

Nanoptix Paycheck[™] 3, 4 & Desktop Printers

Firmware Downloading & Installation Instructions

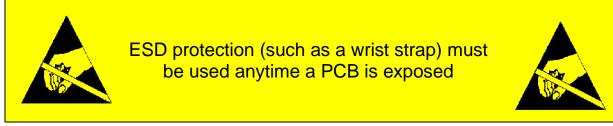
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Date: November, 2020 Document#: 700000-0001 Rev1.8

Section 1: Downloading and Installation

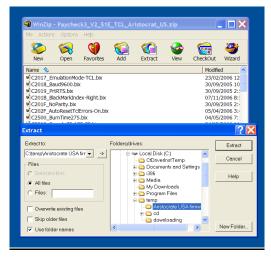
NOTES:

- If you already have a firmware *.zip package in your possession then there is no need to contact Nanoptix you can skip directly to Step 3.
- If your firmware package has already been extracted you can skip directly to Step 4.
- 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.



- 1. For specific firmware requests please contact support@nanoptix.com to receive a download link to the firmware.
- 2. Download the firmware to a <u>known location</u> on your local disk.
- 3. Extract the whole content of the ".zip" file to a <u>known location</u> on your local disk using the ".zip" extractor of your choosing.

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



- 4. 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



- 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).
- 6. 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 3....SUCCESS! Downloading Bank 4....SUCCESS! Downloading Bank 4....SUCCESS!

7. 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_U5_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 C2017_Artty-Netplex.bix Send Configuration file C2017_Artty-Netplex.bix Send Configuration file C202F_AutoResetNtlErrors-Off.bix Send Configuration file C202F_AutoResetNtlErrors-Off.bix FlashImage.exe / FlashimageNFF.exe will then download the firmware image (*.bin or *.nff) to the printer in blocks of 64KB. In the <u>critical final seconds of the download, the printer then</u> <u>transfers all this information from its RAM to its Flash</u>. Finally, the printer reboots and is put back into <u>"RUN" mode</u>.

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

Downloading Bank 15SUCCESS!
Down loading Bank 16SUCCESS!
Downloading Bank 17SUCCESS!
Down loading Bank 18SUCCESS!
Downloading Bank 19SUCCESS!
Downloading Bank 20SUCCESS!
Downloading Bank 21SUCCESS!
Downloading Bank 22SUCCESS!
Downloading Bank 23SUCCESS!
Downloading Bank 24SUCCESS!
Downloading Bank 25SUCCESS!
Downloading Bank 26SUCCESS!
Downloading Bank 27SUCCESS!
Downloading Bank 28SUCCESS!
Downloading Bank 29SUCCESS!
Downloading Bank 30SUCCESS!
Downloading Bank 31SUCCESS!
Done Downloading!
Saving CRC in EEPROM 07B2
WILL NOW FLASH IMAGE FROM RAM, PLEASE DO NOT POWER OFF PRINTER
THIS TASK WILL TAKE APPROX. 29 SECONDS
More Time is required, please hold
Flashimage DONE! Do you want to Flash another Unit? (Y)es or (N)o ->
DU YUU WANT TU FIASH ANUTHER UNIT: (1765 OF (N/O -7

- 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.
- 9. As verification a *power on test ticket* can be printed. To print the test ticket, <u>the printer must be powered "ON" while holding the paper feed button for up to 15 seconds</u>. 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
	INTL
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:	275 03
Real Time Commands:	Enabled
Auto Reset Status:	Enabled
PRINTER ENVIRONMENT CONDITIONS	Enabled
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,g,	
Fonts:	0,2,3,4,5,7,8,15
Graphics:	0,2,0,7,0,7,0,10
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 <u>power is interrupted</u> while *FlashImage.exe* is downloading the settings or the firmware banks into RAM, the printer will power up again already in <u>download mode</u> 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**.

 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 <u>http://support.nanoptix.ca/</u> 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.

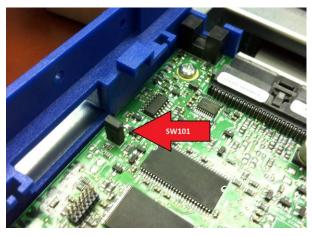
💮 Paycheck 4 - Nanoptix	× +	
- > C	nanoptix.ca/support/paycheck-4/	\$
MANUALS		
Firmware Upgrade F	rocedure	
Owners Manual		
Technical/Service M	lanual	
OTHER DR		
OTHER DR Anchor USB Drivers Cypress Core USB D	(32-bit)	

- 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.

 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 "<u>No,</u> <u>not this time</u>" and then click "<u>next</u>"

Found New Hardware	Wizard		
	Welcome to the Found New Hardware Wizard		
	Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).		
	Read our privacy policy		
	Can Windows connect to Windows Update to search for software?		
	 Yes, this time only 		
	Yes, now and every time I connect a device		
	No, not this time		
	Click Next to continue.		
	<back next=""> Cancel</back>		

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

Found New Hardware	Wizard
	This wizard helps you install software for. TMS320VC5509A - USB BOOT MODE If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do? Install the software automatically (Recommended) Install from a list or specific location (Advanced)
	Click Next to continue.
	<back next=""> Cancel</back>

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

Found New Hardware Wizard
Please choose your search and installation options.
• Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
Include this location in the search:
C.\temp\Anchor USB Drivers Browse Browse
O Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
<back next=""> Cancel</back>

9. Click "Continue Anyway" and then "finish"

Found New Hardware	Wizard
Please wait while the	wizard installs the software
TMS320 می	VC5509A - USB BOOT MODE
	Hardware Installation
È	The software you are installing for this hardware: TMS320VC5509A - USB BOOT MODE has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
	Continue Anyway STOP Installation

 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 "<u>TMS320VC5509A – USB BOOT MODE</u>" is listed

🖶 Device Manager	
File Action View Help	
🖃 🎟 Texas Instruments Emulators	^
Texas Instruments XDS560 PCI JTAG Emulator	
🖻 🚔 Universal Serial Bus controllers	
🖷 🚔 Generic USB Hub	
🚔 Intel(R) 82801FB/FBM USB Universal Host Controller - 2658	
🚔 Intel(R) 82801FB/FBM USB Universal Host Controller - 2659	
🚔 Intel(R) 82801FB/FBM USB Universal Host Controller - 265A	
🚔 Intel(R) 82801EB/EBM USB Universal Host Controller - 265B	
antei(R) 82801FB/FBM USB2 Enhance Host Controller - 265C	_
TMS320VC5509A - USB BOOT MODE	
Composite Device	
🚔 USB Root Hub	
ିଙ୍କ USB Root Hub	*

- 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.