SUZOHAPP

Nanoptix
Paycheck™ 3, 4 & Desktop Printers

Firmware Downloading & Installation Instructions

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Section 1: Downloading and Installation

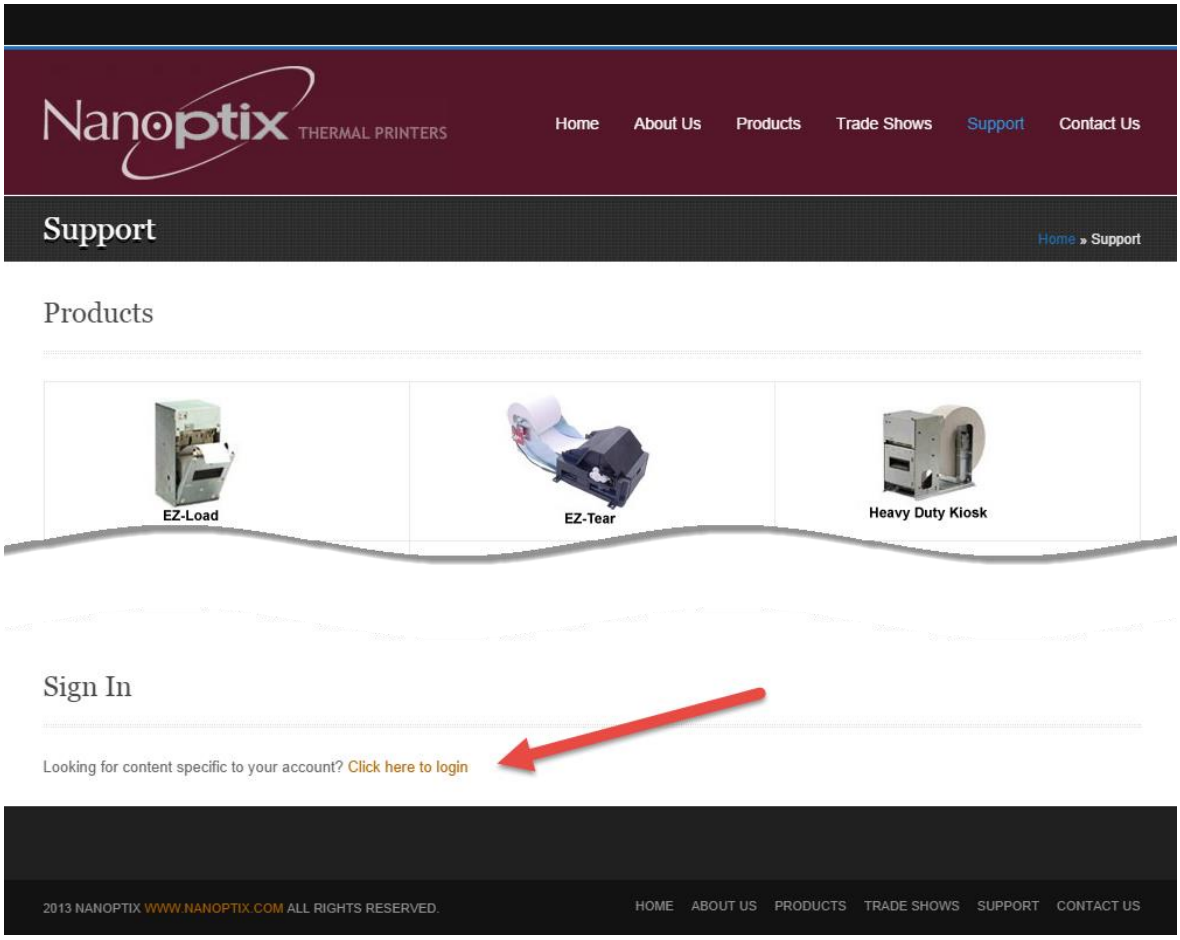
NOTES:

