D4 ELECTRICAL FURNITURE

USB Power Delivery

™

USB - THE PAST

USB standard we designed to transfer data and started being used to charge small electronic devices.

USB 2.0 gave us 2,5W charging then USB 3.0 was capable of 4,5 Watt with USB BC1.2 then 7,5Watt. With these increase in power capabilities data transfer rates also increased exponentially for example from 10 Gig of data in just under 2 minutes on USB 2.0 to less than 20 seconds in USB 3.0.

Most recognizable by the traditional USB Type – A connectors. Later version of USB 3.0 has had blue inserts to identify them.

USB - THE FUTURE

In 2012 USB Power Delivery (PD) specification was released. Power Delivery is focused on providing the ability for devices to safely and easily draw more power than the 7,5 Watt limit, all the way up to 100 Watts. Along with USB-PD as a power system the traditional USB- Type A connector has also undergone an upgrade to USB Type-C, which is more compact, reversable, support more protocols such as HDMI, VGA at the same time as delivering power up to 100W and data speeds of 10Gbps (that 10 Gig file can be theoretically transferred in 1 second).

USB-PD is set to rival the traditional AC outlet. With electronics increasingly being able to accept higher speed charging via USB-PD and lower power laptops, tables and module phones this technology will roll out faster than any other previous USB upgrade.
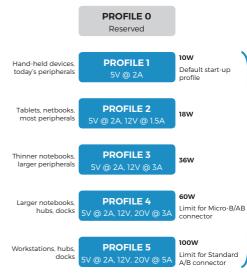
USB-PD chargers are intelligent and able to integrate the device being charged as well as the cable delivering the power. This intelligent handshaking sequence profiles the USB-PD system into 5 profiles as well as allowing for bi-directional power delivery.

A battery bank being charged via USB-PD can reverse and become the power source should it need to.

USB PD → POWER PROFILES

as of today .... per USB PD release 2.0
Source capabilities organized as profiles

	PROFILE 0 Reserved
Hand-held devices, today's peripherals	**PROFILE 1** 5V @ 2A — **10W** Default start-up profile
Tablets, netbooks, most peripherals	**PROFILE 2** 5V @ 2A, 12V @ 1.5A — **18W**
Thinner notebooks, larger peripherals	**PROFILE 3** 5V @ 2A, 12V @ 3A — **36W**
Larger notebooks, hubs, docks	**PROFILE 4** 5V @ 2A, 12V, 20V @ 3A — **60W** Limit for Micro-B/AB connector
Workstations, hubs, docks	**PROFILE 5** 5V @ 2A, 12V, 20V @ 5A — **100W** Limit for Standard A/B connector

The future of single power source and single cables handling Power, HDMI, Display Port, VGA, Ethernet with speed of 10 Gbit/s all via a single reversable connector, will transform workspaces.

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