UNIT-V M12

SKU:U078-V-M12

Tutorial

Choose the development platform you want to use, view the corresponding tutorial&quick-Start.

V-Function V-Training Maixpy

Description

UNIT-V M12 is an AI camera unit with M12 lens specifications and K210 processor, which integrates dual-core 64-bit RISC-V CPU and neural network processor edge computing system-on-chip, it equippes with M12 optical lens **OV7740 wide-angle camera module** (can replace other M12 lenses), the body is equipped with two programmable buttons and TF card expansion slot. Its bottom provides an HY2.0-4P interface and a TYPE-C interface for data connection to the controller. The UNIT-V M12 AI camera is very small, it is suitable for embedding in various devices, with machine vision processing capabilities, supporting a variety of image recognition capabilities (such as real-time acquisition of the size and coordinates of the detected target **Real-time** acquisition of the type of detected target), and it can perform convolutional neural network calculations, which is a low-threshold machine vision embedded solution.

Features

- Dual-Core 64-bit RISC-V RV64IMAFDC (RV64GC) CPU / 400Mhz(Normal)
- Dual Independent Double Precision FPU

- 8MiB 64bit width On-Chip SRAM
- Neural Network Processor(KPU) / 0.8Tops
- Field-Programmable IO Array (FPIOA)
- AES, SHA256 Accelerator
- Direct Memory Access Controller (DMAC)
- Micropython Support
- Firmware encryption support
- On-board Hardware resources:
  - Flash: 16M
  - Camera :OV7740
  - Button: button * 2
  - External storage: TF card/Micro SD
  - Interface: HY2.0/compatible GROVE

Includes

- 1x Unit V M12
- 1x 20cm 4P Grove Cable
- 1x 100cm USB-C Cable

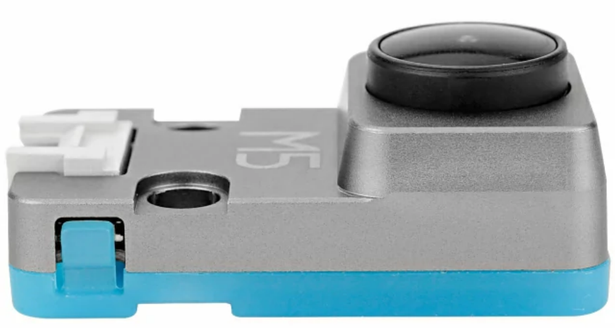
Applications

- Face recognition/detection
- Object detection/classification
- Obtaining size and coordinates of the target in real-time
- Obtaining the type of detected target in real-time
- Shape recognition
- Video recorder

Specification

Resources	Parameters
Kendryte K210	Dual-Core 64-bit RISC-V RV64IMAFDC (RV64GC) CPU / 400Mhz(Normal)
SRAM	8MiB
Flash	16M
Input voltage	5V @ 500mA

Resources	Parameters
KPU Neural network parameter size	5.5MiB - 5.9MiB
Interface	TypeC x 1, GROVE(I2C+I/0+UART) x 1
Button	Custom button x 2
Image Sensor	M12 wide-angle lens ov7740
FOV	80°
External storage	TF Card/Micro SD
shell material	Plastic (PC)+CNC (ALUMINIUM)
Product Size	40* 24* 16.4mm
Package Size	70* 50* 30mm
Product Weight	13.9g
Package Weight	52.6g



Products related to this item

RoverC.Pro (K036-B)

CORE2 (K010)

CORE2 (K010)

CoreS3 (K128)

AtomS3 (C123)

StampS3 (S007)

CORE2 FOR AWS (K010-AWS)

