



AI Accelerator Card

CRL-G18U-P3DF/CRL-G116U-P3DF

Software User Manual

E17563

First Edition

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Conventions used in this manual

To highlight key information in this manual, some text are presented as follows:

IMPORTANT! This message contains vital information that must be followed to complete a task.

NOTE: This message contains additional information and tips that can help complete tasks.

WARNING! This message contains important information that must be followed to keep you safe while performing certain tasks and prevent damage to your Single Board Computer's data and components.

Typography

Bold text Indicates a menu or an item to select.

Italic This indicates sections that you can refer to in this manual.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

ASUS Websites

The ASUS websites worldwide (<https://www.asus.com/>) provide updated information on ASUS hardware and software products. The ASUS websites are listed in the ASUS Contact Information on the inside front cover of this installation guide.

Optional Documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

1. Software requirements

- Workstation running Ubuntu/Debian/Windows 10 (stable release preferred e.g. Ubuntu 18.04.4 or Debian Buster)
 - Assembled AI Accelerator Card, installed into the workstation's PCIe slot.
-

NOTE: For more information on installing the AI Accelerator card to the system's PCIe slot, please refer to 2.2 *Card Installation* in the **Hardware User Manual**.

- Working network connection.

2. Linux OS

NOTE: The command line results are for reference only and may differ according to your system.

2.1 Installing the Edge TPU drivers

Please visit <https://coral.ai/docs/m2/get-started/#2a-on-linux> and "2a: On Linux" for more information on installing the Edge TPU drivers on Linux.

2.2 Installing the Edge TPU runtime

The Edge TPU runtime is required to communicate with the Edge TPU. You can install the Edge TPU runtime on your host computer using the following command:

```
$ sudo apt-get update
$ sudo apt-get install libedgetpu1-std python3-edgetpu
libpython3-dev build-essential libusb-1.0-0-dev
```

2.3 Begin multiple Edge TPU tests

1. Clone the "edgetpu" source code of Google from github.

```
$ git clone https://github.com/google-coral/edgetpu
```

2. Open the "edgetpu" folder, then enter the following commands to test multiple Edge TPUs:

```
$ cd edgetpu/benchmarks
$ python3 multiple_tpus_performance_analysis.py
```

3. You can check the test result through the Pass or fail log.

```
multiple_tpus_performance_analysis.cc:108] Model name:
mobilenet_v1_1.0_224_quant_edgetpu.tflite
multiple_tpus_performance_analysis.cc:82] Single Edge TPU base
time 69760.4 seconds.
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
1.99319
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
2.9895
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
3.94866
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
4.89411
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
5.77968
multiple_tpus_performance_analysis.cc:84] # TPUs: speedup:
6.66029
```

2.4 Monitor Edge TPU status

2.4.1 Related commands for multiple Edge TPUs

You can find a brief list of related commands for multiple Edge TPUs monitoring in the table below:

Task	Command
Amount of Edge TPUs	<code>ls -l /sys/class/apex/</code>
Link speed	<code>cat /sys/class/apex/apex_*/device/current_link_speed</code>
Link width	<code>cat /sys/class/apex/apex_*/device/current_link_width</code>

NOTE: Please refer to <https://coral.ai/docs/pcie-parameters> for more information.

2.4.2 API list

For more information on Edge TPU API you can visit the Google webpage at <https://coral.ai/docs/edgetpu/api-intro/#edge-tpu-api-overview>.

3. Windows OS

3.1 Installing the Edge TPU drivers

Please visit <https://coral.ai/docs/m2/get-started/#2b-on-windows> and "2a: On Windows" for more information on installing the Edge TPU drivers on Windows.

3.2 Monitor Edge TPU status

3.2.1 Related commands for multiple Edge TPUs

You can get the Edge TPU temperature with the following PowerShell command:

```
Get-Counter -Counter '\Coral PCIe Accelerator(*)\Temperature'
```

NOTE: Please refer to <https://coral.ai/docs/pcie-parameters/#using-the-parameters-on-windows> for more information.

3.2.2 API list

For more information on Edge TPU API you can visit the Google webpage at <https://coral.ai/docs/edgetpu/api-intro/#edge-tpu-api-overview>.

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