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

Name of Certifying Engineer(s): Saheli Bhattacharjee
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Name(s) of System Under Test: NUCLEO-L4R5ZI, NUCLEO-H7A3ZI-Q, NRF5340-DK

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
NUCLEO-L4R5ZI (X-CUBE-AI-7.3.0)	AD	AUC: 0.86
NUCLEO-L4R5ZI (X-CUBE-AI-7.3.0)	IC	Top-1: 85.0%
NUCLEO-L4R5ZI (X-CUBE-AI-7.3.0)	KWS	Top-1: 90.2%
NUCLEO-L4R5ZI (X-CUBE-AI-7.3.0)	VWW	Top-1: 85.2%
NUCLEO-L4R5ZI (X-CUBE-AI-8.0.0)	AD	AUC: 0.86
NUCLEO-L4R5ZI (X-CUBE-AI-8.0.0)	IC	Top-1: 85.0%
NUCLEO-L4R5ZI (X-CUBE-AI-8.0.0)	KWS	Top-1: 90.2%

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NUCLEO-L4R5ZI (X-CUBE-AI-8.0.0)	VWW	Top-1: 85.2%
NUCLEO_L4R5ZI (microtvm_cmsis_nn)	AD	AUC: 0.86
NUCLEO_L4R5ZI (microtvm_cmsis_nn)	IC	Top-1: 86.5
NUCLEO_L4R5ZI (microtvm_cmsis_nn)	KWS	Top-1: 90.1%
NUCLEO_L4R5ZI (microtvm_cmsis_nn)	VWW	Top-1: 85.4%
NUCLEO_L4R5ZI (microtvm_native)	AD	AUC: 0.86
NUCLEO_L4R5ZI (microtvm_native)	IC	Top-1: 87.0%
NUCLEO_L4R5ZI (microtvm_native)	KWS	Top-1: 90.2%
NUCLEO_L4R5ZI (microtvm_native)	VWW	Top-1: 81.4%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-7.3.0)	AD	AUC: 0.86
NUCLEO_H7A3ZI-Q (X-CUBE-AI-7.3.0)	IC	Top-1: 85.0%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-7.3.0)	KWS	Top-1: 90.2%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-7.3.0)	VWW	Top-1: 85.2%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-8.0.0)	AD	AUC: 0.86

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NUCLEO_H7A3ZI-Q (X-CUBE-AI-8.0.0)	IC	Top-1: 85.0%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-8.0.0)	KWS	Top-1: 90.2%
NUCLEO_H7A3ZI-Q (X-CUBE-AI-8.0.0)	VWW	Top-1: 85.2%
NRF5340-DK (microtvm_cmsis_nn)	AD	AUC: 0.86
NRF5340-DK (microtvm_cmsis_nn)	IC	Top-1: 86.5%
NRF5340-DK (microtvm_cmsis_nn)	KWS	Top-1: 90.1%
NRF5340-DK (microtvm_cmsis_nn)	VWW	Top-1: 85.4%

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

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

- ☑ Yes
- ❑ No

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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:

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

- ❑ Vendor backend, please name:
- ❑ TF-Lite Micro
- ☑ Micro TVM
- ❑ Other, please specify: We have used microTVM native and CMSIS_NN package, X-CUBE-AI-7.3.0, and X-CUBE-AI-8.0.0.

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
- ❑ 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

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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