



ZebraDesigner™ for XML

User Guide



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Introduction

Welcome

ZebraDesigner software is a family of labeling software products that provides a complete bar code and RFID Smart Label printing solution for desktop users. ZebraDesigner has an easy-to-use interface and meets any label design and printing requirement for efficient label printing solutions for users in retail, logistics, health care, chemical, automotive, and other industries.

ZebraDesigner can be used with any 32-bit Windows® operating system: Windows 98 SE, Windows NT® 4.0, Windows ME, Windows 2000, Windows XP, and Windows Server™ 2003.

You can use ZebraDesigner for XML to design your label templates, export the templates, and parse them through the XML Format Generation Wizard. The resulting label templates are used for off-line label printing with data from different applications.

Contents of the package

Before installing ZebraDesigner for XML, check the contents of the package to ensure it is complete. The package should include the ZebraDesigner CD.

If any of the mentioned items are missing, please contact your software vendor immediately for package replacement.

About this Manual

The ZebraDesigner for XML User Guide helps you design and print labels quickly.

The User Guide contains the following sections:

Introduction: This chapter introduces you to ZebraDesigner for XML.

Installation and Activation: This chapter shows you how to install and activate the labeling software.

Set up ZebraDesigner: This chapter shows you how to set up and customize software to your preferences.

Design Labels: This chapter shows you how to create labels. You should refer to this chapter regularly while designing labels, until you have completely familiarized yourself with the commands. By using the information contained in this chapter, you will be able to use labeling software quickly and efficiently.

Export Labels: This chapter shows you how to print and preview labels.

Interface Reference: This chapter describes details and explains all the commands used in the labeling software (available in the help file only).

Technical Support: This chapter provides information on how to contact technical support.

Glossary of Terms: This chapter describes some of the technical terms used in the document.

Typographical Conventions

Bold text refers to:

- menu names
- file names (**SETUP.EXE**)
- interface buttons (**OK**)
- PC keyboard keys (**Alt**)
- menu flows (menu flows have a > that separates one menu from the next menu, for example **Start > Programs > ZebraDesigner for XML**)

Italic text refers to:

- graphic captions
- text you need to type
- locations
- dialog box names

Installation and Activation

System and Software Requirements

These are the minimum requirements needed to run ZebraDesigner for XML:

- Pentium[®]-based computer with at least 64 MB of RAM
- One of the 32-bit Windows operating system: Windows 98 SE, Windows NT 4.0, Windows ME, Windows 2000, Windows XP, and Windows Server 2003
- Hard disk with 75 MB of free disk space
- CD-ROM drive
- Administrator rights to the local computer during installation

Install Overview for ZebraDesigner for XML

When you put the ZebraDesigner for XML CD in your CD-ROM drive, the installation/demonstration program automatically starts. You can browse the directory of the CD and look at the brochures, technical documentation, sample files, and other documents on the CD.

Note: If you are using Windows NT, Windows 2000, Windows XP, or Windows Server 2003 you have to log on with Administrator rights to perform the installation.

Close All Software Applications

Before you start installing ZebraDesigner for XML, close all other software applications. This ensures a complete installation of ZebraDesigner for XML.

Run Installation

To install ZebraDesigner for XML on your desktop PC, do the following:

1. Insert the ZebraDesigner for XML CD into your CD-ROM drive. The *Setup Wizard* dialog box opens.

Note: If the Setup Wizard does not start automatically, go to the main CD directory of your ZebraDesigner for XML CD and double-click **START.EXE**.

2. Click **Next**.
3. Follow the prompts and make your selections accordingly.
4. Click **Install**.
5. Click **Finish**.

Define Setup Options

To continue the installation, do the following:

1. Click **Next**.
2. Specify the program group you want to use for ZebraDesigner for XML.
3. Specify if shortcuts to ZebraDesigner for XML should be created on the desktop or in the Quick Launch area.
4. To finish the installation, click **Install**.

After installation you are asked to install a printer driver. You must install a ZebraDesigner driver. If you do not install a printer driver while installing the software, you are asked to install one the first time you run the program.

5. After the installation is complete, the **Start** menu in Windows shows a new program group for ZebraDesigner for XML. The program group contains shortcuts for all ZebraDesigner for XML applications.

Install Printer Driver

To install the ZebraDesigner printer driver on your computer, do the following:

1. Click **Start > Programs > ZebraDesigner for XML**.
2. In the group ZebraDesigner for XML, click the shortcut **Add printer**. The printer installation wizard starts.
3. Follow the prompts.

Register ZebraDesigner for XML

To activate all of the features of ZebraDesigner for XML, you need to register the product. If you do not complete the registration process, ZebraDesigner for XML runs in DEMO mode only.

Note: ZebraDesigner does not require registration. It is free software, but available with less functionality than ZebraDesigner for XML.

To register the software, do the following:

1. Start ZebraDesigner for XML. The *DEMO* dialog box opens.
2. Click **Register**.
3. Enter the required information and follow the prompts.

ZebraDesigner for XML Demo Mode

When ZebraDesigner for XML is running in the demo mode, it has limited functionality. The major limitation of ZebraDesigner for XML demo mode is that two text objects with the contents *DEMO* are added to each printed label.

You should use the DEMO version only to evaluate ZebraDesigner for XML. Any commercial use of the *DEMO* version is prohibited. To get a full working version of ZebraDesigner for XML, you must purchase and register the software.

Set Up the ZebraDesigner Software

User Interface

This is the ZebraDesigner for XML main dialog box.



ZebraDesigner for XML user interface

Mouse Wheel Support

If you have a mouse that has a wheel in place of the middle button, you can use it to speed up zooming and scrolling:

- Turning the wheel scrolls the label up or down
- Holding **Shift** and turning the wheel scrolls the label left or right
- Holding **Ctrl** and turning the wheel zooms the label in or out

Shortcuts

Delete	Delete selected object
Ctrl + X	Cut
Ctrl + C	Copy
Ctrl + V	Paste
Alt + Backspace	Undo
+ (on numeric pad)	Zoom In
- (on numeric pad)	Zoom Out
Alt + Shift + Backspace	Redo
Ctrl + T	Rotate 90°
Ctrl + A	Align
Ctrl + Z	Undo
Ctrl + Y	Redo
Ctrl + N	New
Ctrl + O	Open
Ctrl + S	Save
Ctrl + F4	Close
Ctrl + Alt + T	Test print
Ctrl + G	Snap to grid
Ctrl + move the object with mouse	Move the object by main axes only
Alt + move the object with mouse	Snap to grid even if it is off
Ctrl + move the object with cursor keys	Fine-tune the position of the object
Shift + cursor keys	Fine-tune the dimensions of the object, resize width and height in very small steps

Set Up the ZebraDesigner Software

Right-clicking the object	Open pop-up menu with shortcuts to commands. The content of the pop-up menu depends on where you clicked your mouse button and what was selected at that time
Enter F2 or double-click	Open properties dialog box of the selected element
Shift + resizing of the variable text object	Resize the frame text container

Using the Keyboard and Mouse Effectively

- When selecting objects, you can use the **Ctrl** key to adjust the object's anchoring point by clicking the object placeholders.
- If you have a wheel mouse, you can use the wheel to scroll the label up and down. Simultaneously holding the **Ctrl** key and rotating the wheel adjusts the zoom factor. Simultaneously holding the **Shift** key and rotating the wheel scrolls the label from left or right.
- You can set various options for the currently selected printer. To do so, in the status bar, double-click the printer's name to open the *Printer Properties* dialog box. To select a different printer, hold the **Ctrl** key while double-clicking. The *Printer Setup* dialog box opens and you can select a different printer.
- You can quickly move objects from one open label to another by dragging the desired object to another window while holding the **Alt** key. If you want to copy objects instead, hold both the **Alt** and **Ctrl** keys. Note that you must have both label dialog boxes visible to do so.
- You can select different objects on a label using the **Tab** key and the **Shift + Tab** keys.
- You can move selected objects by pressing the cursor keys while holding the **Ctrl** key. You can use this to fine-tune the position of the object. Holding **Shift** while pressing cursor keys resizes the object.
- You can use the right mouse button almost anywhere on the label to access the most common options for that area/object. For example, if you click an object with the right mouse button, a pop-up menu appears that contains actions that can be performed on the selected object. Similarly, clicking other parts of the label produces pop-up menus with options for that part of the label.
- You can select multiple objects by holding **Shift** while clicking the objects.

System folder

The labeling application uses its system folder for storing files needed to run the program. The location of the folder varies depending on the Windows operating system, as follows:

- On Windows 98 and Windows ME, the location is *C:\Program Files\ZebraDesigner for XML\Bin\System*.
- On Windows NT, Windows 2000, and Windows XP, the location is *C:\Documents and Settings\All Users\Application Data\Zebra\ZebraDesigner for XML*.

It is important to have **write/modify access** to this folder on your computer system.

In these files, user data and user rights are stored, as well as custom settings, variable trace logs, label usage logs, variable definition files *.NVR, stock file database, and bar code standards.

Welcome Wizard

When you start the application, a *Welcome Wizard* dialog box opens. It provides a quick access to the most frequently used commands when starting to work on a label layout.

Create a new label	A blank label opens and the Label Setup Wizard starts. You can then design a new label from scratch.
Open recently used label	A list of recently used labels opens to provide quick access to commonly used labels.
Open some other existing label	A common Windows dialog box opens to let you browse for the appropriate label file.

Design Labels

Overview

This section shows you how to design a label file with fixed and variable objects. The variable objects get values from several sources. You learn how to:

- Place objects on the label
- Link objects to the variables
- Preview the label on the screen

The label you create will look like this:



Basic label

Create a Basic Label

Each time you create a new label, the Label Setup Wizard starts to help you set up the label and connect to the printer.

To create a basic label, do the following:

1. Open ZebraDesigner for XML.
2. In the Standard toolbar, click . The *Label Setup Wizard* dialog box opens.

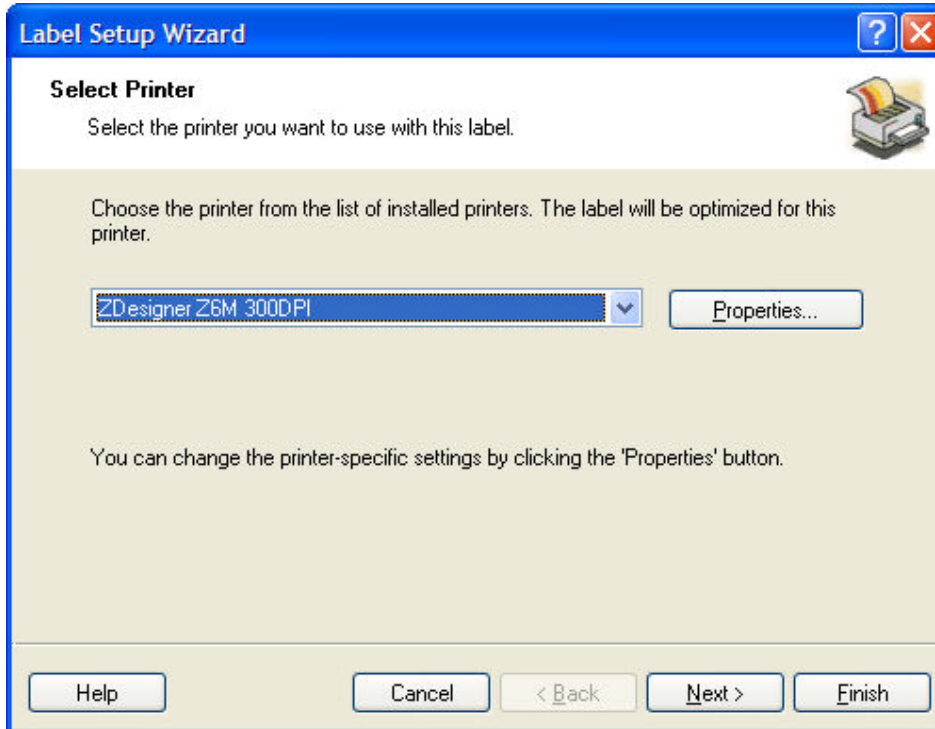
Note: To exit the *Label Setup Wizard* dialog box, click **Finish**.

Select a Printer

To select a printer, do the following:

1. From the menu, select **File > Label Setup**.
2. Select the printer you want to use for label printing.

Note: If you don't find your printer on the list, see **Install Printer Driver** for installation instructions.



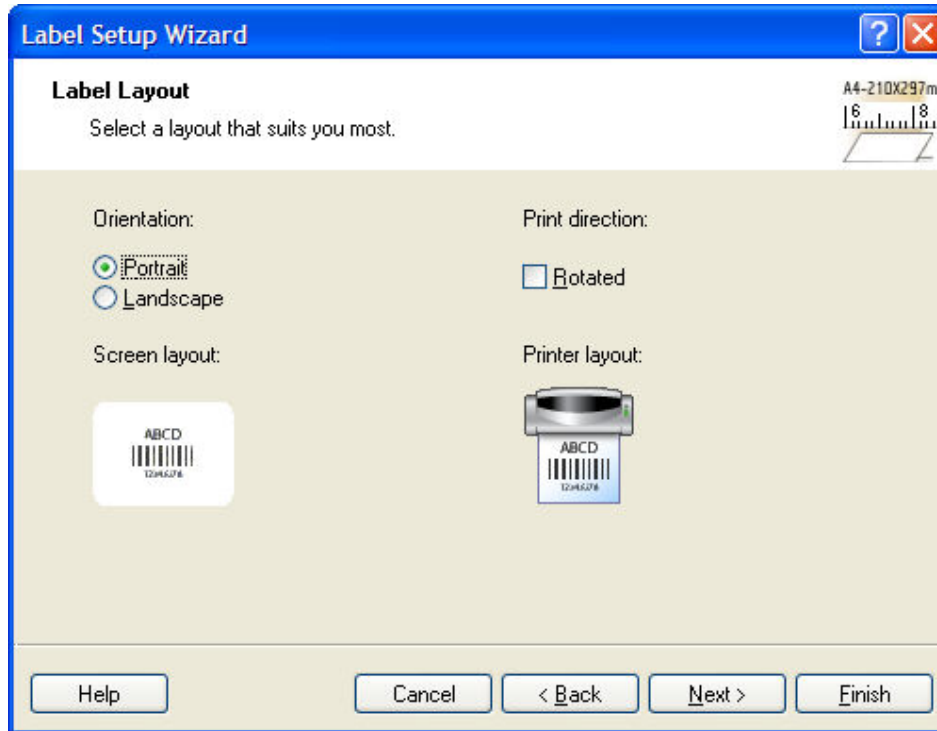
Selecting a printer

3. Click **Next**.

Define Label and Page Dimensions

To define the label dimensions, do the following:

1. If you want to use label stock, make your selections in the *Select Stock* dialog box.
2. Click **Next**. The *Page Size* dialog box opens to define the label dimensions.
3. Leave the **Page size** option at **User defined** default, and check **Automatic Sizing**.
4. Click **Next**. The *Label Layout* dialog box opens.



Selecting label layout

5. Select label orientation and print direction.
6. Click **Next**. The *Label Dimensions* dialog box opens.

Note: The *Label Dimensions* dialog box differs for thermal and office printers.

Design Labels

The screenshot shows the 'Label Setup Wizard' dialog box, specifically the 'Label Dimensions' step. The title bar reads 'Label Setup Wizard' and includes a help icon and a close button. The main title is 'Label Dimensions' with a subtitle 'Set the label layout dimensions and select the appropriate unit of measure.' and a help icon. The dialog is divided into several sections:

- Label width:** Input field containing '10'.
- Label height:** Input field containing '7'.
- Top Margin:** Input field containing '0,0'.
- Left Margin:** Input field containing '0,0'.
- Bottom Margin:** Input field containing '0,0'.
- Right Margin:** Input field containing '0,0'.
- Columns:** Spin box set to '1'.
- X gap:** Input field containing '0,0'.
- Rows:** Spin box set to '1'.
- Y gap:** Input field containing '0,0'.
- Unit of measure:** A button labeled 'cm'.

At the bottom of the dialog, there are five buttons: 'Help', 'Cancel', '< Back', 'Next >', and 'Finish'.

Defining label dimensions

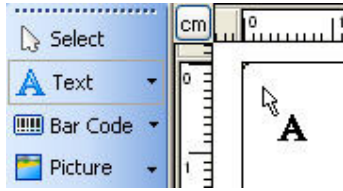
7. Enter 10 for label width and 7 for label height.

