

**CONNECTION OF MICRO SD CARD WITH FLASH MEMORY OF ESP32**



February 26, 2024

**Hardware Setup:**

**Ensure you have the necessary components:**

* ESP32 development board.
* MicroSD card module (or an SD card breakout board).
* MicroSD card (8/64GB).
* Jumper wires.

**Connect the components as follows:**

* Connect VCC on the MicroSD card module to 5V on the ESP32.
* Connect GND on the MicroSD card module to GND on the ESP32.
* Connect MISO on the MicroSD card module to the corresponding SPI MISO pin on the ESP32 (usually GPIO 19).
* Connect MOSI on the MicroSD card module to the corresponding SPI MOSI pin on the ESP32 (usually GPIO 23).
* Connect SCK on the MicroSD card module to the corresponding SPI SCK pin on the ESP32 (usually GPIO 18).
* Connect CS on the MicroSD card module to the SPI CS pin on the ESP32 (you can choose any GPIO pin, e.g., GPIO 5).

**Software Setup:**

* Install the ESP32 board support in the Arduino IDE if you haven't already.
* Open Arduino IDE, go to File -> Preferences.
* Add https://dl.espressif.com/dl/package\_esp32\_index.json to the "Additional Boards Manager URLs."
* Go to Tools -> Board -> Boards Manager, search for ESP32, and install the "esp32" by Espressif Systems.
* Install the SD card library:
* Go to Sketch -> Include Library -> Manage Libraries.
* Search for "SD" and install the "SD" library by Adafruit.

**Sample Code:**

**Here's a basic example code to get you started:**

#include <SPI.h>

#include <SD.h>

const int chipSelect = 5; // Use the CS pin you connected

void setup() {

Serial.begin(115200);

// Check if the card is present and can be initialized:

if (!SD.begin(chipSelect)) {

Serial.println("Card failed, or not present");

return;

}

Serial.println("Card initialized.");

// List files in the root directory:

File root = SD.open("/");

printDirectory(root);

}

void loop() {

// Nothing to do here

}

void printDirectory(File dir, int numTabs = 0) {

while (true) {

File entry = dir.openNextFile();

if (!entry) {

// no more files

break;

}

for (uint8\_t i = 0; i < numTabs; i++) {

Serial.print('\t');

}

Serial.print(entry.name());

if (entry.isDirectory()) {

Serial.println("/");

printDirectory(entry, numTabs + 1);

} else {

// files have sizes, directories do not

Serial.print("\t\t");

Serial.println(entry.size(), DEC);

}

entry.close();

}

}

**Testing:**

After uploading the code, open the Serial Monitor (Tools -> Serial Monitor) and observe the output. You should see the files and directories present on your SD card.

Remember to adjust the CS pin in the code if you used a different pin for the chip select during the hardware setup.