Nanoptix
PayCheck™ NextGen

Firmware Upgrading & Recovery Instructions

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Date: May 8 2024
Document#: 700014-0000 Rev 1.8
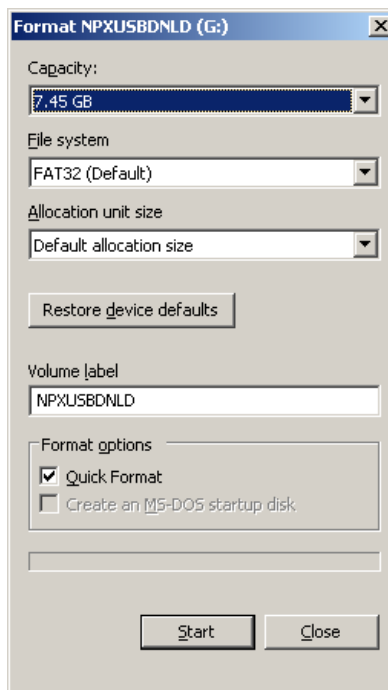
Section 1: USB Setup and Installation

NOTES:

- **A USB flash drive (or similar USB mass storage device) is required in order to complete the process. The storage capacity of the drive must be between 1GB and 32GB**
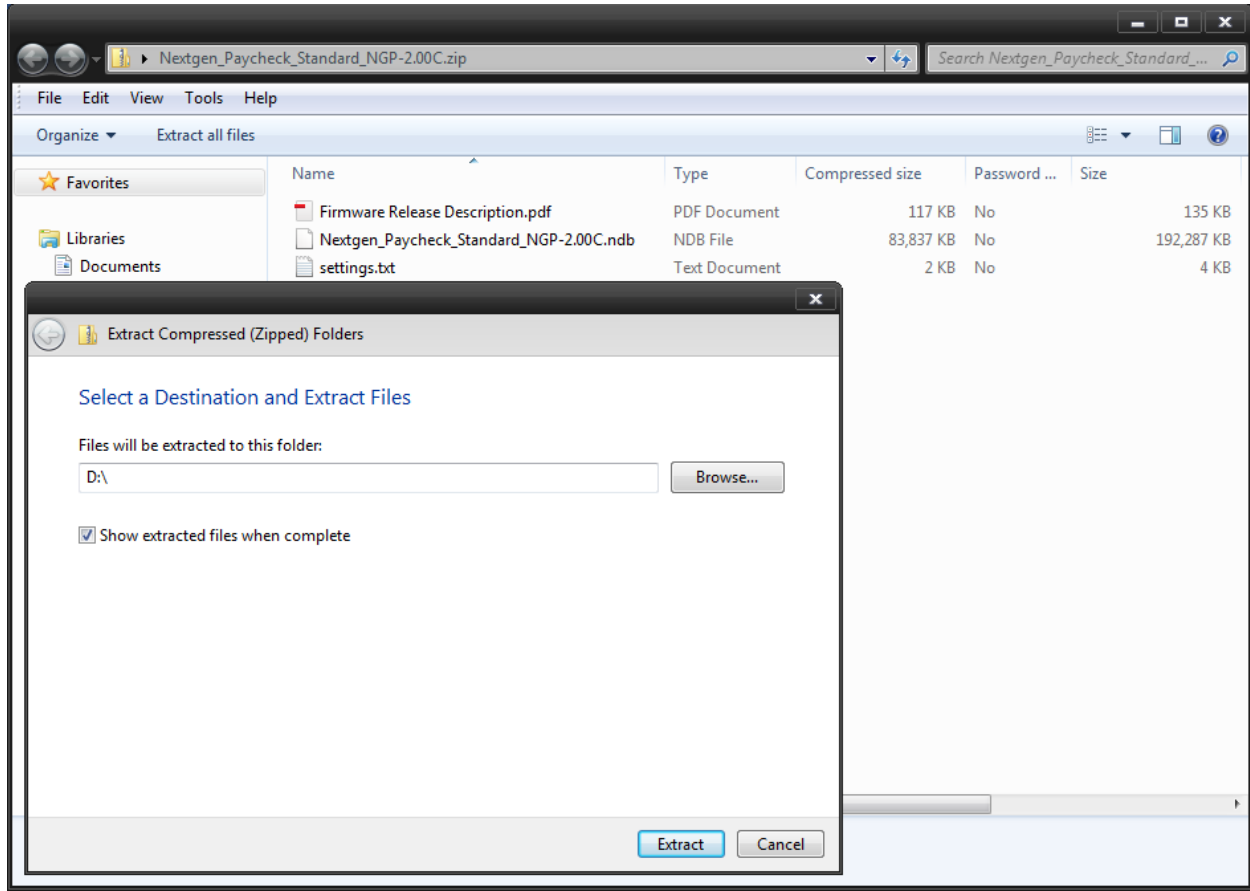
ESD protection (such as a wrist strap) must be used anytime a PCB is exposed