Note: To change the unit of measure from centimeters to inches or other supported units, click **Unit of measure** below the label preview.

8. Click **Finish**. A new empty label opens.

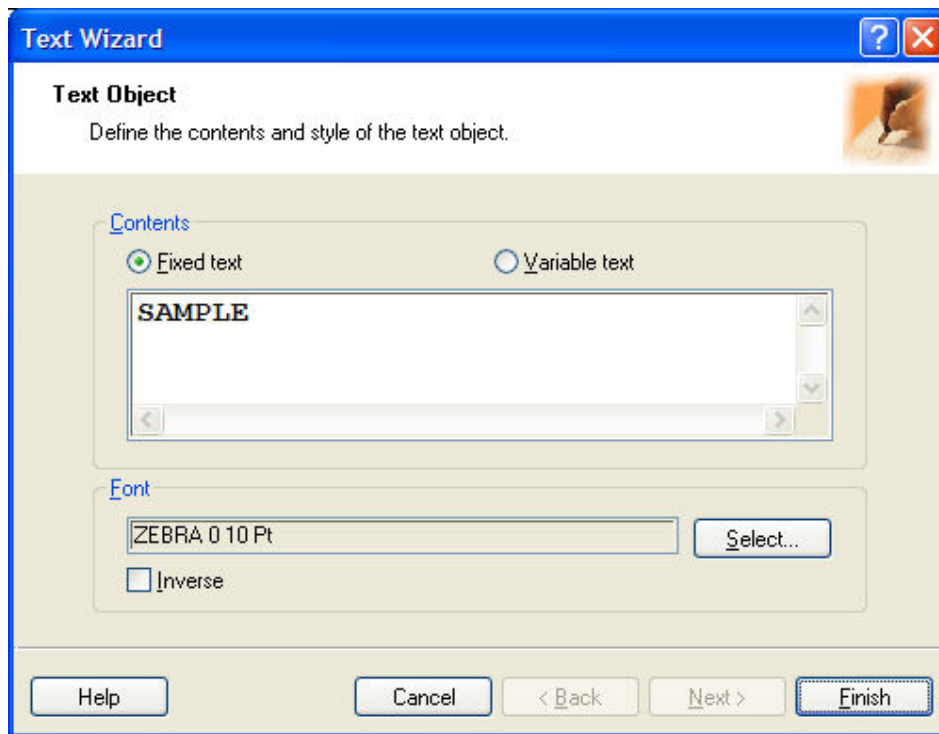
Enter Fixed Text

1. In the **Toolbox**, click . The text cursor appears on the screen.



Cursor for text object

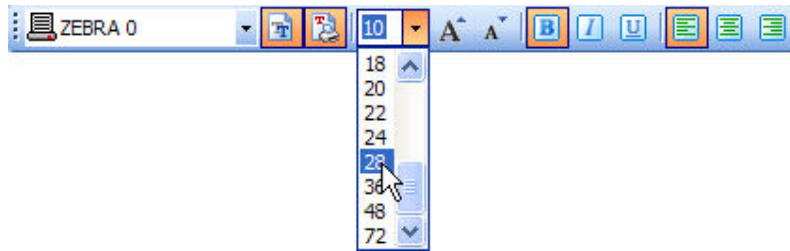
2. Move the cursor to the location on the label where you want to place the text object, and click the mouse button. The *Text Object* dialog box opens.



Entering content for text object

3. In the text box, type *SAMPLE*.
4. Click **Finish**.
5. To select the object, click it.
6. Using the Text toolbar, change the font for the text object. Choose Arial font, 28 point size, and bold style.

Design Labels



Using format options in the Text toolbar

7. To change the position and size of the text object, select the text object and drag it with your mouse to the position you want.


The screen should show the following:

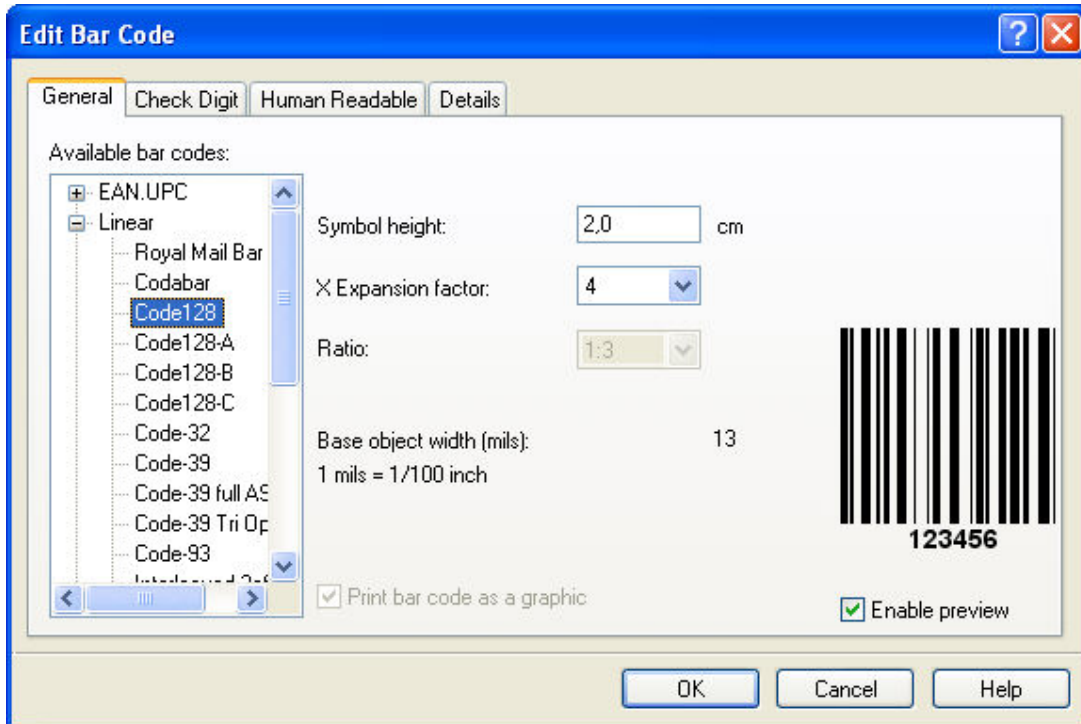


The text object is placed on the label

Insert Bar Codes

To add a non-changeable Code128 bar code on the label, do the following.

1. In the **Toolbox**, click .
2. Move the cursor to the desired position on the label and then click the mouse button. The dialog box with object properties opens.
3. Enter the value *1234567890* for the bar code contents.
4. Click **Define**. The *Edit Bar Code* dialog box opens.



Selecting bar code type

5. In the **Available bar codes** list, select bar code Code128 and then click **OK**.
6. To return to the label, click **Finish**.
7. To change the position of the bar code, select the bar code and drag it to the desired position.
8. To change the object size, drag the object handles. The handles are small rectangles surrounding the object when it is selected.

The label should now show the following:

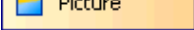


Label with text and bar code objects

Insert Pictures

ZebraDesigner for XML works with BMP, PCX, GIF, WMF, JPEG, and many other popular graphic formats.

To insert a picture, do the following:

1. In the **Toolbox**, click . The icon is a small blue square with a white picture of a landscape, followed by the word "Picture" in a black box.
2. Move the cursor to the desired position on the label and click the mouse button. The *Open* dialog box opens allowing you to browse for a picture on your hard drive.
3. From the *Graphics Kind* dialog box, click **Browse**.
4. Go to the **Sample Graphics** folder and select **LEISURE.WMF**.
5. Click **Open**.

The screen should show the following:




Label with text, bar code, and picture objects

Save a Label

Always save your label during the design process.

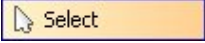
To save a label, do the following:

1. In the Standard toolbar, click .
2. Type in the name of the label. For example, type *label* for the name of the label. The name of the label appears in the program caption.

Use Alignment Tools

Once you place the objects on the label make sure they are aligned on the horizontal center of the label. You can align objects on the label by using the Align toolbar on the right side of the working window.


To align objects on the label, do the following:

1. In the **Toolbox**, click .
2. To select all of the objects, draw a frame around all of them.

Note: The first object you select determines the alignment orientation for all selected objects.



Selecting the objects on the label

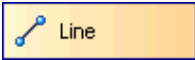

3. To arrange the objects, in the Align toolbar on the right, click . The selected objects are rearranged and positioned on the center of the label.

Note:

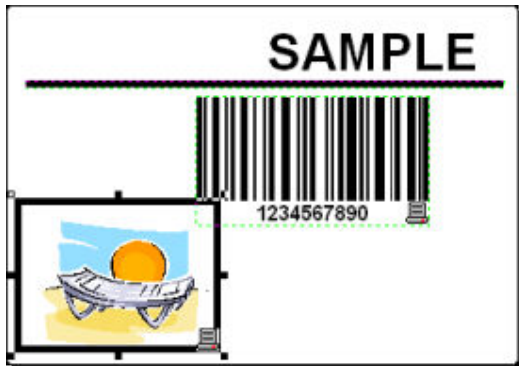
- The Align toolbar has other alignment commands available.
- You can also align the objects to the label grid. The Snap to Grid option is available in the View menu.

Use Drawing Tools

To insert a line to separate a text object from other objects and a rectangle around the picture object, do the following:

1. From the **Toolbox**, click  and move the cursor to the required starting point of the line.
2. While drawing the line, press and hold down the mouse button. Move the mouse to the end position of the line and release the button. The Line object is placed on the label.
3. In the **Toolbox**, click  and point the mouse to the upper left corner of the picture.
4. While you stretch the rectangle to the lower right corner of the picture, click and hold the mouse button.
5. To change the thickness of the vertical and horizontal line, double-click on the rectangle object to open its properties.
6. Select the thickness you want.
7. Click **Finish**.
8. To edit the drawing object, double-click on the line or rectangle to open the dialog box with its properties.

The label should show the following:



Label with fixed objects

Add Variable Fields

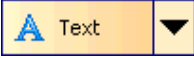
If you want to print a label on which the data changes for each label, ZebraDesigner for XML offers different variable fields (date/time fields, link to the variables) that you can use with text, picture, and bar code objects.

For this example, a new label was created. The steps in the following topics explain how to create a label that contains a variable field and date/time fields.

Create Variable Fields linked to Variables

The object on the label that is linked to the variable can have a different value for each printed label.

To create a text object linked to the variable, do the following:


1. In the **Toolbox**, click . The icon shows a blue letter 'A' on a yellow background with the word 'Text' and a downward arrow.
2. Click the label where you want to place the text object. The *Text Wizard* dialog box opens.
3. For the Contents, select **Variable text**.
4. Click **Next**.
5. Select **Variable Field**.
6. Click **Next**.
7. Select one of the existing variables in the list. If no variable is available in the list, you must create some.
8. Click **Finish**. The text object is placed on the label and linked to the selected variable.

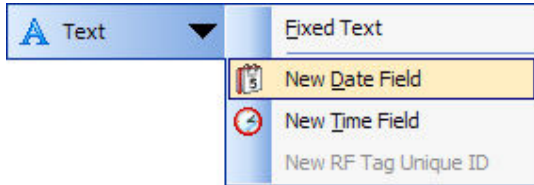
Note: This example shows how to create a text field linked to the variable. You can use the same approach to create and link a variable to the bar code object.

Create Date and Time Variable Fields

Content of the variable field can be filled automatically with the date or time stamp from the computer clock or printer clock (for supported printer models).

To place a date field on the label, do the following:

1. In the **Toolbox**, click the arrow .
2. From the list, select **New Date Field**.



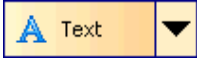
Creating new date variable field

3. Click on the label where you want to place the object. The *Date* dialog box opens.
4. Leave everything as default. The date is used on the label using the selected format.
5. Follow the prompts.

Use Prefix or Suffix Options

You can add a prefix and suffix to each variable field on the label. Both are added to the value when you preview and print the label.

To add the prefix to the variable field on the label, do the following:

1. In the **Toolbox**, click the arrow .
2. From the list, select **New Time Field**.
3. On the label, click where you want to place the object. The *Text Wizard* dialog box opens.
4. Click **Next**.
5. Enter *Time:* for the **Prefix** option.



Prefix:

Defining the variable prefix

6. Click **Finish**. The text object is placed on the label and linked to the new variable. When you print the label, the prefix *Time:* will be appended to the time value on the left side.

Resize Variable Fields (Shift-dragging)

The size of the variable fields on the label is determined by their sample data. The sample data is defined during the variable creation process. The text object on the label is always as wide as the width of the sample data formatted in the current Zebra font.

If the values for the variable always occupy the same length or less than the sample data, the label is printed correctly. If the provided data is longer than the sample data, the text object can overlap the object to its right.

To avoid overlapping, you can resize the variable fields on the label.

To resize the variable fields on the label, do the following:

1. Select the variable text object on the label.
2. Press and hold the **Shift** key.
3. Resize the object to the right.
The new object frame defines the maximum size that the variable value can occupy on the label.

Note: You can resize the object on the right side only.

Resize Variable Field linked to Single-Line Variable

If you resize the object linked to the single-line variable, the contents for the object is visible to the end of the object frame only.

For example, you entered *SAMPLE* for the sample data. You then resized the object for one additional character to the right side. When you print the label with value *DESIGNER*, the whole text is not printed. The text that does not fit into the designed frame is cut.

Resize Variable Field linked to Multiline Variable


If you resize the object linked to the multiline variable, the contents of the object automatically reformat into the multilines. The printer reformats the text to optimally fit into the designed frame.

Design an RFID Smart Label

Radio Frequency Identification (RFID) refers to technologies that use radio waves to automatically identify individual or groups of items. ZebraDesigner for XML and ZebraDesigner printer drivers support programming and printing of RFID tags embedded in a label.

Note: You can use RFID functionality in ZebraDesigner for XML only if you have installed a ZebraDesigner printer driver with RFID support.

Create RFID Encoding Label

1. In the Standard toolbar, click . The *Label Setup Wizard* dialog box opens.
2. Select the printer that supports RFID smart label printing.
3. Click **Finish**. In the **Toolbox**, on the left side of the working window, the RFID tag command is enabled.



RFID tag is available for use

Encode RFID Tag

The RFID tags that are embedded into the label are usually one of these types:

- ISO tags, which encode blocks of data
- UHF tags, which can encode one string of data.

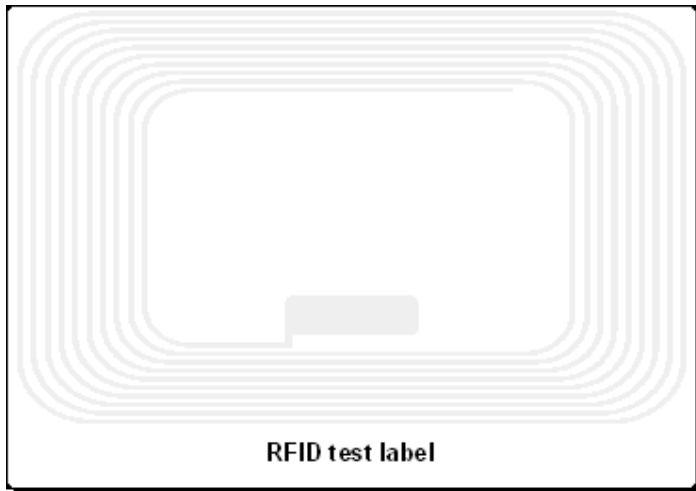
1. To begin encoding the data, in the **Toolbox**, click . The *RFID tag* dialog box opens.

Encoding contents for RFID tag

2. From the **Type** list box on the top of the dialog box, select the type of RFID tag you want to use.
3. Select the **Use RFID tag in label** option.

Note: If you don't select this option, the definition of tag content is saved but not sent to the printer.

4. In the **Data Block** section, from the **Data Type** drop-down, select HEX or ASCII.
5. Enable the **Element** radio button and select the desired variable.
6. Click **OK**. A schematic view of the RFID tag antenna opens in the label background identifying the definition of the RFID data on the label.



RFID tag antenna in the background

7. You can continue designing the smart label with non-RFID data as described in the previous sections.

When you print the label, the RFID data is sent to the printer. The printer prints the RFID smart label and programs the RFID tag embedded into the label at the same time.

Note: ZebraDesigner for XML can also work with Unique RFID tag numbers. Each RFID tag has an embedded unique serial number. All RFID Zebra printers can read the Unique RFID tag number from the RFID tag and use it on the label as data contents of some label object.

