

EXTENDING USB 1,2, 3, and C

by Francis Chao

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SUMMARY

When extending a USB 3 device farther than 5 feet, use an active USB 3 cable. If you use an active USB 2 cable, the USB 2 cable will sometimes intermittently overheat and unpredictably fail either temporarily or permanently

TOPICS

- USB 3 Devices Connected to Active USB 2 USB Extension Cables Are Problematic
- Active USB 2 Extension Cables For USB 2 and USB 1 Devices
- Active USB 3 Extension Cables For USB C Devices

USB 3 DEVICES ATTACHED TO ACTIVE USB 2 EXTENSION CABLES ARE PROBLEMATIC

- I attached various models of USB 3 Gigabit Ethernet adapters to active 25 foot USB 2 cables and none of them were reliable, especially during the hotter summer days

USB 3 DEVICES ATTACHED TO ACTIVE USB 2 EXTENSION CABLES ARE PROBLEMATIC (continued)

- Ditto for USB 3 to SATA hard drive adapters
- Ditto for over-the-air television tuners

USB 3 DEVICES ATTACHED TO ACTIVE USB 2 EXTENSION CABLES ARE PROBLEMATIC (continued)

- When you tether an iPhone or an Samsung (Android) cell phone to a computer using an active USB 2 cable, the cell phone will turn off its "USB Tethering" feature after an unpredictable amount of time. You would then have to turn the "USB Tethering" feature in "Settings" in the cell phone to restore the tethering. ⁷

< Mobile Hotspot and Tether...

Mobile Hotspot



Bluetooth tethering

Share your phone's internet connection using Bluetooth.



USB tethering

Sharing this phone's internet connection.



Ethernet tethering

No USB Ethernet adapter connected



< Mobile Hotspot and Tether...

Mobile Hotspot



Bluetooth tethering

Share your phone's internet connection using Bluetooth.



USB tethering

Share your phone's internet connection using a USB cable.



Ethernet tethering

No USB Ethernet adapter connected



USB 3 DEVICES ATTACHED TO ACTIVE USB 2 EXTENSION CABLES ARE PROBLEMATIC (continued)

- To avoid problems:
If you must use active USB extension cables to have enough total USB cable length:
Connect USB 3 devices to active USB 3 extension cables.
Do not connect USB 3 devices to active USB 2 extension cables.

HDE's ACTIVE 25-FOOT USB 2 EXTENSION CABLE

- HDE's active USB 2 extension cable work reliably for USB 2 and USB 1 devices.
- I have been able to "daisy chain" three of these extension cables for USB 1 devices for a total of 75 feet.

HDE's ACTIVE 25-FOOT USB 2 EXTENSION CABLE (continued)

- For USB 2 devices, I have only been able to "daisy chain" two HDE active USB 2 extension cables for a total of 50 feet.
- If you attach a USB 3 device to this USB 2 extension cable, this USB 2 extension will overheat and fail intermittently.

HDE's ACTIVE 25-FOOT USB 2 EXTENSION CABLE (continued)

- See https://www.amazon.com/HDE-High-Speed-480Mbps-Extension-Repeater/dp/B00GLZYG5S/ref=sr_1_1?dchild=1&keywords=hde+active+usb+2+25+foot&qid=1613540546&sr=8-1



VAVA USB C Hub, 7-in-1 USB C Adapter for...

15% off coupon

★★★★★ 8,636 \$24.99 prime

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Roll over image to zoom in

HDE USB Extension Cable (USB 2.0 Type A Male to Female) High Speed Data and Power Extension Cable with Active Repeater (25 ft)

Visit the HDE Store

★★★★★ 793 ratings | 65 answered questions

Price: \$14.99 FREE Shipping on orders over \$25.00 shipped by Amazon or get Fast, Free Shipping with Amazon Prime & FREE Returns

Get \$50 off instantly: Pay \$0.00 \$14.99 upon approval for the Amazon Rewards Visa Card. No annual fee.

