BRUKER

Sample Track

Label Designer
Technical Manual

Version   001

BRUKER

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General *1.1*

SampleTRACK is a Laboratory Information Management System (LIMS) for analytical laboratories. One demand on such a system is to identify incoming and outgoing samples (chemical substancy, probe, etc.). As these substancies are mostly carried in small bottles, vials, etc., it is useful to put a barcode-label on each of them identifying the probe properly. Label Designer is a tool to create and modify labels, that can be used on such probes.

Label Designer is part of the SampleTRACK System, but works also as a standalone-program. If you are starting Label Designer from SampleTRACK, you will be forced to log into the SampleTRACK databases. In this case you can print labels containing Sample ID´s (unique identifier for each sample) and analytical methods stored in a SampleTRACK database.

Manual Structure *1.2*

The first part of this manual describes how to install the Sample ID Explorer and Label Designer programs. Sample ID Explorer is a tool used to create ranges of Sample ID´s which are enabled to print and to view printed samples. For more information about the Sample ID Explorer refer to the corresponding manual.

The second part of this manual covers the basics of the Label Designer. Here you will receive information about how to create new labels, how to work with elements and so on. In the later parts of this manual you will receive information about how to print labels, how to work with variable fields, how to display labels as they are printed and working with the database tables SampleTRACK provides.

Introduction

Installation

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After installing SampleTRACK you can install the Label Designer and the Sample ID Explorer. Sample ID Explorer is a part of the Label Designer and will be installed automatically.

To install Label Designer, use the SETUP.EXE program on the Label Designer disk. You will be guided through the installation by a Windows standard installation shield, where you can set up the directory, folder name, etc.

Installation

Main Window

3

General   *3.1*

Label Designer runs only under Microsoft Windows NT4.0 and with a recommended screen resolution of 1024 x 768 Pixel. The program is designed to print labels on standard DIN A4 - printers (Laser printer, Inkjet printer) connected to your computer or network and correctly installed under Windows NT.

Label Designer allows you to set your sheet layout (how many labels are on the DIN A4 paper sheet) and to design labels containing pure text, barcodes, images and geometric elements like lines, rectangles, circles and ellipses.

A basic knowledge of working with Microsoft Windows - software is recommended.

Main Window   *3.2*

Figure *"Main Window" on page 12* shows the main window of Label Designer. As you can see it is divided into three sections.

The upper section contains the main menu and two toolbars (main toolbar and element toolbar).

The middle section contains a panel (element panel) with a list of elements (element list) which are placed on your label and six buttons to ***create***, ***modify*** and ***delete*** elements from the label.

The bottom section shows a preview (containing all elements of the element list) of the label to print and contains a status bar where you can receive more information about the selected command or button.

The middle and bottom sections are divided using a splitter, which allows you to vertically resize the preview window, allowing individual setup of your screen.

