

# Flexible MiniPCI Express to PCI Bus Adapter

## Hardware Manual

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June 01, 2011  
Revision 1.1

# Contents

1	About this Document.....	1
1.1	Purpose .....	1
1.2	Feedback .....	1
1.3	Revision History.....	1
2	General Description .....	2
2.1	Introduction .....	2
3	Requirements/Features .....	4
3.1	Power Source .....	4
3.2	Software.....	4
4	Hardware Description .....	5
4.1	Board Layout .....	5
4.2	LEDs .....	6
4.3	Connectors .....	7
5	Installation .....	8
5.1	Hardware Installation.....	8
6	Ordering Information .....	10
6.1	Standard package.....	10
7	Appendix A: Limited warranty .....	11

## Figures

Figure 1: MiniPCI Express Interface board (full size) .....	2
Figure 2: MiniPCI Express Interface board (half size) .....	3
Figure 3: PCI Flex Adapter (2 slots) .....	3
Figure 4: MiniPCI Express Interface board layout (full size Interface board) .....	5
Figure 5: MiniPCI Express Interface board layout (half size interface board) .....	5
Figure 6: PCI Flex Adapter layout.....	6
Figure 7: Inserting add-in card into PCI Flex Adapter .....	9

## Tables

Table 1: MiniPCI Express Host Card (full and half) LEDs .....	6
Table 2: PCI Flex Adapter LEDs.....	6
Table 3: MiniPCI Express Host Card (full and half size) connectors.....	7
Table 4: PCI Flex Bus Adapter connectors .....	7



# 1 About this Document

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## 1.1 Purpose

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

## 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, inconsistency or have trouble understanding any part of this document.

To provide your feedback, please send an email to [support@amfeltec.com](mailto: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 instructions	June 01, 2011

## 2 General Description

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### 2.1 Introduction

Flexible MiniPCI Express to PCI Bus Adapter (Adapter) is designed to support expansion of modern motherboards with limited numbers of PCI or PCI Express Connectors. Adapter converts the standard MiniPCI Express motherboard slot up-to 2 independent 32-bit PCI slots (allocated on the backplane).

It includes MiniPCI Express Interface board (Figure 1 or Figure 2) and PCI Backplane (that include 2 32-bit PCI slots) (Figure 3). The MiniPCI Express Interface board can be “full size” or “half size”. It has to be plugged into an upstream MiniPCI Express motherboard connector. PCI Backplane connects to the MiniPCI Express Interface board 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 Express 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 1: MiniPCI Express Interface board (full size)

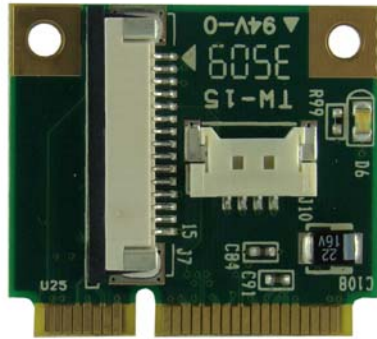


Figure 2: MiniPCI Express Interface board (half size)

The Adapter functions right out of the box, no additional software needs to be installed. The MiniPCI Express Interface board has LED for displaying expansion PCI Backplane “PRESENT” status.



Figure 3: PCI Flex Adapter (2 slots)

## **3 Requirements/Features**

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### **3.1 Power Source**

The power for the expansion PCI add-in boards is supplied from the standard ATX power supply or from any external Power supply (+12V and 5V) via PCI Backplane.

### **3.2 Software**

There is no additional software needs for the Adapter.



## 4 Hardware Description

### 4.1 Board Layout

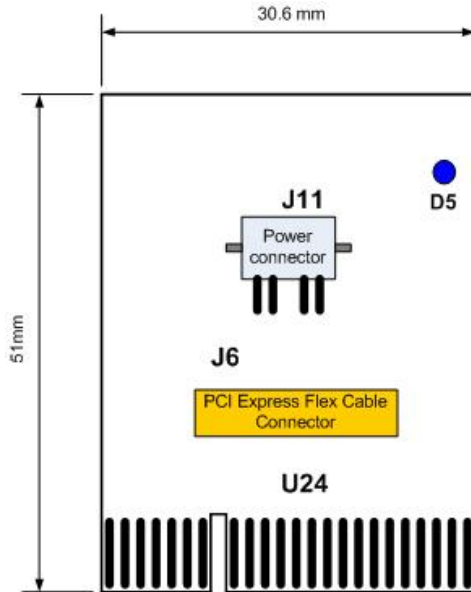


Figure 4: MiniPCI Express Interface board layout (full size Interface board)