Support for RFID tags

The concept of Radio Frequency Identification (RFID) can be simplified to that of an electronic bar code. First emerging in the 1980s, RFID was primarily used to track objects in industrial environments where bar codes were unable to sustain the harsh surroundings. Today, RFID is being used to authenticate official memorabilia, track proprietary assets, automate access control, and for many additional uses.

Some thermal RFID printers have the ability to program an RFID tag at the same time the label prints. Two different technologies and their encoding methods are joined on the same label. Of course, a label must have an embedded RFID tag. The tag is paper thin, flexible, and small in size, which allows it to be placed inconspicuously under the label. It consists of an etched antenna and a tiny chip that can store ID numbers, or your custom data in larger quantities. This contrasts with a bar code label, which does not store any enhanced information, but merely some code numbers.

The screenshot shows the 'RF Tag' dialog box with the following settings:

- Type:** EPC Class 1 (64 bit)
- Use RF Tag in label
- Tag Settings:**
 - Antenna offset: 0.000 inch
 - Number of retries: 6
 - Maximum tags to stop: 3
 - Check for a valid tag
 - Verify data write
- Tag Information:**
 - Number of blocks: 1
 - Block size: 8
 - Reserved blocks: 0
 - Unique RF Tag: No
 - RFID Tag Data Read: Yes
- Data Block:**
 - Use EPC encoding
 - Data type: HEX encoded string
 - Data source: Fixed (selected), Element
 - Data size: 0/8
 - Block locked

Buttons: OK, Cancel, Help

RFID tag dialog box

RFID tag data encoding options are set in this dialog box.

Type: Select the type of RFID tag you want to use with your printer. You must use the ZebraDesigner RFID driver to use RFID programming. The list of available tags changes with the selected printer, and not all tag types are always available. It also depends on each printer model and what type of RFID tags can be used with it. There are generally these types of tags:

- ISO tags (TagIt, iCode, ISO): These are block-oriented tags. The data can be encoded in multiple blocks.
- UHF tags (EPC): The data is encoded in one block of data. These tags include: Class 0, Class 1, Class 0+, and Gen2.

Use RF tag in label: Enable this option if you want to program the tag at the same time the label prints. If the option is not selected, no RFID data is sent to the printer, but the definition is remembered for next time.

Tag Settings: This section provides the information about the selected tag type. For tag placement specification, visit www.zebra.com/RFID.

Antenna offset: To achieve better programming accuracy of the tags this option, define the offset for the antenna in the printer. This is the distance from the edge of the label to the embedded tag. This option helps you program the tags more accurately.

Number of retries: This option sets how many times the printer tries to program the tag if the first attempt fails. The parameter is sent to the printer with the rest of the data.

Maximum tags to stop: This option sets how many consecutive tags should be tried before stopping if an error occurs during tag programming. If the programming error is still detected after the set number of labels, the printing/programming process stops. Enter 0, if you want to continue printing with the next label in the batch, without printing the label with an error.

Check for a valid tag: The contents of the RFID tag are verified to determine the proper contents.

Tag Information: This section shows static tag information based on the tag type in the **Type** drop-down.

Number of blocks: The number of blocks that are available in the RFID tag.

Block size: The size of each block (in bytes).

Reserved blocks: The number of blocks that cannot be accessed and used.

Unique RF Tag: If you have the printer and/or the tag type that can provide you with the Unique Tag ID, set this flag to Yes. Each tag has a unique ID encoded in the production line. If your printer can read this information from the tag, you can use it with the label elements. When the Unique Tag ID is supported, you can connect it with the label elements using RFID Unique Tag ID contents provider.

For example: The printer scans Unique Tag ID, remembers it, and prints it on the label encoded in a bar code element.

RFID Tag Data Read: Determines if the tag is readable.

Data Blocks: This section allows you to provide data values for the RFID tag. This section has different options available for different tag types (UHF or ISO).

For UHF tags

Data type: Data type of the selected tag can be specified here.

Data source: Incoming data that is encoded in the tag can be a fixed value or acquired from some variable defined in the label.

Data size: The currently used data is previewed here. You can see the amount of space still available in the tag. The occupancy of the tag is seen graphically with a bar and numerically with a digit, explaining the number of bytes being used.

Block locked: If you set the block as locked, the data is permanently encoded into the tag. You are not able to erase this block to reprogram it with some other value. Use this option with caution!

For ISO tags

The blocks that are dimmed and unaccessible are reserved blocks that cannot be used.

Block Number: The number of blocks that are available in the RFID tag.

Data source: Select where the data block receives its value. It can be Fixed, where you manually type in the value or Variable, where the value is acquired from some variable defined in the label.

Data: Type in the tag value manually if the selected data type is Fixed. Select the variable defined in the label if the selected data type is Variable. If your variable length is greater than the block size, the next block is automatically reserved for the data.

Data Size: The currently used data is previewed here. You can see the amount of space still available in the tag. The occupancy of the tag is seen graphically with a bar and numerically with a digit, explaining the number of already used bytes.

Data type: The data can be encoded as an ASCII string or as a HEX encoded string.

Block Locked: If you set the block as locked, the data is permanently encoded into the tag. You cannot erase this block to reprogram it with some other value. Use this option with caution!

Change Printer Settings

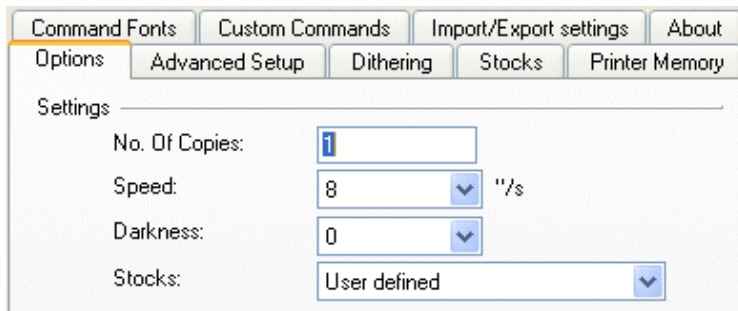
When you start designing a label, tell ZebraDesigner for XML what printer to connect the label to. Each label file remembers the printer settings for the selected printer driver on the label.

This example shows you how to change the printing speed and darkness.

To change the printer settings, do the following:

1. From the menu, select **File > Printer Settings**. The dialog box with the printer settings opens.
2. From the **Options** tab, change the **Speed** and **Darkness** options.
3. Click **OK**.

4. To save the label, in the Standard toolbar, click .



Printer driver properties


Note: Any changes in the printer settings dialog box are saved to the label and applied to future print actions.

Change Dithering Type

Dithering is a process of converting color or gray scale pictures to black and white pictures that can be printed on thermal printers. There are no intermediate shades of gray.

During the dithering process, all colors and shades of gray in the picture are converted to black and white dots, creating the illusion of new colors and shades by varying the pattern of dots. Different shades of gray are produced by varying the patterns of black and white dots. There are no gray dots at all. In printing, dithering is usually called half-toning. Shades of gray are called half-tones.









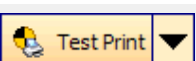
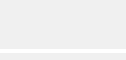
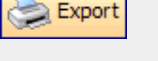


To change the dithering type, do the following:

1. From the menu, select **File > Printer Settings**. The *Printer Properties* dialog box opens.
2. Open the **Dithering** tab.
3. Enable the **Dithering Type** that suits your needs. Look at the preview on the right side to see the result of your selection on the label.
4. Click **OK**.
5. To save the label, in the Standard toolbar, click .

Use Toolbars

Use the Standard Toolbar





Click on the buttons in the Standard toolbar to execute the following actions:

	Create new label.
	Open existing label.
	Save currently opened label.
	Cut the selected objects to clipboard.
	Copy the selected objects to clipboard.
	Paste the objects from the clipboard.
	Undo last action.
	Redo last action.
	Access the test print functionality. The label is quickly printed. You can review the positions of the objects. Click on the small arrow in the toolbar for more commands.
	Access the export functionality. The label template is parsed through the XML Format Generation Wizard and prepared in a format for off-line printing.
	Access the zoom functionality. Click on the small arrow in the toolbar for more commands.
	Access the view functionality. Click on the small arrow in the toolbar for more commands.
	Open the help file.

Use the Variable Toolbar



The list box contains the variables available on the label. If you have selected some variable object, the list box displays variables linked to that object. If no object is selected, selecting a variable and then clicking on the label places the new text object and links it to the variable.

	<p>Create new variable using the Variable Wizard. If you click the small arrow, you can specify the type of the new variable.</p>
	<p>Edit the properties of the selected variable.</p> <p>Note: If you select the variable object, the variable linked to the object is automatically listed in the list.</p>
	<p>Delete the selected variable.</p> <p>Note: If you want to delete the variable, you must not use it on the label linked to label objects.</p>
	<p>Disconnect the variable from the object. The object becomes fixed but preserves the formatting.</p> <p>The number of characters in the object is equal to the length of the variable. This might be useful when you are changing the database on the label and want to conserve current position and format of the objects. When you re-connect the other database, you can link the objects to new variables.</p>

These are the methods to connect a variable to a fixed or variable bar code data that contains variable values:

- If you have the fixed or variable bar code data already positioned on the label, select it, and then choose the appropriate variable in the list.
- If the fixed or variable bar code data is not already on the label, select the variable in the list, and then click the label where you want the element positioned. The Text element appears there and is connected to the selected variable.
- Click on the small arrow button next to the object icon in the **Toolbox**, select the **New Variable** option, select the variable from the list, and then click on the label.

The Variable toolbar always shows the name of the variable that is attached to the current selected element. If there are two or more elements selected that do not have the same variable attached to it, then the variable combo box is empty.

Use the Toolbox

To use the **Toolbox**, do the following:

1. To select the object, in the Standard toolbox click on the applicable icon.
2. Move the mouse over the label. Notice how the cursor has changed.
3. To place the selected object, click on the label where you want to put the object.

Some objects have additional shortcuts on the right side of the icon. Using these shortcuts, you can quickly create a new object with fixed content, create a new variable and connect it to the selected object, or connect the object to one already defined variable.

Use the Text Toolbar



You can use the text toolbar to quickly format the text objects on the label.



To format text objects, do the following:




1. To select the text object, click it.
2. In the Text toolbar, click the appropriate shortcut button.
3. To change the font, select the appropriate font from the list in the list box.

Note: You can limit the display of fonts in the list. You can list all fonts on the system, only graphic fonts (TrueType®, OpenType®, Type1, or bitmap Windows fonts), or only thermal printer resident fonts. Click on the icons next to the list of fonts.

4. To change the size of the text, click on the list with font sizes and select the appropriate size. To enlarge or reduce the size of the font, click  and . This changes the font to the next size in the list.

Note: You can also change the font size directly on the label by resizing the text element with a mouse.

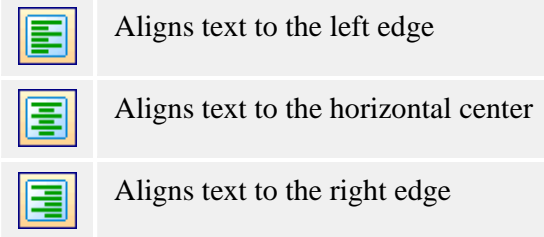
5. To format the text as bold, italic, or underlined, click the appropriate formatting buttons.

	Formats the selected text in bold style
	Formats the selected text in italic style
	Formats the selected text in underline style

Design Labels

6. To change the alignment of the text object, click on the appropriate alignment buttons.

Note: These buttons are accessible only for multiline text objects.



Use the Design Toolbar

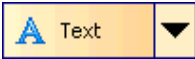
The Design toolbar is used for:

- Changing color of the objects
- Aligning objects
- Rotating objects
- Arranging objects

Work with Objects

Define the Text Object


To place the text object on the label, do the following:

1. In the **Toolbox**, click .
2. Click the position on the label where you want to place the object. The *Text Wizard* dialog box opens.
3. Define the contents for the text object.
4. To advance to the next step of the wizard, click **Next**.
5. Follow the prompts.
6. Click **Finish**.

Note: To edit the object, select it and then double-click it. The *Text Wizard* dialog box opens.

Define the Bar Code Object


To place the bar code object on the label, do the following:

1. In the **Toolbox**, click . The icon shows a barcode and the text "Bar Code" with a dropdown arrow.
2. On the label, click the position where you want to place the object. The *Bar Code Wizard* dialog box opens.
3. Define the contents for the bar code object.
4. To advance to the next step of the wizard, click **Next**.
5. Follow the prompts.
6. Click **Finish**.

Note: To edit the object, select it, then double-click it. The applicable wizard dialog box opens.

Define the Picture Object

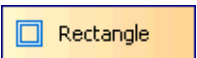
To place the picture object on the label, do the following:

1. From the **Toolbox**, click . The icon shows a picture of a landscape and the text "Picture".
2. Click on the label where you want to place the picture. The *Open* dialog box opens.
3. Browse for the picture on the hard disk.
4. When you find the picture, select it.
5. Click **Open**.

Note: To edit the object later, select it, double-click it, and follow the prompts.

Define the Rectangle Object

To place the rectangle object on the label, do the following:

1. In the **Toolbox**, click . The icon shows a rectangle and the text "Rectangle".
2. Click the position on the label where you want the upper-left position of the object to be set.
3. Drag in the bottom-right direction until the object size is correct.


Note: If you want to draw a square, grab a handle on one of the rectangle corners, simultaneously press and hold the **Shift** key, and then resize the rectangle. A square is drawn.

4. To move a rectangle to a different position, select it and drag it elsewhere on the label.

Note: To edit the object, select it, double-click it, and follow the prompts.

Define the Line Object


To place the line object on the label, do the following:

1. In the **Toolbox**, click . The icon shows a blue line with two endpoints and the word "Line" to its right.
2. Define the line starting point by clicking the mouse at the start position.
3. Move the cursor to the end point while holding down the mouse button. A line is drawn from the left to the right side of the label.

Note: To draw a vertical line, click the starting point and then drag the cursor in the up or down direction.

Define the Ellipse Object

To place the ellipse object on the label, do the following:


1. In the **Toolbox**, click . The icon shows a blue circle with a handle and the word "Ellipse" to its right.
2. Click the position on the label where you want the upper-left position of the object to be set.
3. Drag to the bottom-right direction until the object size is correct.

Note: To draw a circle, grab a handle on one of the ellipse corners, simultaneously pressing and holding the **Shift** key, and then resize the ellipse. A circle is drawn.

4. To move an ellipse to a different position, select it and drag it elsewhere on the label.

Define the Inverse Object

To place the inverse object on the label, do the following:

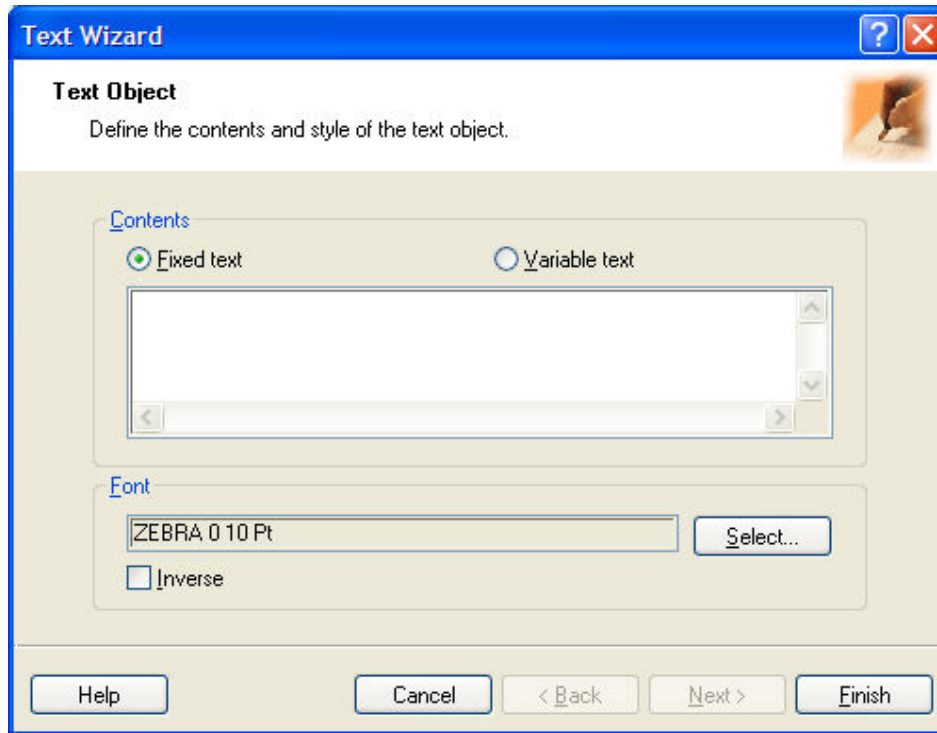
1. In the **Toolbox**, click . The icon shows a blue square with a handle and the word "Inverse" to its right.
2. Click the position on the label where you want the upper-left position of the object to be set.
3. Drag to the bottom-right direction until the object size is correct.

