User Guide
FLDFU Utility v2.x

GEN3 Evolution® Printer
GEN2 Universal™ Mark II Printer
GEN2 Universal™ Printer
ONYX™ Printer
User Guide

FLDFU Utility v2.x (for GEN3 Evolution®; GEN2 Universal™ Mark II; GEN2 Universal™; ONYX™ printers)

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1 Guide Overview

Introduction
This chapter provides an overview of this guide.

Intended Audience
The intended audience for this guide is users of the FLDFU application.

Applicability
This guide covers the FLDFU application v2.x for the following printers:
- GEN3 Evolution®
- GEN2 Universal™ Mark II
- GEN2 Universal™
- ONYX™

Document Conventions
This document uses the following conventions:

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Note" /></td>
<td>This is a note. A note includes information that emphasizes or supplements important points of the topic.</td>
</tr>
<tr>
<td><img src="image" alt="Caution" /></td>
<td>This is a caution. A caution emphasizes information that may cause damage to equipment and/or injury to a person.</td>
</tr>
<tr>
<td><img src="image" alt="Cautionary Note" /></td>
<td>This is Cautionary Note that provides information that changes default settings.</td>
</tr>
<tr>
<td>Bold text</td>
<td>This document uses this style to identify a field, a button to press, a command selection, and an option selection.</td>
</tr>
</tbody>
</table>
2 Product Overview

Introduction
This manual describes the FLDFU application for use with the GEN3 Evolution®, GEN2 Universal™ Mark II, GEN2 Universal™ and ONYX™ printers.

The FLDFU application runs on computers with Windows® 7 (32-bit or 64-bit), or Windows XP. The FLDFU application and the firmware run on the target printer board communicate via USB, and comply with the DFU 1.1 specification. Refer to the USB Device Firmware Upgrade Specification, Revision 1.1 Aug. 2004 from usb.org for more information on the specifics of the DFU process.

Note for TableXchange® device: FutureLogic recommends using the TableX Host Utility instead of FLDFU. Please contact your FutureLogic technical representative.

FLDFU Software Changes
Version 2.2.8 supports the GEN2 Universal Mark II printer.
Additionally, the FLDFU application supports the following:
- DFU and SHA firmware
- DFU 1.1 and IGT SPC Feature 108 downloads
- Product IDs for GEN3 Evolution, GEN2 Universal Mark II, GEN2 Universal, and ONYX printers
- Download and Upload capabilities as specified in the DFU 1.1 specification
- (For GEN3 Evolution and ONYX printers) Uses the Vendor device class when the target is running in BSP or Boot mode (No device driver should be installed for the Vendor class portion of the device). All components of a new firmware image download in a single firmware bundle. This means that the BSP, Application, SLF, and fonts are all built into one DFU bundle, which is sent down to the printer and stored in Flash via a volume manager (the internal operations of this are transparent to the user).

FutureLogic Product IDs

<table>
<thead>
<tr>
<th>Printer Product</th>
<th>Product ID Base</th>
<th>SPC Class</th>
<th>GDS HID Class</th>
<th>DFU Class</th>
<th>PDC Class</th>
<th>CDC Class</th>
<th>BSP Vendor Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN2 Universal</td>
<td>02</td>
<td>0x0202</td>
<td>0x0203</td>
<td>0x0204</td>
<td>0x0206</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>GEN2 Universal Mark II</td>
<td>03</td>
<td>0x0301</td>
<td>0x0303</td>
<td>0x0304</td>
<td>0x0306</td>
<td>0x0307</td>
<td>0x0308</td>
</tr>
<tr>
<td>GEN3 Evolution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eclipse™ **</td>
<td>04</td>
<td>0x0401</td>
<td>0x0403</td>
<td>0x0404</td>
<td>0x0406</td>
<td>0x0407</td>
<td>0x0408</td>
</tr>
<tr>
<td>ONYX ***</td>
<td>05</td>
<td>0x0501</td>
<td>0x0503</td>
<td>0x0504</td>
<td>0x0506</td>
<td>0x0507</td>
<td>0x0508</td>
</tr>
<tr>
<td>--</td>
<td>06</td>
<td>0x0601</td>
<td>0x0603</td>
<td>0x0604</td>
<td>0x0606</td>
<td>0x0607</td>
<td>0x0608</td>
</tr>
</tbody>
</table>

xx = not used
* = Provides support for DFU access when in BSP/Boot level execution; does not have a USB driver.
** = For Eclipse printers, use version 1.00 of the FLDFU application.
*** KBM60-2 printers use the same ID as ONYX. Refer to the KBM60-2 Developers Manual.

