

Flexible MiniPCI to PCI Express Adapter

Hardware Manual

June 4, 2012
Revision 1.2

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.....	5
3.1	Power Source	5
3.2	Software.....	5
4	Hardware Description.....	6
4.1	Board Layout.....	6
4.2	LEDs	7
4.3	Connectors.....	7
5	Installation	8
5.1	Hardware Installation	8
6	Ordering Information	9
6.1	Standard package.....	9
7	Appendix A: Limited warranty.....	10

Figures

Figure 1: Flexible MiniPCI to PCIe Adapter	2
Figure 2: MiniPCI Host card	3
Figure 3: x1 PCI Express adapter board (powered from MiniPCI Host card)	3
Figure 4: x1 PCI Express adapter board (powered from ATX power supply)	4
Figure 5: x1 PCI Express adapter board (powered from external 12V power supply)	4
Figure 6: MiniPCI Host card layout	6
Figure 7: x1 PCI Express adapter board layout	6

Tables

Table 1: MiniPCI Host card LEDs	7
Table 2: MiniPCI Host card connectors	7
Table 3: x1 PCI Express Adapter board connectors.....	7

1 About this Document

1.1 Purpose

This document describes Hardware installation, features, specification and operation for AMFELTEC Flexible MiniPCI to PCI Express Bus Adapter (SKU-037).

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

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
1.2	Next rev.	June 4, 2012

2 General Description

2.1 Introduction

Flexible MiniPCI to PCI Express 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 124-pin MiniPCI motherboard slot into x1 PCI Express slots.

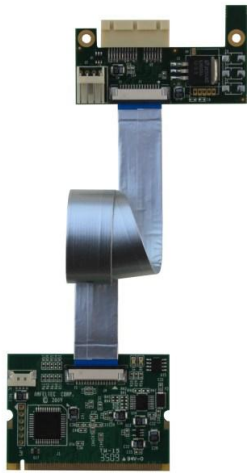


Figure 1: Flexible MiniPCI to PCIe Adapter

It includes MiniPCI Host card (Figure 2) and x1 PCI Express adapter board (Figure 3/Figure 4/Figure 5). The MiniPCI Host card has to be plugged into an upstream MiniPCI motherboard connector. PCI Express adapter connects to the main MiniPCI 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 (unlike traditional rigid risers), expansion PCI Express add-in boards can be positioned away from the MiniPCI 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. 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: MiniPCI Host card

The Adapter functions right out of the box, no additional software needs to be installed. The MiniPCI Host card has LEDs for displaying downstream PCI Express Link status as well as expansion PCI Express add-in card “PRESENT” status.

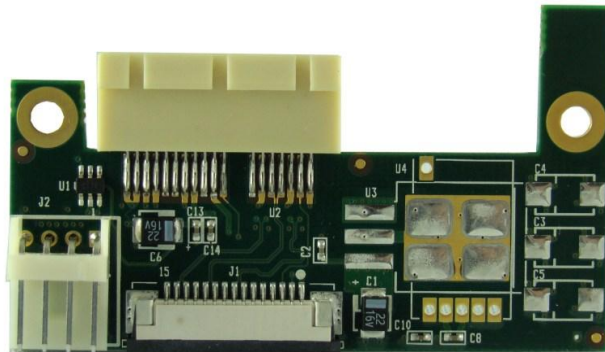


Figure 3: x1 PCI Express adapter board (powered from MiniPCI Host card)

General Description



Figure 4: x1 PCI Express adapter board (powered from ATX power supply)



Figure 5: 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:

- From MiniPCI Host card (3.3 volt only) via power cable and x1 PCI Express adapter board (Figure 3)
- From standard ATX power supply (“floppy disk” connector)(12 and 5 volts) via x1 PCI Express adapter board (Figure 4)
- From any 12 volt power supply via x1 PCI Express Adapter board (Figure 5)

3.2 Software

There is no software needed for normal operations.

4 Hardware Description

4.1 Board Layout

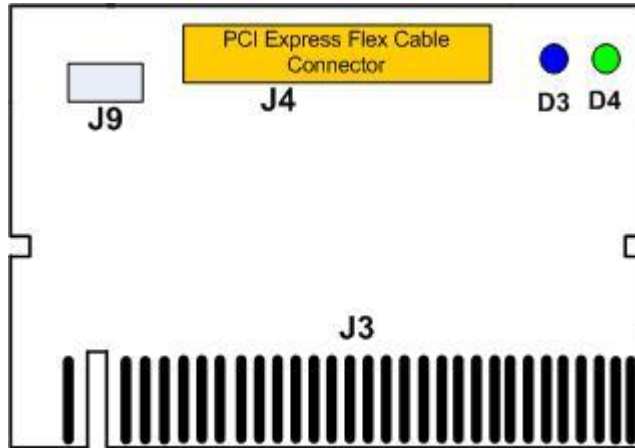


Figure 6: MiniPCI Host card layout

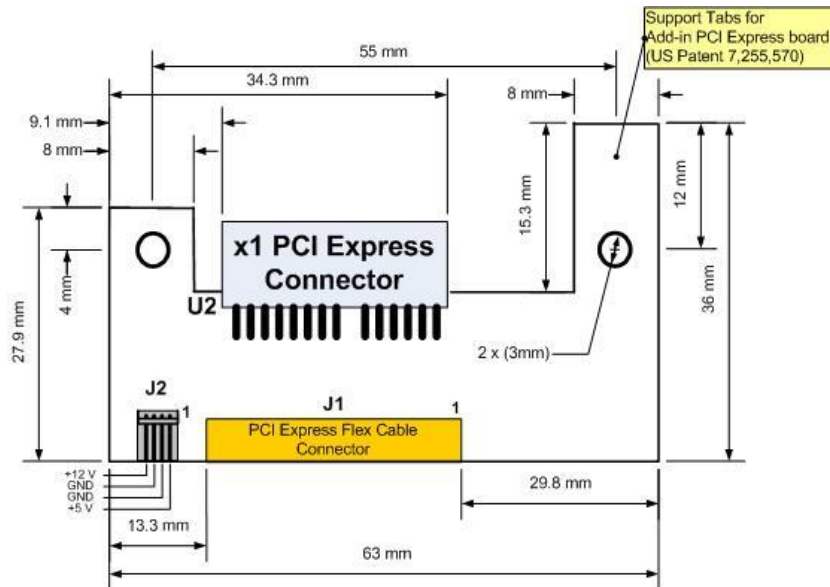


Figure 7: x1 PCI Express adapter board layout

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

4.3 Connectors

RefDes	Type	Usage
J3	Upstream MiniPCI connector (124 pin)	Connection to the upstream MiniPCI bus on motherboard
J9	Power connector	Optional (3.3V only)
J4	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the x1 PCI Express adapter boards.

Table 2: MiniPCI Host card connectors

RefDes	Type	Usage
J1	PCI Express Flex Cable connector	Connector via Flex PCI Express Cable to the MiniPCI 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 to PCI Express 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 Express Adapter.
- Install the host card into the motherboard MiniPCI 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.



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

(Downstream Link status "ON" and x1 PCI Express add-in board "PRESENT")

6 Ordering Information

6.1 Standard package

Standard package include the following components:

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

7 Appendix A: Limited warranty

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