Main Window

Figure 3.1.   Main Window
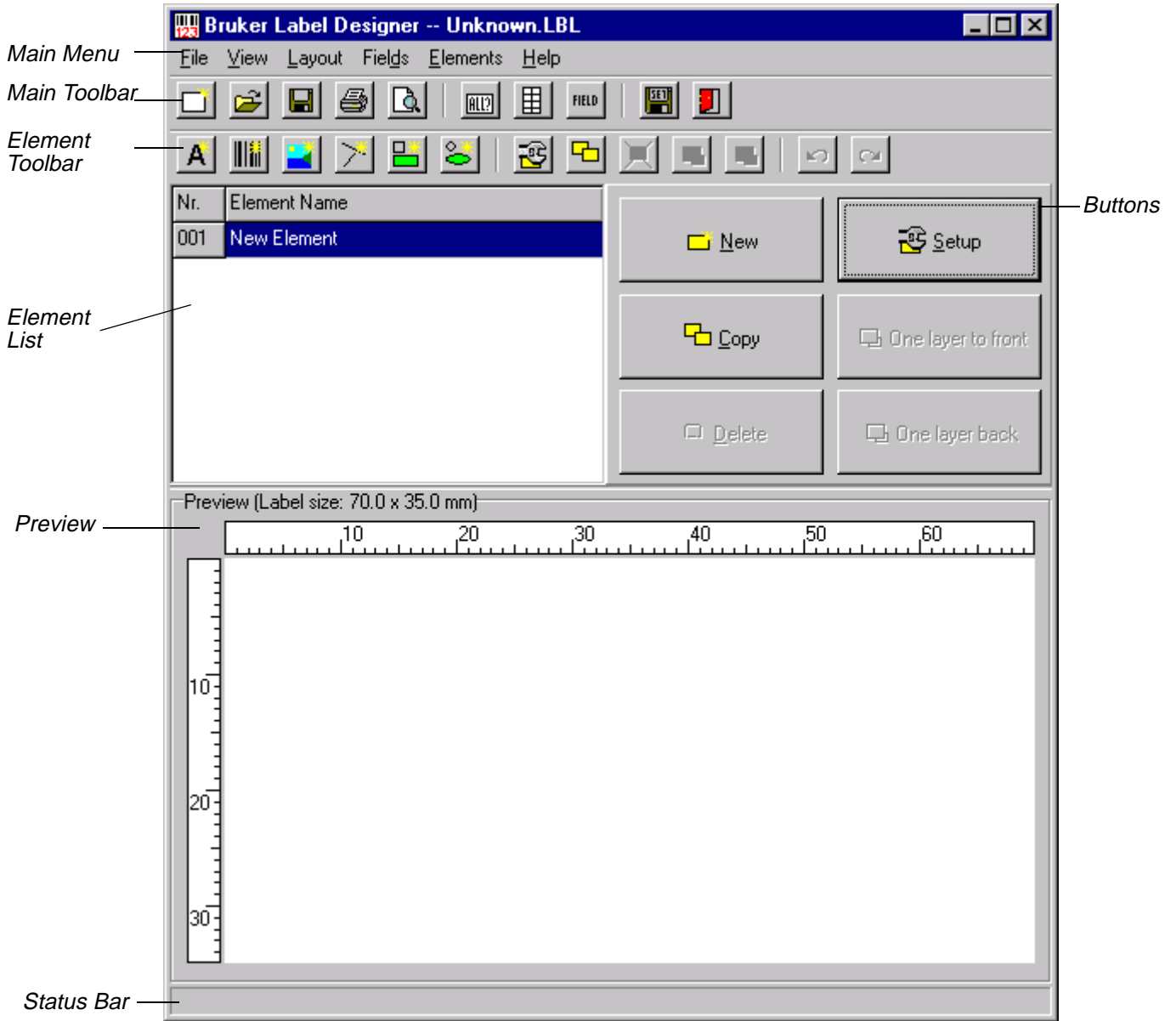
Layout Setup

4

General   *4.1*

The first step you have to perform when creating a new label is to configure Label Designer according to the size of the label you will be using. As default Label Designer uses DIN A4 sheets with a specific number of horizontal and vertical labels.

Setting Up Layout   *4.2*

To enter the information about the sheet layout, select menu item *Setup* from the *Layout* menu or press the toolbutton *Sheet Layout Settings*. In the opening window, shown below, you have to specify the margins (left, right, top and bottom), the distance between two labels horizontally and vertically, and the number of labels in the horizontal and vertical direction. Enter the information corresponding to your paper sheet and press *OK*.

Figure 4.1.   Sheet Layout Setup
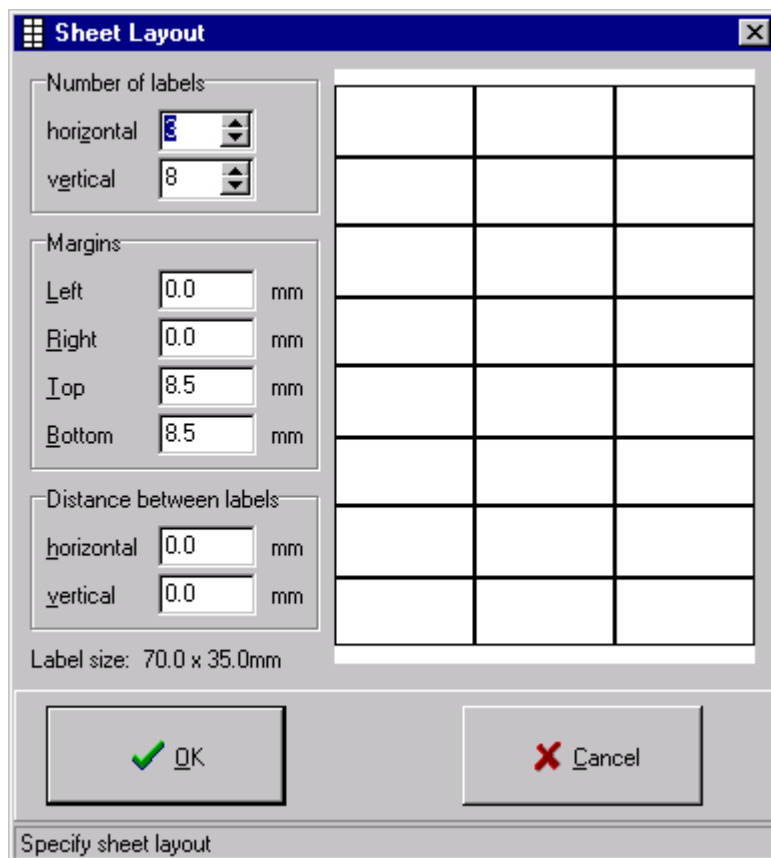
⇨ *Notice*