Technical Support
For technical support, send an email to techsupport@futurelogic-inc.com.
3 Download – Overview

Introduction
This chapter describes the download hardware and software requirements, and hardware connections.

Hardware Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer</td>
<td>GEN3 Evolution, GEN2 Universal Mark II, GEN2 Universal, or ONYX</td>
<td>Varying</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Required if the printer is out of the game</td>
<td>350-00031-102</td>
</tr>
<tr>
<td>Evaluation Cable</td>
<td>Required if the printer is out of the game</td>
<td>150-00013-100</td>
</tr>
<tr>
<td>Upgrade Key</td>
<td>Required for GEN2 Universal only</td>
<td>100-00368-102</td>
</tr>
<tr>
<td>Computer</td>
<td>Running Windows XP or Windows 7 (32-bit or 64-bit) Customer-supplied</td>
<td></td>
</tr>
<tr>
<td>USB Cable</td>
<td>Required for GEN2 Universal and ONXY. Connects to Side Port Customer-supplied</td>
<td></td>
</tr>
<tr>
<td>USB Hub</td>
<td>(Recommended) For maximum operability use a USB hub between the printer and the computer (host). Customer-supplied</td>
<td></td>
</tr>
</tbody>
</table>

Software Requirements

Download the following from the FutureLogic Exchange™ secured area of our web site (www.futurelogic-inc.com). For access, submit your request to webaccess@futurelogic-inc.com.

- Firmware Version. If you need a firmware version, contact the OEM or use our Firmware Request form available at http://www.futurelogic-inc.com/support/firmwarerequest/.
- FLDFU v2.x or newer. The software and printer driver for use with the USB port of the printer.

Download Process Overview

<table>
<thead>
<tr>
<th>Step #</th>
<th>Description</th>
<th>Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Connect the hardware. See Printer and Cable Connections on page 3.</td>
<td>Each Time</td>
</tr>
<tr>
<td>2</td>
<td>Install the FLDFU software. See Chapter 4.</td>
<td>First Time Only</td>
</tr>
<tr>
<td>3</td>
<td>Load the printer driver. See Chapter 5.</td>
<td>First Time Only</td>
</tr>
<tr>
<td>4</td>
<td>Launch the FLDFU application. See Chapter 7.</td>
<td>Each Time</td>
</tr>
<tr>
<td>5</td>
<td>Download the firmware. See page 14.</td>
<td>Each Time</td>
</tr>
<tr>
<td>6</td>
<td>Close/Exit the FLDFU application.</td>
<td>When done with all printers.</td>
</tr>
<tr>
<td>7</td>
<td>Cycle power to the printer.</td>
<td>Each Time</td>
</tr>
<tr>
<td>8</td>
<td>Print a Configuration Ticket. Press and hold the FEED button while powering up the printer. Continue to hold the FEED button until the ticket starts to print, then release. See Appendix C for details on the Configuration Ticket.</td>
<td>Each Time</td>
</tr>
</tbody>
</table>
Printer and Cable Connections

GEN3 Evolution Cable Connections (Out of Game)

1. Verify power is off to the printer.
2. Connect the USB Cable end to the computer (host).
3. Connect the Evaluation Cable to the Interface Cable and Power Supply.
GEN2 Universal Mark II Cable Connections (Out of Game)

1. Verify power is off to the printer.
2. Connect the USB Cable end to the computer (host).
3. Connect the Evaluation Cable to the Interface Cable and Power Supply.

Figure 3-2  GEN2 Universal Mark II – Cable Connections
GEN2 Universal Cable Connections (Out of Game)

1. Verify power is off to the printer.
2. Remove the rubber cap; insert the Upgrade Key with the side marked FRONT facing the keypad.
3. Connect a USB Cable to the **Side port** of the printer; connect the other end to a USB Hub that is connected to the computer.

