

USB Type-C and its Benefits for the AV Market

Summary

The USB Type-C connector was first introduced in 2014. Its compact, reversible design offered a user-friendly experience, while its advanced features unlocked new possibilities for data transfer, power delivery, and multimedia functionalities.

Initially, USB Type-C adoption focused primarily on mobile devices and notebooks. However, its potential for the Audio/Visual (AV) market quickly became apparent. The integration of DisplayPort Alternate Mode (DP Alt Mode) into the USB Type-C standard proved to be a game-changer.

DisplayPort Alternate Mode

The DP Alt Mode feature allows a single USB Type-C cable to transmit DisplayPort video signals for high-resolution video, alongside audio, data, and power, eliminating the need for additional dedicated video cables such as HDMI. This not only simplifies connectivity but also streamlines cable management for AV setups.

There are two different modes available in DP Alt Mode: 2-lane, and 4-lane. 4-lane is mainly used for USB peripherals that do not require high-bandwidth signals such as audio or webcam signals, therefore the focus here is on the video signal from the notebook to the meeting room display.



| Max resolution and USB standard | 2-LANE | 4-LANE |
|---------------------------------|----------------------------|--|
| DP alternate 1.2 | 4K/30Hz / USB3.1 | 4K/60Hz / USB2.0 |
| DP alternate 1.4 | 4K/60Hz / USB3.1 | 8K x 4K at 24bpp, 60Hz / USB2.0 |
| DP alternate 2.0 | 8K x 4K / USB3.1 or higher | 16K x 8K (15360x8640) at 30bpp, 60 Hz / USB2.0 |

Power Delivery

Another transformative feature is Power Delivery (PD). USB Type-C not only transmits data but can also deliver and receive power. This allows a single cable to simultaneously charge a connected device and transfer data. PD further enhances functionality by supporting fast charging protocols for rapid power delivery.

Future-proof solution

In conclusion, the technical aspects of USB Type-C paint a compelling picture. In today's workspace where hybrid working must be accommodated, the simple connectivity of USB Type-C is smoothing the way for effortless Bring Your Own Device (BYOD) scenarios. Furthermore, it offers a future-proof solution with its ability to accommodate advancements in data transfer, power delivery, and alternate modes.

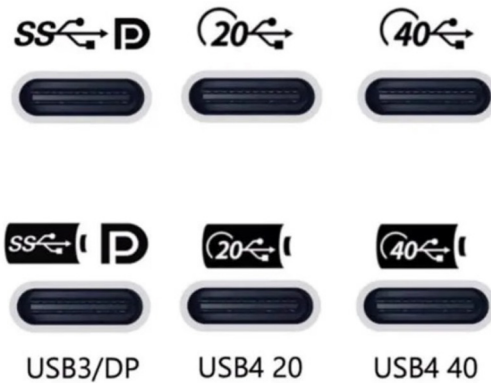
Frictionless workflows

As a result of these powerful advantages, USB Type-C connectivity is enabling a number of significant benefits:

- **Universal Connectivity:** A single cable type is compatible with all your devices including notebooks, video bars, tablets, and more, meaning you don't need to think about supplying any other cable types, adaptors, or hubs. This eliminates potential frustration, saving time and reducing demand on IT support services whilst avoiding e-waste.
- **High-Definition Display Output:** An easy single cable connection between notebook and meeting room display eliminates the need for separate video cables for the best possible user experience. The meeting room is free of cable clutter whilst users can disconnect and reconnect their notebook with ease for BYOD simplicity.
- **Powerful Charging:** Charge your notebook efficiently with Power Delivery technology. Whilst you're delivering your presentation or joining a conference call, your device receives charge without the need for additional power cables.
- **Future-Proof Technology:** USB Type-C is designed to accommodate future advancements in data transfer, power delivery, and alternate modes. As hybrid working practices entrench, USB Type-C will continue to empower the workforce with frictionless workflows.
- **Reversible Design:** Every way is the right way, there is no upside down or wrong way around. The user-friendly reversible plug design features the same connector at both ends making connection simple and effortless for everyone, eliminating potential barriers to engagement.
- **Durable Construction:** The robust design ensures long-lasting performance and minimises wear and tear. Sustainable, long-life, fit-for-purpose performance minimises e-waste and conserves resources.

Advice regarding cables

There are many vendors promoting and selling USB-C cables. Not every cable, however, offers the full feature set and bandwidth. Some cables only support charging whilst others only support USB2.0. Cables with a length of more than 2 or 3m are mainly active (amplified) ones and might not be compatible with DP Alt Mode. It is important to always check that any cable is approved by the display manufacturer for use in combination with their USB Type-C solution, or look for the logos below:



This document is © Copyright 2024 Sharp NEC Display Solutions Europe GmbH. All rights are reserved in favour of their respective owners. The document, or parts thereof, should not be copied, adapted, redistributed, or otherwise used without the prior written permission of Sharp NEC Display Solutions Europe GmbH. This document is provided "as is" without warranty of any kind whatsoever, either express or implied. Errors and omissions are excepted. Sharp NEC Display Solutions Europe GmbH may make changes, revisions or improvements in, or discontinue the supply of any product described or referenced in this document at any time without notice. FG 04.06.2024

Sharp NEC Display Solutions Europe GmbH
 Landshuter Allee 12-14,
 80637 Munich, Germany

infomail.sndse@sharp.eu
 Phone: +49 (0) 89 99 699-0

www.sharpnecdisplays.eu

SHARP / NEC