\$14.99

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In Stock.

Qty: 1







HDE USB Extension Cable (USB 2.0 Type A Male to Female) High Speed Data and Power Extension Cable with Active Repeater (25 ft)

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★★★★☆ 793 ratings | 65 answered questions

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Available at a lower price from [other sellers](#) that may not offer free Prime shipping.


Size: **25 FT**

About this item

- USB extender cable increases the working distance of devices that require high speed USB connections | Compatible with game consoles, computer components and VR headsets
- High-speed USB 2.0 extension cable supports data transfer rates up to 480 Mbps | Active repeater technology provides clarity of signal at longer distances than a normal cable
- Cable is compatible with webcams for streaming, video game consoles such as the PS4, Xbox One and Switch, printers, smart TVs
- Extension cable can also be used to power any device that uses a standard USB cable for power including smart speakers and devices, home surveillance cameras and Maker Projects
- Package Contents: 1x USB Repeater Cable | Cable is can provide both data and power up 250mA to devices, if additional power is needed additional cables may be required

Product information

Size: **25 FT**

Package Dimensions	9.49 x 6.97 x 1.42 inches
Item Weight	6.7 ounces
ASIN	B00GLZYG5S
Item model number	HDE-A149 NEW
Customer Reviews	 793 ratings 4.4 out of 5 stars
Best Sellers Rank	#2,296 in USB Cables
Is Discontinued By Manufacturer	No
Date First Available	November 11, 2013
Manufacturer	HDE

TRIPP LITE'S ACTIVE 16-FOOT USB 3 EXTENSION CABLE

- HDE's active USB 3 extension cable works reliably for USB 3 devices, USB 3 devices, and USB C devices
- I have been able to "daisy chain" two of these extension cables for USB 3 devices and USB 2 devices for a total of 32 feet of USB cable length

TRIPP LITE'S ACTIVE 16-FOOT USB 3 EXTENSION CABLE (continued)

- However, do not expect "USB 3.1 Generation 1" "Superspeed" 5-Gigabits/second speeds:
All of the "Superspeed" 5-Gigabits/second devices that we attached to Tripp Lite's active 16-foot USB 3 extension cable were only capable of operating at USB 2 480-Megabit per second speeds.

TRIPP LITE'S ACTIVE 16-FOOT USB 3 EXTENSION CABLE (continued)

- See https://www.amazon.com/Tripp-Lite-Active-Extension-U330-05M-C2C/dp/B07YZRX3RQ/ref=sr_1_16?dchild=1&keywords=Tripp+active+usb+3&qid=1613541352&sr=8-16

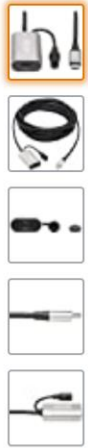


Plugable 5 Meter (16 Foot) USB 2.0 Active Extension Cable...

★★★★☆ 553 \$15.95 prime

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Tripp Lite USB C Active Extension Cable USB C to USB C USB 3.1 Gen 1 M/F 5M (U330-05M-C2C)

Visit the Tripp Lite Store
★★★★☆ 33 ratings
9 answered questions

Price: **\$37.78** & **FREE Shipping.** Details & **FREE Returns**

Get \$50 off instantly: Pay \$0.00 ~~\$37.78~~ upon approval for the Amazon Rewards Visa Card. No annual fee.

\$37.78
& **FREE Shipping.** Details & **FREE Returns**

Arrives: **Monday, Feb 22** Details
Fastest delivery: **Thursday, Feb 18**
Order within 2 hrs and 3 mins
Details

In Stock.