1. Label Designer is designed to use only DIN A4-paper sheets. If you want to use smaller sheets (like DIN A5), you must only adjust the margins.

2. Be sure that the paper sheet is exactly 210 x 297 mm (horizontal x vertical dimension). Some label sheets are only 208 x 295 mm, therefore Label Designer will calculate the label size incorrectly.
Sometimes the backing (carrying-film) has the correct dimension, but the paper on the backing has smaller dimensions, so labels next to the border might be a little bit smaller than the labels in the center of the papersheet. It´s best to measure the sheets with a ruler to be sure that you enter the correct margins!

Based on the margin information, the distance between the labels and the number of labels, Label Designer will immediately calculate the size of the labels. Thus you are able to verify if all the information you entered is correct. You will see the consequence of the changes you have made in a schematic preview on the right side of the window.

After pressing the *OK* button, the label viewed in the main window´s preview () will be recalculated according to the information you have entered.

Creating New Elements

5

General *5.1*

Elements are objects that are shown on your label, for example: text, images and so on.

Before Label Designer can display any element on your label, you have to create these elements and establish their properties.

Different Element Types *5.2*

Label Designer has the ability to use 6 different element types. These element types are

1. **Text**
   Text elements are used to display text information on your label. The font style, size, color, etc. can be set up individually.

2. **Barcode**
   Barcodes are a pattern of lines and spaces containing information in machine-readable format. Label Designer allows you use different barcodes types (e.g. Interleaved 2/5, Code 128, etc.) and to set some barcode-specific properties.

3. **Image**
   Images can also be displayed on your label. You can use this element type to display a company logo on your label, for example.

4. **Line**
   Lines can be displayed on the label as well. You can specify line width, color, line type, etc.

5. **Rectangle**
   A rectangle is often used to group information on your label. You can set up border line width, color, line type, etc.

6. **Circle and Ellipse**
   Circles and ellipses make your label more interesting. You can set up fill pattern, line color, fill color, etc.

Creating a New Element 5.3

When you start Label Designer, a standard element called `New element` will be visible in the element list.You can either **_modify_** this element or create other new elements. All of the created elements will be shown in the **_element list_**.

There are two ways to create a new element:

1. Press the *New* button from the element panel on the right side of the main window (**_"Main Window" on page 12_**) or select menu item *New* from the *Element* menu. Label Designer will then create a new standard text element called `New element 2`. If you want this element to be a barcode or a image, for example, you have to change the element type in the element setup (**_"Element Setup" on page 17_**)

2. Press one of the first six tool buttons in the **_element toolbar_** (New text element, New barcode element, etc.). Each button will create a new element (called `New element`) which will contain the configuration for that element type.

➪ *Element names must be unique!*

Label Designer thus will enumerate the elements you have created if the name is already in use.

Renaming an Element 5.4

Once you have created several new elements, you may notice that your element list contains elements named `New element`, `New element 2`, `New element 3`, etc. As these names really don´t describe the nature of the element, it is useful the give each element a name which distinguishes it, for example `Red rectangle`, `My Name` or `Barcode Number`. To do this, you have to rename the elements.

First step in renaming an element is to select the element you want to rename from the element list. When you have selected the element, a blue background will appear, whereas you can type in another name. Be careful to use each name only once! Label Designer will ignore a new element name if it already exists in the element list and restore the old element name.

You can also rename elements in the element setup window (**_"Element Setup" on page 17_**). When you open the window you can set up all the properties belonging to the element you have selected.

Element Setup

6

General *6.1*

Each element has different properties which must be set up correctly in order for Label Designer to show the element as you desire. To set up an element, select it from the **_element list_** on the left side of the main window and press the *Setup* button or select the *Setup element* toolbutton in the **_element toolbar_**.

Element Setup *6.2*

An element can be set up by specifying the information in the element setup form as shwon below.

