

The diagram illustrates the internal circuitry of the BT module. Key components include:

- U5:** The main microcontroller, an ESP8266, which is connected to various pins including VDD, GND, SCL, SDA, BT (EN), CLK, CLKIO, INT, and GND. It is also connected to a diode D10 and a capacitor C47.
- U10:** An EEPROM 64K memory chip connected to U5 via SCL and SDA lines.
- D10:** A diode connected to the microcontroller and a backup battery B1.
- C47:** A capacitor connected to the microcontroller and the backup battery.
- B1:** A backup battery connected to the microcontroller and the capacitor.
- J3:** A BT module connector with pins for SDA, SCL, and EXP.
- Power Supply:** A section at the top left showing VDD, GND, and resistors R31 and R30.

NOTE: exRTC provides BT clock.

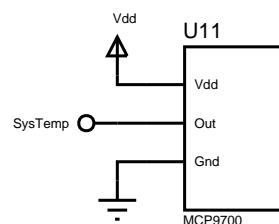


Diagram illustrating the SD card interface circuit. The circuit includes a 10uF capacitor (C42) connected to the SD_CD pin. A 10k resistor (R29) is connected between Vdd SD and the SD_CD pin. The SD card pins are labeled: SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0, SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0, SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0. The SD card is labeled M1.

The schematic diagram illustrates the LED driver circuit. At the top, a power source labeled 'SW' is connected to a resistor 'R5' with a value of '100'. This resistor is connected to a switch 'S1' labeled 'BUTTON'. The switch has two terminals, '1' and '2'. Terminal '1' is connected to the 'SW' source, and terminal '2' is connected to ground. Below the switch, there are ten identical LED driver stages. Each stage consists of an LED (LED1 through LED10) connected in series with a resistor (R15 through R21, all with a value of '100'). The LEDs are connected to the resistors, which are then connected to diodes (D2 through D9). The diodes are connected to ground. The circuit is grounded at the bottom.

The schematic diagram illustrates the power supply section of the PCB, featuring several key components and their interconnections:

- USB Input:** A USB connector (J2) provides Vbus, D-, and D+ signals. A 4kH1 resistor is connected to ground. A USB_DETECT signal is shown.
- Battery Input:** A BATT connector provides Vbat and GND signals. A 1M resistor (R32) is connected to Vbat, and a 1M resistor (R33) is connected to GND. A 1uF capacitor (C49) is connected between Vbat and GND. A 1M resistor (R40) is connected to Vbat, and a 1M resistor (R41) is connected to GND. A 100nF capacitor (C5) is connected between Vbat and GND.
- Voltage Regulators:**
 - U13 (MCP2302):** A digital-to-analog converter (DAC) with VBAT, VDD, VSS, and PROG pins. A 2.2k resistor (R39) is connected to the PROG pin.
 - U15 (TPS2113ADRB):** A DC-DC converter with IN1, IN2, VSEN, EN, STAT, and ILM pins. A 1.6A limit is indicated.
 - U14 (MCP1722T-ADUEMF):** A DC-DC converter with VIN, GND, VOUT, SENSE, and PWRGD pins. A 4.13V nominal output is indicated.
 - U6 (MCP1722T-ADUEMF):** A DC-DC converter with VIN, GND, VOUT, SENSE, and PWRGD pins. A 3.34V nominal output is indicated.
- Resistors:** Various resistors are used for current limiting and signal conditioning, including R32, R33, R40, R41, R39, R47, R46, R48, R23, R12, R24, R26, R43, R27, R42, R34, R22, R50, R51, and R45.
- Capacitors:** Various capacitors are used for decoupling and filtering, including C49, C5, C4, C3, C38, C7, C8, C9, C39, and C40.
- Jumpers:** Jumper points S2 BYPASS and S3 BYPASS are shown, along with a USB_DETECT signal.

Diagram illustrating the SD card interface circuit. The circuit includes a 10uF capacitor (C42) connected to the SD_CD pin. A 10k resistor (R29) is connected between Vdd SD and the SD_CD pin. The SD card pins are labeled: SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0, SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0, SD_CD, SD_CS, SD_SSD1, SD_SCK, SD_SSD0. The SD card is labeled M1.

The schematic diagram illustrates the LED driver circuit. At the top, a power source labeled 'SW' is connected to a resistor 'R5' with a value of '100'. This resistor is connected to a switch 'S1' labeled 'BUTTON'. The switch has two terminals, '1' and '2', with terminal '2' connected to ground. Below this, a series of 10 LEDs are shown, labeled 'LED1' through 'LED10'. Each LED is connected to a resistor (R15 through R21, all with a value of '100') and a diode (D2 through D9). The circuit is grounded at the bottom.