- **If you already have a firmware *.zip package in your possession then there is no need to visit the Nanoptix website you can skip directly to Step 5.**
- **If your firmware package has already been extracted you can skip directly to Step 6.**
- **The FlashImage.exe / FlashimageNFF.exe tool does not support running off of a USB Flashdrive or from CD or DVD ROMs. Therefore, it is recommended that the firmware package be extracted to a machine' local hard disk.**

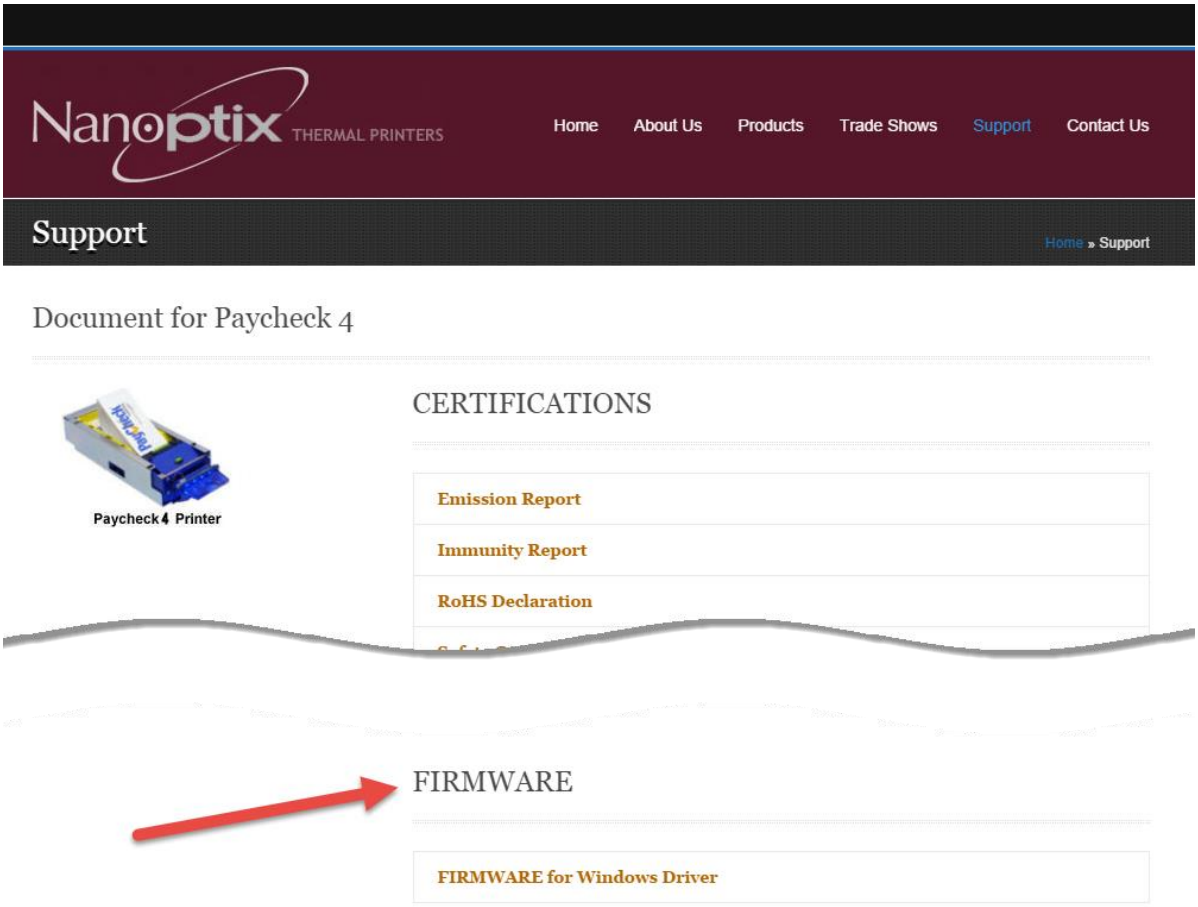
ESD protection (such as a wrist strap) must be used anytime a PCB is exposed

