WORKAROUNDS FOR FAILURES OF USB 2 DEVICES ATTACHED TO USB 3 PORTS

by Francis Chao
fchao2@yahoo.com
Web location for this presentation:
http://aztcs.org
Click on “Meeting Notes”
SUMMARY

USB 2 devices sometimes fail when attached to USB 3 ports in "Windows..", Mac "OS X", and Linux computers. There are two workarounds for this problem:

**Workaround 1:** Use a USB 3 cable that is shorter than 5 feet in total length.

**Workaround 2:** Use a powered USB 3 hub at the equipment end of the USB cable.
TOPICS

- Examples of USB 2 Devices Failing When Attached to USB 3 Ports
- Two Workarounds
- Details of the Two Workarounds
EXAMPLES OF USB 2 DEVICES FAILING WHEN ATTACHED TO USB 3 PORTS
Examples of USB 2 Devices Failing..

• We have discovered that USB 2 devices fail when attached to USB 3 ports a lot more than advertisers and the USB.org proponents claim. Here are some problems that we have encountered with USB 3 ports in "Windows..", Mac OS X, and "Linux" computers:
Examples of USB 2 Devices Failing..
(continued)

• In a Windows computer:
  You attach a USB 2 device to a USB 3 port and the device never shows up in "Devices and Printers" or "Windows Explorer" (="File Explorer" in "Windows 8" and "Windows 8.1").
Examples of USB 2 Devices Failing.. (continued)

• In a Mac "OS X" computer: You attach an external USB 2 hard drive to a USB 3 port with a 6-foot USB2 or USB 3 cable and the computer fails to recognize the external hard drive.
Examples of USB 2 Devices Failing.. (continued)

• See http://help.elgato.com/customer/portal/articles/1020245-usb-2-0-devices-may-have-problems-connecting-to-mac-usb-3-0-ports
Examples of USB 2 Devices Failing..
(continued)

• You attach a USB 2 device to a USB 3 port and the USB device works for a while and then it quits working. If you unplug the USB device and then plug it back in, it works for a while and then it quits working again.
Examples of USB 2 Devices Failing.. (continued)

- Definition: "USB 2--USB 3" shall mean "a USB 2 device attached to a USB 3 port".
WORKAROUNDS FOR USB2--USB 3 FAILURE
Workarounds for USB 2--USB 3 Failure

• Workaround 1: Use a total cable length of 5 feet or less

• Workaround 2: Use a powered USB 3 hub at the equipment end if you have a total USB 3 cable length of greater than 5 feet
DETAILS OF WORKAROUND 1
Details of Workaround 1

- The **official specification** for USB 3 does not specify a specific maximum cable length. It is generally accepted that the maximum cable length for a USB 3 port is 3 meters (=9 and 8/10 feet).
Details of Workaround 1 (continued)

- In contrast, the USB 2 specification specifically states that the maximum cable length for a USB 2 port shall not exceed 5 meters (=16 and 4/10 feet).
Details of Workaround 1

• Some but not all USB 2--USB 3 failures can be attributed to exceeding the 9 and 8/10 foot maximum cable length for USB 3 ports.

• However, you can usually fix a USB 2--USB 3 failure by reducing the total cable length to 5 feet or shorter.
Details of Workaround 1

• However, we have experienced situations where the total cable length was between 6 feet and 9 feet and we still had a USB 2--USB 3 failure. In most of these cases, we resolved the USB 2--USB 3 failure by reducing the total cable length to 5 feet or shorter.
Details of Workaround 1

- In some cases, we had to use a USB 3 cable of less than 1 foot in length before the USB 3 equipment would work.
DETAILS OF WORKAROUND 2
Details of Workaround 2

• When USB2--USB 3 fails, you can use a powered USB 3 hub at the equipment end to resolve the problem.

• Using a powered USB 3 hub will let you have a USB 3 cable distance of up to 10 feet.
Details of Workaround 2 (continued)

• However, this expensive "trick" usually will not work if your total cable length is longer that 10 feet.

• If you need to go farther than 10 feet, you need to use a second USB 3 hub or a USB 3 repeater.
Details of Workaround 2 (continued)

- Here are some powered USB 3 hubs that we have used successfully as workarounds for USB 2--USB 3 failure:
Details of Workaround 2 (continued)

- Tripp-Lite Model U360-004-R:
Super Speed USB 3.0 Hub—4-Port

- Connect up to 4 USB devices from a single USB port
- 10 times faster than USB 2.0, with transfer rates up to 5 Gbps
- Backwards compatible with USB 2.0
- Plug-and-play; driver automatically installs
- Self-powered; external power supply provided for use with energy-consuming devices
- Lifetime limited warranty

To achieve maximum performance, upgrade your hub using the latest firmware from Tripp Lite’s website.
Super Speed USB 3.0 Hub—4-Port

- Connect up to 4 USB devices from a single USB port
- 10 times faster than USB 2.0, with transfer rates up to 5 Gbps
- Backwards compatible with USB 2.0
- Plug-and-play; driver automatically installs
- Self-powered; external power supply provided for use with energy-consuming devices
- Lifetime limited warranty
Details of Workaround 2 (continued)

• See
  http://www.amazon.com/Usb-3-0-Superspeed-Port-Hub/dp/B00DG5SF80/ref=sr_1_2_3?ie=UTF8&qid=1393718158&sr=8-23&keywords=tripp-lite+usb+3+hub
Details of Workaround 2 (continued)

• Sedna model SE-USB3-HUB-304A:
SE-USB3-HUB-304A

USB 3.0 4 port Hub, Orange & Black

4895135702976
Details of Workaround 2 (continued)

• See
  http://www.newegg.com/Product/Product.aspx?Item=9SIA1JM0R64755
Details of Workaround 2 (continued)

• Koutech model IO-HU730: