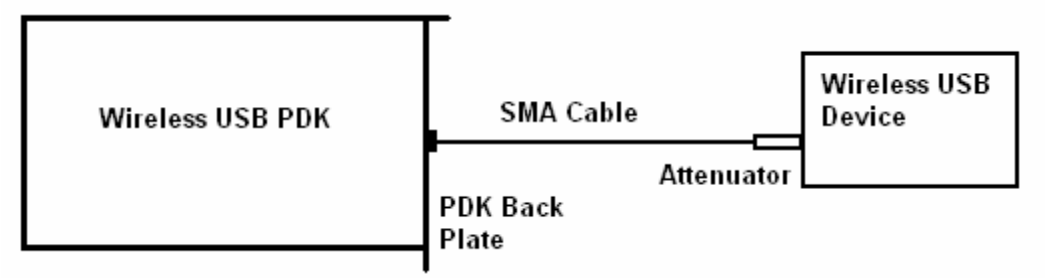
USB-IF WHCI-based PDK Quick-start Guide

Connecting the PDK to Wireless USB Devices or Wireless USB traffic analyzers
The PDK is supplied with an SMA cable and a 40dB attenuator.

Connecting One Device:
Connect one end of the SMA cable to the PDK PHY antenna connector.
Connect the other end of the SMA cable to the 40dB attenuator.
Connect the 40dB attenuator to the Wireless USB Device.



Note: The attenuator may also be connected to the PDK PHY antenna connector or may be placed between the PDK PHY antenna connector and the Device antenna connector.

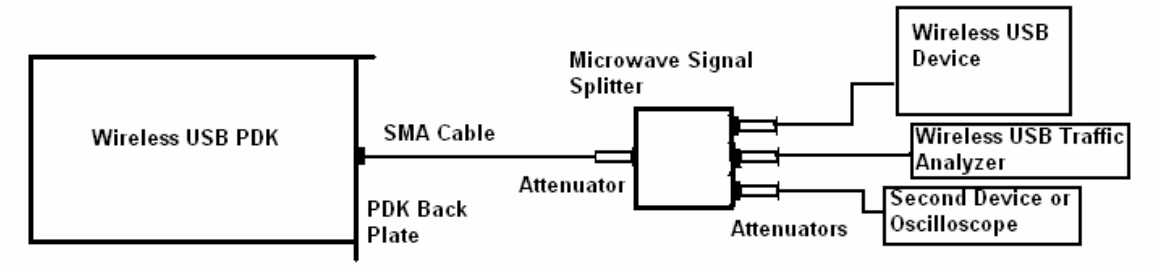
Information: The 40dB attenuator simulates a wireless RF Tx/Rx with UWB omni-directional antennas about 1 – 1.5 meters apart. There may be small amounts of packet error in normal conditions. The PDK may be operated with more or less attenuation in a range of 20dB to 60dB. In most cases, near zero packet error may be accomplished with about 36dB total attenuation including cable and insertion loss.

Connecting Multiple Devices:
The goal is to have about 36 – 40 dB attenuation between the PDK and each connected device and about 36 – 40 dB attenuation between connected devices. Use Microwave parts (attenuators and signal splitter) that are rated 0 to 18GHz. and have SMA connectors. To get total attenuation in a path, add the attenuation for each part. Common splitters have 4 – 10 dB depending on model and number of signal outputs. Splitters often have additional adjacent channel attenuation between the outputs.

Example: If the splitter has 6dB loss and 20dB adjacent channel attenuation, attenuator values could be: PDK side attenuator 20dB, Device side attenuators 8dB. A high quality cable and connectors add about 1 – 2 dB. (See Diagram)

Adding the attenuation in the example:

PDK cable and connections	2dB	Device cable and connections	2dB
PDK side Attenuator	20dB	Device side Attenuator	8dB
Splitter loss	6dB	Splitter Adjacent Channel Attenuation	20dB
Device side Attenuator	8dB	Device side Attenuator	8dB
Device cable and connections	2dB	Device cable and connections	2dB
Total from PDK to devices:	**38dB**	**Total from device to device:**	**40dB**