Qty: 1

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Ships from Amazon.com







Tripp Lite USB C Active Extension Cable USB C to USB C USB 3.1 Gen 1 M/F 5M (U330- 05M-C2C)

[Visit the Tripp Lite Store](#)

 33 ratings

| [9 answered questions](#)

Price: **\$37.78** & **FREE**

Shipping. [Details](#)
& [FREE Returns](#)

About this item

- Adds 16 ft. To your existing USB-C connection to provide flexibility in placing devices
- Increase the extension to 33 ft. (10 m) By daisy-chaining 2 cables together
- Provides up to 770mA of power to connected device without need for external power
- Reversible USB-C plug connects in either direction for immediate no-fuss use
- Supports USB 3.1 Gen 1 data transfer rates up to 5 Gbps—10x faster than USB 2.0

Technical Details

^ Other Technical Details

Brand	Tripp Lite
Series	U330-05M-C2C
Item model number	U330-05M-C2C
Item Weight	7.2 ounces
Color	Black; Gray
Manufacturer	TRIPP LITE
ASIN	B07YZRX3RQ
Is Discontinued By Manufacturer	No
Date First Available	November 3, 2019

WIROTECH'S 10-FOOT USB-C PLUG TO USB-C PLUG "GEN2" CABLE

- Wirotech has BOTH cheaper/slower "USB C" cables which can only run at "USB 3.1 Generation 1" "Superspeed" 5-Gigabits/second AND state-of-the-art "E-Marker"-chipped cables that can run at "USB 3.1 Generation 2" "Superspeed Plus" 10-Gigabits/second

WIROTECH'S 10-FOOT USB-C PLUG TO USB-C PLUG "GEN2" CABLE (continued)

- For better reliability, do not buy the cheaper version of Wirotech's USB-C cables

WIROTECH'S 10-FOOT USB-C PLUG TO USB-C PLUG "GEN2" CABLE (continued)

- However, do not expect "USB 3.1 Generation 2" "Superspeed Plus" 10-Gigabits/second speeds:
All of the "Superspeed Plus" 10-Gigabits/second devices that we attached to Wiretech's 10-foot USB-C to USB-C "Gen2" cable were only capable of operating at USB 3.1 Generation 1 5-Gigabit per second speeds.

WIROTECH'S 10-FOOT USB-C PLUG TO USB-C PLUG "GEN2" CABLE (continued)

- See https://www.amazon.com/WiRoTech-SuperSpeed-Marker-Charging-Compatible/dp/B08164LW41/ref=sr_1_1?dchild=1&keywords=wirotech%2Bgen2&qid=1613591995&sr=8-1&th=1

CableCreation



CableCreation Active USB Extension Cable (Long 16.4 FT)...

★★★★★ 3,818 \$16.99 prime

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WiRoTech USB C 3.1 Gen2 SuperSpeed 10Gbps E-Marker chip Fastest Charging USB Cable, Oculus Quest Link and Gaming PC Compatible (White, 10 Feet)

Visit the WiRoTech Store ★★★★★ 586 ratings 5 answered questions

\$29.99

& FREE Shipping. Details & FREE Returns

Arrives: Tuesday, Feb 23 Details

Fastest delivery: Friday, Feb 19 Order within 11 hrs and 38 mins Details

In Stock.

Qty: 1

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Ships from Amazon







WiRoTech USB C
3.1 Gen2
SuperSpeed
10Gbps E-Marker
chip Fastest
Charging USB
Cable, Oculus
Quest Link and
Gaming PC
Compatible
(White, 10 Feet)

[Visit the WiRoTech Store](#)

★★★★★ ▼ 586 ratings

| [5 answered questions](#)

Price: **\$29.99** & **FREE**

Shipping. [Details](#)

Product information

Size: **10 Feet** | Color: **White**

Technical Details

[^ Other Technical Details](#)

Brand	WiRoTech
Item Weight	3.98 ounces
Package Dimensions	6 x 4 x 1 inches
Color	White
Manufacturer	WiRoTech
ASIN	B08164LW41
Date First Available	November 7, 2019



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CableCreation



USB Printer Cable, CableCreation USB 2.0 A Male to B Male...