**Note:** Only use the **Side Port** to update the Boot and BSP Images as the procedures will not work with the other USB port.

4. Connect the Evaluation Cable to the Interface Cable and Power Supply.
5. Plug in the Power Supply.
ONYX Cable Connections (Out of Game)

1. Verify power is off to the printer.
2. Connect a USB Cable to the Side port of the printer; connect the other end to a USB Hub that is connected to the computer.
3. Connect the Evaluation Cable to the Interface Cable and Power Supply.

Figure 3-5  ONYX – Cable Connections
Introduction
This chapter covers the installation of the FLDFU application.

Remove Previous Version
Before installing a newer version of the FLDFU application, remove the previous installation.

1. Run FLDFUsetupxxx.exe for the version currently installed; click Next.

2. Select Remove; then click Next.

Figure 4-1       InstallShield Wizard – Program Maintenance

Figure 4-2       InstallShield Wizard – Remove the Program
3. Click **Remove**. The application is removed from the computer.

![InstallShield Wizard – Completed](image)

**Figure 4-3** InstallShield Wizard – Completed

4. Click **Finish**.

**Install the FLDFU Application**

**Important Note:**
Remove any previous version before installing this version. For instructions, see page 8.

1. Run the setup (for example, *FLDFUSetupV20.exe*). The InstallShield Wizard displays.

![InstallShield Wizard for FLDFU](image)

**Figure 4-4** InstallShield Wizard for FLDFU

2. Click **Next**.
3. Click **Install**. The FLDFU application installs on the computer.

4. Click **Finish**.

5. If prompted, restart the computer.
5 FLDFU Device Driver Installation

Introduction
This chapter provides instructions on associating devices with the FLDFU driver. During first time connection, the Windows Device Manager may show the printer drivers as unrecognized devices (identifiable when Windows places an exclamation mark on the driver icon). To correct this, the driver must be associated.

Note:
Driver association depends as well on the version of Windows in use.

Install Device Driver
1. Open Control Panel, Device Manager.

Figure 5-1 Control Panel – Device Manager Example

2. In the Device Manager display shown, there are 2 USB devices shown.
   The FLI-CDC-DFU 1.1v entry is the entry to associate with the DFU driver. The other entry may require association with another USB class driver.
   The first time the host computer detects the Product IDs from the printer (device) or if it does not recognize the device, Windows will likely ask to install a driver. The IDs only need to be associated with the FLDFU software once, even if installing a new version of the software.

3. Right-click FLI-CDC-DFU 1.1v and update the driver.
4. Click **Have Disk** to browse for driver selection in either of the following locations:

- C:\Program Files\FutureLogic\FLI DFU Downloader\dfuPrinterFL
- C:\Program Files (x86)\FutureLogic\FLI DFU Downloader\dfuPrinterFL.

5. Using the **dfuPrinterFL.inf** file, select either **FLI-CDC-DFU 1.1** in the **Model** list; click **Next**. The DFU drivers install.

After the driver installation, the Windows Device Manager updates to display **FLI-CDC-DFU 1.1** under **Universal Serial Bus controllers**. The printer is ready for firmware upgrade. Continue with the firmware upgrade procedure on page 14.
6 FLDFU Application Usage

Introduction
This chapter provides details on using the FLDFU application in Simple Mode for firmware downloads.

GEN3 Evolution Printers – Specific Notes

Erase User Settings
When the Erase User Settings option is checked (enabled) for GEN3 Evolution firmware updates, extra steps are required to perform this erase. The flashing green light in the tool indicates activity, and stops flashing when the upgrade process has completed.

Note the following:
1. Select this setting only in going from a GEN3 CB1.x firmware to another GEN3 CB1.x firmware.
2. NEVER select this setting if a GEN3 CB2.x firmware is involved with the firmware operation.
   - Do NOT select Erase User Setting when going from a GEN3 CB 1.x (Code Base 1.x) to a GEN3 CB 2.x.
   - Do NOT select the Erase User Setting option when going from a GEN3 CB 2.x (Code Base 2.x) to a GEN3 CB 1.x.

