

LABEL MATRIX Help

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Introduction

This label design software offers a quick and easy way to design and print high quality labels, coupons, tags and forms to your laser, ink-jet, thermal, or thermal transfer printer. This program's wide range of features allows you to create a variety of bar codes, including popular two-dimensional and composite symbologies. In addition to bar codes, you can design labels using graphics, variable-sized text, paragraphs, lines and shapes. Helpful "wizard" screens prompt you through each step, from designing your label to adding a database.

Depending on the specific edition of the software that you are using —LM QuickDraw for standard labeling applications or LM PowerPro, with more advanced tools — different features are available. Although all features are described in this Help, they may not be available in your edition of the program. (Those features available only in the PowerPro edition are identified by the message "This is a **PowerPro** edition feature".)

View the Product Editions Comparison chart (in PDF format) to compare the two editions of the label design software...

Help with Online Help

About the Help Window

The Help window is divided into two panes. The navigation pane is on the left and includes three tabs used to select help topics. The right side is the topic pane that displays the topic that was selected in the navigation pane.

If the navigation pane is not visible, click **Show**. Click **Hide** to display only the topic pane.

Display Help using the Contents Tab

The Contents tab displays books and pages that represent the categories of information in the help system. Click on a book to display the other books and pages it contains. Click on a page to select a topic to view in the right pane.

Display Help using the Index Tab

The Index tab displays a list of keywords associated with topics. To open a topic in the right pane associated with a keyword, select the word and click **Display**.

Display Help using the Search Tab

The Search tab is used to search for words and locate topics that contain those words. Enter a word or phrase to search for and click **List Topics**.

Searching Help

If you are unable to find the information you need by selecting topics from the **Contents**, you can search using the **Index** or **Search** tabs.

Use keywords to refine your search

1. In the navigation pane click on the Index tab.
2. In the **Type in a keyword to find** box, enter a keyword for your search, or select a keyword from the list.
3. Click **Display**.

Search Help by entering a phrase or question

1. In the navigation pane click on the Search tab.
2. In the **Type in a keyword to find** box, enter one or more words for your search.
3. Click **List Topics**.
4. Select the topic, then click **Display**.

Printing a Help Topic

1. From the **Contents** tab, select a topic so it is displayed in the right-hand pane.
2. From the Help window toolbar, click **Print**.

3. To print the current topic, select **Print the selected topic**.
4. To print all topics contained in a book, select **Print the selected heading and all subtopics**.
5. Select the required print options.
6. Click **Print**.

Installing and Uninstalling the Program

System Requirements

Processor	Minimum: 600 MHz Pentium III-compatible or faster Recommended: 800 MHz or faster (minimum required for Windows Vista)
Operating System	Windows 2000 Professional with SP4 Windows 2000 Server with SP4 or later Windows XP with SP2 or later Windows Server 2003 Standard, Enterprise or Datacenter edition with SP1 or later Windows Vista Windows Server 2008
Memory	64 MB RAM with Windows 2000 (128 MB recommended) 128 MB RAM with Windows XP (256 MB recommended) 256 MB RAM with Windows Server 2003 (512 MB recommended) 512 MB RAM with Windows Vista (1 GB recommended) 512 MB RAM with Windows Server 2008 (2 GB recommended)
Hard Disk Space	Hard drive with at least 150 MB of available space
Display	Minimum: 800 x 600 High Color - 16 bit Recommended: 1024 x 768 True Color - 32 bit

Supporting Software	Microsoft Internet Explorer 6.0 SP1 or later (available for installation from the label design software CD) Adobe Acrobat Reader 8.1 (available for installation from the label design software CD)
Additional Requirements	Serial port if required by printer CD-ROM drive Mouse

Uninstalling the Label Design Software

To remove the label design software from your PC, do one of the following:

1. From the Windows **Control Panel**, double-click on **Add or Remove Programs**.
2. Scroll to locate the label design software, select it, and then click **Remove**.

Note: Uninstalling will not remove the label design software's main directory as there are databases, labels, and other files that it leaves intact.

Exploring the Design Environment

The Menu Bar

The **Menu bar** contains eight drop-down menus: **File**, **Edit**, **View**, **Insert**, **Grid**, **Tools**, **Window** and **Help**.

Note: If you are using a trial version of the software, an additional "Trial" menu will also be available on the Menu bar.

To open a menu

1. Click on a menu with the left mouse button.
2. Click on the command of your choice to select it from the menu.

Note: To access a command using the keyboard, use the hot keys. Press ALT plus the key corresponding to the letter underlined in the menu name or the command name.

Toolbars

Select **Toolbars** from the **View** menu to select or de-select the toolbars you would like to display on the design screen. The toolbars available include:

Standard Toolbar
Add Image Toolbar
Alignment Toolbar
Image Formatting Toolbar
Status Bar
Errors/Warnings Toolbar

Wizards

Wizards are helpful screens that take you through a process step by step, making it easier to understand by giving you hints and answering your questions on the screen. This program features several helpful wizards to make your label-making process as easy as possible.

New Label Wizard
Add Image Wizard
Add Database Wizard
Add Printer Wizard
Combination Wizard
MaxiCode Wizard
UCC/EAN-128 Wizard

Keyboard Shortcuts

Shortcut keys allow you to perform menu functions using simple keystrokes or "hot keys." Each available shortcut key sequence is shown next to its respective function name in each menu. To execute any hot key function, enter the keystrokes listed next to the desired function.

Key Combination	Function
Ctrl + N	Create a new file
Ctrl + O	Open a file
Ctrl + S	Save a file
Ctrl + P or F6	Print
Alt + F4 or Alt + X	Exit
Ctrl + X or Shift + Delete	Cut
Ctrl + C or Ctrl + Insert	Copy
Ctrl + V or Shift + Insert	Paste
F7	Zoom out
F8	Zoom in
Shift + F4	Redraw the design screen
Alt + T	Insert text
Alt + B	Insert bar code
Alt + N	Insert line
Alt + R	Insert Rectangle
Alt + P	Insert Picture
Insert	Image Wizard
F1	Help

Customizing the Design Environment

Modifying Display Settings

1. On the **Tools** menu, click **Setup**. The **Application Options** dialog box appears.
2. Click the View Settings tab and select the appropriate settings.
3. Click the Set Colors tab and use the drop-down lists to set the colors for the design screen area and other design elements.
4. Click the Toolbars tab and select or de-select the toolbars to display on the design screen.
5. Click the Preferences tab and enter the appropriate values.
6. Click the Passwords tab and if desired, set up password-only access to the design screen and other components of the program.
7. Click the Directories tab and specify locations for custom shapes and pick list files.
8. Click **OK**.

Changing the Interface Language

If you are using an International edition of the program, the user interface is available in many different languages and is easily changed.

To change the interface language

1. On the **Tools** menu, click **Set Language**. (The **Set Language** option appears only if you are using an International edition of the program.)
2. Select the desired language and click **OK**.

Note: Once you click **OK**, all the menus, commands and screen messages will appear in the selected language. The online Help and the standard Windows dialog boxes such as **Open** and **Save as** will remain in English.

Adding Your Own Menu Options

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the [feature comparison chart \(in PDF format\)](#) for information on the features included in your edition.

Some editions of this program give you the ability to add up to six of your own drop-down menu options so you can quickly call up frequently used utilities like Notepad, Windows Explorer or the Windows calculator. To add your own menu items, enter lines similar to the examples below in the program's .INI file under the [Utilities] section.

[Utilities]

Utility1=c:\windows\notepad.exe,Notepad

Utility2=c:\windows\explorer.exe,Explorer

Utility3=c:\windows\calc.exe,Calculator

Any new menu options you add will appear under the label design software's **Tools** menu.

Creating, Opening, and Saving Labels


New Label Wizard

The New Label Wizard takes you step by step through the process of creating a new label. You can specify any or all of the following tasks to be covered by selecting them from the first screen of the wizard.

- Select a different printer for this design
- Change the page size, set up margins, and/or print multiple labels per page
- Use information obtained from databases
- Print duplicates of each label
- Use AutoPrint functionality (Not available in all editions of the program.)

Note: The settings that are covered by the New Label Wizard are also available from the Label Properties tabs, which can be accessed by selecting **Label Properties** from the **File** menu.

To access the New Label Wizard

- Select the **Create a new label** option from the program's opening screen.
- OR-
- On the **File** menu, click **New**.
- OR-
- Click the **New**  button on the Standard Toolbar.

Note: If desired, you can turn off the New Label Wizard by selecting the **Don't show wizard...** option on the first screen of the wizard or on the Application Options Preferences tab.

Opening an Existing Label

There are several ways you can open label design files.

To open a label when you start the program


When you first start the program, the opening screen includes an option to **Open a recently used label**, with a listing of the label design files that have been previously opened.

- If the label's path and file name is displayed on this dialog, you can select it and click **OK** to open it.
- If the label design is not listed on this screen, select the **Find an existing label** option and navigate to the drive/folder where the label design file is located and double-click to open it.

- You can also create a shortcut on your Windows Desktop to the label design file and double-click the icon to open it. Or, from the Windows Explorer, open the folder that contains the file and double-click to open it.

To open a label after starting the program

Tip: The last four most recently opened labels are listed near the bottom of the **File** menu for easy access. As a shortcut, you can open any of these label files by selecting them from this menu.

1. On the **File** menu, click **Open**. Alternatively, you can click **Open**  on the Standard Toolbar.
2. Navigate to the drive/folder where the label design file is located and double-click to select it.

Converting Old Label Files

Depending on the edition of the software you are using and the version of the software used to create your old design files, you may be able to open your previously created label designs in this version.

Note: Be sure to back up (or copy to a new filename) any files that you want to use from an older version of this program, because you cannot change them back once they are converted. When the files are saved in this version of the program, they will be completely converted.

To convert old design files

1. Make a backup copy the old design file in case you need to go back to the original design. Keep this copy until you are sure you no longer need the original.
2. Create a new label design by selecting **New** from the **File** menu and following the New Label Wizard screens.
3. Once your label size, margins, etc. have been set up, select **Design File** from the **Insert** menu.
4. Select the name of the file you wish to convert and click **OK**. The label format will be inserted into the new label.
5. Save the label under a new filename.

Note that text, graphics, and bar codes may appear out of place or distorted as a result of the conversion process. In addition, yellow warning or red error lights may display on the label. The most common reasons for these errors and warnings are as follows:

- Font tables may have changed between products or printers
- Printer-specific options may have changed
- Printer drivers may have been redesigned (a printer firmware issue)
- The newer version of the program may not support the older printer firmware
- Bar codes may need to be re-adjusted (densities in particular)

- Database information may not be recognized in the newer version of the program because older databases (.DBF files) were written in dBase II format and need to be converted to a dBase III or dBase IV format file
- Newer ASCII text files used as databases are handled differently so they will need to be reanalyzed and the image variable references will need to be changed

Importing a Label File

The **Insert Design File** command allows you to merge an existing label design into the current label design. This option is often used to bring older label design files into a newer version of the program.

To import an existing design file into your current label design


1. On the **Insert** menu, click **Design File**.
2. Select the name of the design file to be merged and click **OK**.

The selected design file will be merged into the current design. (Only images are merged, any label properties are ignored).

Saving a Label

The **Save** command saves changes made to the current label. If the label has not been saved, the program displays the **Save As** dialog box for you to select a file location and name the label.

To save a new label design

1. On the **File** menu, click **Save**. Alternatively, you can click **Save**  on the Standard Toolbar.
2. On the **Save As** dialog box, browse to the folder where the file will be saved.
3. Enter a file name for the label design.
4. Click **Save**.

Note: This program provides full read/write compatibility with label design files (QDF) created in previous versions of the software (sometimes referred to as "backwards compatibility"). To save your label in a format that can be read by older versions of the program, select the appropriate file version from the **Save as Type** drop-down list located on the **Save As** dialog box.

For single-label layouts (labels Across and Down both set to 1 on the Multiple tab), you also have the option to save your label format as a label background...

Label Properties

Label Properties

The **Label Properties** dialog box allows you to define the page setup for your label. This includes defining the page size, margins, labels per page, default printer, and a description of the label. You can also use the **Label Properties** dialog box to access and modify images and variables associated with the label.

Note: Depending on the edition of the software you are using, some of the Label Properties tabs listed below may not be available in your software. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The **Label Properties** dialog box includes the following tabs:

General
Printer
Page Size
Margins
Multiple
Database
Counter
Keyboard
Duplicates
Job Modifier
Security
Write Data
AutoPrint
RFID Tag

To access the Label Properties tabs

- On the **File** menu, click **Label Properties**

-OR-

- Click the **Label Properties**  button on the Standard Toolbar

-OR-

- Double-click anywhere within the white space (blank area) of the label design window

General tab

To access this tab: On the **File** menu, click **Label Properties**. Then click the **General** tab.

Description: Allows you to assign a description to your label (optional). The label description will appear on the **File** menu > **Open** dialog box if you have selected the **Enable Description** check box on this dialog box. It may be particularly useful to display a label description here if you have many similar labels to choose from when opening a label.

Printer tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Printer** tab.*

The **Printer** tab allows you to select and set up the printer to be used with the current label design file.

Default Printer: The printer to which this label normally prints. Your labels will automatically print to the default printer unless you select a different specific printer.

If you plan to print to a different printer only on occasion, keep your default printer the same and select a specific printer for this label design. If you plan to print most of your labels to a printer other than what is shown as the default printer, you will want to change your default printer.

Specific Printer: Allows you to select a different printer (other than the default printer) to print the label. If you assign a specific printer and save the label, the label will use this printer until you change it back to the default printer and save the label.

Add: Allows you to install a printer driver. If you would like to select a printer other than those appearing in the Specific Printer drop-list, you will need to install it by clicking the **Add** button and following the Add Printer Wizard steps.

Setup: Allows you to set printer specific options such as stock type, speed, etc. The options that appear will vary depending on the printer selected.

Note: Although your label design is not tied to a certain type of printer, slight changes may occur in your design if you switch printers.

Page Size tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Page Size** tab.*

The **Page Size** tab includes the following label setup options.

Height and Width: The Height and Width settings determine the LABEL height and width if you are printing to a thermal printer. These settings determine the PAGE height and width if you are printing to a laser, ink-jet or dot matrix printer. (If you are printing multiple labels across a page, the width is measured from the left edge of the left-most label to the right edge of the right-most label.)

Note: The units of measure (inches or centimeters) can be changed from the **Tools** menu > **Setup** > View Settings tab > **Ruler Markings** setting. The **Ruler Markings** setting determines the units of measure used throughout the program.

Form: If desired, you can simplify the label design process by selecting a pre-formatted form (sometimes called a "template"). When you use a form, the page size, margins, label size and number of labels per page are all set for you automatically. If you do not know the form name or number that corresponds with the label layout you are looking for, you can click on any label form in the list and a preview of the label layout will appear in the **Sample** box. Form options include:

- **None:** The label layout will be defined by the settings on the Label Properties tabs; a predefined form will not be used.
- **[Form Manufacturers]:** Selecting a form manufacturer (e.g., Avery, Brady, etc.) in the **Form** drop-down list will display a list of all available forms by that manufacturer. There are many different predefined label forms to choose from, including labels for everything from ID badges to shipping labels to inventory shelf tags. (Note: The majority of the [Form Manufacturer] forms available are for layouts with multiple labels across and down on a page.)

- **Custom:** If desired, you can save your own label layout as a custom form. Once saved, you can then access your forms by selecting **Custom** in the **Form** drop-down list to display a list of all custom form layouts you have saved.
- **Label Background:** For single-label layouts (labels Across and Down both set to 1 on the Multiple tab), you have the option of designing your label using a label background. A label background serves as a "base layer" outline that you can use to make your label design process easier. A label background is displayed on the design screen for design purposes only and will not print. You can also save your own label format as a label background.

Note: By default, the Label Background label setup values (label size, page size, margins, etc.) are supplied with the label format and are disabled. Label Background labels usually designate a very specific label format, and therefore, changing the label setup values is not recommended, as this may distort the background image. If you do need to modify the label setup values on the Page Size, Margins, and Multiple tabs, you can click the **Allow Resize** check box to enable these settings.

Save As: If you have created a label layout with setup values you plan to use often, you can save that label setup as your own customized form. Once you have specified all label setup settings, click the **Save As** form button. The next time you create a new label, you can select the name of the form you saved and the label layout will be set up for you automatically.

Remove: Deletes the displayed format from the list of forms.

Sample: Displays an example of the label format as it is currently specified and updates as you select different settings on this tab.

Margins tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Margins** tab.*

The **Margins** tab includes the following label setup options.

Left, Right, Top and Bottom: The size of the margin given in the currently displayed units of measure.

Note: The units of measure (inches or centimeters) can be changed from the **Tools** menu > **Setup** > View Settings tab > **Ruler Markings** setting. The **Ruler Markings** setting determines the units of measure used throughout the program.

Form: If desired, you can simplify the label design process by selecting a pre-formatted form (sometimes called a "template"). When you use a form, the page size, margins, label size and number of labels per page are all set for you automatically. If you do not know the form name or number that corresponds with the label layout you are looking for, you can click on any label form in the list and a preview of the label layout will appear in the **Sample** box. Form options include:

- **None:** The label layout will be defined by the settings on the Label Properties tabs; a predefined form will not be used.
- **[Form Manufacturers]:** Selecting a form manufacturer (e.g., Avery, Brady, etc.) in the **Form** drop-down list will display a list of all available forms by that manufacturer. There are many different predefined label forms to choose from, including labels for everything from ID badges to shipping labels to inventory shelf tags. (Note: The majority of the [Form Manufacturer] forms available are for layouts with multiple labels across and down on a page.)
- **Custom:** If desired, you can save your own label layout as a custom form. Once saved, you can then access your forms by selecting **Custom** in the **Form** drop-down list to display a list of all custom form layouts you have saved.

- **Label Background:** For single-label layouts (labels Across and Down both set to 1 on the Multiple tab), you have the option of designing your label using a label background. A label background serves as a "base layer" outline that you can use to make your label design process easier. A label background is displayed on the design screen for design purposes only and will not print. You can also save your own label format as a label background.

Note: By default, the Label Background label setup values (label size, page size, margins, etc.) are supplied with the label format and are disabled. Label Background labels usually designate a very specific label format, and therefore, changing the label setup values is not recommended, as this may distort the background image. If you do need to modify the label setup values on the Page Size, Margins, and Multiple tabs, you can click the **Allow Resize** check box to enable these settings.

Save As: If you have created a label layout with setup values you plan to use often, you can save that label setup as your own customized form. Once you have specified all label setup settings, click the **Save As** form button. The next time you create a new label, you can select the name of the form you saved and the label layout will be set up for you automatically.

Remove: Deletes the displayed format from the list of forms.

Sample: Displays an example of the label format as it is currently specified and updates as you select different settings on this tab.

Multiple tab

To access this tab: On the **File** menu, click **Label Properties**. Then click the **Multiple** tab.

The **Multiple** tab includes the following label setup options for printing multiple labels per page.

Quantity: Enter values for the **Across** and **Down** settings to set the number of labels to print across and down on each page of labels when printing multiple labels per page.

Label Size: Enter values for the **Width** and **Height** settings to set the size of an individual label.

Note: The units of measure (inches or centimeters) can be changed from the **Tools** menu > **Setup** > View Settings tab > **Ruler Markings** setting. The **Ruler Markings** setting determines the units of measure used throughout the program.

Start at: (Not available in all editions of the software) These settings determine the corner of the page from which to start printing (top-left, top-right, bottom-left or bottom-right) and the direction to move on the page when printing the labels. *More...*

The start at point and direction you specify affect how the labels are numbered on the page. For example, if you have three labels across and you start at the top-left and go right, then the top-left label will be label 1 and the top-right label will be label 3. Conversely, if you have three labels across and three down and you start at the top-right and go down, the top-right label will be label 1 and the bottom-right label will be label 3.

You can also specify the exact label at which to start printing by setting the **Start On Label** option, available on the **Print** dialog box when you are printing multiple labels per page.

Stack Printing: (This is a **PowerPro** edition feature.) When printing multiple labels per page, the standard printing order is to print labels from left to right and then top to bottom to fill the page. With **Stack Printing** enabled, the printing order is changed so that when printing is complete, you can cut between labels on a stack of printed pages and have a resulting "stack of labels" that is in order and ready to use. *More...*

The stacked printing functionality is best illustrated using an example of an incrementing counter value being printed on a label. Typically, when printing multiple labels per page the counter value

would increment on each label as it is printed across the page. When the page is full, the next counter value begins on the following page, and this continues to the end of the print job.

With **Stack Printing** enabled, this standard label printing order is altered to count based on the labels in a "stack" instead of the number across the page. This results in the counter value 1 printing on the first label like normal, but counter value 2 is printed on page 2 (instead of page 1 as it would with a standard print order). The counter value 2 will print in the same location (e.g., top left corner) on page 2 as counter value 1 is printed on page 1. The height of the stack is determined based on the number of labels per page and the number of labels requested.

Page	Standard (Non-Stack)	Stack
1	1, 2, 3	1, 4, 7
2	4, 5, 6	2, 5, 8
3	7, 8, 9	3, 6, 9

When printing is complete, you can cut between labels on a stack of printed pages and have a resulting "stack of labels" with the counter values incrementing in order from top to bottom in the stack.

Form: If desired, you can simplify the label design process by selecting a pre-formatted form (sometimes called a "template"). When you use a form, the page size, margins, label size and number of labels per page are all set for you automatically. If you do not know the form name or number that corresponds with the label layout you are looking for, you can click on any label form in the list and a preview of the label layout will appear in the **Sample** box. Form options include:

- **None:** The label layout will be defined by the settings on the Label Properties tabs; a predefined form will not be used.
- **[Form Manufacturers]:** Selecting a form manufacturer (e.g., Avery, Brady, etc.) in the **Form** drop-down list will display a list of all available forms by that manufacturer. There are many different predefined label forms to choose from, including labels for everything from ID badges to shipping labels to inventory shelf tags. (Note: The majority of the [Form Manufacturer] forms available are for layouts with multiple labels across and down on a page.)
- **Custom:** If desired, you can save your own label layout as a custom form. Once saved, you can then access your forms by selecting **Custom** in the **Form** drop-down list to display a list of all custom form layouts you have saved.
- **Label Background:** For single-label layouts (labels Across and Down both set to 1 on this tab), you have the option of designing your label using a label background. A label background serves as a "base layer" outline that you can use to make your label design process easier. A label background is displayed on the design screen for design purposes only and will not print. You can also save your own label format as a label background.

Note: By default, the Label Background label setup values (label size, page size, margins, etc.) are supplied with the label format and are disabled. Label Background labels usually designate a very specific label format, and therefore, changing the label setup values is not recommended, as this may distort the background image. If you do need to modify the label setup values on the Page Size, Margins, and Multiple tabs, you can click the **Allow Resize** check box to enable these settings.

Save As: If you have created a label layout with setup values you plan to use often, you can save that label setup as your own customized form. Once you have specified all label setup settings, click the **Save**

As form button. The next time you create a new label, you can select the name of the form you saved and the label layout will be set up for you automatically.

Remove: Deletes the displayed format from the list of forms.

Sample: Displays an example of the label format as it is currently specified and updates as you select different settings on this tab.

Database tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Database** tab.*

The **Database** tab of the **Label Properties** dialog box displays for each attached database the name of the database, its location, and the number of fields and records in the database. (Note: In the QuickDraw edition of the software, you can attach only one database per label.)

The **Database** tab includes the following options.

Add: Launches the Add Database Wizard. Use this wizard to attach a database to the label.

Remove: Displays a prompt asking you to confirm the deletion of the database that is highlighted in the list. Click **Yes** to detach the database from the label. (Note: If text or bar code images were created using the database file as the data origin, then those images will display with errors on the design screen.)

Properties: Displays the **Database Properties** dialog box, which includes the following tabs:

General tab - Allows you to change the name and description used to identify this database file within the label design program.

Fields tab - Allows you to access (and modify) the properties of fields in the selected database. To view or change the properties for a given field, select the field and click the **Properties** button on the **Fields** tab. The **Field Properties** dialog box that displays allows you to change the sample record that displays while you are designing the label, as well as change the minimum and maximum field length settings.

Access tab - Allows you to set up a field in the database as the key field or change/remove any key fields you have already set up for the selected database.

Reanalyze: Analyzes the selected database for the total number of records and for the field property information. You may need to reanalyze your database if the location, filename, field structure or number of fields has changed.

Counter Tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Counter** tab.*

The **Counter** tab of the **Label Properties** dialog box displays a list of the counters that have been set up for your label. Using the buttons on this tab you can add counters, remove counters, and view/change the properties of a counter.

The **Counter** tab includes the following options:

Add: Displays the **Counter** tab of the **Variable Properties** dialog box. Use this tab to add a counter to the label.

