

“USB Essentials”

Grand Computers Club

New Tech SIG

February 20, 2020

Joe Parla

Talking points

- **A short history**
- **Types of ports**
- **Popular devices**
- **Most recent connections**
- **Flash drive uses**
- **Quirky stuff**
- **Q & A**



What is USB?

- **Universal serial bus, USB (pronounced yoo-es-bee) is a plug and play interface that allows a computer to communicate with peripheral and other devices. USB-connected devices cover a broad range; anything from keyboards and mice, to music players and flash drives.**

[Computer Hope](#)

A Short History of USB

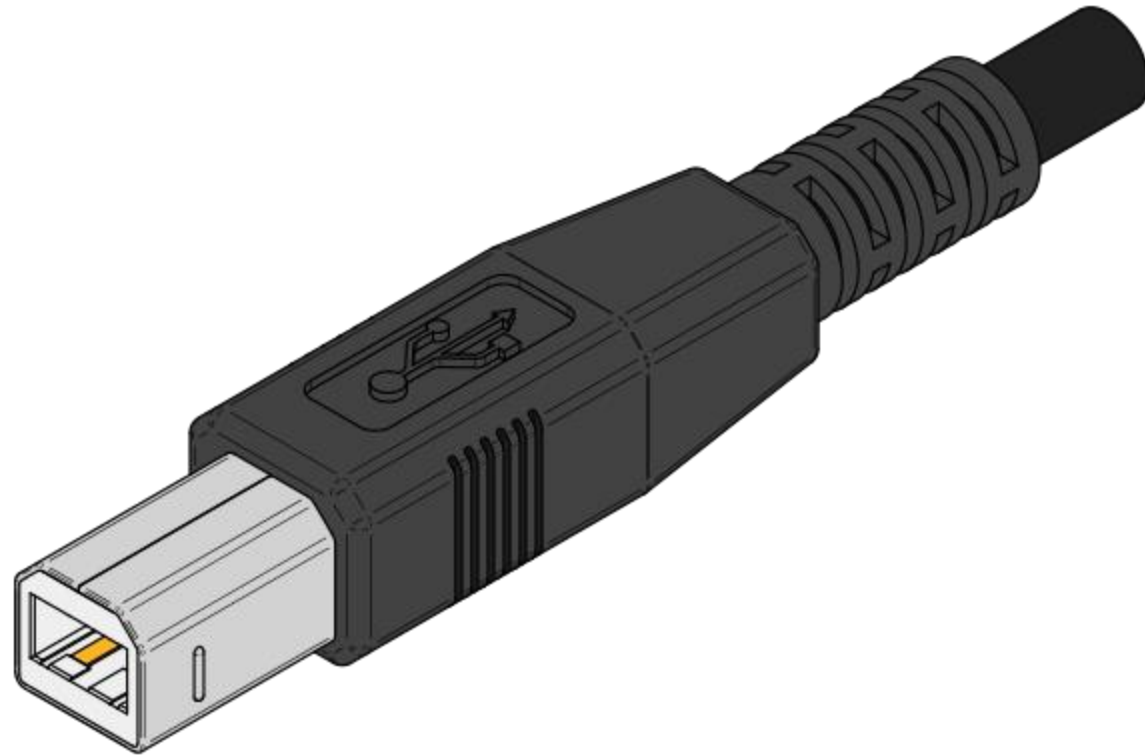
“The first USB technology began development in 1994, co-invented by Ajay Bhatt of Intel and the USB-IF (USB Implementers Forum, Inc). The organization is comprised of industry leaders like Intel, Microsoft, Compaq, LSI, Apple and Hewlett-Packard.”

[PremiumUSB](#)

Types of USB Ports – USB-A



Types of USB Ports – USB-B



Types of USB Ports – Mini-USB



Types of USB Ports – Micro-USB



Types of USB Ports – USB-C

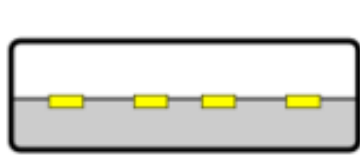


Types of USB Ports – Lightning Not USB

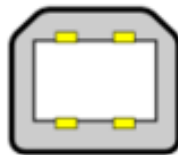


Types of USB Ports – All

USB 1.0 - 2.0



A



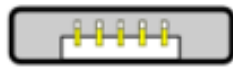
B



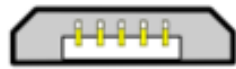
Mini-A



Mini-B

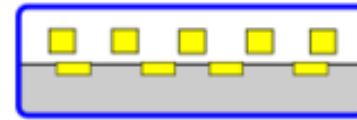


Micro-A

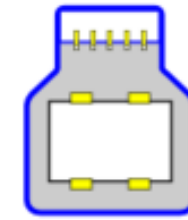


Micro-B

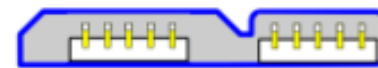
USB 3.0 - 3.1



A



B




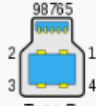
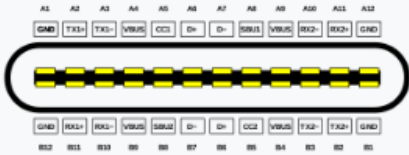


