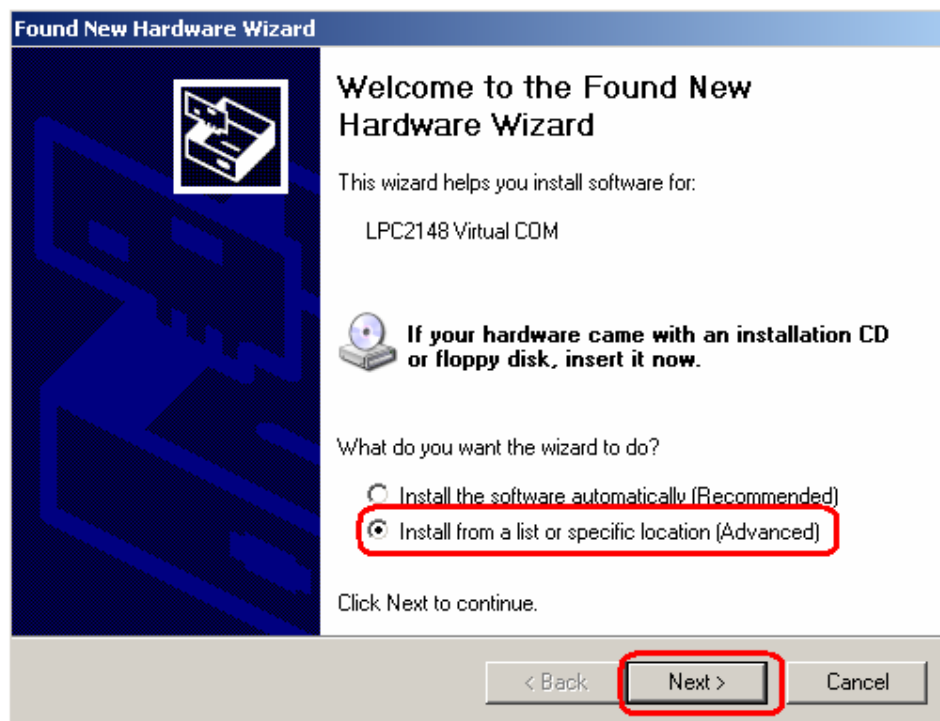


USB VIRTUAL COM PORT EXAMPLE ON LPC2148

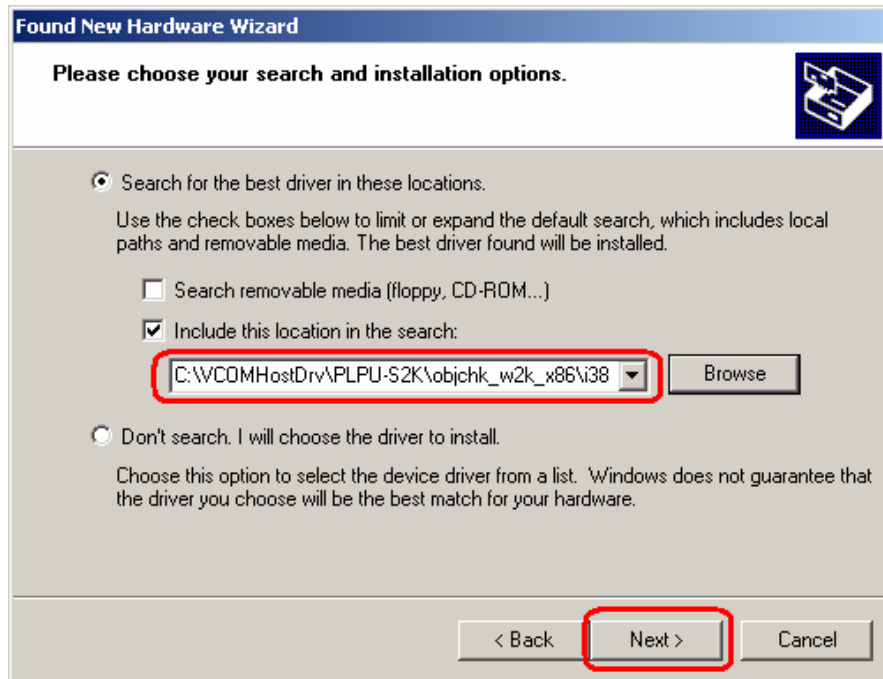
This application note demonstrates the usage of USB peripheral on NXP's LPC2148 microcontroller as a virtual COM port. The virtual COM port sample software is derived from NXP's AN10420 USB virtual COM port on LPC214x. The complete source code including USB device driver and USB host driver are available in the CD.

