

***Squid* 1U PCI Express Gen 3 Carrier Board™ for M.2 SSD module**

Hardware Manual

October 14, 2016

Revision 1.0

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1 About this Document

1.1 Purpose

This document describes hardware installation, features, specification and operation of the *Squid* PCI Express Carrier Board™ for M.2 SSD module from AMFELTEC Corporation.

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.	October 14, 2016

2 General Description

2.1 Introduction

Squid PCI Express family is a series of PCI Express Carrier Boards designed for expansion of any desktop computer or embedded appliance. *Squid* family expands a motherboard's PCI Express or USB slot with multiple full/half size MiniPCI Express or M.2 modules.

PCI Express Carrier Board for M.2 SSD module occupies the space equal to standard one-slot wide PCI Express board defined by PCI Express Specification. Carrier board is 1U height. It is located in the middle of the PCI Express slot and connects to the motherboard PCI Express connector via exchangeable x4 or x1 Express adapters. This unique PCI Express structure (patent pending) allows allocating M.2 module in 1U computer chassis and not violating PCI Express Specification.

M.2 (M key) circuits located on the Carrier board support any M.2 PCI Express M key modules with any standard length (2242/2260/2280 and 22110).

2.2 Package Contents

1U PCI Express Carrier Board for M.2 SSD module package includes the following parts:

1. PCI Express Carrier Board for M.2 modules (Figure 1, 2, 3)
2. x4 or x1 PCI Express Adapters



Figure 1: 1U PCI Express Gen 3 Carrier Board for M.2 SSD module

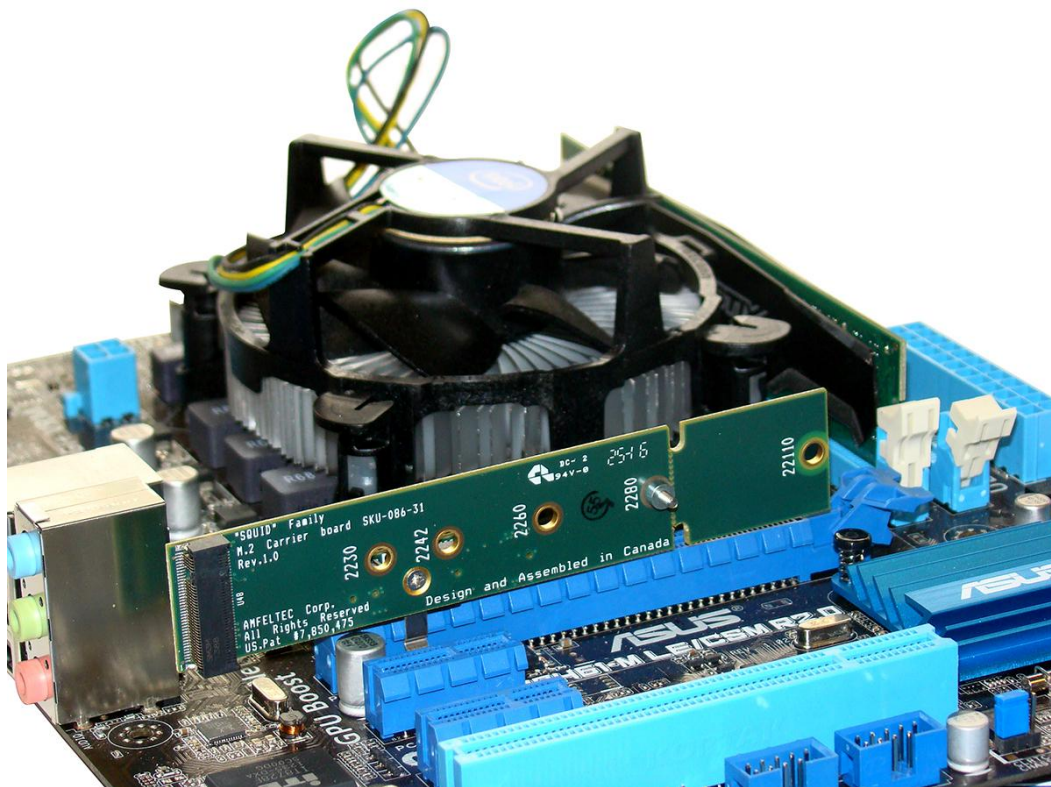


Figure 2: 1U PCI Express Gen 3 Carrier Board for M.2 SSD module (top).