1. Go to www.nanoptix.com and select the "support" section.

2. Login using
   - Username: (**Please contact Nanoptix for unique Username)**
   - Password: **(Please contact Nanoptix for unique Password)**
   - Click the "**login**" button



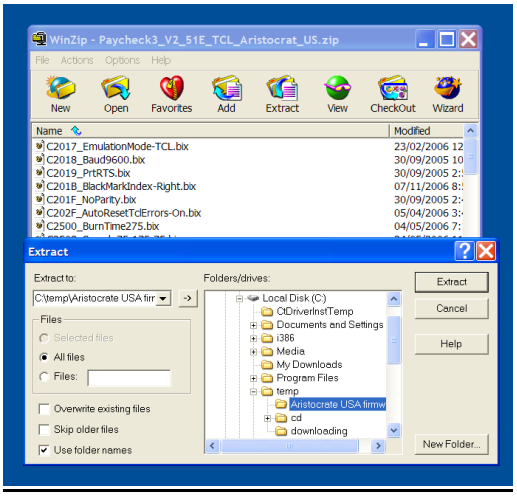
3. Once logged in, click on your product and then navigate to the **firmware** section.



4. Select the desired firmware and download it to a known location on your local disk.

5. Extract the whole content of the ".zip" file to a known location on your local disk using "Winzip" or the ".zip" extractor of your choosing.

   Note: *Running "**FlashImage.exe / FlashimageNFF.exe** from the ".zip" file is not supported*



6. Make sure the PayCheck™ printer is powered up with 24 VDC power source and connected using one of two communication options, RS232 and USB. The firmware downloading application: ***FlashImage.exe*** will look for a known printer on the USB port first. If none are found, it will proceed to look at the installed serial com ports on your PC.

Note: *The USB port is strongly recommended since it is much faster*

7. Run ***FlashImage.exe / FlashimageNFF.exe***, the application will search for printers. Once a printer is found, it will be put into "download" mode (LED and buzzer will be activated once per second).

8. If required, ***FlashImage.exe / FlashimageNFF.exe*** tool will download a temporary boot loader to the printer to assist with certain firmware migration paths.

```
First, Looking For Nanoptix Products in USB ports...
Will Now Verify Compatibility of Binary Image with Processor Type...Pass
Found 1 PAYCHECK DSP
Will force a new Boot from directory...
Verifying Unlock (.BIN)
*** SENDING NEW BOOT (found a boot image in current directory) ***
Opening loader.fbl...
CRC of image with a seed of 0x0000 is 1733
CRC of image with a seed of 0x1234 is BD26
Downloading Bank 0....SUCCESS!
Downloading Bank 1....SUCCESS!
Downloading Bank 2....SUCCESS!
Downloading Bank 3....SUCCESS!
Downloading Bank 4....SUCCESS!
Done Downloading!
WILL NOW FLASH IMAGE FROM RAM, PLEASE DO NOT POWER OFF PRINTER
THIS TASK WILL TAKE APPROX. 19 SECONDS
Found 1 DSP Unit(s) in Download Mode
```

9. If configuration files (*.bix) are present in the firmware package, ***FlashImage.exe*** will download them to the printer.

```
Found 1 DSP Unit(s) in Download Mode
Current boot supports 32 banks
Current boot supports the *Don't Save CRC32* command
Opening Paycheck4_V5_40E.bin...
CRC of image with a seed of 0x0000 is 2A43
CRC of image with a seed of 0x1234 is 6D82
Send Configuration file C2000_ResetAllToDefaults.bix
Send Configuration file C2016_ResetAllToDefaults.bix
Send Configuration file C2017_EmulationMode-NTL.bix
Send Configuration file C2018_Baud19200.bix
Send Configuration file C2019_PrtRTS.bix
Send Configuration file C201F_Parity-Netplex.bix
Send Configuration file C202F_AutoResetNtlErrors-Off.bix
Send Configuration file C2500_BurnTime250.bix
```

10. ***FlashImage.exe / FlashimageNFF.exe*** will then download the *firmware image (*.bin or *.nff)* to the printer in blocks of 64KB. In the critical final seconds of the download, the printer then transfers all this information from its RAM to its Flash. Finally, the printer reboots and is put back into "RUN" mode.

