

USB Power

USB Standart

<https://en.wikipedia.org/wiki/USB>

When connected and transferring data

USB	max voltage	max current	data transfer		
USB 1.1	5v	0.5A	1.5Mbps, 12 Mbps	Low Speed, Full Speed	
USB 2.0	5v	0.5A	12 Mbps, 480 Mbps	HighSpeed	spec
USB 3.1 Gen 1	5v	0.9A	5 Gbit/s	SuperSpeed	AKA USB 3.0
USB 3.1 Gen 2	5v	0.9A	10 Gbit/s	SuperSpeed+	
USB 3.2	5v	1.5A	20 Gbit/s	SuperSpeed+	spec

Battery Charging Specification

https://www.usb.org/documents?search=Battery+Charging&category%5B%5D=49&type%5B%5D=55&items_per_page=50

USB-PD Power Delivery

spec: <https://www.usb.org/sites/default/files/USB%20Power%20Delivery%2020181203.zip>

Spec	V	A max	
BC1.2	5v	1.5A	Battery Charging
Type-C	5v	3A	
PD 2.0	5,9,15,20v	5A	Power Delivery
PD 2.0 micro	5,9,15,20v	3A	
PD 3.0	5,9,15,20v	5A	Auth, Type-C only

Proprietary specs

https://en.wikipedia.org/wiki/Quick_Charge

Spec	V	A	Full Name, feature
MTK-PE+	5,7,9,12v	3A	18W, Mediatek PumpExpress+
MTK-PE2	5-20v	3A	
MTK-PE3	3-6v	5A+	USB PD
MTK-PE4			USB PD 3.0
QC	5v	2A	Qualcomm Quick Charge
QC2	5,9,12v	3A	18W
QC3	3.6v-20v	4.6A	18W
QC4	3.6v-20v		27W, USB PD + QC3
QC4+	0v-11v	3A	27W, USB PD 3.0
VOOC	5v	4A	20W
Super VOOC	10v	5A	
AFC	5v,9v	2A	15W Samsung AFC (QC2?)
Apple 5W	5v	1A	5W
Apple 10W	5.1v	2.1A	10W
Apple 12W	5.2v	2.4A	12W

Apple 29W	5v,14.5v	2.4A	29W USB-PD
Supercharge	4.5-5v	5A	22.5W Huawei Supercharge

Links

https://en.wikipedia.org/wiki/American_wire_gauge

<https://lygte-info.dk/info/USBinfo%20UK.html>