**Sipeed M1 dock RISC-V development board for** **Edge AI**

Sipeed’ s M1 dock is a RISC-V 64 development board based on Kendryte K210 SoC designed for Edge AI.

AI is pervasive today, from consumer to enterprise applications. With the explosive growth of connected devices, combined with a demand for privacy/confidentiality, low latency and bandwidth constraints, AI models trained in the cloud increasingly need to be run at the edge.

MAIX is Sipeed’ s purpose-built module designed to run AI at the edge. It delivers high performance in a small physical and power footprint, enabling the deployment of high-accuracy AI at the edge, and the competitive price make it possible embed to any IoT devices. Sipeed MAIX is quite like Edge TPU, but it acts as master controller, not an accelerator like Edge TPU, so it is more low cost and low power.

M1 dock is the 1st development board Sipeed released based on MAIX-I module without Wi-Fi version. It integrates USB2UART chip, auto download circuit, RGB LED, DVP Camera FPC connector (support small FPC camera and standard M12 camera), MCU LCD FPC connector (support 2.4-inch QVGA LCD), TF card slot. The core voltage of M1w dock can be adjusted, from 0.8V~1.2V. And it can be overclocked to 800MHz.

About K210: the Kendryte K210 is a system-on-chip (SoC) that integrates machine vision and machine hearing. Using TSMC’s ultra-low-power 28-nm advanced process with dual core 64-bit processors for better power efficiency, stability and reliability. The SoC strives for "zero threshold" development and to be deployable in the user’s products in the shortest possible time, giving the product artificial intelligence.

**Features**

* RISC-V Dual Core 64bit, 400MHz adjustable, open architecture-based processor with rich community resources
* High-speed UART and JTAG interface for debugging
* All GPIOs connected to header
* Support Micro SD card holder
* Onboard CH340, which support 2Mbps band rate
* 24P 0.5mm FPC connector for DVP Camera
* 8bit MCU LCD 24P 0.5mm FPC connector
* RST button and USR button
* Provide 3.3V and 1.8V to developers
* Support FreeRTOS and Standard development kit.
* Support Micro Python on M1
* Machine vision based on convolutional neural network
* High performance microphone array processor

**Applications**

* Smart Home applications like robot cleaners, smart speakers, electronic door locks, household monitoring etc.
* Medical Industry applications like Auxiliary diagnosis and treatment, medical image recognition, emergency alarm etc.
* Smart Industry applications like industrial machinery, intelligent sorting, monitoring of electrical equipment, etc.
* Education applications like educational robots, intelligent interactive platforms, educational efficiency inspection, etc.
* Agriculture applications like agricultural monitoring, pest and disease monitoring, automated control, etc.

**Key Search Terms**

Sipeed, MAIX, m1 dock, RISC-V, Artificial Intelligence, AIoT, Edge, Kendryte K210, Neural Network Processor, Deep Learning, Machine Vision, Voice Recognition, TensorFlow, Yolo, Training model, Keras, Darknet

**Parts List**

* Sipeed M1 dock RISC-V development board x 1
* 2.4-inch LCD x 1
* OV2640 Camera x 1