DIY Meta Quest 3 Charger Wiring Guide

1 Introduction

This guide provides instructions for creating a DIY USB-C charging cable compatible with the Meta Quest 3, which uses a USB-C port with Power Delivery (PD) 3.0 protocol, typically requiring an 18W charger (9V at 2A). The following outlines the materials, wiring diagram, and steps to build a custom charging solution. **Note:** Always ensure safety when working with electrical components, and verify compatibility with your device.

2 Materials Needed

- USB-C male connector (with soldering pins)
- USB-C female connector (optional, for extension)
- 18W USB-C Power Delivery charger (9V, 2A)
- 22 AWG insulated copper wires (red for VBUS, black for GND, white/green for data lines)
- Soldering iron and solder
- Heat shrink tubing
- Multimeter (for testing)
- Wire cutters/strippers
- Electrical tape

3 Wiring Diagram

The Meta Quest 3 uses a standard USB-C connector for charging. Below is a textual representation of the USB-C wiring for a DIY charging cable. Only power lines (VBUS and GND) are required for basic charging, but including data lines (D+ and D-) ensures compatibility with PD negotiation.

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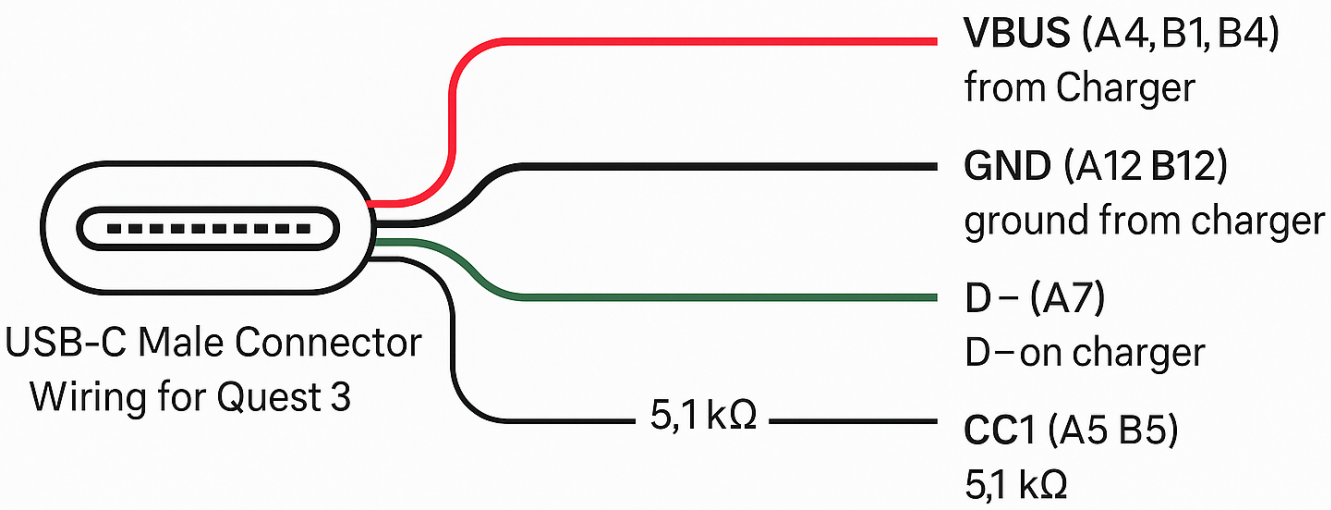
USB-C Male Connector Wiring for Quest 3 Charger



USB-C Male Connector Pinout (Simplified for Charging)

Pin	Connection
VBUS (A1, A4, B1, B4)	Red wire to +5V/9V power from charger
GND (A12, B12)	Black wire to ground from charger
D+ (A6)	White wire to D+ on charger (optional)
D- (A7)	Green wire to D- on charger (optional)
CC1/CC2 (A5, B5)	5.1kΩ resistor to GND for PD negotiation

Note: The CC1/CC2 pins require a 5.1kΩ pull-down resistor to signal the Quest 3 as a power sink. Ensure the charger supports PD 3.0 for proper voltage negotiation (9V at 2A).
For a visual reference, connect the wires as follows:

- **VBUS**: Connect all VBUS pins (A1, A4, B1, B4) to the positive terminal of the charger.
- **GND**: Connect GND pins (A12, B12) to the negative terminal of the charger.
- **D+/D-**: Optionally connect for data compatibility, but not required for charging.
- **CC Pins**: Attach a 5.1kΩ resistor between CC1/CC2 and GND.

4 Steps to Build

1. **Prepare the USB-C Connector**: Strip the insulation from the USB-C cable or connector to expose the VBUS, GND, D+, D-, and CC wires/pins.
2. **Solder the Power Lines**: Solder the red wire to the VBUS pins (A1, A4, B1, B4) and the black wire to the GND pins (A12, B12) on the USB-C male connector. Connect the other ends to the corresponding terminals on the PD charger.
3. **Add Configuration Resistor**: Solder a 5.1kΩ resistor between the CC1 (or CC2) pin and GND to enable PD negotiation.
4. **Optional Data Lines**: If including data lines, solder the white wire to D+ (A6) and the green wire to D- (A7), connecting to the charger's data lines.
5. **Insulate Connections**: Use heat shrink tubing or electrical tape to insulate all soldered connections to prevent short circuits.
6. **Test the Cable**: Use a multimeter to verify continuity and correct voltage (9V) when connected to the PD charger. Ensure no short circuits exist.
7. **Assemble and Secure**: If using a female USB-C connector for an extension, repeat the wiring process and secure all components in a protective casing.
8. **Test with Quest 3**: Plug the DIY cable into the Quest 3's USB-C port and verify charging (check for the charging indicator on the device).

5 Safety Precautions

- Ensure all connections are secure to avoid short circuits or fire hazards.
- Use a charger that supports USB Power Delivery 3.0 for compatibility with the Quest 3.
  Source: Reddit discussion on Quest 3 charging protocol [**?**]
- Do not exceed 9V/2A to prevent damage to the device.
- Keep all charging points clean and dry, as recommended by Meta.
  Source: Meta Quest 3 Safety Hub [**?**]

6 Limitations

Specific pinout details for the Quest 3's charging dock are not publicly available, limiting this guide to a USB-C cable solution. For a custom dock, additional research into pogo pin configurations may be required, but this is beyond the scope of this guide due to lack of verified information.
Source: iFixit discussion on charging dock pinout [**?**]