    Note: *Do* not *disconnect power or communication until the download is complete.*

    Note: After downloading ***FlashImage.exe / FlashimageNFF.exe*** application will ask if you would like to start flashing the printer firmware to another unit. This is normal and is only there for convenience if ever you would like to update the firmware on another unit.

11. As verification a ***power on test ticket*** can be printed. To print the test ticket, *the printer must be powered "ON" while holding the paper feed button for up to 15 seconds*. A status ticket similar to below will be printed. Pressing the button again will result in blank tickets. This ticket can be used to verify the *firmware version*.

Model:		PAYCHECK 4
Firmware:		PAY-2.51E
Protocol		NTL
COMMUNICATION		
Interface:		Serial
Baud:		9600
Data Bits:		8
Parity:		NONE
Handshaking:		PRT + RTS
Print mode:		NTL
Back USB		Fw Controlled
Aux Port:		Disabled
PRINT CONTROL		
Print Method:		No HPQ
Speed:		100 mm/s
Black Bar Index:		Right
No HPQ Burn Time:		275 uS
Motor Current:		2
Real Time Commands:		Enabled
Auto Reset Status:		Enabled
PRINTER ENVIRONMENT CONDITIONS		
Voltage:		23.9 Volts
Temperature:		21 Celsius
SYSTEM RESOURCES		
FLASH	-Used:	48110
	-Free:	17425
LIBRARY INVENTORY		
Templates:		
0,1,2,3,4,5,6,7,8,9,A,B		
Print Regions:		
1,2,3,4,5,6,7,8,h,9,A,B,C,D,E,F,G,I,J,K,L,N,O,P,Q,R,		
S,T,U,Z,X,a,b,c,d,e,f,g,i,j,k,l,m,n,o,p,q,		
Fonts:		0,2,3,4,5,7,8,15
Graphics:		
MANUFACTURING INFORMATION		
Printer ID:		N000024
Date Code:		07D20B14
A to D: 03de, 01da, 00ea, 03c4		
Dip Switch Config (1234): 0000		
Status:		
S|0|PAY-2.51E|@|@|@|I|D|P|		

Section 2: Restoring printer's firmware to factory boot

If the printer's power is interrupted while ***FlashImage.exe*** is downloading the settings or the firmware banks into RAM, the printer will power up again already in download mode and the upgrade can be restarted by closing and reopening ***FlashImage.exe***.

