*DLX*i Desktop Label Printer
USER GUIDE

"Built to Last...
Designed to Connect."

COGNITIVE**TPG**

To contact CognitiveTPG,
Write, email, or call:

CognitiveTPG
25 Tri-State International, Suite 200
Lincolnshire, IL 60069

E-Mail: marketing@cognitivetpg.com
Telephone: 847-383-7900
Toll free: 800-732-8950
Fax: 847-383-7949

Technical Support: 800-732-8950 extension 4

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Chapter 1: Introduction

Welcome

Congratulations on the purchase of a CognitiveTPG DLXi desktop label printer. With its durable design, the DLXi provides professional quality direct thermal and thermal transfer label printing and performance.

CognitiveTPG is committed to providing a reliable product and user experience. This user guide provides information on how to install the printer and includes all necessary user support information.

Package Contents

The DLXi box will contain the following parts:
- (1) DLXi Printer
- (1) Quick Start Guide
- (1) Auto Ranging Power Supply
- (1) Power Cord
- (1) Spindle and Media Guide (Installed in Printer)
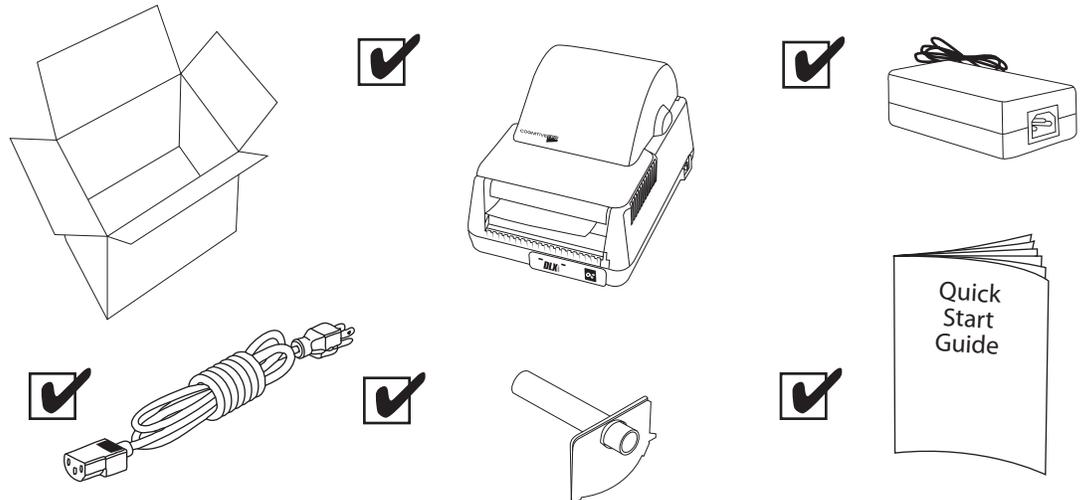
Operating Environment

- 41ºF to 104ºF (5ºC to 40ºC)
- 20% to 85 % non-condensing R. H. (relative humidity)

Storage and Transportation Environment

- -4.0ºF to 122ºF (-20ºC to 50ºC)
- 5% to 95% non-condensing R. H. (relative humidity)

Printer Feature Overview

Front/Rear View

Front View

Rear View
USB-A, USB-B, Serial, Parallel, Ethernet
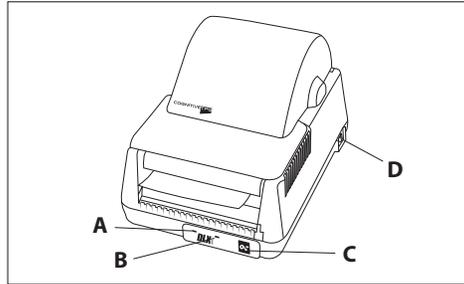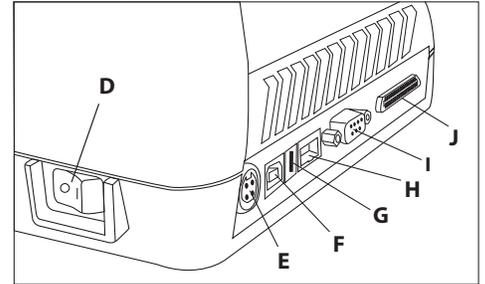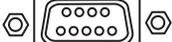(4-inch Model Shown)

Component	Function
A - Power Indicator	Indicates power status
	ON – printer on and ready to print
	OFF- no power applied
B - Ready Indicator	Indicates printer status
	GREEN – printer ready to accept data
	RED – printer error, empty media roll, or paused operation during batch mode processing
	OFF- no power applied
C - Feed Button	Press to advance media
	Press and hold while turning unit on to initiate self test and print configuration label
D - On/Off Switch	Turns printer power On/Off
E - Power Connector	Input for auto-ranging power supply
F - USB B Port	USB Device bidirectional communications port
G - USB A Port	USB Host port for peripheral input or USB flash drive
H - Ethernet Port	10/100 Ethernet port
I - Serial Port	Serial (DB9) bidirectional communications port - DTE device (Use null modem cable)
J - Parallel Port	Parallel (1284-C 36-Pin Mini-Centronics) unidirectional communications port

DLXi Communication Interfaces (2" and 4" Model Detail)

2"   4"

2" USB/Ethernet/ Serial	DC	USB-B	USB-A	ETHERNET	SERIAL 9-PIN
2" USB/Serial	DC	USB-B	USB-A		SERIAL 9-PIN
2" USB/Parallel	DC	USB-B	USB-A	MINI-CENTRONICS	
4" USB/Ethernet/ Serial/Parallel	DC	USB-B	USB-A	ETHERNET	SERIAL 9-PIN	MINI-CENTRONICS
4" USB/Serial/ Parallel	DC	USB-B	USB-A		SERIAL 9-PIN	MINI-CENTRONICS

| **KEY** | **DC** | **USB-B** | **USB-A** | **ETHERNET** | **SERIAL 9-PIN**
(DTE Device) | **MINI-CENTRONICS**
Parallel 1284-C |
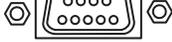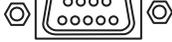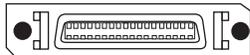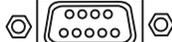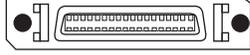
Inside View

Common Components for All Models (Direct Thermal and Thermal Transfer)

