

Power

The diagram illustrates the power supply section of a Raspberry Pi 4B. It features two voltage regulators: U9 (TLV70233DBVR) and U10 (MCP73832T). U9 is a 3V3 LDO regulator connected to VCC and GND. U10 is a 5V LDO regulator connected to +5V and GND. The diagram also shows the connection of the LED1 (19-213/R6C-AM2P1VY/BT) and the SW1 (SSSS811101) switch.

[illegible]

ESP32-WROVER MODULE

The diagram illustrates the connection between an ESP32-WROVER module (U12) and an EP3C10K100-1000F036 FPGA. The ESP32 module is powered by a 3V3 supply through a 100nF capacitor (C1) and a 10K resistor (R1). The EN pin is connected to the 3V3 supply. The I2C interface is connected to the SCL and SDA pins of the ESP32 module, which are connected to the SCL and SDA pins of the FPGA. The UART interface is connected to the TXD0 and RXD0 pins of the ESP32 module, which are connected to the TX and RX pins of the FPGA. The diagram also shows the connection of the IO pins of the ESP32 module to the IO pins of the FPGA.

Ecg Signal

The diagram illustrates the internal circuitry of an ECG signal processing module. It features an AD8232 IC, which is configured to interface with an external ECG sensor (LA, RLD, RA) and a microcontroller (IO36).

Key Components and Connections:

- AD8232 IC:** The central component, with pins labeled HPDRIVE, HPSENSE, +IN, -IN, RLDFB, RLD, SW, OPAMP+, REFOUT, OPAMP-, OUT, LO+, and LO-.
- Power Supply:** A 3V3 supply is connected to the circuit. A 0.33uF capacitor (C2) is connected between the 3V3 supply and the HPSENSE pin. A 0.33uF capacitor (C5) is connected between the 3V3 supply and the REFOUT pin. A 0.1uF capacitor (C12) is connected between the 3V3 supply and the GND pin.
- Resistors:** Various resistors are used for signal conditioning and biasing, including R15, R16, R18, R20, R23, R24, R25, R26, R27, R28, R30, R32, R33, R34, R35, and R36.
- Capacitors:** In addition to C2, C5, and C12, there are capacitors C6 (1nF), C7 (0.1uF), C8 (1.5nF), C9 (10nF), and C10 (10nF).
- LED and Microcontroller:** An LED (LED2) is connected to the REFOUT pin. A microcontroller (IO36) is connected to the OUT pin.
- Grounding:** The circuit is grounded at multiple points, including the GND pin of the AD8232 and the GND_PAD.

The circuit is designed to accurately capture and process ECG signals, providing a clear and reliable output for further analysis or display.

[illegible]

Accelerometer

BMP280

U8
BMP280

3V3

0.1uF

C14

0.1uF

C15

GND

8 VDD

7 GND

6 VDDIO

5 SDO

1 GND

2 CSB

3 SDI

4 SCK

SDA

SCL

1	2	3	4	5	6	7	8
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