Figure 6.1.   Element Setup Form

Element Setup

In the upper left of this form you will see a panel where you can set up the element *Name*, *Type*, *Position* and *Rotation* angle. Remember that the element name must be unique (see also ***"Creating a New Element" on page 16***). The element type was already discussed in ***"Different Element Types" on page 15***.

The meaning of the *Position* (*Top, Left, Bottom, Right*) edit fields are shown to the right of the edit entry boxes. The *Position* creates a rectangle for the element and all distancies are measured from the upper left corner of the label to the upper left or respectivly to the lower right corner of the element. All entries must be in the unit millimeters (mm) and one decimal character (like 5.2) is allowed.

The *Rotation* angle can be a positive or negative number, including one decimal character (measured in degrees) which specifies the rotation of the element in counterclockwise direction.

The checkbox *Transparent* allows you to establish transparent areas in the element. For example if you enter the text „Hello World", this text is displayed in the rectangle you specified above in *Position*. However, as the text doesn´t fill the whole rectangle (there will always be white areas in the rectangle) you can make these white areas transparent (check the checkbox) or opaque (uncheck the checkbox). If you check the *Transparent* checkbox you will be able to see any element element that exists behind your new element. If you uncheck the *Transparent* checkbox, the new element will appear on the top of your existing elements, possibly blocking them from view.

On the right side of the window a table with green fields and gray borders is displayed. This table represents a DIN A4 sheet and contains exactly the same number of labels horizontally and vertically, as you specified in the Layout Setup (refer to ***"Sheet Layout Setup" on page 13***). Each field in that table represents one label on your sheet. A green field indicates to Label Designer that it should print the current element on the corresponding label, whereas a red field indicates that this element will not be displayed on the corresponding label.

You can change the field color from green to red and back by clicking on a field with your mouse or by selecting the field with the cursor buttons on your keyboard and pressing the space bar. Select a column by clicking the gray field on the top of the table, and likewise a row by clicking the gray field on the left of the table, Label Designer will invert the whole column or row, so that all the green fields are red and vice versa. If you select the small gray field in the upper left corner of the table, the whole table will be inverted.

To place the current element on all the labels on the sheet, press the *Display on every label* button.

In the lower part of the element setup window (***"Element Setup Form" on page 17***) you will see a panel which displays various information depending on the ***element type*** you have selected. These different panels will be described in detail in the following sections.

Text Elements 6.3

The text element is used to place text information on a label. When you enter text in the edit field you can adjust how it will be displayed through use of the buttons and checkboxes described below.

Figure 6.2. Text Element Panel

There are two checkboxes below the edit field: *Stretch* and *Center:*

Stretch indicates that the text will be expanded or compressed to the exact dimensions of the rectangle specified in the __*Position*__ panel. Sometimes stretching text produces results that are less than desirable. If you uncheck this checkbox, the text can be displayed as specified in the font setup, whereas the size of the *Position* rectangle is no longer relevant. The text will always be displayed with its upper right corner on the position specified by *Top* and *Left*.

Center indicates that the text will be centered horizontally in the rectangle specified in __*Position*__ panel. The horizontal center of the text rectangle (the size depends on the text you want to display and the font size specified in the font setup) will be placed in the horizontal center of rectangle specified in the *Position* panel. The vertical position will not be changed.

In the text element panel there are also two buttons available: *Font* and *Fields*.

The *Font* button will open the Windows default font selection window. The default font is Arial, 12 point.

The *Fields* button will open a text editor window (see __*"Text Editor Window" on page 39*__), where you can add fields to your text. Additional information about fields will be provided later in this manual (refer to __*"Fields" on page 31*__).

Barcode Elements 6.4

Barcodes are patterns of black lines and white spaces. They are used to encode information in machine-readable format, which barcode-readers can read. Except for a few highly trained professionals it is nearly impossible to read this encoded information without computer assistance.