C

D

A

B

C
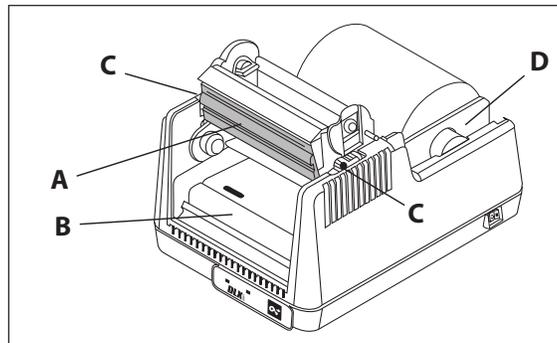
(TT Printer Shown)

Component (DT & TT Models)	Function
A - Printhead	Printing mechanism
B - Platen Roller	Friction feed printing surface
C - Printhead Latches	Latches for printhead mechanism
D - Media Guide & Spindle	Holds and guides label roll

Components for Thermal Transfer Models
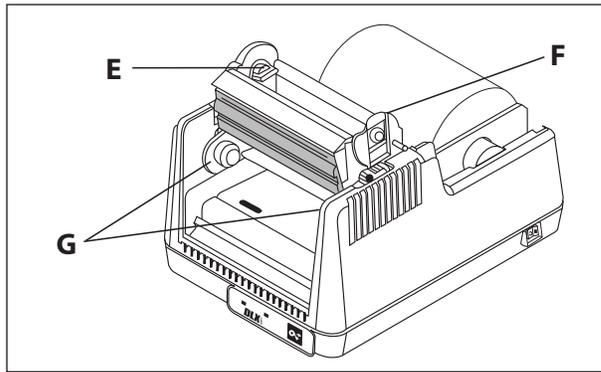
Component (TT Models)	Function
E - Ribbon Take-up Driver	Ribbon take-up core mount and driver
F - Ribbon Take-up Mount	Flexible arm for ribbon take-up core mounting
G - Ribbon Supply Core Mounts	Holds ribbon supplly roll

Chapter 2: Printer Installation

Setting up the DLXi Printer

Connecting the Interface and Power Cables

POWER OFF

1. Make sure power switch is OFF
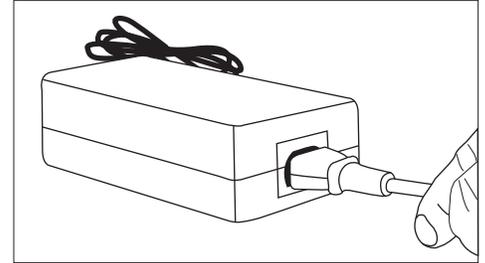
2. Connect power cable to AC adapter
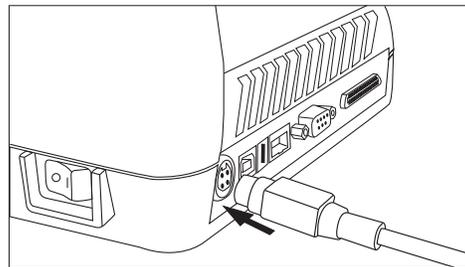
3. Connect the AC adapter to the power connector on the printer
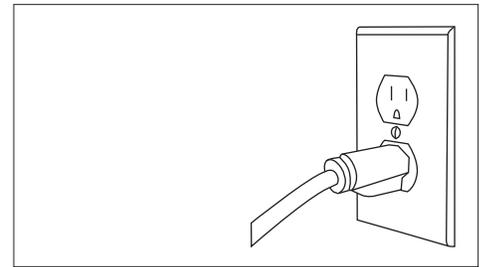
4. Plug the power cable into an AC outlet

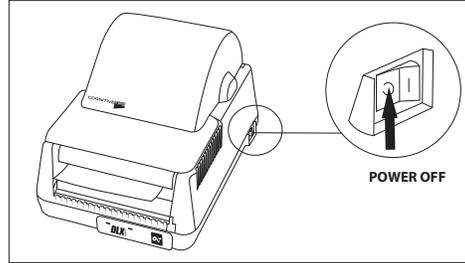5. Connect the interface cable to the rear of the printer. For Serial or Parallel cables, securely fasten the interface connector screws or clips.

NOTE: IF USING USB CONNECTION, IT IS RECOMMENDED TO DOWNLOAD COGNITIVETPG ADMINISTRATOR AND DRIVERS. SEE CHAPTER 3 BEFORE CONNECTING TO COMPUTER

USB

Power OFF

USB-B
(Device)

ETHERNET

Power OFF
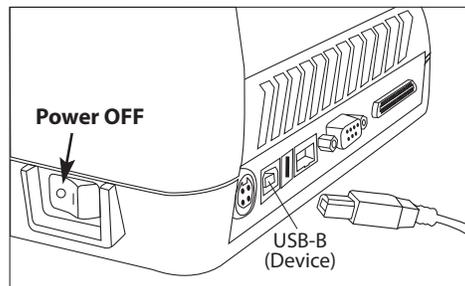
Ethernet
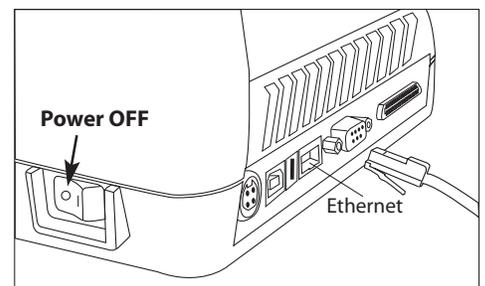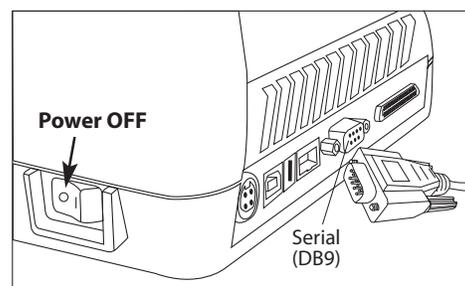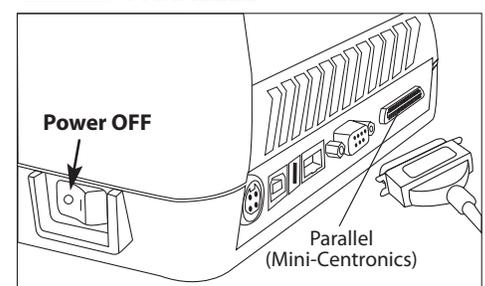
NOTE: DLXI IS CONFIGURED TO USE A STANDARD NULL MODEM CROSSOVER SERIAL CABLE WHEN USING THE COM/SER PORT TO CONNECT TO A DTE DEVICE SUCH AS A COMPUTER.

COM/SER

Power OFF

Serial
(DB9)

PARALLEL

Power OFF

Parallel
(Mini-Centronics)

CAUTION!

