UnitV-M12

SKU:U078-V-M12

Description

Unit V-M12 is a unique AI camera unit featuring an M12 lens specification and equipped with a K210 processor. It integrates a dual-core 64-bit RISC-V CPU and a neural network processor edge computing system-on-chip, offering powerful hardware configuration. The included **OV7740 wide-angle camera module** adheres to the M12 optical lens specification and supports the replacement of other M12 lenses, providing flexibility for various shooting scenarios.

The camera body features two programmable buttons for quick access to specific functions, along with a microSD card expansion slot to meet data storage needs. The bottom provides a HY2.0-4P interface and a Type-C interface, enabling easy data connection with the main control device.

Unit V-M12 is compact, making it easy to embed into various devices. It boasts excellent machine vision processing capabilities, supporting multiple image recognition functions such as real-time acquisition of target size, coordinates, and type information. It also performs convolutional neural network calculations, offering a low-threshold machine vision embedded solution suitable for a wide range of applications requiring machine vision.

Features

- Dual-core 64-bit RISC-V RV64IMAFDC (RV64GC) CPU / 400Mhz (Normal)
- Double-precision FPU
- 8MiB 64-bit on-chip SRAM
- Neural Network Processor (KPU) / 0.8Tops
- Programmable I/O Array (FPIOA)
- AES, SHA256 Accelerator
- Direct Memory Access Controller (DMAC)
- MicroPython Support
- Firmware Encryption Support
- Onboard Hardware Resources:
  - Flash: 16M
  - Camera: OV7740
  - Buttons: 2
  - Expansion Card Interface: microSD card
  - Interface: HY2.0-4P / compatible GROVE

Includes

- 1 x UnitV-M12
- 1 x HY2.0-4P Grove Cable (20cm)

Applications

- Object Detection/Classification
- Real-time Acquisition of Target Size and Coordinates
- Real-time Acquisition of Detected Target Types
- Shape Recognition
- Video Recording

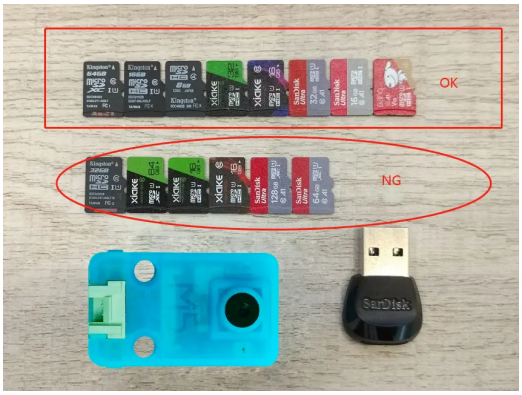
Specifications

Specification	Parameters
Kendryte K210	Dual-core 64-bit RISC-V RV64IMAFDC (RV64GC) CPU / 400Mhz (Normal)
SRAM	8M
Flash	16M
Input Voltage	5V @ 500mA
KPU Neural Network Size	5.5M-5.9M
Interface	Type-C x 1, HY2.0-4P (I2C+I/O+UART) x 1
Buttons	Custom Buttons x 2
Camera	M12 Specification Wide-angle OV7740
FOV	80°
External Storage	TF Card/microSD
Housing Material	Plastic (PC) + CNC Metal
Product Size	40.0 x 24.0 x 16.4mm
Product Weight	13.4g
Package Size	70.0 x 50.0 x 30.0mm
Gross Weight	20.0g

Learn

microSD Card Test

Unit V currently cannot recognize all types of microSD cards. We have tested some common microSD cards, and the results are as follows.



