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. THE WARRANTIES PROVIDED HEREIN ARE BUYER'S SOLE REMEDIES. IN NO EVENT SHALL AMFELTEC CORPORATION BE LIABLE FOR DIRECT, SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUFFERED OR INCURRED AS A RESULT OF THE USE OF, OR INABILITY TO USE THESE PRODUCTS. THIS LIMITATION OF LIABILITY REMAINS IN FORCE EVEN IF AMFELTEC CORPORATION IS INFORMED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the exclusion or limitation on incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.