1. Unpack and prepare outward wound or inward wound media for installation into printer.

Label roll
Paper spindle
Printhead
Printhead release
Paper guide
Drive roller
ON/OFF switch
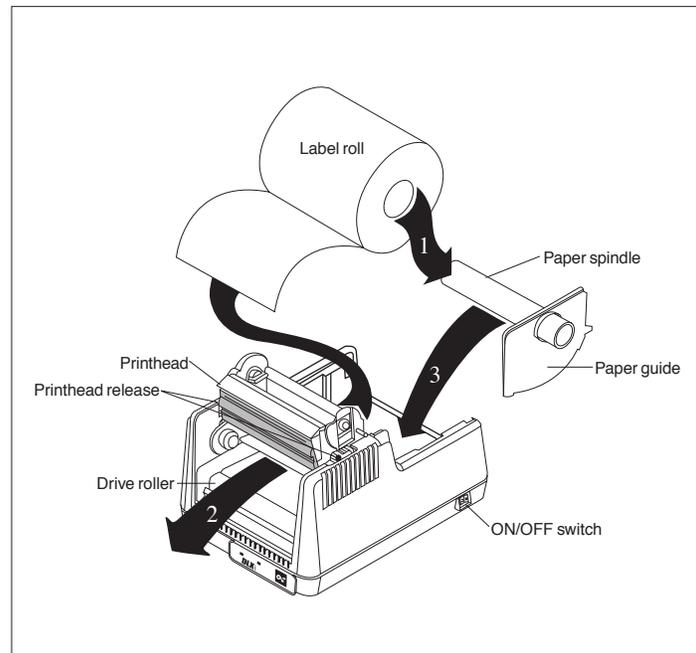
2. Use paper guide and spindle to install media roll as shown.

Loading Thermal Transfer Ribbon

1. Position ribbon in front of printer with supply core closest to printer and text on ribbon leader facing down. Raise dust cover.
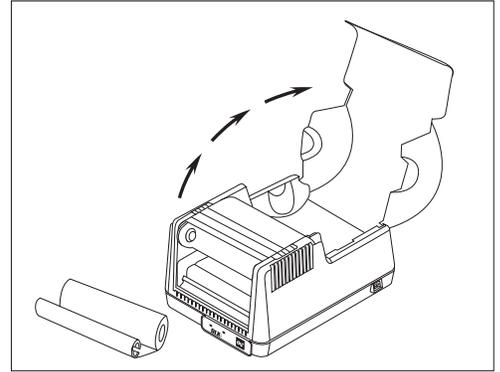
2. Unlatch printhead and fully raise the printhead mechanism.

   Unlatch Printhead
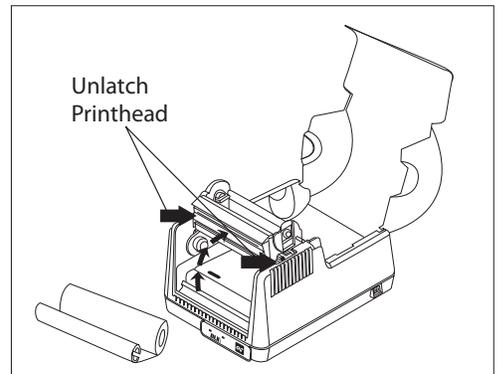
3. Place the left side of the ribbon supply core into the left supply core mount.
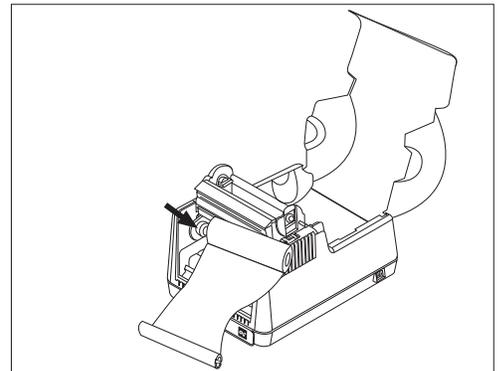
4. Gently pull the right supply core mount open and place the right side of the ribbon core on the mount.

5. Gently lower the printhead but **DO NOT LATCH** printhead at this time.

Lower Printhead.
Do Not Latch
Printhead Mechanism
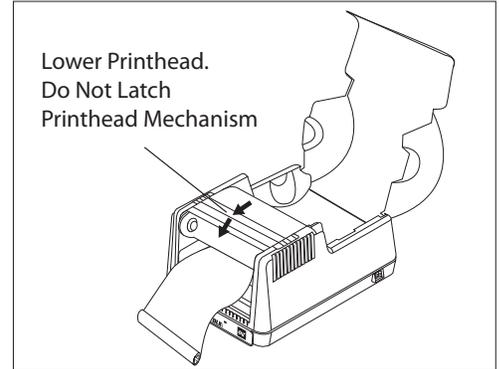
6. Align the notch on the left side of the ribbon take-up core with the left ribbon take-up driver.

REMINDER: THE TEXT ON THE RIBBON LEADER SHOULD BE FACING OUT AND VISIBLE

7. Gently pull the right ribbon take-up mount and insert the right side of the ribbon take-up core.

HELPFUL TIP: IF POWER IS ALREADY ON, THE DLXI WILL TAKE UP ANY EXCESS RIBBON UPON LATCHING THE PRINTHEAD

8. Latch both sides of the printhead and turn the power on to take up the slack in the ribbon leader.

Click!))
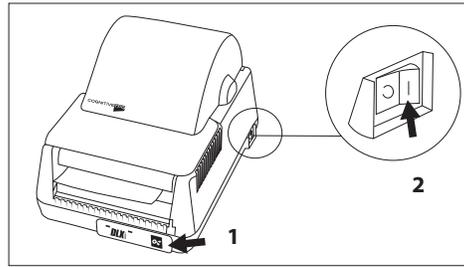
Self-Testing:

1. Press and hold the feed button while turning printer ON.
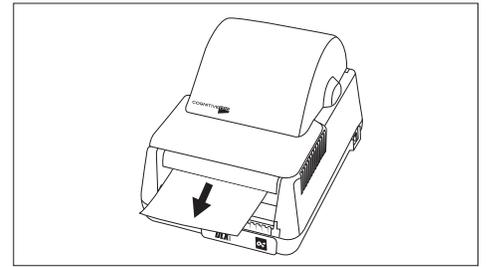
2. Release feed button when printing begins and printer will conduct a self-test and print a configuration label.
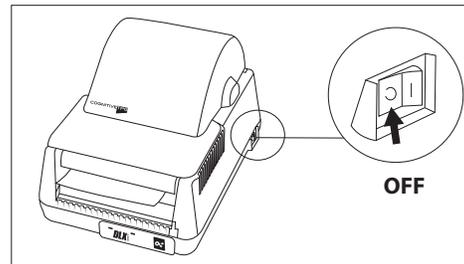
3. Power OFF printer to end hexadecimal dump mode.
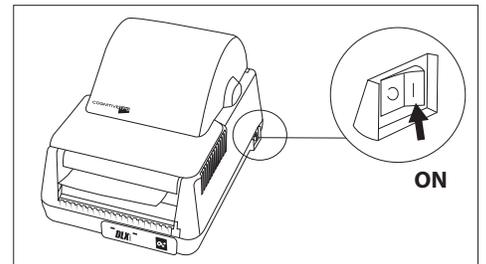
4. Power ON printer for normal operation

Chapter 3: Installing CognitiveTPG Printer Administrator and Print Drivers

CognitiveTPG Printer Administrator is a Java based utility designed for installation on various operating system platforms. Administrator allows complete control over the profiles and settings of the DLXi printer.

Downloading CognitiveTPG Printer Administrator

In order to easily make printer configuration changes, install the CognitiveTPG Printer Administrator Utility. Follow the CognitiveTPG Printer Administrator installation instructions at http://www.CognitiveTPG.com/resources_utility.aspx for the DLXi printer. You can also follow this path: **http://www.CognitiveTPG.com > Downloads > Utility**. This process will also install Windows driver for the printer on your computer. Note that USB, Ser/COM, or Ethernet connection is required for configuring your printer via this utility.
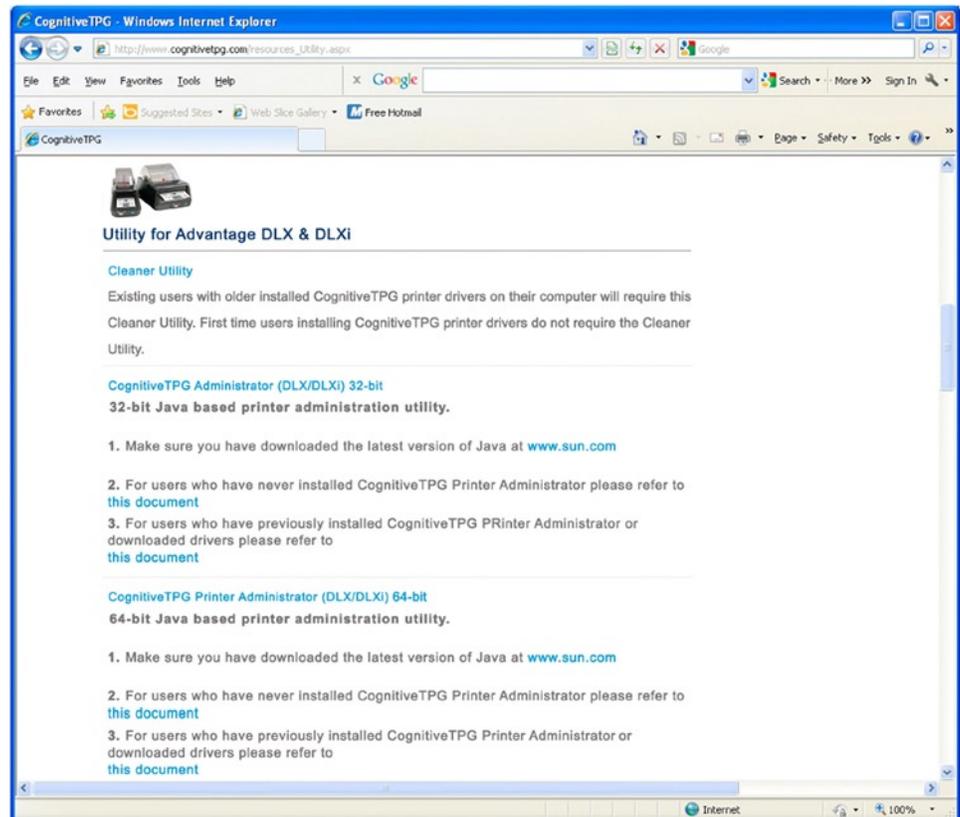
After downloading and installing CognitiveTPG Printer Administrator and driver files, connect the printer to your computer and power it on. If connected via USB, your computer will recognize the printer identification and either load the appropriate driver or open up a wizard to add the printer. For reference, driver files are downloaded to the following location on the computer: C:\Program Files\Cognitive\Drivers.

CognitiveTPG Printer Administrator Utility

Connection Settings

Connecting Via USB

1. Select the **System Printer Connection** radio dial.
2. Select the appropriate printer from the **Printer Name** drop down menu.
3. Click **Connect**.
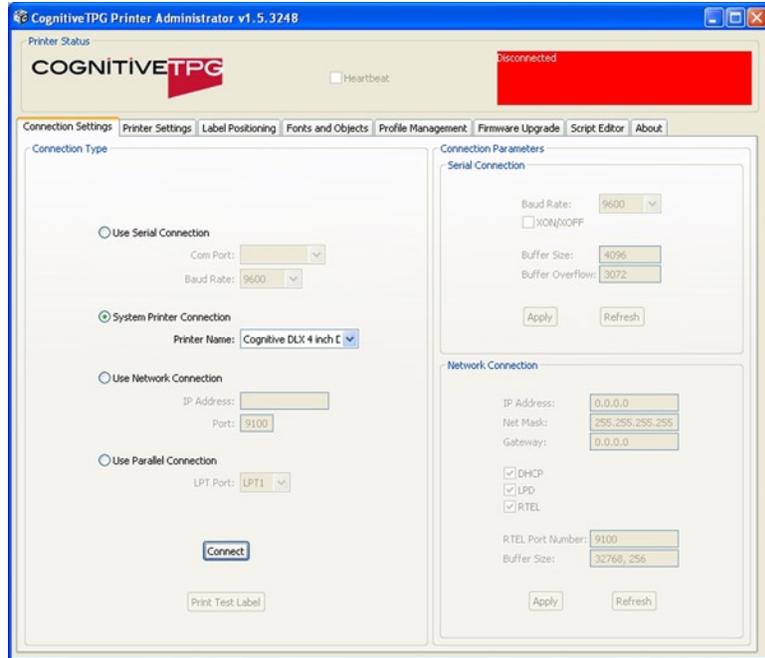
NOTE: WHEN PRINTER IS PROPERLY CONNECTED, COGNITIVETPG PRINTER ADMINISTRATOR WILL DISPLAY CONNECTED IN A GREEN BOX IN UPPER RIGHT CORNER.