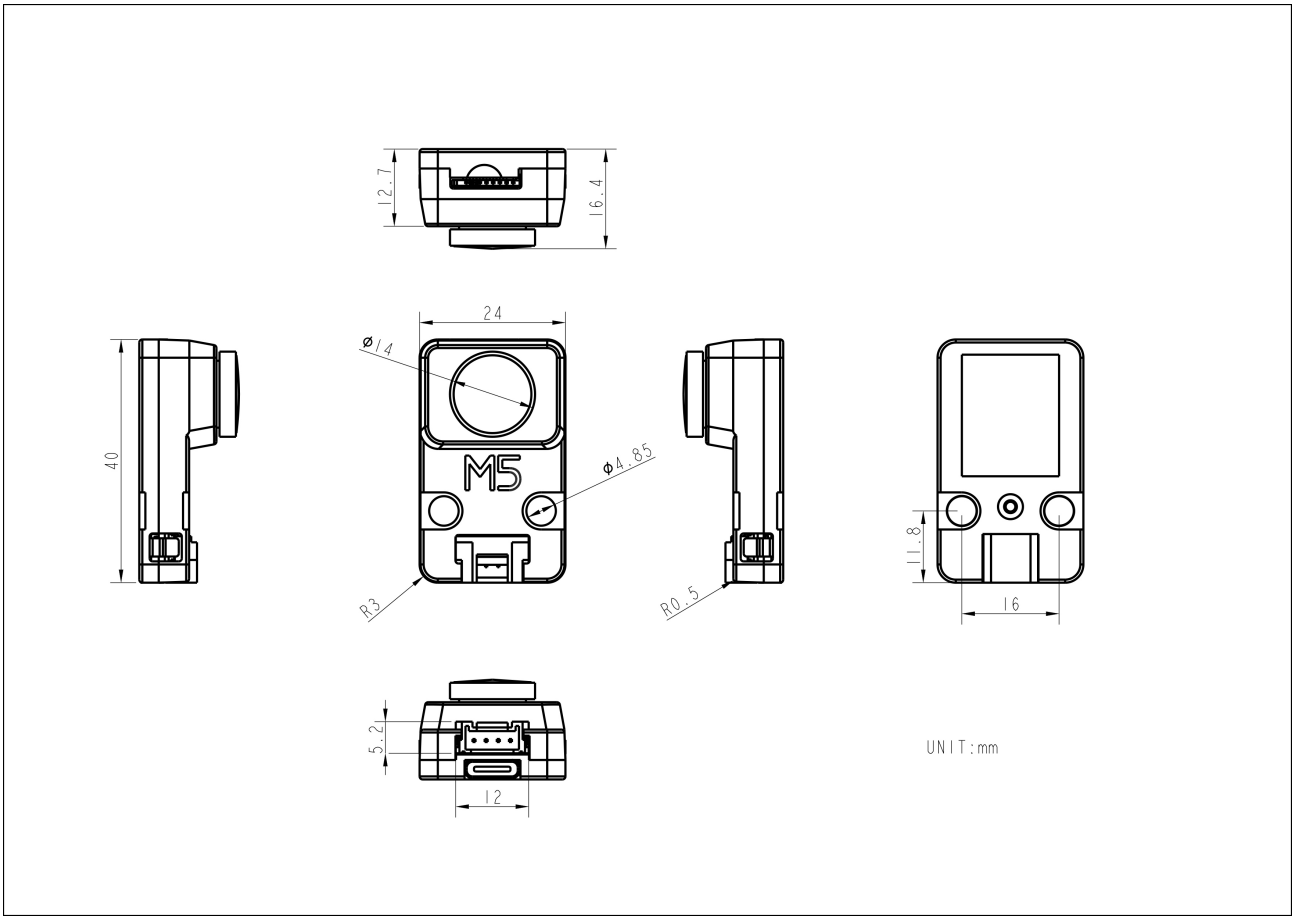
Brand	Memory	Type	Transfer Speed	Partition Format	Test Result
Kingston	8G	HC	Class4	FAT32	OK
Kingston	16G	HC	Class10	FAT32	OK
Kingston	32G	HC	Class10	FAT32	NO
Kingston	64G	XC	Class10	exFAT	OK
SanDisk	16G	HC	Class10	FAT32	OK
SanDisk	32G	HC	Class10	FAT32	OK
SanDisk	64G	XC	Class10	/	NO
SanDisk	128G	XC	Class10	/	NO
XIAKE	16G	HC	Class10	FAT32	OK (Purple)
XIAKE	32G	HC	Class10	FAT32	OK
XIAKE	64G	XC	Class10	/	NO
TURYE	32G	HC	Class10	/	NO

PinMap

UnitV-M12

UnitV	G8	G19	G18	G34, G35
Hardware	RGB LED	Button A	Button B	
HY2.0-4P				Interface

Model Size



Datasheets

- Maixpy docs
- K210 Datasheet
- OV7740 Datasheet

Softwares

Quick Start

- V-Function
- V-Training

- Maixpy

Arduino

- UnitV-M12 Track Ball Example with RoverC

Video

Color Recognition Example

unitV.mp4

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

M5Stack:

U078-V-M12