Flexible MiniPCI Express to PCI Express Adapter

Hardware Manual

June 01, 2011

Revision 1.2

Contents

Figures

Tables

1   About this Document

1.1   Purpose

This document describes Hardware installation, features, specification and operation for AMFELTEC Flexible MiniPCI Express to PCI Express Adapter (SKU-035).

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 PCI Express adapter layout	May 11, 2010
1.2	Update hardware installation instructions	June 01, 2011

2   General Description

2.1   Introduction

Flexible MiniPCI Express to PCI Express Adapter (Adapter) is designed to convert MiniPCI Express bus into x1 PCI Express bus and extend it. Adapter allows connecting standard x1 PCI Express add-in board to motherboard MiniPCI Express connector.

It includes MiniPCI Express Host card (Figure 1or Figure 2) and x1 PCI Express adapter board (Figure 3, Figure 4 or Figure 5). The MiniPCI Express Host card has to be plugged into an upstream MiniPCI Express motherboard connector. PCI Express adapter connects to the main MiniPCI 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 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 MiniPCI Express Host card, 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.

Figure 2: MiniPCI Express Host card (full size)

Figure 3: MiniPCI Express Host card (half size)

The Adapter functions right out of the box, no additional software needs to be installed. The MiniPCI Express Host card has LED for displaying downstream PCI Express add-in card "PRESENT" status.

Figure 4: x1 PCI Express adapter board (powered from host card (3.3V only))

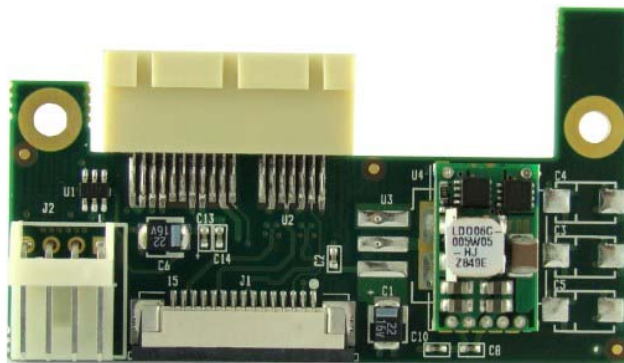Figure 5: x1 PCI Express adapter board (powered from ATX power supply) (12V, 5V)

Figure 6: x1 PCI Express adapter board (powered from external 12V power supply)

3 Requirements/Features

3.1 Power Source

The power for the expansion PCI Express add-in board can be supplied from three different sources (<u>WARNING</u>: Please specify the power source when you are ordering the product! If you purchase product with one power source, you **<u>cannot</u>** use another power source):

- From MiniPCI Express Host card (3.3 volt only) via power cable and x1 PCI Express adapter board (maximum peak current – 2.75A, maximum normal current – 1.1A)

- From standard ATX power supply ("floppy disk" connector) (12 and 5 volts) via x1 PCI Express adapter board (see pinout on Figure 8)

- From any 12 volt power supply via x1 PCI Express Adapter board (see pinout on Figure 8)

3.2 Software

There is no additional software needs for the product.

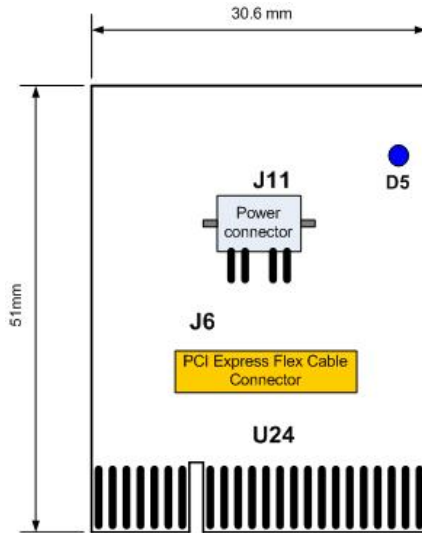# 4   Hardware Description

4.1   Board Layout

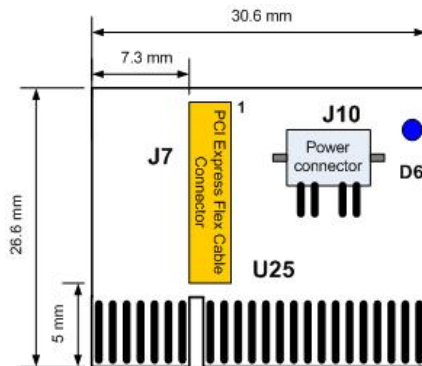Figure 7: MiniPCI Express (full) Host card layout

Figure 8: MiniPCI Express (half) Host card layout
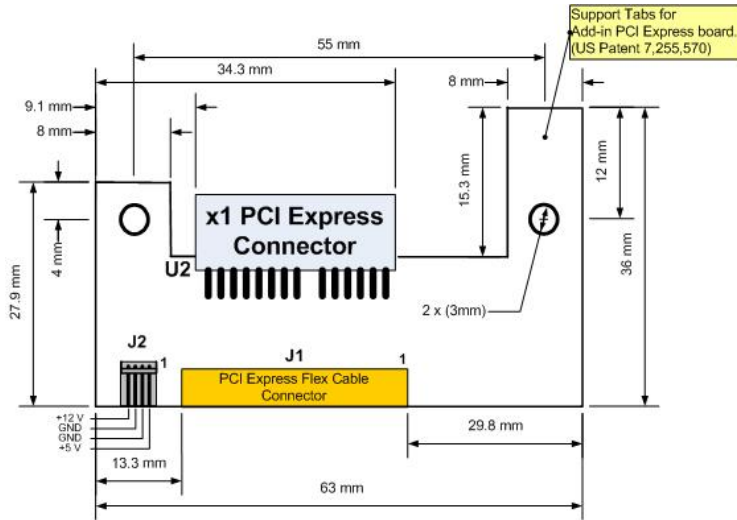
Figure 9: x1 PCI Express adapter board layout

4.2 LEDs

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

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

4.3 Connectors

RefDes	Type	Usage
U24	Upstream MiniPCI Express connector	Connection to the upstream MiniPCI Express bus on the motherboard (full size host card)
U25	Upstream MiniPCI Express connector	Connection to the upstream MiniPCI Express bus on the motherboard (half size host board)

J11	Power connector	Optional (3.3V only) (full size host card)
J10	Power connector	Optional (3.3V only) (half size host card)
J6	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the x1 PCI Express adapter boards.(full size host card)
J7	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the x1 PCI Express adapter boards.(half size host card)

Table 2: MiniPCI 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.
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 3: x1 PCI Express 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 MiniPCI Express to PCI Express 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**: <u>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</u>.

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

- Install the host card into the motherboard MiniPCI Express slot.

- Place and retain PCI Express Adapter inside the chassis.

- Connect power to 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.

⚠ **BE SURE THAT BLUE LEDs D5 or D6 ARE ON!**

(x1 PCI Express expansion add-in board "PRESENT")

6   Ordering Information

6.1   Standard package

Standard package include the following components:

- MiniPCI Express Host card

- x1 PCI Express adapter board with Flex PCI Express cable

- User manual

7   Appendix A: Limited warranty

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