

Power and Battery

The diagram illustrates a power management circuit for a device. It includes a USB power input section, a battery connection section, and a central control section with several ICs.

USB Power Input: A USB_B_Micro connector (J1) provides +5P and GND connections. The +5P line passes through a 10k resistor (R1) to the USB Power in (+5P) terminal. The GND line connects to GNDND.

Battery Connection: A battery pack (BATPSE) is connected to a BATT terminal. The battery pack includes a BATTSE pin, a 1.5A pin, and a 1.5A pin. The BATTSE pin connects to the BATT terminal. The 1.5A pin connects to the BATT terminal. The 1.5A pin connects to the BATT terminal.

Central Control Section: This section contains several ICs and components:

- IC1 (MCP73831T-2AELMC):** A battery protection IC. Its VDD_1, VDD_2, VBAT_1, and VBAT_2 pins are connected to the BATT terminal. Its PROG pin is connected to a 10k resistor (R4) and a 100mA Charge pin. Its NC pin is connected to GND. Its VSS pin is connected to GND. Its STAT pin is connected to a 100k resistor (R5) and a +3V0 terminal. Its GND pin is connected to GND.
- IC2 (S-1000C32-14T1U):** A voltage detector IC. Its VDD pin is connected to the BATT terminal. Its OUT pin is connected to the OUT driven low when voltage is less than 3.2 Low Voltage Cutoff pin. Its NC pin is connected to GND. Its VSS pin is connected to GND. Its GND pin is connected to GND.
- IC3 (AP2112K-3.3V):** A voltage regulator IC. Its VIN pin is connected to the +3V0 terminal. Its VOUT pin is connected to the +3V0 terminal. Its GND pin is connected to GND. Its BP pin is connected to GND.
- Capacitors:** C1 (10uF), C2 (10uF), C3 (10uF), C4 (10uF), C5 (10uF), C6 (10uF), C7 (10uF), and C8 (0.1uF) are connected to various pins and terminals.
- Resistors:** R1 (10k), R4 (10k), and R5 (100k) are connected to various pins and terminals.
- Other Components:** A 600pF capacitor is connected to the BATT terminal. A 1.5A pin is connected to the BATT terminal. A 1.5A pin is connected to the BATT terminal. A 1.5A pin is connected to the BATT terminal.

Output and Status: The circuit provides a +3V0 output and a +BATT output. The +3V0 output is connected to the +3V0 terminal. The +BATT output is connected to the +BATT terminal. The +BATT terminal is also connected to the BATT terminal.

SOC and FLASH

The diagram illustrates a sensor module circuit. It features a temperature, pressure, humidity, and VOC sensor (U6: BME680) connected to a microcontroller (U7: APDS-9960) via I2C. The microcontroller is also connected to a gesture sensor (U5: LSM9DS1) and a microphone (MIC1). The diagram shows various power supply connections (3V0, GND) and component values (resistors, capacitors, switches).

U6: BME680 (Temp. Pressure, Humidity, VOC)

- VDDIO: 3V0
- GND: GND
- IIC_SCL: 100k
- IIC_SDA: 100k
- SCK: 100k
- SDI: 100k
- SDO: 100k

U7: APDS-9960 (Gesture Sensor)

- VDD: 3V0
- GND: GND
- LEDB: 3V0
- LDR: 3V0
- INT: 3V0
- SCL: IIC_SCL
- SDA: IIC_SDA
- LED_A: 3V0

U5: LSM9DS1 (Gesture Sensor)

- VDD: 3V0
- VDDIO: 3V0
- DEN_A/G: 3V0
- INT1_M: 3V0
- INT1_A/G: 3V0
- INT2_A/G: 3V0
- DRDY_M: 3V0
- RES: 3V0
- GND: GND
- IIC_SCL: 100k
- IIC_SDA: 100k
- SCL/SPC: 100k
- SDO_A/G: 100k
- SDA/SDI/SDO: 100k
- SDO_M: 100k
- CS_M: 100k
- CS_A/G: 100k
- CS_B: 100k
- CS_A: 100k
- CS_B: 100k
- CS_C: 100k
- CS_D: 100k
- CS_E: 100k
- CS_F: 100k
- CS_G: 100k
- CS_H: 100k
- CS_I: 100k
- CS_J: 100k
- CS_K: 100k
- CS_L: 100k
- CS_M: 100k
- CS_N: 100k
- CS_O: 100k
- CS_P: 100k
- CS_Q: 100k
- CS_R: 100k
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- CS_FV: 100k
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- CS_GY: 100k
- CS_GZ: 100k
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- CS.HG: 100k
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- CS_HI: 100k
- CS_HJ: 100k
- CS_HL: 100k
- CS_HM: 100k
- CS_HN: 100k
- CS_HO: 100k
- CS_HP: 100k
- CS_HQ: 100k
- CS_HR: 100k
- CS_HS: 100k
- CS_HT: 100k
- CS_HU: 100k
- CS_HV: 100k
- CS_HW: 100k
- CS_HX: 100k
- CS_HY: 100k
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- CS_IC: 100k
- CS_ID: 100k
- CS_IE: 100k
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Testpoints

Diagram illustrating test points (TP1 through TP12) and their connections to various power sources and components:

- TP1: RESET
- TP2: SWCLK
- TP3: SWDIO
- TP4: D+
- TP5: D-
- TP6: IIC_SDA
- TP7: +3V0
- TP8: VBUS
- TP9: +5P
- TP10: +5BATT
- TP11: GND
- TP12: +5BATT