★★★★★ 1,335 \$8.59 prime

Electronics > Computers & Accessories > Computer Accessories & Peripherals > USB Hubs

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StarTech.com USB 3.0 to Gigabit Ethernet Network Adapter - 10/100/1000 NIC - USB to RJ45 LAN Adapter for PC Laptop or MacBook (USB31000SW), White

Visit the StarTech Store

★★★★★ 862 ratings | 131 answered questions

\$23.99

FREE Shipping on orders over \$25.00 shipped by Amazon or get Fast, Free Shipping with Amazon Prime & FREE Returns

Arrives: Thursday, Feb 25 Details

Fastest delivery: Saturday, Feb 20 Order within 2 hrs and 1 min Details

In Stock.

Qty: 1



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StarTech.com USB
3.0 to Gigabit
Ethernet Network
Adapter -
10/100/1000 NIC
- USB to RJ45
LAN Adapter for
PC Laptop or
MacBook
(USB31000SW),W
hite

\$23.99

FREE Shipping ▾ on orders over
\$25.00 shipped by Amazon or
get **Fast, Free Shipping** with
Amazon Prime
& **FREE Returns** ▾

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[Details](#)

Fastest delivery: **Saturday, Feb
20**

Order within 2 hrs and 1 min

[Details](#)

In Stock.

Qty: 1 ▾

STARTECH USB 3 ETHERNET ADAPTER (continued)

- Runs reliably without problems when connected to an 16-foot active USB 3 extension cable

