Zebra®

ZPL & CPCL Printer Driver for OPOS

Application Programmer's Guide

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About This Document

This section provides you with contact information, document structure and organization, and additional reference documents.

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Who Should Use This Document

The manual is targeted to an application developer who requires access to POS-specific peripheral devices.

OPOS Web Sites

Refer to the following web sites for OPOS information:

- Reference implementation — Common Control Objects: http://monroecs.com/opos.htm
- NRF-ARTS Standards Body: http://www.nrf-arts.org

How This Document Is Organized

The Application Programmer's Guide is set up as follows:

Section	Description
OPOS Information on page 9	This chapter provides a general overview of the OPOS Printer Driver.
Supported Bar Codes and Fonts on page 11	This chapter lists supported bar codes and fonts.
Supported Specifications and Printers on page 17	This chapter lists the supported specifications and printers.
Common Properties, Methods, and Events on page 21	This chapter provides the common and specific commands for properties, methods, and events.
Device Manager on page 31	This chapter provides information about the Device Manager and its uses.
Test Application on page 59	This chapter provides steps and illustrations to prepare your keyboard to use additional languages and to launch and perform various operations using the OPOS Test Application.

Contacts

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Key: T: Telephone
F: Facsimile
E: E-mail

Document Conventions

The following conventions are used throughout this document to convey certain information.

Alternate Color (online only) Cross-references contain hot links to other sections in this guide. If you are viewing this guide online in.pdf format, you can click the cross-reference (blue text) to jump directly to its location.

Command Line Examples Command line examples appear in `Courier New` font. For example, type `ZTools` to get to the Post-Install scripts in the `bin` directory.

Files and Directories File names and directories appear in `Courier New` font. For example, the `Zebra<version number>.tar` file and the `/root` directory.

Icons Used

Important • Advises you of information that is essential to complete a task.

Note • Indicates neutral or positive information that emphasizes or supplements important points of the main text.

Example • Provides an example, often a scenario, to better clarify a section of text.

1 OPOS Information

This chapter provides a general overview of the OPOS Printer Driver.

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OLE for Retail POS Controls

The goal of this document is to provide an overview and programming guide for the Zebra ZPL & CPCL Printer Driver for OPOS driver implementation.

For full reference of OLE for Retail POS, please download the latest manual at:

http://www.nrf-arts.org/content/Unified-POS

How an Application Uses an OPOS Control

The first action the application must take on the Control is to call its **Open** method. The parameter for this method selects a device name to associate with the Control. The **Open** method performs the following steps:

- Establishes a link to the device name that, in our case, is the Windows printer driver name.
- Initializes the properties **OpenResult**, **Claimed**, **DeviceEnabled**, **DataEventEnabled**, **FreezeEvents**, **AutoDisable**, **DataCount**, and **BinaryConversion**, as well as descriptions and version number of the OPOS Control layers. Additional class-specific properties may also be initialized.

Several applications may have an OPOS Control open at the same time. Therefore, after the device is opened, the application will need to call the **ClaimDevice** method to gain exclusive access to the device. The device must be claimed before the Control allows access to its methods and properties. Claiming the device ensures that other applications do not interfere with the use of the device. The application may call the **ReleaseDevice** method when the device can be shared by other applications—for instance, at the end of a transaction.

Before using the device, the application must set the **DeviceEnabled** property to TRUE. This value brings the device to an operational state, while FALSE disables the device.

After the application has finished using the device, the **DeviceEnabled** property should be set to FALSE, then the **ReleaseDevice** method, and finally the **Close** method should be called to release the device and associated resources. Before exiting, an application should close all open OPOS Controls.

In summary, the application follows this general sequence:

- **Open** method: Call to link the Control Object to the Service Object.
- **ClaimDevice** method: Call to gain exclusive access to the device. Required for exclusive-use devices; optional for some sharable devices.
- **DeviceEnabled** property: Set to TRUE to make the device operational.
- Use the device.
- **DeviceEnabled** property: Set to FALSE to disable the device.
- **ReleaseDevice** method: Call to release exclusive access to the device.
- **Close** method: Call to release the Service Object from the Control Object.

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Supported Bar Codes and Fonts

This chapter lists supported bar codes and fonts.

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Supported Bar Codes

Barcode Symbology	Supported in ZPL	Supported in CPCL
Codabar	Yes	Yes
Code 128	Yes	Yes
* Code 128 Parsed	Yes	Yes
Code 39	Yes	Yes
Code 93	Yes	Yes
* EAN 128	Yes	Yes
EAN 13s	Yes	Yes
EAN 8S	Yes	Yes
EANJan 13	Yes	Yes
EANJan 8	Yes	Yes
ltf	Yes	Yes
* Maxicode	Yes	Yes
* PDF417	Yes	Yes
* RSS14	Yes	Yes
* RSSExpanded	Yes	Yes
TF	Yes	**No**
UPC-A	Yes	Yes
* UPC-AS	Yes	Yes
UPC-D	Yes	Yes
UPC-D2	Yes	Yes
UPC-D3	Yes	**No**
UPC-D4	Yes	**No**
UPC-D5	Yes	Yes
* OCR-A	Yes	Yes
OCR-B	**No**	**No**
UPC-E	Yes	Yes
* UPC-ES	Yes	Yes

Note • The asterisk (*) above identifies those Barcodes that have no center and right alignments and the driver will return E_ILLEGAL when used with PTR_BC_CENTER or PTR_BC_RIGHT.

Supported Fonts

ZPL Fonts

Font Typeface (Value for # in ESC|#fT)	Font Name	Font Size (h x w)	Line Height	Inter-Character Gap (dots)	Total Width (dots)
0	D	18 x 10	24	2	12
1	F	26 x 13	30	3	16
2	A	9 x 5	12	1	6

Font D

Font D will be the default font. If nothing is specified in the print command, this font will be used. The spacing between lines shall be 24 dots. Counting the inter-character gap of 2 dots the characters are 12 dots wide. In calculating the number of characters that can be placed on an 832 dot line, the result is 69 characters.

Example command:

```
PrintNormal “123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ6789012345678901234567890123456789”
PrintNormal “0987654321abcdefghijklmnopqrstuvwxyz654321098765432109876543210987654321098765432”
PrintNormal “123456789012345678901234567890123456789012345678901234567890123456789”
PrintNormal “098765432109876543210987654321098765432109876543210987654321098765432”
```

Printed Image:

```
1234567890ABCDEFGHIJKLMNOPQRSTUVWXYZ789012345678901234567890123456789
0987654321abcdefghijklmnopqrstuvwxyz432109876543210987654321098765432
1234567890123456789012345678901234567890123456789012345678901234567890123456789
0987654321098765432109876543210987654321098765432109876543210987654321098765432
```

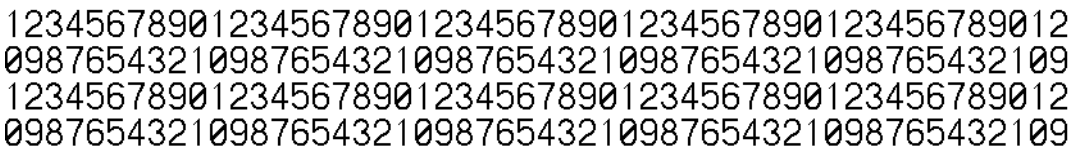
Font F

The spacing between lines shall be 28 dots. Counting the inter-character gap of 3 dots, the characters are 16 dots wide. In calculating the number of characters that can be placed on an 832 dot line, the result is 52 characters.

→ Example command:

PrintNormal “ESC|1fT12345678901234567890123456789012345678901234567890123456789012”
PrintNormal “ESC|1fT09876543210987654321098765432109876543210987654321098765432109”
PrintNormal “ESC|1fT12345678901234567890123456789012345678901234567890123456789012”
PrintNormal “ESC|1fT09876543210987654321098765432109876543210987654321098765432109”

Printed Image:



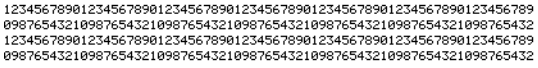
Font A

The spacing between lines shall be 12 dots. Counting the inter-character gap of 1 dots, the characters are 6 dots wide. In calculating the number of characters that can be placed on an 832 dot line, the result is 138 characters.

→ Example command:

PrintNormal “ESC|2fT123456789012345678901234567890123456789012345678901234567890123456789”
PrintNormal “ESC|2fT 098765432109876543210987654321098765432109876543210987654321098765432”
PrintNormal “ESC|2fT123456789012345678901234567890123456789012345678901234567890123456789”
PrintNormal “ESC|2fT 098765432109876543210987654321098765432109876543210987654321098765432”

Printed Image:



CPCL Fonts

Font Typeface (Value for # in ESC|#fT)	Font Name	Font Size (h x w)	Line Height	Total Width (dots)
0	7	0 (24 x 12)	24	12
1	0	3 (18 x 16)	18	16

Font for Typespace 0

The Font for typespace 0 will be CPCL font 7. If nothing is specified in the print command this font will be used. The spacing between lines shall be 24 dots. Counting the inter-character gap of 2 dots, the characters are 10 dots wide. In calculating the number of characters that can be placed on an 832 dot line, the result is 69 characters.

Example command:

PrintNormal “0987654321abcdefghijklmnopqrstuvwxyz654321098765432109876543210987 6”
PrintNormal “123456789012345678901234567890123456789012345678901234567890123 4567”
PrintNormal “098765432109876543210987654321098765432109876543210987654321098 7654”

Printed Image:

```
123456789012345678901234567890123456789012345678901234567890123456
098765432109876543210987654321098765432109876543210987654321098765
123456789012345678901234567890123456789012345678901234567890123456
098765432109876543210987654321098765432109876543210987654321098765
```

Font for Typespace 1

The spacing between lines shall be 28 dots. Counting the inter-character gap of 2 dots, the characters are 14 dots wide. In calculating the number of characters that can be placed on an 832 dot line, the result is 52 characters.

Example command:

PrintNormal “ESC|1fT12345678901234567890123456789012345678901234567890123456789012”
PrintNormal “ESC|1fT09876543210987654321098765432109876543210987654321098765432109”
PrintNormal “ESC|1fT12345678901234567890123456789012345678901234567890123456789012”
PrintNormal “ESC|1fT09876543210987654321098765432109876543210987654321098765432109”

Printed Image:

```
12345678901234567890123456789012345678901234567890123456789012345678
09876543210987654321098765432109876543210987654321098765432109876543
12345678901234567890123456789012345678901234567890123456789012345678
09876543210987654321098765432109876543210987654321098765432109876543
```

Notes •

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Supported Specifications and Printers

This chapter lists the supported specifications and printers.

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Specifications Supported

- UPOS specification supported: v1.11
- ActiveX supported
- .net framework supported: 1.1

Supported Printers

Printer Name	Maximum Print Width (in mm)
MZ 220	48
MZ 320	73
QL220 Plus	48
QL320 Plus	73
QL420 Plus	103
QLn220	48
QLn320	72
RW220	56
RW420	104
105SL (203 dpi)	104
105SL (300 dpi)	104
110PAX4 (203 dpi)	104
110PAX4 (300 dpi)	104
110XiIIIPlus (203 dpi)	104
110XiIIIPlus (300 dpi)	104
110XiIIIPlus (600 dpi)	81
140XiIIIPlus	128
170PAX4 (203 dpi)	168
170PAX4 (300 dpi)	168
170XiIIIPlus (203 dpi)	168
170XiIIIPlus (300 dpi)	168
220XiIIIPlus (203 dpi)	216
220XiIIIPlus (300 dpi)	216
LP2824-Z	56
LP2824 Plus (ZPL)	56
LP2844-Z	101
S4M (203 DPI)	104
S4M (300 DPI)	104

Printer Name	Maximum Print Width (in mm)
TLP2824-Z (203 dpi)	56
TLP2824 Plus (ZPL)	56
TLP2844-Z (203 dpi)	104
TLP3844-Z (300 dpi)	104
ZM400 (203 dpi)	104
ZM400 (300 dpi)	104
ZM400 (600 dpi)	81
ZM600 (203 dpi)	168
ZM600 (300 dpi)	168
GK420d	104
GK420t	104
GX420d	104
GX420t	104
KR403	82.5

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Common Properties, Methods, and Events

This chapter provides the common and specific commands for properties, methods, and events.