Note: To draw a square, grab a handle on one of the rectangle corners, simultaneously pressing and holding the **Shift** key, and then resize the rectangle. A square is drawn.

4. To move an inverse to a different position, select it and drag it elsewhere on the label.

Use Text Wizard

The Text Wizard guides you to define all parameters for the text object. You can define the object with fixed or variable contents.



First screen of Text Wizard

Fixed text: Select this option if you want to have fixed non-changeable content in the object. If you select this option, you can enter the text directly in this dialog box.

Variable text: Select this option if you want to have variable content in the object. Defining the content is explained in the next step.

Font: Currently selected font type is shown in this field.

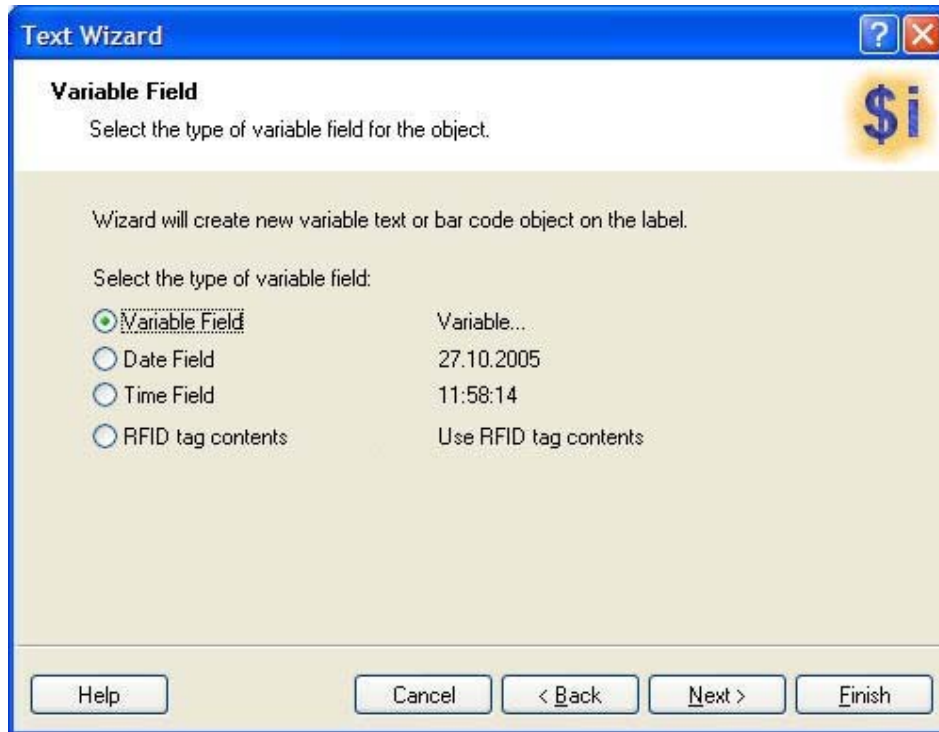
- **Inverse:** Enable this option to use the text in inverse.

Note: This option is not available for all fonts/printers.

- **Select button:** Select different font types for this text object among available fonts in the system.

Text Wizard - Select Type of Variable Text

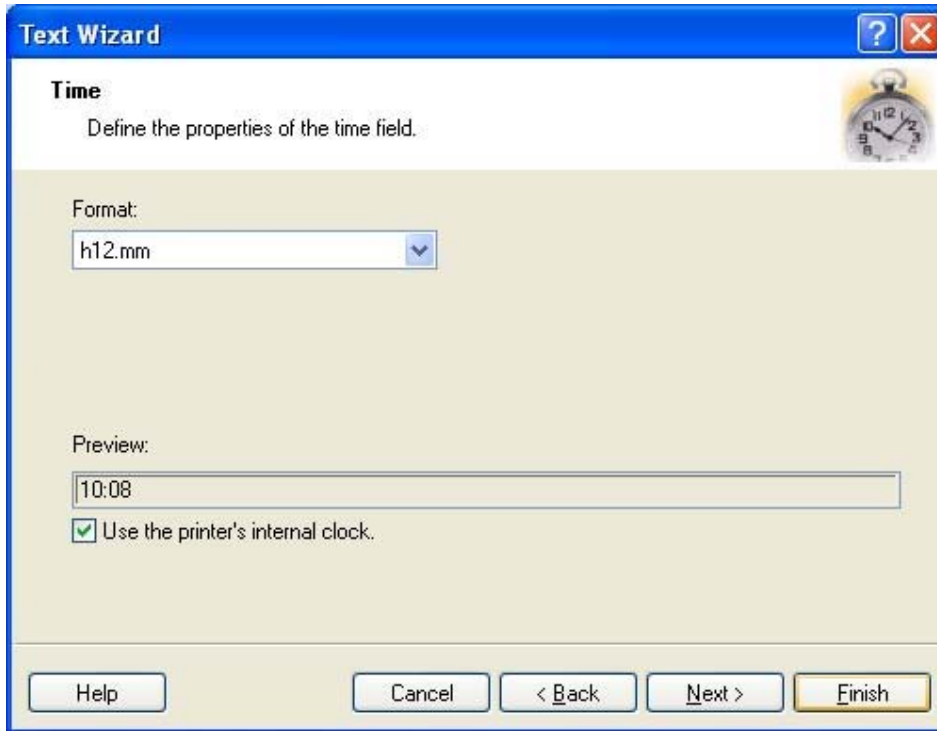
Select the type of variable field you want to use. The next page of the wizard depends on your selection here.



Text Wizard - Choosing variable text

Text Wizard - Time Field

Define the properties of the time field. The variable field gets the value from the computer's clock.



Dialog box for Text Wizard when Time field option is chosen

Format: Select the format for the time from the list. You can also enter a custom format.

Preview: The printer prints the time as shown in the *Preview* field. You can see how the selected date format looks on the label.

Use the printer's internal clock: Enable this option to recall the time information from the Real Time Clock (RTC) built in to the printer, instead of the computer's clock. The list of available time formats changes according to the capabilities of the selected printer.

Note: You must format the current text object in the internal printer clock to be able to use the option *Use the printer's internal clock*.

Only the printer internal date formats can be used with ZebraDesigner for XML.

Text Wizard - Date Field

Define the properties of the date field. The variable field gets its value from the computer's clock.

Dialog box for Text Wizard when Date field option is chosen

Format: From the list, select the format for your date. The list defines the formats available internally in the printer.

Date offset: You can add a certain number of days, months, or years to a current date and print that date instead of the current one.

Preview: The printer prints the date as shown on the *Preview* field. This allows you to see how the selected date format looks on the label.

Use the printer's internal clock: Enable this option to recall the date information from the real time clock (RTC) built in to the printer, instead of the computer's clock. The list of the available date formats changes to the capabilities of the selected printer.

Note: You must format the current text object in the internal printer clock to be able to use the option *Use the printer's internal clock*.

Only the printer internal date formats can be used with ZebraDesigner for XML.

Text Wizard - RFID Tag Contents

Printers with RFID functionality can program RFID tags embedded in the labels. Each RFID tag has a unique ID number that was programmed into the tag during the manufacturing process. The Unique number cannot be altered, but the RFID-enabled printer can read it.

The RFID tag Unique ID functionality allows you to read the unique ID number from the RFID tag and use the content with the selected bar code object. When the label is printed, the printer first reads the unique ID from the tag and then immediately uses the value with the bar code object.

The RFID tag Unique ID can only be used with the bar code objects that are printed as internal printer objects. You must format the bar code object to use internal fonts, not TrueType fonts.

The RFID Tag Contents dialog opens when you select Text > New RF Tag Unique ID

Selected RFID tag: Select the tag from the list.

Note: Only tags supported by the selected printer are listed. If you want to use a different tag type, make sure you have selected the proper Zebra printer driver.

Read Source: This is a static drop-down menu. It's content is based on the tag type in the **Selected RFID tag** drop-down.

Data Format: Select the format of the data.

Preview (WYSIWYG only): Because the RFID tag's Unique ID information is not returned to the labeling software, you do not see the actual data. Enter the data in a format similar to the format encoded in the RFID tag. This information is used only for preview on the label.

Text Wizard - Prefix and Suffix

The variable object can have prefix and suffix values. The prefix text is placed in front of the variable's value. The suffix text is placed at the end of the variable's value.

The screenshot shows a dialog box titled "Text Wizard" with a blue header bar. Below the header, the title "Prefix and Suffix" is displayed in bold, followed by the instruction "Specify prefix and suffix for your element." To the right of this text is a small icon of a printer. Below the instruction, there are two lines of explanatory text: "Prefix string will be placed in front of the data value." and "Suffix string will be placed after the data value." Underneath, there are two input fields: one labeled "Prefix:" and one labeled "Suffix:". At the bottom of the dialog, there are five buttons: "Help", "Cancel", "< Back", "Next >", and "Finish".

Setting Prefix and Suffix string for the variable text element

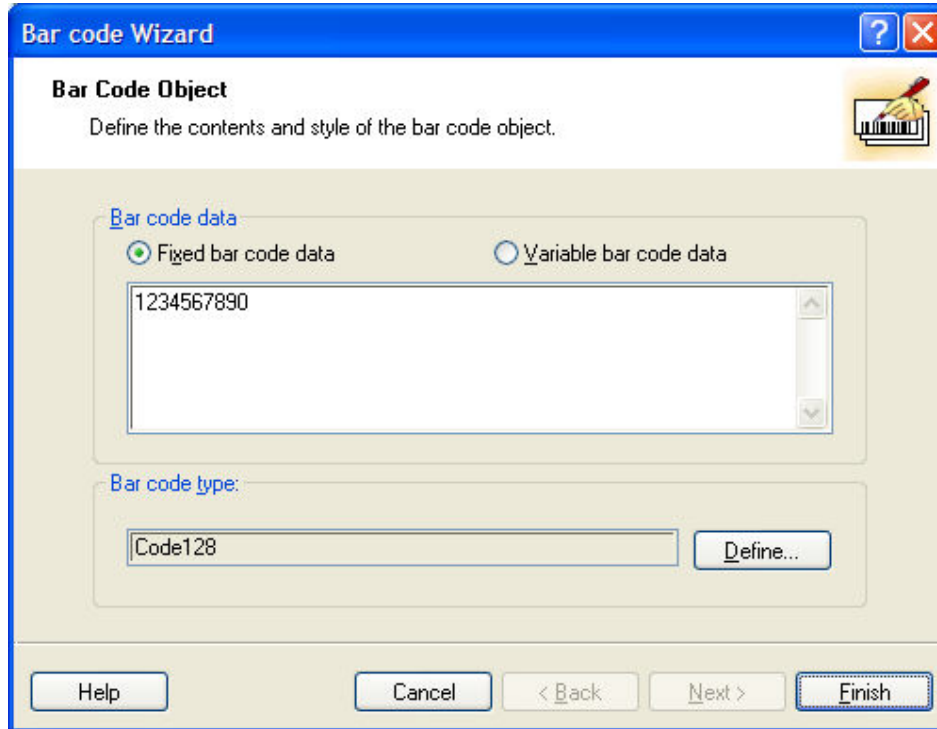
Note: If you leave the edit fields empty, the prefix/suffix is not used.

Prefix and suffix can be used in situations where they are required only if the variable has a value set. If the variable is empty, the prefix/suffix is not printed.

Note: When you use the printer's Real Time Clock for the date or time fields, the combined length of the prefix and suffix cannot exceed 31 characters.

Use Bar Code Wizard

The Bar Code Wizard allows you to define all parameters for the text object. You can define the object with fixed or variable contents.



First page of Bar Code Wizard

Fixed bar code data: Select this option if you want to have fixed non-changeable content for the text object. If you select this option you can enter the text directly in the dialog box.

Variable text: Select this option if you want variable content for the text object. Defining the content is explained in the next step.

Note: When entering values for RSS composite bar codes, you need to provide the value for the linear and composite (2D) parts at the same time.

Use the following syntax for entering values for RSS composite bar codes. The pipe character (|) is used to distinguish between the components.

Syntax: <linear part>|<composite part>

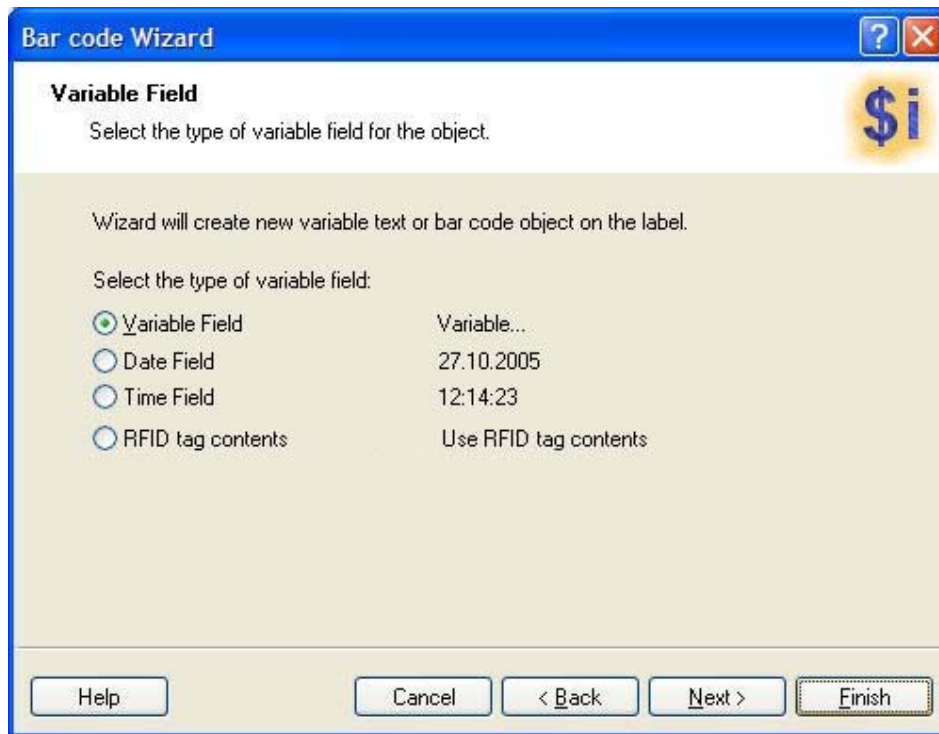
Example: 12345|description

Element name: Each bar code object on the label has a unique name. When you are linking fields together, you can refer to the Element names.

Phantom: If the object is marked as *phantom*, it is visible on the label during the label design, but it is not printed.

Bar Code Type: To select the bar code type you want on the label, click **Define**.

Bar Code Wizard - Select Type of Variable Bar Code



Bar Code Wizard - Choosing variable text

Select the type of variable field you want to use.

The next page of the wizard depends on your selection.

Bar Code Wizard - Date Field

Define the properties of the date field. The variable field gets the value from a computer clock.

Format: Select the date format from the list. You can also enter a custom format.

Date offset: You can add a certain numbers of days, months, or years to a current date and print that date instead of the current one.

Preview: The printer prints the date as shown in the Preview field. You can see how the selected date format looks on the label.

Use the printer's internal clock: Enable this option to recall the date information from the real time clock (RTC) built in to the printer instead of the computer's clock. The list of available date formats changes according to the capabilities of the selected printer.

Note: To format the current text object in the internal printer clock, use the *Use the printer's internal clock* option.

Only the printer internal date formats can be used with ZebraDesigner for XML.

Bar Code Wizard - Time Field

Define the properties of the time field. The variable field value is from the computer's clock.

Format: Select the format for the time from the list. You can also enter a custom format.

Preview: The printer prints the time as shown in the Preview field. You can see how the selected date format looks on the label.

Use the printer's internal clock: Enable this option to recall the time information from the Real Time Clock (RTC) built into the printer, instead of the computer's clock. The list of available time formats changes according to the capabilities of the selected printer.

