Flexible x1 PCI Express to PCI Bus Adapter

Hardware Manual

June 01, 2011

Revision 1.1

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1   About this Document

1.1   Purpose

This document describes Hardware installation, features, specification and operation for AMFELTEC Flexible x1PCI Express to PCI Bus Adapter (SKU-041).

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.	August 10, 2009
1.1	Update hardware installation instructions	June 01, 2011

2 General Description

2.1 Introduction

Flexible x1 PCI Express 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 x1/x4/x8/x16 PCI Express motherboard slot into up-to 2 independent 32-bit PCI slots (allocated on the backplane).

Figure 1: Flexible x1 PCIe to PCI Bus Adapter

It includes one x1 PCI Express Host card (Figure 2) and PCI Backplane (that include 2 32-bit PCI slots) (Figure 3). The x1 PCI Express Host card has to be plugged into an upstream PCI Express motherboard connector. PCI Backplane connects to the x1 PCI Express 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 raisers), expansion PCI add-in boards can be positioned away from the PCI 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.
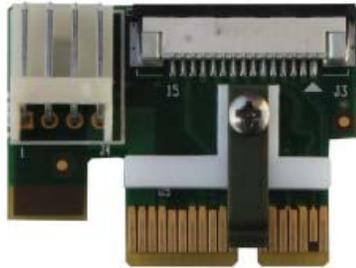
Figure 2: x1 PCI Express Host card with PCI Express add-in board Retainer

x1 PCI Express Host card can be retained inside a computer chassis by using unique PCI Express add-in board retainer (Patent Granted) to prevent Host card wiggling. The add-in card retainer can securely holds a PCI Express Host card without using standard bracket.

Figure 3: PCI Bus Flex Adapter

3   Requirements/Features

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.

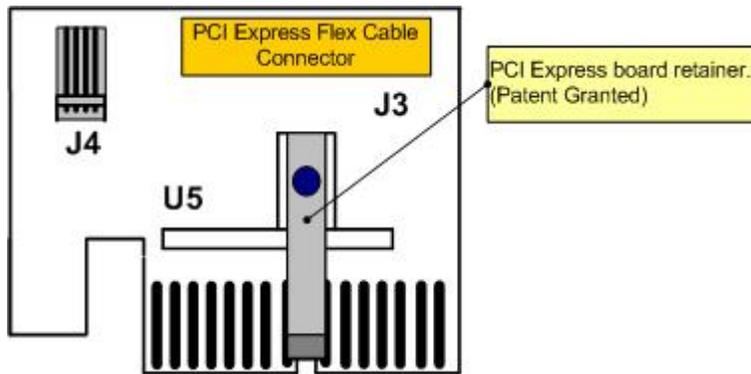# 4   Hardware Description

4.1   Board Layout

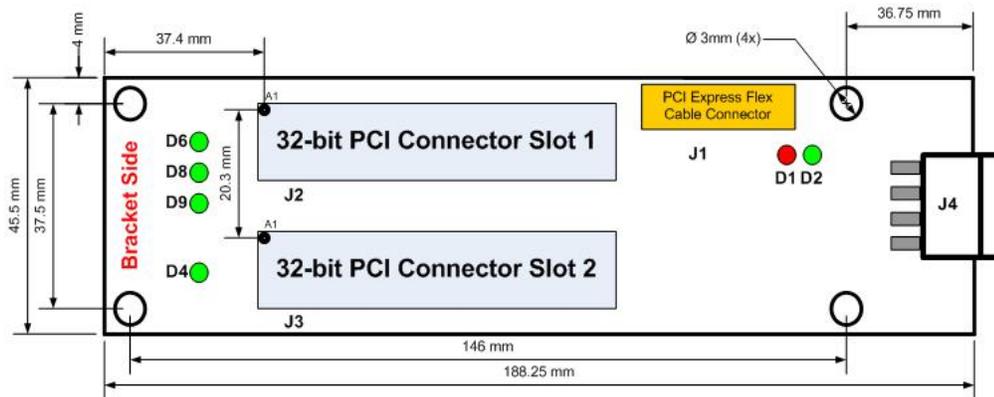Figure 4: x1 PCI Express Host card layout

Figure 5: PCI Bus Flex Adapter

4.2　LEDs

Name	RefDes	Color	Usage
RST	D1	Red	Reset from Mini PCI Host card
Link 1 UP	D2	Green	PCI Express link status between PCI Backplane and PCI Express 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 1: PCI Backplane LEDs

4.3　Connectors

RefDes	Type	Usage
U5	Upstream x1 PCI Express connector	Connection to the upstream PCI Express bus on the motherboard
J4	Power connector	3.3V and 12V power connector
J3	PCI Express Flex Cable connector	Connects via Flex PCI Express Cable to the PCI Backplane adapter boards.

Table 2: x1 PCI Express Host card connectors

RefDes	Type	Usage
J1	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the Mini PCI Host card.
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 3: PCI Bus Flex adapter board connectors

5   Installation

5.1   Hardware Installation

Following steps provide the exact sequence need to be followed in order to properly install the Flexible x1 PCI 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 PCI Express Host card and on the PCI Flex Adapter.

- Install the host card into the motherboard PCI 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.

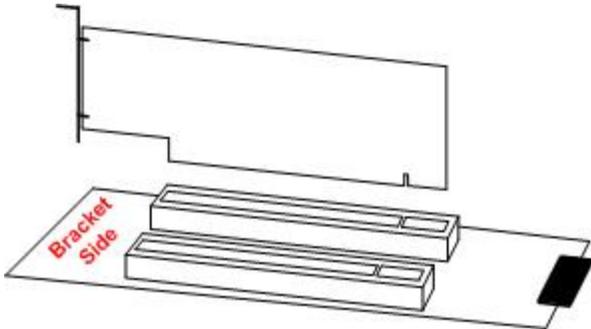- Now, you can close computer cover and power-up the host computer.

Figure 6: Inserting add-in card into PCI Flex Adapter

BE SURE THAT LEDs D2 IS ON!

(PCI Flex Adapter connects to the x1 PCI Express Host card)

6   Ordering Information

6.1   Standard package

Standard package include the following components:

- x1 PCI Express Host card

- PCI Backplane board with Flex PCI Express cable

- User manual

7   Appendix A: Limited warranty

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