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Summary of Common Properties

Table 1 • Common Properties

Name	Type/Access	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
AutoDisable	Boolean /R/W	No	No
CapCompareFirmwareVersion	Boolean /R	No	No
BinaryConversion	Long R/W	Yes	Yes
CapPower Reporting	Long /R	Yes	Yes
CapStatisticsReporting	Boolean /R	No	No
CapUpdateFirmware	Boolean /R	No	No
CapUpdateStatistics	Boolean /R	No	No
CheckHealthTest	String /R	Yes	Yes
Claimed	Boolean /R	Yes	Yes
DataCount	Long /R	No	No
DataEventEnabled	Boolean /R/W	No	No
DeviceEnabled	Boolean /R/W	No	No
FreezeEvents	Boolean /R/W	Yes	Yes
OpenResult	Long /R	Yes	Yes
OutputID	Long /R	Yes	Yes
PowerNotify	Long /R/W	Yes	Yes
PowerState	Long /R	Yes	Yes
ResultCode	Long /R	Yes	Yes
ResultCodeExtended	Long /R	Yes	Yes
State	Long /R	Yes	Yes
ControlObjectDescription	String /R	Yes	Yes
ControlObjectVersion	Long /R	Yes	Yes
Service ObjectDescription	String /R	Yes	Yes
ServiceObjectVersion	Long /R	Yes	Yes
DeviceDescription	String /R	Yes	Yes
DeviceName	String /R	Yes	Yes

Summary of Common Methods

Table 2 • Common Methods

Name	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
Open	Yes	Yes
Close	Yes	Yes
Claim	Yes	Yes
ReleaseDevice	Yes	Yes
CheckHealth	Yes	Yes
ClearInput	No	No
ClearInputProperties	No	No
ClearOutput	Yes	Yes
DirectIO	Yes	Yes
CompareFirmwareVersion	No	No
ResetStatistics	No	No
RetrieveStatistics	No	No
UpdateFirmware	No	No
UpdateStatistics	No	No

Summary of Common Events

Table 3 • Common Events

Name	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
DataEvent	No	No
DirectIOEvent	Yes	Yes
ErrorEvent	Yes	Yes
OutputCompleteEvent	Yes	Yes
StatusUpdateEvent	Yes	Yes

Summary of Specific Properties

Table 4 • Specific Properties

Name	Type/Access	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
CapConcurrentJrnRec	Boolean /R	No	No
CapConcurrentJrnSlp	Boolean /R	No	No
CapConcurrentRecSlp	Boolean /R	No	No
CapCoverSensor	Boolean /R	Yes	Yes
CapTransaction	Boolean /R	Yes	Yes
CapConcurrentPageMode	Boolean /R	No	No
CapMapCharacterSet	Boolean /R	No	No
CapJrnPresent	Boolean /R	Yes	Yes
CapJrn2Color	Boolean /R	No	No
CapJrnBold	Boolean /R	Yes	Yes
CapJrnCartridgeSensor	Long /R	Yes	Yes
CapJrnColor	Long /R	Yes	Yes
CapJrnDhigh	Boolean /R	Yes	Yes
CapJrnDwide	Boolean /R	Yes	Yes
CapJrnDwideDhigh	Boolean /R	Yes	Yes
CapJrnEmptySensor	Boolean /R	Yes	Yes
CapJrnItalic	Boolean /R	No	No
CapJrnNearEndSensor	Boolean /R	No	No
CapJrnUnderline	Boolean /R	Yes	Yes
CapRecPresent	Boolean /R	Yes	Yes
CapRec2Color	Boolean /R	No	No
CapRecBarCode	Boolean /R	Yes	Yes
CapRecBitmap	Boolean /R	Yes	Yes
CapRecBold	Boolean /R	Yes	Yes
CapRecCartridgeSensor	Long /R	Yes	Yes
CapRecColor	Long /R	Yes	Yes
CapRecDhigh	Boolean /R	Yes	Yes
CapRecDwide	Boolean /R	Yes	Yes
CapRecDhighDwide	Boolean /R	Yes	Yes
CapRecEmptySensor	Boolean /R	Yes	Yes
CapRecItalic	Boolean /R	No	No
CapRecLeft90	Boolean /R	Yes	Yes
CapRecMarkFeed	Long /R	Yes	Yes
CapRecNearEndSensor	Boolean /R	No	No

Name	Type/Access	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
CapRecPapercut	Boolean /R	Yes	Yes
CapRecRight90	Boolean /R	Yes	Yes
CapRecRotate180	Boolean /R	Yes	Yes
CapRecStamp	Boolean /R	No	No
CapRecUnderline	Boolean /R	Yes	Yes
CapRecPageMode	Boolean /R	Yes	Yes
CapSlpPageMode	Boolean /R	No	No
CapSlpPresent	Boolean /R	No	No
CapSlpFullslip	Boolean /R	No	No
CapSlp2Color	Boolean /R	No	No
CapSlpBarCode	Boolean /R	No	No
CapSlpBitmap	Boolean /R	No	No
CapSlpBold	Boolean /R	No	No
CapSlpBothSidesPrint	Boolean /R	No	No
CapSlpCartridgeSensor	Long /R	No	No
CapSlpColor	Long /R	No	No
CapSlpDhigh	Boolean /R	No	No
CapSlpDwide	Boolean /R	No	No
CapSlpDhighDwide	Boolean /R	No	No
CapSlpEmptySensor	Boolean /R	No	No
CapSlpItalic	Boolean /R	No	No
CapSlpLeft90	Boolean /R	No	No
CapSlpNearEndSensor	Boolean /R	No	No
CapSlpRight90	Boolean /R	No	No
CapSlpRotate180	Boolean /R	No	No
CapSlpUnderline	Boolean /R	No	No
AsyncMode	Boolean /R/W	Yes	Yes
CartridgeNotify	Long /R/W	Yes	Yes
CharacterSet	Long /R/W	Yes	Yes
CharacterSetList	String /R	Yes	Yes
CoverOpen	Boolean /R	No	No
ErrorLevel	Long /R	Yes	Yes
ErrorStation	Long /R	Yes	Yes
ErrorString	String /R	Yes	Yes
FontTypefaceList	String /R	Yes	Yes
FlagWhenIdle	Boolean /R/W	No	No
MapCharacterSet	Boolean /R/W	No	No

Name	Type/Access	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
MapMode	Long /R/W	Yes	Yes
PageModeArea	String /R/W	Yes	Yes
PageModeDescriptor	Int32 R/W	Yes	Yes
PageModeHorizontalPosition	Int32 R/W	Yes	Yes
PageModePrintArea	String /R/W	Yes	Yes
PageModePrintDirection	Int32 R/W	Yes	Yes
PageModeStation	Int32 R/W	Yes	Yes
PageModeVerticalPosition	Int32 R/W	Yes	Yes
RotateSpecial	Long /R/W	Yes	Yes
JrnLineChars	Long /R/W	Yes	Yes
JrnLineCharsList	String /R	Yes	Yes
JrnLineHeight	Long /R/W	Yes	Yes
JrnLineSpacing	Long /R/W	Yes	Yes
JrnLineWidth	Long /R	Yes	Yes
JrnLetterQuality	Boolean /R/W	Yes	Yes
JrnEmpty	Boolean /R	Yes	Yes
JrnNearEnd	Boolean /R	Yes	Yes
JrnCartridgeState	Long /R	Yes	Yes
JrnCurrentCartridge	Long /R/W	Yes	Yes
RecLineChars	Long /R/W	Yes	Yes
RecLineCharsList	String /R	Yes	Yes
RecLineHeight	Long /R/W	Yes	Yes
RecLineSpacing	Long /R/W	Yes	Yes
RecLineWidth	Long /R	Yes	Yes
RecLetterQuality	Boolean /R/W	Yes	Yes
RecEmpty	Boolean /R	No	No
RecNearEnd	Boolean /R	No	No
RecSidewaysMaxLines	Long /R	Yes	Yes
RecSidewaysMaxChars	Long /R	Yes	Yes
RecLinesToPaperCut	Long /R	Yes	Yes
RecBarCodeRotationList	String /R	Yes	Yes
RecBitmapRotationList	String /R	No	No
RecCartridgeState	Long /R	Yes	Yes
RecCurrentCartridge	Long /R/W	Yes	Yes
SlpLineChars	Long /R/W	No	No
SlpLineCharsList	String /R	No	No
SlpLineHeight	Long /R/W	No	No

Name	Type/Access	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
SlpLineSpacing	Long /R/W	No	No
SlpLineWidth	Long /R	No	No
SlpLetterQuality	Boolean /R/W	No	No
SlpEmpty	Boolean /R	No	No
SlpNearEnd	Boolean /R	No	No
SlpSidewaysMaxLines	Long /R	No	No
SlpSidewaysMaxChars	Long /R	No	No
SlpMaxLines	Long /R	No	No
SlpLinesNearEndToEnd	Long /R	No	No
SlpBarCodeRotationList	String /R	No	No
SlpBitmapRotationList	String /R	No	No
SlpPrintSide	Long /R	No	No
SlpCartridgeState	Long /R	No	No
SlpCurrentCartridge	Long /R/W	No	No

Summary of Specific Methods

Table 5 • Specific Methods

Name	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
PrintNormal	Yes	Yes
PrintTwoNormal	No	No
PrintImmediate	Yes	Yes
PrintMemoryBitmap	Yes	Yes
BeginInsertion	No	No
EndInsertion	No	No
BeginRemoval	No	No
ClearPrintArea	Yes	Yes
EndRemoval	No	No
CutPaper	Yes	Yes
RotatePrint	Yes	Yes
PrintBarCode	Yes	Yes
PrintBitmap	Yes	Yes
TransactionPrint	Yes	Yes
ValidateData	Yes	Yes
SetBitmap	Yes	Yes
SetLogo	Yes	Yes
ChangePrintSide	No	No
MarkFeed	Yes	Yes
PageModePrint	Yes	Yes

Summary of Events

Table 6 • Events

Name	May Use After	Supported for Zebra ZPL Printer	Supported for Zebra CPCL Printer
DataEvent	Not Supported	No	No
DirectIOEvent	Open, Claim & Enable	Yes	Yes
ErrorEvent	Open, Claim & Enable	Yes	Yes
OutputCompleteEvent	Open, Claim & Enable	Yes	Yes
StatusUpdateEvent	Open, Claim & Enable	Yes	Yes

5 Device Manager

This chapter provides information about the Device Manager and its uses.

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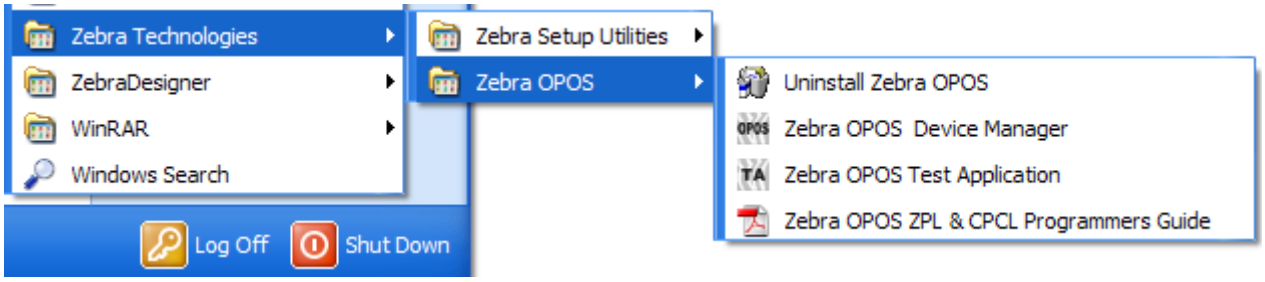
Using the Device Manager

Use the Zebra OPOS Device Manager v1.0 to add a printer. First, make a cable or wireless connection to a supported printer with one of the following:

- Bluetooth
- IP/WiFi
- Parallel
- Serial
- USB

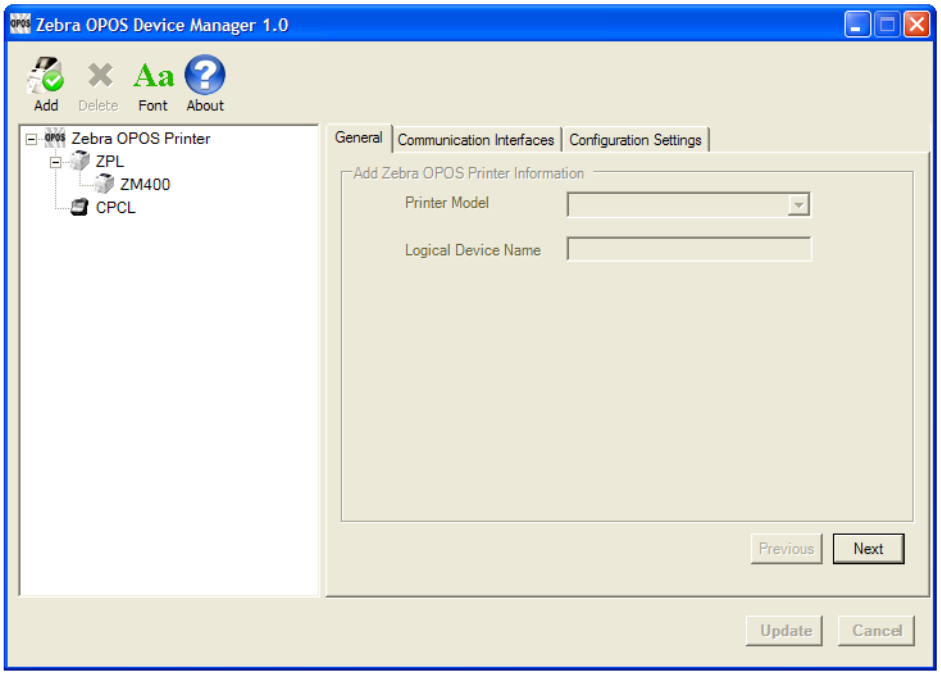
To connect to a supported printer, perform the following steps:

1. To run the Device Manager from the "Start" button on the PC, go to All Programs/Zebra Technologies/Zebra OPOS/Zebra OPOS Device Manager.