Note: To format the current text object in the internal printer clock, use the *Use the printer's internal clock* option.

Only the printer internal date formats can be used with ZebraDesigner for XML.

Bar Code Wizard - RFID Tag Contents

Printers with RFID functionality can program RFID tags embedded in the labels. Each RFID tag has a unique ID number that was programmed into the tag during the manufacturing process. The Unique number cannot be altered, but the RFID-enabled printer can read it.

RFID tag Unique ID functionality allows you to read the unique ID number from the RFID tag and use the content with the selected bar code object. When the label is printed, the printer reads the unique ID from the tag and then immediately uses the value with the bar code object.

RFID tag Unique ID can only be used with the bar code objects that are printed as internal printer objects. You must format the bar code object to use internal fonts, not TrueType fonts.

Selected RFID Tag: Select the tag from the list.

Note: Only tags supported by the selected printer are listed. If you want to use a different tag type, make sure you have selected the proper Zebra printer driver.

Read Source: Select the source of the RFID data. To define the data from the RFID tag you want to use, click **Detailed**.

Note: The Detailed button is not accessible for all RFID printers.

Data Format: Select the format of the data.

Preview (WYSIWYG only): Because the RFID tag's Unique ID information is not returned to the labeling software, you do not see the actual data. Enter the data in a format similar to the format of the RFID tag. This information is used only for preview on the label.

Bar Code Wizard - Prefix and Suffix

The variable object can have prefix and suffix values. The prefix text is placed in front of the variable's value. The suffix text is placed at the end of the variable's value.

Note: If you leave the edit fields empty, the prefix/suffix is not used.

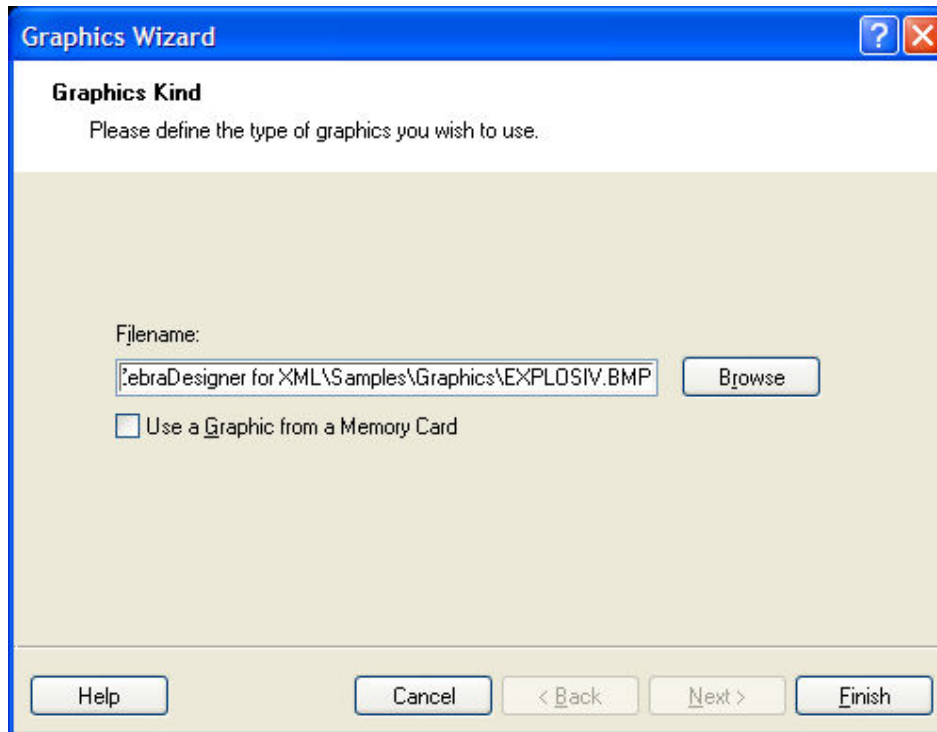
Prefix and suffix can be used in situations where they are required only if the variable has a set value. If the variable is empty, the prefix/suffix is not printed.

Note: When you use the printer's Real Time Clock for the date or time fields, the combined length of the prefix and suffix cannot exceed 31 characters.

Use Graphics Wizard

The Graphics Wizard helps you place the image on the label. You can place fixed images or variable images on the label. If you use variable pictures, the selected variable provides the path and filename of the picture.

Note: The Graphics Wizard is not available with all ZebraDesigner editions. If there is no support for variable graphics in ZebraDesigner for XML, the Graphics Wizard does not start. You are able to browse for fixed graphics files from the disk.



The first step of the Graphics Wizard

Graphics Wizard - Variable Selection

If you want to use variable pictures on the label, select the appropriate variable in the list. The variable must provide the name of the picture.

Note: If no variables are available, click **New** and define a new variable.

Bar Code Type Selection

Settings for Advanced Bar Codes

EAN.UCC 128 Bar Code

This bar code is a combination of one or more standard input values Application Identifiers (AID). Each AID must be followed by the standard values. These values can be fixed or variable.

When you select the EAN.UCC 128 bar code, the bar code data field in the *Bar Code Wizard* dialog box is disabled.

To define the contents of the bar code, do the following:

1. Click **Next**.
2. From the list of available AIDs, select the first identifier; it is written in brackets below the bar code.
3. When the AID also includes check digits, you must define whether it is calculated or entered together with data.
4. Define how you want to set the values for the selected identifier. You may enter a fixed value or define a variable value.

Fixed values

When values are fixed, the *Wizard* dialog box tells you what to enter.

The defined AID is presented on the list of selected Application Identifiers.

To work with AIDs, do the following:

- To add a new AID, click **Add**.
- To delete an existing AID, click **Delete**.
- To change the AID and the data, select the AID, and click **Edit**.
- To sort the listing of AID, click **Up** and **Down**.

All of the settings can be previewed on the **Preview** field.

The separator between AIDs can be defined by entering the required separator for the left and for the right side of the Application Identifier. The default separator is brackets.

Variable values

The EAN.UCC 128 bar code supports keyboard variables – the variable data is entered from the keyboard.

You can define the Prompt, which is the message for the operator who enters the data.

- The data can be numeric only or all characters.
- The value can be fixed or incremented/decremented on every label or a certain number of labels with the desired step.
- The variable data is written in the **Preview** field as a series of *A* characters.
- When you are satisfied with the settings, click **Finish** to put the EAN.UCC 128 bar code on the label.

PDF 417 2D Code

General tab

Y expansion factor

This option defines the height of the bar code symbol.

Security tab

According to the standard, you can select among 9 levels of security. Higher security levels allow more reliable reading regardless of errors, but the bar code symbol is bigger.

Truncated bar codes can be used where label damage is unlikely and there is no demand for a high level of security. The truncated symbol is smaller.

Aspect Ratio

It is the ratio between the number of columns and the number of rows.

Contents

PDF 417 code can encode:

- Full 128 ASCII character set
- All 128 Extended ASCII characters
- 8-bit binary data

DataMatrix Bar Code

General tab**Y expansion factor**

This option defines the height of the bar code symbol.

Aspect Ratio

It is the ratio between the number of columns and the number of rows. Enter the value in the fields.

Details tab**ECC Type**

Error Correction Codes (ECC) define the security level. You can select one from the standard levels in the pull-down menu.

Format ID

This option defines which character set is used in the bar code. You can select one of the formats with the following filter:

01 and 11	0..9, space
02 and 12	A..Z, space
03 and 13	A..Z, 0..9, space
04 and 14	A..Z, 0..9, space,-/
05 and 15	7-bit ASCII lower part (from 0 to 127)
06 and 16	all
07 and 17	7-bit ASCII

Formats 1 to 7 allow a data length up to 500 characters, while formats 11 to 17 allow up to 2000 characters.

Border Size

Factors 1 to 15 set the dimension of the border in the shape of the character *L*.

Data Matrix can encode:

- Full 128 ASCII character set
- All ISO characters
- All EBCDIC characters

MaxiCode 2D Code

General tab

Y expansion factor

This option defines the height of the bar code symbol.

Details tab

When the **Structured** option is not selected, the content of the bar code is optional.

For a Structured bar code you can encode only standard contents.

Edit Bar Code Dialog Box

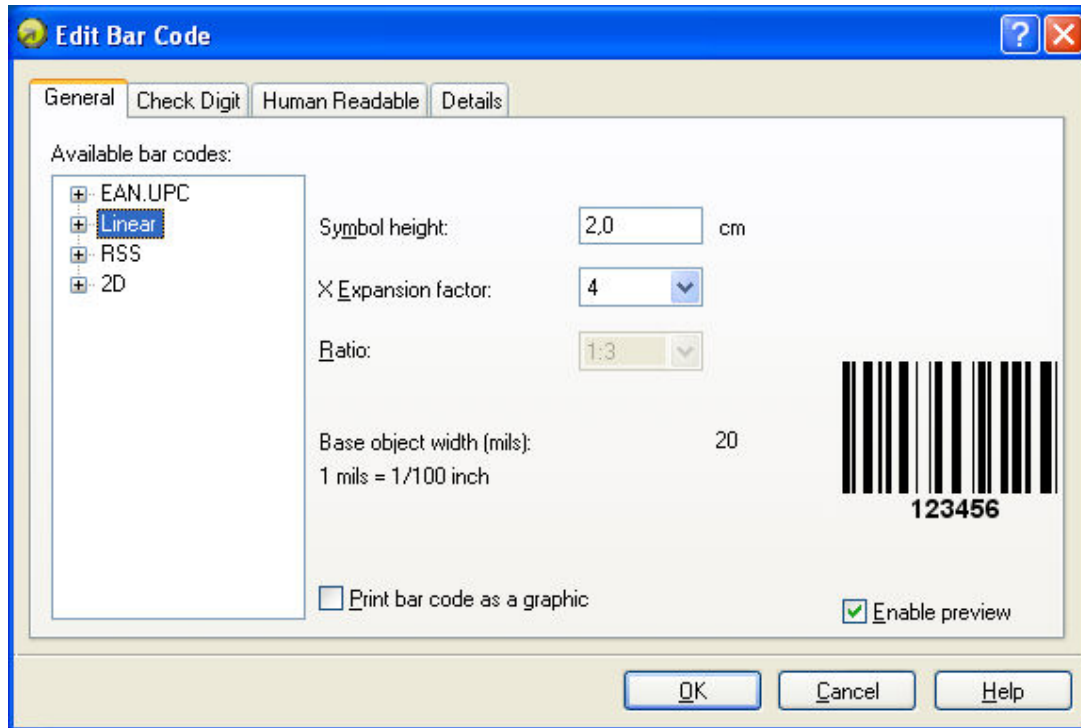
This dialog box is displayed when you click the **Define** button in the *Bar Code* dialog box. In this dialog box, you specify the type of bar code you want to use on the label and all additional advanced settings: how the bar code should be generated, if the check digit should be automatically calculated or not, and various other options. If the **Enable preview** check box is checked, a preview of the resulting bar code appears on the right side of the dialog box.

When you are satisfied with the bar code properties, click **OK** to confirm the changes made, or click **Cancel** to reject them and keep the previous settings.

The *Edit Bar Code* dialog box has several pages (tabs).

General Tab

On this tab you can select the bar code type you want to use and the properties of the bar code.



Edit Bar Code dialog box – General tab

Available bar codes: The required bar code symbology is selected from the tree list of available bar codes.

Symbol height: The height dimension of a bar code can be specified either by entering a value here or by resizing the bar code symbol directly on the label.

X Expansion factor: The expansion factor defines the width of the bar code symbol.

Ratio: This is the ratio between the narrowest and the widest bar in the bar code. It is locked for the majority of bar codes, but it can be changed for some.

Base object width (mils): Shows the width of the narrowest bar in the bar code in mils.

Print bar code as a graphic: Select this if the bar code should be converted to a picture and sent to the printer as an image, or if the bar code should be printed as an internal element. Printing internal bar codes speeds up label printing because less data is transferred to the printer.

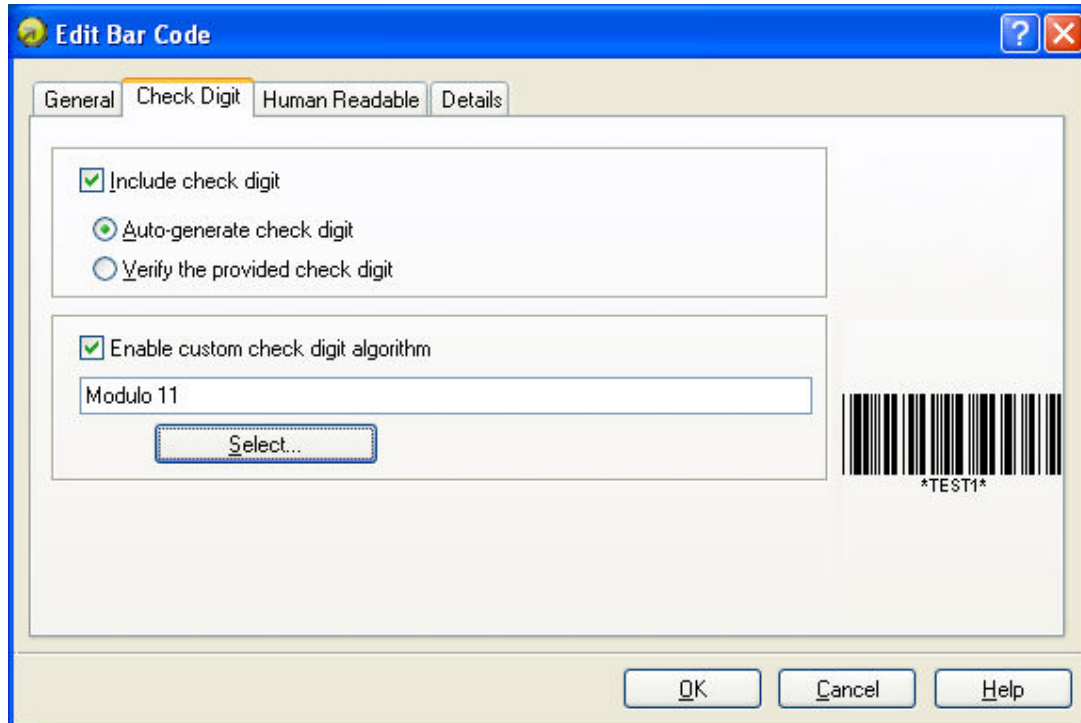
Note: If the printer does not support the selected bar code internally, the **Print bar code as a graphic** option is not available. All office printers print bar codes as pictures.

Check Digit Tab

This tab is used to specify if you want to use the check digit in the bar code. This option can be modified only for the bar codes that allow you to enable and disable the check digit.

Some bar code standards include the check digit by definition and it cannot be omitted. An example of such bar codes is EAN and UPC bar codes, where the check digit cannot be disabled. Some bar codes allow you to freely enable or disable the check digit.

Note: We recommend that you always include the check digit character in the bar code. It increases the scanning reliability.



Edit Bar Code dialog box – Check Digit tab

You can choose whether you want to input the check digit value, or let the program calculate it for you:

Auto-generate check digit: Check digit is calculated by the software. You enter the bar code data only. For example: when using the EAN-13 bar code, you enter the first 12 digits; the check digit on the 13th place is calculated and added automatically.

Verify the provided check digit: Use this command when you want to enter the value for the check digit. At print time, the entered check digits are verified for validity.

Enable custom check digit algorithm: You can set a custom algorithm for calculating the check digit. To choose the algorithm, click **Select**.

Human Readable Tab

On this tab, you can set the options regarding position and format of the bar code interpretation.

No interpretation: Bar code objects do not have human interpretation.

