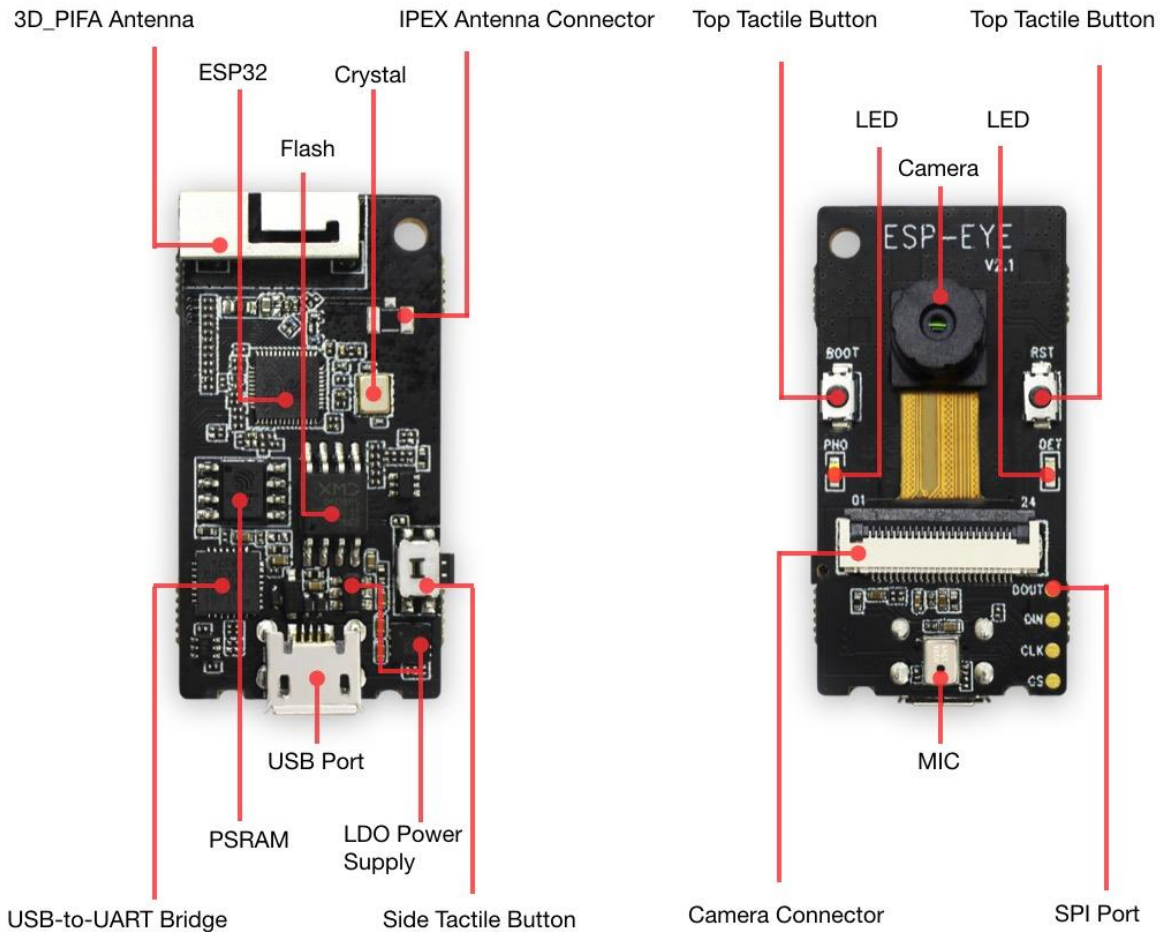# ESP-EYE Getting Started Guide

What You Need

- 1 × ESP-EYE V2.1 board
- 1 × Micro USB cable
- 1 × PC with Windows, Linux or Mac OS

Overview

ESP-EYE is an ESP32-based development board that integrates a digital microphone, an 8 MB PSRAM and a 4 MB flash, while also providing an external 2-Megapixel camera. These features make the board ideal for applications relating to face detection, face recognition and speech recognition. Besides, the board can also support image transmission over Wi-Fi and debugging through a Micro USB port, which enables the development of advanced AI solutions.

Hardware Preparation

The list and figure below describe the key components, interfaces and functions of the ESP-EYE development board:

3D_PIFA Antenna

IPEX Antenna Connector

Top Tactile Button

Top Tactile Button

ESP32

Crystal

LED

LED

Flash

Camera

ESP-EYE
v2.1

BOOT

RST

PHO

OET

Q1

24

DOUT

QAN

CLK

CS

USB Port

MIC

PSRAM

LDO Power
Supply

USB-to-UART Bridge

Side Tactile Button

Camera Connector

SPI Port

- **3D_PIFA Antenna**

  A 3D PIFA antenna. With the R14 resistor users can select the external IPEX antenna, whereas with the R15 resistor they can select the 3D antenna.

- **IPEX Connector**

  Used for connecting the external IPEX antenna. With the R14 resistor users can select the external IPEX antenna, whereas with the R15 resistor they can select the 3D antenna.

- **ESP32 Chip**

  A 2.4 GHz Wi-Fi and Bluetooth combo chip.

- **Crystal Oscillator**

Provides an external clock to ESP32.

- **Flash & PSRAM**

  Provides memory for storing applications.

- **CP2102 USB-to-UART Chip**

  Converts the USB signals to UART signals.

- **USB Port**

  Provides power supply to the whole system.

- **LDO Power Supply**

  Provides the required power supply to the ESP32 chip, camera and LED indicators.

- **Side Tactile Button**

  A function key.

- **Top Tactile Button**

  Reset/Boot button. We recommend that you do not configure this button for other uses.

- **LED Indicators**

  The board has a red and a white indicator. Different flashing combinations of the red and white indicators reflect the different statuses of the board, e.g. waking up, networking, face detection, face recognition, face enrollment and face recognition.

- **Camera**

  An external 2-Megapixel camera module for face detection, face recognition and Face ID enrollment.

- **Camera Connector**

  Used for connecting the external camera.

- **MIC**

A digital microphone for voice control functions.

- **SPI Port**

A reserved port for data transmission.