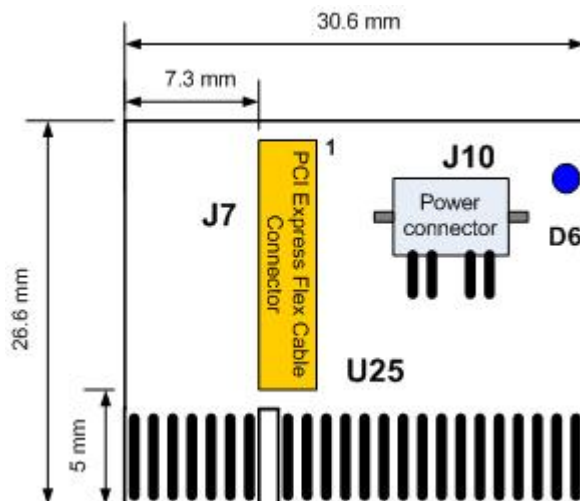


Figure 5: MiniPCI Express Interface board layout (half size interface board)

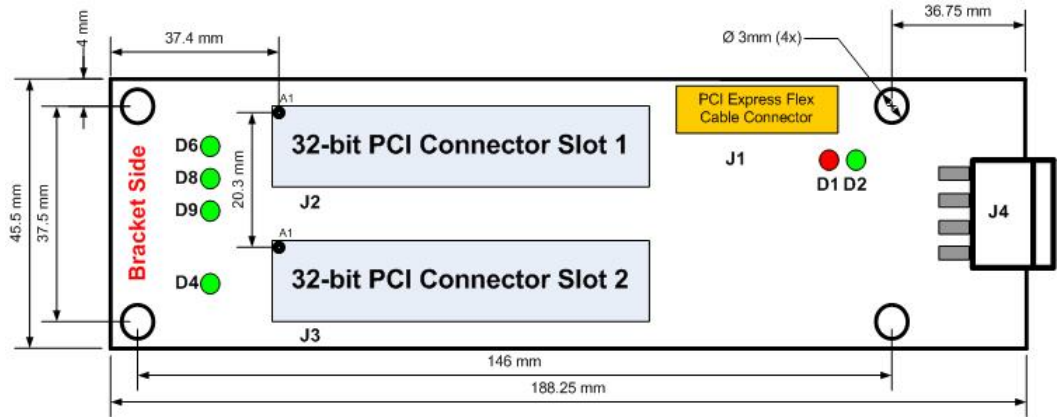


Figure 6: PCI Flex Adapter layout

## 4.2 LEDs

Name	RefDes	Color	Usage
PRESENT	D5	Blue	“PRSNT” signal from expansion PCI Express add-in board. (in case full size Interface board)
PRESENT	D6	Blue	“PRSNT” signal from expansion PCI Express add-in board. (in case half size Interface board)

Table 1: MiniPCI Express Host Card (full and half) LEDs

Name	RefDes	Color	Usage
RST	D1	Red	Reset from Mini PCI Interface board
Link 1 UP	D2	Green	PCI Express link status between PCI Backplane and Mini PCI Interface board
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 Flex Adapter LEDs

## 4.3 Connectors

RefDes	Type	Usage
U24	Upstream MiniPCI Express connector	Connection to the upstream MiniPCI Express bus on the motherboard (full size Interface board)
U25	Upstream MiniPCI Express connector	Connection to the upstream MiniPCI Express bus on the motherboard (half size Interface board)
J11	Power connector	Optional (3.3V only) (full size Interface board)
J10	Power connector	Optional (3.3V only) (half size Interface board)
J6	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the x1 PCI Express adapter boards.(full size Interface board)
J7	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the x1 PCI Express adapter boards.(half size Interface board)

Table 3: MiniPCI Express Host Card (full and half size) connectors

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

Table 4: PCI Flex Bus Adapter connectors

## 5 Installation

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### 5.1 Hardware Installation

Following steps provide the exact sequence need to be followed in order to properly install the Flexible MiniPCI Express 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 Express Host card and on the PCI Flex Adapter.
- Install the host card into the motherboard MiniPCI Express 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 7). **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.
- Now, you can close computer cover and power-up the host computer.

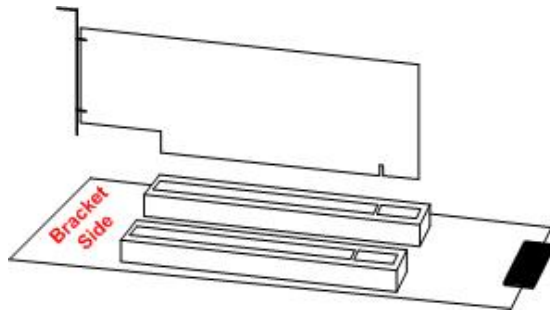


Figure 7: Inserting add-in card into PCI Flex Adapter



**BE SURE THAT BLUE LEDs D5 or D6 (see Table 1) ARE ON** (indicates that PCI Flex Adapter is “PRESENT”)!

## **6 Ordering Information**

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### **6.1 Standard package**

Standard package include the following components:

- MiniPCI Express Host Card (full or half size)
- PCI Flex Bus Adapter with PCI Express Flex cable
- User manual.

## **7 Appendix A: Limited warranty**

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