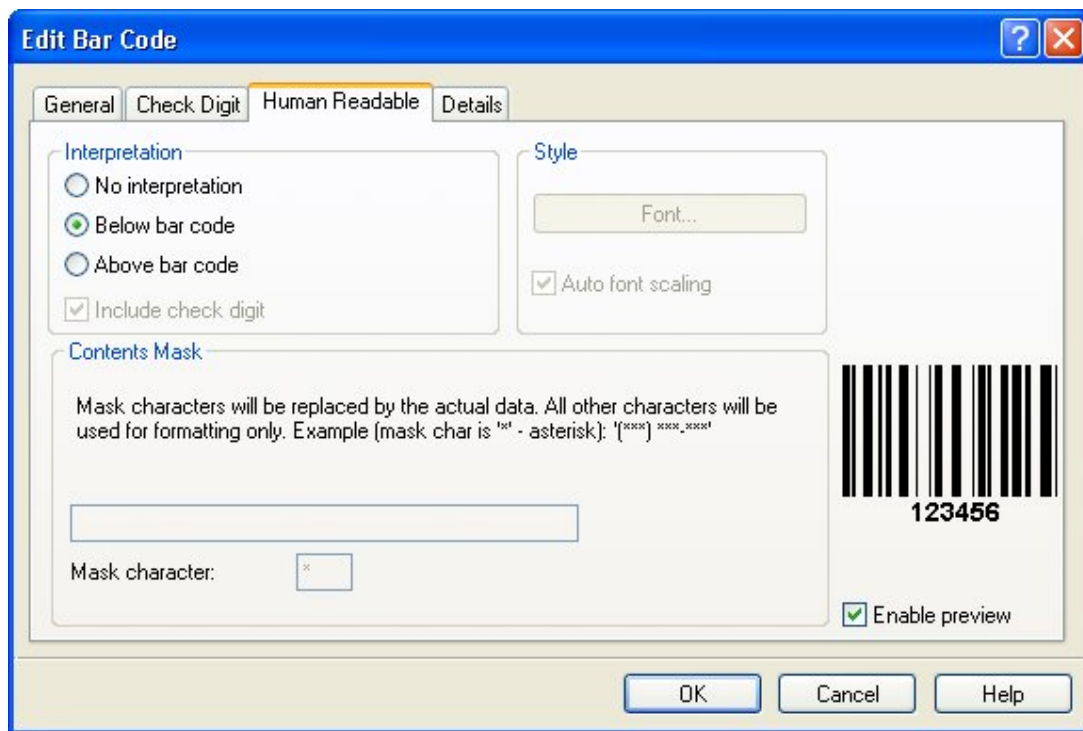
Below bar code: All data encoded in the bar code is placed beneath the bar code symbol as human readable characters.

Above bar code: All data encoded in the bar code is placed above the bar code symbol as human readable characters.

Font: Using the **Font** button, you can choose the font for auto-translation text. The **Auto font scaling** option adjusts the font of the auto translation text to the size of the bar code.

Note: You can format the font for human interpretation only if the bar code is printed as a graphic. When printing the bar code as an internal printer object, the printer prints the interpretation using resident built-in fonts.

Contents Mask: sets the custom format of the human interpretation.



Edit Bar Code dialog box – Human Readable tab

Details Tab

On this tab you can define advanced settings for the bar code:

Note: Not all of these options are available for all bar codes and printers.

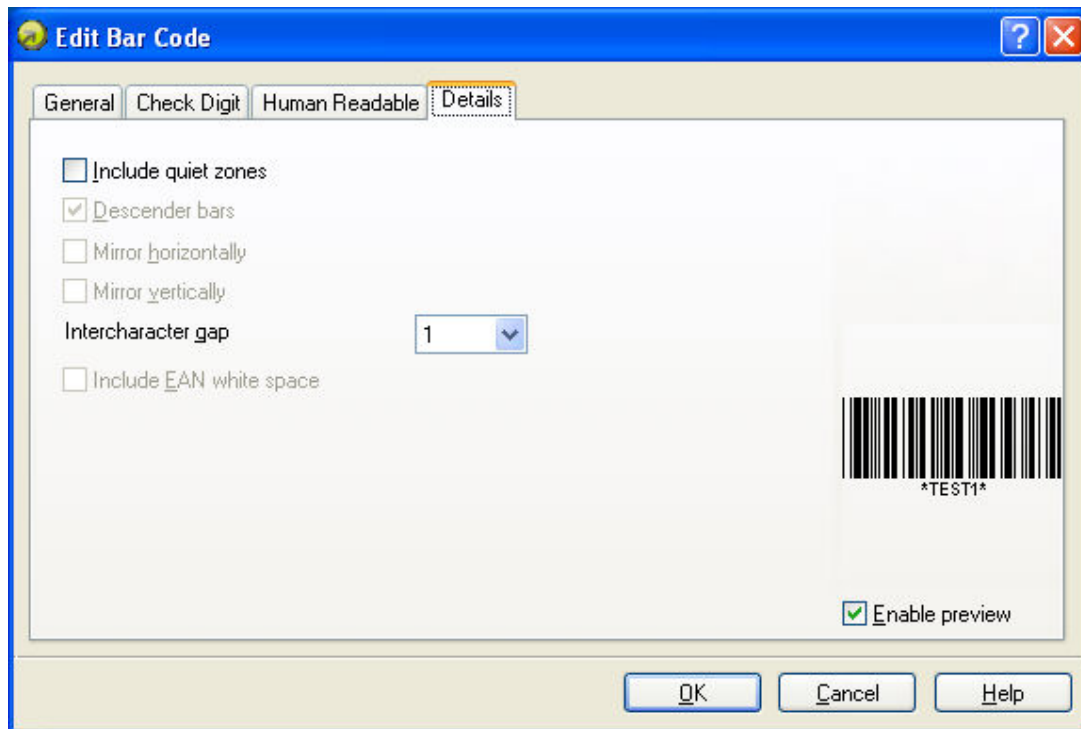
Include quiet zones: Check this field if you want the bar code to have some white space in the front and in the back. This improves readability.

Descender bars: Some bars of a bar code are longer than others. This is typically used with EAN and UPC bar codes that have longer bars in the beginning, in the middle, and in the end of the bar code.

Mirror horizontally/Mirror vertically: The bar code can be mirrored vertically and horizontally. The bar code usually has to be printed as a graphic for this option to be accessible.

Intercharacter gap: Some bar codes allow you to change the gap between characters in the bar code (for example Code 39).

Include EAN white space: Before and after the bar code, a special character is inserted. It indicates the width of the bar code. If you put any other object in the area of the bar code, it reduces the readability of the bar code. This option is valid only for EAN bar codes.



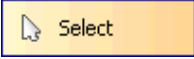
Edit Bar Code dialog box – Details tab

Supported Bar Code Types

Bar code Group	Bar code Types
EAN and UPC	EAN-8, EAN-8 + 2-digit supplement, EAN-8 + 5-digit supplement, EAN-13, EAN-13 + 2-digit supplement, EAN-13 + 5-digit supplement, EAN-14, DUN-14, UPC Case Code, UPC-A, UPC-A + 2-digit supplement, UPC-A + 5-digit supplement, UPC-E, UPC-E + 2-digit supplement, UPC-E + 5-digit supplement, UPC-E(1), EAN.UCC 128, SSCC, Bookland, Addon 2, Addon 5
Linear	Interleaved 2 of 5, ITF 14, ITF 16, Code 39, Code 39 Tri Optic, Code 39 Full ASCII, Code 32, Code 93, CODE 128 (A, B and C subsets), MSI, Codabar, Postnet-32, Postnet-37, Postnet-52, Postnet-62, Kix, Pharmacode, Plessy, Anker
RSS	<p>Linear RSS symbologies RSS14, RSS14 Truncated, RSS14 Stacked, RSS14 Stacked Omnidirectional, RSS Limited, RSS Expanded</p> <p>Composite RSS symbologies RSS14, RSS14 Truncated, RSS14 Stacked, RSS14 Stacked Omnidirectional, RSS Limited, RSS Expanded, UPC-A, UPC-E, EAN-8, EAN-13, EAN.UCC 128 & CC-A/B, EAN.UCC 128 & CC-C</p>
Two-dimensional	2D-Pharmacode, PDF-417, DataMatrix, MaxiCode, Aztec, QR, MicroQR, Codablock F, MicroPDF, InfoGlyph

Select Objects

To select the object on the label, do the following:

1. In the **Toolbox**, click . The icon is a yellow rectangle with a black border, containing a mouse cursor icon and the word "Select".
2. Click the object on the label that you want to select.
3. To select two or more objects, press and hold down the **Shift** key while clicking the object with the mouse.

The objects can be selected, cut, copied, pasted, and edited with the right mouse button. If you click the right mouse button on the object, the menu shows all available commands. Note that these commands are equivalent to corresponding menu commands.

You can change the anchoring point of a selected object by holding down the **Ctrl** key while clicking the placeholders (corners of the bounding box) of the object.

Edit Objects

To edit the properties of the object, do the following:

1. Double-click the object on the label. The *Object* dialog box opens.

Note: If the object is selected, you can also press **Enter**.

2. Make modifications to the object properties.
3. Click **Finish**.

Move Objects

To move the object on the label, do the following:

1. Select the object.
2. Click on the object with the left mouse button.
3. Hold the mouse key down.
4. Move the position of the cursor on the screen. The object moves with the cursor.

Align Objects

To align objects on the label, do the following:

1. Select the objects that you want to align.

Note: All objects are aligned relative to the first selected object.

2. To align selected objects to each other, in the Design toolbar click the appropriate buttons. If the Align toolbar is not visible (by default it is on the right side of the window), from the menu, select **View > Toolbars**. Make sure **Design** is enabled.

Note: Alternatively you can right-click the objects on the label and select *Align* command.

You can align objects to:



Left



Right



Center



Top



Bottom



Vertical center

You can also distribute objects evenly so that spacing between them is equal:



Horizontally Space Equally



Vertically Space Equally

Note: If you hold the **CTRL** key while clicking the buttons, objects are aligned relative to the label and not to the first selected object.

Resize Objects

To resize the object on the label, do the following:

1. Select the object. The selected object is framed with a rectangle.
2. Click on one of the small rectangles in the corners of the rectangle.
3. Hold the mouse key down.
4. Move the position of the cursor on the screen. The object resizes with the cursor.

Rotate Objects

To rotate the object, do the following:

1. Select the object.
2. In the Design toolbar, click . The object is rotated 90° clockwise.

Note: If the Design toolbar is not visible in the application, to enable it, from the menu select **View > Toolbars**.

Supported Graphics Formats

These are the supported graphical formats:

File extension	Graphics type
BMP, DIB, RLE	Windows Bitmap
GIF	CompuServer Bitmap
JPG, JPEG, JPE	JPEG Bitmap
TIFF, TIF, FAX, G3N, G3F	TIFF Bitmap
PNG	Portable Network Graphics
WMF	Windows Metafile
EMF	Enhanced Windows Metafile
ICO	Windows Icon
CUR	Windows Cursor
TGA, TARGA, VDA, ICB, VST, PIX	Targa Bitmap
PXM, PPM, PGM, PBM	Portable Pixmap, GreyMap, BitMap
JP2	JPEG2000
J2K, JPC	JPEG2000 Code Stream
PCX	Paintbrush

Work with Variable Data

Dynamic Data Overview

You may want to print labels where the data changes for each label, for example, serial numbers, date, and time. To accommodate the changing data, ZebraDesigner for XML can be used to format labels using the variable fields. Variable fields can be used with text and bar code objects.


There are several types of variables you can choose. The data for the variables must be provided before the label can be exported:

- Before the label can be printed, you must provide the values for the variables.
- The data is provided from the printer's clock for the date and time fields (internal printer RTC).
- The data is provided from the RFID tag embedded in the label (RFID tag Unique ID).

Create Single-Line Variable

As the name suggests, you can use a single-line variable in one line of text on the label.

To create a single-line variable on your label, do the following:

1. Make sure the Variable toolbar is visible. If it is not, select **View > Toolbars > Variable**.
2. In the Variable toolbar, click . The *Variable Wizard* dialog box opens.
3. Enter the name of the variable. Use a descriptive name so that you know what the variable contains.
4. Click **Next**.
5. Enter the *Sample data*. When you link your variable to the label object, the sample data will be used for the contents of the object. The sample data is shown during label design only.


Note: When you print the label, the variable uses the data you provide, not the sample data.

6. Click **Finish**.

Create Multiline Variable

As the name suggests, you can use a multiline variable with more lines of text in the text object on the label. The variable can contain as many characters in each line as you specify. The total amount of allowable characters is the number of characters per line, times the number of lines. For example, if you allow 20 characters in a line and have 5 lines, the total number of characters is 100.

To create a multiline variable on your label, do the following:

1. Make sure the Variable toolbar is visible. If it is not, select **View > Toolbars > Variable**.
2. In the Variable toolbar, click . The *Variable Wizard* dialog box opens.
3. Enter the name of the variable. Use a descriptive name so that you know the variable contents.
4. Click **Next**.
5. Enable the **Multiline Variable** option.
6. Enter the *Sample data*.
When you link your variable to the label object, the sample data is used for the contents of the object. The sample data is shown during label design only. Use the **Enter** key to advance to the next line of text.

Note: When you print the label, the variable uses the data you provide, not the sample data.

7. Click **Finish**.

Control Text Field Widths and Multiline Fields


Sometimes you may want to control the width of the variable text field. This is useful for ensuring correct text alignment and justification. At print time, if the width of the field set on the label template is not large enough, the text may word wrap on itself on the same line. This results in what looks like corrupt data.

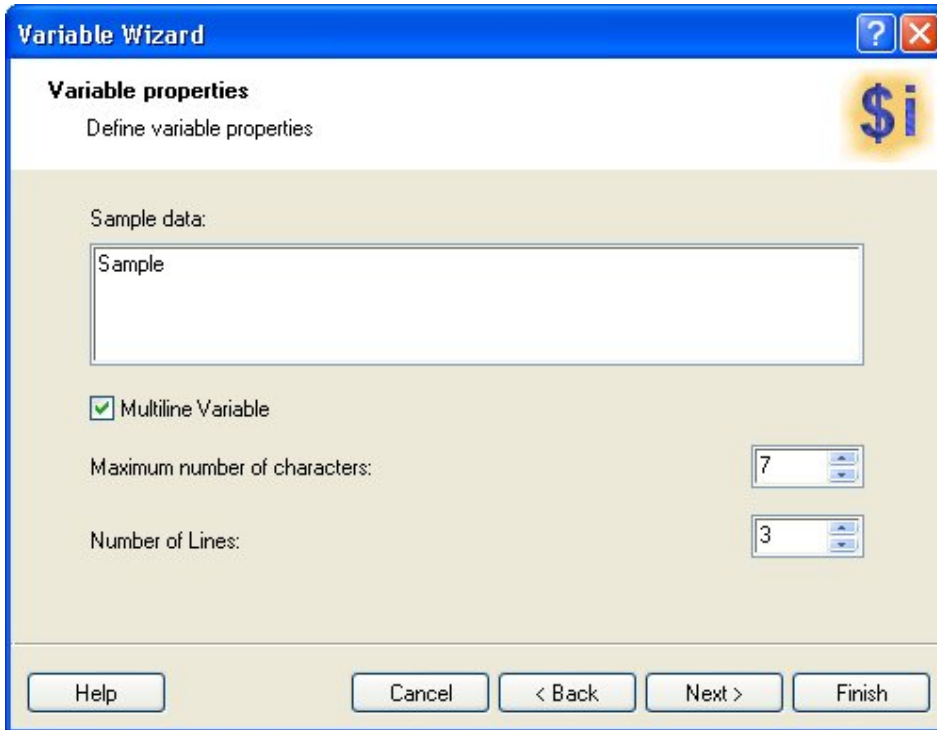
To control the field width, do the following:

1. While holding down the **Shift** key, drag the middle right handle of the field. This method establishes the width of the text object frame. Once a field has been set using this method, it is easy to use the justification buttons in the Standard toolbar to set left, center or right justification for the field.

Another method is necessary when creating multiline variable fields.

To set up the Sample data in the Variable Wizard, do the following:

1. From the menu, click .
2. In the *Sample data* text box, type the name of the variable and click **Next**. The *Variable properties* dialog box opens:



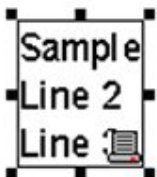
Variable Wizard dialog box

3. To establish a multiline variable type, click the **Multiline Variable** check box. The **Number of Lines** value increases each time you press the **Enter** key while entering your *Sample data*. When used as a Text Field variable, a Multiline variable will result in a field that uses the number of lines you defined in the variable. In this method you can also use the justification buttons in the design environment to set left, center, or right justification for the field.