Figure 6.3.   Barcode Element Panel
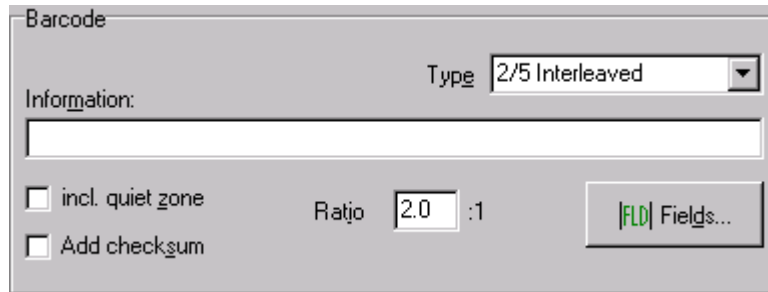
When you enter the information you want to encode in the edit field, it is very important to select the right barcode type in the combobox. You must ensure that this barcode type can encode the information you have entered. To help you to find the right barcode type, an overview of the different barcode types Label Designer supports is shown in the following table:

Table 6.1.   Supported Barcode Types

Barcode type	Information to encode
Interleaved 2 of 5	Numbers 0 to 9, only pairs of numbers
Industrial 2 of 5	Numbers 0 to 9
Code 39	0 to 9, A to Z, - . Space * $ / + %
Code 93	0 to 9, A to Z, - . Space $ +
Code 128	full ASCII-character set
Code Codabar	Numbers 0 to 9, - $: / . +
EAN 8	7 digits, numbers 0 to 9
EAN 13	12 digits, numbers 0 to 9

All of the barcode types listed above allow you to add a checksum to the barcode, but some barcode types require a checksum. A checksum is used to verify the information read by using a mathematic algorithm. If you want to add a checksum to the barcode, check the checkbox *Add checksum*. If the barcode type requires a checksum, you will not be able to uncheck the checkbox *Add checksum*.

The barcodes listed in the table above also allow you to include a quiet zone. The quiet zone is the white area to the left and right of the barcode. The quiet zone has a minimum size requirement. If you can not guarantee that your label has enough space to meet the minimum quiet zone size, you should check the checkbox *Incl. quiet zone*. Label Designer will then place the barcode, including both quiet zones, in the rectangle specified in the ***Position*** panel.

Some barcode types allow you to set the ratio of thick and thin lines and spaces. You can enter a value of between 2.0 and 3.0 in the edit field *Ratio.*

The meaning of the *Fields* button is the same as that in text elements and will be explained later in this manual (see *"Fields" on page 31*).

Sometimes you will find a barcode crossed out on the label. There a several reasons why this can occur:

1. You have entered information the code can not encode. For example, you have selected code Interleaved 2 of 5 and want to encode the information „Hello world". This is not possible as this code only allows numbers from 0 to 9.

2. Barcodes need a minimum line and space width size. If there´s not enough element width to ensure this minimum size, the barcode will be crossed out. To correct this problem, expand the width of the barcode.

3. If you use codes EAN8 or EAN13 and you have not entered the correct number of digits (EAN8: 7 digits, EAN13: 12 digits) then the barcode will also be crossed out.

4. Barcodes have to maintain a line and space width tolerance. If the barcode density is too high, the tolerances will be exceeded. Expand the *width* of the barcode, or select a *printer* with higher resolution, to correct this problem.

Image Elements   *6.5*

You can also place images on your label.

Figure 6.4.   Image Element Panel
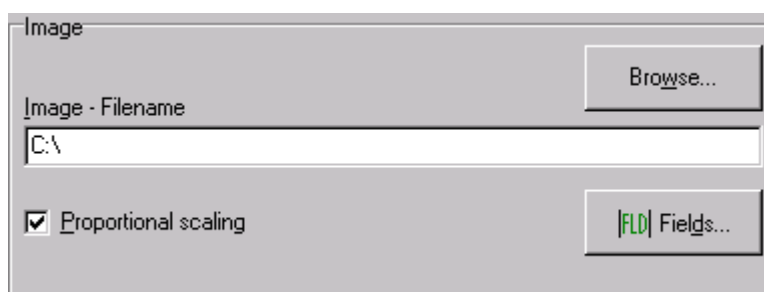
The first step in placing an image on your label is to enter a filename (may include drive and/or path to the image file) or to press the *Browse* button to browse for the image file.

It is only possible to place bitmap graphics on the label. The bitmap file will be logically imported to save memory resources. That is, it is not imported directly to the label, rather is loaded into memory only when needed.

The bitmap graphic will be stretched to fit the exact dimensions in the ***Position*** panel. Sometimes you may want the bitmap to be scaled proportionally. This means that if the width of the element on your label is, for example, 2 times the width of the bitmap (so that the bitmap is scaled by factor 2), the height of bitmap will also be doubled when it is displayed.

If the graphic is larger than the settings in the *Position* panel, it will be scaled down to fit within the dimensions defined.

The meaning of the *Fields* button is the same as that in text elements and will be explained later in this manual (see ***"Fields" on page 31*** and ***"Image Elements and Fields" on page 40***).