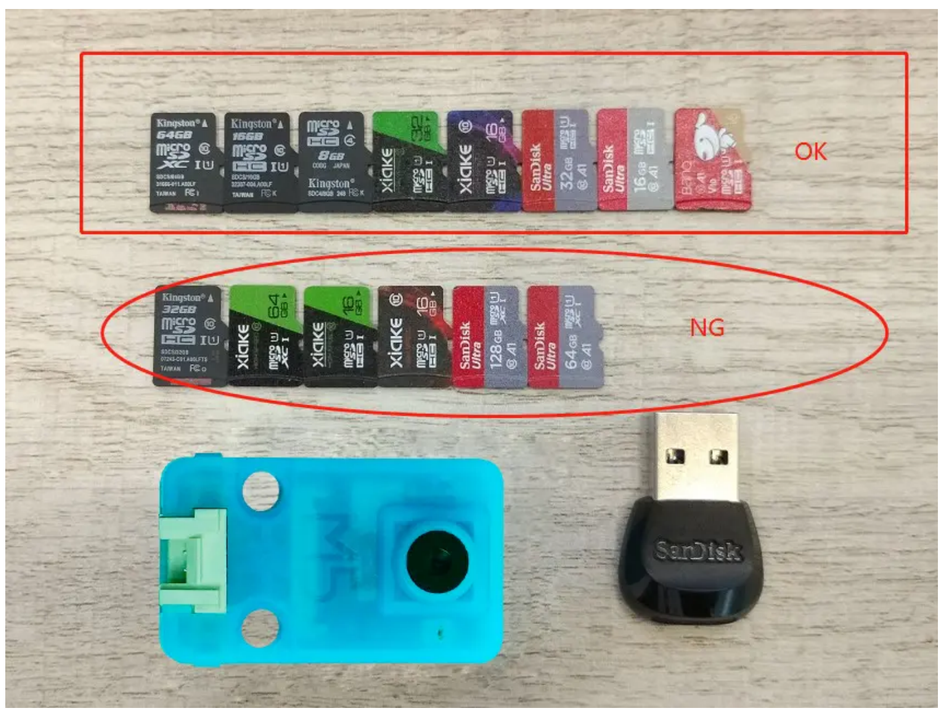
BASIC (K001)

Related Link

- Maixpy docs
- K210 Datasheet
- OV7740 Datasheet

SD card test

UNIT-V does not currently recognize all types of MicroSD cards. We have tested some common SD cards. The test results are as follows.



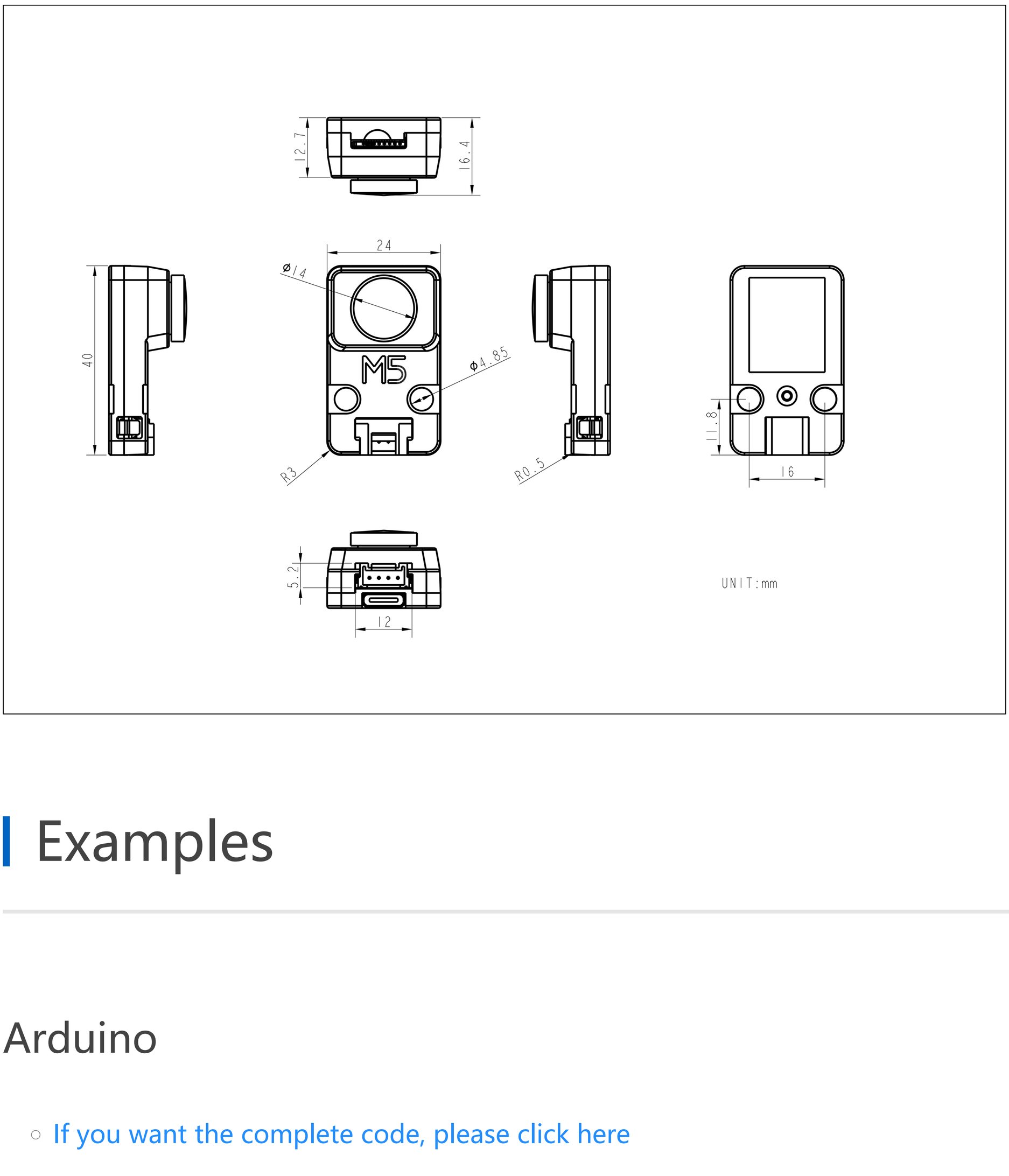
Brand	Storage	Type	Class	Format	Test Results
Kingston	8G	HC	Class4	FAT32	OK
Kingston	16G	HC	Class10	FAT32	OK
Kingston	32G	HC	Class10	FAT32	NO
Kingston	64G	XC	Class10	exFAT	OK
SanDisk	16G	HC	Class10	FAT32	OK
SanDisk	32G	HC	Class10	FAT32	OK
SanDisk	64G	XC	Class10	/	NO
SanDisk	128G	XC	Class10	/	NO
XIAKE	16G	HC	Class10	FAT32	OK(purple)