Micro-B



C

Types of USB Ports – All

Connectors	USB 1.0 1996	USB 2.0 2001	USB 2.0 Revised	USB 3.0 2011	USB 3.1 2014	USB 3.2 2017	USB4 2019
Data rate	1.5 Mbit/s (Low Speed) 12 Mbit/s (Full Speed)	1.5 Mbit/s (Low Speed) 12 Mbit/s (Full Speed) 480 Mbit/s (High Speed)		5 Gbit/s (SuperSpeed)	10 Gbit/s (SuperSpeed+)	20 Gbit/s (SuperSpeed+)	40 Gbit/s (SuperSpeed+ and Thunderbolt 3)
Standard	Type A  Type-A		Type A  Type-A SuperSpeed			Deprecated	
	Type B  Type-B		Type B  Type-B SuperSpeed		Deprecated		
	N/A				Type C (enlarged) 		

Popular Devices

- **External Hard Drive**
- **External SSD Drive**
- **Thumb Drive**
- **External Monitor**
- **External Battery Pack**
- **Security Key**
- **Camera**
- **Printer**
- **Joystick**
- **Webcam**
- **Mouse**

Popular Devices

Fingerprint Reader

Keyboard

Microphone

Scanner

MP3 Player

Wireless USB

Most Recent Connections

Standard	Also Known As	Max. Data Transfer Speed
USB 2.0	Hi-Speed USB	480 Mbps
USB 3.2 Gen 1	USB 3.0 USB 3.1 Gen 1 SuperSpeed USB	5 Gbps
USB 3.2 Gen 2	USB 3.1 USB 3.1 Gen 2 SuperSpeed USB 10Gbps	10 Gbps
USB 3.2 Gen 2x2	USB 3.2 SuperSpeed USB 20Gbps	20 Gbps

Most Recent Connections

USB 1.1	August 1998	Full Speed (12 Mbit/s) ^[39]	
USB 2.0	April 2000	High Speed (480 Mbit/s)	
USB 3.0/3.1 Gen 1/3.2 Gen 1 × 1	November 2008	Superspeed USB (5 Gbit/s)	Also referred to as USB 3.1 Gen 1 ^[28] and USB 3.2 Gen 1 × 1
USB 3.1 Gen 2/3.2 Gen 2 × 1	July 2013	10 Gbit/s Superspeed USB	Includes new USB 3.1 Gen 2 ^[28] which is later also named USB 3.2 Gen 2 × 1
USB 3.2 Gen 1 × 2	August 2017	10 Gbit/s Superspeed USB	Includes new USB 3.2 Gen 1 × 2
USB 3.2 Gen 2 × 2	August 2017	20 Gbit/s Superspeed USB	Includes USB 3.2 Gen 2 × 2 multi-link modes ^[40] ^[failed verification]

Most Recent Connections

USB4 Gen 2 × 1	August 2019	10 Gbit/s	USB3.2, DP1.4a and PCIe tunnelling, Host to host transfers
USB4 Gen 2 × 2	August 2019	20 Gbit/s	USB3.2, DP1.4a and PCIe tunnelling, Host to host transfers
USB4 Gen 3 × 1	August 2019	20 Gbit/s	USB3.2, DP1.4a and PCIe tunnelling, Host to host transfers
USB4 Gen 3 × 2	August 2019	40 Gbit/s	USB3.2, DP1.4a and PCIe tunnelling, Host to host transfers

Flash Drive Uses

Portable Apps

LiberKey (performance impact)

Data backup

Bootable USB

Multiboot USB ([YUMI](#))

Quirky Stuff

#37



Unisex Women's & Men's USB Heated Gloves
Mitten Winter Hands Warm Laptop...

★★★★☆ 476

\$11.99 ✓prime

Quirky Stuff



USB Hamster Wheel

Quirky Stuff



Duck-Shaped Vacuum Cleaner

Quirky Stuff

Fundue



Quirky Stuff

USB-powered Oil Burner



Quirky Stuff

USB Thumb Drive



Useful Sites

[Computer USB history](#)

[HISTORY OF USB - Video](#)

[Understanding USB Cable Types - Video](#)

[Different Types of USB Connectors - Video](#)

[USB, the port that changed everything](#)

[Universal Serial Bus \(USB\) Wikipedia](#)

[10 Weirdest USB Devices](#)

[How to Create a Multiboot USB Drive Using Windows](#)

A young girl with brown hair tied back with a blue bow, wearing a light blue school uniform, is raising her right hand in a classroom. She has a curious expression. Other children are visible in the background, slightly out of focus. A large white diamond shape is overlaid on the left side of the image, containing the text.

Questions???

2/20/2020

USB Essentials

Next Meeting

“Bad Actors in Cyberspace”

Thursday March 19, 2020

3:30-5:00pm

Computer Classroom

Chaparral Center