Akida PCIe Board
User Guide

Version 1.0.1, document revision: March 2022
Table of contents

1 INTRODUCTION ........................................................................................................................................3
2 INSTALLATION STEPS ............................................................................................................................4
  2.1 REQUIREMENTS .................................................................................................................................4
  2.2 INSTALL THE BOARD .........................................................................................................................4
  2.3 INSTALL THE DRIVER .........................................................................................................................5
  2.4 INSTALL AKIDA ................................................................................................................................5
3 TROUBLESHOOT ........................................................................................................................................6
  3.1 RUNNING ISSUE ..................................................................................................................................6
  3.2 LSPCI GIVES NO RESULTS ..................................................................................................................6
  3.3 ERROR WHEN CHECKING THE PCIE BUS ............................................................................................6
1 INTRODUCTION

The Akida Board Evaluation Kit is a one-lane PCIe board, for Akida technology assessment. It includes the AKD1000 Akida processor from Brainchip.

Akida Board Evaluation Kit content and description:
- Akida PCI Express Reference Board
- Bracket and screw
2 INSTALLATION STEPS

2.1 REQUIREMENTS

Computer
An x86-64 PC architecture, such as any intel, i5, i7, i9 based computer.
Or an aarch64 machine architecture such as a Raspberry Pi 4 (IO mother board + CS daughter board).

OS
Linux Ubuntu 16.04, 18.04 and 20.04

Slots
A one-lane PCIe slot available

2.2 INSTALL THE BOARD

Depending on your computer, you may need to prepare the board, screwing the bracket onto the board. **Important:** Power down your computer before installing the board.

![Figure 2: A board with its bracket](image1)

Then insert the board in the PCIe slot

![Figure 3: A board plugged on a x86 PC and on a Raspberry Pi](image2)
Note

- The Akida PCI board is one-lane it can fit into a 2-, 4-, or 8-lines slot therefore it is important to pay careful attention when installing it. If it is improperly installed the board could be damaged.
- Brainchip Akida PCIe board is small, and it may appear that the ‘front’ part of the board is the wider that the “back” part, but it is not. See figure 3 notice the board “back” part extends past the PCIe connector this is the proper way to insert the board.

2.3 INSTALL THE DRIVER
In order to install Akida board PCIe Driver:
- Get the zipped driver from Brainchip
- Unzip it
- Follow the instruction you will find in the README.md file located in the unzipped folder.

2.4 INSTALL AKIDA
MetaTF development details can be found at https://doc.brainchipinc.com/index.html
3 TROUBLESHOOT

3.1 RUNNING ISSUE
If the system is stuck or if your applications do not run after performing the required steps in this user guide reboot the system.

3.2 LSPCI GIVES NO RESULTS
If, when entering:

\texttt{lspci}

at the command prompt, nothing is displayed.

Your Akida board may be wrongly inserted into bus slot.
Do the following
\begin{itemize}
  \item Turn your machine totally off.
  \item Unplug and then plug back your Akida board into the PCI bus.
  \item Restart your machine.
\end{itemize}

3.3 ERROR WHEN CHECKING THE PCIE BUS
If you experience this error “\texttt{RuntimeError: unexpected transfer len: 1 expected: 4}” when running the command “akida devices” or when running akida demos run the provided “resetpcie.sh” script and retry.