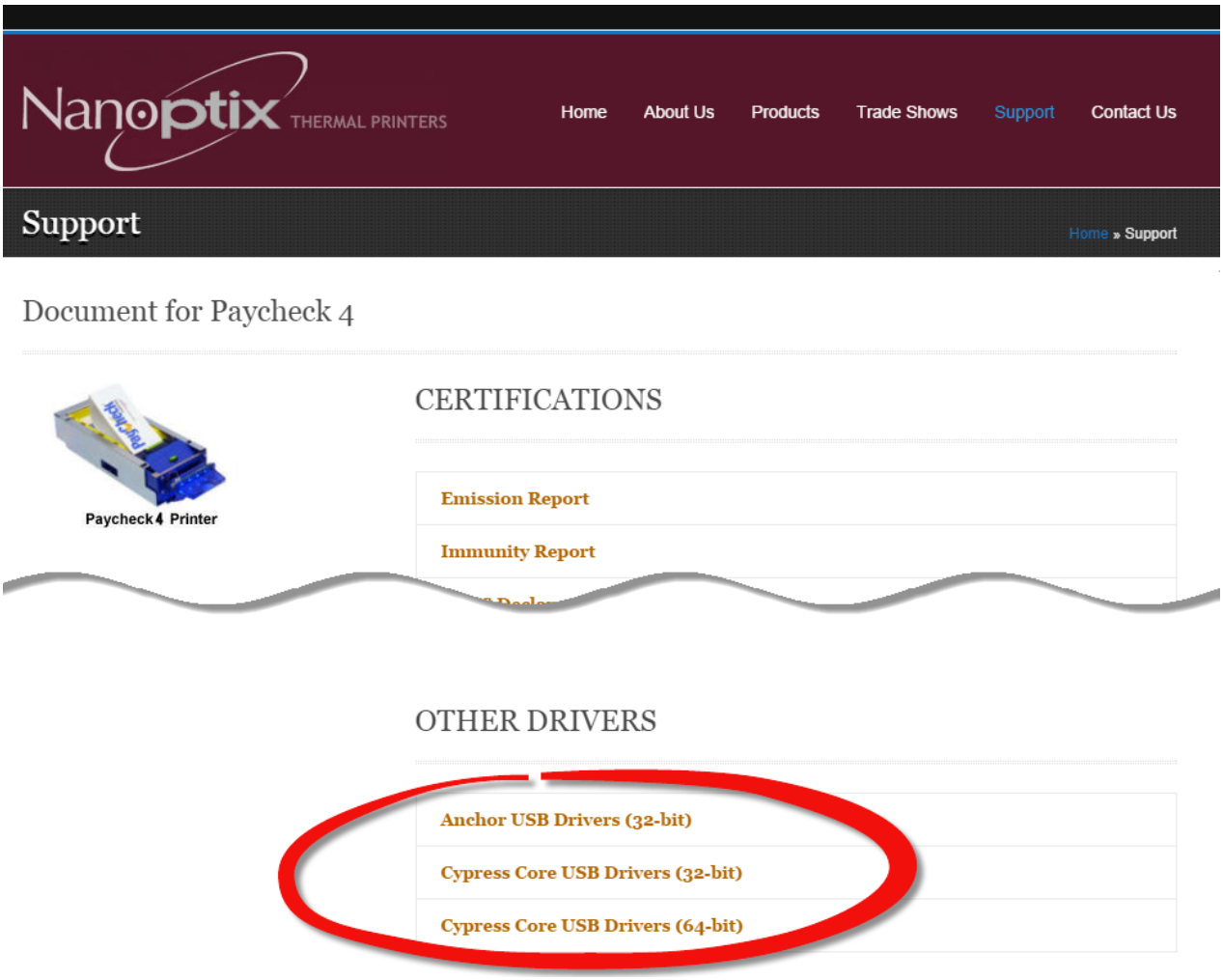
On the other hand, if the printer's **power is interrupted during the final seconds** of downloading, it might not have been able to finish the transfer from RAM to Flash. If the power is restored to the printer and it is non responsive (Does not feed paper), the printer will have to be restored to its **default factory boot**.

1. When a printer is first received from the factory or if the current firmware is not valid it is possible to place it into a **factory boot mode** in order to download a fresh new version of firmware. Some drivers need to be downloaded from the Nanoptix web site in order for windows to detect the printer in its factory boot mode.

   First, navigate to the Support section of the Nanoptix website at http://support.nanoptix.ca/ and then click on the appropriate product support page.

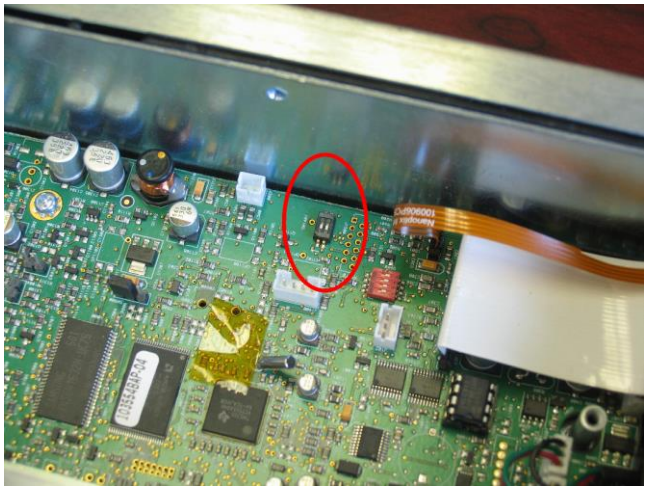
   Then, click on the appropriate driver link for your Windows OS, Cypress Core USB Drivers (32 or 64 bit).

