

NCSDK & Intel Movidius Testing

Stress testing Raspberry Pi with Intel Movidius

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-Overview

The previous paper described how NCSDK is installed on the Raspberry pi. This paper describes the way we used for stress testing using NCSDK and Intel Movidius. NCSDK.

-Stress testing

For the purposes of this project 5 stress tests were completed using NCSDKs build-in example for Tensorflow. Tensorflow was chosen because it is the industry standard when Neural Networks are considered.

To begin the experiment, navigate to the tensorflow directory in examples in the NCSDK folder. Use make to run the test.

Test number 1

Test number one gave the following response:

Total inference time 1: 567.68

Total inference time 2: 93.23

The energy consumption was plotted using Grafana, this generated the following graph:



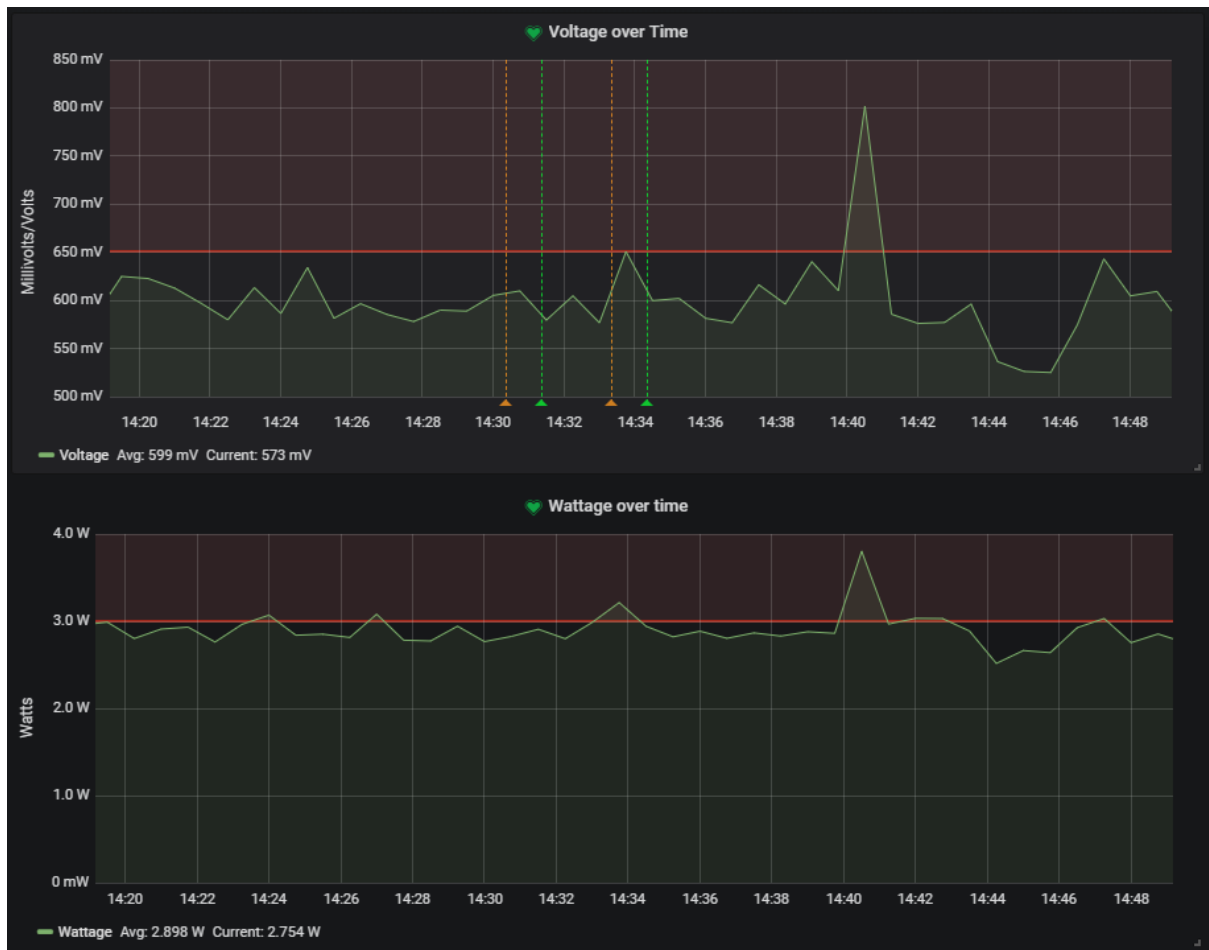
Test number 2

Test number two gave the following response:

Total inference time 1: 567.63

Total inference time 2: 93.36

The energy consumption was plotted using Grafana, this generated the following graph:



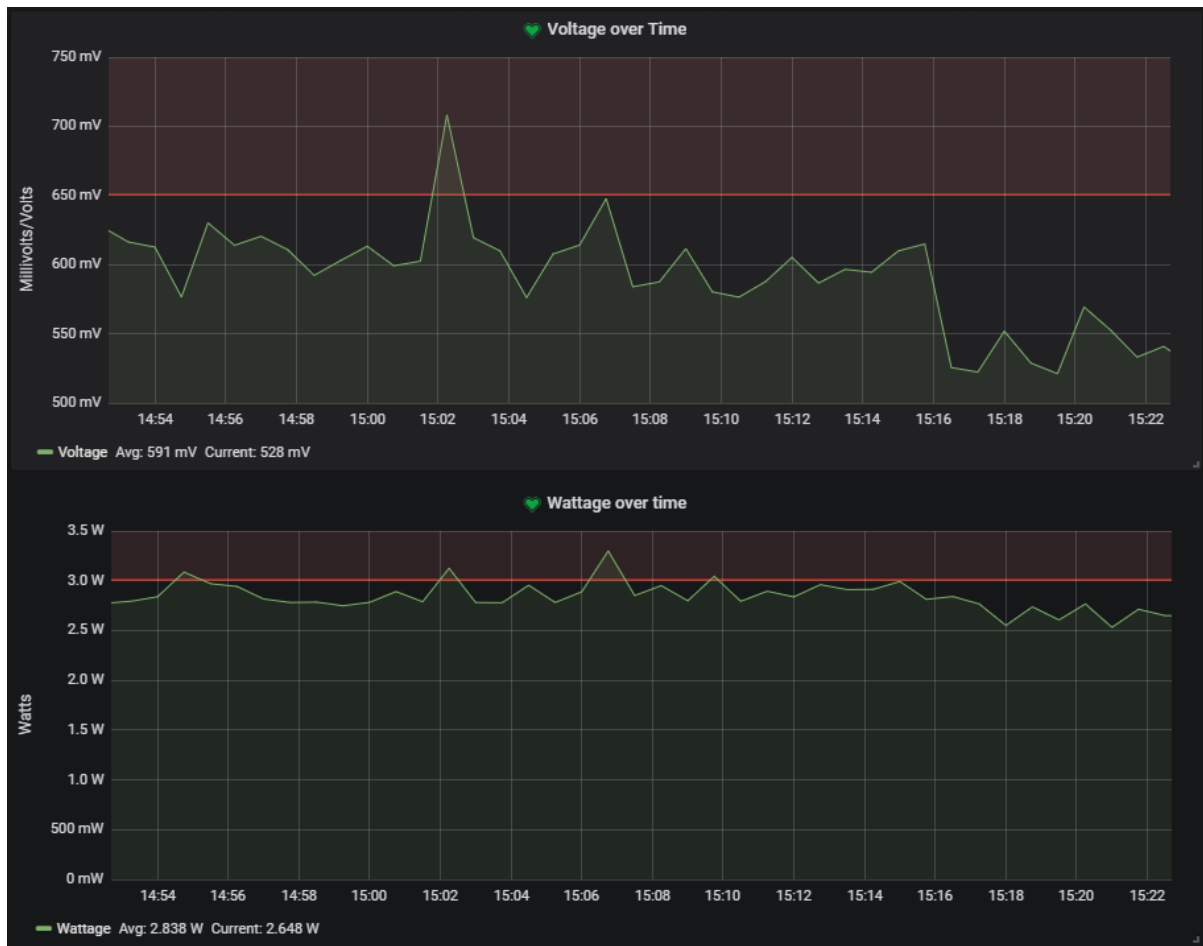
Test number 3

Test number three gave the following response:

Total inference time 1: 567.67

Total inference time 2: 93.54

The energy consumption was plotted using Grafana, this generated the following graph:



Test number 4

Test number four gave the following response:

Total inference time 1: 567.65

Total inference time 2: 93.72

The energy consumption was plotted using Grafana, this generated the following graph:



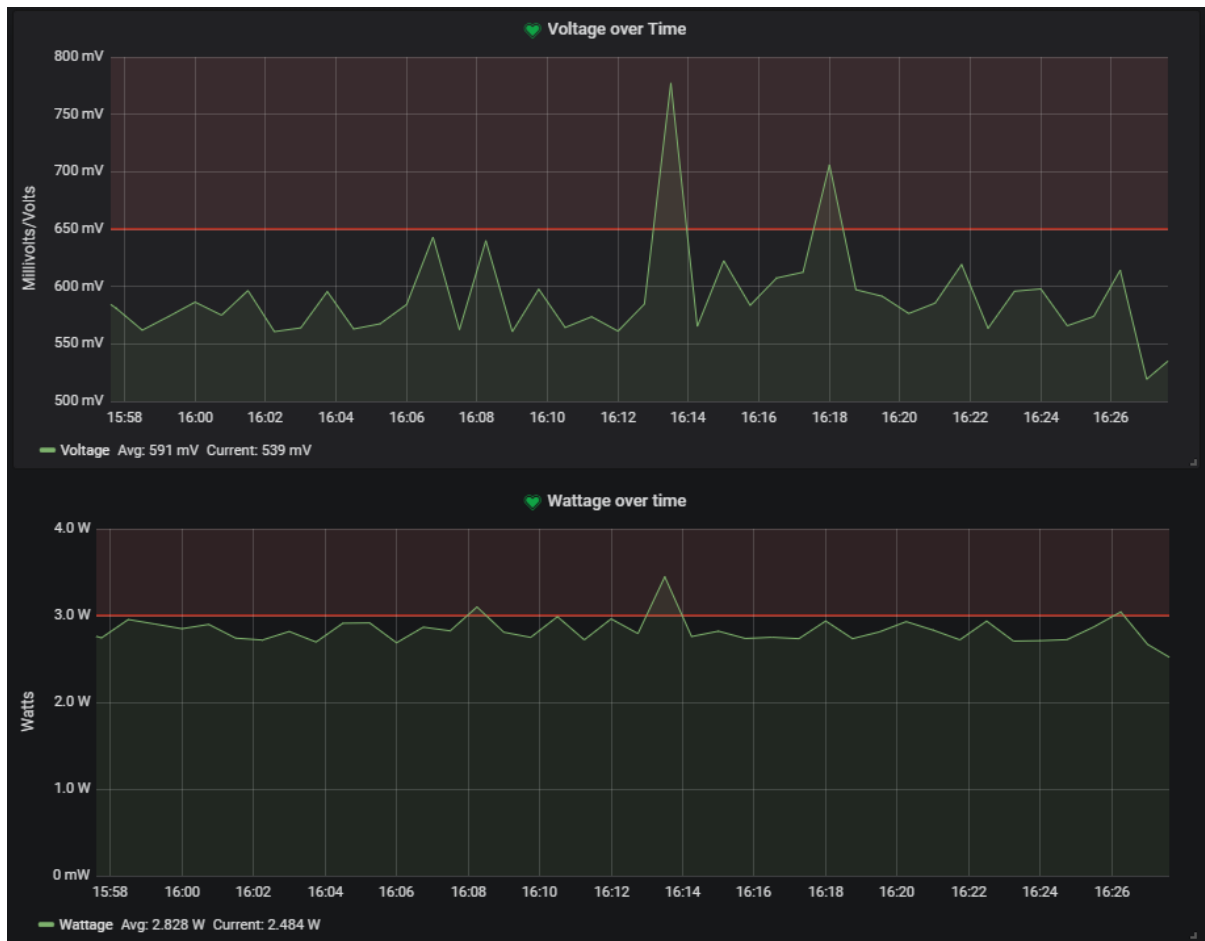
Test number 5

Test number five gave the following response:

Total inference time 1: 567.60

Total inference time 2: 93.46

The energy consumption was plotted using Grafana, this generated the following graph:



These statistics are only a portion of what is provided in the actual output of NCSDK. The actual output can be found in enclosure "TF test 1-5".

-Using Make Check

Since the goal was to compare an unaccelerated Raspberry Pi (RPI) to an accelerated RPI a way had to be found to disable the Intel Movidius and run the underlying algorithm (InceptionV3) without it. I consulted with Ed and we determined that using make check might be the command needed. Using make check provided the output as seen in enclosure "Make check".

However, it didn't produce the required result.