The comparison between USB 1.1 cable and USB 2.0 cable

1. How to tell the difference of USB cable?

The USB 1.1 cable or USB 1.0 cable did not have "+" sign on USB Logo in both ends of USB connector.

The USB 2.0 cable will have "+" sign on USB Logo in both ends of USB connector.

2. The shielding between USB 2.0 cable and USB 1.1 cable.

The data transmission speed for USB 2.0 port is 480M Bit / second.
The data transmission speed for USB 1.1 port is 12M Bit / second.
The data transmission speed for USB 1.0 port is 1.5M Bit / second.

USB 2.0 specification encompasses all USB data transmission speed for low speed (1.5M Bit / second), full speed (12M Bit / second) and high speed (480M Bit / second).

USB 2.0 cable meet the compliance with USB 2.0 specification, hence, it can support to work with low speed (USB 1.0) or full speed (USB1.1) USB products and high speed USB 2.0 products.
The maximum cable length for USB 2.0 cable is 5 meters.
The maximum cable length for USB 1.1 cable is 3 meters.

It is because the data transmission speed from USB 2.0 port is higher than USB 1.1 port, hence, the requirement of shielding in USB 2.0 cable is more important than USB 1.1 cable.

You can find out there is a core in Microtek USB 2.0 cable, it is to reduce cross talk and ensure high speed, error-free data transfer. But USB 1.1 cable did not have such shielding in design.

Below illustration is the picture of shielding in USB 2.0 cable. (Black Line is a Ground wire, Red Line is a Vcc (+5Vdc) wire, Green Line is a Data (+) wire, White Line is a Data (-) wire. Green wire and White wire is a twisted signal pair in USB 2.0 cable.)
3. How come you need USB 2.0 cable for USB 2.0 port?

Below illustration is a table to show the attenuation between USB 1.1 cable and USB 2.0 cable at different running speed. (You can find out the data transmission speed of USB 1.1 cable can not run over 96MHz.)
above information tell you if USB 1.1 cable is connected to USB 2.0 port from PC to scanner, it will slow down the data transmission speed of USB 2.0 port and make the data transmission speed of USB Bus can not keep up with USB 2.0 port has.

4. **Windows XP system will treat USB 1.1 port or USB 1.1 Hub as a low speed USB device.**

If you interfaced USB 2.0 scanner into USB 1.1 port in PC, or if you interfaced a USB 1.1 Hub into USB 2.0 port in PC, by this way, there is a message box will pop out in screen as below illustration.

Normally, if USB 2.0 cable connects to USB 2.0 port between PC and scanner, by this way, Windows XP system will treat it as a high speed USB device and list you the information as below.

Sometimes, if USB 2.0 port in PC connected to an USB 2.0 Scanner through USB 1.1 cable, it will pops up the same message also.