Geometric Elements *6.6*

Geometric elements can be lines, rectangles, circles and ellipses. You will have various properties to set based on the radio button that is selected.

Figure 6.5.   Geometric Element Panel
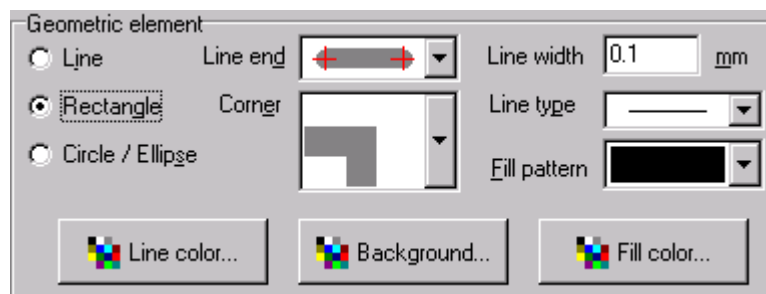
When you select the element type *Geometric element*, the checkbox *Transparent* in the ***Position*** panel will disappear. This does not mean that geometric elements can´t be transparent, but rather you have to set this information in another way:

If you are setting up a rectangle, a circle or an ellipse, select the item *Glass* in the *Fill pattern* combobox. The geometric element will also be transparent in this case.

If you are setting up a line there will be no transparency option.

Other Element Functions

7

General *7.1*

Label Designer provides several functions which allow you to use the program professionally and effectivly. These functions are described in the following sections.

Copying Elements *7.2*

Sometimes it it necessary to copy an existing element. To do this, select the element you want to copy from the ***element list*** and press the *Copy* button on the right side of the main window (see ***"Main Window" on page 12***) or select menu item *Copy* from the *Elements* menu.

Label Designer will create a new element in the element list with the same name as the element that you copied, plus an incremented number starting with the number „2". The properties of the element will also be copied to the new element.

Deleting Elements *7.3*

If you no longer need an element, you can delete it from the ***element list***. Select the element you want to delete from the element list, press the *Delete* button, or select the menu item *Delete* from the *Elements* menu. You will be asked to confirm the deletion of the selected element. After confirmation the element will be deleted from the element list.

Bring To Front and Send To Back *7.4*

The elements displayed in the preview are a visualisation of the elements in the ***element list***. The element list is always worked from top to bottom when displaying the label preview. This means that elements from the top of the list are placed behind elements from the bottom of the list, which may cause these elements to be hidden by the elements from the bottom of the list.

Other Element Functions

To change the order of the elements, so that the elements are brought forward, select the element from the element list and press *Bring to front* or *Send to back* button located on the right sde of the main window, or select the corresponding menu item from the *Elements* menu.

As you will see, the selected element will change position in the element list thus displaying it in front of / back of the other elements.

It is only possible to move an element one step forward or one step backward at a time.

Undo and Redo   *7.5*

These functions are often used when creating a new label, because sometimes you wish to undo the last command. Label Designer allows you to undo up to 50 commands.

If you have undone a command by mistake you must only press the *Redo* buttton to re-implement the command (maximum: also 50 times).

The functions undo and redo can be executed by selecting the menu items *Undo* or *Redo* from the *Elements* menu or by pressing the corresponding toolbutton (blue arrows) in the element toolbar.

⇨ **Notice**

1. It is only possible to undo or redo the actions in the sequence in which they were executed.

2. It is possible to undo and redo all of the changes made in the element setup (e.g. modifying position, rotation angle, element type, etc.; refer to **"Element Setup" on page 17**), element list (e.g. **creating**, **deleting** and **copying** elements, **changing working order**, etc.; see current chapter) and field setup (e.g. **creating**, **deleting** and **modifying** fields, contents, start numbers, etc.; refer to **"Fields" on page 31**).

Mouse Functions

8

General

In *"Element Setup" on page 17* you learned how to modify an existing element using the setup window (*"Element Setup Form" on page 17*). Label Designer also provides various functions which simplify this process.

Information in the Statusbar

When you move your mouse over an element in Label Designer, various information is displayed in the status bar at the bottom of your screen.

In the statusbar you will recieve information about the current mouse position, the *visibility* of this element and some element-type-specific information (e.g. |+|+|+|+| means that this element is visible on all labels of the page; |?|?|?|?| means that this element is visible only on some labels of the page).

If the element contains fields (see *"Fields" on page 31* later in that manual) the current content is also displayed in the statusbar.