Remove: Displays a prompt asking you to confirm the deletion of the counter that is highlighted in the list. Click **Yes** to delete the counter from the label.

Properties: Displays the **Variable Properties** dialog box, which allows you to modify the selected counter variable using the following tabs:

General tab - Allows you to change the name and description used to identify the selected counter variable within the label design program.

Counter tab - Allows you to change the properties of the selected counter variable.

Keyboard tab - Allows you to set up the selected counter variable as a "verified counter" value, wherein the counter start value is entered at a keyboard prompt at print time.

Keyboard tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Keyboard** tab.*

The **Keyboard** tab of the **Label Properties** dialog box displays a list of the keyboard input prompts associated with the label. The prompts appear in the order they are asked when the operator prints the label.

The **Keyboard** tab includes the following options:

Add: Displays the **Keyboard** tab of the **Variable Properties** dialog box. Use this tab to add a keyboard input variable to the label.



Remove: Displays a prompt asking you to confirm the deletion of the keyboard input variable that is highlighted in the list. Click **Yes** to delete the prompt from the label.

Properties: Displays the **Variable Properties** dialog box, which allows you to modify the selected keyboard input variable using the following tabs:

General tab - Allows you to change the name and description used to identify the selected keyboard input variable within the label design program.

Keyboard tab - Allows you to change the properties of the selected keyboard input variable.

Counter tab - Allows you to set up the selected keyboard input variable as a "verified counter", wherein a counter start value is entered at a keyboard prompt at print time.

Tip: You can use the  and  buttons on this tab to change the order of the keyboard input prompts.

Duplicates tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Duplicates** tab.*

The **Duplicates** tab allows you to define the number of duplicate labels to print (the quantity to print). The number of duplicates will be in effect each time you print your label. The duplicate value (number of duplicate labels to print) can be set up as a constant or variable value using one of the available origins. Depending on the origin selected, different properties appear on this tab.

Set up the number of duplicates with one of these origins:

- **Constant:** The number of duplicates is entered here (on the **Duplicates** tab), and that value will stay the same for every print job. The default is 1, meaning only one label will be printed.

- **Database:** The number of duplicates is extracted from a field in a database.
- **Keyboard Input:** The operator is prompted for the number of duplicates at print time.
- **Combination:** The number of duplicates is the result of an expression, which can be written using math, string or logic functions applied to keyboard, counter or database variables using the Combination origin. (Note: This origin is not available in all editions of the program.)
- **Copy:** Copies an existing variable or image and uses its data origin to determine the number of duplicates to print.

Note: The duplicate value includes the original. For example, set the duplicate value to 2 if you want to print an original and one copy.

Job Modifier tab

To access this tab: On the **File** menu, click **Label Properties**. Then click the **Job Modifier** tab.

The Job Modifier tab includes options used to add instructions to a Job Modifier script.

Enable Job Modifier: Click this check box to enable the Job Modifier functionality for the current label design. Then select a .jms file from the drop-down list of existing scripts and click **OK** to apply the selected Job Modifier file to the current label design.

New: Opens the Job Modifier dialog box, which allows you to create a new script file.

Edit: Allows you to edit the selected script file and, if desired, save the script to a new or the same file name.

Delete: Deletes the currently selected script file from the list and from its directory location.

Security tab

To access this tab: On the **File** menu, click **Label Properties**. Then click the **Security** tab.

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The **Security** tab options allow you to place password protection on the currently open label design file.

Enable Design Security: If password security is enabled, the user will be prompted to enter a password upon opening the label. If the user does not enter the correct password, the user will not be allowed to modify the label in any way.

Require Design Password to Print: Select this option if you want to require users to enter a password in order to print. (The user will be prompted to enter a password upon opening the label.)

Note: A password will also be required to insert a password protected label design into the currently open label (using the **Insert** menu **Design File** option).

Write Data tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **Write Data** tab.*

Enable Writing Image Data to a File: Allows you to select a file and set up preferences for saving data associated with the objects on your label to a text file. Image data includes the name of the objects on the label, and the value of each object. The value may be populated by a constant or variable origin.

File Name: Displays the **Open** dialog box for you to browse to and select (or name) the file to which you want to write data for this label. Once you select a file, its path appears in the File Name text box.
 Note: The text file does not have to exist but you must designate a path name and file name. If the file does not exist, it is created at print time. (You can read these data files using a simple text editor, such as NotePad, or the label design software's Log Viewer tool.)

Append to existing file: Adds the most recent print data to the file without deleting existing data that was generated from previous print jobs. If you clear this check box, then when you print this label, the data file is overwritten with the current print information.

Constant data too: Adds the name and value of objects that are populated by a constant origin. If you clear this check box, then data for objects that have a constant origin are not written to the text file.

Write date/time to the file: Adds to the text file the date and time that the label was printed. You will see both the field name ("Date" and "Time") and the value (in the currently selected time format). This data is useful for tracking print activity. If you clear this check box, the date and time will not appear in the text file.

Write the user name to the file if used: If you are required to enter a user name and password when you launch the label design software, then your user name is written to the text file for the label. If you clear this check box, the user name is not written to the text file.

Enable Writing Variable Data to a File: Allows you to select a file and set up preferences for saving the variable data associated with your label to a text file. Variable data includes the names of the variables (not the objects) used in the label, and the value of each. All the variables are listed separately. For combination origins, each variable is written to the file, not just the value that is the result of the expression.

Also, all variables are included regardless of whether they are used by an object. For example, if you use a field from an attached database, the entire record appears in the data file, not just the field used in the label.

AutoPrint tab

*To access this tab: On the **File** menu, click **Label Properties**. Then click the **AutoPrint** tab.*

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The AutoPrint feature enables you to print labels based on data that is constantly changing. It allows the automation of print jobs where data files are sent from a mainframe or an accounting or manufacturing process. AutoPrint seeks the data when available, prints, and then deletes the current file in anticipation of the next batch of data to come.

Enable AutoPrint: Click this check box to enable AutoPrint functionality for the selected database file. Note that the AutoPrint feature may only be used with one dBase or ASCII file that has been set up with sequential access. The data file you select must be a database that can be deleted as this file WILL BE DELETED after all records in that database are printed.

Advanced: Click the **Advanced** button to set the polling frequency and/or set the amount of time you will allow AutoPrint to sit idle before shutting down.

RFID Tag tab

To access this tab: On the **File** menu, click **Label Properties**. Then click the **RFID Tag** tab (available only if you are using the PowerPro edition of the label design software AND you have installed and selected a printer driver that supports printing to RFID tags).

This is a **PowerPro** edition feature.

The **RFID Tag** tab allows you to specify the type of RFID tag to use, and allows you to set the desired options for each block on the tag.

Type: Allows you to specify the type of RFID tag to use. The settings appearing on this tab will vary depending on the tag type and printer selected.

Properties button: Displays the [RFID Tag] Properties dialog box, which allows you to change the properties for the selected tag type. The properties appearing on the **[RFID Tag] Properties** dialog box will vary depending on the tag type and printer selected.

Block Options

The following options appear as column headers in the blocks table (each row in the table represents a block on the tag) on the **RFID Tag** tab. These settings allow you to set the desired options and data source for each block on the tag:

#: The block number.

Type: The type of data contained in the block.

Value: If you want to use fixed data, type a fixed value to be written to the block (only allowed when **Access** is set to **Write** mode).

If you are using an existing object to populate the block (selected under the **Data source** setting), the specified data will appear in this cell. (Note: If the selected object contains more data than can fit in this block, the **Row Replication Range** dialog box will appear, requiring you to set the range of blocks over which the selected data should be distributed.)

A circle image is used to indicate whether the block is empty, partially used, or full:



block is empty; contains no data



block is partially used; contains some data



block is full; no additional data can be added to this block

Access: Sets the block access to **Read** or **Write** mode. Note: Read ability is not supported on all printers; Write ability is not supported with all tag types.

Data source: Allows you to select an existing object and use its data to populate the block. If the data field contains more data than can fit in this block, the **Row Replication Range** dialog box will appear when you click off the **Data source** cell. This dialog box allows you to set the range of blocks over which the selected data will be distributed. A default **Row Range** value will be set automatically based on the amount of data in the selected object; simply click the **Validate** button to accept this range.

You can also manually set the number of blocks occupied by the selected data by right-clicking the cell and selecting **Replicate Row Attribute**. Enter a **Row range** value to set the range of blocks over which the selected data will be distributed, and then click the **Validate** button.

Tip: To quickly set a range of rows to all have the same attribute, you can do this using the **Replicate Row Attribute** function. For example, to set a range of 5 rows to **Locked**, set row 1 of 5 to be locked, then right-click on the locked cell and select **Replicate Row Attribute**. Set the **Row range** to 4 and then select the **Column "Lock" only** checkbox. Click the **Validate** button.

Format: Choose the desired format to use for encoding data in the block.

Lock: Click the icon to lock the block permanently, meaning that once the data is written to the tag, it can no longer be modified or updated. Note: If you attempt to encode a used tag with a locked block, the printer will void the tag.

Data Origins

About Data Origins

Note: Depending on the edition of the software you are using, some of the data origins listed below may not be available in your software. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

A data origin (or data source) must be specified for all image data and variable data used to create text, paragraphs, and bar codes. The data origin is selected from the image's **Data** tab.

These are the origins from which you can select:

Constant: The information does not change from label to label.

Database: The information comes from a data file record and so it changes from label to label (variable data).

Keyboard Input: The operator is prompted for the information at print time, so different information could be entered for each label (variable data).

Counter: The information increments (counts up) or decrements (counts down) for each label, so the value changes from label to label (variable data).

Copy: The information is copied from another variable image.

Combination: Allows you to build an image by using other images already placed on a label or by creating additional variable data pieces.

Date: Stamps the print date on the label (or a different date, depending on the date format you specify).

Time: Stamps the print time on the label (or a different time, depending on the time format you specify).

The "Constant" Data Origin

Data with a Constant data origin remains the same on every label. For example, you would want to use the Constant data origin if you are creating a basic company label containing both a Ship From Address (your company's address) and a Ship To Address. In this case, your company's address should be given a Constant data origin, because it's going to remain the same on every label printed. (The Ship To Address, however, would not work well with a Constant data origin, because you would have to delete it and add a new address for each label.)

Constant is the default data origin.

To set up an image with a Constant origin

1. Add a text or bar code image by clicking on the appropriate button at the left side of the screen (or select one of these images from the **Insert** menu).
2. Click on the **Data** tab and then select **Constant** from the **Origin** drop-down list.
3. Enter the image data in the **Text** box provided on the **Data** tab.

The "Database" Data Origin

The Database data origin allows you to create an image (text, paragraph, bar code, or picture) that is populated from a field in a database. You simply need to specify the database file to read and the field from which to print.

To add an image with a Database origin

1. Add a text, paragraph, bar code or picture image by clicking on the appropriate button at the left side of the screen (or select one of these images from the **Insert** menu).
2. Click on the **Data** tab, and then select **Database** from the **Origin** drop-down list.
3. Click the **Add** button to start the Add Database Wizard, and follow the screens through the process of adding a database.
4. When you exit the Add Database Wizard, you will return to the **Properties** dialog box for the image type that you are adding, with a record from the database displayed in the **Fields** box.
5. In the **Fields** box, select the field you want to place on the label.
6. At this point, you can click the Font, Color, Position, or General tabs to format the database image.
7. Click **OK** or **Place** to add the database image to your label.

Note: You may need to use advanced database setup if you need to select an OLE DB provider, specify an ODBC data source, use SQL statements, or set up a username and password on a database with security. Some text files and FoxPro/dBase files may also require advanced setup to read data correctly if the fields are truncated.

The "Keyboard Input" Data Origin

The Keyboard Input data origin allows you to prompt the operator (person printing the labels) to key in information at print time. For example, if your company ships six boxes of product per day, and you want to print shipping labels for each box. The boxes go to different stores with various addresses, but each one can use the same basic label design. Can the label design stay the same and the data change? Yes, by setting up the store address variable with a Keyboard Input data origin.

To set up an image with a Keyboard Input origin

1. Add a text or bar code image by clicking on the appropriate button at the left side of the screen (or select one of these images from the **Insert** menu).
2. Click on the **Data** tab and then select **Keyboard Input** from the **Origin** drop-down list.
3. Set the Keyboard properties now appearing on the **Data** tab.
4. When you have finished choosing properties for the Keyboard Input image, click the **OK** button to have the image placed at the location you have specified in the **Position** tab, or click the **Place** button to place the image on the label using the mouse.

The "Counter" Data Origin

The Counter data origin allows you to set up a counter field for which you set a start value and an amount to increment or decrement as labels are printed.

You can specify that the count be unique for each set of labels, or that the count occur when labels are duplicated. Incrementing and decrementing on duplicate labels gives you the advantage of changing the Counter value while all Keyboard Input and data file values remain the same.

The Counter data origin is used to create serial numbers, shelf numbers, inventory numbers, and other incrementing values commonly used on labels.

To set up an image with a Counter origin

1. Add a text or bar code image by clicking on the appropriate button at the left side of the screen (or select one of these images from the **Insert** menu).
2. Click on the **Data** tab and then select **Counter** from the **Origin** drop-down list.
3. Set the Counter properties now appearing on the **Data** tab.
4. When you have finished choosing properties for the Counter, click the **OK** button to have the image placed at the location you have specified in the **Position** tab, or click the **Place** button to place the image on the label using the mouse.

The "Copy" Data Origin

The Copy data origin is useful if you want to use identical pieces of information in more than one place on a label. With a Copy origin, several pieces of text or bar code data can use the same variable or image data. Simply select an existing object to copy, and you'll have an exact duplicate of that value to use elsewhere on the label.

To set up an image with a Copy origin

1. Add a text or bar code image by clicking on the appropriate button at the left side of the screen (or select one of these images from the **Insert** menu).
2. Click on the **Data** tab and then select **Copy** from the **Origin** drop-down list.
3. Select either **Variables** or **Images**, depending the object you want to copy.
4. From the list that appears, select the object to copy.

The "Combination" Data Origin

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Some editions of the program feature a Combination data origin that allows you to set up text or bar code images in a variety of ways. The Combination origin allows you to create one image by combining several variable images (like Keyboard, Counter or Database origin images) from the label design. You can also set up calculations and use functions to formulate data from those variable images.

Combination images are based on "expressions" which are entered on the Combination properties screen.

To combine several images into one Combination image using the Combination Wizard

1. Specify **Combination** as the image origin type from the Data tab.
2. Click the **Use Wizard** button on this screen to let the Combination Wizard guide you through the setup. The Combination Wizard steps you through the process of adding a combined image to your label; it helps you build an expression. As long as the **Add another data origin to combined image** option is checked, you can select and set up data origins to add to the expression.
3. When you are finished building your expression, de-select the **Add another...** option to gray out all choices and click **Next** to view your completed expression. If you decide at this point that you

want to change any part of the expression, click the **Back** button located at the bottom of the dialog to go back and make changes.

Note: The Combination Wizard can help you combine other images into one Combination image, but it does not allow you to add functions to your expression.

To use bar code, string, math or logic functions in your Combination expression, you can either use the **Other** button on the Combination properties screen or you can type the functions directly into the **Expression** box.

The "Date" Data Origin

The Date data origin allows you to print the date on the label. Days may be added to or subtracted from the current date for uses such as an expiration date for perishable goods, or for an estimated start date. Simply choose a date setting from one of the commonly used formats listed in the **Format** drop-down list.

In some editions of the program, you can also select any commonly used format and then overwrite (or customize) the format with your chosen settings based on the table of options below.

Date Setting	Output	Description
D\$	SUNDAY	uppercase day of week (DOW)
d\$	Sunday	upper/lowercase DOW
DD\$	SU	2 char uppercase DOW
dd\$	Su	2 char upper/lowercase DOW (2 to 30 chars available)
DDDDDDDDDD\$	SUNDAY	11 char DOW (5 trailing spaces)
dddddddddd\$	Sunday	11 char DOW (5 trailing spaces)
D and d	1	date of month (non lead zero)
DD	01	2 char date of month (lead zero)
dd	1	2 char date of month (lead space)
DDD	224	days from begin of year (lead zero); also known as the Julian Date
ddd	224	days from begin of year (lead space); also known as the Julian Date
DDDDD and ddddd	33482	days from 1/1/1900 (5 to 9 chars available)

W and w	1	day of week (Sun=1, Sat=7)
WW	34	weeks from begin of year (lead zero)
ww	34	weeks from begin of year (lead space)
WWW and www	783	weeks from 1/1/1900 (last 3 digits)
WWWW and wwww	4783	weeks from 1/1/1900 (4 to 9 chars available)
WWWWWWWWW	000004783	weeks from 1/1/1900 (lead zero)
wwwwwwwww	4783	weeks from 1/1/1900 (lead space)
M\$	SEPTEMBER	uppercase month
m\$	September	upper/lowercase month
MM\$	SE	2 char uppercase month
mm\$	Se	2 char upper/lowercase month (2 to 30 chars available)
MMMMMMMMMM\$	SEPTEMBER	11 char month (2 trailing spaces)
mmmmmmmmmm\$	September	11 char month (2 trailing spaces)
M and m	9	month digit (non lead zero)
MM	09	2 char month digit (lead zero)
mm	9	2 char month digit (lead space)
MMM	009	3 char month digit (lead zero)
mmm	9	3 char month digit (lead space)
MMMM and mmmm	1101	months since 1/1/1900
MMMMM	01101	5 char months from 1900 (lead zero)
mmmmm	1101	5 char months from 1900 (lead space)

		(5 to 9 chars available)
MMMMMMMMMM	000001101	9 char months from 1900 (lead zero)
mmmmmmmmm	1101	9 char months from 1900 (lead space)
YY and yy	91	2 digit year
Y and y	1991	full year
YYY and yyy	991	last 3 digits of year (3 to 9 chars available)
YYYYYYYYY	000001991	full year (leading zero)
yyyyyyyyy	1991	full year (leading space)

The "Time" Data Origin

The Time data origin allows you to print the time of printing on the label. Simply choose a time setting from one of the commonly used formats listed in the **Format** drop-down list.


In some editions of the program, you can also select any commonly used format and then overwrite (or customize) the format with your chosen settings based on the table of options below.

Time Setting	Output	Description
H and h	3	Hour (12 hour non-lead zero)
HH	03	hour (12 hour lead zero)
hh	3	hour (12 hour lead space)
X and x	15	hour (24 hour non-lead zero)
XX	15	hour (24 hour lead zero)
xx	15	hour (24 hour lead space)
M and m	45	minutes (non-lead zero)
MM	45	minutes (lead zero)
mm	45	minutes (lead space)

S and s	9	seconds (non-lead zero)
SS	09	seconds (lead zero)
ss	9	seconds (lead space)
AA\$	PM	2 char AM/PM signifier
aa\$	pm	2 char am/pm signifier
A\$	P	1 char AM/PM signifier
a\$	p	1 char am/pm signifier

Text & Paragraphs

Adding Text

1. Do one of the following:
 - On the **Insert** menu, click **Text**.
 - OR-
 - Click **Add Text**  on the Add Image Toolbar.
3. From the **Origin** drop-down list, select the data origin appropriate for your text. Depending on the origin selected, different properties will appear.
4. If desired, change other text properties such as font, color, and position.
5. When you have finished setting properties for your text, you can click **OK** to have the text placed at the position you have specified or click **Place** to place the text using the mouse.

Adding Reversed Text

1. Add a text image to your label.
2. On the Text Properties **Color** tab, select black for the background color and white for the foreground color.

Note: On some printers a background (or filled rectangle) must also be added to print reversed text. Simply add a rectangle and check the **Filled** option. Then proceed to add the reverse image.

Text Properties

This program gives you a wide variety of options for text creation, formatting, and placement. These options are set using the following **Text Properties** tabs:

Data tab

Font tab

Color tab

Position tab

General tab

To access the Text Properties tabs

- For an existing text image, double-click on the image.
- For a new text image, do one of the following:
 - On the **Insert** menu, click **Text**.

-OR-

- Click **Add Text**  on the Add Image Toolbar.

Adding a Paragraph

1. Do one of the following:

- On the **Insert** menu, click **Paragraph**.

-OR-

- Click **Add Paragraph**  on the Add Image Toolbar.

3. From the **Origin** drop-down list, select the data origin appropriate for your text. Depending on the origin selected, different properties will appear.
4. If desired, change other paragraph properties such as font, color, position and text wrapping.
5. When you have finished choosing properties for your paragraph, you can click **OK** to have the paragraph placed at the position you have specified or click **Place** to place the paragraph using the mouse.

Note: If there are too many lines of text to fit in the paragraph area you defined, the lines outside the area are not printed. To adjust the paragraph so all of your lines of text fit, you can reduce the font size or increase the rectangular area size by clicking on an image handle and dragging it to make the area larger.

Paragraph Properties

This program gives you a wide variety of options for paragraph creation, formatting, and placement. These options are set using the following **Paragraph Properties** tabs:

Data tab

Font tab

Color tab

Position tab

General tab

PowerWrap tab

To access the Paragraph Properties tabs

- For an existing paragraph image, double-click on the image.
- For a new paragraph, do one of the following:
 - On the **Insert** menu, click **Paragraph**.

-OR-

- Click **Add Paragraph**  on the Add Image Toolbar.

About the RTF Editor

The program's RTF (Rich Text Format) Editor allows you to create, edit and save RTF files within the program. The RTF Editor allows you to select Windows fonts and/or thermal printer fonts (only attributes supported by the given font will be allowed). You can also format text using the Bold, Underline, Italic, Superscript, Subscript, Font, Text Color, and Background Color options available in the RTF Editor's Font menu. This powerful formatting ability is well-suited for nutrition labels, food product labels, chemical and safety warning labels, etc.

Note: If desired, you can cut, copy and paste data between the RTF Editor and other Windows applications. (The format of the data is dependent on the abilities of the receiving Windows application and how it accepts data from the clipboard.) This ability can save you significant time if, for example, your label text already exists in a Microsoft Word document. To add that text to your label, save the text as an .RTF file in Word and then you can open and edit the text in the RTF Editor.

To access the RTF Editor

- On the **Tools** menu, click **RTF Editor**.

Bar Codes

Bar Code Types

Note: Depending on the edition of the software you are using, some bar code types may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The type of bar code you choose depends on the kind of information you want encoded, the printing space available, the degree of readability needed, and the scanning equipment you use. If you are designing compliance labels, the label specification should indicate the type of bar code required for the application.

Note: Not all printers support all bar code types. This program will print all bar codes no matter the printer type, however if a printer does not support a particular bar code that bar code will be sent to the printer as a graphic (which may significantly slow down printing).

The following tables show the available bar codes and a summary of the information each can encode.