Brand	Storage	Type	Class	Format	Test Results
XIAKE	32G	HC	Class10	FAT32	OK
XIAKE	64G	XC	Class10	/	NO
TURYE	32G	HC	Class10	/	NO

PinMap

UNIT-V-M12	GPIO19	GPIO18	5V	GND
Hardware	ButtonA	ButtonB	VCC	GND
HY2.0-4P	Interface			

Module Size



Examples

Arduino

- If you want the complete code, please click here

Video

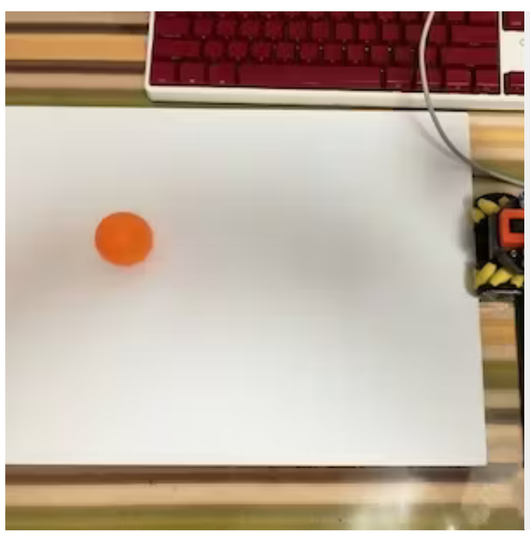
- Color Recognition Example

FAQ

Question: What should I do if the computer does not detect Device?

- UnitV may not work without a drive in some systems, and users can fix this problem by manually installing FTDI drivers (https://ftdichip.com/drivers/vcp-drivers/). Taking the Win10 environment as an example, download the driver file that matches the operating system, extract it, and install it through Device Manager. (Note: In some system environments, you need to install twice before the driver takes effect, the unrecognized device name is usually **M5Stack** or **USB Serial**, Windows recommends using the driver file to install directly in Device Manager (custom update), the executable file installation method may not work normally).

Learn



UnitV with M5Stack Deep Learning and Object Detection

Thank the original author @Canghai

M5Stickv / UNIT-V Analog Meter Readout

Get an image of an analog meter with a camera and read the figures shown by the meter.