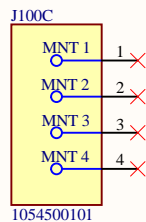
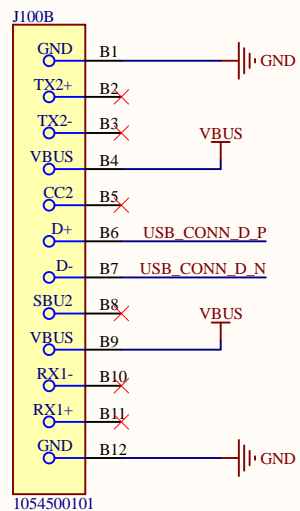
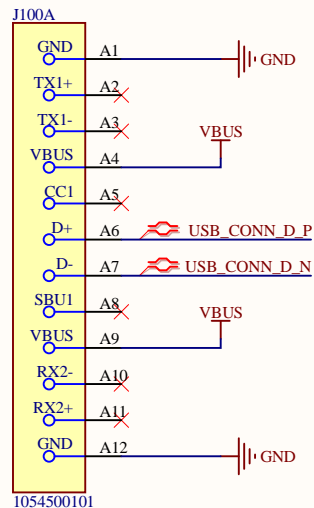
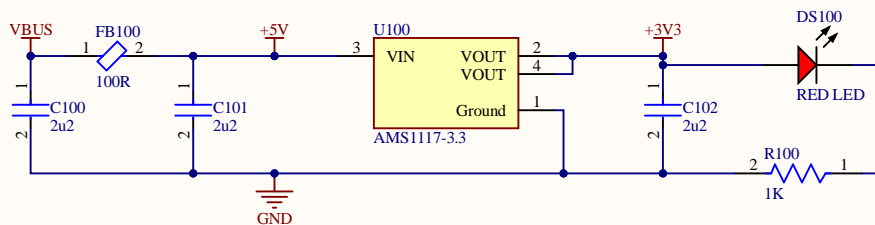


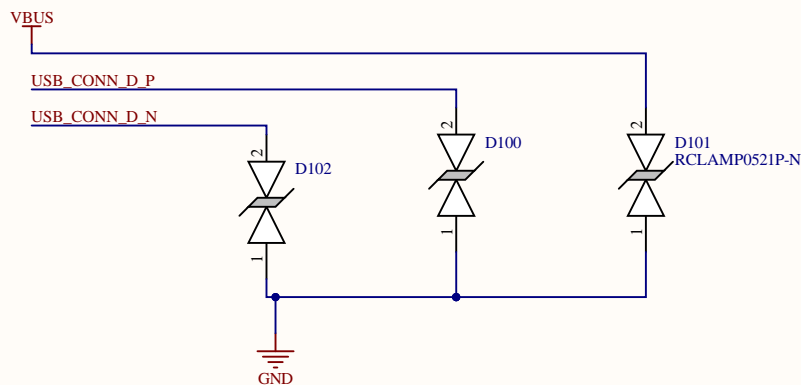
USB Type C Connector



Buck Step-Down (+5V to +3V3)



Overvoltage Protection



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The schematic diagram illustrates the hardware connections for the STM32 MCU (U200). Key components and connections include:

- Power Supply:** A 3V3 supply is connected to the MCU's VDD1, VDD2, VDD3, and VDDA pins. A GND connection is provided for the MCU's GND pin.
- Crystal Oscillator:** A crystal oscillator (Y200) is connected to the MCU's VDD1 and GND pins. The oscillator is labeled with the value 16.000000MHz.
- Capacitors:** Several capacitors are used for decoupling and timing: C201 (100nF), C202 (100nF), C203 (100nF), C204 (100nF), C205 (100nF), and C206 (100nF).
- Reset:** A reset button (SW200) is connected to the MCU's NRST pin. The button is labeled with the value 100K.
- LED:** An LED (D200) is connected to the MCU's LED pin. The LED is labeled with the value 100K.
- IMU (U201):** An IMU module is connected to the MCU's I2C pins (I2C1_SDA, I2C1_SCL) and to the MCU's I2C2_SDA and I2C2_SCL pins.
- TracesWO (U202):** A TRACESWO module is connected to the MCU's SWO pin.
- Other Connections:** The MCU is also connected to a TAMPER pin (PC13-TAMPER1-WKUP2/PC13), an OSC pin (PC14-OSC32_IN/PC14), and an OSC pin (PC15-OSC32_OUT/PC15).