† Does not include check digit

†† U=Uppercase, L=Lowercase, D=Digits, C=Control Characters

††† Based on a .010 inch print head dot (100 dpi) and no ink spread

Linear Bar Code Type	# of Characters Encoded †	Encodes ††	Elements per Character	Characters per Inch †††
Australia Post 4-State	10-25	U-L-D-C	2-3	6
Codabar	2 to 50	D	11	9
Code 39 (3 of 9)	2 to 50	U-D	15	6.7
Extended 39	2 to 50	U-L-D-C	30	3.3
Code 93	2 to 50	U-D	9	11
Extended 93	2 to 50	U-L-D-C	18	5.6
Code 128 Auto	2 to 50	U-L-D-C	11	9
Code 128 A	2 to 50	U-D-C	11	9
Code 128 B	2 to 50	U-L-D	11	9
Code 128 C	2 to 50	D	5.5	18

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EAN/JAN-8	7, 9 or 12	D	7	14
EAN/JAN-13	12, 14 or 17	D	7	14
EAN/UCC-8	7, 9 or 12	D	7	14
EAN/UCC-13	12, 14 or 17	D	7	14
EAN/UCC-14	13	D	5.5	18
GS1-128	(variable depending on AI)	D	5.5	18
GS1-128 Coupon Code - EAN-13	EAN-13: 12	D	EAN-13: 7	EAN-13: 14
	GS1-128: 6 to 36	D	GS1-128: 5.5	GS1-128: 18
GS1-128 Coupon Code - UPC-A	UPC-A: 11	D	UPC-A: 7	UPC-A: 14
	GS1-128: 6 to 36	D	GS1-128: 5.5	GS1-128: 18
HIBC	2 to 50	U-D	15	6.7
Intelligent Mail	20-31	D	2.1-3.25	20-24 bars per inch
Interleaved 2 of 5	2 to 50	D	9	11
ISBN-13	17	D	7	14
ISBT-128	(variable depending on Data Structure)	U-L-D-C	11	9
ITF-14	13	D	9	11
MSI Plessey	2 to 50	D	12	8
PLANET Code	11	D	5	4.2
UCC-12	11	D	7	14
UCC/EAN-128	(variable depending on AI)	D	5.5	18
UCC/EAN-128 Coupon Code - EAN-13	EAN-13: 12	D	EAN-13: 7	EAN-13: 14
	UCC-128: 6 to 36	D	UCC-128: 5.5	UCC-128: 18
UCC/EAN-128 Coupon Code -	UPC-A: 11	D	UPC-A: 7	UPC-A: 14

UPC-A	UCC-128: 6 to 36	D	UCC-128: 5.5	UCC-128: 18
UPC-A	11, 13 or 16	D	7	14
UPC-E1 (6 digit)	6, 8 or 11	D	4	25
UPC-E (11 digit)	11, 13 or 16	D	4	25
UPC-E0 (6 digit)	6, 8 or 11	D	4	25
Zip+4 POSTNET	5, 9 or 11	D	5	4.2

2D Bar Code Type	# of Characters Encoded	Encodes †	Elements per Character	Characters per Inch ††
Aztec	2 to 3067 Chars 2 to 3832 Digits	U-L-D-C	NA	NA
Aztec Mesa	2 to 854 Chars 2 to 1066 Digits	U-L-D-C	NA	NA
Code 16K Auto	7 to 154	U-L-D-C	11	9
Code 16K A	7 to 77	U-D-C	11	9
Code 16K B	7 to 77	U-L-D	11	9
Code 16K C	14 to 154	D	5.5	18
Code 49	9 to 81	U-L-D-C	16	6.2
DataMatrix	1 to 500	U-L-D-C	NA	NA
EAN/UCC-128 Composite – A/B	Linear up to 48 Composite up to 338	D (Composite)	NA	NA
EAN/UCC-128 Composite - C	Linear up to 48 Composite up to 2361	D (Composite)	NA	NA

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EAN/UPC Composite	Linear up to 13	D	NA	NA
	Composite up to 338	(Composite)		
GS1 Composite	Linear up to 13	D	NA	NA
	Composite up to 338	(Composite)		
GS1-128 Composite - A/B	Linear up to 48	D	NA	NA
	Composite up to 338	(Composite)		
GS1-128 Composite - C	Linear up to 48	D	NA	NA
	Composite up to 2361	(Composite)		
GS1 DataBar	Linear up to 14 (13 plus a check digit)	U-L-D	NA	NA
	Composite up to 338	(Composite)		
GS1 DataBar Expanded Composite	Linear 14 to 74	U-L-D-C	NA	NA
	Composite up to 338	(Composite)		
GS1 DataMatrix	1 to 500	U-L-D-C	NA	NA
UPS MaxiCode	15 to 99	U-D	NA	NA
MicroPDF417	2 to 250 alphanumeric, 2 to 366 numeric	U-L-D-C	NA	NA
PDF 417	up to 2000	U-L-D-C	4	up to 500
QR Code	7366 numeric	U-L-D	NA	NA
RSS-14 Composite	Linear up to 14 (13 plus a check digit)	U-L-D	NA	NA
	Composite up to 338	(Composite)		
RSS-14 Expanded Composite	Linear 14 to 74	U-L-D-C	NA	NA
	Composite up to 338	(Composite)		
TLC39	Linear 6	D	NA	NA
	Composite 2 to 250			

alphanumeric, 2 to
366 numeric

Adding a Bar Code

You can follow the steps below to add a bar code to your label design (with the exception of the UCC/EAN-128 bar code, which has a special wizard to help you).

To add a bar code to your label design

1. Do one of the following:
 - On the **Insert** menu, click **Bar Code**.
 - OR-
 - Click **Add Bar Code**  on the Add Image Toolbar.
2. From the **Origin** drop-down list, select the data origin appropriate for your bar code. Depending on the origin selected, different properties will appear.
3. Once you have set up the data to be used for your bar code, click on the Bar Code tab. Choose a bar code type from the **Type** drop-down list. The settings that appear on this screen will vary depending on the bar code type you select.
4. If desired, change other image properties using the Font, Color and Position tabs.
5. When you have finished setting properties for your bar code, you can place it on the label by clicking the **Place** button and positioning it using the mouse OR click **OK** to have the program place the bar code on the label according to the settings specified on the Position tab.

Note: Many variables (printer, scanning equipment, etc.) affect how well each bar code symbology works. For best results, always check to ensure you have the latest specifications and requirements for any symbology. It is also recommended to seek the support of all parties involved with the label's use (shipper, receiver, carrier), as each may have their own requirements.

Bar Code tab

To access this tab: On the **Insert** menu, click **Bar Code**. Then click the **Bar Code** tab.

The settings on the **Bar Code** tab allow you to select a bar code type and configure its settings to fit your application.

Note: The settings that display on this tab depend on the type of bar code symbology selected. For information on bar code-specific settings, see the topic pertaining to the particular bar code type.

Type: Allows you to choose from many types of bar codes that can be added to your label design.

Note: Many variables (paper stock, printer, scanning equipment, etc.) affect how well each bar code symbology works. For best results, always check to ensure you have the latest specifications and

requirements for any symbology. It is also recommended to seek the support of all parties involved with the label's use (shipper, receiver, carrier), as each may have their own requirements.

Height: Determines the height of your bar code image, with accuracy to 0.001 inch or centimeter (rounded at print time to your printer's dots per inch).

Note: The units of measure (inches or centimeters) can be changed from the **Tools** menu > **Setup** > View Settings tab > **Ruler Markings** setting. The **Ruler Markings** setting determines the units of measure used throughout the program.

Density: Enter your own density setting or choose from one of six pre-set densities. If you enter a density value that your printer is incapable of printing, the program rounds it to the nearest printer dot. The displayed density values are based on the resolution of your printer. For example, a 200 dpi resolution printer generates images by combining dots that are roughly .005 inches (5 mil) square. Bar codes work the same way; acceptable densities change by .005-inch increments.

Checksum: Enables you to choose from optional checksums for the type of bar code selected.

The following table summarizes the available bar code checksum options.

Bar Code Type	Required Checksums	Optional Checksums	Prints in Text
UPC-A	mod 10		Yes
UPC-E (6 dgt)	mod 10		No
UPC-E (11 dgt)	mod 10		No
EAN/JAN-13	mod 10		Yes
EAN/JAN-8	mod 10		Yes
Code 39		mod 43	Yes
Extended 3 of 9		mod 43	Yes
HIBC	mod 43		Yes
Code 93		mod 43	Yes
Extended 93		mod 43	Yes
Interleaved 2 of 5		mod 10	Yes
Code 128	mod 103		No
UCC-128	mod 103	mod 10	mod 10
Codabar		mod 10, mod 16	Yes
MSI Plessey	mod 10	2 mod 10, mod 11/mod 10	First
Zip+4 POSTNET	mod 10		NA

Text Where: Specify where you would like the human readable text to be placed in relation to your bar code image.

Ratio: Specify whether the bar code image should be printed with a wide-to-narrow bar ratio of 2 to 1, 2.5 to 1, or 3 to 1. For example, a ratio of 3 to 1 prints the narrow bars at the density specified, and the wide bars three times as wide.

Supplement: Used for UPC and EAN bar codes to specify whether the bar code includes a 2- or 5-digit supplement. When selected, the normal input string length increases by two for 2-digit supplements and five for 5-digit supplements.

Data Identifier: Allows you to enter a prefix that identifies the data in the bar code. Many compliance label specifications require a data identifier or prefix to appear in bar-coded data, but not in the human-readable interpretation. One example is the AIAG label format.


Sample: Displays a sample bar code of the type you specify and updates as you select different settings on this tab.

Adding a 2D Bar Code

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

You can follow the steps below to add a 2D bar code to your label design (with the exception of the MaxiCode 2D bar code, which has special wizard to help you).

To add a 2D bar code to your label design

1. Do one of the following:
 - On the **Insert** menu, click **2D Bar Code**.
 - OR-
 - Click **Add 2-Dimensional Bar Code**  on the Add Image Toolbar.
2. From the **Origin** drop-down list, select the data origin appropriate for your bar code. Depending on the origin selected, different properties will appear.
3. Once you have set up the data to be used for your 2D bar code, click on the 2D Bar Code tab. Choose a bar code type from the Type drop-down list. The settings that appear on this screen will vary depending on the bar code type you select.
4. If desired, change other image properties using the Font, Color and Position tabs.
5. When you have finished setting properties for your 2D bar code, you can place it on the label by clicking the **Place** button and positioning it using the mouse OR click **OK** to have the program place the bar code on the label according to the settings specified on the Position tab.

Note: Many variables (printer, scanning equipment, etc.) affect how well each bar code symbology works. For best results, always check to ensure you have the latest specifications and requirements for any symbology. It is also recommended to seek the support of all parties involved with the label's use (shipper, receiver, carrier), as each may have their own requirements.

2D Bar Code Properties

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

This program gives you a wide variety of options for 2D bar code creation, formatting, and placement. These options are set using the following 2D Bar Code Properties tabs:

Data tab

2D Bar Code tab

Font tab

Color tab


Position tab

General tab

To access the Bar Code Properties tabs

- For an existing 2D bar code image, double-click on the image.
- For a new 2D bar code, do one of the following:
 - On the **Insert** menu, click **2D Bar Code**.

-OR-

- Click **Add 2-Dimensional Bar Code**  on the Add Image Toolbar.

Linear Bar Code Symbologies

Linear Bar Code Symbologies

The linear (also called one-dimensional or 1D) bar code symbologies represent the traditional type of bar code that is made up of a series of varying-width parallel bars and spaces. Linear bar code types vary greatly in the type of data they can encode. For example, certain bar code types can encode only numeric data, others can encode numbers and alphabetic characters, while still others can encode numbers, letters and some punctuation characters.

Bar codes are made up of machine readable and human readable parts. The black and white striped pattern is, of course, the machine readable portion. The human readable part of a bar code is the series of letters and/or numbers printed above or below the striped bar pattern. The machine readable and human readable parts of a bar code are shown in the following graphic.



Linear Bar Codes

Australia Post 4-State

Codabar

Code 39 (3 of 9)

Extended 39

Code 93
 Extended 93
 Code 128
 EAN/JAN-8
 EAN/JAN-8 M&S
 EAN/JAN-13
 EAN/UCC-8
 EAN/UCC-13
 EAN/UCC-14
 GS1-128
 GS1-128 Coupon Code - EAN-13
 GS1-128 Coupon Code - UPC-A
 HIBC
 Intelligent Mail
 Interleaved 2 of 5
 ITF-14
 MSI Plessey
 PLANET Code
 UCC-12
 UCC/EAN-128
 UCC/EAN-128 Coupon Code - EAN-13
 UCC/EAN-128 Coupon Code - UPC-A
 UPC-A
 UPC-E
 Zip+4 POSTNET

Australia Post 4-State



The Australia Post 4-State bar code was developed as part of a three-stage Quality Addressing process. Information embedded in the bar codes uniquely identifies every address or delivery point in Australia. The bar code allows mail to be sorted to individual addresses rather than by postal code. As part of this process, an 8-digit Delivery Point Identifier (DPID) was assigned to each of the 8.8 million physical delivery points in Australia. In order to print Australia Post 4-State bar codes, you must have a mailing list where every record contains its associated DPID value. The DPID is encoded to form the main component of the customer bar code and is printed as part of an address. Optional customer information, such as a customer identifier or campaign number, can also be encoded into the bar code.

The bar code is made up of four types (or states) of bar, which are identified by both a name and a value: Tracker (middle section, value 3), Tracker with Descender (bottom section, value 2), Tracker with Ascender (top section, value 1), and Tracker with Ascender and Descender (value 0). The bar code consists of individual bars sorted into fields. Each field is represented by a number of bars.

Each bar code contains the following bars and fields:

- Start bars – 2 bars
- Format Control Code (FCC) Field – 4 bars

- Sorting Control Field (DPID) – 16 bars
- Customer Information Field (Bar Codes 2 and 3 only) – 16 or 31 bars
- Filler Bar
- Reed Solomon Error Correction Parity Values – 12 bars
- Stop bars – 2 bars

There are three bar code structures, two of which allow inclusion of customer information.

- Standard Customer Bar Code 1: Length 37 bars, no bars of customer information
- Customer Bar Code 2: Length 52 bars, 16 bars of customer information
- Customer Bar Code 3: Length 67 bars, 31 bars of customer information

Format Control Codes

There are 7 defined format control codes for 4-State bar codes. Of these codes, 11, 59, and 62 are most commonly used.

Value	Format
11	Standard Customer Bar Code
87	Routing Bar Code
45	Reply Paid Bar Code
92	Redirection Bar Code
59	Customer Bar Code 2
62	Customer Bar Code 3
44	Currently Reserved

For additional information on the Australia Post 4-State Bar Code and other encoding conversion tables, download the *Guide to Printing the 4-State Barcode* and *Customer Barcoding Technical Specifications* documents from the [Australia Post web site](#).

Code 39 (3 of 9)



The Code 39 bar code (also called "3 of 9") is probably the most commonly used bar code, and it is a standard for many government bar code specifications. This bar code encodes numbers, uppercase letters, and some punctuation.

The list of valid characters for the Code 39 bar code includes:

- Capital letters A to Z
- Numbers 0 to 9
- The space character
- Symbols -. \$ / +%

The input string is printed as it is read except for lowercase letters, which are converted to uppercase. Any spaces are bar coded, as are other valid characters.

The checksum options for the Code 39 bar code include None or Mod 43.

Extended Code 39



The Extended Code 39 bar code supports every character in the ASCII character set except for ASCII 0 and those characters above ASCII 127. This enables full support of uppercase and lowercase letters, as well as control codes.

The program actually generates two characters for each non-Code 39 input string character when the Extended Code 39 mode is enabled. (See the table below for the two-character combination for each Extended Code 39 character.)

The program uses the single character whenever a standard Code 39 character is found to save on the width of the bar code. The Extended Code 39 bar code can get very wide with very few characters because of the double character method of encoding.

The checksum options for the Extended Code 39 bar code include: None or Mod 43.

**Character Set for Extended Code 39
and Extended Code 93**

ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code
NUL	%U	SP	Space	@	%V	'	%W
SOH	\$A	!	/A	A	A	a	+A
STX	\$B	"	/B	B	B	b	+B
ETX	\$C	#	/C	C	C	c	+C
EOT	\$D	\$	/D	D	D	d	+D
ENQ	\$E	%	/E	E	E	e	+E
ACK	\$F	&	/F	F	F	f	+F
BEL	\$G	'	/G	G	G	g	+G
BS	\$H	(	/H	H	H	h	+H
HT	\$I	)	/I	I	I	i	+I
LF	\$J	*	/J	J	J	j	+J
VT	\$K	+	/K	K	K	k	+K
FF	\$L	,	/L	L	L	l	+L
CR	\$M	-	-	M	M	m	+M
SO	\$N	.	.	N	N	n	+N
SI	\$O	/	/O	O	O	o	+O
DLE	\$P	0	0	P	P	p	+P
DC1	\$Q	1	1	Q	Q	q	+Q
DC2	\$R	2	2	R	R	r	+R
DC3	\$S	3	3	S	S	s	+S
DC4	\$T	4	4	T	T	t	+T
NAK	\$U	5	5	U	U	u	+U
SYN	\$V	6	6	V	V	v	+V
ETB	\$W	7	7	W	W	w	+W
CAN	\$X	8	8	X	X	x	+X
EM	\$Y	9	9	Y	Y	y	+Y
SUB	\$Z	:	/Z	Z	Z	z	+Z
ESC	%A	;	%F	[	%K	{	%P
FS	%B	<	%G	\	%L		%Q
GS	%C	=	%H	]	%M	}	%R
RS	%D	>	%I	^	%N	~	%S
US	%E	?	%J	_	%O	DEL	%T

Code 93



The Code 93 bar code is a more compact version of Code 39, but it is not quite as easy for bar code readers to read because of the way it is encoded. Code 93 derives its name from the fact that every character is constructed from nine elements arranged into three bars with their adjacent spaces.

The checksum for the Code 93 bar code is automatically set to 2 Mod 47s.

Extended Code 93



The Extended Code 93 bar code uses Code 93 to encode the entire 128 ASCII character set by using combinations of control characters and basic data characters. The table below shows the character set that the Extended Code 93 supports.

The checksum for the Extended Code 93 is automatically set to 2 Mod 47s.

**Character Set for Extended Code 39
and Extended Code 93**

ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code	ASCII	Extend 3 of 9 Code
NUL	%U	SP	Space	@	%V	'	%W
SOH	\$A	!	/A	A	A	a	+A
STX	\$B	"	/B	B	B	b	+B
ETX	\$C	#	/C	C	C	c	+C
EOT	\$D	\$	/D	D	D	d	+D
ENQ	\$E	%	/E	E	E	e	+E
ACK	\$F	&	/F	F	F	f	+F
BEL	\$G	'	/G	G	G	g	+G
BS	\$H	(	/H	H	H	h	+H
HT	\$I	)	/I	I	I	i	+I
LF	\$J	*	/J	J	J	j	+J
VT	\$K	+	/K	K	K	k	+K
FF	\$L	,	/L	L	L	l	+L
CR	\$M	-	-	M	M	m	+M
SO	\$N	.	.	N	N	n	+N
SI	\$O	/	/O	O	O	o	+O
DLE	\$P	0	0	P	P	p	+P
DC1	\$Q	1	1	Q	Q	q	+Q
DC2	\$R	2	2	R	R	r	+R
DC3	\$S	3	3	S	S	s	+S
DC4	\$T	4	4	T	T	t	+T
NAK	\$U	5	5	U	U	u	+U
SYN	\$V	6	6	V	V	v	+V
ETB	\$W	7	7	W	W	w	+W
CAN	\$X	8	8	X	X	x	+X
EM	\$Y	9	9	Y	Y	y	+Y
SUB	\$Z	:	/Z	Z	Z	z	+Z
ESC	%A	;	%F	[	%K	{	%P
FS	%B	<	%G	\	%L		%Q
GS	%C	=	%H	]	%M	}	%R
RS	%D	>	%I	^	%N	~	%S
US	%E	?	%J	_	%O	DEL	%T

Codabar



The Codabar bar code is a variable length bar code that can print numeric values and some punctuation characters. This bar code is useful for encoding dollar figures and mathematical figures because a decimal point, plus sign and minus sign can be encoded.

The Codabar bar code can encode the following 16 characters:

- Numbers: **0123456789**
- Symbols: - \$: / . +

The Codabar bar code must begin and end with one of four special start/stop characters, A, B, C, or D. If the input string does not begin and end with one of these characters, the program automatically inserts the 'A' character at the beginning and/or the end of the bar code. This enables you to use this bar code with normal numeric data, which is the bar code's primary use.

The checksum options for the Codabar bar code include None, Mod 16 or Mod 10.

Code 128



The Code 128 bar code is a variable length symbology that can encode numeric, upper and lower case alphabetic characters (the full 128 ASCII character set), punctuation, special function and control data characters. It also enables numeric data to be compressed into double the normal density by encoding two digits per encoded character.

Code 128 Character Sets

Code 128 is available in four different character code subsets which allow the bar code to be optimized for size:

Code 128 Auto automatically determines which character code subsets will result in the smallest bar code. One of the code subsets described below is initially selected as the first encoded character. As the data is encoded, the code subset is changed within the bar code as necessary to reduce the bar code size. The checksum for the Code 128 Auto is automatically set to Mod 10.

Code 128 A includes all of the standard upper case alphanumeric keyboard characters plus the control and special characters. The checksum for the Code 128 A is automatically set to Mod 103.

Code 128 B includes all of the standard upper and lower case alphanumeric keyboard characters and special characters. The checksum for the Code 128 B is automatically set to Mod 103.

Code 128 C includes the set of 100 numeric data character pairs from 00 through 99 inclusive, as well as special characters. This enables double-density numeric digits (two digits per bar coded character) to be encoded. Data encoded in a Code 128 C must contain an even number of characters. If the data contains an odd number of characters, a zero (0) will be inserted at the beginning of the bar code. The checksum for the Code 128 C is automatically set to Mod 103.

Special Function Control Codes

Code 128 also has five special non-data function characters. These can be bar coded by the program by using the following decimal ASCII values in your input string:

Control Code	Decimal ASCII Value To Use
SHIFT	128
FNC 1	129

FNC 2	130
FNC 3	131
FNC 4	132

EAN/JAN-8



EAN/JAN-8 is used for products that are manufactured or sold outside the United States. The country origin is an integral part of the EAN/JAN specification.

The EAN/JAN-8 symbology includes:

- A 2-digit country code
- A 5-digit numeric data string
- A checksum digit (a Mod 10 checksum automatically generated by the software)

The EAN/JAN-8 supports a 2-digit or 5-digit supplement, which appends the additional 2 or 5 characters in a second, smaller bar code following the primary bar code.

EAN-8 M&S

EAN-8 M&S is a variation of the EAN-8 bar code. EAN-8 M&S is a standard EAN-8 code with the letters M and S included in the human readable.

HIBC



The Health Industry Bar Code (HIBC) is a modified Code 39 bar code, using all of the characters of Code 39. The program automatically inserts the required "+" character after the start character.

The checksum for the HIBC is automatically set to Mod 43 for this bar code (added to the end of the bar code before the stop character).

Interleaved 2 of 5



The Interleaved 2 of 5 (also called "Code 25") is a numeric-only bar code used in many types of industrial and warehouse applications. The data can be of any length, but it must contain an even number of characters (if not, the program will automatically add a leading zero).

Each data character is composed of 5 elements, either 5 bars or 5 spaces. Of these 5 elements, two are wide and three are narrow. Adjacent characters are interleaved, alternating the spaces from once character with the bars of the other.

The checksum options for the Interleaved 2 of 5 bar code include None or Mod 10. Remember that if the checksum is added, the input string needs to be odd (the checksum adds one character, making it even). If you have an even number of characters with the checksum enabled, it will be wider than without the checksum.

MSI Plessey



The MSI Plessey is a numeric-only bar code that can encode 2 to 30 numbers. MSI Plessey is a self-clocking bar code used most often by grocery stores for shelf labels.

This bar code has a required Mod 10 checksum. You can also set an additional 2 Mod 10 or Mod 11/Mod 10 checksum, which would then be added to the bar code before the required Mod 10 checksum.

PLANET Code

The PLANET Code is the inverse of the Zip+4 POSTNET (or POSTNET) bar code, reversing long bars for short and short for long. PLANET Codes have the same dimensional requirements as POSTNET bar codes. The PLANET Code is used along with the POSTNET bar code as part of the "Confirm" letter-tracking program created by the U.S. Postal Service (USPS).

PLANET Code is a 12-digit bar code with the following structure:

- **Digits 1-2:** Represent the service type (21=Origin Confirm or 22=Destination Confirm)
- **Digits 3-11:** Identify the mailpiece
- **Digit 12:** A checksum digit that helps USPS detect errors

UCC/EAN-128



UCC/EAN-128 is a variation of the Code 128 symbology. The distinguishing feature of the UCC/EAN-128 is its Application Identifier (AI) prefix. An AI is a numeric two, three, or four digit prefix that defines the structure of the data that follows it. For example, the AI for the SSCC-18 is (00), which means that every time a (00) AI precedes the data in the UCC/EAN-128, you know that the data is formatted for the SSCC-18.

When you select the UCC/EAN-128 bar code type (on the Bar Code tab), the **UCC/EAN-128 Template** drop-down list appears. This list allows you to enter a format for the human readable text of the bar code.

You can define the appearance of the text and specify the number of characters to be encoded in the bar code. The '9' character is used to specify the position of numerical data. The underscore '_' character is used to specify the position of the Mod 10 checksum (if it applies).

You can also use the wizard to create a UCC/EAN-128 bar code. The UCC/EAN-128 Wizard takes you step by step through the process of selecting an AI and creating a UCC/EAN-128 bar code.

The UCC/EAN-128 bar code symbology includes:

- A start code (a start character A, B, or C and an FNC1 character)
- The data (the AI and the data fields)
- A Mod 103 checksum (in the bar code, not in the human readable)
- A stop character

All UCC/EAN-128 symbologies use a required Mod 103 checksum (not in human readable form). You can also set an additional Mod 103 or Mod 10 and Mod 103 checksum, which is used with some UCC/EAN-128 symbologies (any additional checksum(s) are included in the human readable).

For more information on UCC standards, see the GS1 US (formerly named Uniform Code Council) web site at <http://www.gs1us.org/>.

UPC-A



The Universal Product Code version A (UPC-A) bar code is used primarily in the retail industry as the Point-of-Sale bar code symbology, and is the standard code for items that are for sale to the public in the United States. The UPC-A designates both the manufacturer and the product within one bar code.

UPC-A encodes the following 12 numeric digits:

1 = number system digit

2-6 = the manufacturer's ID number, given by the appropriate registering body

7-11 = represent the product

12 = a Mod 10 checksum digit based on the preceding 11 digits (added automatically by the software)

The UPC-A supports a 2-digit or 5-digit supplement, which appends the additional 2 or 5 characters in a second, smaller bar code following the primary bar code.

