Connection system based on USB Type-C

Your Advantages

Package

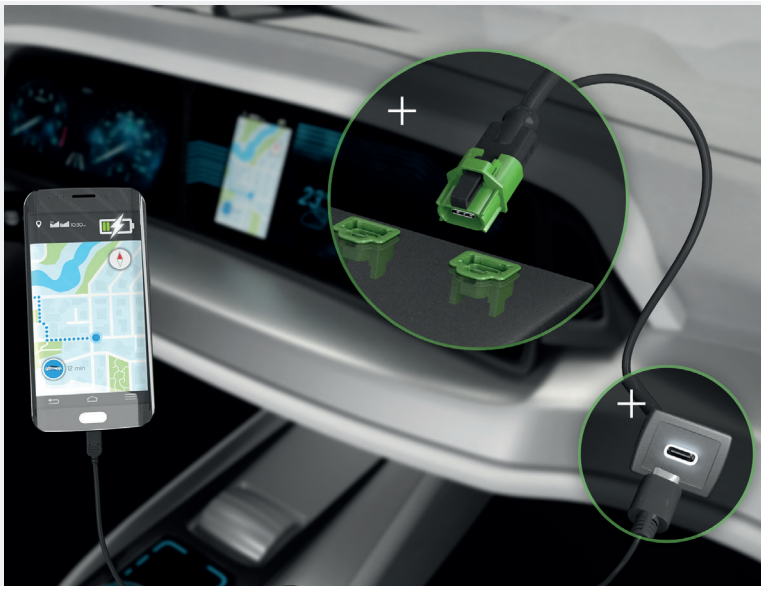
› Significantly smaller dimensions compared to a standard USB charging module with integrated electronics
> ***up to 60 % package savings in dashboard***

Temperature

› In spite of high charging power only marginal heating in dashboard
> ***up to 90 % less waste heat at customer interface***

Additional features possible

› such as lighting, temperature monitoring, real time detection V_{drop}



Use Case I – USB Charging

Headunit or HUB ⟷ USB ⟷ Customer interface passive USB Type-C (female)

Data transmission

› USB 2.0 High-Speed (480 Mbps)

V_{bus}

› Power delivery specification (5 V – 20 V / max. 5 A)

Transmission length

› 80 mV ground drop at 5 A with one meter cable (comparable to HSD application with 1.5 A per one meter cable)

Additional functions

› e.g. lighting, temperature monitoring, real time detection V_{drop} , etc.

Use Case II – USB Data

Headunit ⟷ USB ⟷ HUB or active USB module (with customer interface)

Data transmission

› USB 2.0 High-Speed (480 Mbps)
› USB 3.2 SuperSpeed (Gen1 / 5 Gbps)

Transmission length

› max. 7 meters (depends on chipset)

Additional functions

› power supply, USB alternate modes

Requirements & Applications

› USB Power Delivery (100 W)
› SuperSpeed (5 Gbps)
› Additional features possible
e.g. USB alternate modes
› Data transmission > 10 Gbps

Use Case III – Data Transmission

Headunit 1 / Electronics ⟷ DATA ⟷ Headunit 2 / Electronics

Possible variant

› **Data transmission**
parallel via 4 differential pairs
› **Transmission length**
3 meters (depends on transmission protocol)
› **Additional functions**
power supply (max. 1 A), 2 additional unshielded control lines

Possible variant

› **Customer-specific applications**

MD in a Nutshell

The C.A.S.E. megatrend describes the four essential future topics for the automotive industry: Connected, Autonomous, Shared & Service and Electric. Data plays a central role and drives the future of the automotive industry. Data is generated, transferred, merged and evaluated. We are experts in the transmission of the rapidly increasing data volumes and have developed the latest technological solutions for this future topic.

25

years experience
in the automotive industry

100 %

automotive

Supplier of products for
over **350 car models** from
more than **60 OEMs**

Volume supplier – over
160 million products in more than
20,000 variants annually

Global production- &
sales network in **NAFTA**,
Europe and **APAC**

Stable
ownership structure

Worldwide leading
company for data transmission
solutions in vehicles

Approx. **6,000**
employees worldwide

Accredited in-house
test laboratory

Do you have any questions or need a data transmission solution in vehicles?
Please contact us: product-info@md-elektronik.com

www.md-elektronik.com