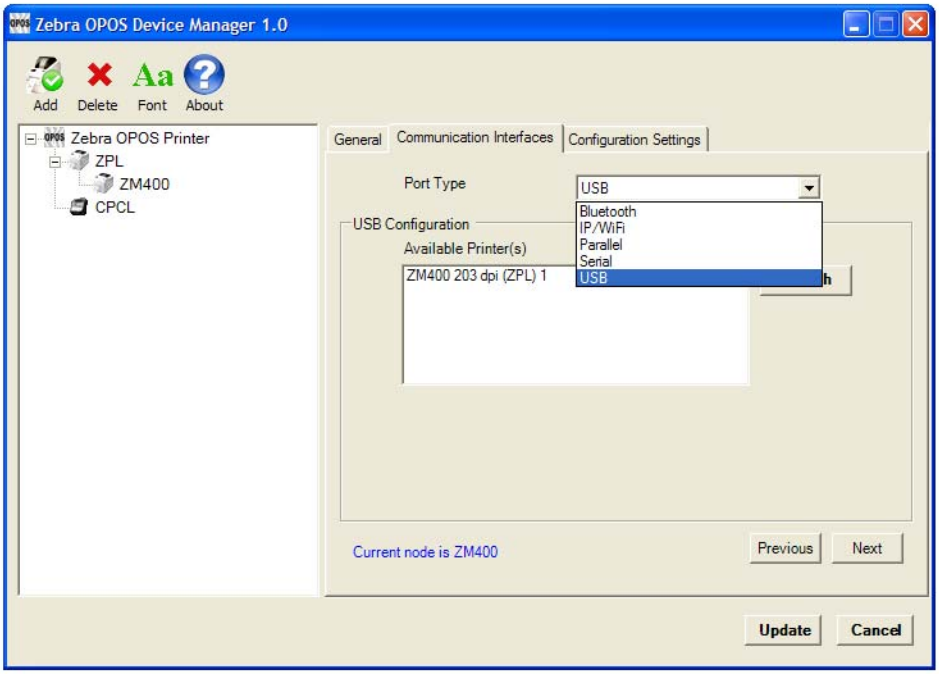


2. When the program displays, click on the "Add" icon. The General tab is used to add a printer by selecting the printer model using the drop-down menu.

   A logical device name for the printer must be defined, as this name will be used by the OPOS application.



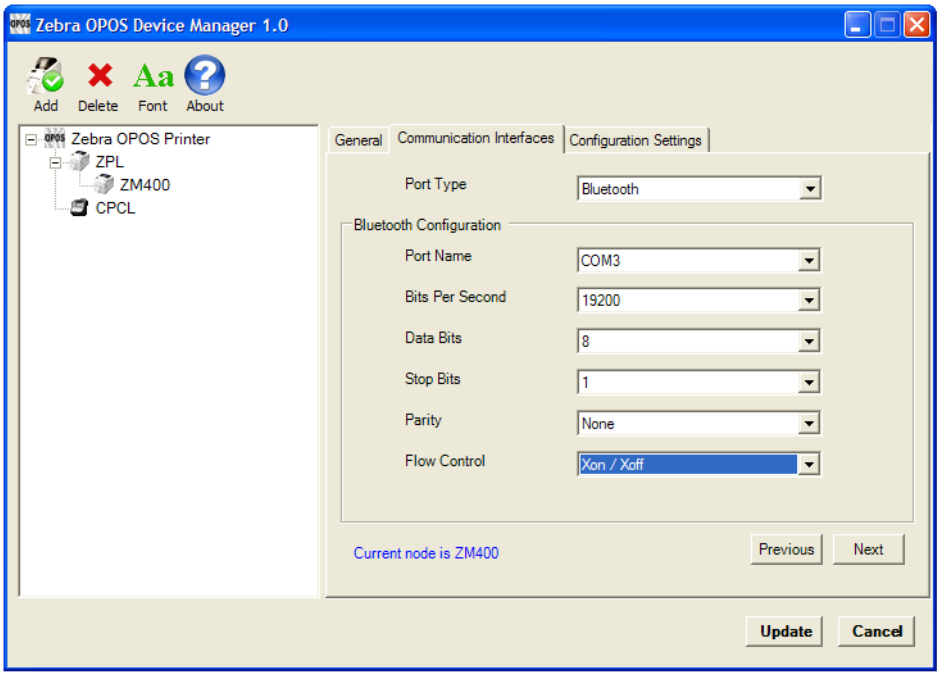
3. Once these steps are complete click on Next.
   The Communication Interfaces dialog will display.
4. On this screen, select the port type by using the drop-down menu.
5. Choose the interface to which the printer is connected.
6. Click on Search and the printer model should populate the area under Available Printer(s).



Connecting Using Bluetooth

With Bluetooth as a Port Type, you will need to make a serial cable connection and define the Bluetooth Configuration parameters to match the Bluetooth device.

Example • Bluetooth configuration

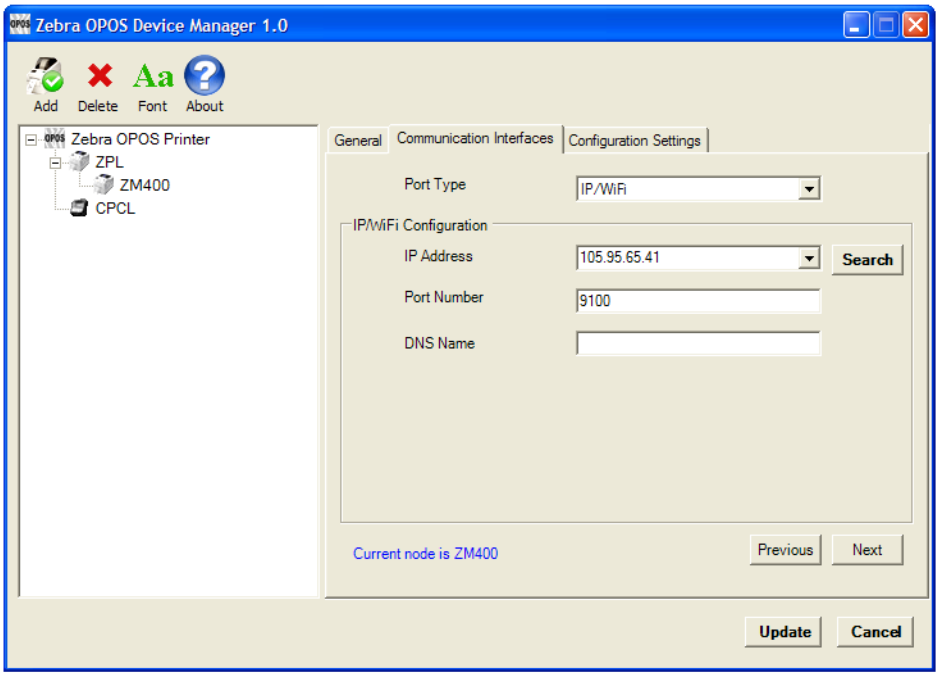


Once this is complete, click on Next.

Connecting Using an IP Address

With IP/WiFi as a Port Type, manually enter the IP Address of the device or click on the Search button. A search for devices that have the same subnet as the PC running the Device Manager will start and then populate the drop-down menu.

Example • IP address configuration

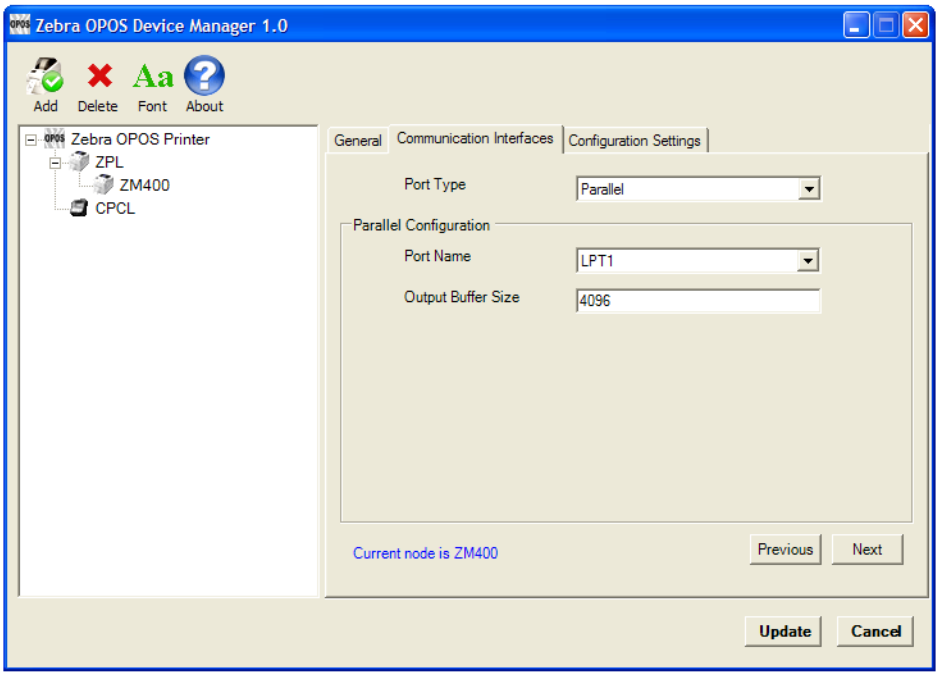


Once this is complete, click on Next.

Connecting Using a Parallel Cable

A parallel cable can be used to connect to the printer. Configure Port Type to Parallel.

Example • Parallel cable configuration

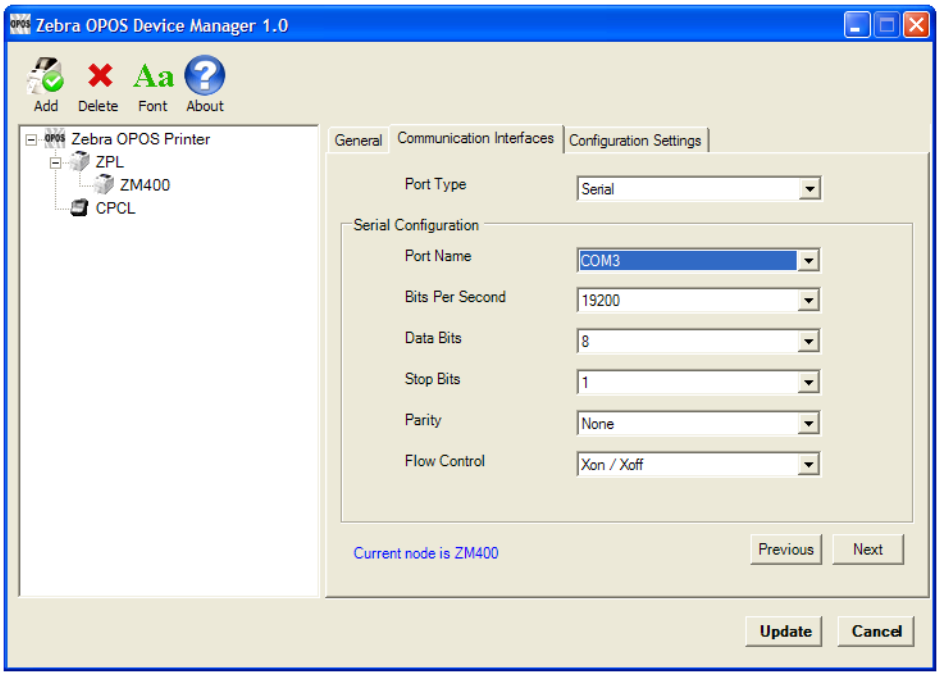


Once this is complete, click on Next.

Connecting Using a Serial Cable

A serial cable can be used to connect to the printer. Configure Port Type to Serial, then configure Port Name, Bits Per Second, Data Bits, Stop Bits, Parity and Flow Control to match the settings on the printer.

Example • Serial cable configuration

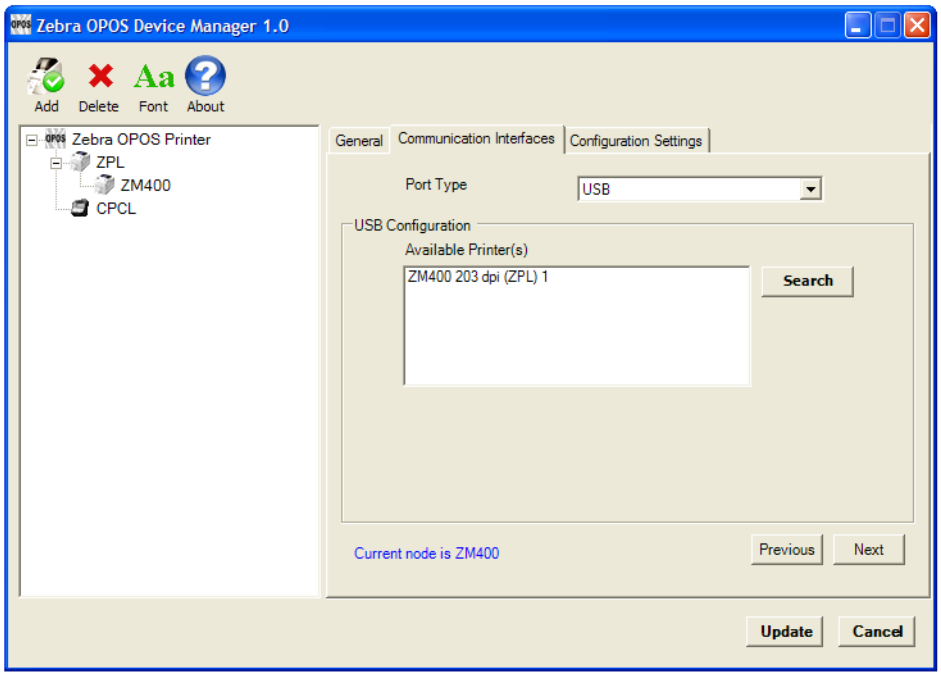


Once this is complete, click on Next.

Connecting Using a USB Cable

1. When using a USB cable, make the cable connection first.
2. Then, click on Search button.
   This will populate the Available Printer(s) area with found printers.