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. Prepare the USB flash drive by inserting it into one of your computer's USB ports.

4. Format the USB flash drive using a <u>FAT32</u> file system, set the allocation unit size to the default setting and **change the volume label to "NPXUSBDNLD"**
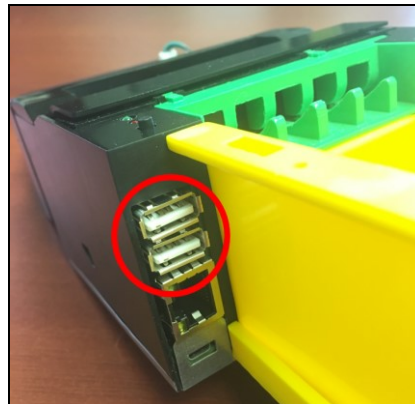
5. Extract the whole content of the ".zip" file that contains the firmware, provided by Nanoptix, to the USB flash drive that was prepared in step 4.

6. Make sure the PayCheck™ NextGen printer is <u>OFF</u> then Insert the USB flash drive in the front USB port (Or in the side USB ports if available).

<u>NOTE: If the firmware needs to be restored using a micro SD card, go to section 2</u>

7. Plug in the printer to turn it <u>ON</u>.

8. On power up, the red LED will be illuminated, after 15 seconds, the download will start. As confirmation, the printer will emit a beeping sound at approximately a 1 second interval and the green LED will blink at the same speed.

9. Since only the sections of firmware that change will be downloaded, the process takes anywhere between 1 second and 6 minutes. Once complete, the speed of the LED and beeping will increase to 3 times per second.

10. Once the rapid beeping is heard, the USB flash drive can be removed. The printer will reset and boot up with the newly downloaded version of firmware. This process takes approximately 20 seconds; the illumination of the green LED is a confirmation that the printer is ready.
   <u>**Note:**</u> Do not *disconnect power or communication until the download is complete.*

11. 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 NextGen
Firmware:                     NPG-9.99Z (0x6D00)
Printer Driver Ver:           1.0.1.1
SETTINGS
COMMUNICATION
   Protocol:                  NTL
   Interface:                 Serial
   Serila Settings:           9600,8,NONE
   Handshaking:               XON + RTS
   Print mode:                Page
NETWORKING
   eth0                       99.99.99.201
PRINT CONTROL
   Speed:                     200 mm/sec
   BurnTime:                  300 uS
Motor Current:                58%
PRINTER ENVIRONMENTAL CONDITIONS
Voltage:                      24.7 Volts
Temperature:                  25 Celcius
SYSTEM RESOURCES
  FLASH Used=00000
         Free=65535
LIBRARY INVENTORY (Satandard)
Tpl:  0, 1, 2, 4, 4, 5,6,7,8,9,A,B
Rgn 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, l, j, k, l, m, n, o, p, q
Gfx:
LIBRARY INFORMATION
Board:                        209022-0001R-04
Board ID:                     5P00122
Printer ID:                   NG0003C
Date Code:                    20160505