The virtual comport can be used in applications that involve data logging, remote monitoring and control, etc. The virtual comport driver allows PC to recognize the embedded hardware as a COM port device. The virtual com port firmware is loaded into the microcontroller using the primary bootloader (UART0) and Flash Magic software. The firmware is configured to create two virtual com ports on the host side. At this point it is assumed that Flash Magic software and uVision Keil IDE are already installed on your PC. The sample software and USB host drivers are tested to work with windows XP 32-bit operating system. The following steps will help you in loading the firmware and installation of USB host drivers.

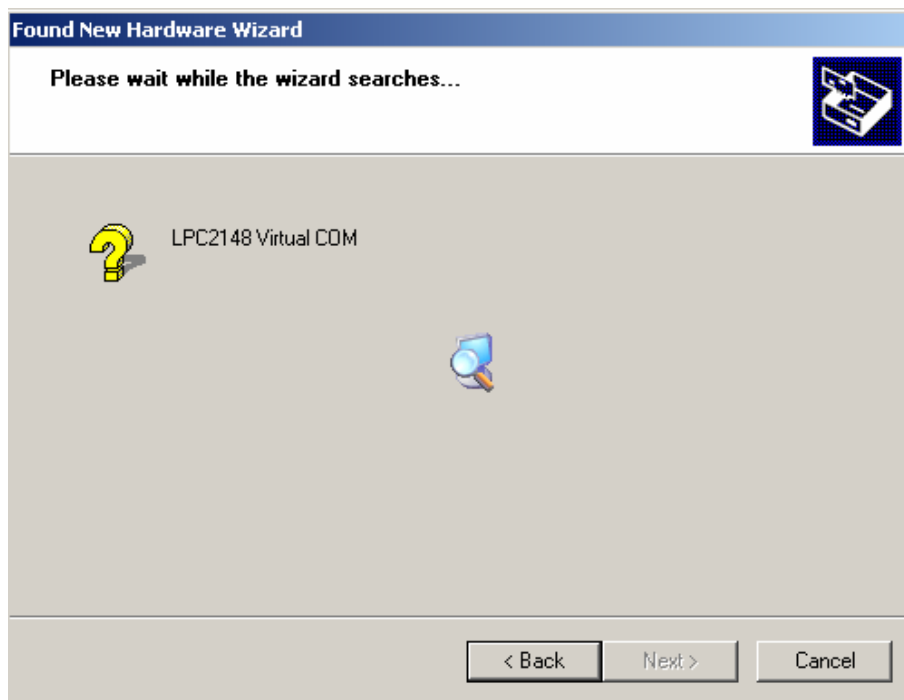
1. The first step is to load the virtual comport firmware on to the microcontroller using Flash Magic. For help on Flash Magic refer LPC2148 development board documentation. The hex file of the firmware can be found in \VirtualCOM\Obj folder.
2. After loading the hex file press reset button on development board. Your PC should recognize the LPC2148 development board as "LPC2148 Virtual COM device" and windows driver installation wizard will start. Select "Install from a list of specific location" and click next to continue.



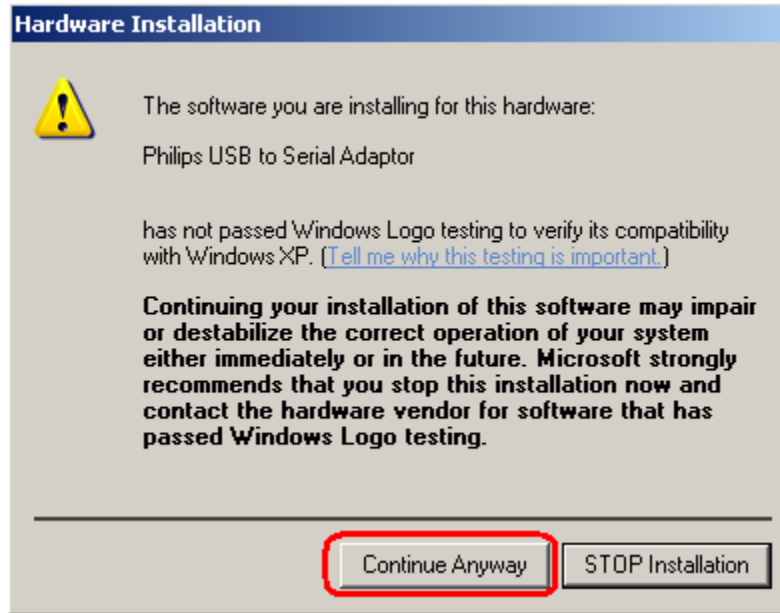
3. Browse to \VirtualCOM\VCOMHostDrv\PLPU-S2K\objchk_w2k_x86\i386 directory and click next to continue.