USB Device Tree Viewer V3.4.4

File Edit Options Help

Drives: ----- Others: ----- Search: Hits: 0/0

```

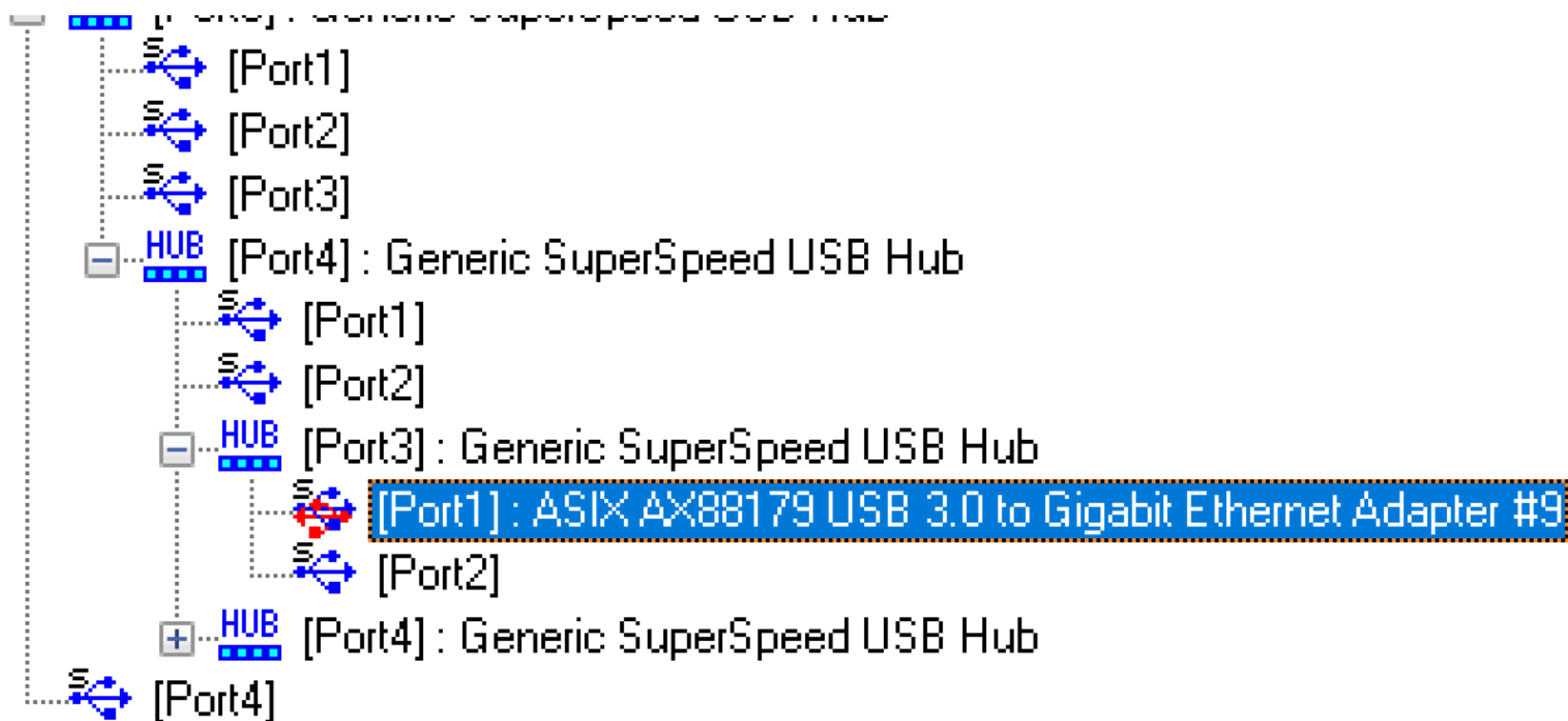
Pipe[2]           : EndpointID=3 Direction=OUT ScheduleOffset=0 Type=Bulk
Data (HexDump)   : 01 00 00 00 12 01 00 03 FF FF 00 09 95 0B 90 17 .....
                  : 00 01 01 02 03 01 01 02 00 1E 00 03 00 00 00 01 .....
                  : 00 00 00 07 05 81 03 08 00 0B 00 00 00 00 07 05 .....
                  : 82 02 00 04 00 00 00 00 00 07 05 03 02 00 04 00 .....
                  : 00 00 00 00 .....

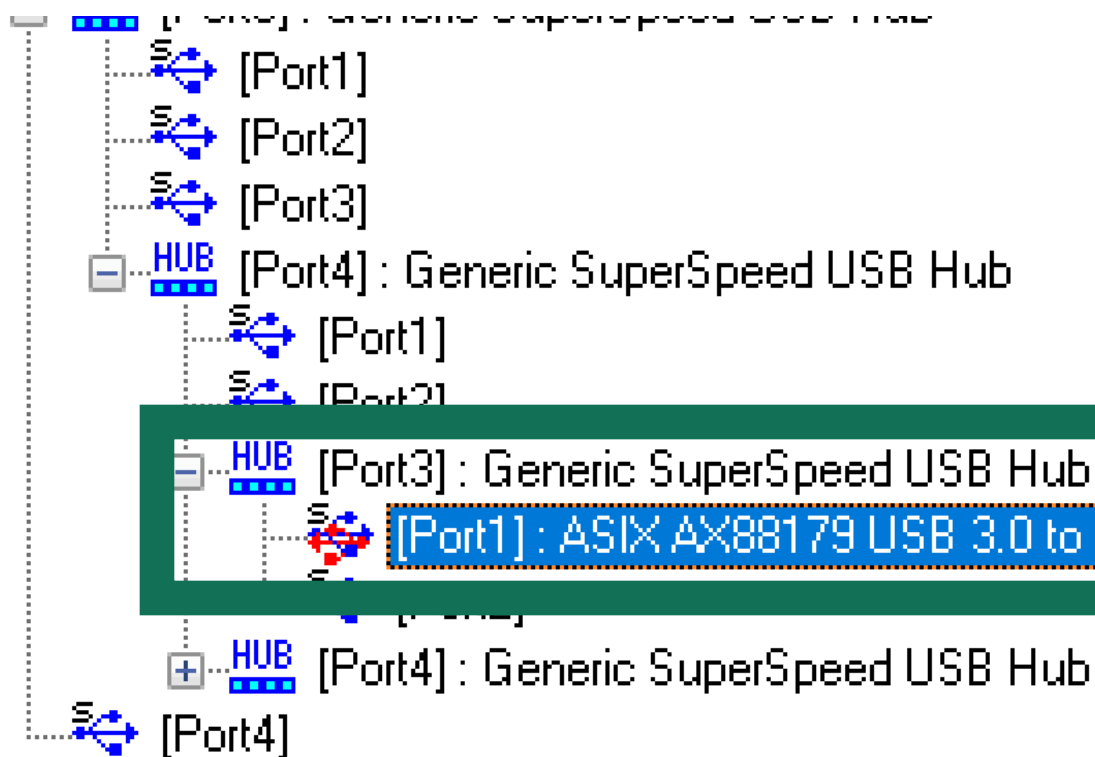
----- Connection Information V2 -----
Connection Index  : 0x01 (1)
Length            : 0x10 (16 bytes)
SupportedUsbProtocols : 0x04
Usb110           : 0 (no, port not supports USB 1.1)
Usb200           : 0 (no, port not supports USB 2.0)
Usb300           : 1 (yes, port supports USB 3.0)
ReservedMBZ     : 0x00
Flags            : 0x03
DevIsOpAtSsOrHigher : 1 (Device is operating at SuperSpeed or higher)
DevIsSsCapOrHigher : 1 (Device is SuperSpeed capable or higher)
DevIsOpAtSsPlusOrHigher : 0 (Device is not operating at SuperSpeedPlus or higher)
DevIsSsPlusCapOrHigher : 0 (Device is not SuperSpeedPlus capable or higher)
ReservedMBZ     : 0x00
Data (HexDump)   : 01 00 00 00 10 00 00 00 04 00 00 00 03 00 00 00 .....

----- Device Descriptor -----
bLength          : 0x12 (18 bytes)
bDescriptorType  : 0x01 (Device Descriptor)
bcdUSB           : 0x300 (USB Version 3.00)
bDeviceClass     : 0xFF (Vendor Specific)

