

The diagram shows a USB-to-Battery Charger circuit. It features a 5V input connected to a B540C-13-F diode (D1) and a DMG3415U MOSFET (U3). The MOSFET's gate is connected to a BAT input. The MOSFET's drain is connected to a 3.3V output, which is also connected to a 10uF capacitor (C1). The MOSFET's source is connected to a 100k resistor (R34) and a 10uF capacitor (C13). The 100k resistor (R34) is connected to the VIN pin of an AP2112K-3.3TRG1 DC-DC converter (U4). The GND pin of the converter is connected to ground, and the EN pin is connected to a 100k resistor (R33) and ground. The VOUT pin of the converter is connected to the 3.3V output, and the NC pin is connected to ground. A 10uF capacitor (C1) is connected to the 3.3V output and ground.

# Proxi Sense

The diagram shows the wiring for a Proxi Sense module. The sensor, U7 VCNL36821S, is connected to a +3V3 supply and ground. The connections are as follows:

- Pin 1 (GND):** Connected to ground.
- Pin 2 (INT):** Connected to a +3V3 supply through a 10k resistor (R6).
- Pin 3 (NC):** Not connected (marked with a green X).
- Pin 4 (LED\_LED\_A):** Not connected (marked with a green X).
- Pin 5 (VDD):** Connected to a +3V3 supply through a 10uF capacitor (C19).
- Pin 6 (SCL):** Connected to a +3V3 supply through a 10uF capacitor (C18).
- Pin 7 (SDA):** Connected to a +3V3 supply through a 10uF capacitor (C18).
- Pin 8 (IO3):** Connected to a +3V3 supply through a 3.3k resistor (R7).
- Pin 9 (IO46):** Connected to a +3V3 supply through a 3.3k resistor (R8).

The diagram illustrates the wiring for the Raspberry Pi 40-pin header. The connections are as follows:

- Power Pins:**
  - +A2V8:** Connected to pin 1 (red).
  - +A1V5:** Connected to pin 6 (green).
  - +D3V3:** Connected to pin 9 (green).
  - +3V3:** Connected to pin 24 (green) through resistor R31 (10k).
- Ground Pins:**
  - GND:** Connected to pins 3, 4, 5, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 (green).
- Data Pins:**
  - I2C\_SDA:** Connected to pin 2 (green).
  - I2C\_SCL:** Connected to pin 3 (green).
  - CAM\_RESET:** Connected to pin 4 (green).
  - DVP\_VSYNC:** Connected to pin 5 (green).
  - PWDN:** Connected to pin 6 (green).
  - DVP\_HREF:** Connected to pin 7 (green).
  - DVP\_Y9:** Connected to pin 8 (green).
  - XMCLK:** Connected to pin 9 (green).
  - DVP\_Y8:** Connected to pin 10 (green).
  - DVP\_Y7:** Connected to pin 11 (green).
  - DVP\_PCLK:** Connected to pin 12 (green).
  - DVP\_Y6:** Connected to pin 13 (green).
  - DVP\_Y2:** Connected to pin 14 (green).
  - DVP\_Y5:** Connected to pin 15 (green).
  - DVP\_Y3:** Connected to pin 16 (green).
  - DVP\_Y4:** Connected to pin 17 (green).
- Resistors:**
  - R31 (10k):** Connected between +3V3 and pin 24.
  - R30 (10k):** Connected between pin 24 and GND.

The diagram illustrates the placement of decoupling capacitors for various power rails. It shows four capacitors: C10 (4.7uF) and C11 (100nF) connected to the +3V3 and +D3V3 rails respectively; C9 (4.7uF) connected to the +2V8 rail; and C12 (100nF) connected to the +1V5 rail. All capacitors are connected to ground (GND).

The diagram shows the Gyro Sense module (BMA253) connected to a +3V3 supply. The module is a BMA253 (U5) with pins for SDO, SDX, SDO, SDO, VDDIO, and VDD. It also has pins for NC, INT1, INT2, INT3, INT4, and INT5. The module is connected to a +3V3 supply and ground. The module is labeled 'Gyro Sense' in blue text.

Timing diagram for DVP\_Y signals. The diagram shows eight horizontal green lines representing DVP\_Y9 through DVP\_Y0. Above each line, a red box indicates a pulse. The pulses are labeled with IO signals and their corresponding R values: IO16 (R21, 0), IO17 (R20, 0), IO18 (R19, 0), IO12 (R18, 0), IO11 (R17, 0), IO10 (R16, 0), IO9 (R22, 0), and IO8 (R23, 0).