   NOTE: For legacy OS support, the ***Anchor USB Drivers (32-bit)*** are still offered.

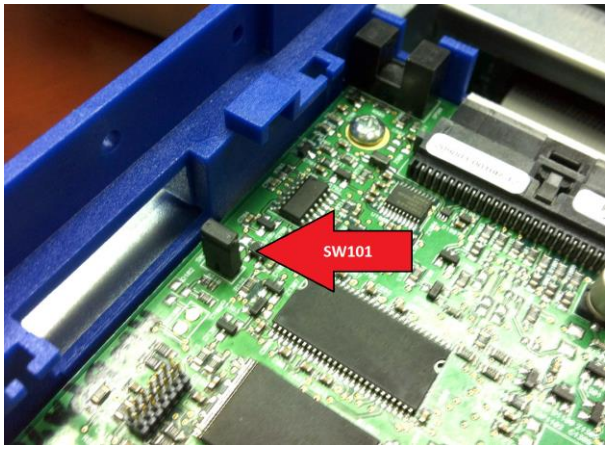


2. Download the ***.zip*** file and extract the content to a known location on your local disk. These files will be used a few steps further, in *section 8*.

3. To place a printer into **factory boot mode** you first need to locate the "boot mode dip switch bank" on the main controller board. Depending on the printer model, there can be several dip switch banks present on the board. The boot mode dip switch bank is the one with **two (2)** dip switches. With the printer's power turned off, move the two dip switches from the OFF position to the ON position



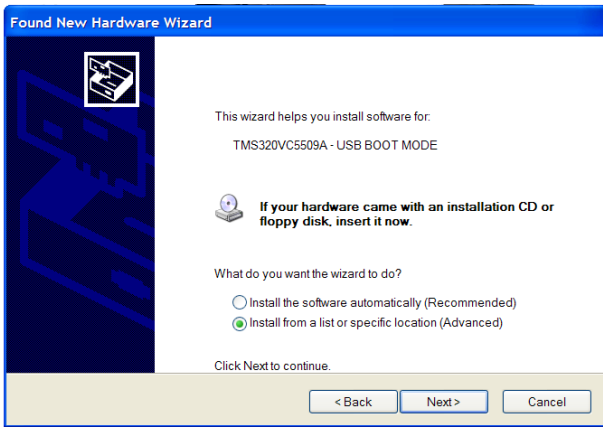
4. To avoid the HW watchdog from resetting the printer in the middle of flashing, temporarily remove the jumper SW101 (Note: This is optional because jumper not present on all board revisions)



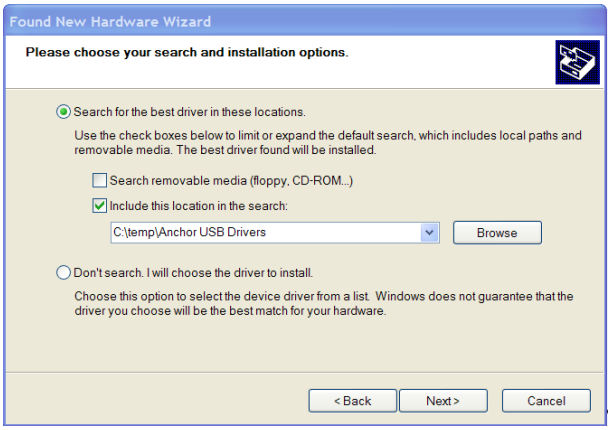
5. Then turn the printer's power on. When the processor powers up and sees the two dip switches in the ON position it goes into an internal factory boot mode. After the printer is powered on, the dip switches need to be switched back to the OFF position.