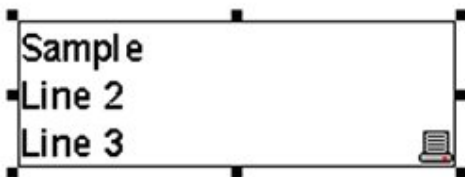
This is an example of a field that has been set to a controlled width using the Shift-dragging method, and then set to center justification. At print time, data sent to this field will occupy the defined width, in a center justification:



This is an example of a field that has been created using a multiline variable and set to left justification:



These two methods can be used together to create variables fields with known width, multiline, and justification properties as shown below:

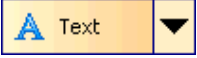


Note: This method requires the use of a font that is internal to the printer, such as the scalable Zebra Font 0 or Zebra Swiss Unicode.

Using Printer Real Time Clock (RTC)

When the printer selected on the label has a built-in Real Time Clock (RTC), you can use the time or date fields from the Real Time Clock with text objects on the label. The available time and date formats are defined in the printer driver.

To use the time field from the printer RTC on the label, do the following:

1. In the **Toolbox**, click . The icon consists of a blue letter 'A' on a yellow background, followed by the word 'Text' and a small downward-pointing triangle.
2. Click the position on the label where you want to place the object. The *Text Wizard* dialog box opens.
3. Enable the **Variable text** option.
4. Click **Next**.
5. Select the **Time Field** option.
6. Click **Next**.
7. Select the appropriate time format from the list. The printer driver provided the software with the list of available time formats. You cannot define your own time format. It is determined by the printer functionality.
8. Click **Finish**.

Note: When you are using a prefix and suffix with the Real Time Clock field on the label, make sure that the combined length of the prefix and suffix does not exceed 31 characters. When you are using a linked field and are merging a Real Time Clock field with other fields, make sure that the combined length of fields surrounding the Real Time Clock field does not exceed 31 characters.

Use Variable Wizard

Variable Wizard

Use the Variable Wizard to create and manage the variables in the label file. When you assign a value to the variables, the same value is used with all objects on the label that are linked to the variable.

The variables can be linked to Text and Bar Code objects.

To create a variable follow the prompts.

Define Variable Name

You can define the variable name and quantity information in this step of the Variable Wizard.

Variable Name: Type in the variable name. The variable name is included in the exported label. Make sure you use the proper variable name that is recognized by the XML Format Generation Wizard.

Note: Make sure you include the proper characters for the variable left and right tag characters. These characters define the beginning and end of the variable name. Use the tag characters as suggested by ZebraDesigner for XML. For example, for the left tag character "%" may be suggested, and for the right tag character "&" may be suggested.

This is a special variable: If the value of the variable contains the quantity information that must be included in the exported label format, click this option.

Use var for Print Quantity: The variable identifies how many labels print. When you export the label format, the exported file has this variable included with the print command for label quantity.

Use var for Copy Quantity: The variable identifies how many identical label copies print. When you export the label format, the exported file has this variable included with the print command for label copies.

Use var for Cut Quantity: The variable identifies how many labels are printed before the printer pauses. When you export the label format, the exported file has this variable included with the cut command.

Note: The *Use var for Cut Quantity* option is available only when the selected printer has the option to use the cutter.

Define Variable Properties

You can define the variable data properties in this step of the Variable Wizard.

Sample data: Enter the appropriate data for the variable. The entered data will be used for design and preview functionality. You will assign the variable with its proper value outside of ZebraDesigner for XML.

Multiline Variable: If you want to enable multiline functionality for the variable, click this option. You are able to enter more than just one line of sample data.

Note: To move to the next line of text, press the key combination **Ctrl+Enter**.

Maximum number of characters: Define the maximum number of characters that the variable can occupy. The number defined must correspond to the external application that will actually set variable values.

Number of lines: Define the multiline variable. Enter the number of lines the variable can occupy.

To find out the total number of characters the variable can contain, multiply the maximum number of characters in a line by the number of lines. For example: if you have 10 characters in one line and have defined 3 lines of data, 30 characters can be set to the variable.

Define Script

You can define a script that is included in the exported label format. This feature is optional.

The XML Format Generation Wizard in ZebraDesigner for XML includes the variable in the proper formatting in the exported label file. You can override the default settings and include some special parameters or commands with the variable name. Define a script and include not only the variable name in the script but other parameters and commands using Zebra Programming Language (ZPL).

Note: This feature is for advanced users only. You must be familiar with ZPL to successfully use the script option.

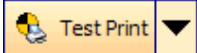
Use script: Click this option to enable the script option. Write your script in the provided space. Make sure you include the variable name in the script.

Export Labels

Test Print Labels

To test print the label, do the following:

1. Make sure your printer is connected to the computer.
2. Make sure the printer is online and available for printing.

3. In the Standard toolbar, click  to quickly print your label.

Note: The variables are assigned with a default value, but you get an overview if the label is designed correctly and if the objects fit on the label. You also see how the pictures are processed and printed. When you place a picture on the label, in design mode it is always shown in color-depth as defined in the picture.

When printing the labels, the preview of the pictures depends on the dithering option set in the printer driver. All color pictures (except WMF and EMF files) are converted to monochrome images. The illusion of colors and shades of grey is accomplished by varying the pattern of dots. More dots close together provide a darker shade of grey.

The test print of the label show pictures in the same way as they are printed according to the dithering setting. If the picture is not printed as you want it, change the dithering setting in the printer driver.

Export to Printer

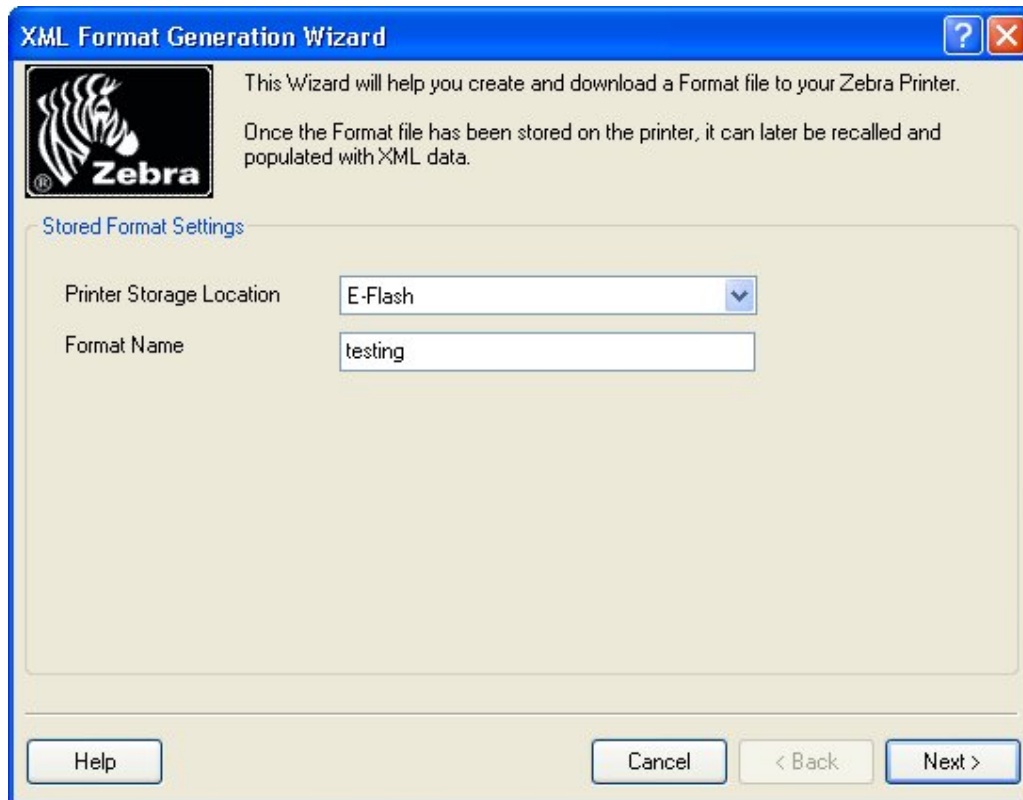
During the label design make sure the label is printed correctly. To verify the printout of your label, from the menu, select **File > Test Print**. When you are satisfied with the designed label, you can export the label to the printer. During the export process, ZebraDesigner for XML runs the XML Format Generation Wizard and converts the label format to a supported Zebra printer.

The generated file includes commands from the Zebra Programming Language (ZPL) and is ready to be used in the printer for off-line printing.

Note: Off-line printing is a term that describes the type of label printing where the label design application is not available at print time. Usually the label format is stored in the memory of the printer and can be recalled. Off-line printing support is great for print requirements where the PC computer cannot be included in the label printing process either because of unacceptable working conditions or logistic issues. Off-line printing also provides faster label printing because all variable objects on the label use internal printer functionality.

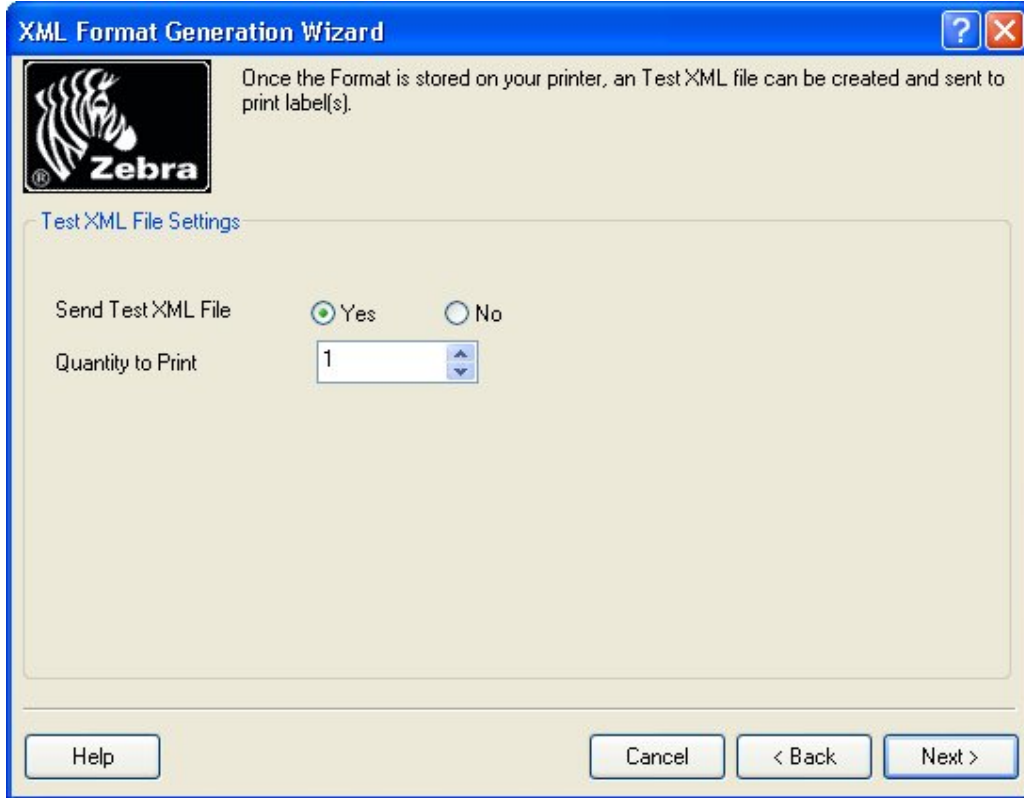
To export the label to printer, do the following:

1. From the menu, select **File > Export to Printer**. The *Stored Format Settings* dialog box opens.



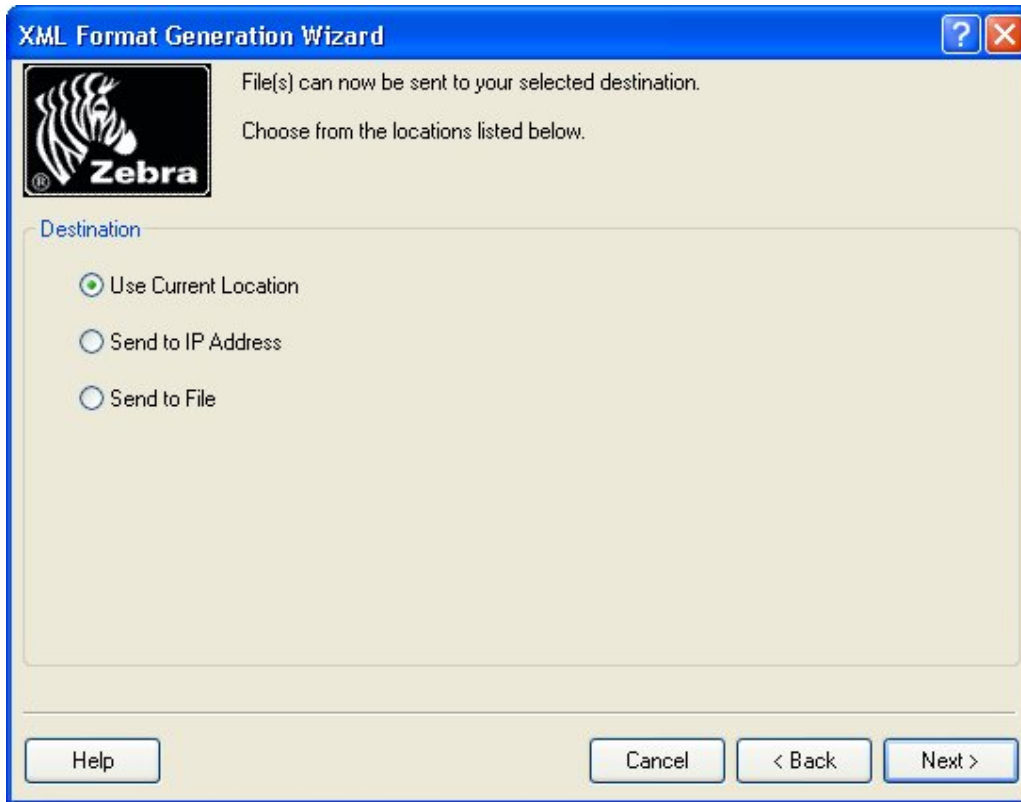
Stored Format Settings dialog box

2. Fill in the **Printer Storage Location** and **Format Name** fields, and then click **Next**. The *Test XML File Settings* dialog box opens.



Test XML File Settings dialog box

3. Make your selections and then click **Next**. This confirmation dialog box opens: *File(s) created successfully*.
4. Click **OK**. The *Destination* dialog box opens.



Destination dialog box

Your destination choices include:

- Use Current Location
- Send to IP Address
- Send to File

5. From the *Destination* dialog box, enable your desired destination and then click **Next**.

Use Current Location

If you chose **Use Current Location**, this confirmation dialog box opens: *The format has been transferred. The XML test file can now be sent.*

To send the files to the printer using the port that the ZebraDesigner driver is using, do the following:

1. To send, click **Send File**.

Send to IP Address

If you chose **Send to IP Address**, the *Select Network Destination* dialog box opens.

To complete the IP address search, you can enter an IP address or an address range.

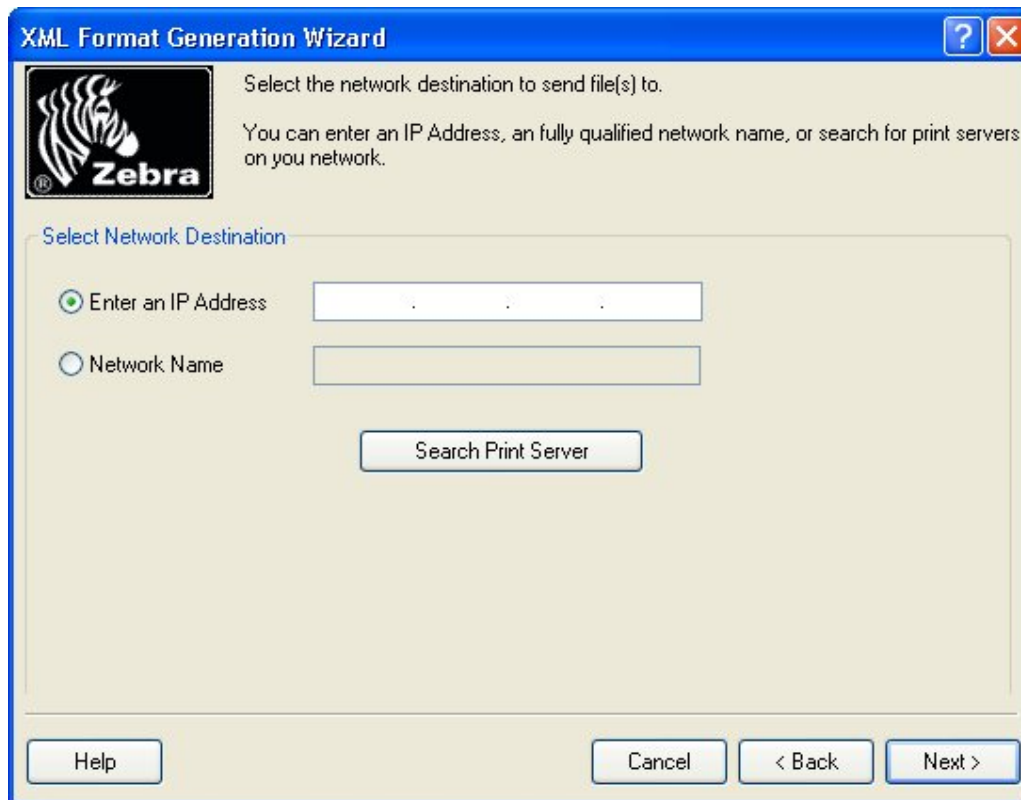
Examples:

- To send a discovery request to 10.3.5.20 only, enter: 10.3.5.20
- To send a discovery request to printers in the address range of 10.3.5.20 through 10.3.5.47, enter 10.3.5.20-47

The IP address search avoids sending unnecessary traffic to non-printing devices.