NOTE: FOR SERIAL CONNECTION, THE DLXI DEFAULT BAUD RATE IS 9600.
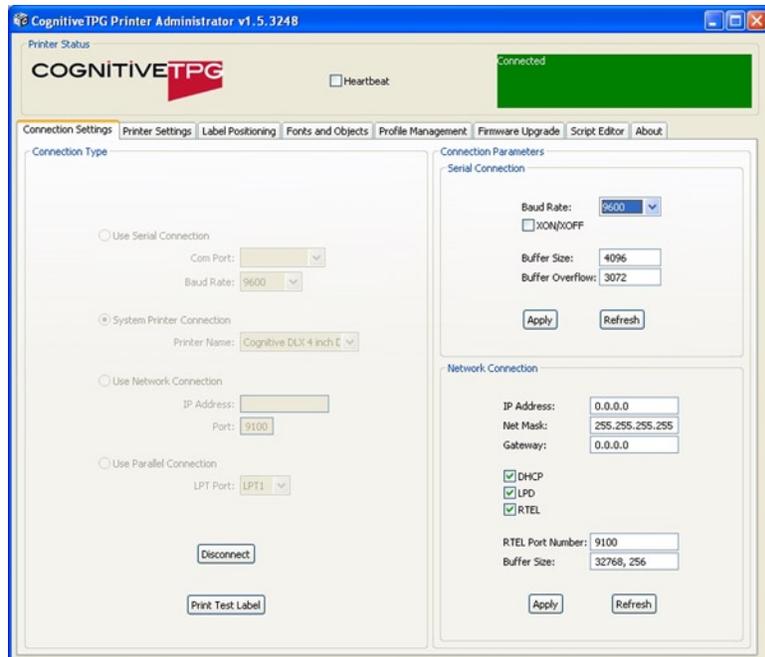
Connecting Via Serial
1. Select the **Use Serial Connection** radio dial.
2. Select the Com port to which the printer is connected.
3. Select the printer's baud rate setting.

Serial Connection Parameters
- Baud Rate
- XON/XOFF
- Buffer Size
- Buffer Overflow

Connecting Via Ethernet
1. Select the **Use Network Connection** radio dial.
2. Input the printer's IP Address if static IP Address is to be used, otherwise, with DHLP enabled, your server will assign an IP Address to the printer.
3. Input the printer's RTEL port number.

Ethernet Connection Parameters
- IP Address
- Net Mask
- Gateway
- DHCP
- LPD
- RTEL
- RTEL Port
- Ethernet Text Buffer

Printer Settings

Print Speed

The **Print Speed** value sets the printing speed of the printer.
- **Low** = 2 inches per second
- **Normal** = 3 inches per second
- **High** = 5 inches per second
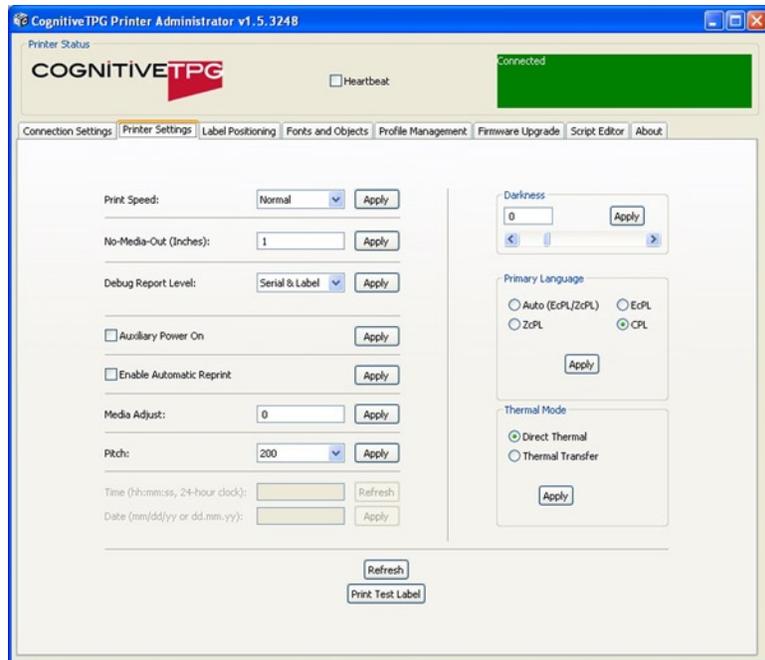
No-Media Timeout

The no media timeout value represents the number of inches of media fed through the printer without detecting an index mark prior to reporting an error.

EXAMPLE: IF NO MEDIA TIMEOUT IS SET TO 12, THE PRINTER WILL CONTINUE TO FEED 12 INCHES OF MEDIA WITHOUT DETECTING AN INDEX MARK BEFORE REPORTING AN ERROR.

Debug Report Level

Specifies the method by which the printer reports error.

Values:
- **None** = Turns error reporting Off.
- **Serial** = Printer sends error report to host device via serial port.
- **Serial & Label** = Printer sends error report via serial port and prints an error label.

Auxiliary Power ON

Check Auxiliary Power ON to enable the 5V serial port output.

Enable Automatic Reprint

Checking the Enable Automatic Reprint box prompts the printer to reprint a label in the event the printer detects an index mark prior to completing the requested label.

Media Adjust

Adjusts print contrast on object leading edges for optimum print quality. Adjustment of this parameter is not normally required; refer to Cognitive Programming Language (CPL) Programmer's Guide for more detail.

Pitch

The pitch represents the dots per inch (dpi) setting for the printer.

Values:

100 or 200 for 200 dpi printers

Darkness

The **Darkness** value adjusts the print darkness.
Darkness range: -200 to 800

NOTE: THE FACTORY DEFAULT FOR DARKNESS IS 0.

Primary Language

Selects the primary command language the printer uses. The DLXi is defaulted to CPL (Cognitive Programming Language). Select AUTO for automatic detection and selection of EcPL, ZcPL or cPL. You may also manually select EcPL or ZcPL command languages.

NOTE: THE DLXi DOES NOT SUPPORT TPCL COMMAND LANGUAGE

IMPORTANT! THERMAL TRANSFER MODE REQUIRES THE USE OF A THERMAL TRANSFER PRINTER AND THERMAL TRANSFER PRINT RIBBON. DIRECT THERMAL MODE REQUIRES THE USE OF DIRECT THERMAL MEDIA.

Thermal Mode

Select direct thermal or thermal transfer based on the model of DLXi printer and the type of media being used. Thermal transfer DLXi printers can be set to operate in direct thermal mode.