Moving Elements with the Mouse

To move elements with the mouse, move the mouse to the middle of the element you want to move, press the left mouse button and hold it down. The element will be highlighted with a focus rectangle and the mouse will change to a pointing hand. Move the mouse (while holding the left mouse button down) to the new position where you want to have the element placed. During this movement information about the moved distance in horizontal and vertical direction will be displayed in the status bar. When you have reached the new position just release the left mouse button and the element will be placed on the new position.

Sizing Elements with the Mouse

You can also resize elements with the mouse. To do this press the mouse button on one edge or border of the focus rectangle. Move the mouse to the new position while holding the left button down. The focus rectangle will resize, and after you released the left mouse button, the element will acquire the new size.

Setting up Elements with the Mouse   *8.5*

However, you easily enter the setup window by pressing the right mouse button while over an element, and selecting *Setup* from the popup menu shown below:

Figure 8.1. Popup Menu
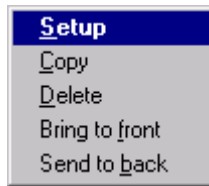
Loading and Saving Labels

<div style="text-align: right">

9

</div>

General   *9.1*

This chapter discusses how to save a label design to your disk, so that it can be used at a later time.

Saving Labels   *9.2*

To save the label you have designed, select the menu item *Save* or *Save as* from the *File* menu or press the *Save* toolbutton in the **_main toolbar_**.

If you select *Save as*, a dialog box will open which requests you to enter a name for the label.

When you select the *Save* menu item, Label Designer will save the label with the current name (displayed in the header of Label Designer´s main window), without asking for a new filename. If the file is named „`Unknown.LBL`", Label Designer will ask for a new filename.

When you save a label 3 files with different extensions will be created on your disk:

`*.LBL`: This file contains all the information about the elements that are placed on your label. The file contains the element list and its working order, and each element with its properties.

`*.SHT`: This file contains all the information about the sheet layout that you set up in the **_"Sheet Layout Setup" on page 13_**.

`*.FLD`: This file contains all the information about the defined fields and their current content. See **_"Fields" on page 31_** in this manual for further information.

You can also save the files with the *.SHT or *.FLD formats separatly by selecting menu item *Save as* from the *Layout* or *Fields* menu. This has the advantage, for example, of using a pre-defined default sheet for your default labels used.

Loading and Saving Labels

Loading Labels 9.3

Before loading a label file from your disk be sure to save any changes to the label you are working with, otherwise the changes will be lost.

To load a label file from your disk, select menu item *Load* from the *File* menu or press the corresponding toolbutton in the ***main toolbar***. In both cases a dialog box will open and request you to enter the name of the label you want to load.

When you loading a label file, there will be actually 3 files loaded into computer memory: The *.LBL, *.FLD and *.SHT format files (see ***"Saving Labels" on page 27*** for further information about the file´s content). If one or more of these files can not be found, you will receive an error message.

If the *.LBL or the *.FLD format files do not contain any element or field (because they are empty, for example) you will receive a message that it was not possible to load the elements or fields correctly.

Favorites 9.4

The favorites tool makes it easier for you to load label files that are used frequently. Selecting the menu item *Favorites* from the *File* menu will open the window shown below:

Figure 9.1.   Favorites Form
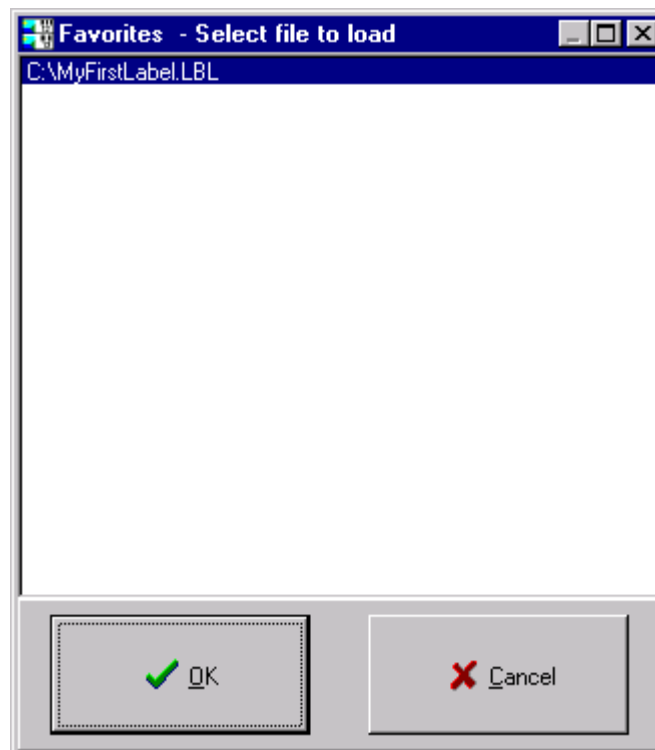
The list shown in the favorites window (***"Favorites Form" on page 28***) can contain up to 99 files in the order in which you loaded them, with the files that were loaded first located on the bottom of the list. The maximum number of files shown in the list can be set up in the Settings (***"Window Size and Position" on page 53***) window. To load a file, select the file from the list and press *OK*. If the file has not been previously deleted or moved, it will be loaded in your working window.