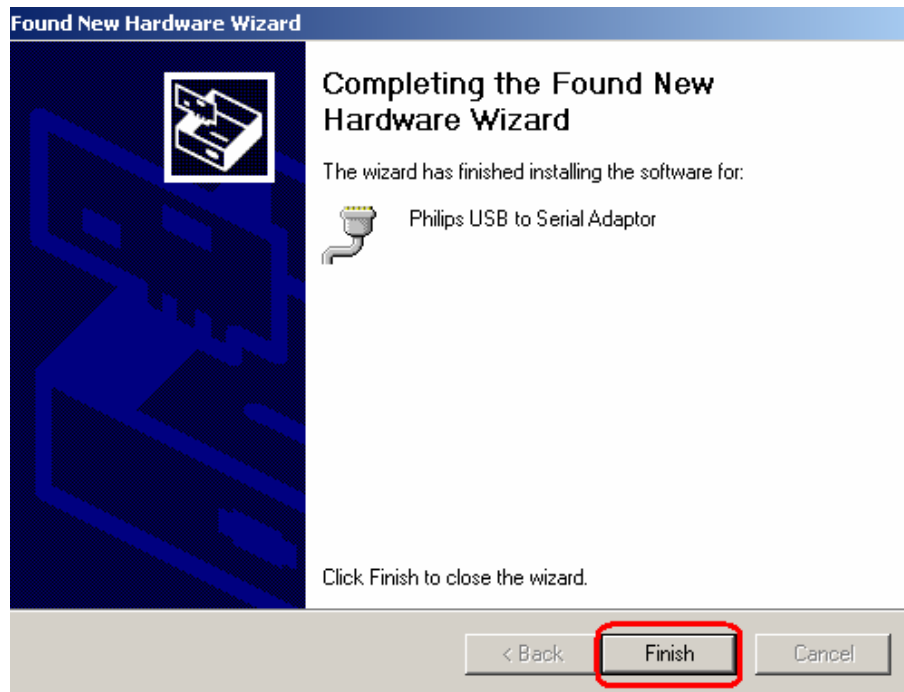
4. Wait while windows searches the driver files in the previously selected location.



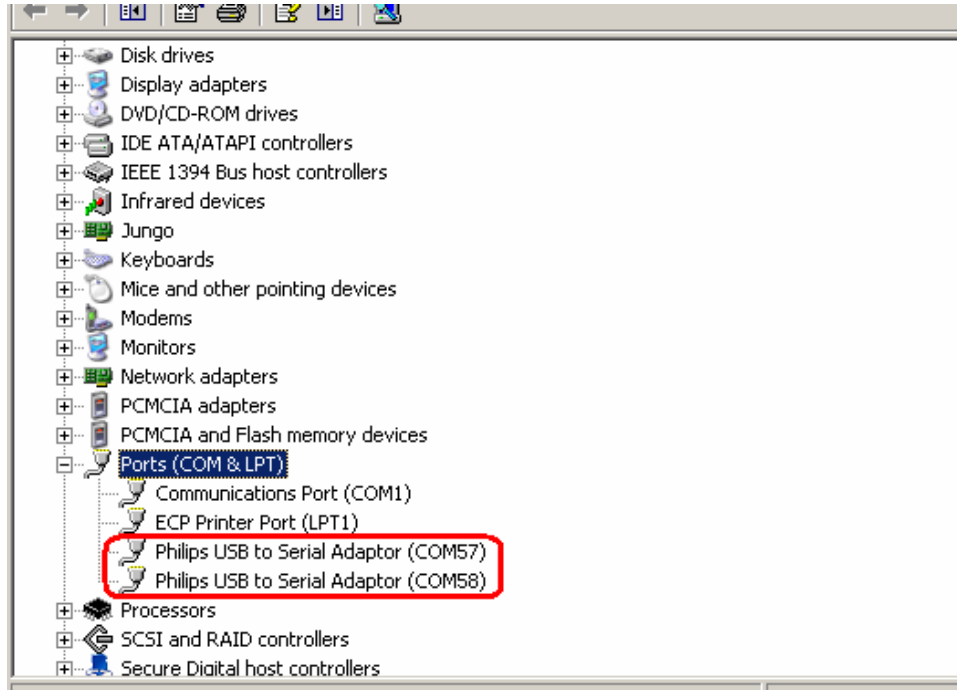
5. In the next window click **Continue Anyway** to proceed.