6. Connect the printer to the host via USB**.** The Windows USB detection will discover an unknown device and ask for drivers. The following screen will be displayed, Select "No, not this time" and then click "next"

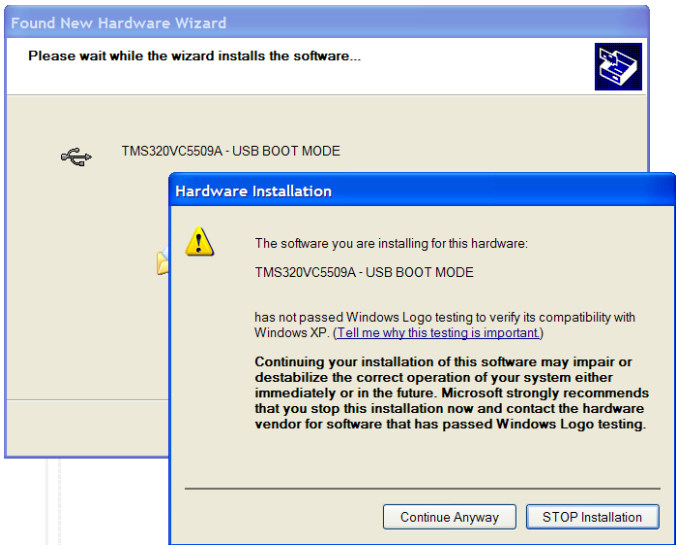
7. Select "Install from a list or specific location" and then click "next"



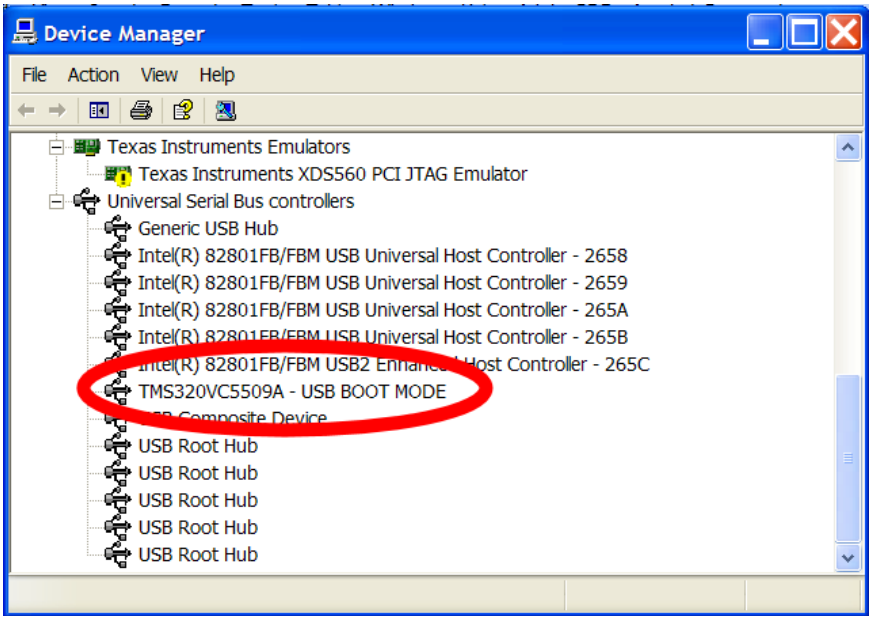
8. Browse to the ***Anchor USB Drivers*** which have been downloaded and extracted to a known location, then click "next"



9. Click “Continue Anyway” and then “finish”



10. Open the device manager to verify that the printer (in USB Boot mode) was correctly detected by Window. To do this, select: **Start / Control panel / System / Hardware / Device Manager**, scroll down to “**Universal serial bus controller**” and make sure that “TMS320VC5509A – USB BOOT MODE” is listed



11. At this point everything is ready. Run ***FlashImage.exe.*** Because of the previous steps, when Windows looks for “**USB BOOT MODE**” drivers, they will have already been installed and the download will proceed and should complete successfully.

12. Once the download is completed, the jumper needs to be reinstalled.

*Note: The **USB ANCHOR /CYPRESS CORE USB DRIVERS** have to be installed for every single USB port on your computer.*