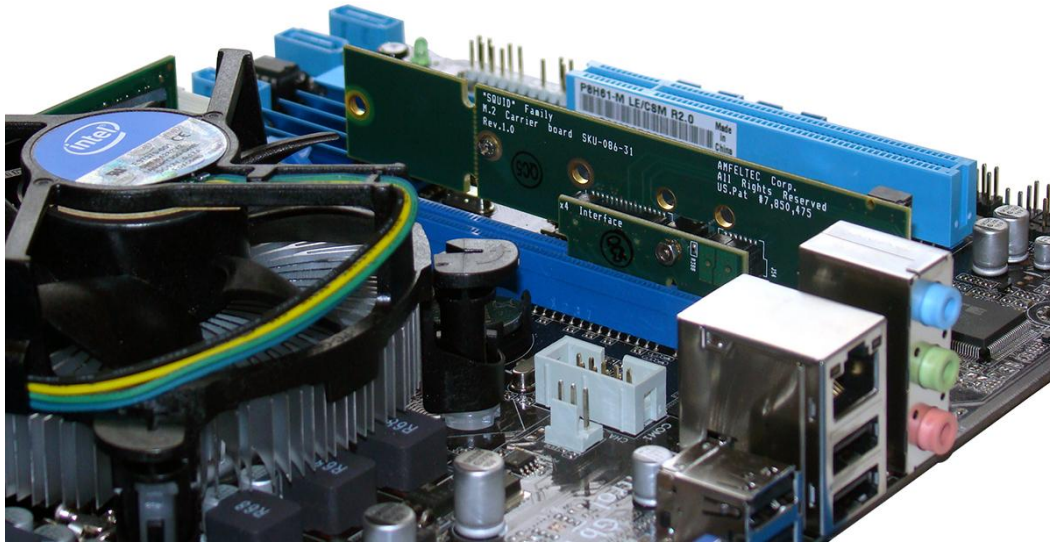


Figure 3: 1U PCI Express Gen 3 Carrier Board for M.2 SSD module (bottom)

3 Features

3.1 Features

- Easy ‘Plug and Play’ installation
- Supports any M.2 PCI Express add-in modules (M key)
- x4 PCI Express (Gen3) connection between motherboard and M.2 circuit
- One PCI express slot wide, 1U height PCI Express board; x4 or x1 upstream PCI Express (Gen 3) connection
- Supports PCI Express Gen 3 (8.0 Gbps) interface
- Meets PCI Express 2.1 and M.2 1.0 Specifications
- Dimension 4 ¾” x 1 1/3” (121 mm x 30 mm)
- RoHS compliant

3.2 1U PCI Express Gen 3 Carrier board for M.2 SSD module interfaces connection.

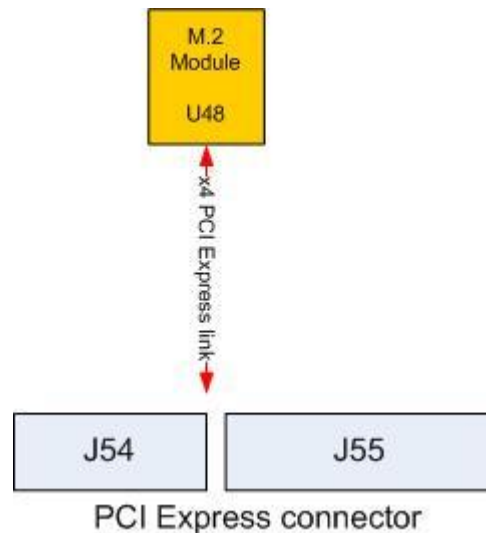


Figure 4: Carrier board PCI Express connection.