*S|0|PAY-4.82H|@|@|@|I|@|P|*
```
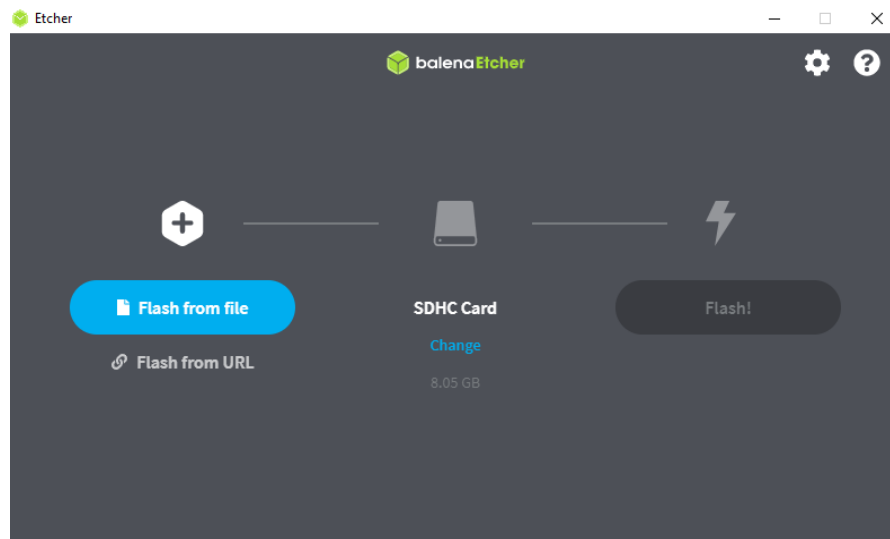
Section 2: Restoring printer's firmware

- **A micro SD is required in order to complete the process. The storage capacity of the card must be between 512MB and 32GB**
- **Balena's Etcher Utility is required in order to prepare the micro SD card. The Balena's Etcher Utility software can be downloaded from https://www.balena.io/etcher/**

NOTE: When going from any NGP-1.XYZ to NGP-2.XYZ firmware release the download may result in the printer's download mode beeping to get stuck in either the ON or OFF state. Removing the USB flash drive early can result in the printer failing to reboot, and requiring the use of a MicroSD card to recover.
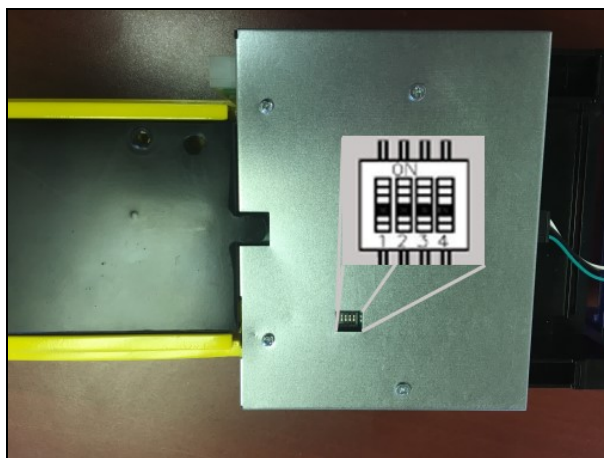**Please read the following guide for detailed instructions and examples.**
http://techsupport.nanoptix.com/techsupport/files/nextgen/docs/help/index.html

1. Visit http://techsupport.nanoptix.com/techsupport/files/nextgen/recovery/MicroSDBootDisk_BOT-3.20B.zip for the recovery image.

2. Download the .img file to a <u>known location</u> on your local disk.

3. With the Paycheck NextGen powered off.

4. Insert the micro SD card in your card reader and note which drive letter is associated with the micro SD card when it's connected. (Example "G:"). Then start the Etcher Utility software.

5. Navigate to and select the image file that was downloaded previously in step 4. Select the Device that corresponds to the Micro SD card that was inserted in step 5.

6. Click the Flash! button, when prompted about overwriting the disk, click yes. Once complete, eject the micro SD card.

7. On the underside of the Printer put dip Switch 1 into the ON position. This will force the Printer to boot from the Micro SD recovery card. Dip switch 4 should set to the OFF position, this will prevent the watchdog from resetting the printer while the download is in process.

8. Insert the micro SD recovery card into the micro SD slot on the front of the printer. And insert the Nanoptix USB download drive (USB flash drive created in section 1) into the Front USB Host port of the printer.

9. Power on the printer, the red LED will be illuminated, after 15 seconds, the download will start. As confirmation, the printer will emit a beeping sound at approximately a one second interval and the green LED will blink at the same speed.

10. The process takes anywhere between 1 second to 6 minutes. Once complete, the speed of the LED and beep will increase to 3 times per second. At that point, disconnect the printer and remove the USB flash drive and micro SD cards. Restore dip switch 1 to the OFF position and dip switch 4 to ON

11. Plug in the printer and verify the firmware downloaded correctly.