Arowana 1U PCI Express Gen 3 Internal SSD Board™

Hardware Manual

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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 *Arowana* PCI Express Internal SSD Board™ 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, 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.	October 31, 2020

2 General Description

2.1 Introduction

Arowana PCI Express family is a series of PCI Express Internal SSD boards designed for expansion of any desktop computer (servers) or embedded appliance. *Arowana* boards is an internal SSD with PCI express interface connection. This family is design for robust industrial application and can operate in external temperature range.

1U PCI Express SSD Board occupies the space equal to standard one-slot wide PCI Express board and is compatible for 1U computer chassis. The board has manufactured in two types: one version has x1 PCI Express connection to a motherboard and another version has x4 PCI Express connection to a motherboard. Both versions are holding in the PCI express slot by using Amfeltec PCI express Retainer (US Pat. 7,850,475) without any PCI express brackets.

2.2 Package Contents

1U PCI Express SSD board package includes the following parts:

1. PCI Express SSD board itself depend of the version:

   - Version with x1 PCI Express upstream connection (SKU-090-31-x1) (Figure 1)

   - Version with x4 PCI Express upstream connection (SKU-090-31-x4) (Figure 1)

2. 2-pin RESET cable

Figure 1: 1U PCI Express SSD board with x1 upstream PCIe interface

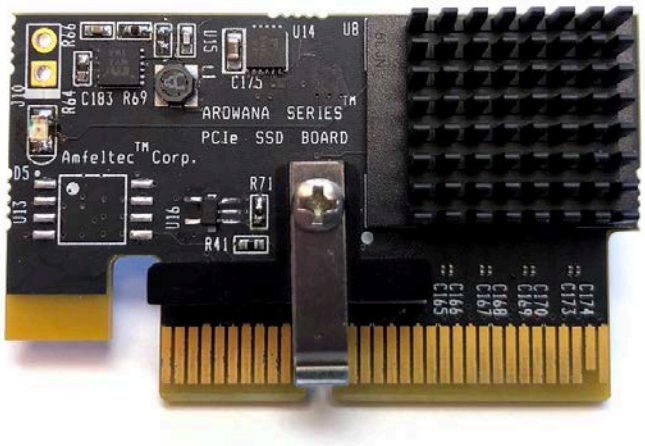

Figure 2: 1U PCI Express SSD board with x4 upstream PCIe interface

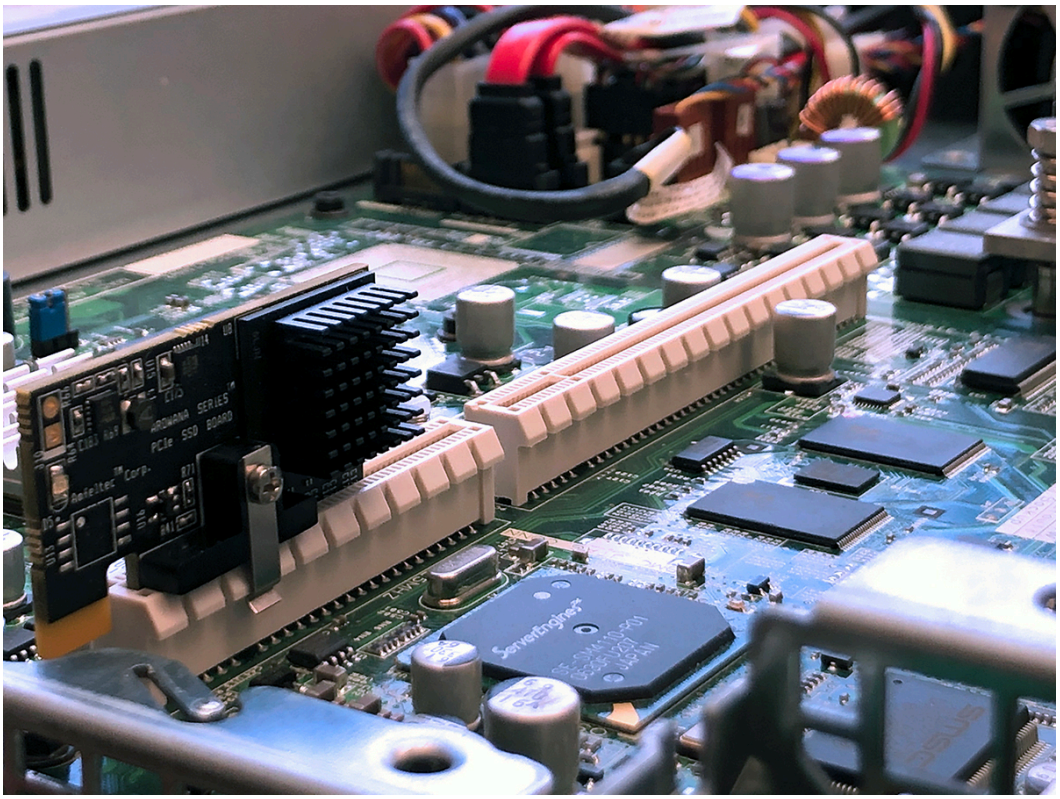

Figure 3: 1U PCI Express SSD board inside 1U computer chassis

3 Features

3.1 Features

- Easy ‘Plug and Play” installation
- 1TB storage capacity (optional: 512 MB, 256 MB and 128 MB)
- Supports PCI Express Gen 3 (8.0 Gbps) interface
- One PCI express slot wide, 1U height PCI Express board (49mm x 30mm);
- Depend of the version has x4 or x1 upstream PCI Express connection
- Retained inside a computer without any PCIe bracket by using Amfeltec PCI Express Retainer (US Pat.: 7,850,475)
- Compatible with any motherboard or any embedded system
- MTBF 3,000,000 hours
- Extended Industrial temperature rang (from -40°C to +95°C
- Automotive support
- RoHS compliant

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 1U PCI Express SSD board:

- Turn OFF computer before installation
- Remove the chassis cover from the computer
- Locate an unused PCI express slot
- Plug-in SSD Board to PCI express
- Put the chassis cover back on the computer
- Turn ON computer