```

Host Controllers: 3 Root Hubs: 3 Standard Hubs: 23 Peripheral Devices: 9





----- Connection Information V2 -----

Connection Index : 0x01 (1)
Length : 0x10 (16 bytes)
SupportedUsbProtocols : 0x04
 Usb110 : 0 (no, port not supports USB 1.1)
 Usb200 : 0 (no, port not supports USB 2.0)
 Usb300 : 1 (yes, port supports USB 3.0)
 ReservedMBZ : 0x00
Flags : 0x03
 DevIsOpAtSsOrHigher : 1 (Device is operating at SuperSpeed or higher)
 DevIsSsCapOrHigher : 1 (Device is SuperSpeed capable or higher)
 DevIsOpAtSsPlusOrHigher : 0 (Device is not operating at SuperSpeedPlus or higher)
 DevIsSsPlusCapOrHigher : 0 (Device is not SuperSpeedPlus capable or higher)
 ReservedMBZ : 0x00
Data (HexDump) : 01 00 00 00 10 00 00 00 04 00 00 00 03 00 00 00


```
1 (Device is operating at SuperSpeed or higher)
1 (Device is SuperSpeed capable or higher)
0 (Device is not operating at SuperSpeedPlus or higher)
0 (Device is not SuperSpeedPlus capable or higher)
0...00
```

STARTECH USB 3 ETHERNET ADAPTER (continued)

- Fails intermittently when attached to a 25-foot active USB 2 extension cable:

