

The new USB Type-C™ connector

Advantages & Features

SPEED

The current USB 3.0 standard is called SuperSpeed USB (USB 3.1 Gen 1). It allows data transfer rates of up to 5 Gbit/s.

The fastest transfer mode of the USB Type-C™ connector is called **SuperSpeed USB 10 Gbps** (USB 3.1 Gen 2) and allows data transfer rates of up to **10 Gbit/s**.

COMPATIBILITY

From a mechanical point of view, USB Type-C™ is not compatible with other USB connectors. However, by the additional use of an adapter or a cable it is possible to establish a **connection to other USB devices**. Thereby, existing devices can still be used.

FLEXIBLE USAGE

The plug can be used on both sides, it can be plugged into the port in both directions. There is no need to pay attention to a "top" or "bottom".

INCREASED DURABILITY

The USB Type-C™ connector was designed for up to **10,000 connection cycles**. In comparison, the USB 3.0 type A connector only supports up to 5,000 connection cycles.

SLIM BUT RUGGED DESIGN

The USB Type-C™ connector is **rugged** enough to be practically used in laptops and tablet PCs. Due to its **slim design, similar to a Micro USB connector**, it will be integrated into a lot of mobile devices in the future.

POWER SUPPLY

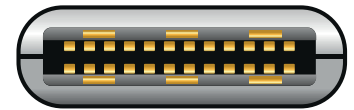
USB Type-C™ supports the USB Power Delivery 2.0 specification. It allows a **power consumption** of up to **5 A and 20 V (100 W)**. Power delivery works in both directions.

RESOURCES SAVING

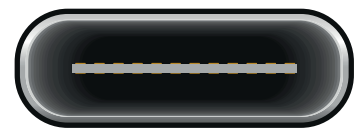
In the future, **less power supplies** will be necessary for connected devices. For example, a docking station connected to a notebook can supply power to the notebook and all other connected devices.

ENHANCED EMC

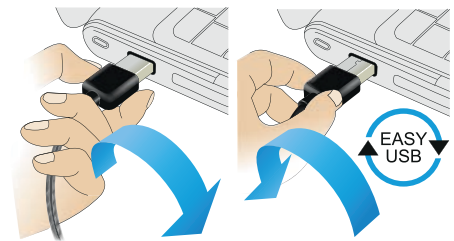
Thanks to the enhanced electromagnetic compatibility, the devices are affected by less interferences.



Plug



Jack



USB Type-C™ plug



For size comparison:
USB Type A plug

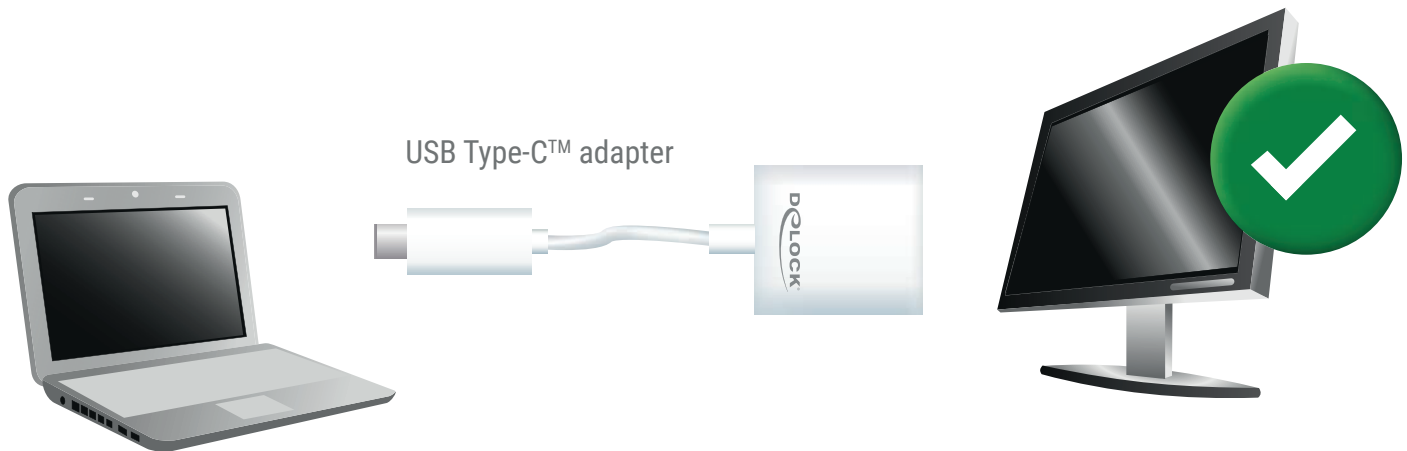


The DP Alt Mode of the USB Type-C™ connector

The USB Type-C™ connector of the Macbook and Chromebook has, additionally to the USB data line, another function. This function is called **DP Alt Mode**.

It allows you to connect a display adapter to the appropriate USB Type-C™ port of your Macbook or Chromebook. In case this port supports the DP Alt Mode, the **signal transmission to the display works** via the adapter.

Provided the DP Alt Mode support is given, you can use appropriate USB Type-C™ to DisplayPort™, HDMI, DVI oder VGA adapters in order to connect corresponding monitors.



The USB Specification

Data transfer rate

Designation

Low-Speed 1.5 Mbps

USB 1.1

Full-Speed 12 Mbps

USB 2.0

Hi-Speed 480 Mbps

USB 2.0

SuperSpeed 5 Gbps

SuperSpeed USB (USB 3.1 Gen 1) *

SuperSpeed 10 Gbps

SuperSpeed USB 10 Gbps (USB 3.1 Gen 2)

* old designation: USB 3.0