→ **Example** • USB cable configuration

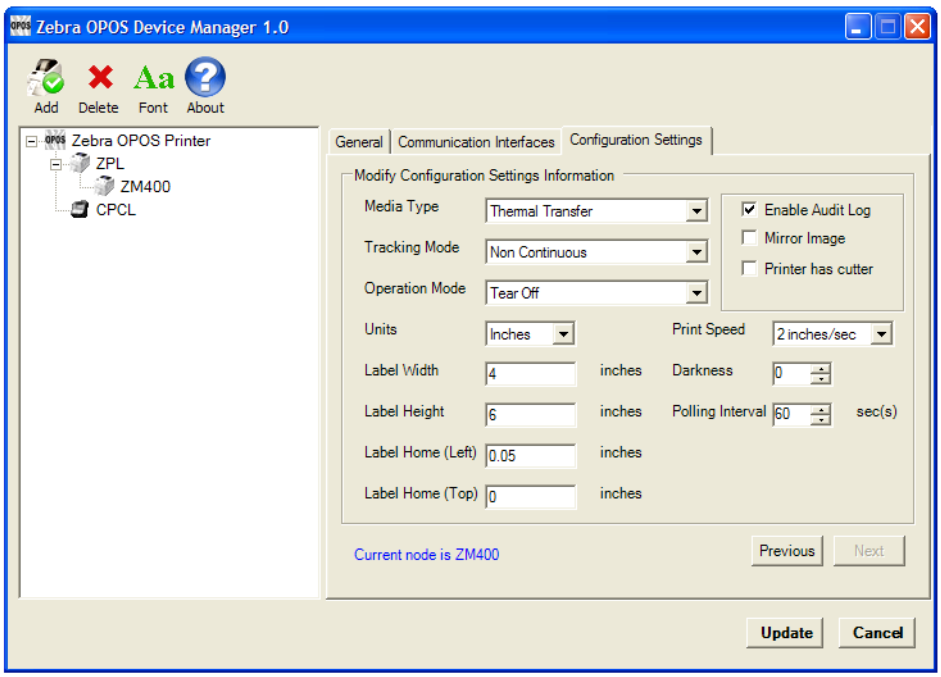


3. Click on the printer.
4. Click Next.
   The Configurations Settings tab will display.

Configuration Settings

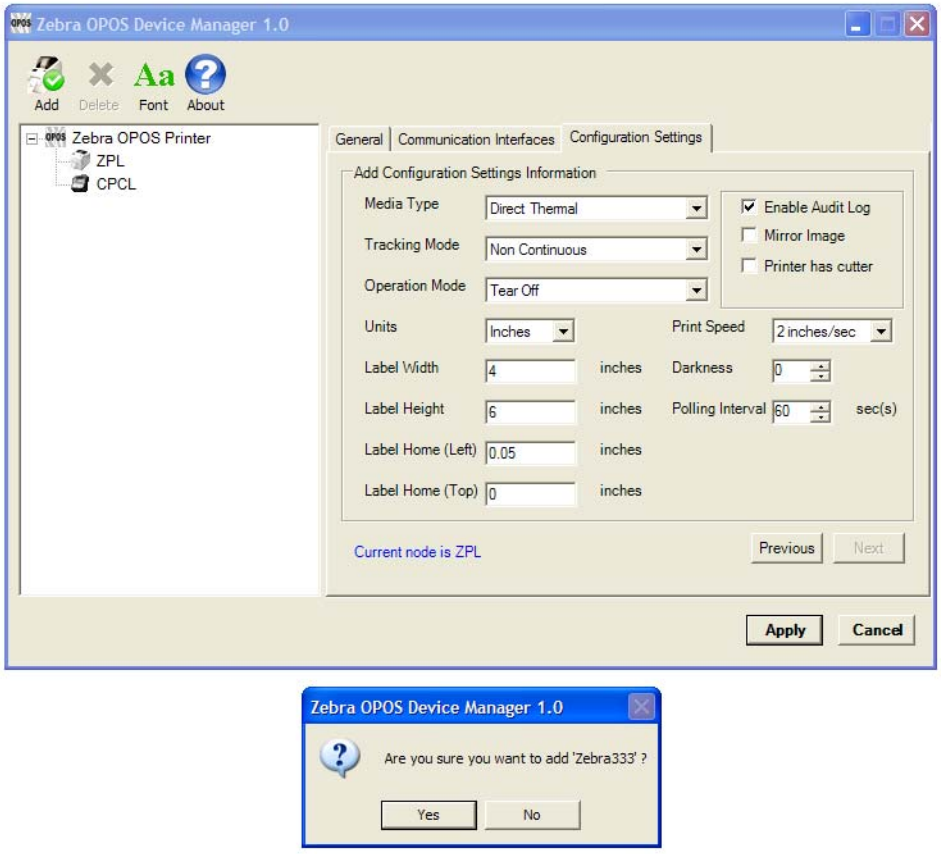
Adding a Printer

1. On the Configurations Settings tab, select the settings that will be used for the printer.

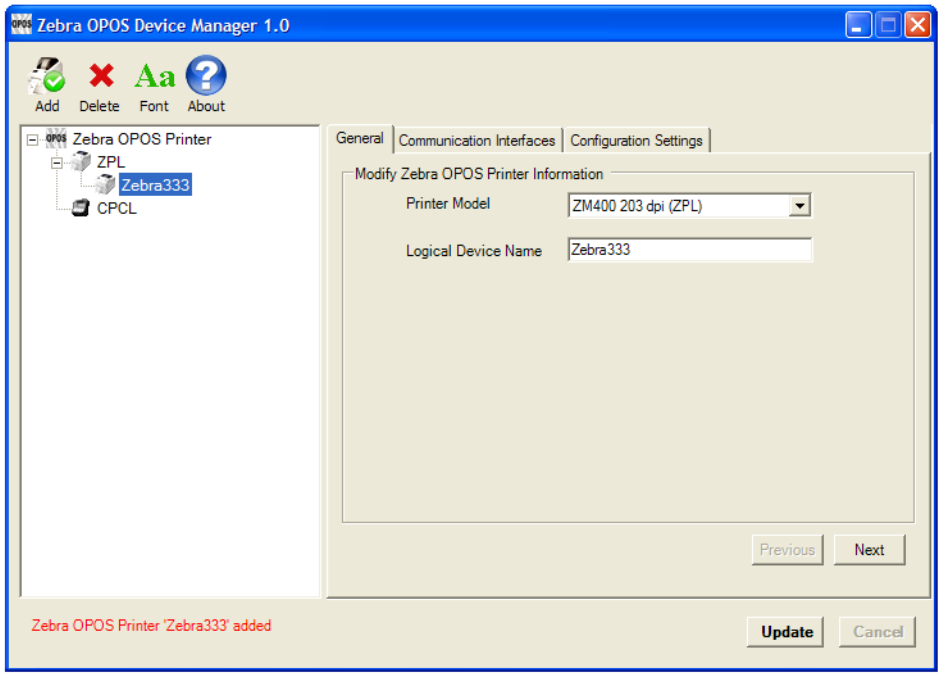


2. Once complete, click on the Update button.

3. A message will appear asking if you are sure you want to add the printer, click Yes.



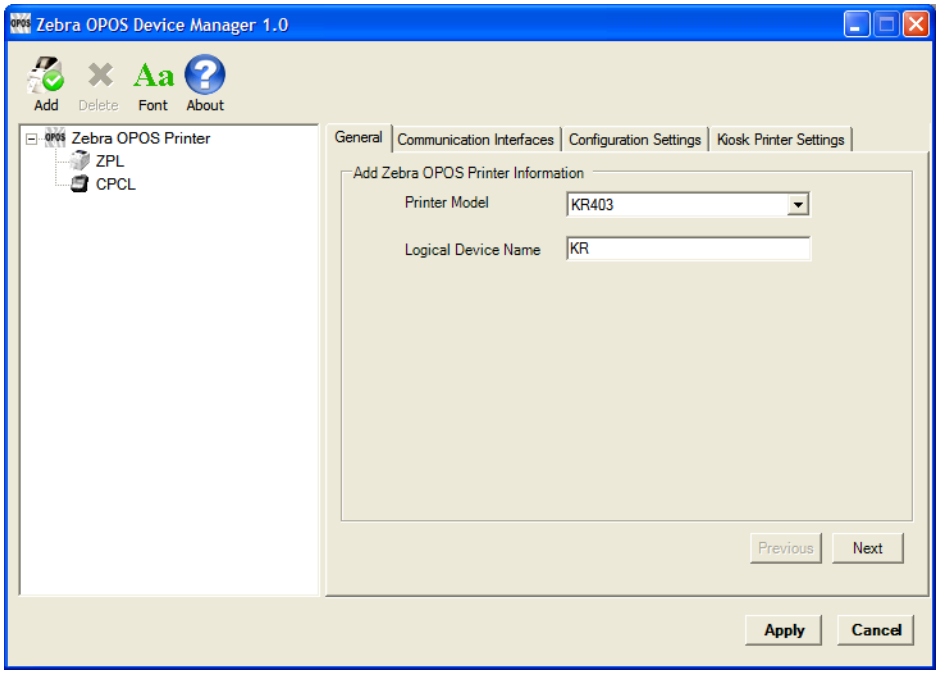
The printer will be added under the ZPL directory.



Adding a KR403 Kiosk Printer

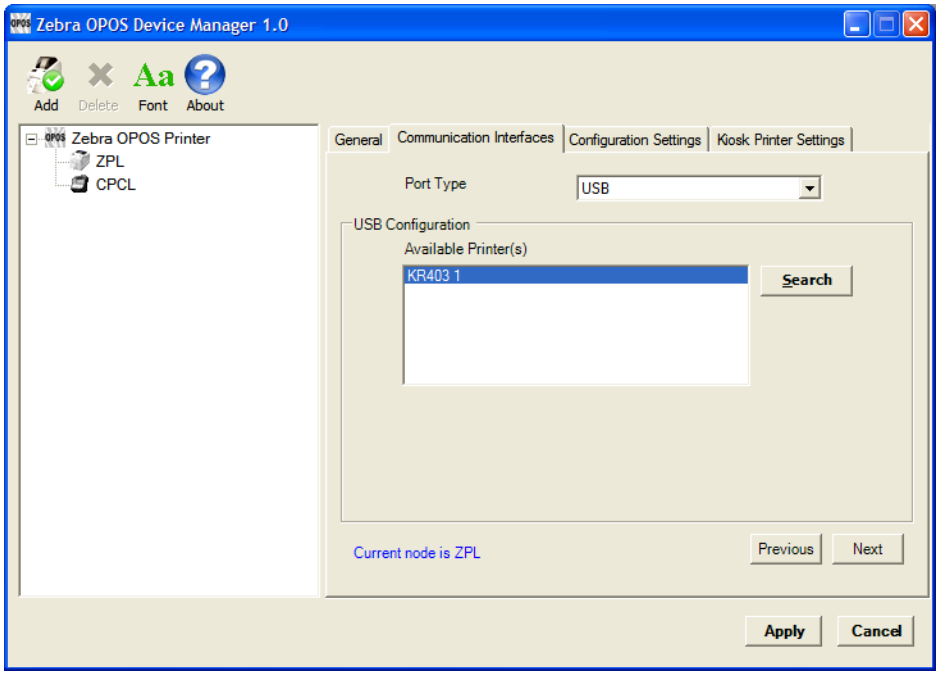
1. Open the Device Manager application, select ZPL under Zebra OPOS Printer. Click the Add Button.