ONYX Printers – Specific Notes

Erase User Settings
When the Erase User Settings option is checked (enabled) for ONYX firmware updates, extra steps are required to perform this erase. The flashing green light in the tool indicates activity, and stops flashing when the upgrade process has completed.

In general, if upgrading a different version of the same firmware, enabling this option is not necessary.

GEN2 Universal Mark II Printers – Specific Notes

Erase User Settings
When the Erase User Settings option is checked (enabled) for GEN2 Universal Mark II firmware updates, extra steps are required to perform this erase. The flashing green light in the tool indicates activity, and stops flashing when the upgrade process has completed.

In general, if upgrading a different version of the same firmware, enabling this option is not necessary.

GEN2 Universal Printers – Specific Notes

Download Application Only

Note:
The Download Application Only function is only applicable to GEN2 Universal™ printers.

The GEN2 Universal printers also support separately downloading the Application, BSP and boot code.

With the Download Application Only function, the FLDFU application downloads only the Application without automatically upgrading the printer BSP. If the printer is running a version of the BSP that will not allow the Application upgrade, the FLDFU application will show an error message prompting to update Boot and BSP code using Full Upgrade (see page 14 for instructions).

See also First Time Connection: GEN2 Universal Printer with GDS/HID Firmware on page 16.
Upgrade Key and USB Side Port
When upgrading a GEN2 Universal printer, the Full Upgrade function checks the version of the BSP running on the printer and, if needed, automatically updates it. A message will prompt to confirm that the Upgrade Key and the correct port are in place. At this point, ensure that both the Upgrade Key and the USB Side Port are utilized correctly.

TableXchange Device – Specific Notes
FutureLogic recommends using the TableX Host Utility instead of FLDFU. Please contact your FutureLogic technical representative.

Full Upgrade
1. IMPORTANT! Verify the proper hardware and cabling connection (see page 3).
2. Start the FLDFU application.

![FLDFU Main Window](image)

Figure 6-1  FLDFU Main Window
3. Click **Select FIRMWARE**. The Firmware Upgrade window displays.

4. Locate and select the file to download; click **Open**. These can be in either .DFU or .SHA format.

5. *(Recommended for most firmware versions)* Select **Erase User Settings**. See specific notes for each printer or device on previous pages of this chapter. This will reset the previous communication parameters (baud rate and handshaking) to the new firmware default settings.

6. Click **Full Upgrade**. The upgrade cycle may repeat depending on the firmware and if you select **Erase User Settings**. The green status icon on the top right of the screen will flash continuously until the process is complete. Once a download completes and written to Flash, the target printer automatically reboots.

**Figure 6-3**  **FLDFU Main Window – Progress Area**

**Note:**
Should a download fail or the FLDFU application hangs, click **Download Application Only** again. The FLDFU application will attempt to recover and start a new download.

**WARNING!**
Do not stop the process or unplug the printer.
7. Wait for the “Printer Successfully Updated” message to display in the Status area.

![Figure 6-4 FLDFU Main Window – Status Area](image)

8. After this message displays and the flashing green status icon disappears, disconnect the printer.
9. Press the FEED button twice to print a Configuration Ticket. This ticket confirms the upgrade. If the default firmware communication settings require no change, the upgrade is complete.

**First Time Connection: GEN2 Universal Printer with GDS/HID Firmware**

**Note:**
Manually load the driver when trying to download the GEN2 Universal GDS/HID (GUHR) firmware for Win7/XP (with or without using a USB hub).

1. Since this application is a composite device, the printer exposes two interfaces: HID-interface 0, and DFU-interface 1. Under **Device Manager**, the incorrect driver will display. The FutureLogic standard RS232 also has the DFU interface 0. The Windows OS will load the RS232 DFU interface driver in the beginning. In **Device Manager**, it displays as **FutureLogic USB DFU Dev**.
2. Re-install the driver:
   a. Right-click **FutureLogic USB DFU Dev**.
   b. Select **Update Driver**.

