

POWER, BATTERY

R16 Charge Rate

R16	Charge Rate
10K	110mA
5.0K	200mA
3.3K	300mA
2.0K	500mA
1.2K	830mA

830mA charge rate is the recommended fastest this PMIC can charge

FUEL GAUGE

The diagram illustrates the wiring for a FUEL GAUGE using the MAX17048G+T10 (U1) IC. The IC is connected to various power and signal lines:

- Power Connections:**
 - CTG (Pin 1):** Connected to GND.
 - CELL (Pin 2):** Connected to VBAT.
 - VDD (Pin 3):** Connected to GND.
 - EP (Pin 9):** Connected to GND.
 - GND (Pin 4):** Connected to GND.
- Signal Connections:**
 - ALERT (Pin 5):** Connected to IO10.
 - FG_QSTRT (Pin 6):** Connected to a 100K resistor (R18), which is then connected to GND.
 - QSTRT (Pin 7):** Connected to GND.
 - SDA (Pin 8):** Connected to GND.
- Additional Components:**
 - Resistors:** R8 (10K) connects 3.3V to IO8; R10 (10K) connects 3.3V to IO9; R12 (100K) connects 3.3V to IO10.
 - Capacitor:** C7 (0.1uF) is connected between the ALERT pin (5) and GND.

USB + MISC

The diagram illustrates the electrical connections for a USB-C port and various miscellaneous components. The USB-C connector (J2) is shown with its pins and their corresponding connections:

- VBUS:** Connected to USB_P through a diode D5 (MSK4010).
- D+:** Connected to the USB cable.
- D-:** Connected to GND.
- CC1:** Connected to GND through a 5.1K resistor (R9).
- CC2:** Connected to GND through a 5.1K resistor (R11).
- SHLD:** Connected to GND.
- GND:** Connected to the common ground.

Additional components and connections include:

- ORANGE LED:** Connected to USB_P through a 5K1 resistor (R1) and an orange LED (D3). The LED is also connected to GND through a 5.1K resistor (R11).
- JUMPER A3:** A jumper connected between pins 1 and 2 of the ORANGE LED.
- SPICKL_P:** A pin connected to GND through a 4.2K resistor (R13).
- VOLTAGE SENSE:** A pin connected to GND through a 3K3 resistor (R3).
- DOUBLE RESET:** A pin connected to GND through a 1033 capacitor (C16).

RGB LED & BUTTONS

ESP32-S3 & RF

The diagram illustrates the electrical connections for an ESP32-S3 & RF module. Key components and connections include:

- Antenna:** ANT (1) connected to ANT_FREQ, with matching components TBA, L3, L2, and TBA. A U-FL Connector is also shown.
- Power Supply:** VDD_SPI (4) and VDD (5) pins are connected to the power supply. Decoupling capacitors C17, C15, C13, C18, C14, C19, and C21 are used for filtering.
- RF Section:** The RF section includes a pre-switch (S1, BGS12WN6E6327XTSA1) connected to RF1, RF2, RFIN, and CTRL pins. A GNDPAD is also present.
- Control and Status:** The chip includes various control and status pins, including VDDA, XTAL, U0RXD, U0TXD, MTMS, MTDI, VDD3P3_CPU, MTDO, MTCK, and RF_CTL_ONBOARD.

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