The number system digit is normally printed in human-readable form to the left of the printed symbol. This number is always the first digit entered as the data. If you do not completely fill the data field, the program fills the bar code with leading zeros, resulting in a number system character of 0.

The uses of each number system are described in the following table.

Number System	Specific Use
0, 7	Product UPC codes

2	Random weight items which are symbol marked at the store level
3	National Drug Code and National Health-Related Items
4	For use without code format restriction and with checksum
5	For use on coupons
1, 6, 8, 9	Reserved

UPC-E



The Universal Product Code version E (UPC-E) bar code is a compressed version of UPC-A, often used in the retail industry to identify small items. Because of the technique used to compress the UPC-E, it is sometimes also referred to as the "zero suppression version."

The UPC-E data must contain seven numeric digits, with the 8th digit being a checksum digit that is automatically calculated by the software.

Like the UPC-A, the UPC-E also supports both 2- and 5-digit supplements, which increase the amount of information contained within the bar codes. These supplements add either two or five digits in a second, smaller bar code following the primary bar code.

This program supports three forms of UPC-E:

UPC-E System 0 allows you to enter six numbers and the program will create a bar code with those same digits for system number 0.

UPC-E System 1 gives you the same six numbers for system number 1.

UPC-E11 requires you to perform the zero-suppression checks described below to ensure that the bar code works properly. Note that you can send any 11-digit string and all correct ones are bar coded.

Zero Suppression

The UPC-E bar code is often referred to as a zero-suppressed version of the UPC-A bar code. This version compresses the 11 numbers and the checksum into six numbers. Only bar codes with a number system character of 0 or 1 can be encoded into the zero-suppressed version. With the UPC-E bar code, the original 10 data characters (without the system code) must have at least four zeros in certain positions.

The first five characters are the manufacturer number and the last five characters are the product number.

- **If the manufacturer number ends in 000, 100, or 200**, there are 1000 numbers between 00000 and 00999 available for the product number. The six characters come from the first two characters of the manufacturer number, followed by the last three characters of the item number, then the third character of the manufacturer number.
- **If the manufacturer number ends in 300, 400, 500, 600, 700, 800, or 900**, there are 100 item numbers between 00000 and 00099 available. The six characters come from the first three characters of the manufacturer number, followed by the last two characters of the item number, then "3".

- **If the manufacturer number ends in 10, 20, 30, 40, 50, 60, 70, 80, or 90**, there are 10 item numbers between 00000 and 00009 available. The six characters come from the first four characters of the manufacturer number, followed by the last character of the item number, then "4".
- **If the manufacturer number does not end in zero**, then five item numbers between 00005 and 00009 are available. The six characters come from all five of the manufacturer identification numbers, then the last character of the item number.

Zip+4 POSTNET



The Zip+4 Postal Code (Postnet) bar code is a symbology used by postal processing centers to direct mail from place-to-place using automated equipment.

The Postnet bar code is used by the U.S. Postal Service (USPS) for high-speed mail sorting. Postnet bar codes are placed on envelopes or postcards in one of two positions: on the lower right below the address or above the address. Use of this bar code on United States mail can save from 8% to 20% on postage costs. Contact your local post office for more information on correct placement of the bar code and the discount rate schedule.

The Postnet bar code is made up of evenly spaced tall and short bars. There are 5, 9 or 11 digits plus a correction digit encoded into every Postnet. The correction digit is used by a post office bar code reader to identify reading errors. Each numeric digit is represented by five bars. Two of these are tall and the other three are short. The tall bar represents a binary one (1) and the short bar represents a binary zero (0).

The 9-digit Postnet (the most commonly used) consists of 50 bars representing the digits of the Zip+4 code and the correction digit, plus a framing bar at each end of the string for a total of 52 bars. The 5-digit type of code consists of 32 bars, and the 11-digit code has 62 bars.

Note: The 11-digit code is known as the delivery point bar code (DPBC). A DPBC is formed by adding 10 bars to the Zip+4 code to represent the last two characters of the primary street address or the last two characters of the post office box number.

The Postnet bar code can be used along with the PLANET Code as part of the "Confirm" letter-tracking program created by the USPS.

2D Bar Code Symbologies

2D Bar Code Symbologies

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Two-dimensional (2D) bar codes are capable of encoding a large amount of data into a very small space. They are useful for labeling small parts, products and packages.

The 2D bar codes can be stacked codes, matrix codes, or composites.

- **Stacked codes** are arranged in horizontal layers to create a multi-row bar code. Code 49 is an example of a stacked code.
- **Matrix codes** are made up of a pattern of cells that can be square, hexagonal or circular in shape. MaxiCode is an example of a matrix code.

- **Composites** are two different codes (usually one is linear and the other is 2D) that contain linked data and are printed in close proximity to each other. The RSS-14 Composite is an example of a composite code.

Note: If your printer does not support a particular bar code that you have in your label, the bar code will be sent to the printer as a graphic (requiring more printer memory) and thus will print significantly slower.

2D Bar Codes

Aztec
 Aztec Mesa
 Code 16K
 Code 49
 DataMatrix
 EAN-UCC Composite
 GS1 Composite
 GS1 DataBar
 GS1 DataMatrix
 PDF417
 MaxiCode
 MicroPDF
 QR Code
 RSS-14 Composite
 TLC39

Aztec

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



Aztec Code is a general purpose two-dimensional (2D) matrix symbology, used mainly for small item marking. A 2D imaging device such as a CCD camera is necessary to scan the symbology.

The Aztec Code is created with a string of data. There is no special format to the string and all characters and digits may be used. Depending on the amount of data in the string, it will produce either a "Compact" or "Full Range" symbol.

The Compact symbol displays two concentric square rings in the center of the symbol, and the Full Range symbol displays three concentric square rings in the center of the symbol. Together the two formats create a sequence of 33 distinct symbol sizes, capable of encoding small to large data messages.

No human readable is usually present.

Aztec Properties

The following properties are specific to the Aztec Code. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Reader Initialization Symbol: Allows the bar code reader to decode menu symbols (Reader Initialization Symbols) if supported by the reader. The symbols deliver initialization or configuration information to the bar code reader.

Aztec Mesa

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



The Aztec Mesa Code is a rearrangement of the Aztec Code. It incorporates a "linear host" symbol where the Aztec Mesa portion lies on top and also possibly below the host symbol. The Mesa portion is commonly known as the "2D supplemental field," and together with the linear host the entire symbol makes up a "composite" bar code.

Aztec Mesas can be attached to any of the following linear host symbols. (All linear host symbols will follow their own unique specifications for correct encoding.)

- EAN/JAN-13
- Code 128 Auto
- Code 39
- Code 93
- Interleaved 2 of 5*

* Also available as in Interleaved 2 of 5 with Barrier, which prints a "barrier" pattern along the top and bottom of the symbol to prevent short reads.

Format for Input String

The required input string for the Aztec Mesa begins with the data for the linear host, followed by a pipe character "|", followed by the data for the Mesa portion. The pipe character is used to separate the linear data from the Mesa data. *Example...*

Example:

123456789|This is a test

The data at the beginning of the string will be encoded into the chosen linear host and the "This is a test" data after the | symbol will be encoded as the composite portion .

The format for the input data depends on the data origin selected:

- **Constant:** When adding an Aztec Mesa bar code symbol with a Constant data origin, from the **Data** tab enter the linear input in the **Text** box and enter the composite input in the **Composite Text** box. The pipe separator will be automatically inserted between the two components.
- **Keyboard Input:** If you are adding an Aztec Mesa bar code with a Keyboard Input data origin, the entire continuous string of text and separator must be input at the prompt at print time. Note that you must manually enter the separator pipe between the two data strings.

- **Combination:** If you use the Combination data origin to create your Aztec Mesa bar code, from the **Data** tab you can type an expression directly in the **Expression** box (e.g., "1234" + "|" + "abcd") or use other variable images on the label that contain the data (e.g., Counter 1 + "|" + [Database1.partnum]).

When creating your expression, note that if the separator pipe is not contained within a variable image you are using, then you will need to manually type the separator pipe directly in the **Expression** box within double quotation marks, separating the linear and composite data. You can also add the separator pipe within your expression by clicking the **Other** button (on the Combination properties screen), selecting the **Special Character** option, and then selecting the ANSI value **124**.

Aztec Mesa Properties

The following properties are specific to the Aztec Mesa Code. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Linear Host: Select a linear bar code type to serve as the "host" for your Aztec Mesa Code.

Reader Initialization Symbol: Allows the bar code reader to decode menu symbols (Reader Initialization Symbols) if supported by the reader. The symbols deliver initialization or configuration information to the bar code reader.

Barrier Bar: Incorporates a barrier bar pattern that is used with some linear hosts to help with readability.

Symmetry: Divides the Mesa proportionally to display on the top and bottom of the linear host symbol.

Code 16K

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



The Code 16K bar code is a two-dimensional (2D) multiple-row symbology that can encode the full ASCII character set below ASCII 128. It uses existing UPC and Code 128 character set patterns. Up to 77 full ASCII characters or 154 numeric characters can be encoded. These characters are encoded into 2 to 16 rows. Each row is divided by a separator bar. The top and bottom of the symbol also have separator bars that extend to the ends of the minimum quiet zones.

The Code 16K bar code has three forms of error detection. Parity is checked for each character, start and stop characters are used to identify each row, and two checksum characters are always appended to the end of the bar code.

Code 16K Character Sets

Code 16K is available in four different character code subsets: Auto, subset A, subset B, or subset C. The availability of the codes depends on which subset mode you are encoding. The start, stop, and mode switching codes are automatically controlled by the program. These are used appropriately when the Code 16K Auto mode is selected. When using this mode, the program automatically optimizes the code to give the smallest size.

This program also supports the three subsets of Code 16K directly, without the auto switching capability.

Available Code 16K character sets include:

Code 16K Auto: When the Auto subset is selected, if the bar code has four or more consecutive numbers, the numbers are encoded in double-density mode. This means that two numbers are encoded into one character width, making the size of the bar code smaller. When using this subset, the program automatically optimizes the code to give the smallest size.

Code 16K A: If Code 16K A is selected, you can encode punctuation, digits, uppercase letters, and control codes below the space character.

Code 16K B: If Code 16K B is selected, you can also encode lowercase letters, but you cannot encode control codes below the space character.

Code 16K C: If Code 16K C is selected, only digits can be encoded. This is the mode that prints digits in double-density compressed mode. When selecting Code 16K C, if you have an odd number of digits, the program automatically uses the starting mode of Code Set C with an implied Shift B. This means that the first digit will be encoded in single density and all the rest will be in double density. If your input string contains less than seven full ASCII characters or 14 numeric characters, the program automatically appends enough pad characters to print the two rows that are the minimum requirement for the symbol.

Special Function Control Codes

Code 16K has 11 special function control codes that some readers recognize. These can be bar coded by the program by using the following decimal ASCII values in your input string:

Control Code	Decimal ASCII Value To Use
SHIFT	128 (hex 80)
FNC 1	129 (hex 81)
FNC 2	130 (hex 82)
FNC 3	131 (hex 83)
FNC 4	132 (hex 84)
PAD	133 (hex 85)
SHFT 2A	134 (hex 86)
SHFT 2B	135 (hex 87)
SHFT 2C	136 (hex 88)
SHFT 3B	137 (hex 89)
SHFT 3C	138 (hex 90)

Code 49

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



The Code 49 bar code is a two-dimensional (2D) multiple-row symbology that can encode the full ASCII character set below ASCII 128. Up to 49 alphanumeric characters or 81 numeric characters can be encoded. These characters are encoded into two to eight rows. Each row is divided by a separator bar. The top and bottom of the symbol also have separator bars that extend to the ends of the minimum quiet zones.

All characters are encoded in double-density mode. This means that two characters are encoded into one character width, making the size of the bar code smaller. If your input string contains a sequence of at least five digits, these are compressed even further. Sequences of five digits are represented as three code characters. If the number of digits is a multiple of five plus four, the last four digits are also represented as three code characters. If the number of digits is a multiple of five plus three, the last three digits are represented as two code characters. If the number of digits is a multiple of five plus two, this is considered to be four followed by three, and these are represented as three and two code characters. If the number of digits is a multiple of five plus one, the last digit is represented by a single code character.

The Code 49 bar code has three forms of error detection. Parity is checked for each character, each row contains a check character as the last row character, and two or three check characters are always appended to the end of the bar code. Symbols with six or less rows have two checksum characters. Symbols with seven or eight rows have three checksum characters.

The start and stop codes are automatically controlled by the program, and the program automatically optimizes the code to give the smallest size. If your input string contains less than nine alphanumeric characters or less than 15 numeric characters, the program automatically appends enough pad characters to print the two rows that are the minimum requirement for the symbol.

Special Function Control Codes

Code 49 has six special function control codes that some readers recognize. These can be bar coded by the program by using the following decimal ASCII values in your input string:

Control Code	Decimal ASCII Value To Use
SHIFT	128 (hex 80)
SHIFT 1	128 (hex 80)
SHIFT 2	129 (hex 81)
FNC 1	130 (hex 82)
FNC 2	131 (hex 83)
FNC 3	132 (hex 84)
NUMERIC SHFT/PAD	133 (hex 85)

DataMatrix

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



DataMatrix is a two-dimensional (2D) matrix symbology used mainly for small part marking and tracking in the manufacturing and health care industries. Because of the DataMatrix symbol's small physical size, low print contrast requirement (20%), and ease of reading, it has become widely accepted for use in electronics, pharmaceutical and healthcare applications. It is also frequently used to verify part identification, orientation, and positioning in automated manufacturing and process-control systems.

The DataMatrix code is extremely flexible in terms of physical size and information capacity. It consists of a cellular matrix of square modules that can encode large amounts of text and data. DataMatrix codes can only be read by certain types of camera-based 2D scanners that are specially programmed to do so.

Error Correction

The DataMatrix code also has superior error correcting capabilities, called Error Correction Codes (ECC). ECC 200 is the newest and most standard version of DataMatrix error correction. It supports advanced encoding and error checking with Reed Solomon error correction algorithms. These algorithms allow the recognition of bar codes that are up to 60% damaged. So even if part of the symbol is damaged, all data encoded throughout the symbol can often still be read, maintaining extreme integrity.

Error Correction Code	Overhead
000 (none)	0%
010	25%
040	33%
050 (low)	25%
060	50%
070	33%
080 (med)	33%
090	67%
100	50%
110	75%
120	50%
130	67%
140 (high)	75%

DataMatrix Properties

The following properties are specific to the DataMatrix symbology. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Character Set: Allows a data codification format to be selected. Each format defines a character set, a data compression ratio, as well as an input mask for the messages to be encoded.

Error Correction: This program allows you to select the desired ECC level. Note that using higher error correction creates a matrix with more squares (more overhead, thus a larger bar code). Consideration must be given to the camera field of view when determining the size of cells and amount of error correction to use.

Border Width: Determines the width of the border on the left and bottom of the bar code, with the default being 1. (Note: ECC 200 has a fixed border width.)

Rectangle Symbol: Allows the matrix bar code to be printed in a rectangular shape vs. the standard square shape.

EAN-UCC Composite

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The EAN-UCC Composite symbol consists of a linear symbol component and a multi-row 2D Composite component. The 2D component is printed above the linear component at a specified location relative to the linear component and with the same X dimension as the linear component. The linear and composite components together are referred to as a "Composite symbol."

Linear Component

The linear component can be one of the following:

- UCC/EAN-128
- EAN-8
- EAN-13
- UPC-A
- UPC-E

The published specifications for the specific linear symbols apply.

2D Composite Component

The 2D Composite component is chosen based on the selected linear component, and on the amount of supplementary data to be encoded. The three available Composite components — CC-A, CC-B, and CC-C — are based on the PDF 417, and on a variant of the MicroPDF (for UCC-128 CC-A/B).

2D Composite Component	Encodes	Additional Notes
CC-A	Up to 53 chars	Available in widths of 2, 3, or 4 columns and 3 to 12 rows.
CC-B	Up to 338 chars	Available in widths of 2, 3, or 4 columns and 10 to 44 rows.
CC-C	Up to 2,361 chars	Only available for use with UCC/EAN-128. Available in multiple widths to match the UCC/EAN-128 width and 3 to 90 rows.

Input Format for an EAN-UCC Composite Symbol

The required input string for the EAN-UCC Composite begins with the linear input (primary data), followed by a pipe character "|", followed by the composite input (secondary data). The pipe character is used to separate the linear data from the composite data (e.g., LinearData|CompositeData).

The format for the input data depends on the data origin selected:

- **Constant:** When adding a Composite symbol with a Constant data origin, from the **Data** tab enter the linear input in the **Text** box and enter the composite input in the **Composite Text** box. The pipe separator will be automatically inserted between the two components.
- **Keyboard Input:** If you are adding a Composite with a Keyboard Input data origin, the entire continuous string of text and separator must be input at the prompt at print time. Note that you must manually enter the separator pipe between the two data strings.
- **Combination:** You can click the **Use Wizard** button (on the Combination properties screen) to set up your data origins and input data using the Combination Wizard. The wizard will step you through adding your data in two parts. First, you will add the data for the linear component of your bar code. Then, the Combination Wizard will run again for the Composite component.

Note: If you select the EAN/UCC-128 as the linear host for your bar code, the UCC/EAN-128 Wizard will appear to step you through the process of selecting Application Identifiers and setting up a Human Readable Template.

To manually set up the Combination data origin to create your Composite symbol, from the **Data** tab you can type an expression directly in the **Expression** box (e.g., "1234" + "|" + "abcd") or use other variable images on the label that contain the data (e.g., Counter 1 + "|" + [Database1.partnum]).

When creating your expression, note that if the separator pipe is not contained within a variable field you are using, then you will need to manually type the separator pipe directly in the **Expression** box within double quotation marks, separating the linear and composite data. You can also add the separator pipe within your expression by clicking the **Other** button (on the Combination properties screen), selecting the **Special Character** option, and then selecting the ANSI value **124**.

EAN/UCC Composite Properties

The following properties are specific to the EAN/UCC Composite. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Linear Host: Select a linear bar code type to serve as the "host" for your EAN-UCC Composite symbol.

Linear Height: Sets the height of the bars for the linear component.

UCC/EAN Template: (Applies only to the EAN/UCC-128 Composites) Allows you to set the UCC/EAN format for the bar code's human readable characters. You can select one of the predefined formats from the **UCC/EAN-128 Template** drop-down list, or modify one of these formats to define the appearance of the text and specify the number of characters to be encoded in the bar code. Use the '9' character to specify the position of numerical data, and the underscore '_' character to specify the position of the Mod 10 checksum (if it applies).

Checksum: (Applies only to the EAN/UCC-128 Composites) Select either the Mod 103 checksum (default) or the Mod 10 and 103 checksum.

PDF 417

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



Portable Data File 417 (PDF 417) is a two-dimensional (2D) symbology that supports full ASCII, binary, and numeric data, and can encode foreign language character sets.

A traditional bar code is really just a key to a record in an external database that contains the useful information. A PDF, however, contains the useful information in it; it really is a "Portable Data File." The advantage to this is that access to a database is not necessary.

Error correction enables this bar code to make corrections for missing data due to a damaged or defaced label. Part of the label can actually be missing and the redundancy built into the PDF can still result in all the information encoded being readable. If the information cannot be read in its entirety, it provides no data at all.

PDF 417 Properties

The following properties are specific to the PDF 417. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

PDF Security: Enables you to set the appropriate level of Error Correction Control (ECC), which determines how resistant the bar code is to destruction while still maintaining readability. The error correction levels range from 0 (no error) to 8 (maximum correction). Note that while higher ECC levels provide better error correction, they also increase the size of the bar code.

Rows/Columns: Allows you to specify the number of rows and columns which will comprise the bar code.

Truncated: Enables or disables truncated PDF symbols, where the PDF 417 generates a symbol with the right tow indicator and stop pattern replaced by a single width bar. This form of PDF 417 occupies less printed area than a standard symbol, but there is a slight degradation in decodability.

MaxiCode

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



MaxiCode is a fixed size, two-dimensional (2D) matrix symbology developed by United Parcel Service of America, Inc. (UPS). MaxiCode has been adopted by AIM and ANSI as the recommended symbology for sortation and tracking. MaxiCode 2D bar code symbologies are made up of many different properties (Postal Code, Country Code, Tracking Number, etc.) that must follow specific requirements for their data and length.

Note: The following information is based on the MaxiCode symbology used by UPS. Note that the required fields and optional data may differ when the MaxiCode is used with carriers other than UPS or with non-shipping label applications.

The MaxiCode Wizard provides a separate screen for each of the MaxiCode properties, as listed in the following table.

Property	Required Format	Additional Notes
Postal Code	alphanumeric 5, 6, or 9 characters	Three different lengths are acceptable for the Postal Code: 5 characters for U.S. Zip Codes, 6 characters for International Postal Codes, or 9 characters for extended U.S. Zip Codes. Shorter codes must be filled in with spaces behind the data.
Country Code	numeric 3 digits	The Country Code shall conform with ISO 3166 or codes updated by the maintenance agency for ISO 3166. The Country Code for the United States is 840.
Class of Service	numeric 3 digits	The 3-digit Class of Service field contains the appropriate service indicator with a leading zero added (e.g., UPS NEXT DAY AIR = 001).
Tracking Number	alphanumeric 10 or 11 characters	When IZ is used as the tracking number, the Tracking Number field within the MaxiCode is 10 characters, consisting of a 2-character data identifier, a 7-digit reference number, and a 1-digit check digit. When a PTN is used as the tracking number, the entire 11-character PTN is encoded in this field.
UPS Shipper Number	alphanumeric 6 characters	
Julian Day of Pickup	numeric 3 digits	
Shipment ID Number	alphanumeric 1-30 characters	
Package n/x	numeric 1-3 digits	Package n of x total packages. For example, if you have package 2 of 10 total packages, you would enter 2/10.
Weight (lb.)	numeric 1-3 digits	Round up to the next pound.

Address Validation	alphanumeric 1 character	Y or N. Accomplished by comparing the complete destination address to a certified U.S. Postal Service database.
Ship to Street Address	alphanumeric 1-35 characters	
Ship to City	alphanumeric 1-20 characters	Truncate city names to a maximum of 20 characters.
Ship to State	alphanumeric 2 characters	

MaxiCode Data Format

As you use the wizard to enter fields and build your MaxiCode, you'll notice that several short codes have also been added to your expression. These codes are required for the MaxiCode format and will be automatically added for you by the program. If you would like detailed information on these codes, or if you want to format your own MaxiCode data, contact UPS.

MicroPDF

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.



MicroPDF is a two-dimensional (2D) multi-row symbology based on the PDF417 and is used for small area applications. One example of its application is in conjunction with the PDF417 symbol in the manufacturing industry.

This symbol is capable of encoding up to 150 alphanumeric characters. A limited set of symbol sizes is available, together with a fixed level of error correction for each symbol size.

MicroPDF Properties

The following properties are specific to the MicroPDF. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Mode: Sets the symbol width by specifying the number of data columns (1-4) and a variable number of rows.

X:Y Ratio: Sets the ratio of width (X) to height (Y); used along with the **Mode** setting to determine the size of the bar code.

Code 128: Transmits the symbol's data as if it were encoded in a Code 128 symbol. Options include the following:

- **Emulation off:** No emulation (default setting).
- **Linked C1:** Linear symbology printed below the MicroPDF symbol is 'linked' to the data of the MicroPDF symbol. The reader will not transmit the data unless the linear symbol is also found and decoded within the scanner's field of view.
- **Unlinked C1:** Linear symbology is not linked to the data in the MicroPDF symbol.
- **C0:** Data is transmitted exactly as encoded.
- **C2:** The first two digits or single alpha character of the data represents an Application Indicator followed by an implied FNC1 character.

Reader Initialization Symbol: Allows the bar code reader to decode menu symbols (Reader Initialization Symbols) if supported by the reader. The symbols deliver initialization or configuration information to the bar code reader.

Disable Macro Character Substitution: Disables the means of abbreviating an industry-specific header and trailer in one symbol character, which reduces the number of symbol characters needed to encode data in a symbol using certain structured formats.

QR Code

This is a **PowerPro** edition feature.

Quick Response Code (QR Code) is a two-dimensional (2D) matrix symbology consisting of an array of dark and light square cells. It has position detection patterns on three of its four corners, which making omni-directional ultra fast reading possible. A 2D imaging device such as a CCD camera is necessary to scan the symbology.

QR Code is capable of handling numeric, alphanumeric, and byte data. Up to 7,366 characters (numeric data) can be encoded using this symbol.

QR Code Properties

The following properties are specific to the QR Code. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Model: Model 1 meets the requirements of the original QR Code specifications. Model 2 is an extension of the specifications of Model 1.

