

# Flexible x1 PCI Express Riser

## Hardware Manual

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**June 01, 2011**

**Revision 1.1**

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# 1 About this Document

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## 1.1 Purpose

This document describes Hardware installation, features, specification and operation for AMFELTEC Flexible x1 PCI Express Riser (SKU-039).

## 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 x1PCI Express Riser (Riser) (Figure 1) is designed to extend x1 PCI Express bus. It includes x1 PCI Express Host card (Figure 2) and x1 PCI Express adapter board (Figure 3/Figure 4/Figure 5).



Figure 1: Flexible x1 PCI Express Riser

The PCI Express Host card has to be plugged into the PCI Express motherboard connector. PCI Express adapter board is connecting to the PCI Express Host card via 12” Flex PCI Express cable. The expansion x1PCI Express add-in board has to be plugged into the standard PCI Express female connector on the PCI Express adapter board.

Because of the flexible nature of the connection, expansion PCI Express add-in boards can be positioned away from the motherboard, including around any obstacles inside a computer chassis. PCI Express adapter has two mounting holes allowing them to be securely fixed inside a computer chassis. An additional the x1 PCI Express adapter board has two support tabs for mechanical stabilization of add-in PCI Express expansion board (US Patent 7,255,570).

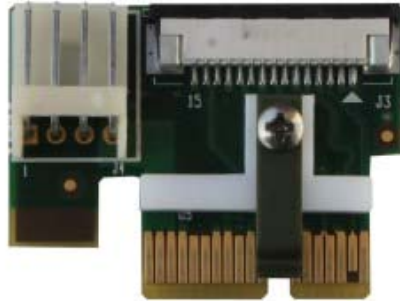


Figure 2: x1 PCI Express host card

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

The Riser functions right out of the box, no additional software needs to be installed.



Figure 3: x1 PCI Express adapter board (powered from host card 12V, 3.3V)

## General Description



Figure 4: x1 PCI Express adapter board (powered from ATX power supply) (12V, 5V)

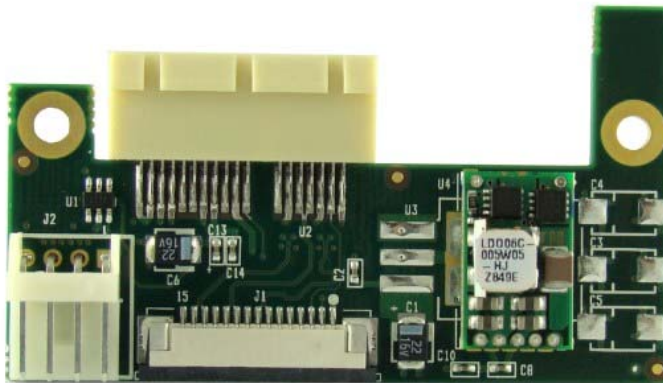


Figure 5: x1 PCI Express adapter board (powered from external 12V power supply)



## 3 Requirements/Features

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### 3.1 Power Source

The power for the expansion PCI Express add-in board can be supplied from three different sources:

- From PCI Express Host card (12V and 3.3 volt) via power cable and x1 PCI Express adapter board
- From standard ATX power supply (“floppy disk” connector)(12 and 5 volts) via x1 PCI Express adapter board
- From any 12 volt power supply via x1 PCI Express Adapter board

### 3.2 Software

There is no additional software needs for the Adapter.

## 4 Hardware Description

### 4.1 Board Layout

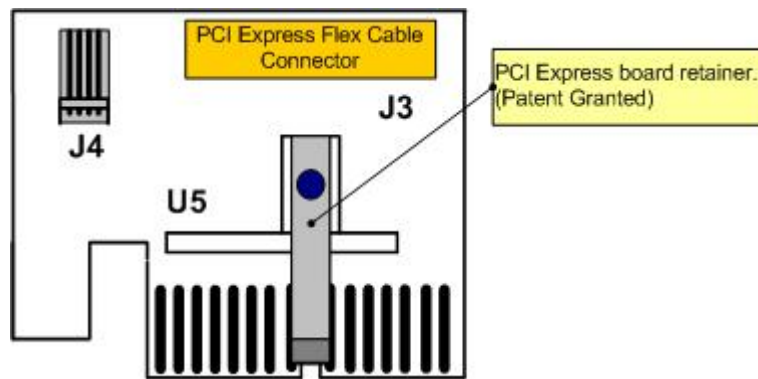


Figure 6: x1 PCI Express Host card layout

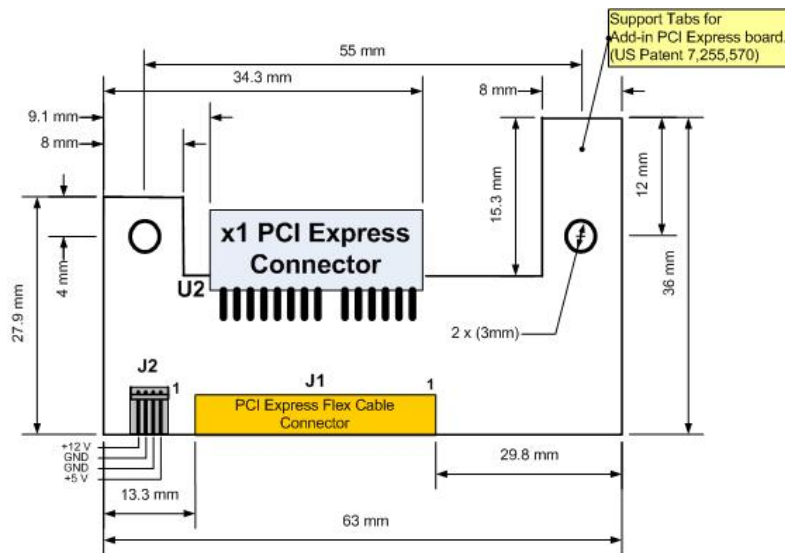


Figure 7: x1 PCI Express adapter board layout

## 4.2 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 1: x1 PCI Express Host card connectors

RefDes	Type	Usage
J1	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the PCI Express host card.
J2	“Floppy disk” male power connectors	Incoming power for the expansion x1 PCI Express add-in boards
U2	Downstream 1x PCI Express female connector	Connection to the expansion x1 PCI Express add-in board.

Table 2: x1 PCI Express adapter board 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 x1 PCI Express Riser 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 Express Adapter.
- Install the host card into the motherboard PCI Express slot.
- Place and retain PCI Express Adapter inside the chassis.
- Connect power to the PCI Express Adapter.
- Holding your add-in card by its edges and the mounting bracket, position the card with the contacts downward over the PCI Express slot and insert the card into the slot. Do not let it touch any of the components on the motherboard or PCI Express Adapter.
- Now, you can close computer cover and power-up the host computer.

## 6 Ordering Information

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### 6.1 Standard package

Standard package include the following components:

- x1 PCI Express Host card
- x1 PCI Express adapter board with Flex PCI Express cable
- User manual

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

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