2. Select KR403 from the Printer Model drop-down menu and type in the logical device name.

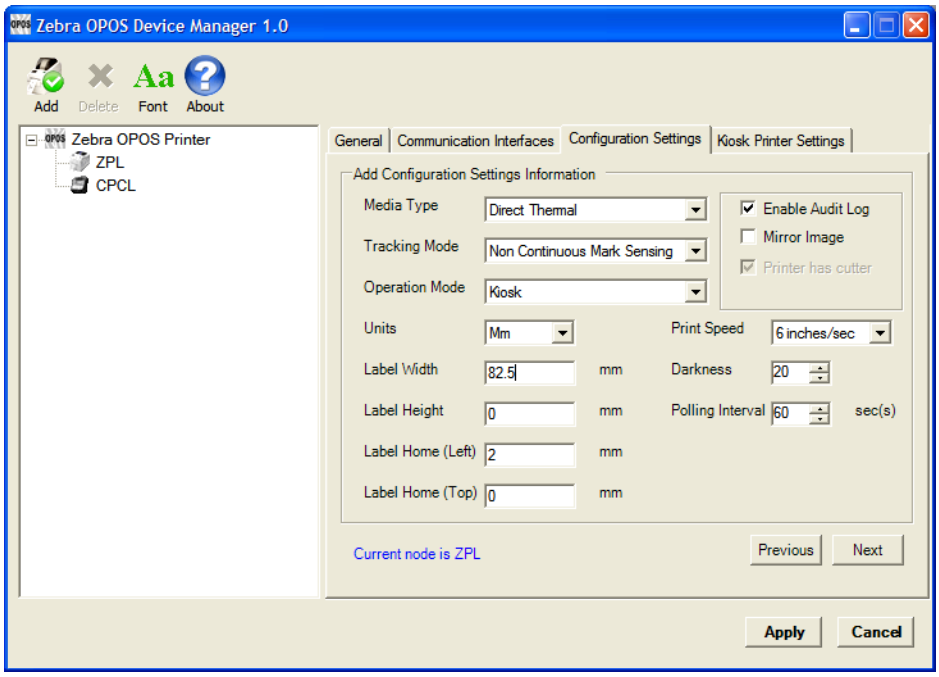


3. Click Next.

4. In the Communication Interfaces tab, select the Port Type and then click the Next button.

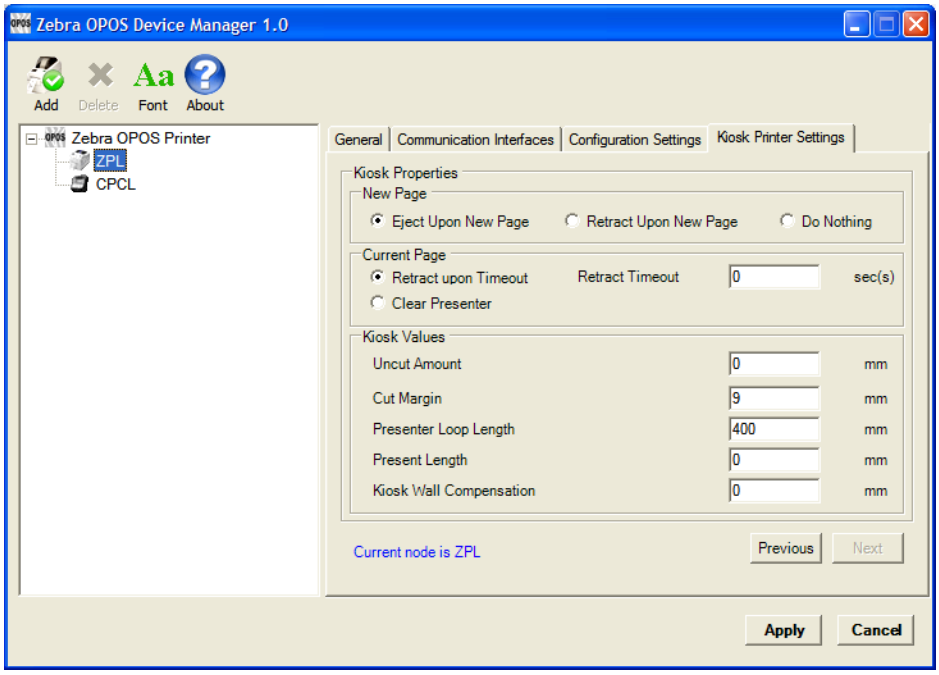


5. In the Configuration Settings tab, select the settings such as Media Type, Tracking Mode, etc. Check the Enable Audit Log box to enable event logging.



6. Click the Next button and configure the Kiosk Printer Settings.

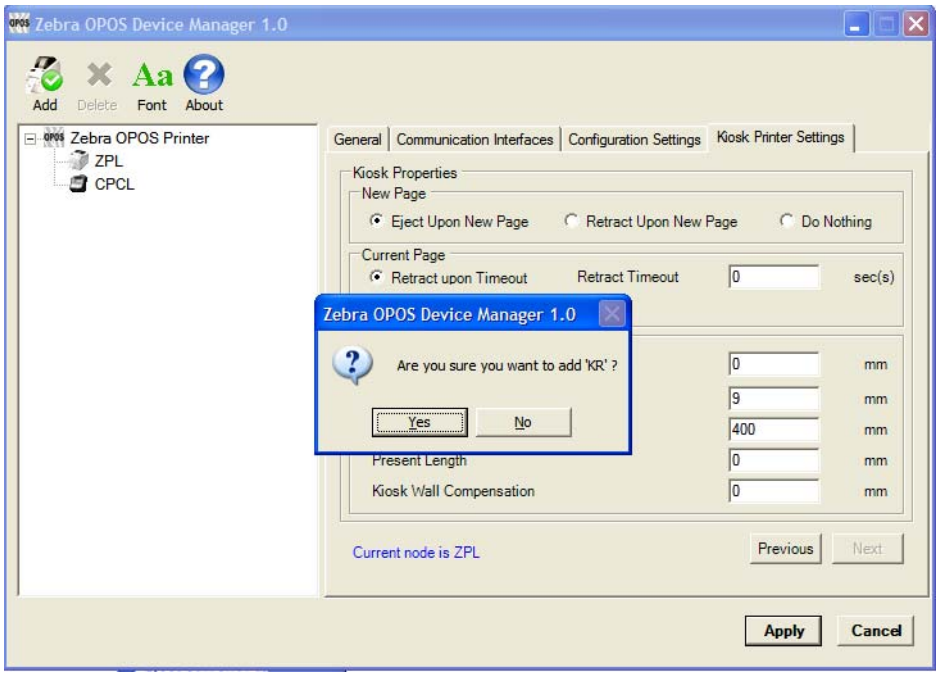
   For a detailed explanation of the Kiosk Printer Settings, see *Kiosk Printer Settings* on page 53.



7. Click the Apply button.

8. Click Yes to add the printer.

The KR403 should now be listed in the Device Manager.

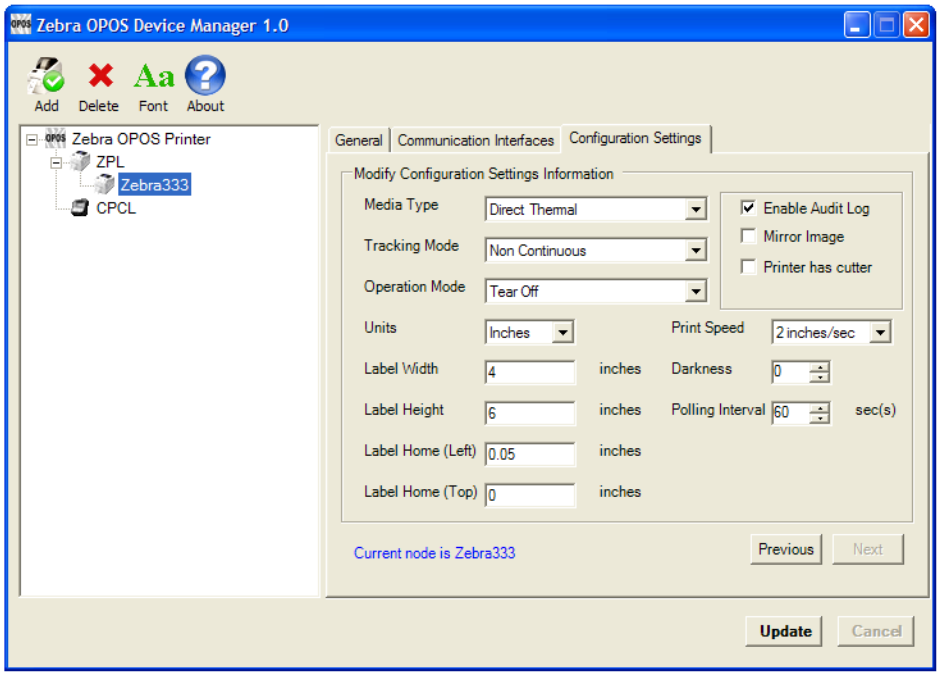


Output Logging

The Driver can log its printer command output for troubleshooting purposes. By default, this option is not turned on to keep the logs from consuming disk space. In the event that the Output Logs are needed, the feature can be activated from within the Device Manager.

To turn on Output Logging, perform the following:

1. Run the Device Manager and select the printer to be monitored.
2. Click on the Configuration Settings tab and check Enable Audit Log.



The logs can be found at C:\Program Files\Zebra Technologies\ZebraOPOS\LOGS.

There are two logs:

- ZebraPOS_Audit.txt - contains a running log of the OPOS commands used and the resulting driver output.
- ZebraPOS_Status_Audit.txt - contains a running log of when status queries were sent.

To turn off the logging, perform the following:

1. Uncheck the Enable Audit Log box in the Device Manager.

Note • If logging is turned off or on while a printer is in the "Claimed" state, the setting change will not take effect until the printer has been "Released".

Additional Font Handling

In order to provide customers with the ability to add fonts to the printer and then use those in the OPOS driver, the Device Manager UI has the following functionality.

Note • Zebra offers two pre-converted fonts for use with ZPL-based printers. These are a monospaced font called “Mono1” and a scalable font called “Swiss721”. Please contact your Zebra Reseller to obtain these fonts.

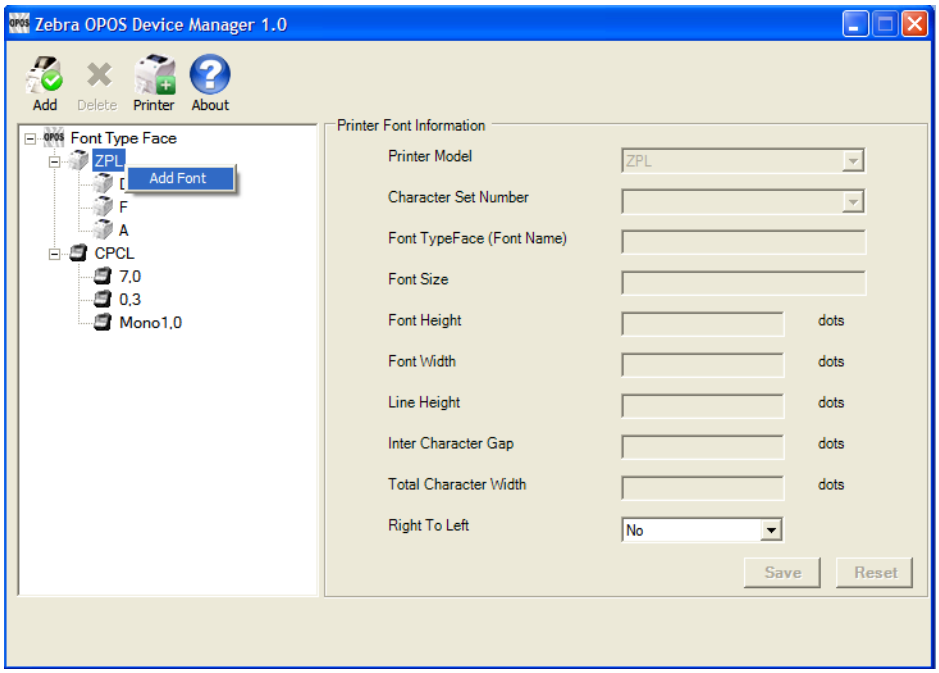
Note • Zebra offers a pre-converted fonts for use with CPCL-based printers. This is a monospaced font called “Mono1”. Please contact your Zebra Reseller to obtain this font. As a convenience, “Mono1” is predefined as an Additional Font for the CPCL printer models.

Adding a New Font in Device Manager

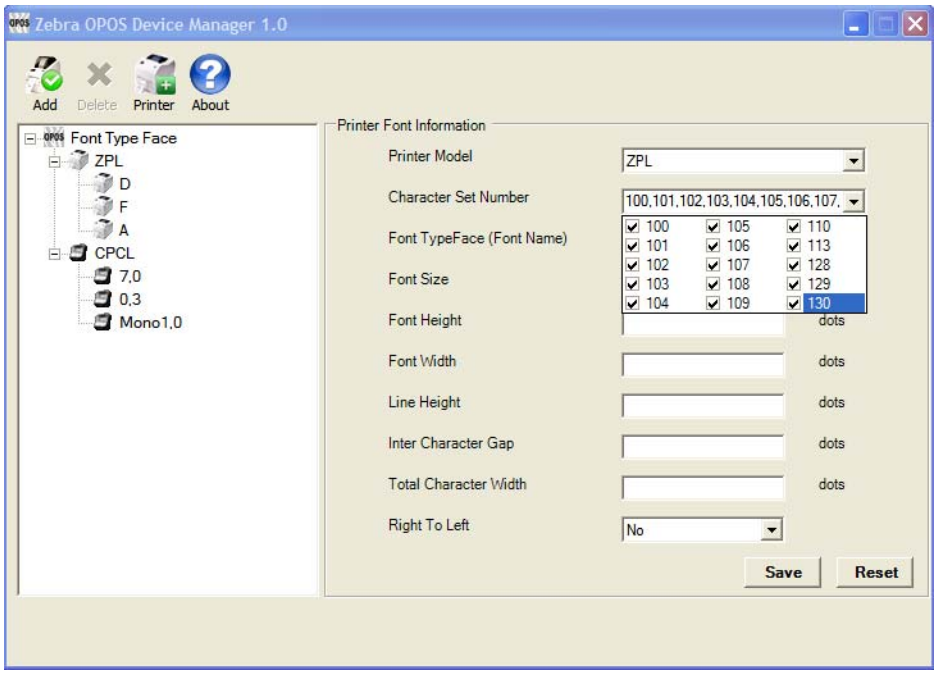
The following example demonstrates how to add the “Swiss721” font to a ZPL printer.

1. Open the Device Manager Application and click the Font button.
2. Right-click ZPL and click Add Font.

   Fonts D, F and A will be listed under ZPL.



3. Select Character Set drop-down menu, verify selectable character sets (100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 113, 128, 129, 130) and select the character sets by clicking the corresponding boxes.

