

TRANSACT

Technologies Incorporated

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Major Firmware Update Procedure

Occasionally an Epic 950 printer may require a firmware update. Minor firmware updates can be applied with the DL File program. Major updates sometimes require a complete firmware replacement. This document is intended to be used for major printer updates when the complete firmware and graphics must be replaced.

Minor Firmware Updates

Minor firmware updates might include changes to the character map or a change to the Power On configuration (por.ini) file. The DL File program is a quick and easy method of making these changes.

Note: If you change any of the core files in the printer the System CRCs will reflect those changes. The printer will have to be re-qualified if the system CRC is not correct. Access to core elements is restricted within the DL File program. You will require system access permissions for the DL File program to be able to update the printer's firmware.

Major Firmware Changes

Occasionally the printer will require a complete firmware change. This might be required if new features are being added to the printer or a different firmware version is required. It is also possible to create a snapshot of a printer and duplicate it in other printers. This process will completely replace the data stored in the printer's internal flash. This includes the firmware, fonts, and any stored graphics.

Major Firmware Changes and Security

The Epic 950 has several layers of security that detect when firmware changes have been made and prevent printer operation. Whenever the complete firmware is replaced, these features must also be reconfigured.

FTP Web Site

To allow developers easy access to firmware, fonts and graphics provided by TransAct, TransAct supports an ftp web site dedicated to the Epic 950 printer. This site contains firmware, tools and documentation. By receiving this document you are being granted access to this information. This information is confidential and proprietary property of TransAct. Do not duplicate or disseminate this information without written permission from TransAct.

By clicking on this link <ftp://transactftp2:bluestop3@www.transact-tech.com> you will see one or more directories. The Epic 950 directory contains firmware, fonts and documentation for the Epic 950 printer.

Two programs are required for a major update. The first is the low level download program; the second is the printer configuration tool.

Low Level Download Tool

This tool is available from the ftp site and is located in: /Epic 950/Tools/Download/Low level Boot Loader/ and called Download.exe. This program requires a compressed boot file to operate. This file

uses a special compression procedure that prevents undetectable changes to the file. If you change the file, it won't work any more.

This program does not need to be installed and will run from any local directory. (You can use the same directory where the configuration program is loaded. See below.)

Configuration Tool

The configuration tool is used to set various configuration features of the printer. Things like the energy levels used to print various paper types are configured with this tool. This tool can also reset the security features but only for approved firmware versions. This configuration tool requires a map and option file that matches the firmware to function.

The configuration tool can be downloaded from the ftp site and is located in: /Epic 950/Tools/Configuration/. This program must be installed to function and the map and opt files that match the firmware being installed in the printer must be in the same directory where the program was installed.

Major Firmware Update Process

The update process is as follows

1. Download a new firmware image into the printer.
2. Allow the new firmware to attempt to function so that its identity can be confirmed and updated.
3. When the firmware security feature detects a firmware modification, it will halt the printer.
4. Restart the printer in Post Boot mode and use the config program to reset the firmware security control.
5. The update is then complete.

Major Firmware Update Procedure

- 1) In order to download the printer you will need to have power to the printer and have the 4 pin molex download cable plugged into the printer and connected to the computer using a null-modem cable. (If you do not have a null-modem cable, TransAct can provide one.)
- 2) From the ftp site, download the low level firmware loader. Locate the firmware image you wish to load. Firmware images end with the .CBT extension. For example the RS232 Serial firmware would be in the /Epic 950/Firmware/RS232 Serial/ directory.
- 3) Copy the image to a local directory for access by the download program.
- 4) Apply power to the printer with the chassis slid open, the head cover open, and while holding the feed button down.
- 5) The power LED will be blinking and the fault LED should be on solid.
- 6) Next run the firmware download program, select the proper communications port.
- 7) Press the "Get Printer information" button. This should show information in the windows below the button.
- 8) Slide the Serial performance slider to the right until 115200 baud is selected. There are warning messages; however the Epic 950 can be loaded at up to 115200 baud. (Do not select higher rates.)
- 9) Next press the "Select file to download" button.
- 10) Select the *.CBT file you downloaded from the ftp site.
- 11) Press the "Download Now" Button.
- 12) Wait until the download has completed. The PC will actually stop sending data to the printer some time before the printer has completed its update. Wait for the printer to exit boot load mode before proceeding to the next step. When complete, only the READY light should be on and it should be blinking with a short single blink about every second.
- 13) At this point the printer is in Post Boot mode where the configuration program will operate, however, the nonvolatile memory in the printer does not yet know about the new firmware. In addition, the firmware security does not know about the new firmware. To get things started, close the front cover and power cycle the printer. The printer will now come up and attempt to

operate. The printer will validate itself and update the nonvolatile information, however, the firmware will not be identified correctly by the security features. The printer will fault in about 5 seconds.

- 14) After the fault, open the front cover and power cycle the printer. The printer will then reenter Post Boot mode where firmware can be modified and the printer configured.
- 15) At this time you should start the configuration program and set the CRC valid flag to ReGen. Setting the ReGen flag will force the printer to regenerate the CRC on the next power cycle. To set the ReGen flag follow the following procedure.
 - a. Start the config program.
 - b. Select the communications port. (The same one used for the download)
 - c. Select 115200 baud 8 bit no parity and no flow control. (If the Setup Serial port is grayed out after you select the com port, click OK and reselect the port configuration button)
 - d. Select read
 - e. Select edit
 - f. Select CRC Verification
 - g. Select CRC Valid and set it to Regen
 - h. DO NOT MAKE ANY OTHER CHANGES.
 - i. Select OK
 - j. Select Write and wait for the write to complete.
 - k. Close the config program.
- 16) Once the ReGen flag has been set you should close the cover and power cycle the printer.
- 17) If all went well, the printer will now be operating with the new firmware and the security features will accept the new firmware.