# ESP32 Connection Table

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| Component | Pin on Module | ESP32 GPIO | Notes |
| RFID (RC522) | SDA (SS) | GPIO 5 | SPI SS (CS) |
|  | SCK | GPIO 18 | SPI Clock |
|  | MOSI | GPIO 23 | SPI MOSI |
|  | MISO | GPIO 19 | SPI MISO |
|  | RST | GPIO 22 | Reset pin |
|  | VCC | 3.3V | ⚠️ Do NOT use 5V |
|  | GND | GND | Common ground |
| OLED Display | SDA | GPIO 16 | Custom I2C SDA |
|  | SCL | GPIO 17 | Custom I2C SCL |
|  | VCC | 3.3V |  |
|  | GND | GND |  |
| Green LED 1 | Anode (+) | GPIO 12 | System Ready LED |
|  | Cathode (–) | GND | Via 220Ω resistor |
| Green LED 2 | Anode (+) | GPIO 14 | Wi-Fi Connected LED |
|  | Cathode (–) | GND | Via 220Ω resistor |
| Red LED | Anode (+) | GPIO 27 | Error Indicator |
|  | Cathode (–) | GND | Via 220Ω resistor |
| Piezo Buzzer | Positive (+) | GPIO 4 | Passive buzzer (uses tone()) |
|  | Negative (–) | GND |  |
| DIP Switch 1 (LSB) | One leg | GPIO 32 | Station Bit 0 |
| DIP Switch 2 | One leg | GPIO 33 | Station Bit 1 |
| DIP Switch 3 | One leg | GPIO 25 | Station Bit 2 |
| DIP Switch 4 | One leg | GPIO 26 | Station Bit 3 |
| DIP Switch 5 | One leg | GPIO 13 | Station Bit 4 |
| DIP Switch 6 (MSB) | One leg | GPIO 15 | Station Bit 5 |
| All DIP GND legs | Other leg | GND | Use INPUT\_PULLUP logic (ON = LOW) |
| Push Switch 1 | One leg | GPIO 0 | Use INPUT\_PULLUP |
| Push Switch 2 | One leg | GPIO 2 | Use INPUT\_PULLUP |
|  | Other legs | GND |  |
| Mini-Din 1 |  | GPIO 36 | Can only be set as input, internal pull-up and pull-down are not enabled |
| Mini-Din 2 |  | GPIO 39 | Can only be set as input, internal pull-up and pull-down are not enabled |
| Mini-Din 3 |  | GPIO 34 | Can only be set as input, internal pull-up and pull-down are not enabled |
| Mini-Din 4 |  | GPIO 35 | Can only be set as input, internal pull-up and pull-down are not enabled |
| Mini-Din 5 |  | 3.3V |  |
| Mini-Din 6 |  | GND |  |