

Sipeed Maixduino Kit for RISC-V AI + IoT

Product Overview

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Description

Seeed Studio Sipeed Maixduino Kit for RISC-V AI + IoT features the Maixduino development board, the GC0328 camera module, and a 2.4inch TFT display. The Maixduino development board is designed in an Arduino Uno form factor with ESP32 module on board together with MAIX AI module. This kit offers an onboard omnidirectional I²S digital output MEMS microphone, 8bit MCU LCD 24P 0.5mm FPC connector, and high-performance microphone array processor for machine hearing. The Sipeed Maixduino kit supports a self-elastic micro SD card holder, MaixPy IDE, Arduino IDE, OpenMV IDE, and PlatformIO IDE. This kit also supports Tiny-Yolo, Mobilenet and TensorFlow Lite for deep learning.



The Sipeed Maixduino Kit for RISC-V AI + IoT implements machine vision based on a convolutional neural network. MAIX combines custom hardware, open software, and state-of-the-art AI algorithms. Applications include robot cleaners, smart speakers, electronic door locks, medical image recognition, emergency alarm, industrial machinery, and intelligent sorting.

Features

- CPU:
 - RISC-V Dual Core 64bit, with FPU; 400MHz neural network processor
 - QVGA@60FPS/VGA@30FPS image identification
 - Onboard ESP32 module support 2.4G 802.11. b/g/n and Bluetooth 4.2
 - Arduino Uno form factor, Arduino compatible interface
 - Onboard omnidirectional I²S digital output MEMS microphone
 - 24P 0.5mm FPC connector for DVP camera
 - 8-bit MCU LCD 24P 0.5mm FPC connector
 - Support self-elastic micro SD card holder
 - Reset and boot button and 3W DAC+PA Audio output
 - Just connect the USB Type-C cable to complete the download
 - Machine vision based on a convolutional neural network
 - High-performance microphone array processor for machine hearing
 - Support MaixPy IDE, Arduino IDE, OpenMV IDE, and PlatformIO IDE
 - Support Tiny-Yolo, Mobilenet, and TensorFlow Lite for deep learning

Specifications

- Master module:
 - Sipeed MAIX-I AIoT module
- Power input:
 - USB Type-C
 - DC-DC step-down circuit that supports 6V-12V input and provides 5V 1.2A output
- Onboard MEMS microphone:
 - MSM261S4030H0 is an omnidirectional, bottom-ported, and I²S digital output MEMS microphone
- DVP Camera interface:
 - 24P 0.5mm FPC connector
- LCD connector:
 - 8-bit MCU LCD 24P 0.5mm FPC connector
- Audio output:
 - DAC+PA
 - TM8211:
 - 16-bit dynamic range and low harmonic distortion
 - NS4150:
 - 3W output power with up to 90% efficiency
- ESP32 module:
 - Supports 2.4G 802.11.b/g/n
 - 802.11 n (2.4 GHz) speeds up to 150 Mbps
 - Bluetooth v4.2 full standard, including traditional Bluetooth (BR/EDR) and Bluetooth Low Energy (BLE)
- 4.8V to 5.2V supply voltage of external power supply
- >600mA supply current of external power supply
- <30K temperature rise
- -30°C to 85°C range of working temperature
- ESP8285 MCU:
 - Tensilica L106 32-bit MCU
 - 802.11 b/g/n wireless standard
 - 2400Mhz to 2483.5Mhz frequency range
- TX power(conduction test):
 - 802.11.b: +15dBm
 - 802.11.g: +10dBm(54Mbps)
 - 802.11.n: +10dBm (65Mbps)
- IPEX 3mm x 3mm antenna connector
- Wi-Fi mode:
 - Station/SoftAP/SoftAP+Station

Kit Contents

- 1x Maixduino dev. board
- 1x GC0328 camera module
- 1x 2.4 inch TFT display

Applications

- Smart Home:
 - Robot cleaners
 - Smart speakers
 - Electronic door locks
 - Household monitoring
- Medical industry:
 - Auxiliary diagnosis and treatment
 - Medical image recognition
 - Emergency alarm
- Smart industry:
 - Industrial machinery
 - Intelligent sorting
 - Monitoring of electrical equipment
- Education:
 - Educational robots
 - Intelligent interactive platforms
 - Educational efficiency inspection
- Agriculture:
 - Agricultural monitoring,
 - Pest and disease monitoring
 - Automated control

Mouser Part Numbers

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To learn more, visit <https://www.mouser.com/new/seeed-studio/seeed-studio-sipeed-maixduino-kit/>