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OV3660 Camera Module 75MM User Manual

For ESP32 CAM and ESP32 S3 Development Boards

1. INTRODUCTION

This manual provides essential information for the proper setup, operation, and maintenance of your OV3660 Camera Module with a 75mm Flexible Flat Cable (FFC). Designed for integration with ESP32 CAM and ESP32 S3 development boards, this module offers high-definition imaging capabilities for various embedded vision applications.

2. PRODUCT OVERVIEW

The OV3660 Camera Module is a compact imaging solution featuring a 3-megapixel sensor. It connects via a DVP 24PIN interface, making it suitable for

various microcontroller projects. Available in multiple lens angles, it provides flexibility for different field-of-view requirements.

2.1 Components

- OV3660 Camera Sensor
- 75mm Flexible Flat Cable (FFC)
- 24-pin DVP Interface Connector
- Lens (available in 68, 80, 120, 160 degrees)

2.2 Features

- High Definition 3-Megapixel (3MP) Resolution
- DVP 24PIN Interface for easy integration
- Supports YUV and RGB output formats
- Multiple lens angle options: 68°, 80°, 120°, 160°
- Compatible with ESP32 CAM and ESP32 S3 Development Boards



Figure 1: OV3660 Camera Modules with various lens angles (68, 80, 120, 160 degrees) and 75mm FFC cable.



Figure 2: Side view of OV3660 Camera Modules, showing 75mm FFC cable length.

3. SPECIFICATIONS

Attribute	Value
Sensor Model	OV3660
Resolution	3 Megapixels (3MP)
Interface	DVP 24PIN

Attribute	Value
Output Format	YUV, RGB
Cable Length	75mm (FFC)
Lens Angles Available	68°, 80°, 120°, 160°
Compatibility	ESP32 CAM, ESP32 S3 Development Boards
Package Type	SMD
Approximate Weight	0.007 kg
Approximate Package Dimensions (L x W)	9 cm x 13 cm

4. SETUP AND INSTALLATION

Follow these steps to correctly install your OV3660 Camera Module onto a compatible development board.

1. **Prepare the Development Board:** Ensure your ESP32 CAM or ESP32 S3 development board is powered off and disconnected from any power source.
2. **Locate the DVP Interface:** Identify the 24-pin DVP camera interface connector on your development board.
3. **Connect the Camera Module:** Carefully insert the 24-pin FFC of the OV3660 Camera Module into the DVP interface connector on the development board. Ensure the FFC is inserted straight and fully seated, with the contacts facing the correct direction (usually indicated by a small arrow or pin 1 marking on the FFC and connector).

4. **Secure the Connector:** If your development board's connector has a locking mechanism (e.g., a flip-up or slide-in type), gently secure it to hold the FFC in place.
5. **Position the Camera:** Position the camera module and FFC to avoid strain on the cable or obstruction of other components.
6. **Power On:** Once the camera module is securely connected, you can power on your development board.

Caution: Improper insertion of the FFC can damage the module or the development board. Always handle the FFC and connectors with care.



Figure 3: Close-up of a 68-degree OV3660 Camera Module, highlighting the 24-pin DVP interface for connection.

5. OPERATING INSTRUCTIONS

The OV3660 Camera Module functions as a peripheral to your ESP32 CAM or ESP32 S3 development board. Its operation is primarily controlled through software programming on the host board.

1. **Software Configuration:** You will need to write or use existing firmware for your ESP32 board that supports the OV3660 sensor. This typically involves configuring the camera driver, setting resolution, frame rate, and output format (YUV/RGB).
2. **Initialization:** In your code, initialize the camera module by calling the appropriate functions provided by the ESP32 camera library.
3. **Image Capture:** Use the camera API to capture still images or stream video data. The captured data will be available in the specified YUV or RGB format for further processing or transmission.
4. **Data Processing:** Implement your desired image processing, analysis, or streaming logic on the ESP32 board.

Refer to the documentation and examples provided by the ESP32 development community (e.g., Espressif's official documentation, Arduino IDE examples for ESP32-CAM) for specific programming details and code examples.

6. MAINTENANCE

- **Handling:** Always handle the camera module by its edges or the FFC, avoiding touching the lens or the sensor directly.
- **Cleaning:** If the lens becomes dusty, gently clean it with a soft, lint-free cloth or a specialized lens cleaning pen. Do not use abrasive materials

or harsh chemicals.

- **Storage:** Store the module in a dry, anti-static environment, away from direct sunlight and extreme temperatures.
- **Moisture:** Keep the module away from moisture and liquids to prevent damage to electronic components.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Camera not detected / No image output	Loose FFC connection; Incorrect wiring; Software configuration error; Faulty module/board.	Ensure FFC is fully seated and locked. Double-check pin connections. Verify software configuration (e.g., correct sensor model, pin assignments). Test with a known working board/module if possible.
Image is distorted or corrupted	Poor FFC connection; Insufficient power supply; Incorrect clock settings; Electromagnetic interference.	Reseat FFC. Ensure stable power supply to the ESP32 board. Check camera clock settings in software. Keep module away from strong electromagnetic fields.
Camera module gets hot	Normal operation (some heat is expected); Overvoltage; Short circuit.	Monitor temperature; if excessively hot, immediately disconnect power. Verify power supply voltage. Check for any visible shorts.

8. USER TIPS

- When selecting a lens angle, consider your application's field-of-view requirements. Wider angles (e.g., 160°) are suitable for general surveillance, while narrower angles (e.g., 68°) are better for focused imaging.
- Always ensure your ESP32 development environment (Arduino IDE, ESP-IDF) and camera libraries are up-to-date for optimal performance and compatibility.
- For long-term projects, consider adding a small amount of hot glue or tape to secure the FFC connection once it's confirmed to be working, to prevent accidental disconnections.

9. WARRANTY AND SUPPORT

This product is supplied by Global Super Factory Store. For any technical support, warranty claims, or inquiries regarding the product, please contact the seller directly through the platform where the purchase was made. Please retain your proof of purchase for any warranty-related requests.

Related Documents - OV3660 75MM

	ESP32-S3-CAM Development Board with OV3660 Camera Module Technical specifications and features of the ESP32-S3-CAM development board, including Wi-Fi, Bluetooth 5, dual Type-C ports, and OV3660 camera integration.
	JOY-IT ESP32 Camera Module SBC-ESP32-Cam User Guide Comprehensive guide for the JOY-IT ESP32 Camera Module (SBC-ESP32-Cam), covering setup with Arduino IDE, pinout details, example programs, and usage

	instructions for IoT projects. Includes information on development environment configuration and accessing the web server.
	ESP32-CAM WiFi Bluetooth Camera Development Board Module User Guide Comprehensive guide to the ESP32-CAM-MB WiFi Bluetooth Development Board, covering its features, specifications, pinout, power consumption, and setup instructions for Arduino IDE.
	Aideepen ESP32-CAM Operation Instruction and Specifications Explore the Aideepen ESP32-CAM, a versatile camera module with Wi-Fi and Bluetooth. This guide covers product introduction, features like dual-core processing and PSRAM, performance parameters, RF specifications, and initial usage instructions for IoT applications and smart device development.
	Joy-IT SBC-ESP32-Cam Camera Module User Manual Comprehensive user manual for the Joy-IT SBC-ESP32-Cam camera module. Includes setup instructions, pinout diagrams, Arduino IDE configuration, and example code.
	ESP32-CAM: Arduino IDE Setup for Video Streaming and Photography A comprehensive guide to setting up the Arduino IDE for the ESP32-CAM module. Learn how to install the IDE, configure the ESP32 board support, and run the example code for video streaming and taking photos.

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