Debug Header (SWD)

The diagram illustrates the connection of a Debug Header (SWD) for an STM32F103C8T6. The header is a 5-pin connector (P200) with the following connections:

- Pin 1: SWDIO (connected to R206, 10k pull-up resistor)
- Pin 2: SWCLK (connected to R207, 10k pull-up resistor)
- Pin 3: TRACESWO (connected to R208, 10k pull-up resistor)
- Pin 4: NRST (connected to R209, 10k pull-up resistor)
- Pin 5: CAT10-2204LF (connected to R210, 10k pull-up resistor)

The SWDIO pin is connected to a 3V3 supply and a 10k pull-up resistor. The SWCLK pin is connected to a 3V3 supply and a 10k pull-up resistor. The TRACESWO pin is connected to a 3V3 supply and a 10k pull-up resistor. The NRST pin is connected to a 3V3 supply and a 10k pull-up resistor. The NRST pin is also connected to a 3V3 supply and a 10k pull-up resistor. The NRST pin is also connected to a 3V3 supply and a 10k pull-up resistor.

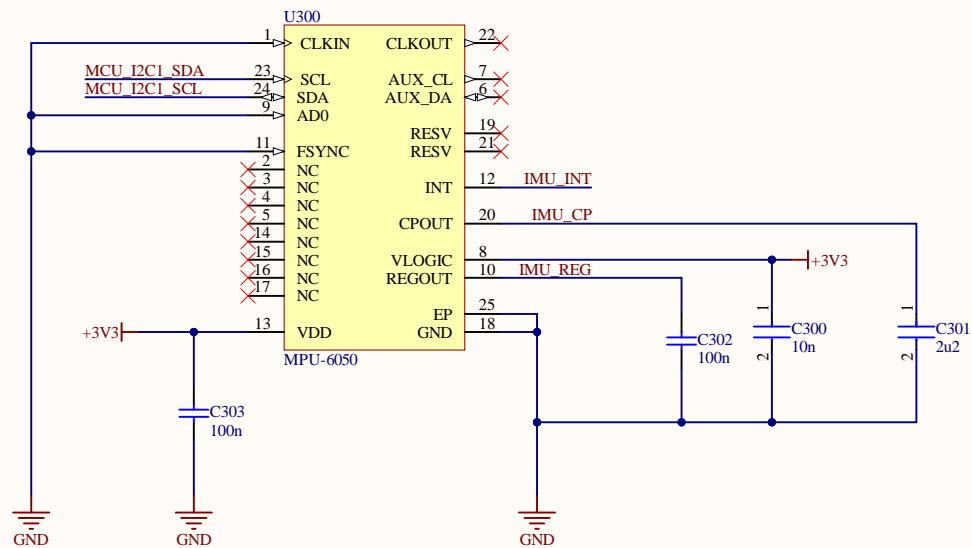
GPIO Connector

The schematic diagram illustrates the GPIO Connector circuit. It features three main headers: P201 (Header 5X2), P202 (B4B-PH-R-S(LF)(SN)), and P302 (RCLAMP0521P-N). The circuit includes several components:

- MCU Pins:** P201 connects to MCU PA0-PA7. P202 connects to MCU PA12C2 SDA and SCL. P302 connects to MCU PA12C2 SDA and SCL.
- Resistors:** R207 (CAT10-2204LF) and R208 (CAT10-2204LF) are used for pull-up/pull-down. R209 (B4B-PH-R-S(LF)(SN)) is used for signal conditioning.
- Diodes:** D208-D215 (RCLAMP0521P-N) are used for signal conditioning. D206 (B4B-PH-R-S(LF)(SN)) is used for signal conditioning.
- Capacitors:** CAT10-2204LF and B4B-PH-R-S(LF)(SN) are used for signal conditioning.
- Power and Ground:** +3V3 and GND are connected to the circuit.

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MPU-6050 Attitude Sensor



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