![Figure 6-5 Update Driver Software Window](image)
3. Click **Browse my computer for driver software.**

![Figure 6-6 Browse For Driver Software Window](image)

4. Locate and select the driver file; click **Next.**

![Figure 6-7 Select The Device Driver Window](image)

5. Select **USB Composite Device;** click **Next.**
6. Wait for the driver to load. When the process completes, the following message displays.

![Successful Driver Update Window](image1)

**Figure 6-8** Successful Driver Update Window

7. *(For Windows 7)* After loading the USB Composite Device driver, the FLI-HID-DFU interface driver automatically loads as well. Confirm the DFU driver is loaded.

![Computer Management Window](image2)

**Figure 6-9** Computer Management Window
## Appendix A  Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Showing With Printer</th>
<th>Description/Work Around</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Windows XP) Manual loading of drivers.</td>
<td>GEN2 Universal GEN3 Evolution</td>
<td>Newer operating systems such as Windows 7 use “pnputil” to pre-install the driver package one time; then plugging in new printers of the same model will not require administrator intervention. Because Windows XP does not have the PNP Utility, it requires the manual installation of the driver every time it detects a device or port change. Also, if you have the USB HUB between the computer and the printer, Windows XP will treat the USB HUB as a new USB connectivity and will ask you to install a driver again. See Chapter 5.</td>
</tr>
<tr>
<td>(Windows XP) Repeat loading of drivers when switching USB ports or when there is a different printer firmware communication protocol.</td>
<td>GEN2 Universal GEN3 Evolution</td>
<td>FutureLogic printers support different communication protocols that are controlled by different firmware applications; for example, DFU, PDC, CDC, GDS/HID, and SPC USB. Each protocol has its own Product ID. Since Windows XP manually associates the driver for different Product IDs, if the printer has a new application that has a different protocol loaded, the Found New Hardware wizard will pop up to prompt for installation of the particular driver. However, if the USB port already went through the driver installation for this specific driver, Windows XP will associate the driver without again prompting for installation of the driver. See Chapter 5.</td>
</tr>
<tr>
<td>New devices found.</td>
<td>All</td>
<td>The printer supports different communication protocols: DFU, PDC, CDC, GDS/HID, SPC USB. Windows associates a driver for each protocol. The firmware upgrade uses at least 2 protocols. The firmware upgrade also uses more protocols if there is a change in the firmware type. See Chapter 5.</td>
</tr>
<tr>
<td>(Windows 7) FLDFU application shuts down unexpectedly with Windows exception.</td>
<td>GEN2 Universal GEN3 Evolution</td>
<td>Old DFU drivers may conflict with the new drivers. Use Add/Remove Programs to remove the old versions and associated drivers for FLDFU (for example, FLDFU v.1.1). Restart the computer. See Chapter 4.</td>
</tr>
<tr>
<td>Issue</td>
<td>Showing With Printer</td>
<td>Description/Work Around</td>
</tr>
<tr>
<td>-------</td>
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</tr>
</tbody>
</table>
| Printer appears as two devices in Device Manager. (CDC) | GEN3 Evolution | The GEN3 Evolution RS232 application uses the composite device with two interfaces:  
- DFU run time, to support the DFU communication for the firmware upgrade purpose; and  
- CDC interface does not require installation. The CDC interface is not needed for normal operation so you can ignore the driver's installation for this interface. In Windows XP, cancel the Found New Hardware wizard. |
| Error when converting from SPC protocol to DFU. | GEN3 Evolution | A first-time download may time out depending on the time taken to install the drivers.  
Close the application and restart the printer. |
| Printer fails to restart while loading BSP SPC bundle. | GEN3 Evolution | When downloading BSP SPC firmware, the device will not automatically reset.  
As a work around: Power cycle the printer. The printer should come back up in BSP mode. |
| Cannot update if printer currently has “older” IGT firmware. | GEN2 Universal | If the printer has either legacy SPC or Netplex (GUUXXXX4XX/502 or GUNXXXXXX2X respectively), the USB communication is out-of-sync which will cause the FLDFU to not recognize the printer and interrupt the Full Upgrade procedure.  
As a work around, upgrade the printer to the latest Netplex GUNXXXX503 or above using the IGT downloader first before the Full Upgrade process:  
1. Launch the IGT downloader.  
2. Click **Start Download**.  
3. Select GUNXXXX503 (where XXXX is any version that IGT has approved for example GUN0010503).  
4. Wait for the download to complete.  
5. Close the IGT downloader.  
6. Launch the FLDFU; continue with the upgrade process. |
| Occasionally cannot complete the download (presumably needs updated BSP but won’t update automatically). Or FLDFU application times out when updating old Netplex SHA to DFU. | GEN2 Universal | This may be caused by the FLDFU application and the printer with older application firmware being out-of-sync.  
To resolve this:  
1. Close the running FLDFU application.  
2. Power cycle the printer.  
3. Launch FLDFU and restart download. |
| (Windows 7) OS cannot recognize the printer when there is the GDS/HID application loaded in the printer. | GEN2 Universal | See First Time Connection: GEN2 Universal Printer with GDS/HID Firmware on page 16. |
## Issue | Showing With Printer | Description/Work Around
--- | --- | ---
Error message when downloading firmware to printer with old BSP. | GEN2 Universal | When performing a Full Download on a printer with the old BSP, the FLDFU will hang right after it updates the Boot and BSP and will eventually abort the download. This may be the result of an out-of-sync between FLDFU and the printer.
As a work around, click **Download Application Only** when the download hangs after boot and BSP update. This will resume the download and update the application FW once the Boot and BSP update process is done.