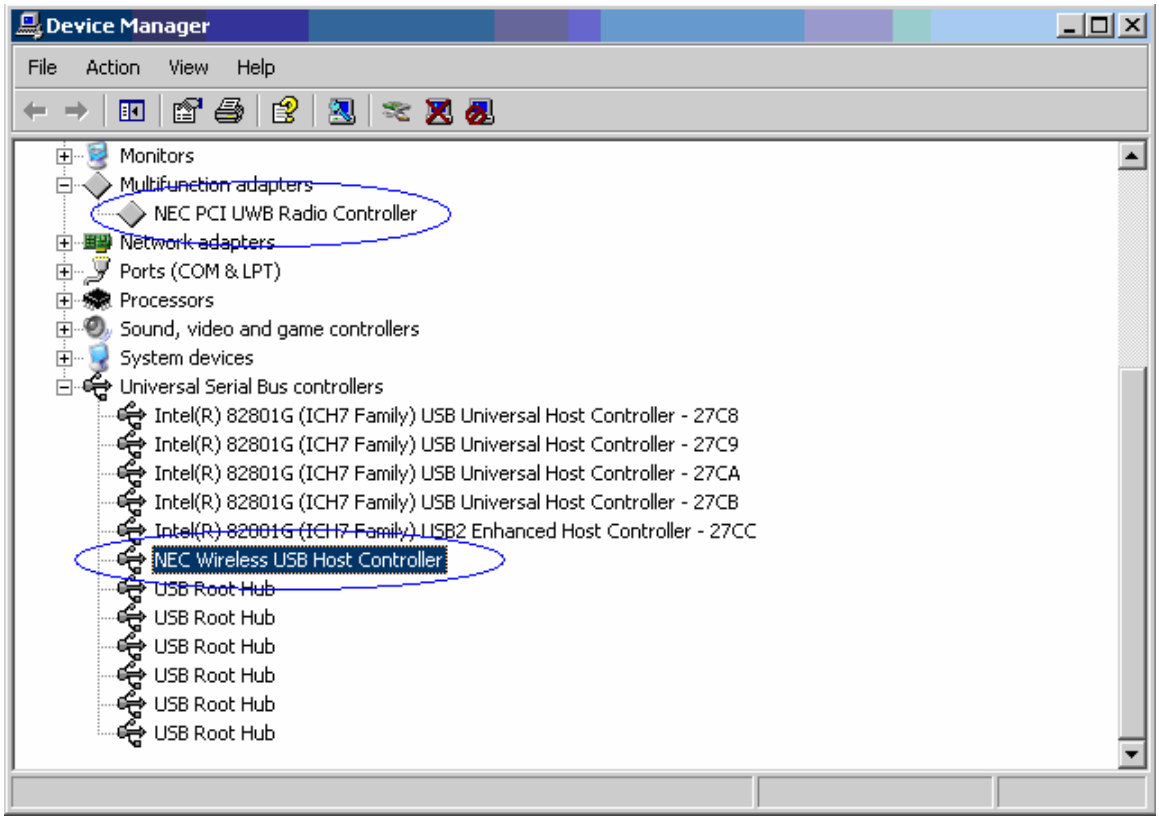


Installing the Microsoft Wireless USB Software*

Refer to the "Readme.txt" provided with the Microsoft Wireless USB Software package. There are two installations required to install the Microsoft Wireless USB software package (as noted in the "Readme.txt"). Install both components in the order listed and reboot before placing the PDK in the system. When the system is booted with the PDK installed, the system will locate the device and begin driver installation. Allow the system to "Install the software automatically". It may be necessary to choose "continue" for drivers that have not passed Windows Logo Testing. It may be necessary to locate the driver to complete the installation. The drivers are located in the …windows\system32\drivers folder. This routine may be necessary for both driver components, uwbpci.sys (Radio Controller) and usbwhci.sys (Wireless USB Host Controller). It may also be necessary to locate a dll in the system32 folder.

When the driver installation is complete, the device manager should show two new devices:

1. Multifunction adaptors >> NEC PCI UWB Radio Controller
2. Universal Serial Bus Controllers >> NEC Wireless USB Host Controller



* If you do not have access the Microsoft Wireless USB Drivers, contact Zack Little (Zach.Little@microsoft.com)
Refer to: http://www.usb.org/developers/estoreinfo/PDK_Overview/PDK_Overview

Reboot the system and the Wireless USB Host will begin sending MMC's with WHOSTINFO_IEs and DNTS packets ready to accept a device connection request.

This document will be amended to show Wireless USBCV installation notes when the Wireless USBCV tool is distributed.
(Expected November 7, 2006)