

Cables, connectors and converters

Here you can find information about common and uncommon connectors used in the workshop and beyond and how to tidy up cables when finishing your work in the workshop.

- [Cable management](#)
- [Connector types](#)
- [Converters, extenders and interfaces](#)

Cable management

The standard way to roll-up cables with two examples to do it properly

Short example

<https://www.youtube.com/embed/0yPcJD7RVuY>

Longer example

<https://www.youtube.com/embed/KHwPthJO5bo>

step by step text and image (in dutch)

<https://nl.wikihow.com/Een-snoer-oprollen#>

Connector types

This page gives an overview of different categories and types of connectors with a short description and links to resources with more detailed descriptions. Sometimes the same connectors can be seen within different categories depending on the type of category.

Power connectors



Resource: <https://www.electronicconnectors.net/power-connectors/>

USB connectors

USB Plug (Male):



Micro B



Mini B



Type A 2.0



Type B 2.0



Type A 3.0



Type B 3.0



Type C 3.0

USB Port (Female):



Micro B



Mini B



Type A 2.0



Type B 2.0



Type A 3.0



Type B 3.0









Type C 3.0

Resource: <https://tvtropes.org/pmwiki/pmwiki.php/MediaNotes/UniversalSerialBus>

EVERYTHING YOU NEED TO KNOW ABOUT **USB C**, A GRAPHIC

■ USB C Version Speeds and Specs

USB VERSION/ CABLE TYPE	2.0	3.1 GEN 1	3.1 GEN 2 (FULL-FEATURED)	THUNDERBOLT 3 PASSIVE	THUNDERBOLT 3 ACTIVE
SPEED	480 Mbps	5 Gbps	10 Gbps	40 Gbps	40 Gbps
MAX LENGTH	4 Meters	2 Meters	1 Meters	0.5 Meters	2 Meters
ASSOCIATED SYMBOL(S)					
DISPLAY/4K SUPPORT	No	No	No	Yes	Yes
PROTOCOL SUPPORT	-	-	-	DisplayPort (DP)	DisplayPort (DP)
CURRENT RATING	3A/5A*	3A/5A*	3A/5A*	3A/5A*	3A/5A*

 *Always double check a cable's capabilities before using to power laptops or monitors. Only 5A cables should be used. Never use a 3A USB C cable to power these devices.



USB C is a **specific shape of USB connector**. It was designed to take the universality of USB a step further by being the one connector for almost anything including data, power/charging, video and audio.



Resource: [Facebook](#)