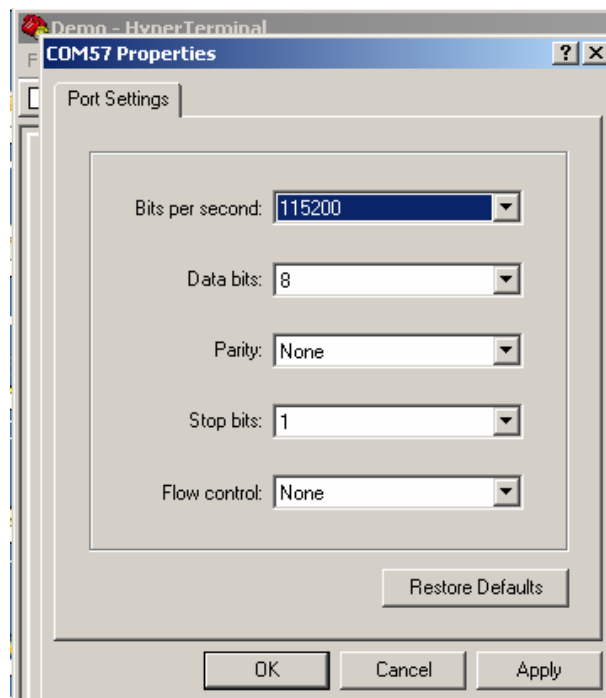
6. Click Finish to complete the installation process. This completes installation of drivers for first COM port. Repeat steps 2 to 6 to complete installation of drivers for second virtual COM port.



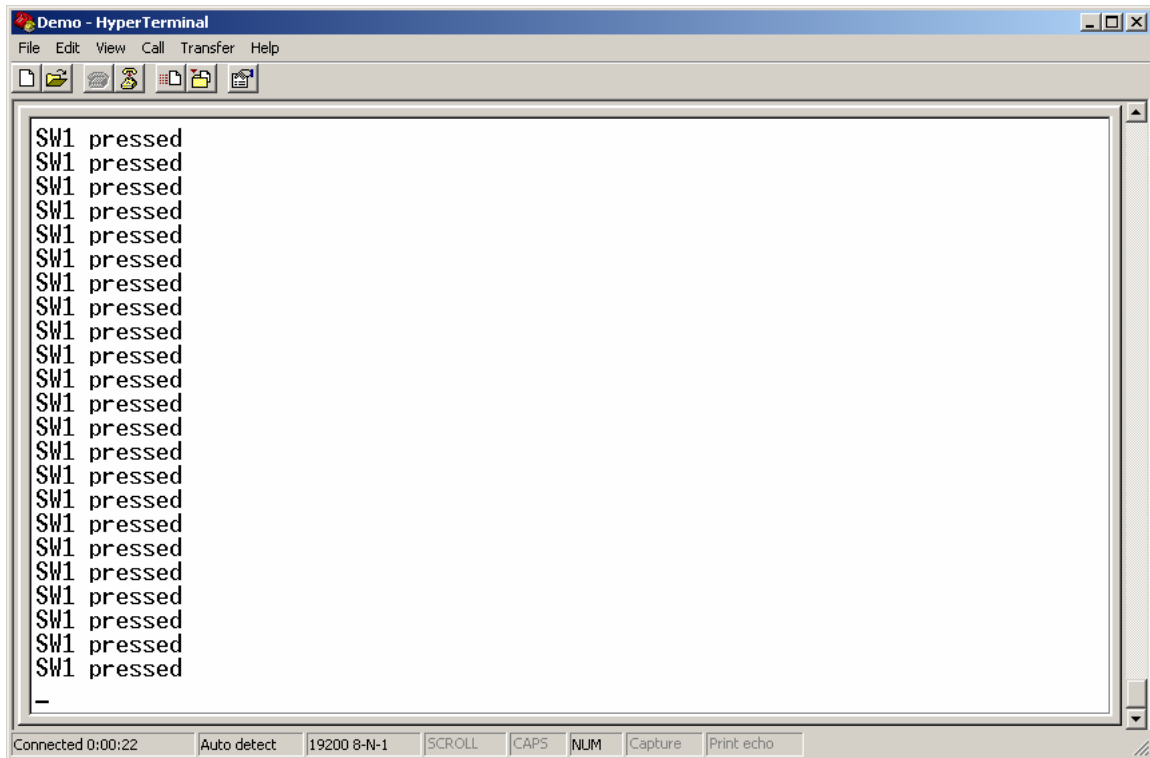
7. You may verify installation of both the com port in the device manager. The com port number may vary for different installation of operating system. Here we will refer the first COM port i.e. COM57 as COM_n and COM58 as COM_n+1. The sample software is written to communicate over COM_n only.



8. Setup windows hyper terminal to utility to communicate over COM_n with following settings and click OK to start the communication.



9. Now you should be able to control the LEDs1 to 4 on development board by pressing keys 1 to 4 in the hyper terminal window. At the same time if you press SW1 to SW4 on the development board a message will appear in the hyper terminal window.



10. The user code is located in the “vcomuser.c” file. This file contains two functions i.e.

a. void DeviceData2UART(BYTE portNum) - Handles data transfers from development board to PC.

b. void DeviceData2Host(BYTE portNum) - Handles data transfer from PC to development board.