Label Positioning

Print Width

The **Print Width** value adjusts the printing width of the printer for the particular media being used.

Maximum print width is 4.1" (104 mm), media width range is 2.0 to 4.25" (50 to 108 mm) for 4-inch DLXi (DBD42 & DBT42) models.

Maximum print width is 2.2" (56 mm). Media width range is 1.0" to 2.4" (25 to 61 mm) for 2-inch DLXi (DBD24 & DBT24) models.

Auto Recalibration

Check and **Apply Enable Auto Recalibration** and the printer will automatically attempt to recalibrate in the event an index mark is not detected.

Auto Top Of Form

Check and **Apply Enable Automatic TOF** and the printer will feed a label when the printer is turned ON or the printhead is latched.

Indexing

Indexing indicates to the printer the index type of the media being used. The **Indexing On** check box must be checked when using Bar, Gap, or Notch style indexing. Uncheck the **Indexing On** box when using continuous media.

Label Presentation

Label presentation advances media out of the printer after printing a label and then retracts the media prior to printing the next label.

- **Advance** = Distance the media advances after printing a label.
- **Retract** = Distance the media retracts prior to printing a label.
- **Time** = Amount of time in seconds the label remains presented prior to retracting.

NOTE: WHEN TIME IS SET TO 0 FOR LABEL PRESENTATION, THE LABEL WILL REMAIN ADVANCED UNTIL THE NEXT LABEL IS PRINTED.

Top of Form Adjust

Top of Form (TOF) sets the top of the label with relation to the print head. Increasing the TOF value moves the printed text down the label. Decrease the **TOF** setting to move the printed test up the label. This value is set at the factory and typically will not need to be changed.

Shift Left

Shift left moves the printed image left across the label.

Fonts and Objects

The Fonts and Objects tab lists the Fonts, Formats and Graphics currently stored in the printer.
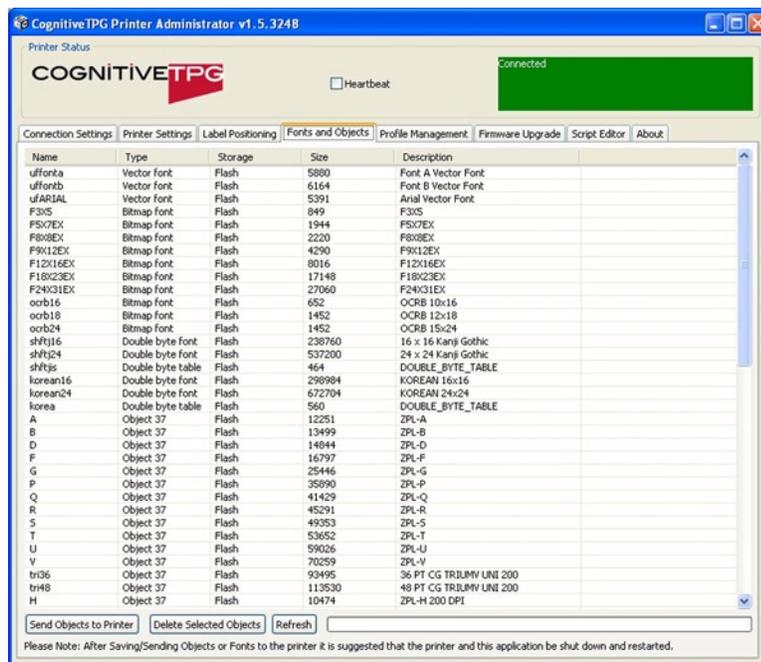
NOTE: GRAPHICS MUST BE MONOCHROME IN .BMP OR .PCX FILE FORMAT TO BE STORED IN PRINTER MEMORY. FILE NAME MUST BE 8 CHARACTERS OR LESS.

Loading Fonts and Objects

1. Select the **Fonts and Objects** tab.
2. Click the **Load Objects to Printer** button.
3. Select the Font or Object to be stored and click **Ok**.

Deleting Fonts and Objects

1. Select the **Fonts and Objects** tab in CognitiveTPG Printer Administrator.
2. Highlight the Font, Object or Graphic to be deleted.
3. Click the **Delete Selected Objects** button.

Profile Management

Manage the settings of the DLXi using the Profile Management section of CognitiveTPG Printer Administrator. Profile Management displays a list of the printer's current variable settings.
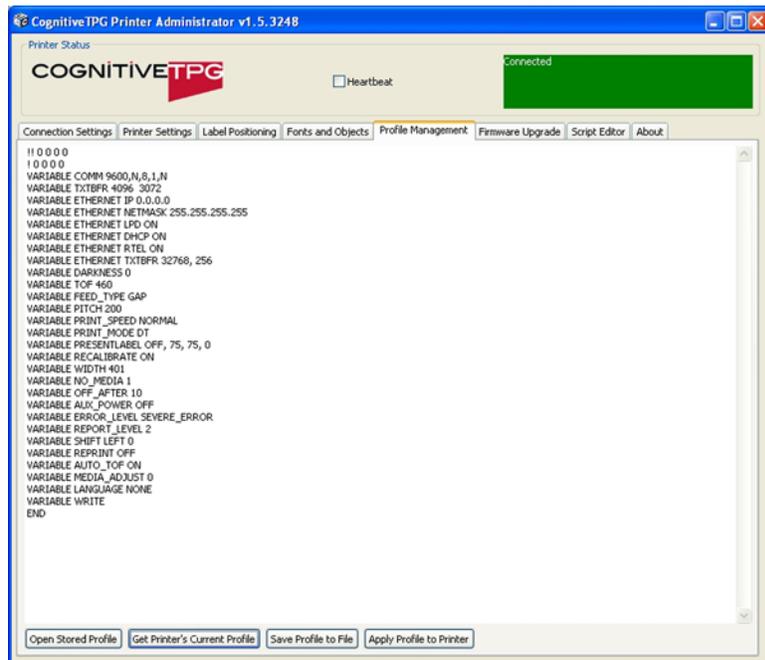
Obtaining Printers Current Profile

1. Select the Profile Management tab in CognitiveTPG Printer Administrator.
2. Click the Get Printer's Current Profile button.

Saving the Current Printer's Profile

1. Select the Profile Management tab in CognitiveTPG Printer Administrator.
2. Click the Get Printer's Current Profile button.
3. Click the Save Profile to File button.

Applying a Saved Profile to the Printer

1. Select the Profile Management tab in CognitiveTPG Printer Administrator.
2. Click the Open Stored Profile button.
3. Select the desired Stored Profile and click Ok.
4. Click the Apply Profile to Printer button.