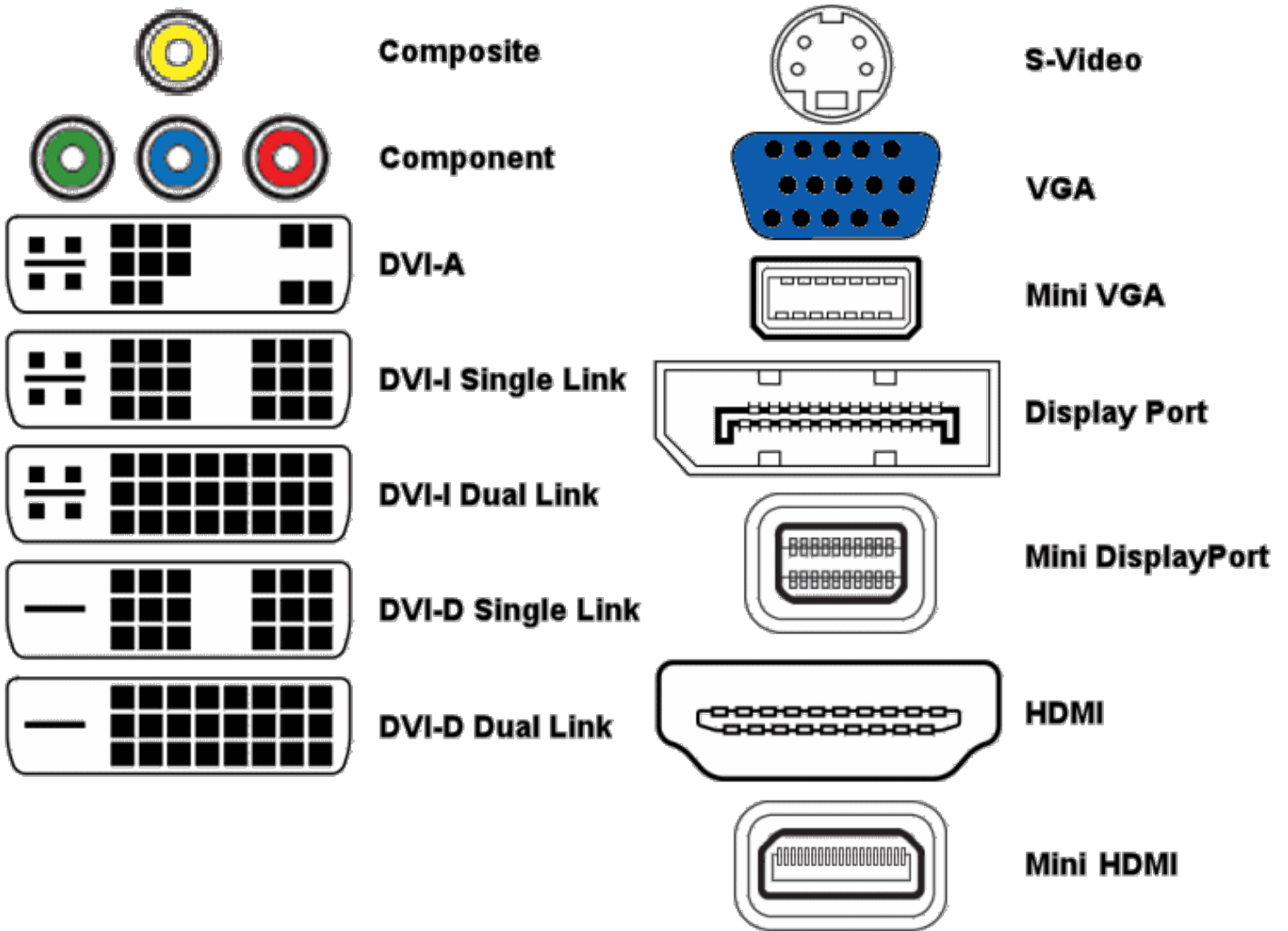
NOTE! If you are a HKU student or employe and need to [test your USB-C cable](#)? Contact the blackbox workshop @ blackbox.oudenoord@hku.nl

Also, there is a cool open source tool for your mac that gives you info on any usb cable connected to your macbook;

<https://www.whatcable.uk/>

See the explanation here: <https://www.instagram.com/reel/DY0I8bgyb-U/>

Video connectors



Resource: <https://www.diyaudioandvideo.com/TV/WireCableConversions/>

What is HDMI?

<https://www.eaton.com/us/en-us/products/backup-power-ups-surge-it-power-distribution/backup-power-ups-it-power-distribution-resources/cpdi-vertical-marketing/hdmi-explained.html>

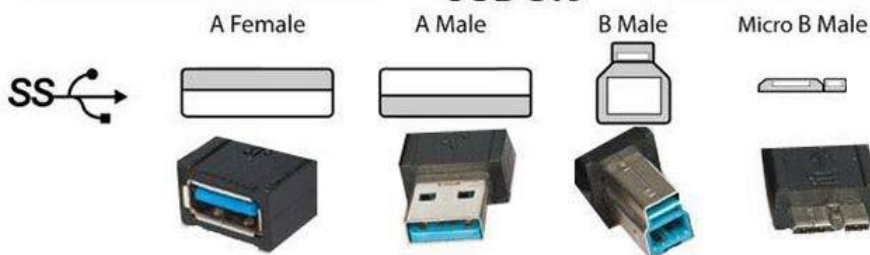
Audio connectors



USB 2.0



USB 3.0



Computer connectors

NOTE! Click to enlarge image and text

Ultimate Chart of Computer Connectors and Ports

Updated for 2020

USB, Keyboard and Mouse



USB 2.0 Type A (male)



USB 2.0 Type A (female)



USB 2.0 Type B (male)



USB 2.0 Type B (female)



USB 2.0 Mini-A (male)



USB 2.0 Mini-B (male)



USB 2.0 Micro-A (male)



USB 2.0 Micro-B (male)



USB 3.0 Type A (male)



USB 3.0 Type A (female)



USB 3.0 Type B (male)



USB 3.0 Micro B (male)



USB 3.0 Type C (male)



USB 3.0 Type C (female)



PS/2 (male)



AT Keyboard (male)

Storage / Disk



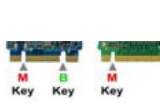
SATA Type A



e-SATA



mSATA



M.2



U.2



SAS (Serial Attached SCSI)



Lightning



Thunderbolt



Firewire 400 1394a 6-pin



Firewire 400 1394a 4-pin



Firewire 800/3200 1394b/c



IDE 40-pin



SCSI Micro DB68 (female)



SCSI Micro DB50 (male)



Internal 50-pin SCSI (f)



Internal 68-pin SCSI (f)

Network / Communications



GigE RJ-45 (SFP)



Ethernet RJ-45



Modem/Phone RJ-11



Serial/Parallel (f) DB-25



Serial RS232 (m) DE-9



Serial RS232 (f) DE-9



Centronics Parallel 36-pin



MIDI/gameport/DA-15

Audio



Line-Out, Headphones



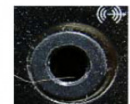
Microphone



Stereo Line In



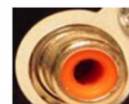
Subwoofer/Center Out



Rear Surround Speakers



Mid Surround Speakers



Digital Audio (RCA)



Optical Audio "Toslink"

Video



VGA/SVGA (male) DE-15



VGA/SVGA (female) DE-15



DisplayPort (male)



DisplayPort (female)



Mini DisplayPort (m)



Mini DisplayPort (f)



HDMI Type A (male)



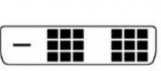
HDMI Type A (female)



DVI-I Single Link



DVI-I Dual Link



DVI-D Single Link



DVI-D Dual Link LFH-60



DVI-D Dual Link DMS-59



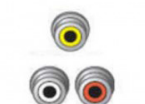
Micro-DVI



Mini-DVI



Mini HDMI Type C



Composite A/V (RCA)



S-Video



Component Video (m)



Component Video (f)



RF/Coaxial (male)



RF/Coaxial (female)



Apple Display Conn (ADC)



Micro HDMI Type D

Power



IEC 320 C13/C14 Connector



IEC 320 C13 Socket (f)



IEC 320 C14 Plug (m)



IEC 320 C19 (f)



IEC 320 C20 (m)



IEC 320 C5 Connector



SATA Power Connector



Molex 4-pin Connector

Resource: <https://www.prrcomputers.com/blog/ultimate-connectors-chart/>

Converters, extenders and interfaces

A list of useful devices for converting signals

Video

Dell D3100 and D6000 docking station

The Dell Docking Station allows you to connect your laptop to up to three additional monitors (you need to install the [Displaylink](#) software), various external devices and the Internet with just one cable.



info: <https://www.dell.com/nl-nl/shop/dell-dockingstation-usb-30-d3100/apd/452-bbot/docks-and-stands>

available in the blackbox workshop and 'HKU uitleen':

<https://www.synaptics.com/products/displaylink-graphics/downloads/macOS>

<https://www.synaptics.com/products/displaylink-graphics/downloads/windows>

