This checklist must be submitted as a PDF as part of your submission.

Name of Certifying Engineer(s): Benjamin Hawks
Email of Certifying Engineer(s): bhawks@fnal.gov
Name(s) of System Under Test: Pynq-Z2

Division (check one):

- ☑ Open
- ❑ Closed

Category (check one):

- ☑ Available
- ❑ Preview
- ❑ Research, Development, and Internal (RDI)

Benchmark(s) (check all that apply):

- ❑ Visual Wake Words
- ❑ Keyword Spotting
- ❑ Anomaly Detection
- ☑ Image Classification

Please fill in the following table adding lines as necessary:

System Under Test Name	Benchmark	Accuracy/AUC
Pynq-Z2	IC	83.5%/0.91

For each SUT, is the benchmark Accuracy/AUC target met? (Not a requirement for the Open division) (check all that apply):

- ❑ Yes (Visual Wake Words … 80% Accuracy)
- ❑ Yes (Keyword Spotting … 90% Accuracy)
- ❑ Yes (Anomaly Detection … 0.85 AUC)
- ❑ Yes (Image Classification ... 85% Accuracy)
- ❑ No, for some combination of benchmark, scenario and SUT

For each SUT and benchmark, did the submission run on the whole validation set in accuracy mode? (check one):

- ☑ Yes
- ❑ No

For each SUT and benchmark, does the submission use the EEMBC Runner? (check one)

- ☑ Yes
- ❑ No

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For each SUT and benchmark, is the same code run in accuracy and performance modes? (check one)

- ☑ Yes
- ❑ No

Are the weights calibrated using data outside of the official calibration set? (check one)

- ❑ Yes
- ☑ No

What numerics does the submission use? (check all that apply)

- ❑ INT4
- ❑ INT8
- ❑ INT16
- ❑ UINT8
- ❑ UINT16
- ❑ FP11
- ❑ FP16
- ❑ BF16
- ❑ FP32
- ☑ Other, please specify: Fixed-point 8-12bits

What backend does the submission use? (check all that apply)

- ❑ Vendor backend, please name:
- ❑ TF-Lite Micro
- ❑ Micro TVM
- ☑ Other, please specify: hls4ml

Which of the following caching techniques does the submission use? (check all that apply, ideally none):

- ❑ Caching Inputs between iterations
- ❑ Caching responses between iterations
- ❑ Caching intermediate computations between iterations

Which of the following techniques does the submission use? (check all that apply, ideally none if submitting to the closed division.)

- ☑ Quantization aware training
- ☑ Wholesale weight replacement
- ❑ Weight supplements
- ❑ Discarding non-zero weight elements
- ❑ Pruning

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- ❑ Modifying weights during the timed portion of an inference run
- ❑ Hard coding the total number of queries
- ❑ None of the above

Is the submission congruent with all relevant MLPerf rules?

- ☑ Yes
- ❑ No

If the answer to the above question is no, please explain:

For each SUT, have you filled out the JSON system description file?

- ☑ Yes
- ❑ No

For each SUT, does the submission accurately reflect the real-world performance of the SUT?

- ☑ Yes
- ❑ No

Does your submission include the following: (check all that apply)

- ☑ System description file
- ☑ Code that implements the benchmarks
- ☑ Code/scripts that train the model(s) (Open Division)
- ☑ Metadata that describes each system-implementation combination tested
- ☑ Scripts that set up and execute each system implementation tested
- ☑ Result logs for each system implementation tested
- ☑ This Checklist