Error Correction: QR Code is designed with selectable levels of error correction. Data can be restored even if a part of the symbol has become dirty or been damaged.

TLC39

This is a **PowerPro** edition feature.

TCIF Linked Code 39 (TLC39) is a two-dimensional (2D) composite symbology published by the Alliance for Telecommunications Industry Solutions' (ATIS) Telecommunications Industry Forum (TCIF). The TLC39 code is a combination of the Code 39 and Micro PDF symbols — it provides a transition between the current coding standard, based on Code 39, and the one that will replace it in the future, the bi-dimensional MicroPDF code.

The linear portion encodes a six-digit Equipment Catalog Item (ECI) number, used to look up the full 10-character Common Language Equipment (CLEI) code.

The Micro PDF portion is used to encode supplementary data, such as the serial number, and other optional data elements.

Format for Input String

The required input string for the TLC39 begins with the linear data, followed by a pipe character "|", followed by the data for the Micro PDF portion. The pipe character is used to separate the linear data from the Micro PDF data.

The format for the input data depends on the data origin selected:

- **Constant:** When adding a TLC39 with a Constant data origin, from the **Data** tab enter the linear input in the **Text** box and enter the Micro PDF data in the **Composite Text** box. The pipe separator will be automatically inserted between the two components.
- **Keyboard Input:** If you are adding a TLC39 with a Keyboard Input data origin, the entire continuous string of text and separator must be input at the prompt at print time. Note that you must manually enter the separator pipe between the two data strings.
- **Combination:** If you use the Combination data origin to create your TLC39, from the **Data** tab you can type an expression directly in the **Expression** box (e.g., "123456" + "|" + "ABCD1234567890") or use other variable images on the label that contain the data (e.g., [Database1.ECINumber] + "|" + [Database1.SerialNumber]).

When creating your expression, note that if the separator pipe is not contained within a variable image you are using, then you will need to manually type the separator pipe directly in the **Expression** box within double quotation marks, separating the linear and Micro PDF data. You can also add the separator pipe within your expression by clicking the **Other** button (on the Combination properties screen), selecting the **Special Character** option, and then selecting the ANSI value **124**.

TLC39 Properties

The following properties are specific to the TLC39. Other general 2D bar code properties can also be accessed from the 2D Bar Code tab.

Mode: Sets the number of data columns (4) and a variable number of rows.

X:Y Ratio: Sets the ratio of width (X) to height (Y); used along with the **Mode** setting to determine the size of the bar code.

Code 128: Transmits the symbol's data as if it were encoded in a Code 128 symbol. Options include the following:

- **Emulation off:** No emulation (default setting).
- **Linked C1:** Linear symbology printed below the TLC39 symbol is 'linked' to the data of the TLC39 symbol. The reader will not transmit the data unless the linear symbol is also found and decoded within the scanner's field of view.
- **Unlinked C1:** Linear symbology is not linked to the data in the TLC39 symbol.
- **C0:** Data is transmitted exactly as encoded.
- **C2:** The first two digits or single alpha character of the data represents an Application Indicator followed by an implied FNC1 character.

Linear Height: Sets the height of the bars for the linear portion.

Disable Macro Character Substitution: Disables the means of abbreviating an industry-specific header and trailer in one symbol character, which reduces the number of symbol characters needed to encode data in a symbol using certain structured formats.


Lines & Shapes

Adding a Line or Shape


Note: Depending on your printer, shapes may be sent to your printer as graphics and when images print as graphics the print speed is much slower.

1. Do one of the following:
 - On the **Insert** menu, click **Shapes**, and then use the submenu to select the appropriate shape type.

-OR-

- Click **Add a Shape**  on the Add Image Toolbar, and then use the submenu to select the appropriate shape type.

The shape's properties tabs will appear.

Note: You can also add a Custom Shape by selecting the **Custom Shape**  option from the submenu.

2. Click on the Position tab and then do one of the following:
 - If you want the shape to be hollow, select one of the default line thickness settings (Thin, Medium or Thick) or use a different thickness setting by entering your own value.
 - If you want the shape to be filled, click the **Fill** check box.
3. If desired, change other shape properties such as color and description by clicking on the appropriate tabs.
4. When you have finished choosing properties for your shape, you can click **OK** to have the shape placed at the position you have specified or click **Place** to place the shape using the mouse.
5. Once the image has been added to the label you can easily change its size. Simply click on the image to select it, then click on one of its image "handles" and drag to size it.

Note: When adding a shape as instructed above, it will snap to the Snap Value set on the **Tools** menu View Settings tab. To ignore the Snap Value setting so the endpoints of your image can be placed at any point on the label, hold down CTRL as you drag to create the image. If you are adding a straight line, you can press and hold down the SHIFT key while drawing the line to ensure that it is straight.

Shape Properties

This program gives you a wide variety of options for creating and positioning lines and shapes. These options are set using the following **Shape Properties** tabs:

General tab

Lines

Color tab

Position tab

Shapes

Color tab

Position tab


Custom Shapes

Custom Shape tab

To access the Shape Properties tabs

- For an existing shape, double-click on the shape.
- For a new shape, do one of the following:
 - On the **Insert** menu, click **Shapes**, and then use the submenu to select the appropriate shape type.

-OR-



- Click **Add a Shape**  on the Add Image Toolbar, and then use the submenu to select the appropriate shape type.

Adding a Custom Shape

Note: Depending on your printer, shapes may be sent to your printer as graphics and when images print as graphics the print speed is much slower.

1. Do one of the following:
 - On the **Insert** menu, click **Shapes**, and then select **Custom Shape** from the submenu.

-OR-

- Click **Add a Shape**  on the Add Image Toolbar, and then select **Custom Shape**  from the submenu.

The Custom Shape Properties tabs will appear.

2. On the Custom Shape tab, click on the **Shape Category** drop-down list and select the category for the type of shape you would like to add. For example, if you are looking for a hammer, click **Tools**. All the available shapes for the selected category appear.
3. Scroll through the displayed shapes and click the shape you want.
4. If desired, change other custom shape properties such as color, position, and description.
5. When you have finished choosing properties for your shape, you can click **OK** to have the shape placed at the position you have specified or click **Place** to place the shape using the mouse.

6. Once the image has been added to the label you can easily change its size. Simply click on the image to select it, then click on one of its image "handles" and drag to size it.

Note: When adding a shape as instructed above, it will snap to the Snap Value set on the **Tools** menu View Settings tab. To ignore the Snap Value setting so the endpoints of your image can be placed at any point on the label, hold down CTRL as you drag to create the image.

Custom Shape Properties

This program gives you many options for adding, sizing and positioning custom shapes. These options are set using the following Custom Shape Properties tabs:

Custom Shape tab

Color tab


Position tab

General tab

To access the Custom Shape Properties tabs

- For an existing custom shape, double-click on the image.
- For a new shape, do one of the following:
 - On the **Insert** menu, click **Shapes**, and then use the submenu to select the **Custom Shape** type.

-OR-

- Click **Add a Shape**  on the Add Image Toolbar, and then use the submenu to select the **Custom Shape** type.

Pictures

Adding a Picture

1. Do one of the following:

- On the **Insert** menu, click **Picture**.

-OR-

- Click **Add Picture**  on the Add Image Toolbar.

3. Choose one of the *picture file origins*.

Note: Depending on the edition of the software you are using, the following features may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Embedded - The "Embedded" picture origin saves the actual picture or graphic image as part of the label design. This method of graphic storage should be used if the path for your original graphic file may change at some point, or if you do not have limited storage space for your label designs.

Linked File - The "Linked File" picture origin saves a reference to a selected picture filename; it does not store the actual image as part of the design. Use this origin if you have limited storage space for your label designs. Be sure to note, however, that if you use this origin for your files and then decide to move those files, you will have to edit every label design to change its path.

Database - The "Database" picture origin enables you to specify a field in the database file that determines the directory path and filename for the selected picture image.

Keyboard Prompt - The "Keyboard Prompt" picture origin enables you to specify the directory path and filename for the selected picture image at the time of printing.

4. Click the **File** button and select the graphic file to add to the label design. This program can load black and white or color graphics and supports many graphic file types including popular formats such as BMP, JPG, PCX, and TIF.

Note: The TIF graphic format varies depending on the program used to create the file. If you are unable to insert and/or print a TIF graphic, try converting it to another graphic file format like PCX or BMP.

4. If desired, change other picture properties such as color, position, and description.

5. When you have finished choosing properties for your picture, you can click **OK** to have the picture placed at the position you have specified or click **Place** to place the picture using the mouse.

Note: Because some printers handle graphic images better than others, graphic images may slow your printing operation significantly.

Picture Properties

This program gives you many options for adding, sizing and positioning pictures. These options are set using the following **Picture Properties** tabs:

Picture tab

Color tab

Position tab

General tab

To access the Picture Properties tabs

- For an existing picture image, double-click on the image.
- For a new picture, do one of the following:
 - On the **Insert** menu, click **Picture**.

-OR-

- Click **Add Picture**  on the Add Image Toolbar.

Working with Placed Objects

Editing Images

Editing an image's properties

Moving images to the front or back

Grouping and ungrouping images

Scaling images

Aligning images

Finding images

Replacing images

Rotating images

Moving and Sizing Images

To move an image

1. Use the mouse to place the cursor on the selected image (but not over the handles).
2. Click the left mouse button and drag to move the image to the desired location.

To size an image

1. Click once on the image to select it.
2. Use the mouse to place the cursor on the handles that border the selected image.
3. Click the left mouse button on one of the image handles and drag it to the desired size.
4. To size the image while keeping the aspect ratio of the height and width the same, click on an image handle in one of the four corners of the image (so the cursor is at a diagonal) and drag to the desired size.

Copy, Cut, Paste or Delete an Image

Select the image/object and then perform one of the following actions:

To	Do this
Copy an object	On the Edit menu click Copy or right-click on the object and select Copy or press CTRL + C.
Cut an object	On the Edit menu click Cut or right-click on the object and select Cut or press CTRL + X.

Paste an object	On the Edit menu click Paste or right-click on the object and select Paste or press CTRL + V.
Delete an object	Press the Delete key.

Rotating Images

The **Rotate** command allows you to rotate the selected image(s) or all images in the design area.

To rotate images on a label

1. Click on the image(s) you want to rotate. To select more than one image at once, hold down the SHIFT key while clicking on the images.
2. On the **Edit** menu, click **Rotate**. Alternatively, you can right-click on the image and select **Rotate**.
3. Select one of the following rotation options:
 - **All Images:** Changes the orientation of the label on your screen and on the print media. The display shows the orientation of the printed label. For example, to print labels upside down, rotate all images 180 degrees.
 - **Selected Images:** Use this command to rotate the orientation of selected images. The display shows how images will print. This command does not affect the orientation of the label.
4. Choose a rotation setting from the **Rotate by** drop-down menu.
5. Click **OK**.

Scaling Images

The **Scale** command allows you to size the selected image or images by the percentage you specify. Specifying a percentage of 100 percent leaves the image unchanged; 50 percent cuts the image size in half; 200 percent doubles the image size, etc.

To scale selected images or all images in the design area

1. Click on the image(s) you want to scale. To select more than one image at once, hold down the SHIFT key while clicking on the images.
2. On the **Edit** menu, click **Scale**. Alternatively, you can right-click on the image and select **Scale**.
3. Specify if you want to scale **All Images** or **Selected Images**.
4. Select a value from the **Scale Factor** drop-down list or use a different scale factor percentage by entering your own value.
5. Click the **OK** button.

Grouping/Ungrouping Images

When editing images you can save time and effort by grouping several images together and working with them as though they were a single element. For example, you can rotate all images in a group as a single

unit instead of clicking on each image and rotating each one separately. You can also create groups within groups to help you build complex images.

To select several images at once

- Hold down the SHIFT key and click on each image you want to select.

OR

- Hold down the left mouse button while dragging to draw a box that encloses the images you want to select.

To group images

1. Select the images that you want to group together.
2. On the **Edit** menu, click **Group**. Alternatively, you can right-click and select **Group**.

To ungroup images

1. Select the group of images that you want to ungroup by clicking the left mouse button on the grouping.
2. On the **Edit** menu, click **Ungroup**. Alternatively, you can right-click and select **Ungroup**.

Moving Images to the Front or Back

To move a selected image in front of all other images

- Right-click on the image and select **Pull to Front**. Alternatively, you can select the image and then select **Pull To Front** from the **Edit** menu. The image that is pulled to the front is the last item printed.

To move a selected image to the back of all other images

- Right-click on the image and select **Drop to Back**. Alternatively, you can select the image and then select **Drop To Back** from the **Edit** menu. The image that is dropped to the back is the first item printed.

Redrawing the Label

The **Redraw** command refreshes the view of the label design screen. This redrawing of the label is sometimes necessary if a design function causes an image to appear distorted or incomplete.

To redraw the label on the design screen

- On the **View** menu, click **Redraw**.

Working with Expressions

About Expressions

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

An expression is a formula that consists of various parts, the result of which produces a value that populates a text or bar code object on a label. The parts that comprise an expression can include constant data, variable data, and database fields. Spaces, paragraph breaks and special characters can also be included in an expression, along with math, string and logic functions.

Expressions are composed in the Data tab of the **Text Properties** or **Bar Code Properties** dialog box. When you select the Combination origin, the **Data** tab displays a list of variables currently attached to the label, a text box for creating an expression, and a sample box that displays the result of the expression (that is, the value or sample value that will appear in the label).

Connecting Elements in an Expression

- Use a plus sign (+) to connect separate elements of an expression.
- Use a space enclosed in quotation marks (" ") to insert a space between elements. Instead of typing these characters, you can insert a space from the **Expression Piece** dialog box by selecting **Space** and clicking **OK**.
- Use "\r\n" to insert a line return (paragraph break) between elements. Instead of typing these characters, you can insert a line return from the **Expression Piece** dialog box by selecting **Paragraph Break** and clicking **OK**.

Creating an Expression

The method you use to create your expression will depend on the type of elements you want to include.

Constant Data

Punctuation and ANSI Codes

Database Fields

Bar Code Functions

String Functions

Math Functions

Logic Functions

Linked File

Date Stamp

Offset (Extended) Date

Time Stamp

Offset (Extended) Time

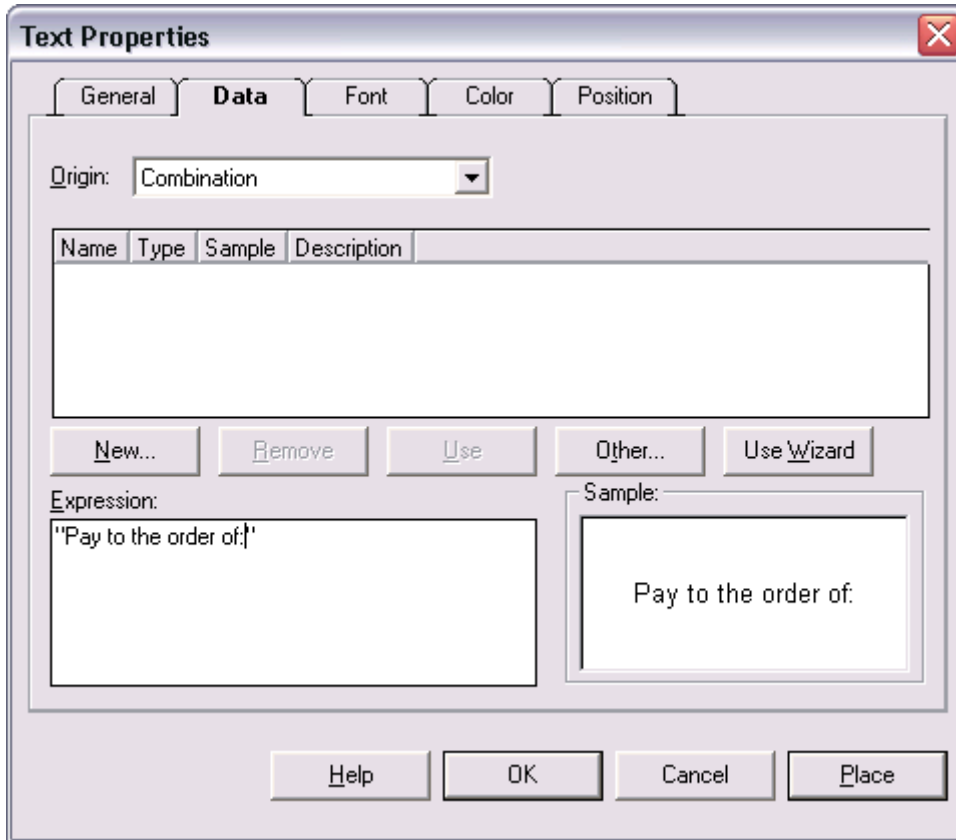
Referenced (Expanded) Subdatabase

Tip: You can shorten long expressions with complex string elements by replacing those elements with an expansion variable name.

Using Constant Data in Expressions

Constant data is data that does not change from label to label; it is not variable. It is typically typed as it should appear in the label. In combination expressions, you must enclose constant data in double quotation marks ("").

View an example of constant data in an expression...



Note: When typing constant data, some punctuation and special characters (ANSI character set) must be preceded with a backslash (\).

The following table shows examples of constant data formatting.

Expression	Result
"Ship To:"	Ship To:
"Use a single backslash \\ mark"	Use a single backslash \ mark
"Use a \" mark"	Use a " mark

Note: When combining constant data with other data in an expression, remember to use the required connecting elements.

To use constant data in an expression

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Type your constant data directly in the **Expression** box. Be sure to enclose the constant data in double quotation marks ("").

OR

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Click **Other**, click **Constant**, and then click **OK**. Type your constant data and click **OK**. (Note: Do not include quotation marks; they will be inserted automatically.)

Note: When using the Expression Piece dialog box to add constant data to an expression, the quotation marks and any line returns will be added automatically.

Using Database Fields in Expressions

You can use database fields in expressions if you attach a database to your label design.

When a database is attached, you can select **Combination** as the origin for a text or bar code image and all the fields from the database file will automatically appear in the variables list of the **Data** tab. These database variables are available for use in expressions.

The syntax of a database variable is very specific. Each database has a file name and a list of fields, each having a unique name. A dot (period) separates the file name and field name; and square brackets surround the entire reference. For example, **[sample2.name]** represents the current value of the Name field from the SAMPLE2 database. Unlike constant data, database variables should not be enclosed in quotation marks.

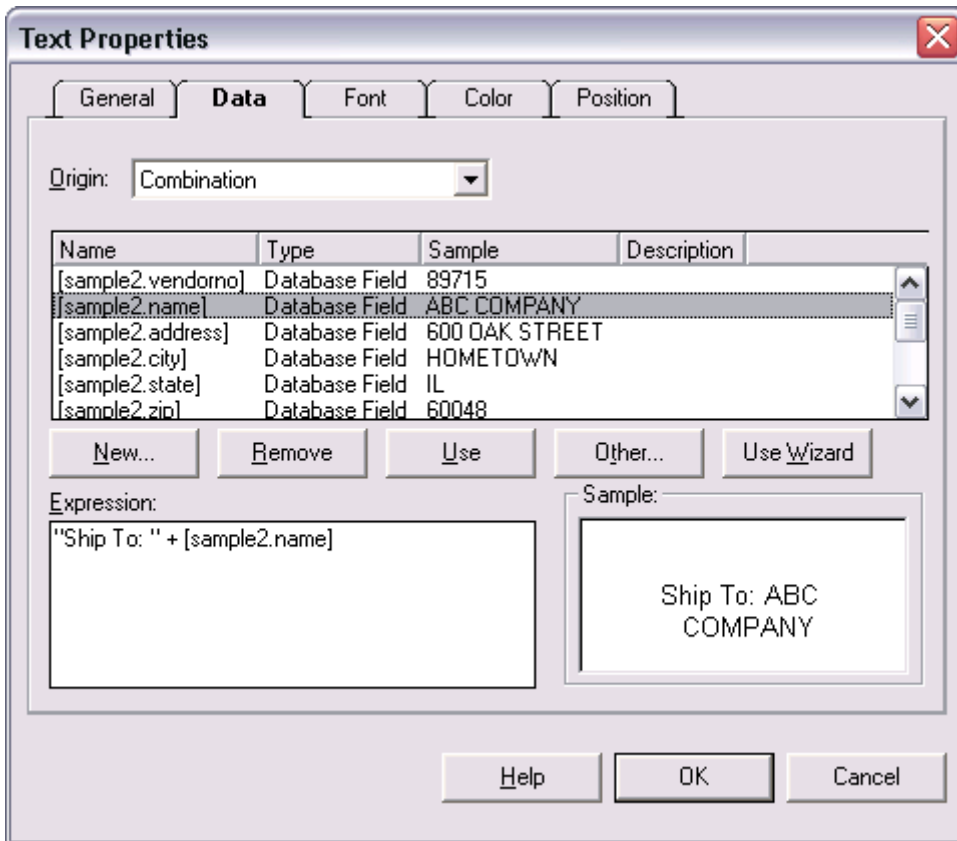
To use a database variable in an expression

- Click in the **Expression** box to place the cursor at the desired location within the expression. Select (highlight) the desired field in the variables list, and then click **Use** to insert the selected database variable at the cursor location.

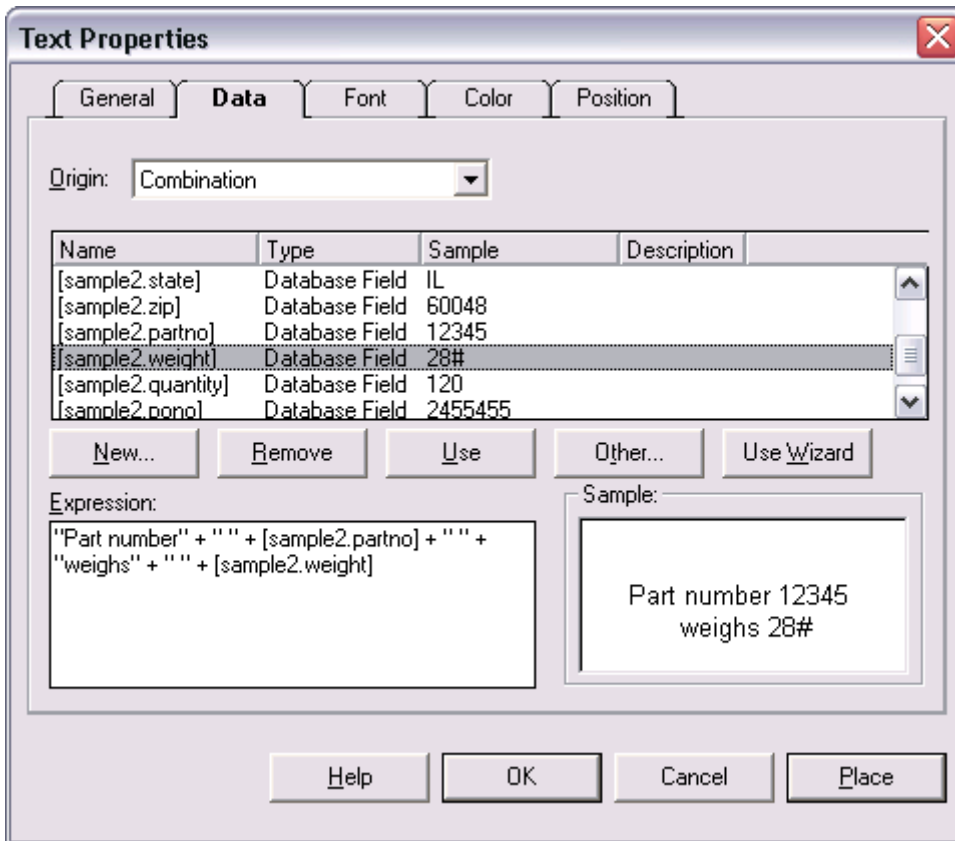
OR

- Type the database variable name in the appropriate location within the **Expression** box using the required syntax (e.g., **[sample2.address]**).

[View an example of a database field used in an expression...](#)



View an example of several database fields used in an expression along with other data...



Note: When combining a database variable with other data in an expression, remember to use the required connecting elements.

The following table shows examples of expressions using database variables.

Expression	Result
[sample2.NAME]	ABC COMPANY
[sample2.NAME] + "\r\n" + [sample2.ADDRESS] + "\r\n" + [sample2.CITY]	ABC COMPANY 600 OAK STREET HOMETOWN
"Part number" + " " + [sample2.PARTNO] + " " + "weighs" + " " + [sample2.WEIGHT]	Part number 12345 weighs 28#

Using a Date Stamp in an Expression

The **Date** function allows you to use a date stamp in a combination expression. The **Date** function inserts the current date based on the system clock using the date format of your choosing.