USB Device Tree Viewer V3.4.4

File Edit Options Help

Drives: Others: Search: Hits: 0/0

```

HUB [Port5]: Generic USB 2.1 Hub
├── HUB [Port1]: Generic USB 2.0 Hub
│   ├── [Port1]: Hauppauge WinTV-quadHD ATSC (Bulk Mode)
│   ├── [Port2]
│   ├── [Port3]: Hauppauge WinTV-quadHD ATSC (Bulk Mode)
│   └── [Port4]
├── [Port2]
├── HUB [Port3]: Generic USB 2.0 Hub
│   ├── [Port4]: U.S. Robotics V.92 USB Voice Modem - Modem - CDM4Modem - COM-
│   └── [Port6]
├── HUB [Port7]: Generic USB 2.0 Hub
│   ├── [Port1]
│   ├── [Port2]: USB Composite Device - 2x HID
│   ├── [Port3]
│   └── [Port4]
├── HUB [Port8]: Generic USB 2.0 Hub
│   ├── [Port1]
│   ├── [Port2]: USB Composite Device - Keyboard, 2x HID
│   ├── [Port3]
│   └── [Port4]
├── HUB [Port9]: Generic USB 2.0 Hub
└── HUB [Port10]: Generic USB 2.0 Hub
    ├── [Port1]
    ├── [Port2]
    ├── [Port3]
    └── [Port4]: ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter #9
        └── [Port11]
    
```

```

Pipe[0] : EndpointID=1 Direction=IN ScheduleOffset=0 Type=Inter
Pipe[1] : EndpointID=2 Direction=IN ScheduleOffset=0 Type=Bulk
Pipe[2] : EndpointID=3 Direction=OUT ScheduleOffset=0 Type=Bulk
Data (HexDump) : 04 00 00 00 12 01 10 02 FF FF 00 40 95 0B 90 17 .....
                00 01 01 02 03 01 01 02 00 16 00 03 00 00 01 .....
                00 00 00 07 05 81 03 08 00 0B 00 00 00 00 07 05 .....
                82 02 00 02 00 00 00 00 00 07 05 03 02 00 02 00 .....
                00 00 00 00 .....

----- Connection Information V2 -----
Connection Index : 0x04 (4)
Length : 0x10 (16 bytes)
SupportedUsbProtocols : 0x03
Usb110 : 1 (yes, port supports USB 1.1)
Usb200 : 1 (yes, port supports USB 2.0)
Usb300 : 0 (no, port not supports USB 3.0)
ReservedMBZ : 0x00
Flags : 0x02
DevIsOpAtSsOrHigher : 0 (Device is not operating at SuperSpeed or higher)
DevIsSsCapOrHigher : 1 (Device is SuperSpeed capable or higher)
DevIsOpAtSsPlusOrHigher : 0 (Device is not operating at SuperSpeedPlus or higher)
DevIsSsPlusCapOrHigher : 0 (Device is not SuperSpeedPlus capable or higher)
ReservedMBZ : 0x00
Data (HexDump) : 04 00 00 00 10 00 00 00 03 00 00 00 02 00 00 00 .....

----- Device Descriptor -----
bLength : 0x12 (18 bytes)
bDescriptorType : 0x01 (Device Descriptor)
bcdUSB : 0x210 (USB Version 2.10)
    
```

Host Controllers: 3 Root Hubs: 3 Standard Hubs: 23 Peripheral Devices: 9

HUB [Port10] : Generic USB 2.0 Hub

H [Port1]

H [Port2]

H [Port3]

H [Port4] : ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter #9

U -

```
: 0 (Device is not operating at SuperSpeed or higher)
: 1 (Device is SuperSpeed capable or higher)
: 0 (Device is not operating at SuperSpeedPlus or higher)
: 0 (Device is not SuperSpeedPlus capable or higher)
```

Connection Information V2 -----

: 0x04 (4)
: 0x10 (16 bytes)
: 0x03
: 1 (yes, port supports USB 1.1)
: 1 (yes, port supports USB 2.0)
: 0 (no, port not supports USB 3.0)
: 0x00
: 0x02
: 0 (Device is not operating at SuperSpeed or higher)
: 1 (Device is SuperSpeed capable or higher)
: 0 (Device is not operating at SuperSpeedPlus or higher)
: 0 (Device is not SuperSpeedPlus capable or higher)
: 0x00
: 04 00 00 00 10 00 00 00 03 00 00 00 02 00 00 00

