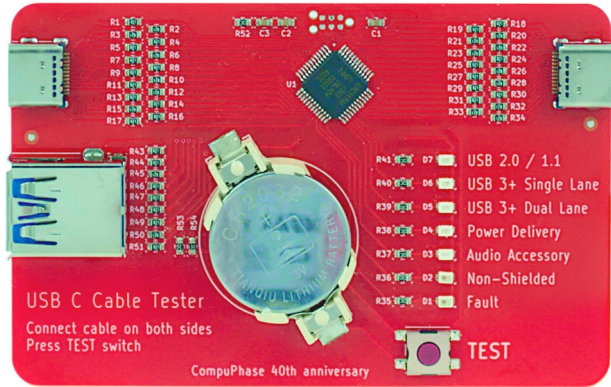


# USB C Cable Tester



## Introduction

The “USB C Cable Tester” verifies the wiring and capabilities of a USB C cable; that is, any cable with either two USB C connectors, or a combination of a USB A and a USB C connector. On the outside, USB C cables look alike. Internally, though, some may have as few as 2 individual wires and others as many as 18 wires.

The USB C Cable Tester is therefore not only useful to check whether a cable is good or bad, but also to check what type of cable it is (what capabilities it has). Not every USB C cable is fit for every purpose.

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## Using the Tester

The USB C Cable Tester is simple to use: you connect the cable to the connectors on the left and right sides of the Tester. Then you press the push button in the lower right corner. One or more LEDs will light up, telling you the cable type and whether any fault was detected.

If the cable has a USB A connector on one end, you connect it to the connector on the left side, and the USB C connector to the right side.

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## Indicators & USB Cable Types

- USB 2.0 / 1.1.....Up to 480 Mbit/s data transfer.
- USB 3+ Single Lane.....A “SuperSpeed” cable with up to 5 Gbit/s (USB 3.0) or 10 Gbit/s (USB 3.1) transfer speed.
- USB 3+ Dual Lane.....A “SuperSpeed” cable with up to 20 Gbit/s (USB 3.2) transfer speed or higher (USB4).
- Power Delivery.....If this is the only LED that lights up, it is a charging cable (no data transfer); otherwise it indicates a cable with a higher power rating. See “USB Power Rating”.

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- Audio Accessory.....The cable supports the analogue sideband channels. These are used by some audio devices or headsets.
- Non-Shielded.....When full on, the cable is not shielded. When blinking, it is either improperly shielded or unshielded. Proper shielding is required for reliable operation at high speeds.
- Fault.....When full on, the cable has a broken wire or an internal short. When blinking, the cable is not standards-compliant, but may still function (at lower transfer speeds).

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## USB Power Rating

The power rating of a USB cable is convoluted, and depends (among other things) on the connectors.

### Cable with two USB C connectors

Any cable with two USB C connectors must be rated to at least 60 Watt (20V × 3A). When the “Power Delivery” LED is on, the cable is rated 100 Watt (20V × 5A) or possibly higher. The exception is for a charge-only cable (when the “Power Delivery” LED is the only LED that lights up). In that case, the rating must be assumed 60 Watt.

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### **Cable with USB A to USB C connectors**

When the “Power Delivery” LED is off, the cable must be assumed 15 Watt (5 V × 3 A). When the LED is on, the power rating is 60 Watt (20 V × 3 A) or possibly higher.

For a charge-only cable (when the “Power Delivery” LED is the only LED that is on), the rating must be assumed 15 Watt.

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### ***Limitations of the Tester***

The USB C Cable Tester basically tests which wires are connected between both connectors. From that, it infers the capabilities and the USB standards that apply to the cable.

Full-featured USB C cables contain an E-marker chip inside the cable. This chip gives details on the maximum voltage, maximum current and maximum data transfer speed that it supports (plus other information, such as the manufacturer and the cable length). The USB C Cable Tester detects the presence of an E-marker chip, but does not read it out.

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### ***Specifications***

#### **Mechanical**

Dimensions.....Base: 85×54 mm, height: 7 mm.  
USB connectors.....2× USB C, 24-pin;  
1× USB A, 9-pin.

#### **Operating conditions**

Operating temperature....-25 °C to +40 °C.  
Humidity.....5% to 95% non-condensing.  
Operating voltage.....CR2032 coin cell, 3 V.

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### **Conformity**

EMC.....Compliant with EU Directive  
2004/108/EC: EN 55022 and  
EN 55024 + A1 (2001) + A2  
(2003).  
Electrical safety.....Compliant with EU Directive  
2006/95/EC: EN 60950-21  
RoHS.....Compliant with EU Directive  
2002/95/EC.

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### **Legal disclaimer**

CompuPhase shall not be liable for the incidental or consequential losses or damage to tangible property, injury or death of a person in connection with the use of this device.

This device is intended to test USB C cables; it should not be connected to other equipment.

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### **Company address**

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