Firmware Upgrade

1. Select the **Firmware Upgrade** tab.
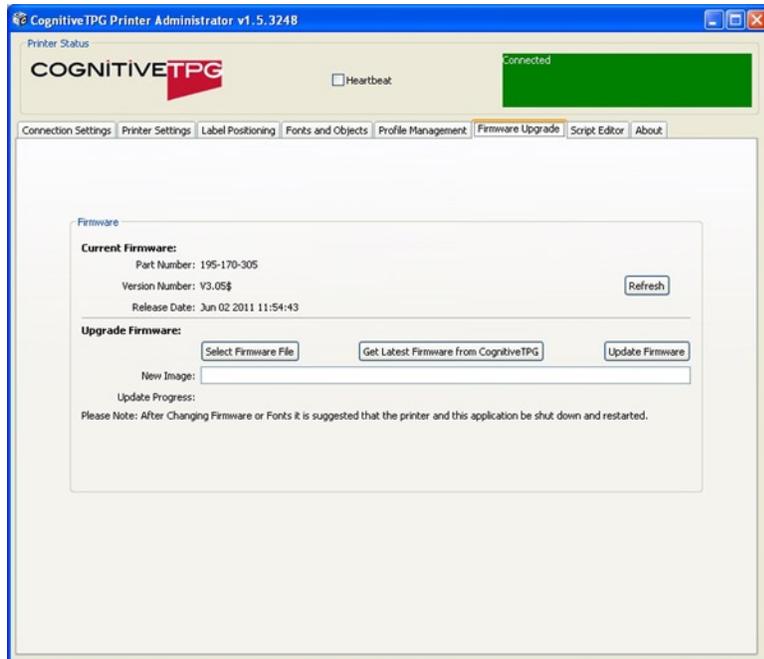
2. Click the **Select Firmware File** button.
3. Select the appropriate Firmware file and click **Ok**.
4. Click the **Update Firmware** button.

Script Editor

Use the Script Editor in CognitiveTPG Printer Administrator to send programming language code to the printer. For more information on programming CPL please refer to the CPL Programmers guide located on the CognitiveTPG Web site www. CognitiveTPG.com.

Sample Test Script in CPL:

```
! 0 100 195 1
VARIABLE WIDTH 200
TEXT 3 5 15 PRINTER TEST
END
```

For a simple printer test, type in the sample code shown above in the "Printer Input" window and click "Send to Printer" button. The printer should print the phrase "Printer Test."
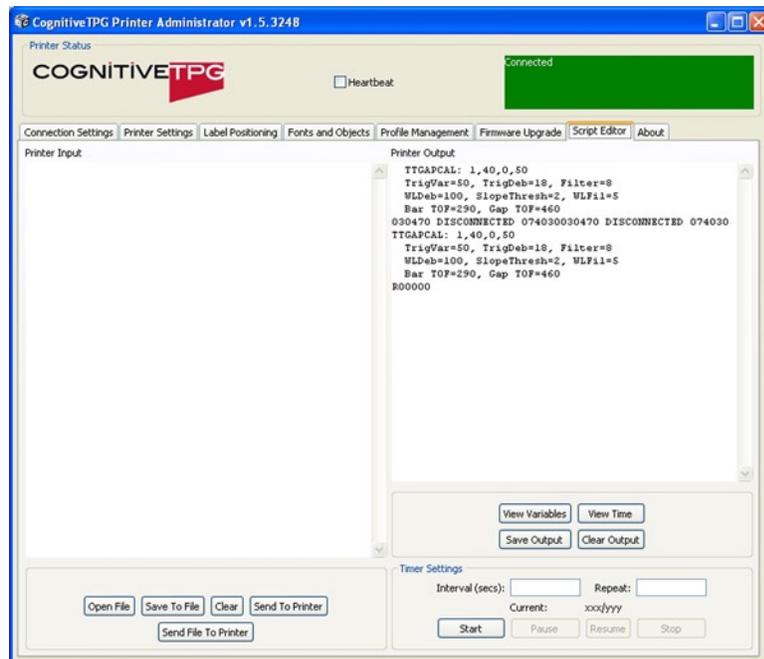
Chapter 4: Advanced DLXi Features

Each DLXi printer includes a USB-A (Host) port in addition to the USB-B (Device) port. This feature allows for stand alone applications and set-up as described below.

DC   USB-B   Ethernet   Serial 9-pin   Mini-Centronics
USB-A   (DTE Device)   Parallel 1284-C
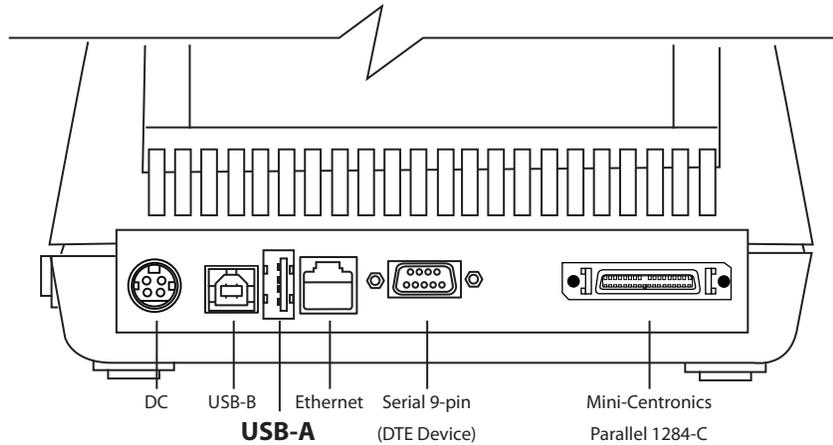
4-inch DLXi with USB, Serial, Parallel, and Ethernet

Using USB Hubs, Keyboards, and Scanners

The printer supports USB hubs, keyboards, and scanners. Any USB hub, Windows™ keyboard, or number pad can be used with the USB-A port. Only USB scanners that provide a keyboard-wedge interface can be used.

Keyboards and scanners can be used for menu navigation and data entry with menus and stored formats.

Using a USB Flash Drive

This section describes use of a USB flash drive and the USB-A host port on the printer to load firmware, objects, and settings to the printer using its USB-A connector. The printer loads files in the following order: 1) Settings, 2) Objects, and 3) Firmware.