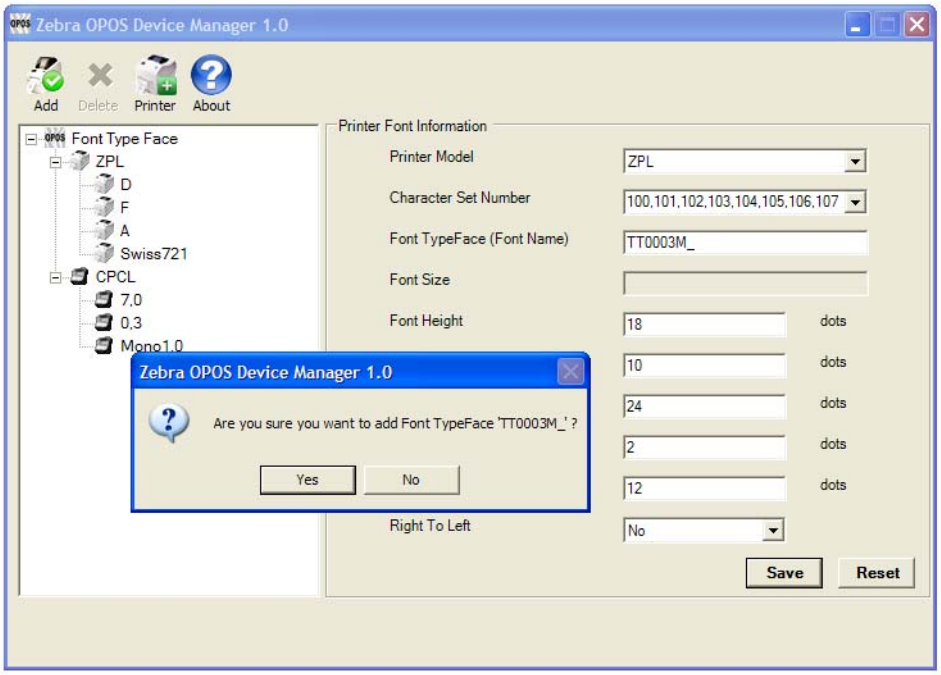


4. Enter Font Name, Font Height, and Width (in dots). If adding “Swiss721”, use the name “TT0003M_”. If adding the “Mono1” font, use the name “Mono1”.

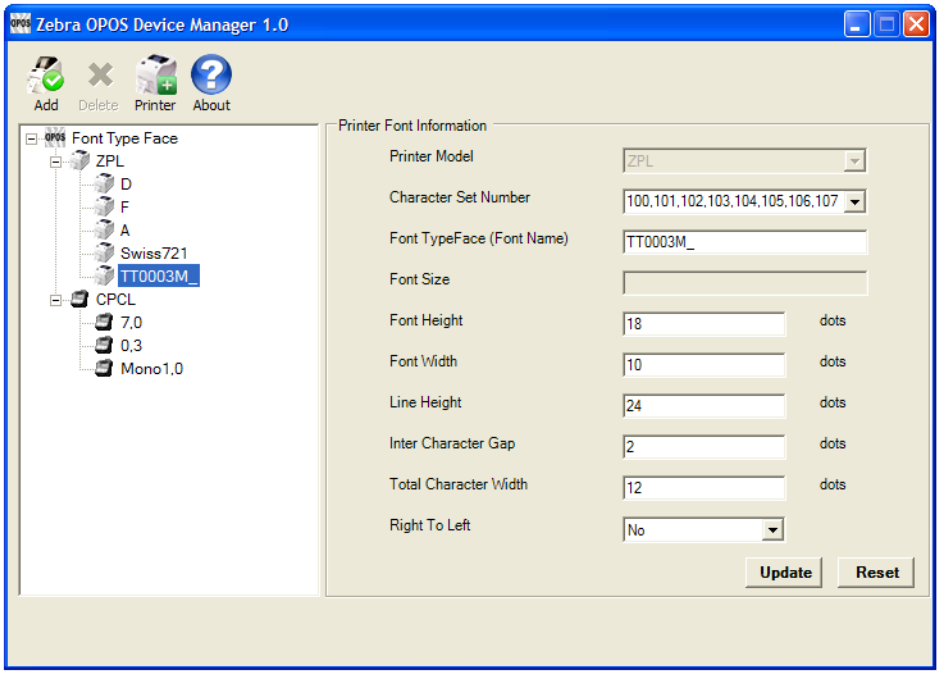
5. Enter Line Height, Inter Character Gap (in dots), Total Character Width, and select “Yes” or “No” to identify if your Font supports “Right to Left”.

6. Click the Save button to save the Font.

(The user will be presented with a dialog box to confirm the adding of the font.)



7. The new font should now be listed.



Note • When using One Shot ESC commands, the index entry for the font will be assigned by the Device Manager to the next available font slot.

Note • 0, 1, 2 are built-in ZPL fonts and any new font will be assigned a following number, e.g., 3 for “Mono1” if it was loaded before “TT0003M_” and 4 for “TT0003M_” if this font was loaded after “Mono1”.

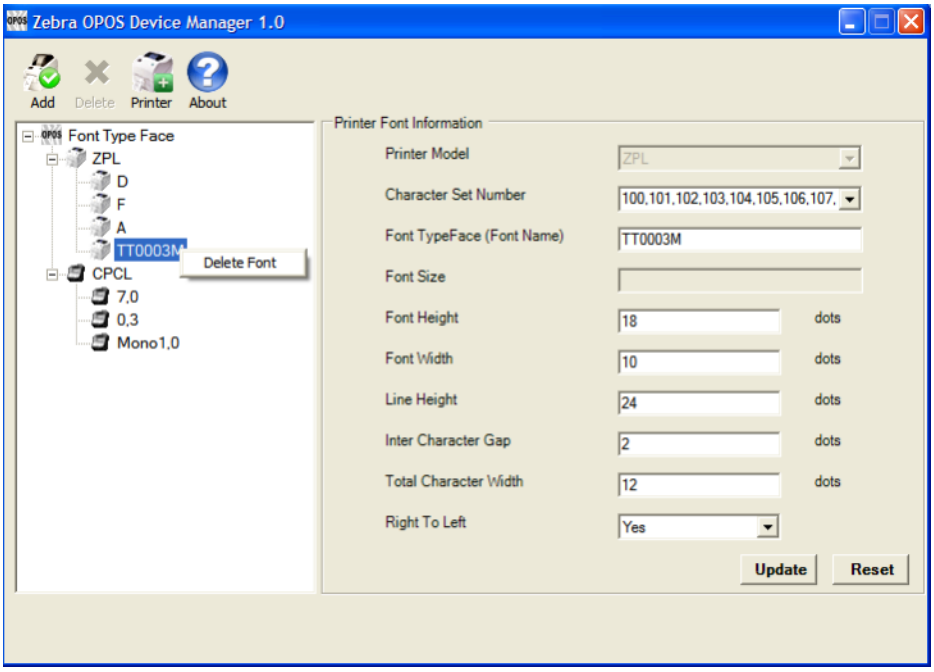
Assigning Multiple Fonts

1. In order to assign multiple fonts, repeat the steps in *Adding a New Font in Device Manager* on page 45 for every font you want to add.

Deleting a Font

1. To delete a font from the list, simply right-click the Font you wish to delete and select "Delete Font".

   (The user will be presented with a dialog box to confirm the deletion of the font.)



Programming Tips For Using Additional ZPL Fonts

In order to print in other languages, it is necessary to load a new font Swiss721 into the printer and control it within the OPOS driver. See *Adding a New Font in Device Manager* on page 45 for more specific information.

An OPOS application developer has to select the proper font encoding by selecting the new codepage as described in the font definition.

In order to enable locale setting, we can check the currently selected language support in the OS and select the OPOS CharacterSet value according to the following selection:

Zebra ^CI Values	OPOS CharacterSet Value
0 = Single Byte Encoding - U.S.A. 1 Character Set	100
1 = Single Byte Encoding - U.S.A. 2 Character Set	101
2 = Single Byte Encoding - U.K. Character Set	102
3 = Single Byte Encoding - Holland Character Set	103
4 = Single Byte Encoding - Denmark/Norway Character Set	104
5 = Single Byte Encoding - Sweden/Finland Character Set	105
6 = Single Byte Encoding - Germany Character Set	106
7 = Single Byte Encoding - France 1 Character Set	107
8 = Single Byte Encoding - France 2 Character Set	108
9 = Single Byte Encoding - Italy Character Set	109
10 = Single Byte Encoding - Spain	110
13 = Zebra Code Page 850	113 (default)
28 = Unicode (UTF-8 encoding) - Unicode Character Set	128
29 = Unicode (UTF-16 Big-Endian encoding) - Unicode Character Set	129
30 = Unicode (UTF-16 Little-Endian encoding) - Unicode Character Set	130

Note • If printing with a new font and character set shall occur, perform the steps in the next procedure shown on page 51.

If using Swiss721 font (with font index 3), perform the steps below.

1. Send the ESC|3fT. With the first use, the CharacterSetNumber value (128,129,130) (assigned to the Swiss721 font) will be appended to the default CharacterSetList property (100,101,102,103,104,105,106,107,108,109,110,113).

   This will throw an exception as “Selected Font doesn't support character set”. You will need to add the appropriate character set number within 128,129,130.

2. Assign the CharacterSetNumber within the CharacterSetNumber value (128,129,130) selected for Swiss721.

   Now, the Service Object will change the CharacterSetNumber to the specified number and use it for future printing.

Use of OPOS Character Properties

The **CharacterSetList** property will display all of the ASCII numeric set numbers associated with the currently loaded fonts. The default is:

`“100,101,102,103,104,105,106,107,108,109,110,113”.`

If a new font is added, the new character set values will be added to the **CharacterSetList** so an application can choose the new values for the respective fonts.

The **CharacterSet** property will initialize with 113 on “open”.

The **CapMapCharacterSet** property will be initialized with **FALSE** on “open”.

Note • The above setting has the effect that the **MapCharacterSet** property will also always show FALSE regardless of what the user sets it to. If **MapCharacterSet** is set to TRUE, an error **E_ILLEGAL** will be thrown.

The **CapCharacterSet** property will initialize with **DISP_CCS_ASCII** on “open”. This property will change with a different selection of the CharacterSet property.

CapCharacterSet	CharacterSet
DISP_CCS_ASCII	100-110, 113
DISP_CCS_UNICODE	128,129,130

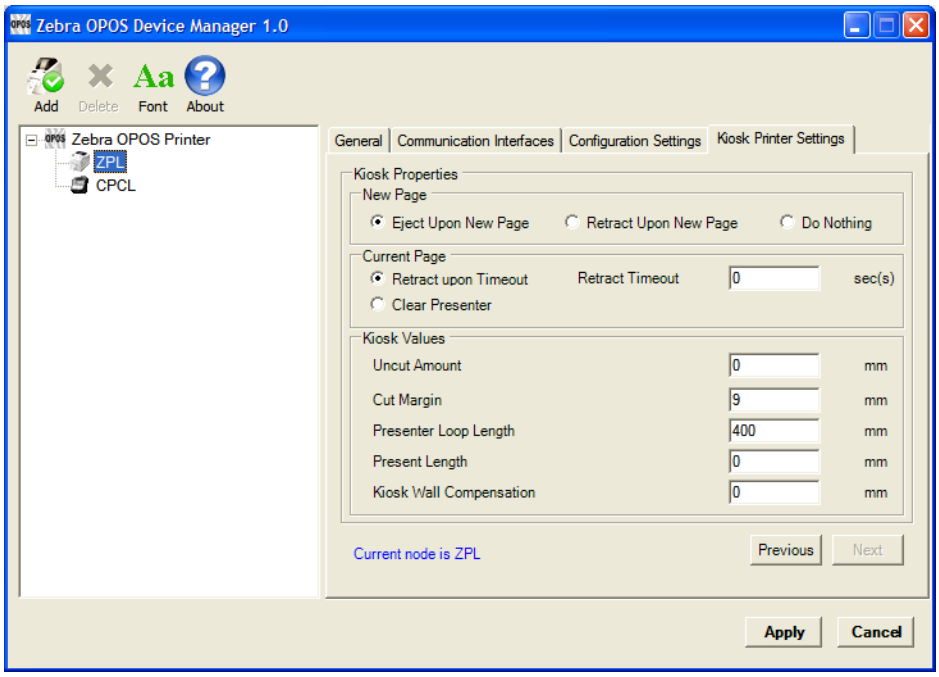
Note • Error handling - If a specific character set value is selected with the CharacterSet property and a font is selected that cannot support the character set, an error E_ILLEGAL will be thrown.

Note • OPOS Properties - The driver does not support font mapping. The application is responsible for this task. **CapMapCharacterSet** is always FALSE, which will also cause MapCharacterSet to always be FALSE. If **MapCharacterSet** is set to TRUE, an error E_ILLEGAL will be thrown.

KR403 Specific User Interface

Kiosk Printer Settings

The Kiosk Printer Settings tab will appear only after adding KR403 as a Printer Model under the General tab. The following information will assist configuring Kiosk properties.



Kiosk Properties

New Page:

There are three settings which you may select when a new page is printed:

- Eject Upon New Page
- Retract Upon New Page
- Do Nothing

These settings instruct the printer to change the presenter function mode.

Eject Upon New Page – Ejects the current page while the new page is printed.

Retract Upon New Page – Retracts current page while the new page is printed.

Do Nothing – The current page still remains in the printer neither ejects nor retracts.

Current Page:

Retract upon Timeout – If a label is not taken, you can define a timeout value when expired will retract the current page. Retract timeout can be defined from 0 – 300 seconds.

Clear Presenter – Will eject the current page before printing a new page.

Kiosk Values:

Uncut Amount – When a partial cut is made by the printer, the media left uncut can be defined from 10 to 60mm.

Cut Margin – This setting determines the margin between the cutter and the printhead. It is defined from 2 to 9mm. The default is 9mm.

Presenter Loop Length – Determines the length of the presenter loop. It is defined from 3 to 1023mm. The default gives a loop of approximately 400mm.

With this feature, we build a loop with the imaged receipt and keep the printout in the printer to prevent the kiosk user from taking the receipt while it is still being imaged. When the full receipt is imaged, we cut the receipt and present a portion of the receipt to the user for them to take. This reduces jamming and print image distortion of the receipt.

Present Length – Determines the amount of media to eject the page through the presenter module.

When the customer takes the receipt, the printer detects a movement and issues the rest of the receipt at 300 mm/s to help ensure receipt is removed undamaged. Value range from 0 to 255mm.