[View table of valid date formats...](#)

Date Setting	Output	Description
--------------	--------	-------------

LABEL MATRIX Help

D\$	SUNDAY	uppercase day of week (DOW)
d\$	Sunday	upper/lowercase DOW
DD\$	SU	2 char uppercase DOW
dd\$	Su	2 char upper/lowercase DOW (2 to 30 chars available)
DDDDDDDDDDDD\$	SUNDAY	11 char DOW (5 trailing spaces)
ddddddddddd\$	Sunday	11 char DOW (5 trailing spaces)
D and d	1	date of month (non lead zero)
DD	01	2 char date of month (lead zero)
dd	1	2 char date of month (lead space)
DDD	224	days from begin of year (lead zero)
ddd	224	days from begin of year (lead space)
DDDDD and ddddd	33482	days from 1/1/1900 (5 to 9 chars available)
W and w	1	day of week (Sun=1, Sat=7)
WW	34	weeks from begin of year (lead zero)
ww	34	weeks from begin of year (lead space)
WWW and www	783	weeks from 1/1/1900 (last 3 digits)
WWWW and wwww	4783	weeks from 1/1/1900 (4 to 9 chars available)
WWWWWWWWW	00004783	weeks from 1/1/1900 (lead zero)
wwwwwwwww	4783	weeks from 1/1/1900 (lead space)
M\$	SEPTEMBER	uppercase month
m\$	September	upper/lowercase month

MM\$	SE	2 char uppercase month
mm\$	Se	2 char upper/lowercase month (2 to 30 chars available)
MMMMMMMMMMMM\$	SEPTEMBER	11 char month (2 trailing spaces)
mmmmmmmmmmmm\$	September	11 char month (2 trailing spaces)
M and m	9	month digit (non lead zero)
MM	09	2 char month digit (lead zero)
mm	9	2 char month digit (lead space)
MMM	009	3 char month digit (lead zero)
mmm	9	3 char month digit (lead space)
MMMM and mmmm	1101	months since 1/1/1900
MMMMM	01101	5 char months from 1900 (lead zero)
mmmmm	1101	5 char months from 1900 (lead space) (5 to 9 chars available)
MMMMMMMMM	00001101	9 char months from 1900 (lead zero)
mmmmmmmmm	1101	9 char months from 1900 (lead space)
YY and yy	91	2 digit year
Y and y	1991	full year
YYY and yyy	991	last 3 digits of year (3 to 9 chars available)
YYYYYYYYY	00001991	full year (leading zero)
yyyyyyyyy	1991	full year (leading space)

The following table shows examples of the **Date** function used in expressions in different formats. (Note: For these examples, assume the current date is January 7, 2004.)

Expression	Result
Date("MM/DD/Y")	01/07/2004
Date("m\$ dd, y")	January 7, 2004
Date("DD M\$ Y")	07 JANUARY 2004

If desired, you can also add a custom date stamp that offsets the current date by a certain interval (often used for expiration dates) using the Extended Date function.

Note: When combining a date stamp with other data in an expression, remember to use the required connecting elements.

To use a date stamp in an expression

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Type **Date()** directly in the **Expression** box. Type the appropriate date format code inside the parentheses and enclosed in double quotation marks (e.g., **Date("m\$ dd, y")**).

OR

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Click **Other**, click **Date**, and then click **OK**. Click **Date** again, and click **OK**. Type the appropriate date format code inside the parentheses and enclosed in double quotation marks (e.g., **Date("m\$ dd, y")**).

Using an Extended Date Function in an Expression

The **Extended Date** function allows you to customize a date stamp by offsetting the date by a certain interval and use this customized date in a combination expression. The **Extended Date** function offsets the current date based on the system clock using either the default date format or a different format of your choosing.

When used in an expression, the **Extended Date** function must be written using the following parameters:

ExDate("date format", offset data, "+/- date interval", adjust for Daylight Saving Time)

Example: ExDate("MM/DD/YY", 10, "+d", 0)

- "date format"* - Specifies the date format to use. This parameter must be enclosed within parentheses. [View table of valid date formats...](#)

Date Setting	Output	Description
D\$	SUNDAY	uppercase day of week (DOW)
d\$	Sunday	upper/lowercase DOW
DD\$	SU	2 char uppercase DOW

dd\$	Su	2 char upper/lowercase DOW (2 to 30 chars available)
DDDDDDDDDD\$	SUNDAY	11 char DOW (5 trailing spaces)
dddddddddd\$	Sunday	11 char DOW (5 trailing spaces)
D and d	1	date of month (non lead zero)
DD	01	2 char date of month (lead zero)
dd	1	2 char date of month (lead space)
DDD	224	days from begin of year (lead zero)
ddd	224	days from begin of year (lead space)
DDDDD and ddddd	33482	days from 1/1/1900 (5 to 9 chars available)
W and w	1	day of week (Sun=1, Sat=7)
WW	34	weeks from begin of year (lead zero)
ww	34	weeks from begin of year (lead space)
WWW and www	783	weeks from 1/1/1900 (last 3 digits)
WWWW and wwww	4783	weeks from 1/1/1900 (4 to 9 chars available)
WWWWWWWWW	00004783	weeks from 1/1/1900 (lead zero)
wwwwwwwww	4783	weeks from 1/1/1900 (lead space)
M\$	SEPTEMBER	uppercase month
m\$	September	upper/lowercase month
MM\$	SE	2 char uppercase month
mm\$	Se	2 char upper/lowercase month (2 to 30 chars available)

MMMMMMMMMM\$	SEPTEMBER	11 char month (2 trailing spaces)
mmmmmmmmmm\$	September	11 char month (2 trailing spaces)
M and m	9	month digit (non lead zero)
MM	09	2 char month digit (lead zero)
mm	9	2 char month digit (lead space)
MMM	009	3 char month digit (lead zero)
mmm	9	3 char month digit (lead space)
MMMM and mmmm	1101	months since 1/1/1900
MMMMM	01101	5 char months from 1900 (lead zero)
mmmmm	1101	5 char months from 1900 (lead space) (5 to 9 chars available)
MMMMMMMMM	000001101	9 char months from 1900 (lead zero)
mmmmmmmm	1101	9 char months from 1900 (lead space)
YY and yy	91	2 digit year
Y and y	1991	full year
YYY and yyy	991	last 3 digits of year (3 to 9 chars available)
YYYYYYYY	000001991	full year (leading zero)
yyyyyyyy	1991	full year (leading space)

- *offset data* - This value specifies the amount by which to offset the date. You can use an existing keyboard, counter or database variable to determine this value, or it can be entered in the expression as a constant value.
- *+/- date interval* - The date interval must be either **d** for days, **w** for weeks, **m** for months, or **y** for years. The interval must be preceded by either a plus (+) or minus (-) sign, depending on if you want to add or subtract from the current date.

- *adjust for Daylight Saving Time* - Enter a **1** if you want the date to adjust for Daylight Saving Time. Enter a **0** if you do not want to adjust for it. If you do not specify a value for this parameter, by default the extended date will adjust (1) for Daylight Saving Time.

The following table shows examples of the **Extended Date** function used in expressions in different formats. (Note: For these examples, assume the current date is October 30, 2002, Keyboard 1 = 10, and [DB.Field] = 3.)

Expression	Result
ExDate("m\$ dd, y", 1, "+m")	November 30, 2002 (1 month after the current date)
ExDate("MM/DD/YY", [DB.Field], "-w")	10/09/02 (3 weeks before the current date)
ExDate("MM/DD/Y", Keyboard 1, "+d")	11/09/2002 (10 days after the current date)
ExDate("DD M\$ Y", 120, "+d", 0)	27 FEBRUARY 2003 (120 days after the current date, with no adjustment for Daylight Saving Time)

Note: When combining a date stamp with other data in an expression, remember to use the required connecting elements.

To use the Extended Date function in an expression

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Type your **Extended Date** function directly in the **Expression** box, with the appropriate parameters enclosed within the parentheses (e.g., **ExDate("m\$ dd, y", 1, "+m")**).

OR

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Click **Other**, click **Date**, and then click **OK**. Click **Extended Date**, and then click **OK**. The program will insert a sample **Extended Date** function into the **Expression** box. Replace the sample values with your own parameters, using the sample as a template (e.g., **ExDate("m\$ dd, y", 1, "+m", 1)**).

Using a Time Stamp in an Expression

The **Time** function allows you to use a time stamp in a combination expression. The **Time** function inserts the current time based on the system clock using either the default time format (e.g., 11:42 PM) or a different format of your choosing.

[View table of valid time formats...](#)

Time Setting	Output	Description
H and h	3	Hour (12 hour non-lead zero)
HH	03	hour (12 hour lead zero)

hh	3	hour (12 hour lead space)
X and x	15	hour (24 hour non-lead zero)
XX	15	hour (24 hour lead zero)
xx	15	hour (24 hour lead space)
M and m	45	minutes (non-lead zero)
MM	45	minutes (lead zero)
mm	45	minutes (lead space)
S and s	9	seconds (non-lead zero)
SS	09	seconds (lead zero)
ss	9	seconds (lead space)
AA\$	PM	2 char AM/PM signifier
aa\$	pm	2 char am/pm signifier
A\$	P	1 char AM/PM signifier
a\$	p	1 char am/pm signifier

The following table shows examples of the **Time** function used in expressions in different formats. (Note: For these examples, assume the current time is 11:42:15 PM.)

Expression	Result
Time("H:MM AA\$")	11:42 PM
Time("HH:MM aa\$")	11:42 pm
Time("XX:MM:SS")	11:42:15
Time("XX:MM:SS A\$")	11:42:15 P

If desired, you can also add a custom time stamp that offsets the current time by a certain interval using the Extended Time function.

Note: When combining a time stamp with other data in an expression, remember to use the required connecting elements.

To use a time stamp in an expression

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Type the **Time** function directly in the **Expression** box, entering the appropriate format code inside the parentheses and enclosed in double quotation marks (e.g., **Time("m\$ dd, y")**).

OR

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Click **Other**, click **Time**, and then click **OK**. Click **Time** again, and click **OK**. The program will insert a sample Time function into the **Expression** box. If desired, replace the default format code with a different format of your choosing. Be sure to type the code within the parentheses and enclosed in double quotation marks (e.g., **Time("H:MM A\$")**).

Using the Extended Time Function

The **Extended Time** function allows you to customize a time stamp by offsetting the time by a certain interval and use this customized time in a combination expression. The **Extended Time** function offsets the current time based on the system clock using either the default time format or a different format of your choosing.

When used in an expression, the **Extended Time** function must be written using the following parameters:

ExTime("time format", offset data, "+/- time interval", adjust for Daylight Saving Time)

Example: ExTime(XX:MM:SS", 10, "+m", 0)

- "time format"* - Specifies the time format to use. This parameter must be enclosed within parentheses. You can use the default format of "H:MM AA\$" (i.e., 11:42 PM) or enter a different format of your choosing. [View table of valid time formats...](#)

Time Setting	Output	Description
H and h	3	Hour (12 hour non-lead zero)
HH	03	hour (12 hour lead zero)
hh	3	hour (12 hour lead space)
X and x	15	hour (24 hour non-lead zero)
XX	15	hour (24 hour lead zero)
xx	15	hour (24 hour lead space)
M and m	45	minutes (non-lead zero)
MM	45	minutes (lead zero)
mm	45	minutes (lead space)
S and s	9	seconds (non-lead zero)

SS	09	seconds (lead zero)
ss	9	seconds (lead space)
AA\$	PM	2 char AM/PM signifier
aa\$	pm	2 char am/pm signifier
A\$	P	1 char AM/PM signifier
a\$	p	1 char am/pm signifier

- *offset time* - This value specifies the amount by which to offset the time. You can use an existing keyboard, counter or database variable to determine this value, or it can be entered in the expression as a constant value.
- *" +/- time interval"* - The time interval must be either **s** for seconds, **m** for minutes, or **h** for hours. The interval must be preceded by either a plus (+) or minus (-) sign, depending on if you want to add or subtract from the current time.
- *adjust for Daylight Saving Time* - Enter a **1** if you want the time to adjust for Daylight Saving Time. Enter a **0** if you do not want to adjust for it. If you do not specify a value for this parameter, by default the extended time will adjust (1) for Daylight Saving Time.

The following table shows examples of the **Extended Time** function used in expressions in different formats. (Note: For these examples, assume the current time is 11:42:15 PM on October 26, 2002 (Daylight Saving Time ends on October 27, 2002), Keyboard 1 = 10 and [DB.Field] = 3.)

Expression	Result
ExTime("XX:MM:SS", 30, "+s")	11:42:45 PM (30 seconds after the current time)
ExTime("H:MM AA\$", [DB.Field], "+m")	11:45 PM (3 minutes after the current time)
ExTime("HH:MM:SS AA\$", Keyboard 1, "+h", 1)	08:42:15 AM (10 hours after the current time, with adjustment for Daylight Saving Time)
ExTime("HH:MM:SS AA\$", Keyboard 1, "+h", 0)	09:42:15 AM (10 hours after the current time, with no adjustment for Daylight Saving Time)

Note: When combining a time stamp with other data in an expression, remember to use the required connecting elements.

To use the Extended Time function in an expression

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Type your **Extended Time** function directly in the **Expression** box, with the appropriate parameters enclosed within the parentheses (e.g., `ExTime("HH:MM:SS AA$", 8, "+h")`).

OR

- On the Data tab, select **Combination** as the origin and then click in the **Expression** box to place the cursor at the desired location within the expression. Click **Other**, click **Time**, and then click **OK**. Click **Extended Time**, and then click **OK**. The program will insert a sample Extended Time function into the **Expression** box. Replace the sample values with your own parameters, using the sample as a template (e.g., `ExTime("H:MM AA$", 8, "+h", 0)`).

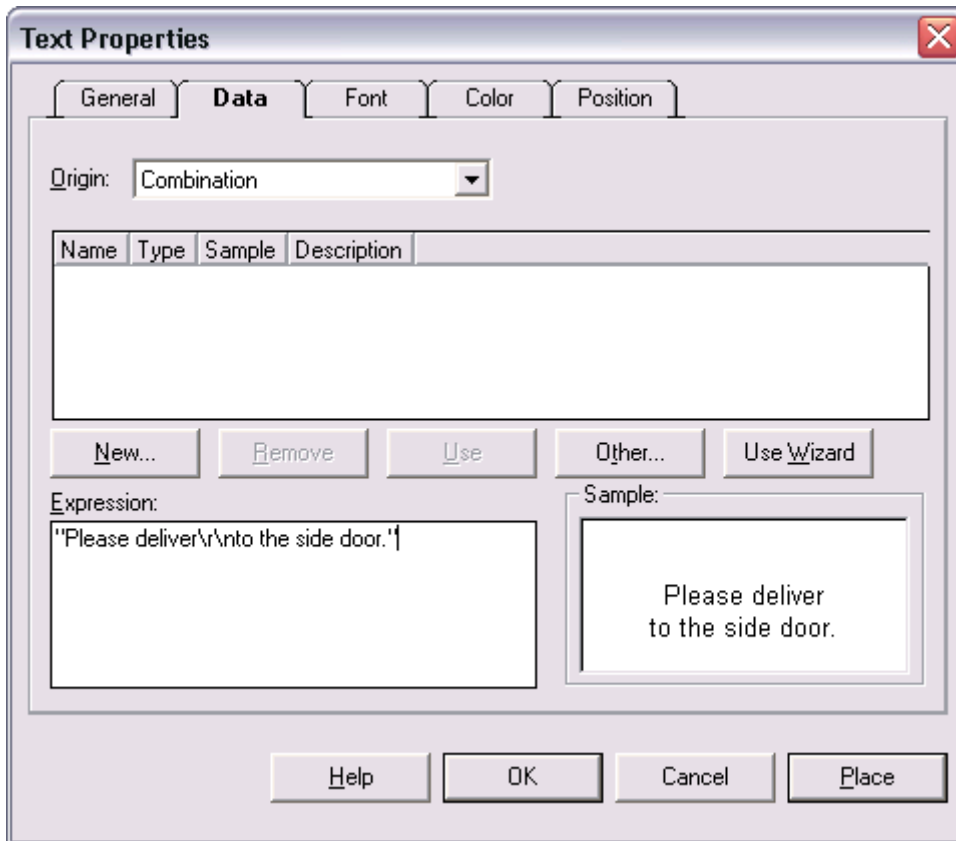
Using Punctuation and ANSI Codes in Expressions

You can use punctuation and symbols that are associated with ANSI characters in expressions.

Certain punctuation marks and special characters must be preceded with a backslash (\). This table shows how the backslash can be used.

Expression	Result
\\	A single backslash (\)
\"	A double quotation mark (")
\x##	(Any ANSI character entered in hexadecimal)
\x81	FNC1 character (ANSI 129) entered in hexadecimal
\r\n	A return (ANSI 13) and a line feed (ANSI 10), which results in a paragraph break

View an example of a paragraph break used in an expression...



Note: Remember that any constant data used in an expression must be enclosed within double quotation marks and must be combined with other data using required connecting elements.

To use special characters (ANSI codes) in an expression

Note: When using the Expression Piece dialog box to add constant data to an expression, the quotation marks and any line returns will be added automatically.

1. Add a text or bar code image and select **Combination** as the origin.
2. On the Data tab, click **Other**. The **Expression Piece** dialog box appears.
3. Click **Special Character** and then click **OK**.
4. Scroll through the list of ANSI codes to locate the character you want to enter; select the character and click **OK**.

On the **Data** tab, the ANSI code appears in the **Expression** box and the special character appears in the **Sample** box.

For example, if you click **ANSI: 35 (\x23) = #**, then **"\x23"** appears in the **Expression** box and **#** appears in the **Sample** box.

Using Linked Files in an Expression

The **Linked File** function allows you to place information within a combination expression by linking to a text file (.TXT), Rich Text Format (.RTF) file, or ASCII (.ASC) file. The **Linked File** function can be used to access the file name directly, or to access a database field that references the path and file name.

The following is an example of an expression you could use to access a text file directly:

```
LinkFile("C:\Program Files\InstallationFolderName\test.txt")
```

The following is an example of an expression you could use to access a text file from a database field:

```
LinkFile([Testdata.TXTFILE])
```

Note: Only a "link" to the file will be stored with the label design; the data from the linked file will be incorporated into the image only when the label is displayed or printed.

To insert a link to a text file within an expression

1. Add a text or bar code image and select **Combination** as the origin.
2. On the Data tab, click **Other**.
3. In the **Expression Piece** dialog box, click **Linked File**, and then click **OK**.
4. Select the text file you want to link to, and click **Open**.

On the **Data** tab, the expression appears in the **Expression** box and the result of the expression appears in the **Sample** box.

5. Click **OK** or **Place** to add the image to your label.

Using the Expand Sub Database Function in an Expression

The **Expand Sub Database** function can be used in a combination expression to set up a field in one database to cross reference another database in order to assemble data from multiple records into a single image.

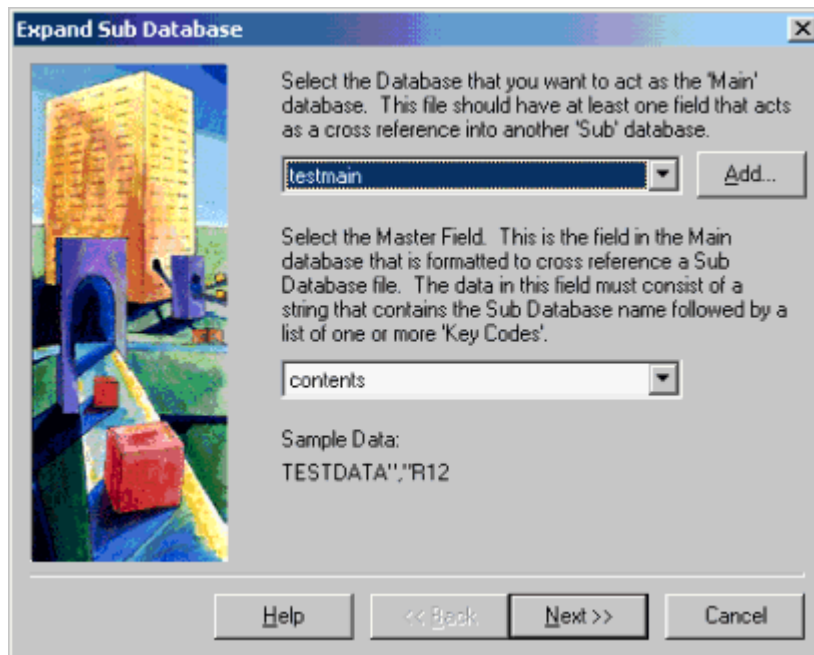
In order to cross reference another database, you will need to set up or specify values for the following:

- **Main Database** - An attached database file that contains one or more fields that cross reference another database file (the sub database) attached to the label.
- **Sub Database** - An attached database file that is cross referenced by a field (the master field) in the main database.
- **Master Field** - A field in the main database that is formatted to cross reference a sub database file. The master field format must be comma delimited, with or without quotes, and it must contain the name of the sub database file followed by a list of one or more key code fields (used to find records in the named sub database file).
- **Key Code Field** - The field that identifies the record to be retrieved from the sub database.
- **Data Field** - A field that identifies the data to be retrieved from the sub database.

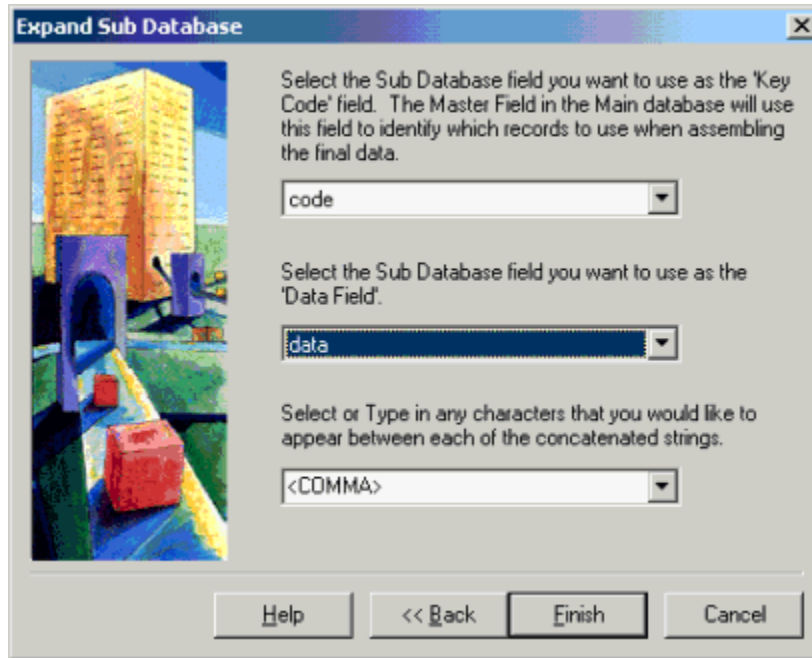
- **Conjunction Character** - The character(s) inserted between the pieces of concatenated data retrieved from the sub database.

To set up a field in one database to cross reference another database

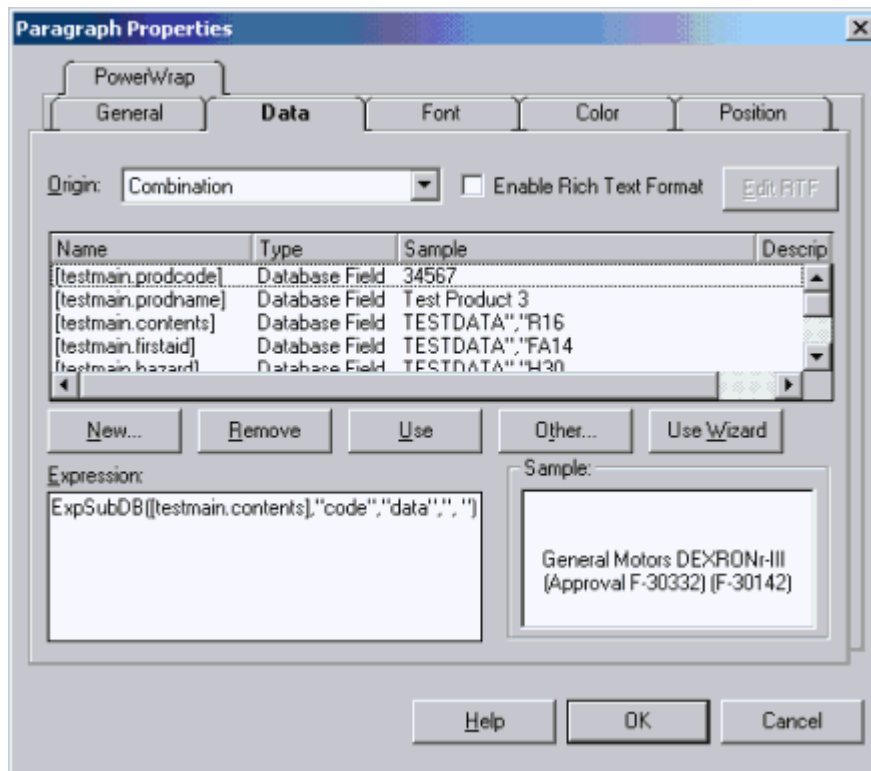
1. Add a database to be used as the main database. One of its fields must contain the name (not the file name) of a sub database, followed by a list of one or more key codes.
2. Add a second database to be used as your sub database.
3. Add a text or bar code image and select **Combination** for the data origin.
4. Click the **Other** button on the Data tab, and then select the **Expand Sub Database** function. The Expand Sub Database Wizard appears.
5. Select your main database from the list of attached database files.



