ArduCam®

OV5642 Camera Shield for Arduino

Rev 2.0, Sep 2016

Introduction

Arducam-M-5MP is optimized version of Arducam shield Rev.C, and is a high definition 5MP SPI camera, which reduce the complexity of the camera control interface. It integrates 5MP CMOS image sensor OV5642, and provides miniature size, as well as the easy to use hardware interface and open source code library. The Arducam mini can be used in any platforms like Arduino, Raspberry Pi, Maple, Chipkit, Beaglebone black, as long as they have SPI and I2C interface and can be well mated with standard Arduino boards. ArduCAM mini not only offers the capability to add a camera interface which doesn't have in some low cost icrocontrollers, but also provides the capability to add multiple cameras to a single microcontroller.

Application

1. IoT cameras
2. Robot cameras
3. Wildlife cameras
4. Other battery-powered products
5. Can be used in MCU, Raspberry Pi, ARM, DSP, FPGA platforms

Features

1. 5MP image sensor OV5642
2. M12 mount or CS mount lens holder with changeable lens options
3. IR sensitive with proper lens combination
4. I2C interface for the sensor configuration
5. SPI interface for camera commands and data stream
6. All IO ports are 5V/3.3V tolerant
7. Support JPEG compression mode, single and multiple shoot mode, one time capture multiple read operation, burst read operation, low power mode and etc.
8. Well mated with standard Arduino boards
9. Provide open source code library for Arduino, STM32, Chipkit, Raspberry Pi, BeagleBone Black
10. Small form of factor

Functions

1. Single Capture Mode
2. Multiple Capture Mode
3. JPEG Compression
4. Normal Read and Burst Read Operation
5. Rewind Read Operation
6. Low Power Mode
7. Image Sensor Control

Pin Definition

Pin No.	PIN NAME	TYPE	DESCRIPTION
1	CS	Input	SPI slave chip select input
2	MOSI	Input	SPI master output slave input
3	MISO	Output	SPI master input slave output
4	SCLK	Input	SPI serial clock
5	GND	Ground	Power ground
6	+5V	POWER	5V Power supply
7	SDA	Bi-directional	Two-Wire Serial Interface Data I/O
8	SCL	Input	Two-Wire Serial Interface Clock

Key Specification

Power supply: Normal: 5V/390mA, Low power mode: 5V/20mA
Active array size: 2592x1944
Shutter: rolling shutter
Lens: 1/4 inch
SPI speed: Max 8MHz
Resolution support: 5MP, 1080p, 720p, VGA, QVGA
Frame buffer: 512KB
Format support: RAW, YUV, RGB, JPEG
Pixel Size: 1.4µm x 1.4µm
Temperature: -10℃～+55℃

Typical Wiring

The typical connection between Arducam shield and Arduino or etc platform is shown in the Figure 1.
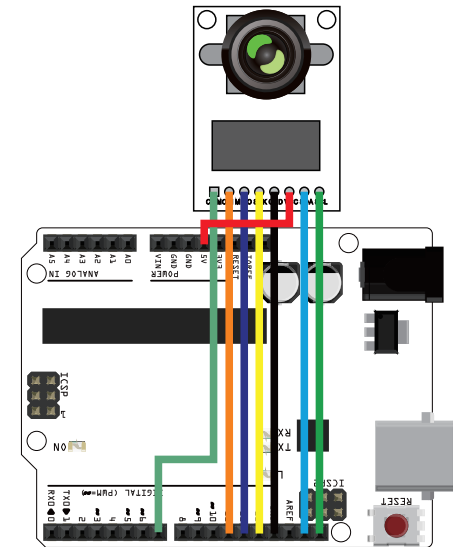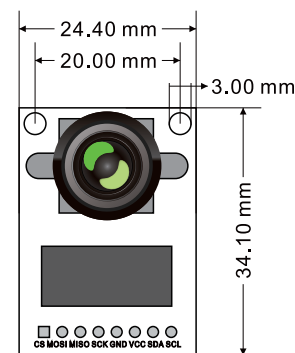

Figure 1 Typical Wiring

Mechanical Dimension

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