Kiosk Wall Compensation – By default, the printer will eject the paper 50 mm during a present cycle. The kiosk wall compensation setting allows the user to increase the distance that media is ejected during a present cycle. The additional distance can range from 0 to 255 mm.

Details for Variable Continuous Mode vs. Continuous Mode

The KR403 printer supports two continuous modes. The “variable continuous mode” is different from the “continuous mode”. Variable continuous mode allows the printer to print pages without length limitation.

Note • The minimum presenter length of 70 mm always applies.

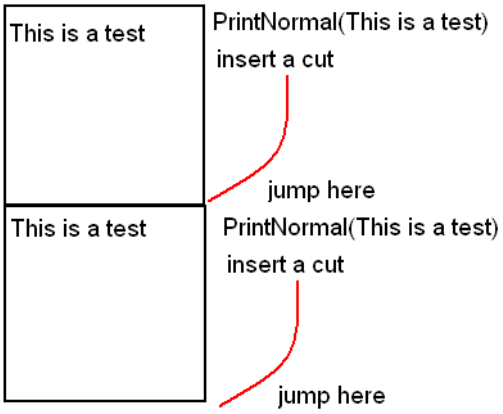
- Variable continuous mode will print on continuous paper without page boundaries until a cut command is issued.
- Continuous mode requires a defined page length and will print a page that adheres to that set page length.

Continuous Mode

Example • Continuous Mode:

- You have a set label width
- You have a set label height (minimum length is 70 mm)
- You have a Label Home (left and top)

You print content that is not filling the page and you receive a cut command.The printer shall feed to the end of the page and cut there.

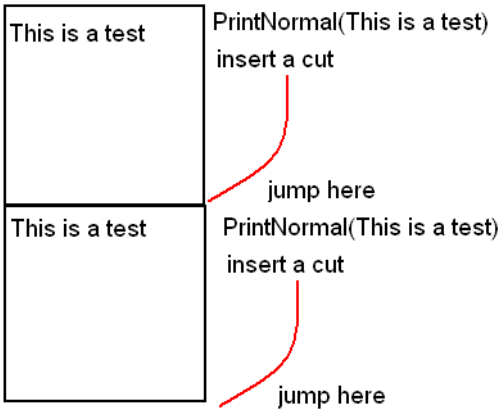


Variable Continuous Mode 1

Example • Variable Continuous Mode 1:

- You have a set label width
- You have a minimum label height of 70 mm
- You have a Label Home (left and top)

You print content that is not filling the page and you receive a cut command.The printer shall feed to the end of the page and cut there.



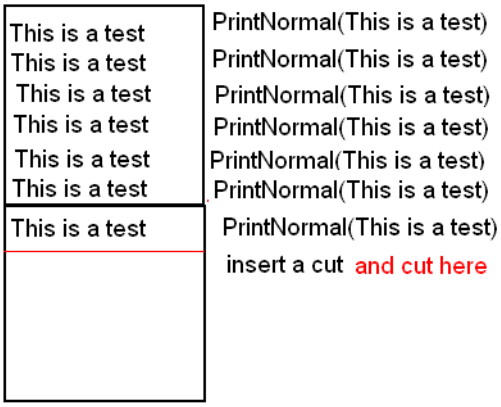
In this example, the minimum label length is not exceeded and is not different from Continuous mode.

Variable Continuous Mode 2

Example • Variable Continuous Mode 2:

- You have a set label width
- You have a minimum label height of 70 mm
- You have a Label Home (left and top)

You print content that is exceeding the minimum page and you receive a cut command. The printer shall not feed to the end of the page and cut right after the last print.



In this example, only the minimum page length is honored and after the minimum length is exceeded the printer can cut at any location after the last print statement.

Implementation

To begin printing in variable continuous mode, we need to issue PrintNormal statements until the minimum page length is exceeded and the cut command is received.

This means we have to establish a hybrid. Using page mode and continuous mode, you will set up a requirement to cut at any location (other the end of the page), once the minimum page length is exceeded.

Note • This requirement is introduced due to a change in the original firmware behavior to the new minimum page length requirement.

Note • Variable mode is the default mode for the KR403.

When using variable mode, you need to also set a minimum page length in order to accomplish the desired effect. In this mode, the printer is feeding paper without length limitation (besides the minimum presenter length).

Notes •

6

Test Application

This chapter provides steps and illustrations to prepare your keyboard to use additional languages and to launch and perform various operations using the OPOS Test Application.

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Preparing Windows® and Printer for Unicode Printing 60
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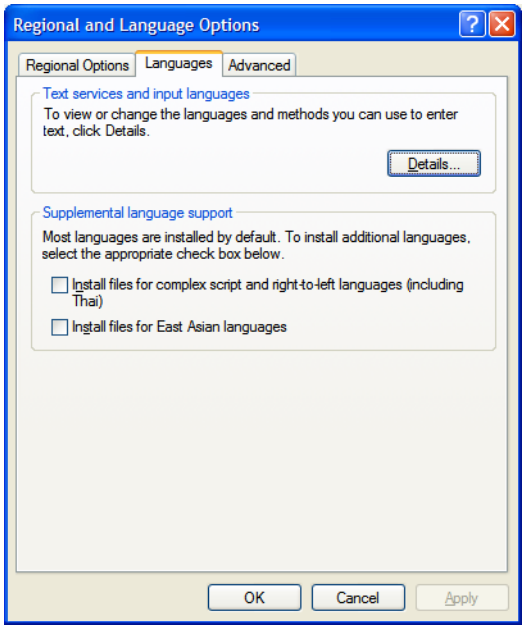
Printing Unicode with the Test Application 66

Preparing Windows® and Printer for Unicode Printing

In order to print in other languages, it is necessary to load a new font into the printer and control the font within the OPOS driver. See *Adding a New Font in Device Manager* on page 45 to add a new font. Before attempting to print, be sure that the new font is already loaded in the printer in the E: directory.

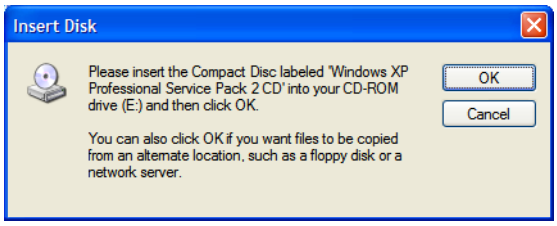
Note • To add language support to the PC, it may require Administrative rights. If you do not have Administrative rights, you may need to seek assistance from your IT organization.

1. Navigate to the Control Panel and click on “Regional and Language Options”.
2. Click the Languages tab and check both boxes under “Supplemental language support”.



3. Windows may ask for the XP CD for the files.

   If you do not have the CD, it will be necessary to obtain it from your IT Administrator.

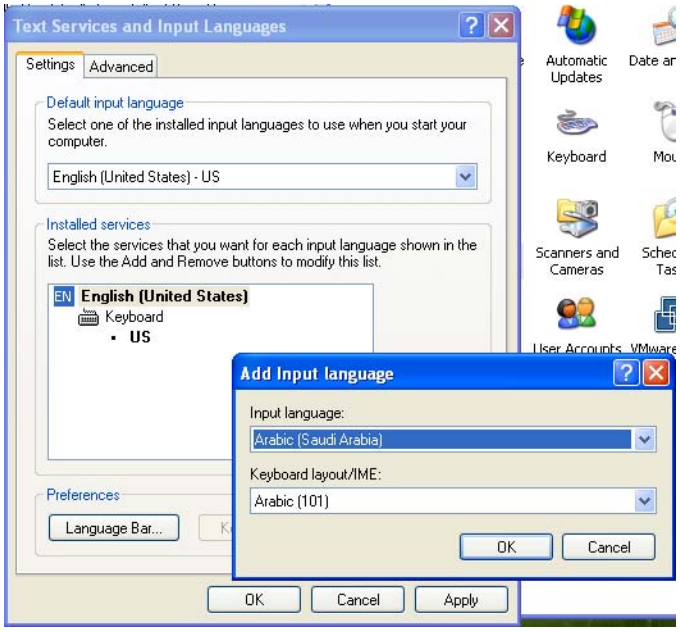


   The installation will take a few minutes and a reboot will be required.

4. Once the system has rebooted, navigate to the Control Panel and open “Regional and Language Options”.
5. Click the language tab and click the “Details…” button under “Text services and input languages”.

6. Under “Installed services”, click the Add button.

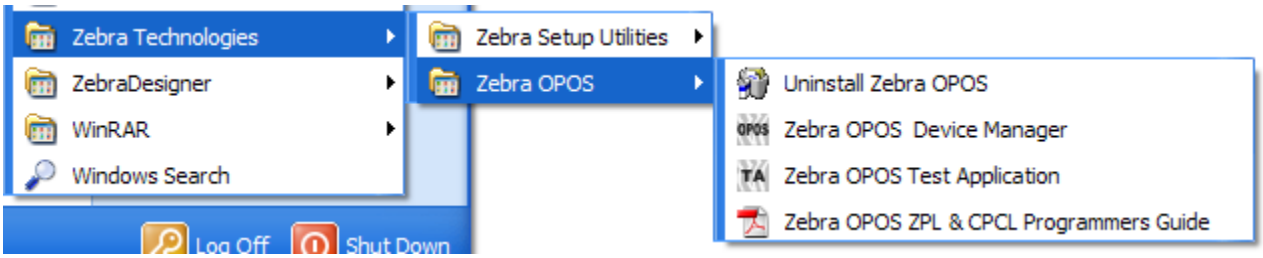
7. Select the desired language from the drop-down menu and click OK.



Zebra OPOS Test Application

Once the printer has been added using the Device Manager, you can test the driver with the Zebra OPOS Test Application utility.

1. From the Start menu, navigate to All Programs/Zebra Technologies/Zebra OPOS/Zebra OPOS Test Application.

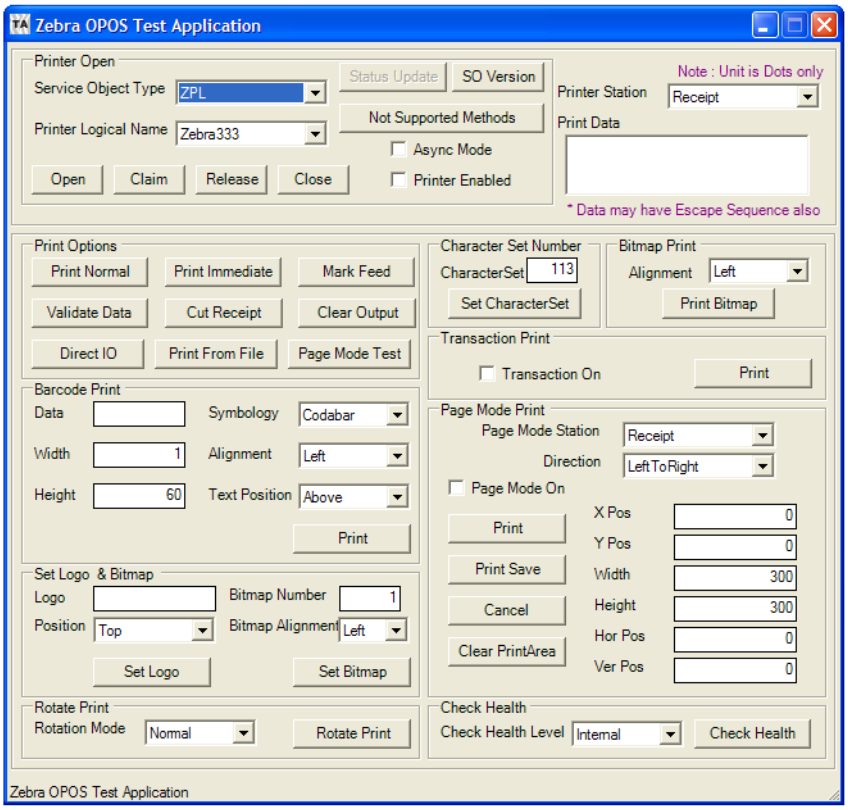


2. From the Printer Open section, choose a Printer Language from the Service Object Type drop-down menu.

3. Choose CPCL or ZPL.

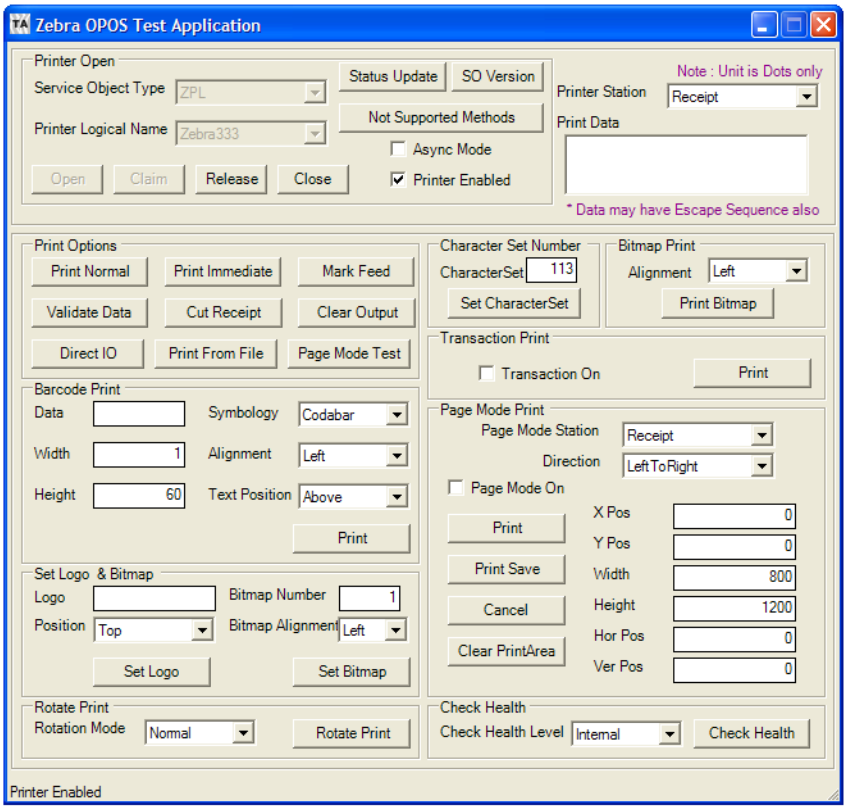
4. Select a printer in the Printer Logical Name drop-down menu.