6. Select a master field to cross reference the sub database file. The master field must be comma-delimited, with or without quotes, and it must contain the name of the sub database file followed by a list of one or more key codes. Click **Next** to continue.
7. Select a sub database field to use as the key code field. The master field in the main database will use this key code field to identify which records to use when assembling the final data.



8. Select the sub database field you want to use as the data field. This field will be used to identify the data to appear in your combination image.
9. Select or type the character(s) you would like to appear between each of the concatenated strings.
10. Click **Finish** to return to the **Data** tab and view the combination expression.



View an example of the Expand Sub Database function used in an expression...

The following example shows how the main database and sub database relate to each other when the **Expand Sub Database** function is applied.

In this example, *MAIN* is the name of the main database file, *MASTER* is the name of the master field in the main database, *SUB* is the name of the sub database file, *KEY* is the name of the key code field in the Sub Database, and *DATA* is the name of the data field in the sub database.

The function is set up in the **Expression** box as:

ExpSubDB([MAIN.MASTER],"KEY","DATA","--")

Note: The KEY and DATA fields were added to this expression as constant data (merely typed in parentheses), but these field references could have any data origin (database, keyboard input, etc.).

MAIN.MASTER contains the data:

"SUB, a245, a255, a234"

"SUB, a285, a465, a255"

The *SUB* database contain fields KEY and DATA with the following data:

KEY,DATA

a234,do not breathe when open

a245,Dangerous materials

a285,Health hazard

a255,avoid exposure to skin

a465,contains lethal toxins

The data for Label #1 would expand to:

Dangerous materials--avoid exposure to skin--do not breath when open

The data for Label #2 would expand to:

Health hazard--contains lethal toxins--avoid exposure to skin

Using Functions in Expressions

Using a Bar Code Checksum Function in an Expression

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

When you add a bar code to your label, if that bar code has a required checksum, the label design software will automatically include that checksum in the bar code. However, there may be times when you want the checksum of a bar code to appear as a text image on your label, or possibly your bar code specification calls for a non-standard checksum — in these instances you can use a **Bar Code Function** in a combination expression to calculate a checksum.

The following table shows the checksum functions that are available in the label design software.

Checksum Function	Bar Code
Check10UPC	UPC
Check10EAN	EAN
Check10Int25	INT 2 OF 5
Check10UCC	UCC-128
Check10Codabar	CODABAR
Check10MSI	MSI PLESSEY
Check16	CODABAR
Check43	3 OF 9
2Check47	CODE 93
2Check10	MSI PLESSEY
Check11Check10	MSI PLESSEY
Check10Quelle	
Check11_3Suissets	

Note: Check10Quelle is also known as MOD10 LUHN or MOD10 Double Add Double.

To add a checksum to a label as a separate text image

1. Add a text object that uses the **Combination** origin.
2. In the Data tab, click **Other**.
3. In the **Expression Piece** dialog box, click **Bar Code Function**.
4. Select the appropriate bar code function, and then click **OK**.
5. Do one of the following:
 - If you want to add only the checksum without the text string, click **Just Check Digit** and then click **OK**.
 - If you want to add a checksum that includes the text string along with the checksum, click **Append Check Digit** and then click **OK**.

On the **Data** tab, the expression appears in the **Expression** box and the result of the expression appears in the **Sample** box.

6. Click **OK** or **Place** to add the image to your label.

Note: If desired, you can type a bar code function directly in the **Expression** box on the **Data** tab instead of using the **Other** button to add the function.

Using a String Function in an Expression

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

1. Add a text or bar code image that uses the Combination origin.
2. In the Data tab, click **Other**.
3. In the **Expression Piece** dialog box, click **String Function**. A list of string functions appears.
4. Select the appropriate string function, and then click **OK**.
5. The program will insert a sample function into the **Expression** box. Replace the sample values with your own parameters, using the sample as a template.
6. Check the output in the **Sample** box, and click **OK** to place the image on your label.

Note: If desired, you can type a string function directly in the **Expression** box on the **Data** tab instead of using the **Other** button to add the function.

Using a Math Function in an Expression

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

1. Add a text or bar code image that uses the Combination origin.
2. In the Data tab, click **Other**.
3. In the **Expression Piece** dialog box, click **Math Function**. A list of math functions appears.
4. Select the appropriate math function, and then click **OK**.
5. The program will insert a sample function into the **Expression** box. Replace the sample values with your own parameters, using the sample as a template.
6. Check the output in the **Sample** box, and click **OK** to place the image on your label.

Note: If desired, you can type a math function directly in the **Expression** box on the **Data** tab instead of using the **Other** button to add the function.

Using a Logic Function in an Expression

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

1. Add a text or bar code image that uses the Combination origin.
2. In the Data tab, click **Other**.
3. In the **Expression Piece** dialog box, click **Logic Function**. A list of logic functions appears.
4. Select the appropriate logic function, and then click **OK**.
5. The program will insert a sample function into the **Expression** box. Replace the sample values with your own parameters, using the sample as a template.
6. Check the output in the **Sample** box, and click **OK** to place the image on your label.

Note: If desired, you can type a logic function directly in the **Expression** box on the **Data** tab instead of using the **Other** button to add the function.

Working with Databases

Adding a Database

This program allows you to set up your label design to read information from a database file at print time. It can interface with many different types of database files to integrate that data into your labels. If your program can produce an ASCII Text file or any of the following file types, then the program can connect to the data to print it on your labels.

- Microsoft Access
- Microsoft Excel
- dBase
- Text
- FoxPro
- Visual FoxPro
- Paradox
- Oracle 7
- Oracle Lite
- SQL Server
- SQL Anywhere
- Lotus Approach
- Lotus Notes

To add a database file to your label design

1. To start the Add Database Wizard, do one of the following:
 - On the **Insert** menu, click **Database File**.
 - OR-
 - Select **Database** as the data origin for a text or bar code image and then click the **Add** button on the **Data** tab.
 - OR-
 - From the Label Properties tab dialog, click on the Database tab. The **Database** tab lists any database files that have already been attached, but you can also attach a new database file by clicking the **Add** button.
2. Depending on the edition of the software you are using, the Normal Setup/Advanced Setup screen may appear. Select the **Normal Setup** option, then click **Next**.

Note: You may need to use advanced database setup if you need to select an OLE DB provider, specify an ODBC data source, use SQL statements, or set up a username and password on a database with security. Some text files and FoxPro/dBase files may also require advanced setup to read data correctly if the fields are truncated.

3. Click the **File** button and select a database file to use with the label, then click **Open**.
4. The filename appears in the text box. Click **Next**.

5. The program will analyze the database to find out the total number of records, the sample field information, and field properties such as the type and min/max lengths. (If you are using a large database you may stop the analyzing process at any time by clicking the **Stop** button.) After the drivers are scanned, a list of analyzed records appears.

If desired, you can select the **Add a text image for each field** check box to automatically add a text image to the label for each field in the database. It will use the first record in the database to populate the text images. Each image will be added starting in the top-left corner of the label, placing the next text image below the previous one, all left-aligned with consistent vertical spacing. The default text properties (font, color, etc.) will be used.

6. Click **Next**.
7. Select and set up a method of accessing the database information: Sequential Access, Keyed Access/Primary Key, or Keyed Access/Unlimited Keys.
8. If desired, assign a name and description to the database. This name will not change the database file name, but will merely be used as a descriptive name that allows you to easily reference the database within this program.
9. Click **Finish** to end the Add Database Wizard.

Adding a Database Using Advanced Setup

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

You may need to use Advanced Setup to add a database if you plan to select an OLE DB provider, specify an ODBC data source, use SQL statements, or set up a username and password on a database with security. Some text files and FoxPro/dBase files may also require Advanced Setup to read data correctly if the fields are truncated.

To add a database using Advanced Setup

1. Add a text or bar code image and select **Database** as its data origin.
2. Click the **Add** button to start the Add Database Wizard.
3. Select the **Advanced Setup** option.

The following advanced database setup options are available when you select the **Advanced Setup** option from the first screen of the Add Database Wizard.

Selecting an OLE DB Provider

Providing a Username and Password

Specifying an ODBC Driver

Customizing an SQL Select Statement

Accessing Database Records

The label design software provides three methods for accessing records in a database. The method you choose will depend on whether you want all the records in the database to print (sequential access) or you want to limit the records to those that match certain data ("keys") that you specify.

You can define a database access method in the Add Database Wizard while adding a database to the label. If you have already attached a database to the label, you can define the key access in the **Database Properties** dialog box (accessible from the Label Properties Database tab).

Sequential Access

With sequential access, printing usually begins at the first record in the file and prints the records in succession. Use sequential access when you want to print every record in the database (for example, if you want to print the names of all company employees)

Keyed Access, Primary Key

This method allows you to randomly access any record in the database based on a primary key (a key field that you specify). The key, depending on its key origin, can contain a value that is constant, entered at the time of printing, or derived from a field in another database. The key field selected determines which records in the database are accessed. Use keyed access when you want to access a specific group of records, not the entire database.

For example, if you have a company database of employees containing records that have Name, Title, and Department fields, and you want to print nametags for individuals in a certain department, you can define a primary key for the Department field. The value you enter for the key (e.g., Sales, Marketing, Support or other department that appears in the database) determines which records are accessed.

Keyed Access, Unlimited Keys

This method allows you to randomly access any record in the database based on the values of several keys, with each key assigned to a field in the database. Each key, depending on its key origin, can contain a value that is constant, entered at the time of printing, or derived from a field in another database. You can define multiple keys and assign keys to as many database fields as you need to narrow the search for database records to print.

For example, if you have a company database of employees you could assign a key with a value (such as Sales) to the Department field, and a key with a value (such as Managers) to the Title field. By doing so you could access records and print nametags for managers in the Sales department, and not anyone else.

Reanalyzing Your Database

The **Reanalyze** function allows you to analyze your database for the total number of records and for updated field property information. To reanalyze an attached database file, go to the Label Properties Database tab, select the appropriate database file, and click the **Reanalyze** button.

Reasons for reanalyzing your database:

- You may need to reanalyze your database if you used either Normal Setup or Advanced Setup to add your database and one or more of the following changed: the location, filename, field structure (i.e., fields set up as numeric, character, etc.), or number of fields. If any of these changes occur, then the database drivers may no longer be able to understand the database setup and so you may be prompted to reanalyze your database.
- If you used Normal Setup to add your database and then the contents of the database changed, you may need to reanalyze in order to access the changed data. Another solution for this problem is to use Advanced Setup to add the database – then the structure will be analyzed by the driver during setup and the data will be able to change as needed without having to reanalyze.


Data Grid

The Data Grid is available if you have attached a database file to your label. When selected, the Data Grid appears in the lower portion of the design window.

The Data Grid displays a scroll list of records for the selected database file, and allows you to select specific records for printing or display in your label.

By using the Data Grid Toolbar at the top of the Data Grid, you can search, sort, and filter records, or type in a specific record number to display. As you select a new record in the Data Grid, the text or bar code image that pulls data from that record will update "live" on the design screen.

To view database records in the Data Grid

1. On the **Grid** menu, click **Data Grid**. Alternatively, you can click the **Data Grid**  button. (The Data Grid option is available only if you have attached a database file to the label).
2. If you have more than one database attached to the label, select the desired database file from the drop-down list located on the left side of the Data Grid Toolbar.

Note: All keyed access files will appear sequentially in the Data Grid scroll list.

Printing Labels

Selecting a Printer

One of the first steps in the process of designing a label is to select the printer you will use for printing labels. The printer model selected determines what options are available as well as the label's size limitations—not all printers share the same characteristics.

To select a printer for your label design

1. On the **File** menu, click **Printer Setup**.
2. Select a printer from the list of attached printers.

If your printer does not appear in the drop-down list, click the **Add** button to install a printer using the Add Printer Wizard (not available in all editions of the software). Windows printers must be added through the Windows Control Panel.

3. Click **OK** to return to the design window.

Print dialog box

*To access this dialog box: On the **File** menu, click **Print**.*

Note: Depending on the edition of the software you are using, some features may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The options that appear on the **Print** dialog box will vary depending on the variables (such as counters) and page setup defined for your label.

All: The labels will print continuously until the print job is finished. If the label contains images that retrieve information from a database file, then printing will start with the first record in the file and print a label for every record in the database.

Pages: If printing multiple labels per page, this option allows you to specify the total number of pages to print. When you enter a value for **Total** pages setting, a value for **Total** labels appears automatically based on the number of labels per page.

Labels: The number of labels to print. The way this setting works varies depending on the type of images (constant, variable or database) on your label:

- If all images on the label are constant, this will be the number of copies of the label.
- If the label uses variable images such as counters or keyboard input values, this is the number of unique labels that will print.
- If the label contains images that retrieve information from a database file, then the **From** and **To** boxes appear for you to select a range of database records to print.
- If you have a database file attached to your label and currently have the Data Grid displayed on the screen, you can print the labels for those records that you have selected (highlighted) in the Data Grid.

Note: The **Labels** value does not include any duplicates you have set up for the label. So, for example, if you have duplicates set to 2 and you enter a **Labels** value of 3, the program will print 2 duplicates of each of the 3 labels, for a total of 6 labels printed (basically multiplying the value entered for the **Labels** setting by the value set on the Label Properties Duplicates tab).

Selected: If you have a database file attached to your label and currently have the Data Grid displayed on the screen, you can print the labels for those records that you have selected (highlighted) in the Data Grid.

Sample: Allows you to print just one label or one page of labels so you can test communications or check the appearance of the printed label.

Start On Label: This option appears if you are printing multiple labels per page. The position of the printed label will depend on the direction in which your labels are printed (as defined in the Multiple tab of the **Label Properties** dialog box). For example, if you have three labels across and have set up the label direction to start at the **top-left** and go **right**, and if you **Start On Label 3**, it will print in the top-right label.

Reverse Pages: (This is a **PowerPro** edition feature.) Reverses the order of pages in a print job. For example, if printing 10 pages of labels, normally pages 1-10 would be printed in order with page 1 printed first. With **Reverse Pages** selected, however, the print job is reversed so that instead of page 1 printing first, page 10 would print first and printing would continue until all pages are printed, with page 1 printing last.

Print to File: Instead of sending the label to a printer, **Print to File** prints the contents to a text (.txt) file that you can name and save. This option is used mostly for troubleshooting purposes, to verify the exact label information being sent by the program.

Print to Picture: Creates a picture file of the label in a supported graphic file format (.bmp or .jpg). You will be prompted for file type, resolution (dots per inch, or DPI), color definition, and a file name for the new graphic file.

Printer: Allows you to select a printer from the list of printers that have been added through the label design software or through Windows.

Left Offset: Allows you to offset the position of the label on the label media, in relation to the left edge of the media.

Top Offset: Allows you to offset the position of the label on the label media, in relation to the top edge of the media.


Setup: Displays the printer properties dialog box for the selected printer.

Printing a Sample Label

Print Sample allows you to print just one label or one page of labels. By doing so you can test communications and check the output of a printed label.

If the label or page that is printed contains keyboard input, counter, or database values, the sample values will be used to act as placeholders for the actual image data. Printing sample labels does not cause counters to increment or database values to change.


To print a sample label

- On the **File** menu, click **Print Sample**. Alternatively, you can click **Print Sample**  on the Standard Toolbar.


The **Printing** box appears briefly during processing, and then the sample is printed.

Printing Labels


To preview a label before printing

- Click Print Preview  to see how the label in the design window will look when it is printed.

To print a test label

- Click Print Sample  to print just one label or one page of labels to test communications and check the output of a printed label.

To print your labels

1. Select **Print** from the **File** menu. Alternatively, you can click **Print**  on the Standard Toolbar.
2. Set the options on the Print dialog box as appropriate for your print job.
3. Click **OK**.

Printing Duplicates of Each Label

You can define the number of duplicate labels to print when you set up your label design. The number of duplicates will be in effect each time you print the label design.

To define the number of duplicate labels to print

1. On the **File** menu, click **Label Properties**.
2. Click the Duplicates tab.
3. Select an *origin* for the duplicate value.

Set up the number of duplicates with one of these origins:

- **Constant:** The number of duplicates is entered here (on the **Duplicates** tab), and that value will stay the same for every print job. The default is 1, meaning only one label will be printed.
 - **Database:** The number of duplicates is extracted from a field in a database.
 - **Keyboard Input:** The operator is prompted for the number of duplicates at print time.
 - **Combination:** (Not available in all editions of the software) The number of duplicates is the result of an expression, which can be written using math, string or logic functions applied to keyboard, counter or database variables using the Combination origin.
 - **Copy:** Copies an existing variable or image and uses its data origin to determine the number of duplicates to print.
4. Set up your duplicate value as appropriate for the origin you selected.

Command Line Printing

LMWPRINT Commands

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Label Setup Commands

File Name of Label to Print (/L=<filename>)

Number of Labels to Print (/C=<label count>)

Start On Label (/R=<label number>)

Number of Pages to Print (/P=<page count>)

Number of Duplicate Labels to Print (/D=<dupe count>)

Bypass Program Password (/E=<username,password>)

Bypass Label Password (/LP=<password>)

Log Error Messages to a File or Ignore Them (/G=<logfile name> or /G)

Lock File (/F=<path\lock file name>) or (/FL=<path\lock file name>)

Database Commands

Replace Datafile (/File= <internalName,path\datafileName>)

Number of Records to Skip (/S=<record count>)

Control Database Reanalyzing (/Z)

Print Job Commands

Redirect Printed Output to a Port or Printer Path (/O)

Specify Printer Name (/X)

Suppress Print Status/Cancel Dialog (/N)

Wait for Next Print Job (/W)

Run Separate Instance of LMWPRINT (/Y)

Minimize LMWPRINT (/M)

Close LMWPRINT (/Q)

Using LMWPRINT to run AutoPrint

Using LMWPRINT to control the Write Data function

Label Setup Commands

File Name of Label to Print (/L=<filename>)

The /L= command tells LMWPRINT which label to print by loading the file that matches the name you enter for the <filename> parameter. The full file name must be entered correctly or the file will not load. If you enter the file name without including the file extension, the QDF file extension is automatically appended to the file name.

Example:

```
LMWPRINT /L=product1.qdf
```

This command line will print the label which has product1.qdf as its file name.

Number of Labels to Print (/C=<label count>)

The /C= command tells LMWPRINT the number of unique labels to print.

Example:

```
LMWPRINT /L=shipto.qdf /C=50
```

This command line will print 50 labels for the file having the shipto.qdf file name.

Start On Label (/R=<label number>)

The /R= command tells LMWPRINT the exact label from which you would like to start printing when you have multiple labels on the page. This number must be between 1 and the total number of labels on the page.

The label number you should enter here will depend on the direction in which your labels are counted on the Label Properties Multiple tab. For example, if you have three labels across and you've set up the label direction to start at the top-left and go right, then if you tell the program to print starting on label 3 it will start on the top-right label. Conversely, if you have three labels across and you've set up the label direction to start at the top-right and go left, then if you tell the program to print starting on label 3 it will start on the top-left label.

Example:

```
LMWPRINT /L=shipto.qdf /R=3
```

This command line will tell the program to print starting with the third label.

Number of Pages to Print (/P=<page count>)

The /P= command tells LMWPRINT the number of pages to print. The <Page Count> parameter given for this command must be a numeric value.

Example:

```
LMWPRINT /L=customer.qdf /P=25
```

This command line will print 25 pages of the label with the customer.qdf file name.

Number of Duplicate Labels to Print (/D=<dupe count>)

The /D= command tells LMWPRINT the number of duplicate labels to print. The <Dupe Count> parameter given for this command overrides any Constant duplicate label settings in the design file (it will NOT override database or Keyboard origin duplicate settings).

Example:

```
LMWPRINT /L=office.qdf /C=50 /D=2
```

This command line will print a label with the office.qdf file name and print 50 labels with two duplicates of each label (for a total of 100 labels).

Bypass Program Password (/E=<username,password>)

If you have set up security to require a password in order to use the program (**Tools** menu > **Setup** > Passwords tab), you can use the /E= command to tell LMWPRINT to bypass any user input required to allow automatic label processing. If you are required to enter a username and password to use the program and you do NOT include the /E= command, the program will display a dialog asking you to enter a username and password.

Example:

```
LMWPRINT /L=ex2.qdf /E=PSmith,golfball
```

This command line will print the label having the ex2.qdf file name, enter your username as PSmith, and enter your password as golfball.

Bypass Label Password (/LP=<password>)

If you have placed password protection on a specific label design file (**File** menu > **Label Properties** > Security tab), you can use the /LP= command to tell LMWPRINT to bypass any user input required to allow automatic label processing. If you are required to enter a password to open the label design file and you do NOT include the /LP= command, the program will display a dialog asking you to enter a password.

Example:

```
LMWPRINT /L=ex2.qdf /LP=football
```

This command line will print the label having the ex2.qdf file name and enter the label password as football.

Log Error Messages to a File or Ignore Them (/G=<logfile name> or /G)

The /G command lets you specify a log file name for error messages. If this command is used, it will write error messages to the log file instead of popping up message dialogs requiring you to click OK. If the /G command is used without any parameters, it will ignore the error messages completely. The /G command needs to be supplied for each print job in which you want to send any error messages to a file.

Example:

```
LMWPRINT /L=quantity.qdf /C=75 /G=logfile.txt
```

This command line will tell LMWPRINT to print 75 of the quantity.qdf label and send any error messages to the logfile.txt log file.

Lock File (/F=<path\lock file name>) or (/FL=<path\lock file name>)

Note: The /F= command does NOT work in conjunction with AutoPrint.

The /F= command passes LMWPRINT a temporary "lock file" that will be deleted when the print job is finished. The /F= command can be used with front-end applications such that the application looks for the existence of the lock file and as long as it is there, the application knows LMWPRINT is still printing.

The /F= command can also be used with front-end applications to handle timing issues when multiple LMWPRINT jobs are sent to the printer. For example, if the jobs are sent too quickly, data from the front-end may not be available for them, or the printer may still be busy with the first job and then the second job does not print because the printer was tied up.

The /FL= command serves the same purpose as /F=, but /FL= also opens the file so that the front-end application can try to delete the file until it succeeds, which means that the print job has either finished printing or errored out and released the file. The purpose is to be able to tell that the printing is complete if the print engine errors out and does delete the file.

[View steps for implementing the /F= \(or /FL\) command...](#)

To implement the /F= (or /FL) command

1. Via your front-end application, create a temporary file, which we will call the "lock file." The lock file can be any physical file on the computer and can have any file name. The important point to note is that LMWPRINT will delete this file when the print job is done.
2. Set up your front-end application to check for the presence of the lock file. When the file is no longer present you can then start up the next print job in your application. For example, you could set up a program loop that keeps checking for the file and as long as it finds it there, you know the print job has not been completed. Once the print job is finished and the file is deleted, you are ready to send another print job.
3. Add the /F=<path\lock file name> command switch to your LMWPRINT batch file or call it from your front-end application.

Example:

```
LMWPRINT /L=ex2.qdf /F=C:\lock.txt
```

This command line will tell LMWPRINT to print a label with the ex2.qdf filename and use a lock file called lock.txt that will be copied to the root of the C: drive.

Note: We cannot provide support for front-end applications or for writing/configuring these applications.

Database Commands

Replace Datafile (/File=<internalName,path\datafileName>)

The /File= LMWPRINT command allows you to replace an attached database file with a database file of the same format. It is important to note the difference in the two parameters required for this command: The first parameter, internalName, is the name of the database being replaced. This is NOT the actual file name, but the name you give the database in the program (normally

entered on the last screen of the Add Database Wizard and can be viewed in the NAME column of the Database tab in the Label Properties tab dialog). The second parameter, path\datafileName, is the file name of the new database file. The format of this database file MUST be the same as that of the file being replaced. (As always, be sure to specify the label that the database is attached to by using the /L= command.)

Example:

```
LMWPRINT /L=send.qdf /File=customer1,cust2.dbf
```

You could enter this command line to print a label with the send.qdf file name, and replace the customer1 dBase format database (currently attached to the send.qdf label) with the cust2.dbf database at print time.

View examples for databases with multiple tables and for working with table names with spaces in them...