USB A Port Utilization

Changing Printer Settings Using a USB Flash Drive

1. Create a folder on the USB flash drive at the root level named **Cognitive**.
2. Inside the **Cognitive** folder create a folder named **Settings**.
3. Place the desired CPL text files into the **Settings** folder.
4. Turn the printer ON and verify the **POWER** and **READY** lights are green.
5. Insert the USB flash drive into the USB A port on the back of the printer. **READY** light will flash quickly while the file loads.
6. When the **READY** light remains solid green remove the USB Flash Drive.

Loading Firmware Using a USB Flash Drive

1. Create a folder on the USB flash drive at the root level named **Cognitive**.
2. Inside the **Cognitive** folder create a folder named **Firmware**.
3. Place the desired firmware revision into the **Firmware** folder.
4. Turn the printer ON and verify the POWER and READY lights are green.
5. Insert the USB flash drive into the USB A port on the back of the printer. The READY light will flash red during firmware installation.
6. When READY light remains solid green, turn the printer off and remove the USB Flash Drive.

IMPORTANT! WHEN USING USB FLASH DRIVE, PRINTER WILL ONLY UPGRADE TO A NEWER FIRMWARE REVISION.

Loading Formats Using a USB Flash Drive

1. Create a folder on the USB flash drive at the root level named **Cognitive**.
2. Inside the **Cognitive** folder create a folder named **Objects**.
3. Place the desired Stored Label Formats into the **Objects** folder.
4. Turn the printer on and verify the **POWER** and **READY** lights are green.
5. Insert the USB flash drive into the USB A port on the back of the printer. **READY** light will flash red during firmware installation.
6. When **READY** light remains solid green, turn the printer off and remove the USB Flash Drive.

CAUTION! REMOVING USB FLASH DRIVE WHILE FIRMWARE IS LOADING COULD DAMAGE THE PRINTER.

HELPFUL TIP: PRINTER WILL LOAD OBJECTS FILES IN ALPHABETICAL ORDER.

Data Trace Using a USB Flash Drive

Capture all data sent to the printer onto the USB flash drive. This capability is used for advanced troubleshooting. Contact Technical Support for procedure.

Chapter 5: Cleaning and Maintenance

For optimal printhead performance CognitiveTPG recommends cleaning the interior components (printhead, platen roller, media sensor, peel bar (if installed), ribbon, and media paths) every 20,000 inches (508 m). The thermal printhead should be cleaned every 5,000 inches if pre-printed labels are used. Proper maintenance reduces replacement costs by extending the life of the printhead and improves the performance of the printer.

Cleaning the Printer

Clean the exterior of the printer and the media tray using a lint-free cloth, and if necessary, a mild detergent solution.

Cleaning the Thermal Printhead and Platen

1. Open the print mechanism.
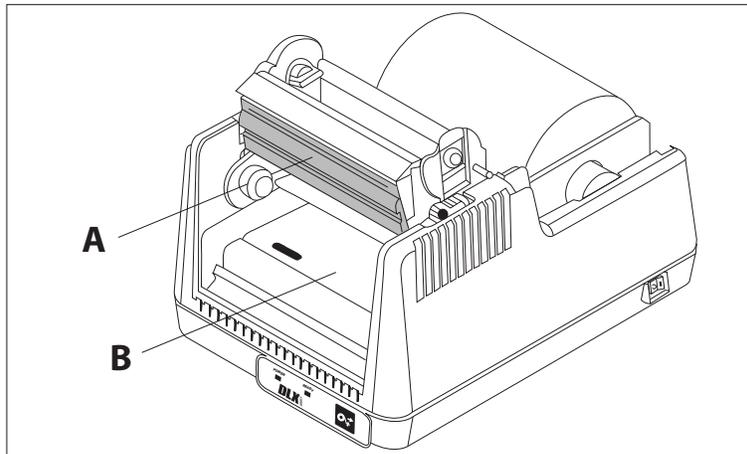
2. Gently clean the printhead (A), platen roller (B) and media path using a CognitiveTPG approved cleaning pen, card or a soft, lint-free cloth saturated with 99% isopropyl alcohol.

Cleaning Supplies

DLXi Cleaning Supplies			
Part #	**Size (inches)**	**Items per box**	**Description**
14-00-0001	4.5" x 6"	25	Cleaning card
14-00-0002	-	12	Cleaning pen

Chapter 6: Troubleshooting & Default Settings

Use the chart below for troubleshooting your DLXi printer prior to contacting Technical Support. If you are unable to resolve the problem using the chart below, please contact our Technical Support.

Symptom	Possible Cause	Recommended Solution
Red Ready Light	Print Head Unlatched	Securely latch printhead
	Out of Media/Ribbon	Replace media/ribbon
	Printer Paused	Press Feed Button to continue printing
Red Power Light	Incorrect Power Supply	Verify use of correct power supply
Printing Too Light	Printer Darkness Setting	Increase printer Darkness using CognitiveTPG Printer Administrator
	Driver Darkness Setting	Increase the Darkness value within the printer driver
	Printhead Dirty	Clean printhead
Printing Blank Labels	Incorrect Media	Use direct thermal media
	Missing Ribbon	Use print ribbon when printing to thermal transfer media
Continuously Feeding Labels	Printer out of Calibration	Calibrate printer using CognitiveTPG Printer Administrator
Feed Button Not Working	Printer is running a stored program	With print head unlatched, turn printer off and back on then re-latch printhead
Print Not Positioned Properly	Top of Form or Print Width requires adjustment	Adjust Top of Form and Print Width using CognitiveTPG Printer Administrator
Media Drifting During Printing	Media Guide improperly adjusted	Verify Media Guide is positioned properly
Skipping Labels During Printing	Label Design	Decrease height of label
	Printer out of Calibration	Recalibrate printer using CognitiveTPG Printer Administrator

The DLXi ships with the following default settings:

Parameter	Default Setting
Programming Language	CPL - Cognitive Programming Language
Speed	5 ips (127 mm/s)
Label Width	2" Models: 220 (2.2" or 56 mm) 4" Models: 409 (4.09" or 104 mm)
Label Length	Measure label (automatically measures and sets label length at power up)
Indexing Type	Gap
Reference Point	0,0 (upper left corner)
Auto Top of Form	On
Enable Label Present	Off
Advance Label	75 (0.75" or 19 mm)
Retract Label	75 (0.75" or 19 mm)
Delay Time (Retract Label)	0 seconds
Serial Port Settings (serial port printers only)	9600 bps, 8 bit data, 1 stop bit, no parity (DTE configuration - use null-modem cable)
Settings below only apply to printers with Ethernet	
Printer IP Address	10.0.0.12
Net Mask	255.255.255.255
Gateway	0.0.0.0
DHCP	On
LPD	On
RTEL	On
RTEL Port Number	9100