Error message when downloading DFU firmware while in SPC mode when it is first connected to computer. | GEN2 Universal | When downloading on a computer (host) that has never downloaded before, FLDFU will sometimes time out on the first download, eventually displaying an error message indicating a time out.
As a work around:
1. Click **OK** on any error message.
2. Close and reopen the FLDFU application.
3. Power cycle the printer; wait for the printer to be listed on the FLDFU application.
4. Restart the download.

---

**Note:**
The ONYX printer may experience some of the same issues as a GEN3 Evolution printer.
Appendix B  FLDFU Modes

Introduction
This appendix provides details on the various modes available with the FLDFU application.
The following describes the various states and modes for the printer firmware.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>This is the ideal state (assuming that the printer has valid firmware loaded). When running in Application, the printer can be in one of the following modes (from a USB perspective):</td>
</tr>
<tr>
<td></td>
<td>• CDC. See page 22.</td>
</tr>
<tr>
<td></td>
<td>• GDS/HID. See page 23.</td>
</tr>
<tr>
<td></td>
<td>• SPC. See page 24.</td>
</tr>
<tr>
<td></td>
<td>• Netplex. See page 24.</td>
</tr>
<tr>
<td>Boot or BSP</td>
<td>If there is no Application or the Application fails to load properly, the printer will likely come up in BSP mode. If the BSP is corrupt or does not load, then the printer reverts to Boot mode. See page 25.</td>
</tr>
<tr>
<td>DFU</td>
<td>When the printer transitions by the Host into DFU, it will operate in this mode. See page 26.</td>
</tr>
</tbody>
</table>

Note:
Due to the Windows device driver architecture, the first firmware upgrade may be interrupted by the Windows Device Driver Wizard. If this happens, cycle power to the device and start again after the correct driver is found by the wizard.

CDC Mode
The following figure shows an example of the CDC Run-time mode in the FLDFU application.

![FLDFU Application – CDC Mode](image)

**Figure B-1**  FLDFU Application – CDC Mode

The Windows Device Manager displays two CDC device entries: one associated with the CDC Composite serial driver and the other (FLI-CDC-DFU 1.1) associated with the FLDFU application. The Hardware ID for FLI-CDC-DFU 1.1 displays as either PID_0307&MI_02 or PID_0307&Rev_0003 (for a GEN3 Evolution printer).
GDS/HID Mode

The following figure shows an example of the GDS/HID mode in the FLDFU application.

The Windows Device Manager displays two GDS/HID entries: one associated with the HID-compliant device driver and the other (FLI-HID-DFU 1.1) associated with the FLDFU application. The Hardware ID for FLI-HID-DFU 1.1 displays as: PID_0303&MI_01 or PID_0303&Rev_0003 (for a GEN3 Evolution printer).
SPC Mode

The printer supports a vendor defined class called SPC mode. This uses Product ID 0x0301 (for a GEN3 Evolution printer, for example), and supports a number of different features. Feature 108 defines the firmware download capability. When the FLDFU application is running SPC, it will show three Features: 0, 105 and 108.