4 Installation

4.1 Carrier board installation

Following steps provide the exact sequence that needs to be followed in order to properly install the Amfeltec PCI Express Expansion Carrier Board:

- Turn OFF computer before installation
- Remove the chassis cover from the computer
- Locate an unused PCI express slot and remove the corresponding slot cover from computer chassis
- Plug-in Carrier Board to PCI express slot and attach its bracket to the computer chassis with a screw
- Put the chassis cover back on the computer
- Turn ON computer

5 Hardware Description

5.1 Board Layout

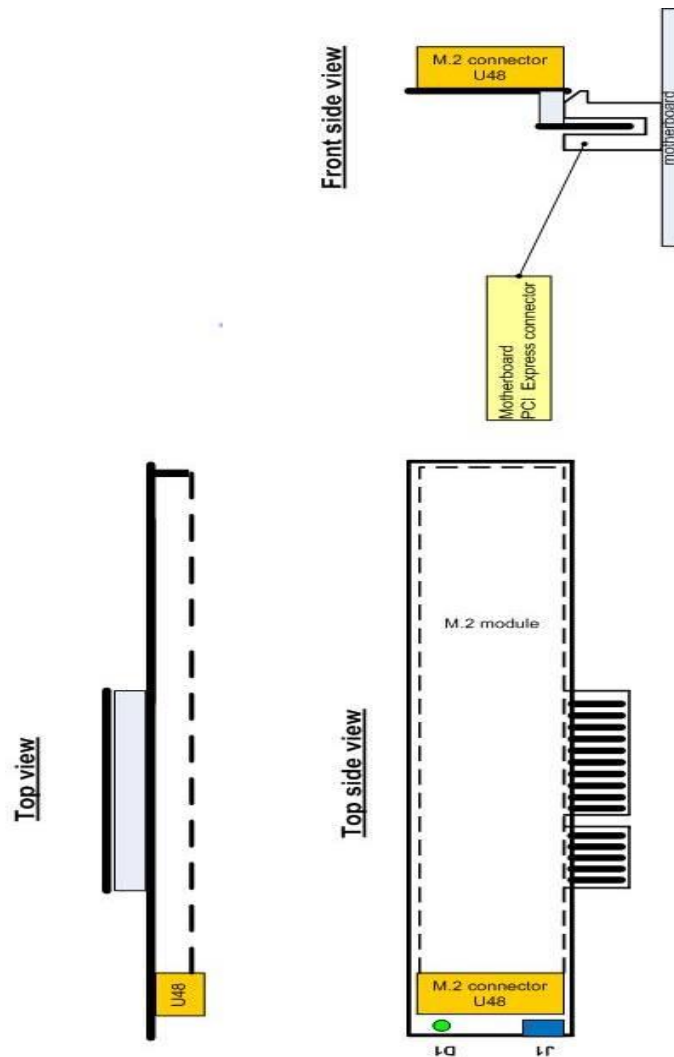


Figure 5: 1U PCI Express Gen 3 Carrier Board for M.2 module layout

5.2 LEDs

Name	Ref. Des	Color	Usage
SSD Active	D1	GREEN	Activity indication from M.2 SSD module

Table 1: 1U PCI Express Gen 3 Carrier Board for M.2 module LEDs

5.3 Connectors

Ref. Des.	Type	Usage
J54, J55	connectors	Connection to the x4 or x1 PCI Express Adapter
J1	Connector	LED indication from M.2 SSD module
U48	M.2 connectors (M key)	M.2 add-in modules connection (top side)

Table 2: 1U PCI Express Gen 3 Carrier Board for M.2 module connectors

6 Appendix A:

7 Appendix B: Limited warranty

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