   The defined printers in the Device Manager should be available.



5. To gain exclusive access to the device, click the Open button, click the Claim button, and then check the Printer Enabled in the Printer Open section.

   You can now begin using the Test Application.



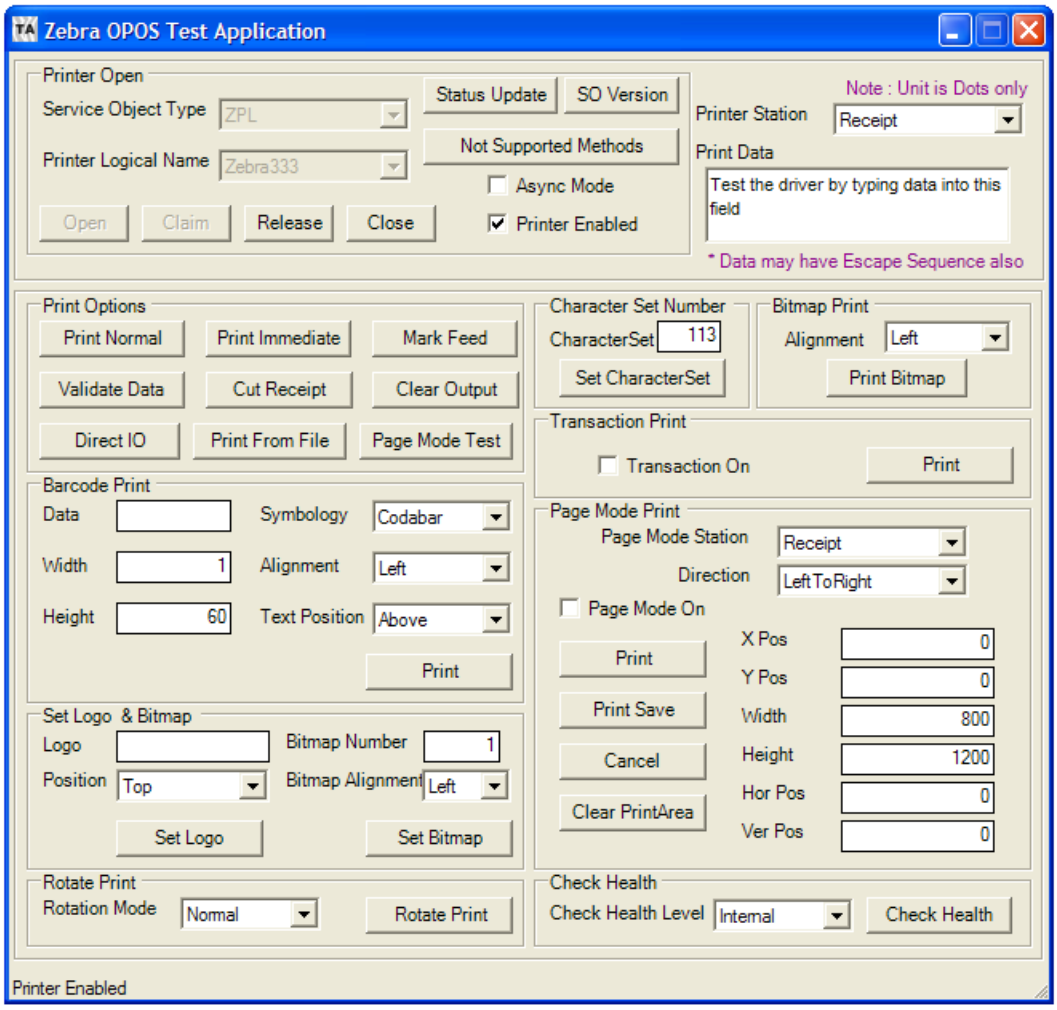
On the next pages, two methods to run a test print are described.

Test One:

Example • Test one:

1. Type some data into the Print Data field.
2. Click on the Print Normal button found in the Print Options area then click the Mark Feed button.

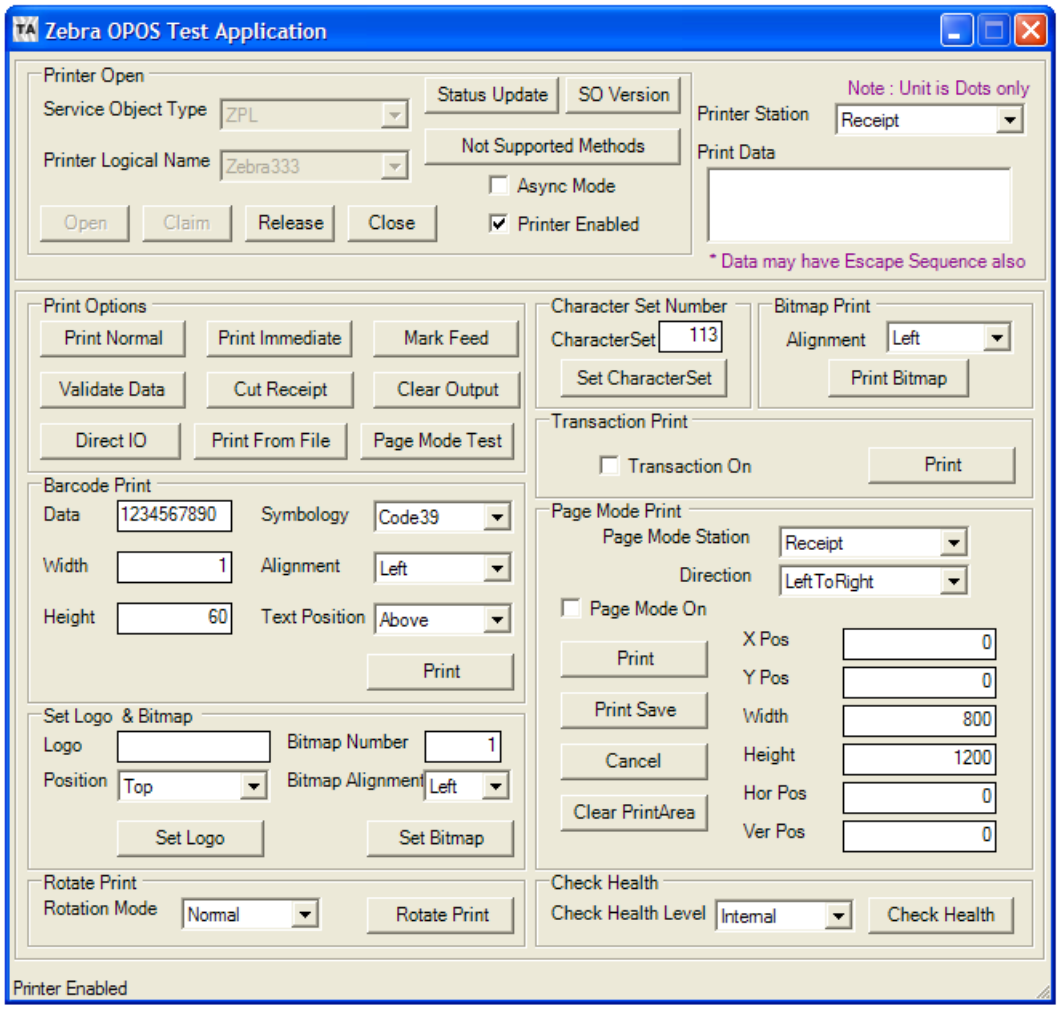
   The printer will print the contents from the Print Data field.



Test Two:

Example • Test two:

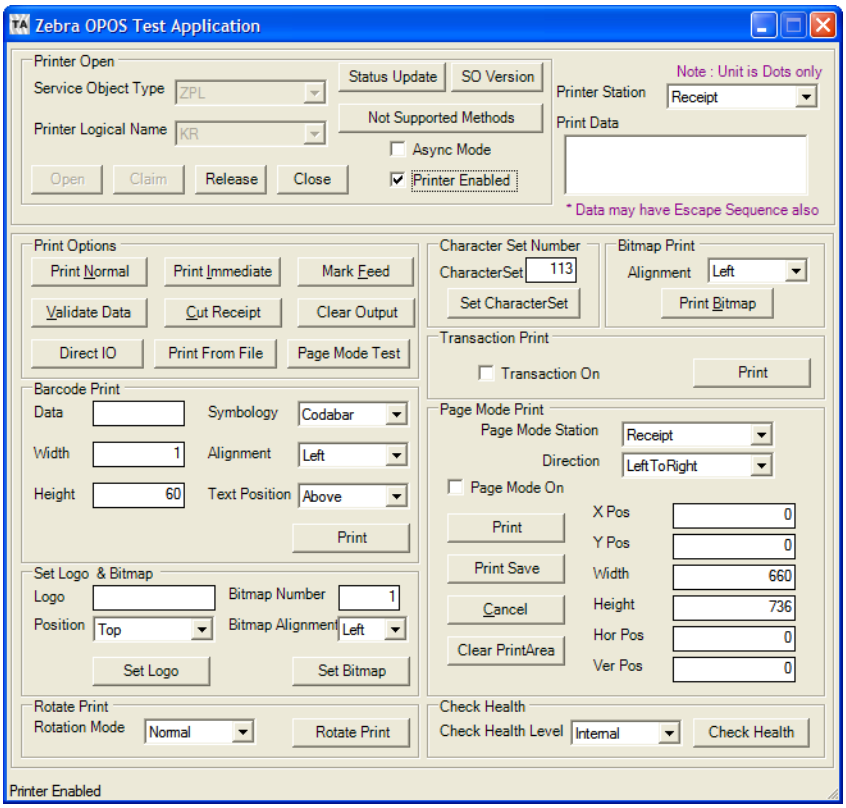
1. Type some data into the Data field in the Barcode Print area.
2. Then select Code 39 from the drop-down menu next to Symbology.
3. Now click on Print from the Barcode area and Mark Feed in the Print Options area. The printer will print the Code39 barcode and the data entered in the Data area.



Printing Unicode with the Test Application

Before printing with the test application, please make sure that the font has been loaded in the printer and added in the Device Manager. (See *Adding a New Font in Device Manager* on page 45.)

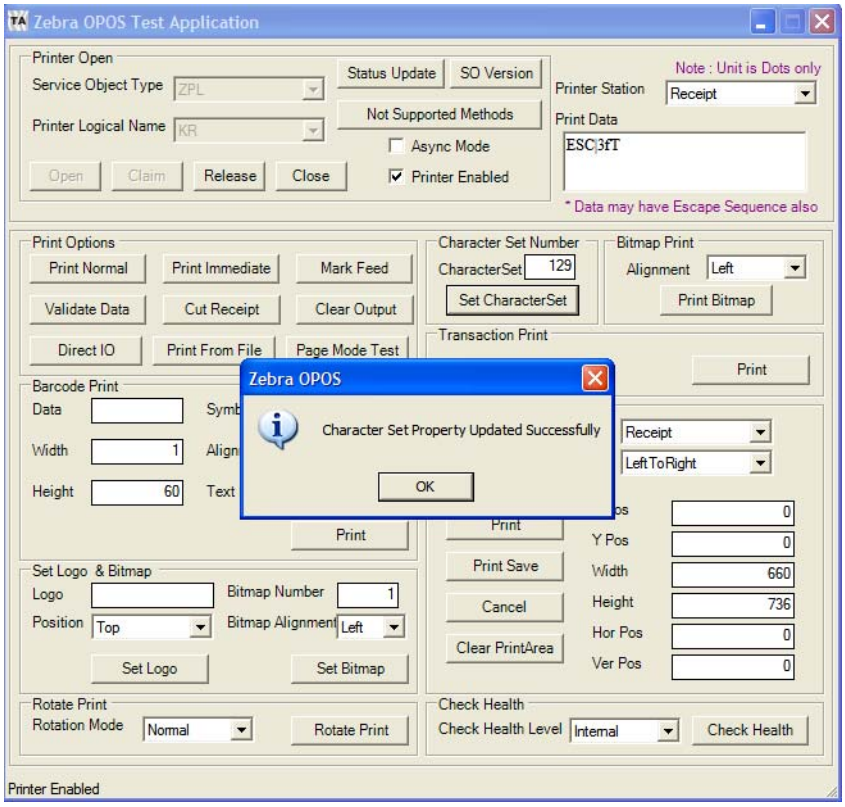
1. Open the Zebra OPOS Test Application, select the Service Object Type (ZPL or CPCL) and then the Printer Logical Name.
2. Click Open, Claim, and check the Printer Enabled box.



3. Select the new font by sending the correct OPOS one-shot command (example: ESC|3fT).
4. Type the one-shot command in the Print Data field and click the Print Normal button.

5. Change the Character Set value (Default is 113) by entering the correct Character Set value in the Character Set Number box, and then click the Set CharacterSet button below.

The user will get a message showing that the Character Set was updated.



Notes •

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