The following figure shows an example of the SPC mode in the FLDFU application.

![Figure B-5 FLDFU Application – SPC Mode](image)

While the FLDFU application does not support the entire SPC download specification (SDFU), it will recognize SPC devices and transition the device into DFU mode to support the download.

In Windows Device Manager, an SPC device displays under Universal Serial Bus Controllers.

![Figure B-6 Device Manager Window – SPC Mode](image)

Netplex Mode

Netplex Mode is also an SPC defined mode, yet it runs at the BSP level. The key difference is that only two Features are presented: 0 and 108. The USB interface is enabled at the BSP level, not the Application level, which accounts for the lack of Feature 105.

The following figure shows an example of the Netplex mode in the FLDFU application.

![Figure B-7 FLDFU Application – Netplex Mode](image)
The **Windows Device Manager** displays two entries for Netplex under Universal Serial Bus Controllers.

![Device Manager Window – Netplex Mode](image)

### BSP/Boot Mode

BSP/Boot Mode is the default mode when no Application is running or fails to properly load. The Product ID for run-time USB operation is 0x0308 (for a GEN3 Evolution printer, for example). In Run-time mode, the USB device is defined as a BSP vendor class and does not support a driver.

The following figure shows an example of the BSP/Boot mode in the FLDFU application.

![FLDFU Application – BSP/Boot Mode](image)

The **Windows Device Manager** displays the device as FLI-BSP-DFU 1.1 under the Universal Serial Bus controllers and FLI BSP VENDOR DEV under Other devices.

**Notes:**

The FLI BSP VENDOR DEV is not used. Do not associate with a driver. The FLI-BSP-DFU 1.1 is the run-time DFU portion of the device associated with the DFU software.

![Device Manager – BSP/Boot Mode](image)
DFU Mode
When the printer transitions into DFU mode (either through a DETACH command from the host or on power-up due to a previous error condition), the following displays in the FLDFU application.

![FLDFU Application – DFU Mode](image)

The Windows Device Manager displays one device entry: FutureLogic USB DFU Device. The Hardware ID is PID_0304 or PID_0304&Rev_0003 (for a GEN3 Evolution printer, for example).

![Device Manager Window – DFU Mode](image)
Appendix C  Configuration Ticket

The Configuration Ticket contains information similar to the following:

- Model number
- System communications setup
- Print Control Parameters
- List of templates and fonts available in the printer by TCL™ page mode

---

**Figure C-1 Sample Configuration Ticket**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>PSA-66 USB REV A</td>
</tr>
<tr>
<td>Firmware:</td>
<td>GXX0000000 2012-06-05</td>
</tr>
<tr>
<td>COMMUNICATION Interface:</td>
<td>USB 2.0 Full Speed</td>
</tr>
<tr>
<td>Darkness Control:</td>
<td>+0.0</td>
</tr>
<tr>
<td>Black Bar Index:</td>
<td>Enabled</td>
</tr>
<tr>
<td>Print On Demand:</td>
<td>Disabled</td>
</tr>
<tr>
<td>Auto Sleep Timer:</td>
<td>Off</td>
</tr>
<tr>
<td>SYSTEM RESOURCES:</td>
<td></td>
</tr>
<tr>
<td>FLASH -Used:</td>
<td>000000</td>
</tr>
<tr>
<td>-Free:</td>
<td>065536</td>
</tr>
<tr>
<td>LIBRARY INVENTORY:</td>
<td></td>
</tr>
<tr>
<td>Templates:</td>
<td>0,1,2,3,4,5,6,7,8,9,A,B,z,x</td>
</tr>
<tr>
<td>Fonts:</td>
<td>1,2,3,4,5,7,8,9</td>
</tr>
</tbody>
</table>

---

System communications setup
Print Control Parameters
List of templates and fonts available in the printer by TCL™ page mode
Resident ticket template package version
Firmware version
Amount of memory available for user-defined font and graphics storage is indicated by the “Free” resources.
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