If you have a database with multiple tables (Access and Excel files may have table names associated with them in addition to the filename) you can replace just the database filename OR leave the database name alone and change just the table name OR you can change both the database filename and the table name. To change the table name, enclose it in brackets "[]". Here are some examples:

```
/FILE=internalName,path\dataFilename
```

```
/FILE=internalName,path\dataFilename[tableName]
```

```
/FILE=internalName,[tableName]
```

If you have a file or table name with a space in it, you will need to put quotes around everything after FILE= or it will not work. For example:

```
/FILE="internal Name,path\filename"
```

```
/FILE="internalName,path\filename[table Name]"
```

```
/FILE="internalName,[table Name]"
```

Number of Records to Skip (/S=<record count>)

The /S= command tells LMWPRINT how many records to skip if the file is pulling values from a sequential database. This command is useful if you have a database with a large number of records and have to stop the print job when you are only part way through the records. Using the /S= command, you can resume the print job right where you left off. The <Record Count> parameter must be a numeric value.

Example:

```
LMWPRINT /L=control.qdf /D=3 /S=15
```

This command line will print the label with the control.qdf file name, print three duplicates of each label, and skip records 1-15 of the database when printing.

Control Database Reanalyzing (/Z)

The /Z= commands allow you to control whether or not LMWPRINT should reanalyze any databases attached to the label.

When a /Z= command is NOT passed, LMWPRINT will check for changes to the database structure and display a prompt asking if you want to reanalyze.

/Z Command	Description
/Z=1	<p>LMWPRINT will perform a check to see if any of the attached databases have changed, and if so it will automatically reanalyze the database.</p> <p>A user interface will NOT be displayed.</p>
/Z=2	<p>LMWPRINT will NOT perform a check to see if any of the attached databases have changed and will NOT reanalyze.</p>
/Z=3	<p>LMWPRINT will ALWAYS reanalyze every database attached to the label, regardless of whether the database has changed or not.</p> <p>A user interface will be displayed.</p>

Note: Any other value passed with /Z= (including /Z without a value) will generate a command line parsing error.

Print Job Commands

Redirect Printed Output to a Port or Printer Path (/O)

For Printing Using Standard Serial or Parallel Ports

The /O LMWPRINT command will redirect printed output to a specified port. It allows changing of the port for the printer that was selected for the label design. The printer type and name must be the same for the printer on the newly selected port as the one selected in the label design. This command works best when you have two printers of the same model attached to your computer and wish to direct the print job to one printer or the other. For example, you can set up your label design for almost any Windows printer and then specify the proper one to print to at print time.

Example:

LMWPRINT /L=zlabel.qdf /O=LPT1:

This command line will tell LMWPRINT to print a label called zlabel.qdf to the printer on the LPT1: port.

For Printing Using TCP/IP or UNC Ports

The /O command becomes slightly more complex when printing using TCP/IP or UNC ports because it is more difficult for the program to determine what type of port is being requested. For this reason, when using these types of ports, an extra letter must be used in the command to distinguish the port type. The syntax is as follows:

<i>/O Command</i>	<i>Port Type</i>	<i>Example</i>
<i>/OS=COMportname</i>	Serial port	/OS=COM1:
<i>/OP=LPTportname</i>	Parallel port	/OP=LPT1:
<i>/ON=\\servername\printername</i>	UNC port	/ON=\\HAL9000\EasyCoderF4
<i>/OI=TCP/IPport</i>	TCP/IP port	/OI=192.168.10.143
<i>/OI=TCP/IPport:port\ipp\queuename</i>	TCP/IP port with port and queue name	/OI=192.168.10.143:9100\ipp\q1
<i>/OF=filenamepath</i>	Print to file	/OF=C:\Labels\label1.txt

Specify Printer Name (/X)

With the /X LMWPRINT command, you are able to further refine your printer designation by passing in both the printer name (/X) and the port (/O) commands. These commands would be used together when you have two or more printers of the same kind, same name, etc. on different ports and you want to send the print job to a particular one of the two printers. The /X command must be sent first, specifying the printer to look for (assuming this printer is different than the printer for which the label was originally designed), and then the /O would specify the port to which it is attached. If the correct /X and /O information is not given, the print job will be sent to the printer for which the label was originally designed (the selected printer saved with the label design).

IMPORTANT: You must input the EXACT name of the printer as it appears in the Printer Setup area of the label design software (or if using a Windows printer, you must input the printer name exactly as it appears in the Windows Printers folder).

Use of the /X command is intended for a setup in which print jobs are sent to multiple printers that are **exactly the same make and model** and used at different locations. The printer name specified should be of the same make and model as the printer for which the label was originally designed. In some cases, you may be able to design the label for one model and then send the print job to a different model by the same manufacturer, but the success of this type of setup varies by printer manufacturer and the results are unpredictable.

Note: Do NOT attempt to send the print job to a printer from a manufacturer other than that used with the original label design because problems can occur if your label is set up to use native fonts that are resident on the original printer and then the fonts are unavailable if you switch to a different make of printer. For example, if you design a label for a Zebra printer and use a native font for a text image, then try to print to a Datamax printer, the result is usually undesirable.

Suppress Print Status/Cancel Dialog (/N)

The /N command tells LMWPRINT to suppress the dialog which normally indicates which page is printing and allows you to cancel the print job. The /N command needs to be supplied for each print job in which you want to suppress the print status/cancel dialog.

Example:

```
LMWPRINT /L=class.qdf /P=30 /N
```

This command line will tell LMWPRINT to print a label with the class.qdf file name, print 30 pages of labels, and suppress the print status/cancel dialog for this print job.

Wait for Next Print Job (/W)

The /W command tells LMWPRINT to wait for you after printing so you can continue with another print job without having to open the program again. With no /W command specified, LMWPRINT will close after the final label prints. Subsequent calls to the LMWPRINT program do not need the /W command unless the /Q command was used on the command line to close the program.

Example:

```
LMWPRINT /L=class.qdf /P=50 /S=10 /W
```

This command line will tell LMWPRINT to print a label with the class.qdf file name, print 50 pages of labels, skip the first 10 records of the database, and keep the print program open after the print job so you can set up another print job.

Run Separate Instance of LMWPRINT (/Y)

The /Y LMWPRINT command changes the way print jobs are processed. Without using this command, if you send one print job and then send a second job, the program will wait for the first job to finish and will then use the same "instance" of LMWPRINT that is already open to run the second job. When you use the /Y= command, a second "instance" of LMWPRINT will open to run the second job, allowing you to run jobs to different ports simultaneously rather than waiting for the first job to finish. The number of print jobs that can be run simultaneously depends on how many licenses exist.

Minimize LMWPRINT (/M)

The /M command starts LMWPRINT in a minimized state, waiting for you to activate it and select a label to print.

Close LMWPRINT (/Q)

The /Q command closes LMWPRINT and removes it from memory. When the original print job is started with the /W command, this is the only way to close down LMWPRINT, as there is not a dialog associated with it. This command can be sent alone on the command line or on the last call to print a label.

Example:

```
LMWPRINT /L=rlabel.qdf /W
LMWPRINT /L=slabel.qdf /D=2
LMWPRINT /Q
```

The first command line in the example will tell LMWPRINT to print the label design called rlabel.qdf and the program will remain active in memory, waiting for the next command line. The second command line will tell LMWPRINT to print the label design called slabel.qdf with two duplicates of each label. The final command line will close the LMWPRINT program and remove it from memory.

Using the Standalone Print Engine (LMWPRINT)

Note: Depending on the edition of the software you are using, this functionality may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Some editions of this program allow you to initiate on-demand print jobs virtually anywhere at any time by specifying special commands and parameters. This flexible printing capability is possible via a separate printing engine called LMWPRINT.

The LMWPRINT print engine can be used in a variety of ways:

Using the LMWPRINT icon to open and print a file

Entering print commands on the Windows Run line

Entering print commands at a DOS prompt

Setting up a shortcut to print a file

Calling LMWPRINT from another program (advanced)

Using LMWPRINT to run AutoPrint

Using LMWPRINT to control the Write Data function

LMWPRINT - Entering Print Commands on the Windows Run Line

1. Click the **Start** button on the Windows taskbar and select **Run**.
2. Type the appropriate path to call the LMWPRINT engine (i.e. C:\Program Files*InstallationFolderName*\LMWPRINT) plus the /L= command followed by the appropriate filename (i.e. /L=sample.qdf). If desired, type additional commands to customize your print job further (i.e. print four duplicate labels using the /D=4 command). So a complete command line entry might look something like this:

```
C:\Program Files\InstallationFolderName\LMWPRINT /L=sample.qdf /D=4
```

3. Press ENTER to run the LMWPRINT engine with the commands and parameters you have specified.

LMWPRINT - Entering Print Commands at a DOS Prompt

1. At a DOS prompt, type the appropriate path to call the LMWPRINT engine (i.e. C:\Program Files*InstallationFolderName*\LMWPRINT) plus the /L= command followed by the appropriate filename (i.e. /L=shipping.qdf). If desired, type additional commands to customize your print job further (i.e. print 10 labels using the /C=10 command). So a complete command line entry might look something like this:

```
C:\Program Files\InstallationFolderName\LMWPRINT /L=shipping.qdf /C=10
```

2. Press ENTER to run the LMWPRINT engine with the commands and parameters you have specified.

Using the LMWPRINT Icon to Open and Print a Label

1. Locate the **LMWPRINT** icon (it will be in the same program group where the main program is installed) and double-click on it with your mouse. The LMWPRINT introduction screen appears.
2. Select the **Find another label to print** option and press ENTER. The **Open** dialog box appears.
3. Select the label file you would like to print and click **OK**.

LMWPRINT - Setting Up a Shortcut to Print a File

1. Right-click anywhere on the Windows desktop, click **New**, and then click **Shortcut**.
2. Type the LMWPRINT location and name of the design file to which you want to create a shortcut (i.e. C:\Program Files*InstallationFolderName*\LMWPRINT /L=label2.qdf).

Calling LMWPRINT From Another Program (Advanced)

This is a **PowerPro** edition feature.

LMWPRINT is an executable file, and therefore, it is possible to call LMWPRINT from other programs. However, it is important to note that every program has a different way of passing command lines.

Some editions of this program also allow you to pass parameters to LMWPRINT using Dynamic Data Exchange (DDE) for the purpose of printing pre-designed labels from your own programs. DDE allows you to send messages between applications that share data and uses shared memory to exchange data between applications. To view the parameters that are available to be passed to LMWPRINT using DDE, see LMWPRINT Commands.

Note: Support is not available for front-end applications or for writing/configuring these applications to work with LMWPRINT.

Printing Labels Automatically with AutoPrint

About AutoPrint

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

AutoPrint allows you to set up automatic printing of a label that uses an attached database.

This function is useful for printing labels based on data that is constantly changing, such as data sent from a mainframe or from an accounting or manufacturing process. AutoPrint automates these types of print jobs by looking for the database and, when available, printing labels for all the records in the database, and then deleting the current database in anticipation of the next batch of data to come.

Note: Another application must write data to a file. The label design software does not perform this action.

Prerequisites

Polling frequency

Accessing AutoPrint

Prerequisites

The AutoPrint feature can be associated with a label that has only one dBase or ASCII file with sequential access attached. The data file you select must be a database that can be deleted because this file will be deleted after all records in the database are printed.

If you are using AutoPrint in conjunction with the standalone print engine (LMWPRINT), you must launch LMWPRINT first in order to run AutoPrint.

Polling Frequency

AutoPrint will “poll” or query a target location for the data file. It looks for the database in the location where it was when the label was designed. If it is there, it prints a label for each record. When it is done printing, it then deletes the control database (so be sure to choose a database that can be deleted).

Then it waits until the database is re-created. When the database is created, it resumes printing until all records in the database are printed and once again deletes the database.

This cycle continues until you click **Cancel** on the **Polling** dialog box or—depending on which option is selected—it keeps polling until a specified time, for a specified number of hours, or until printing has ceased for a specified amount of time.

To change the polling frequency...

Access

You can access AutoPrint from the AutoPrint tab of the **Label Properties** dialog box.

Access polling properties by clicking the **Advanced** button on the **AutoPrint** tab of the **Label Properties** dialog box.

AutoPrint - Setting Up AutoPrint

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

To set up files for automatic printing

Note: AutoPrint may only be used with one dBase or ASCII file with sequential access. The data file you select must be a database that can be deleted as this file **WILL BE DELETED** after all records in that database are printed.

Note: If you are using AutoPrint in conjunction with LMWPRINT, the program's print engine, note that LMWPRINT must first be launched in order to run AutoPrint.

1. First, create a database. This database will be deleted after the print job. Your database program must create a new database using the same name and location as this database in order for AutoPrint to recognize and launch the next print job.
2. Open your label design file.
3. Attach the database to the label design using sequential access.
4. On the **File** menu, click **Label Properties**, and then click the AutoPrint tab.
5. Select the database that will signal the start of the print job, and that can be deleted at the end of the print job.
6. Select the **Enable AutoPrint** check box, and then click **Advanced**.
7. Set the options on the Advanced AutoPrint Properties dialog box as appropriate for your application, and click **OK** to return to the label design window.
8. Design your label by adding text and/or bar code images to the label, and associating selected objects with the Database origin, and with the fields in the database that should populate them.
9. Save the label design.
10. On the **File** menu, click **Print**.

Note: Alternatively, you can use AutoPrint in conjunction with LMWPRINT and initialize the first print job from the standalone print engine.

11. On the Print dialog box, click **All**, and then click **OK**.

A dialog box appears on the desktop indicating that AutoPrint is working. (This box cannot be minimized, but you can drag it to the bottom of the screen.)

AutoPrint prints a label for all the records in the database, and then deletes the database. AutoPrint searches for the same database file name and, upon finding it, initializes the next print job automatically.

AutoPrint - Adding Records to the Source Database

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

Timing

When using the AutoPrint function, you can add records to the source database if you do it in between the times that AutoPrint is set to poll the database.

The program you use to create the database file should attempt to open the file with exclusive access and create the file if it does not exist. If it cannot open it, it should attempt to open it again after a short delay, as AutoPrint may be processing the contents of the file.

Keep trying to open the file until it is opened or until some predetermined time-out time is reached. (AutoPrint processes the file faster than the printer prints, so normally you should be able to access the file rather quickly.)

Process

With the file open, proceed to add as many records as you like and then close the file. The program will print the contents of the file, after it is closed, the next time it checks for the existence of the file.

If the file is on a network and there are several programs adding records to the file, follow the same instructions given above, but try to close the file as quickly as possible so that the other programs will not have to wait too long before they can access the file.

Changing the Polling Frequency

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

When AutoPrint functionality is enabled, AutoPrint will "poll" or query a target location for the data file. It looks for the database in the location where it was when the label was designed. If it is there, it prints a label for each record. When it is done printing, it then deletes that database (so be sure to choose a database that can be deleted). Then it waits until the database is created once again. When the database is created, it then resumes printing until all records in the database are printed and once again deletes the database. This cycle continues until you click the **Cancel** button on the polling dialog, or depending on which option is selected, it will keep polling until a specified time, for a specified number of hours, or until printing has ceased for a specified amount of time.

To change the polling frequency and/or enable a specific period of time to wait before shutting down

1. Click the **Advanced** button on the AutoPrint tab to bring up the **Advanced AutoPrint Properties** dialog box.
2. By default, AutoPrint will query the target location every 30 seconds. If you would like it to check for the presence of the database more or less often than every 30 seconds, you can change this time interval setting in the LM8.ini file under [Options].

For example:

[Options]

Auto Print Interval = 5

(where 5 is the number of seconds to wait before checking for the existence of the data file again)

Note: In Windows 2000, XP, or Windows Server 2003, the LM8.ini file can be found in C:\Windows. For Windows Vista, it can be found in C:\Users*<Username>*\AppData\Local\TKI).

Using LMWPRINT to Run AutoPrint

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

You can use the LMWPRINT standalone print engine to initiate automatic label printing (AutoPrint) without having to launch the label design software.

LMWPRINT must first be launched in order to run AutoPrint. Once the AutoPrint options have been configured, launch LMWPRINT to begin the process.

Note: LMWPRINT occupies a license. If you plan to use the label design software while LMWPRINT is open, you must have a license for each instance of each program.

LMWPRINT commands

These are the commands you can use with LMWPRINT to activate and configure the AutoPrint functionality:

Command	Description
/A1=x	Turn AutoPrint On(1) or Off(0)
/A3	Poll continuously
/A4=xx	Poll until a certain time (1-24)
/A5=xxx	Poll for a given number of Hours (0-168)
/A6=xxx	Number of minutes of idle time (0-999)
/A8=xx	Number of backup files (0-10)

Modifying Printer Code with Job Modifier

About Job Modifier

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

The Job Modifier utility provides a means for directly modifying the printer code for a label.

Using the Job Modifier utility, you can delete and insert lines of printer code, or modify lines using a search and replace routine. The scripts you create can be saved to a file (.jms extension) for use with any label format that uses the same printer.

Job Modifier scripts (.jms files) are printer specific and must be used only with the printer make and model for which they were originally created. The label design software does not automatically convert JMS files to work with other printers.

IMPORTANT: The Job Modifier utility is an advanced feature intended for use by those who are very familiar with the printer code for each printer. Understanding the printer code is your responsibility; the label design software manufacturer does not provide support in this area.

Job Modifier Commands

There are two types of Job Modifier commands — Target commands and Action commands. The Target commands specify where in the print job the action is to occur, and the Action commands specify what to do once the Target area has been reached.

Note: The underscore character is a necessary part of each command.

Target Commands

Action Commands

Allowable Target/Action Combinations

Specific Parameters

Target Commands

line_number(N)

Specifies the line number (N) on which the action will be performed.

line_starting_with("X")

Specifies the starting string (X) of the line on which the action will be performed. The action will be applied only to the first line that starts with the string. The string (X) can contain as many characters as necessary to clearly define the target.

lines_starting_with("X")

Specifies the starting string (X) of the lines on which the action will be performed. The action will be applied to all the lines that start with the string. The string (X) can contain as many characters as necessary to clearly define the target.

all

Specifies that the action will be performed on all the lines in the print job.

end

Specifies that the action will be performed after the last line of the print job.

line_containing("string")

Specifies that the action will be performed on the first line that contains the value entered for "string".

lines_containing("string")

Specifies that the action will be performed on all the lines that contain the value entered for "string".

Action Commands

delete_line

Removes the entire line specified by the Target.

insert_line("ABC")

Adds the line ABC before the line specified by the Target. ABC can be any combination of characters that constitute a complete printer command.

append("ABC")

Attaches the string ABC to the end of the line specified by the Target.

insert("ABC")

Inserts the string ABC at the beginning of the line specified by the Target.

replace("ABC","DEF")

Replaces the ABC section of the line specified by the Target with DEF. Both ABC and DEF can be as long as required to make the desired change. Use this Action to insert individual characters into a line. For example: replace("helo","hello")

Allowable Target/Action Combinations

Each Target string can only be used with certain Actions. This table lists acceptable combinations.

Target	Supported Actions
line_number	delete_line, insert_line append, insert, replace
line_starting_with	delete_line, insert_line append, insert, replace
lines_starting_with	delete_line, insert_line append, insert, replace
line_containing	delete_line, insert_line append, insert, replace
lines_containing	delete_line, insert_line append, insert, replace
all	replace
end	insert_line

Specific Parameters

For Targets and Actions, you must manually enter specific values after the commands are inserted into the editing window. To enter values in the editing window, click once to insert the cursor in the command, and then type the required information.

When entering specific values, follow these guidelines:

- Alphanumeric strings must be enclosed in quotation marks ("Hello"), but numbers may be entered without quotes.
- Field names already specified on the label can be used to include variable information in the Targets and Actions. Enter the exact name, without quotes, given to the field on the label.
- Any valid linked expression can be entered, without quotes, to specify the Target.
- Special command characters, such as SOH or STX, can be included in the script by placing them in angle brackets; for example, <SOH>. Add these command characters as separate fields in a longer string (e.g., <SOH>+123+BOB+"Hello").
- Different values can be combined into a single expression by connecting them with a plus sign (+).

Adding Instructions to a Job Modifier Script

Note: Depending on the edition of the software you are using, this feature may not be available. Refer to the feature comparison chart (in PDF format) for information on the features included in your edition.

A Job Modifier script contains instructions that require certain Job Modifier commands. Specifically, they require a Target and an Action. The Target tells the utility where to place the new instruction; the Action tells it what to do at that location. A colon separates the two strings. A script may contain multiple instructions, each with a Target and an Action.

To add instructions to a Job Modifier script

1. On the **File** menu, click **Label Properties**, and then click on the Job Modifier tab.
2. Do one of the following:
 - To create a new script file, click **New**.
 - To edit an existing script file, select the .jms file from the drop-down list and click **Edit**.

The Job Modifier dialog box appears.

3. Select a Target command from the **Target** drop-down list of commands.
4. Select an Action command from the **Action** drop-down list of commands.
5. Click **Insert** to move the Target and Action commands into the editing window.
6. Click in the editing window to add the specifics to the commands (e.g., specifying line numbers, text to replace, and so on).
7. If desired, click **Save** or **Save As** to save the contents of the script to a .jms file.

Examples of Job Modifier Scripts

The following examples are provided to show how you can add instructions to a Job Modifier script.

all:replace("BX2,2","BX3,3")

will find every occurrence of BX2,2 in the print job and change it to BX3,3.

To add these instructions from the Job Modifier screen:

1. Click on the **Target** drop-down list and click **all**.
2. Click on the **Action** drop-down list and click **replace()**.
3. Click the **Insert** button. The Target and Action commands appear in the script editing window.
4. In the script editing window, click between the two parentheses () and type **"BX2,2","BX3,3"** including the quotes.

line_starting_with(<stx> + "M"):delete_line

finds the first line that starts with the ASCII code STX followed by an M character and removes the entire line from the print job. Such commands must be enclosed in the angle brackets < > to be correctly recognized by the utility, or their ASCII code number must be placed into a CHR(NN) string (e.g., STX = CHR(02)). Refer to an ASCII code chart for specific string equivalents.

To add these instructions from the Job Modifier screen:

1. Click on the **Target** drop-down list and click **line_starting_with()**.
2. Click on the **Action** drop-down list and click **delete_line**.
3. Click the **Insert** button. The Target and Action commands appear in the script editing window.
4. In the script editing window, click between the two parentheses () and type **<stx> + "M"** including the quotes.

end:insert_line("This will be added to the end of the file")

will append the specified string after the last line of the print job.

To add these instructions from the Job Modifier screen:

1. Click on the **Target** drop-down list and click **end**.
2. Click on the **Action** drop-down list and click **insert_line()**.
3. Click the **Insert** button. The Target and Action commands appear in the script editing window.

4. In the script editing window, click between the two parentheses () and type **"This line will be added to the end of the file"** including the quotes.

Writing Label Data to a Text File

Writing Label Data to a Text File

You can configure your label setup so that when a label is printed, its data is written to a comma-delimited text file that you define.

Writing Image Data

Keep in mind the following points when writing image data to a file:

- If the label contains variable images, the data written to the text file matches what appears on the label.
- If a text object has a combination origin, the data written to the text file is the result of the combination expression, not the separate parts of the expression.
- If several objects use the same variable field, the variable field will be listed once for each image. For example, for a text image and a bar code image (Text3 and Bar Code1) that both use the Date1 variable with a value of 3/24/04, the image data is something like this: "Text1" "7/29/03"; "Bar Code1" "7/29/03"

Writing Variable Data

Keep in mind the following points when writing variable data to a file:

- All the variable fields are listed separately, including those that are used in combinations. The data file lists the separate parts of the expression instead of the result.
- All variables are written to the data file, even those that are not used by an object. For example, for database objects, the entire record is written to the data file, not just the data for the field that was assigned to an object.
- Each variable is listed only once, even if it is used by multiple objects on the label.

To write label data to a text file

1. Open your pre-designed label in the label design software.
2. On the **File** menu, click **Label Properties**, and then click the **Write Data** tab.
3. Depending on the type of data on your label and the information that you would like to write to a text file, click the **Enable Writing Image Data to a File** check box and/or the **Enable Writing Variable Data to a File** check box.
4. Set the options on the Write Data tab as appropriate for your application.
5. Click **OK** to return to the design window.
6. Print the desired quantity of labels.

Label data is written to the text file when you print the label.

Displaying Label Data in Log Viewer

This is a **PowerPro** edition feature.

When you enable the Write Data feature, the label design software generates text files that record the label data being printed. You can view these data files with a simple text editor, such as Notepad, or you can display them in Log Viewer, which provides a grid similar to that used to display databases.

To display log files in Log Viewer

1. On the **Tools** menu, click **Log Viewer**.
2. Now in Log Viewer, select **Open Log File** from the **File** menu.
3. Locate and select the log file (i.e., LABEL.RPT), and click **Open**.

The report appears in Log Viewer.

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