To send to an IP address, do the following:

1. In the *Select Network Destination* dialog box, in the **Enter an IP Address** field type in a valid IP address, or a partial address using an *.



Select Network Destination dialog box

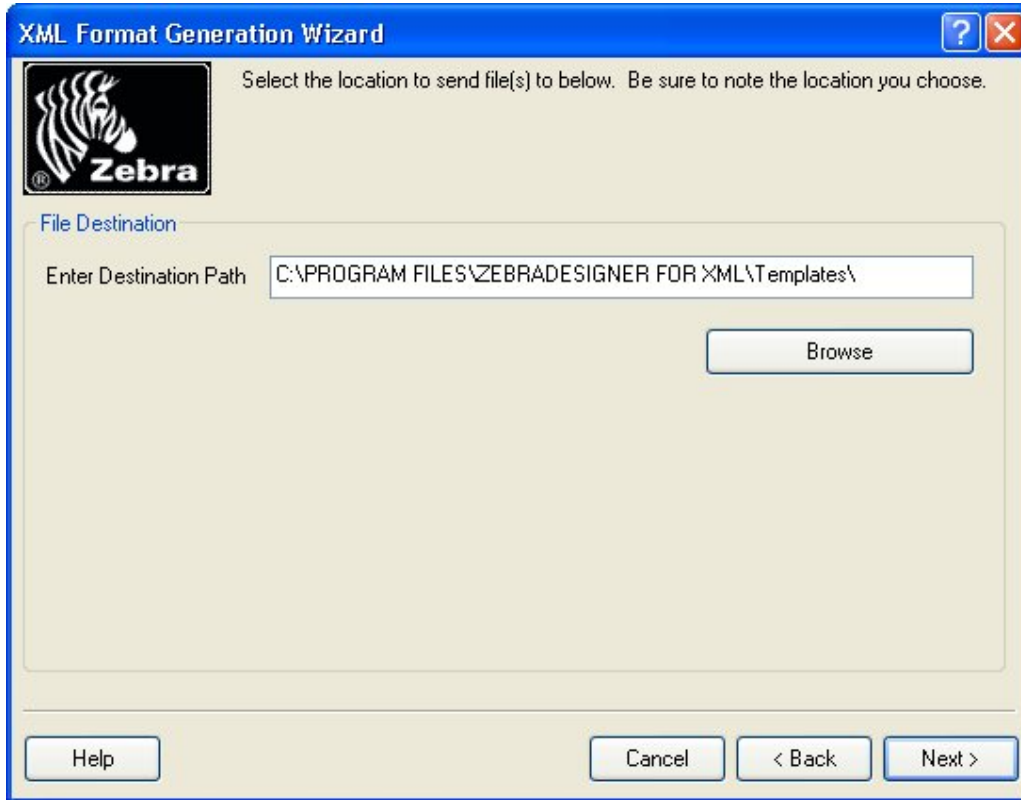
2. Click **Next**. This confirmation dialog box opens: *The Format has been transferred. The XML file can now be sent.*
3. Click **Send File**. The file is sent.
4. Click **Finish**.

Send to File

If you chose **Send to File**, the *File Destination* dialog box opens.

To send a file to a specific destination, do the following:

1. From the *File Destination* dialog box, click **Browse** and navigate to the location you want the file to go.



File Destination dialog box

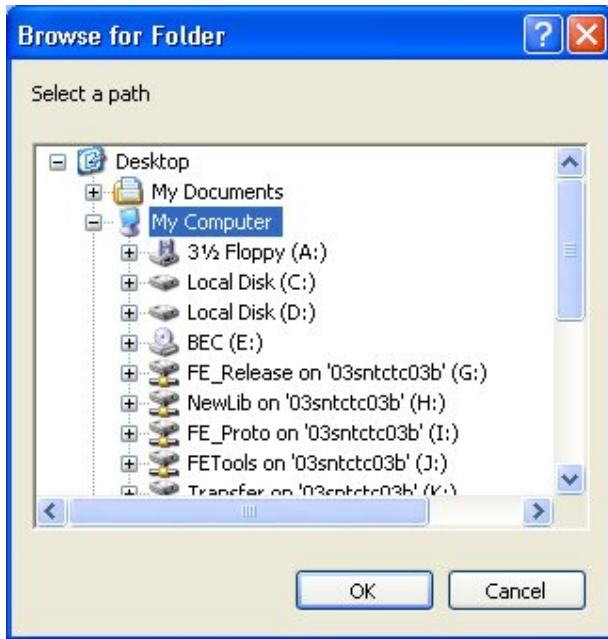
2. Click **Next**. This confirmation dialog box opens: *The Format has been saved*.
3. Click **OK**.

File Destination

If you enable **Send to File** from the *Destination* dialog box, the *File Destination* dialog box opens.

To choose a file destination, do the following:

1. Click **Browse**. The *Browse for Folder* dialog box opens.



Browse for Folder dialog box

2. Navigate to the path where you want the file sent.
3. Click **OK**.

The *Browse for Folder* dialog box closes and you return to the *File Destination* dialog box. The **Enter Destination Path** text-box is populated with the destination you selected in the *Browse for Folder* dialog box.

4. Click **Next**. The Format has been saved dialog box opens.
5. Click **OK**.

The **Browse** button in the *File Destination* dialog box allows you to navigate to the location you want the file sent.

Local Broadcast

Local broadcasts send a discovery request to the local broadcast address of 255.255.255.255. This request finds printers in the same local network as the requesting computer.

The local broadcast search populates itself.

To perform a local broadcast search, do the following:

1. From the *Select Network Destination* dialog box, click **Search Print Server**.
2. In the *Search Type* dialog box, enable **Local Broadcast**. The **Value** field is automatically populated.

XML Format Generation Wizard

You can search for print servers using several different methods.

Please note that you must have access to the network that you are trying to locate a print server on.

Search Type

Local Broadcast
 Subnet xxx.xxx.xxx.*
 Directed Broadcast xxx.xxx.xxx.
 Multicast (Hops)
 IP Address xxx.xxx.xxx.xxx (-xxx)

Value:

Search Type	Value

Search Type dialog box

3. Click **Add**. The **Value** field is added to Search type.
4. Click **Next**. The *Select Print Server* dialog box opens.
5. Using the buttons between the two panels, select the print servers you want.
6. When you are finished, click **Next**. This confirmation dialog box opens: *The Format has been transferred. The XML test file can now be sent.*
7. To send, click **Send File**.

Subnet Search

The subnet search sends a discovery request to each address in the specified subnet. This feature is useful for networks that prevent broadcast packets from passing across routers. The Subnet search requires you to type in the first three subnet octets.

Example: A request to 192.168.2.* sends a request to: 192.168.2.1 through 192.168.2.254.

To perform a subnet search, do the following:

1. From the *Select Type* dialog box, enable **Subnet**.
2. In the **Value** field, type the first three subnet octets. Then type an *.
3. Click **Add**, and then click **Next**. The *Select Print Server* dialog box opens.
4. Using the buttons between the two panels, select the print servers you want.
5. When you are finished, click **Next**. This confirmation dialog box opens: *The Format has been transferred. The XML test file can now be sent.*
6. To send, click Send **File**.

Directed Broadcast

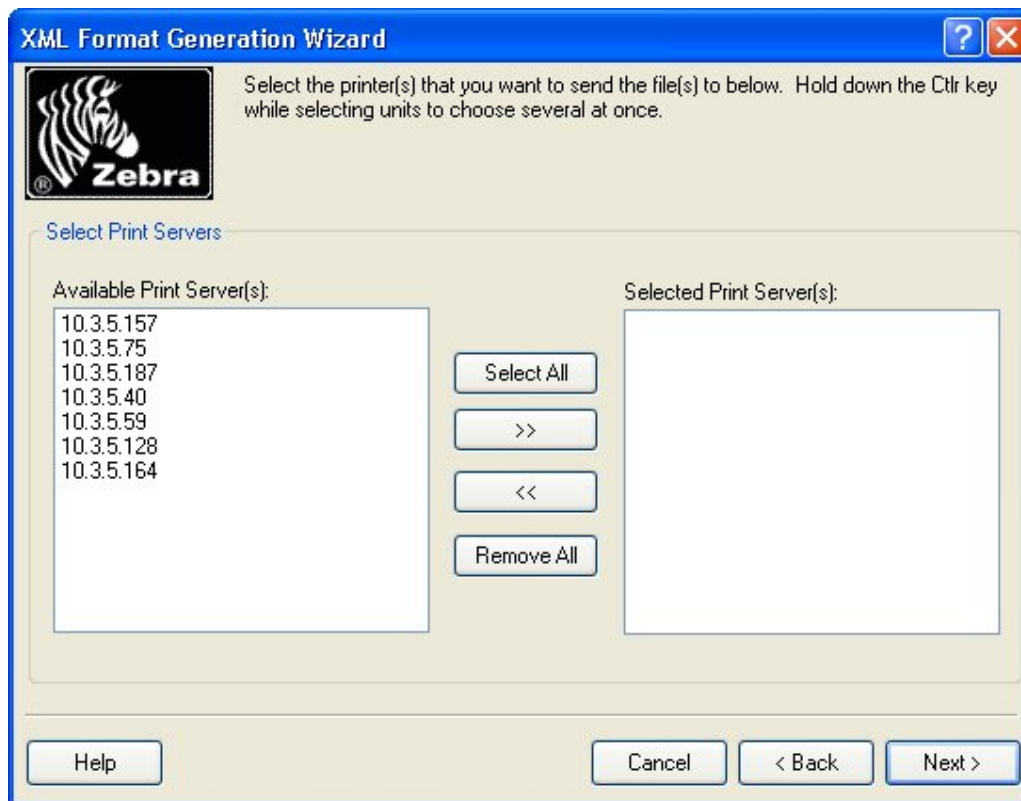
Directed broadcasts send a discovery request to the broadcast address of the specified subnet.

Note: If a broadcast search does not work, the broadcast packets might be disabled across routers. Try multicast or subnet search.

Example: The directed broadcast search requires you to type in the first three subnet octets, followed by 255, such as 192.168.2.255.

To perform a directed broadcast search, do the following:

1. From the *Select Type* dialog box, enable **Subnet**.
2. In the *Search Type* dialog box, enable **Directed Broadcast**. The **Value** field is automatically populated.
3. Click **Add**.
4. Click **Next**. The *Select Print Server* dialog box opens.



Select Print Servers dialog box

5. Using the buttons between the two panels, select the print servers you want.
6. When you are finished, click **Next**. This confirmation dialog box opens: *The Format has been transferred. The XML test file can now be sent.*
7. To send, click **Send File**.

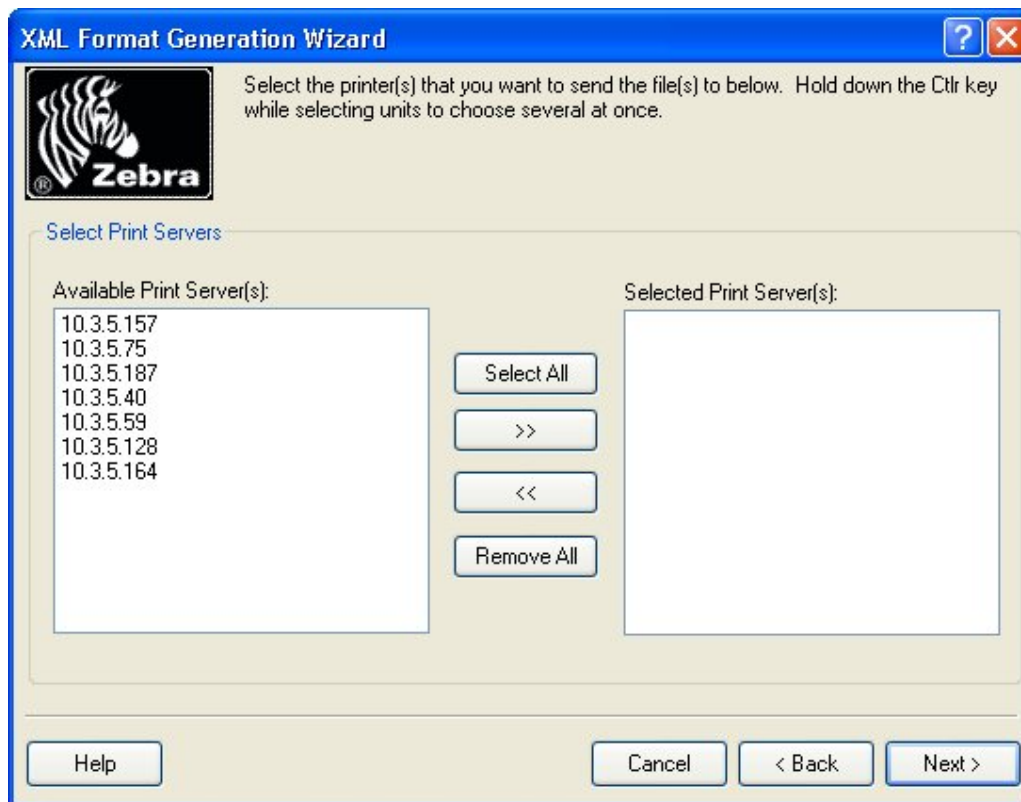
Multicast

Multicast uses the multicast address to send a discovery address to all Zebra printers across as many routers as the hop count specifies. A multicast search may return a large number of printers in some installations.

On some routers, this feature might be disabled. See your network administrator to determine if a search failure was due to this feature being disabled.

To perform a multicast search, do the following:

1. In the *Search Type* dialog box, enable **Multicast (Hops)**. The **Value** field is automatically populated.
2. Click **Add**.
3. Click **Next**. The *Select Print Server* dialog box opens.



Select Print Servers dialog box

4. Using the buttons between the two panels, select the print servers you want.
5. When you are finished, click **Next**.
6. This confirmation dialog box opens: *The Format has been transferred. The XML test file can now be sent.*
7. To send, click **Send File**.

Optimize the Printing Speed

There are many factors that affect the printing speed. By following the guidelines below, you can dramatically increase the printing speed:

- Use the printer's internal fonts instead of Windows TrueType fonts. TrueType fonts must be sent to the printer as graphics and the size of the file is much bigger (kilobytes). When using internal fonts, only the text is sent to the printer (a couple of bytes). If you must use true-type fonts, use the ZebraDesigner Font and Graphics Downloader program to download these fonts to the printer's memory and access these fonts as internal printer fonts (only available if your printer supports download of the fonts).
- When using bar codes, do not print bar codes as graphics if ZebraDesigner for XML supports printing bar code.
- Set the printing speed to a higher value (if your printer supports it). Note that setting the printing speed affects the print quality. The higher the speed, the lower the quality. You need to find an acceptable compromise for this.
- Don't print too much data on labels. If the speed of printing is an important factor, you should consider using preprinted labels, and print only the data that is different on each label.

Glossary of Terms

Auto translation

Bar code interpretation of human readable characters.

Darkness

The printhead temperature defines the print darkness. The higher is the temperature is, the darker the printout (thermal printers only) is.

Descender bars

The first and last bar is longer in the EAN 13 bar codes.

Quiet zone

This is the empty place before and after the bar code symbol. This is necessary for the bar code reader to properly read the bar code.

Security

This is the definition of the control check digit with some bar code types.

Contacts

You can contact Zebra Technologies at the following.

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