4.2 Performance Test results

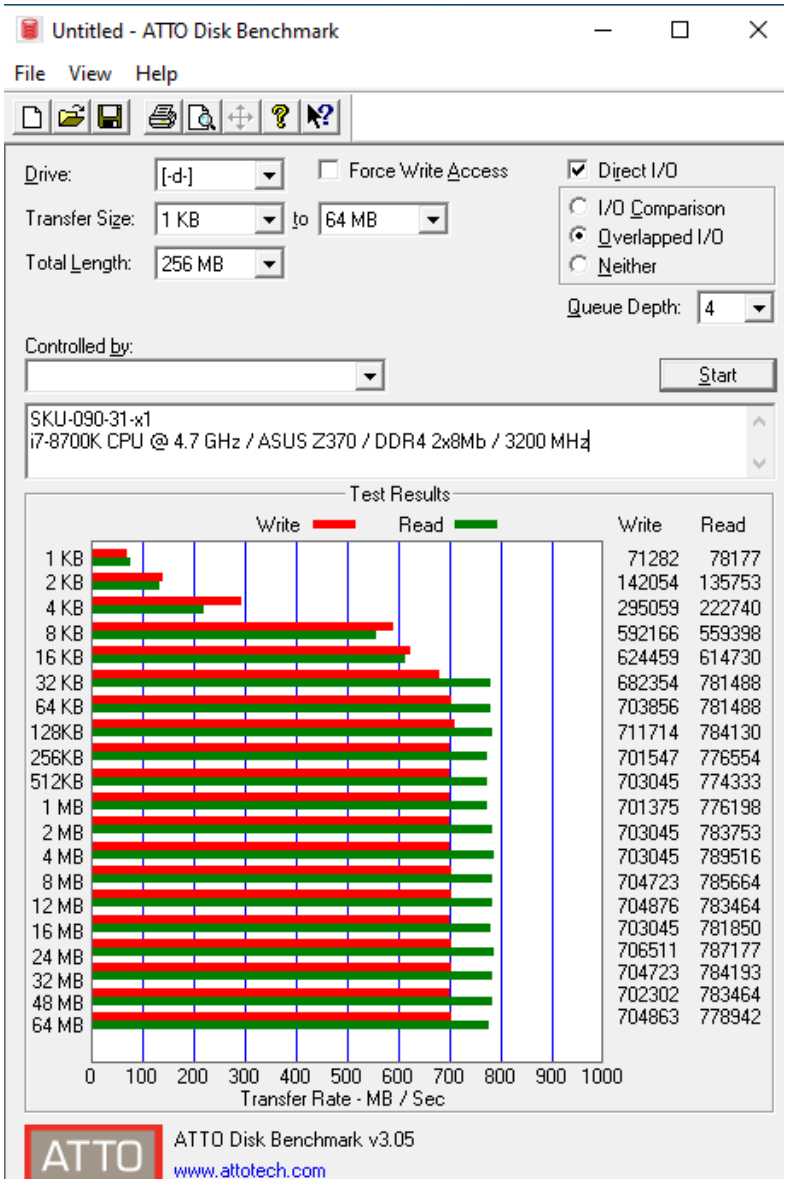

Figure 4: 1U PCI Express SSD board with x1 upstream PCIe interface

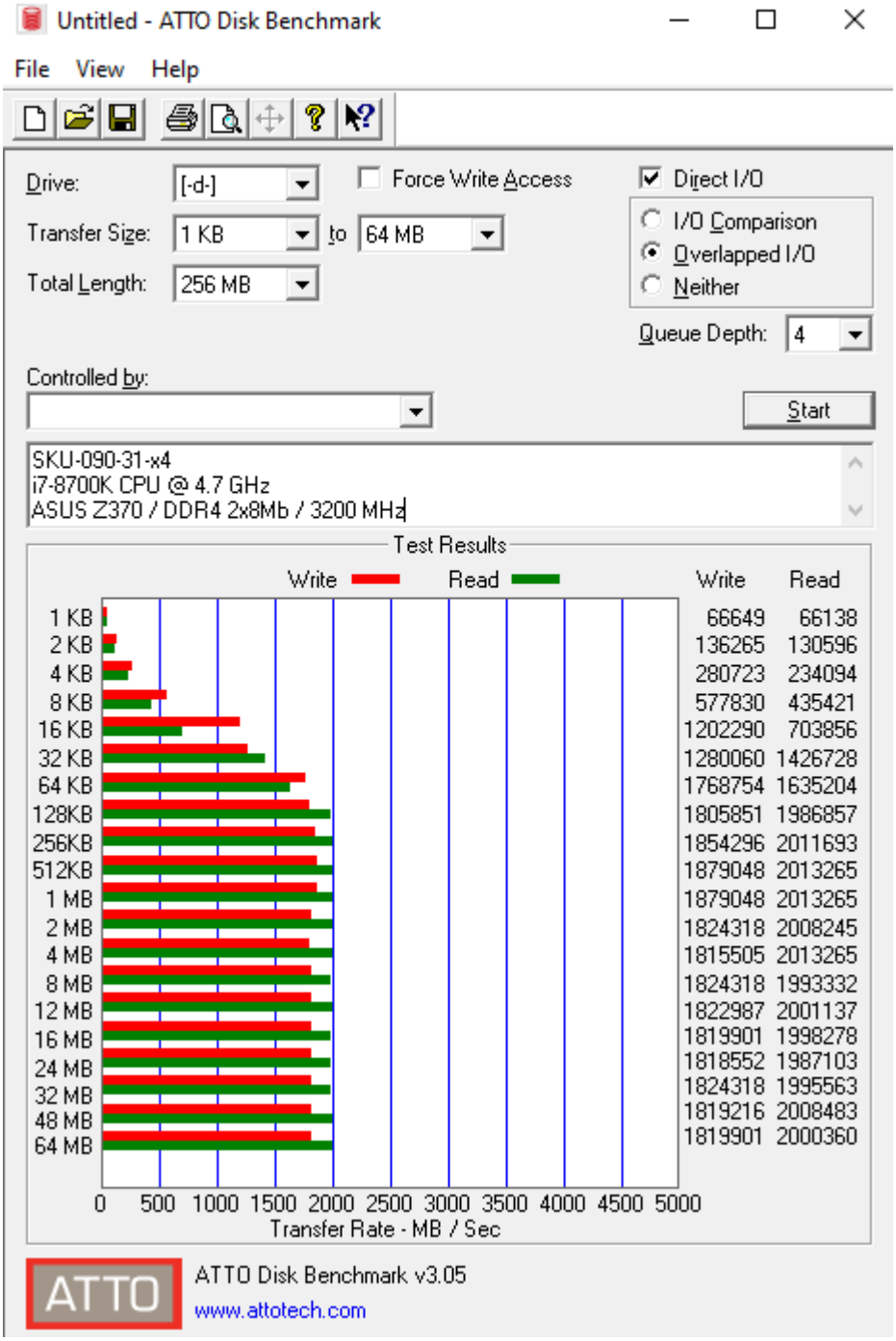

Figure 5: 1U PCI Express SSD board with x4 PCIe upstream interface

5 Hardware Description

5.1 LEDs

Name	Ref. Des.	Color	Usage
SSD Active	D6	GREEN	SSD activity indicator

Table 1: 1U PCI Express Gen 3 SSD Board LEDs

5.2 Connectors

Ref. Des.	Type	Usage
J11	x1 PCIe connector (male)	Upstream x1 PCI Express connector
J5	x4 PCIe connector (male)	Upstream x4 PCI Express connector

Table 2: 1U PCI Express Gen 3 SSD board connectors

6 Appendix A:

7 Appendix B: Limited warranty

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