The list of favorites will be saved in the directory where Label Designer is located, with the extension *.FAV.

The list of favorites is loaded each time you start Label Designer, and saved each time you end a Label Designer session.

Loading and Saving Labels

Fields *10*

General *10.1*

This chapter provides information about fields and how to work with fields.

Fields provide an advantage if you want to use the same information in more than one element on the label. Imagine the following situation: You have designed a label with a barcode containing a serial number. The label also has a text element, which displays the serial number, so that the serial number can be read without having a barcode-reader.

Without the use of a field you would create both elements and have to enter the same information in both, the barcode element and the text element.

A field allows you to enter the information in one place (in the field setup where the field is defined) and configure both elements to use this one information field.

What is a Field ? *10.2*

Fields in Label Designer contain variable and other parameter information, which are used within the elements in your element list.

If you have ever written your own programs, you may know fields as variables, which have a name and a type. Label Designer adds other information to these fields, for example, the counting order (ascending, descending), the increment step, etc.

Fields in Label Designer are used as a placeholder which are replaced by their current content when the information is displayed.

Field Setup Form *10.3*

Fields can be administrated by selecting the menu item *Setup* from the *Fields* menu or by pressing the corresponding toolbutton in the main toolbar. The following window (***"Field Setup Form" on page 32***) will open:

Fields

Figure 10.1. Field Setup Form

In this window you can define all the fields you will need in your label. One field called „Serial number" is already defined for you.

Creating a New Field   10.4

You can create a new field by pressing the *Create new field* button in the field panel. An additional window (***"New Field Form" on page 33***) will open requesting you to enter a name for the new field:

Figure 10.2. New Field Form

You can enter any name you like for the new field that you are creating. By default `New fieldname` is displayed in the edit field as this is the default field name for new fields.

Pressing the *OK* button will create a new field with the name you have specified and return you to the „Field Setup Form". The newly created field will automatically be displayed in the *Fieldname* combobox.

Notice:

All field names must be unique!

Renaming a Field   10.5

If you want to rename a field, select the field you want to rename from the *Fieldname* combobox and press the *Rename field* button. The window shown below will open:

Figure 10.3. Rename Field Form

The old fieldname will be displayed in the edit field. Type in the new name for that field and press the *OK* button. Remember that fieldnames must be unique.

Fields

Deleting Fields 10.6

It is also possible to delete fields if they are no longer needed. Select the field you want to delete from the *Fieldname* combobox and press the *Delete field* button.

⇨ **Label Designer will not ask you to confirm the deletion of this field!**

Instead, Label Designer will delete this field from the list displayed in the *Fieldname* combobox. You can undo this deletion by pressing the *Cancel* button in the **"Field Setup Form" on page 32**.

⇨ *Notice:*

You can´t delete all of the fields. At least one field must remain in existance.

Modifying a Field 10.7

Each field that you create will be assigned with some default field properties. However, normally you will need to modify these default properties for your own needs.

To set up these properties you will find two panels in the lower part of the window. The panel on the left side displays a list of all possible **field types** Label Designer provides. The right side displays specific information for the selected field type.

There is also a panel visible which allows you to set up a database connection of this field. Leave this field unchecked for the moment, this will be discussed later in **"Databases" on page 41**.

After you have defined all the fields press the *OK* button to return to Label Designer´s main window (**"Main Window" on page 12**).

Different Field Types 10.8

The following section provides an overview of the possible field types.

Numeric Fields 10.8.1

Normally numeric fields are the most often used field type. On the right side of the „Field Setup Window" is a panel named *Counter* (**"Counter Type" on page 35**), which is visible when you select numeric, hexadecimal or alphabetic fields.

Figure 10.4. Counter Type
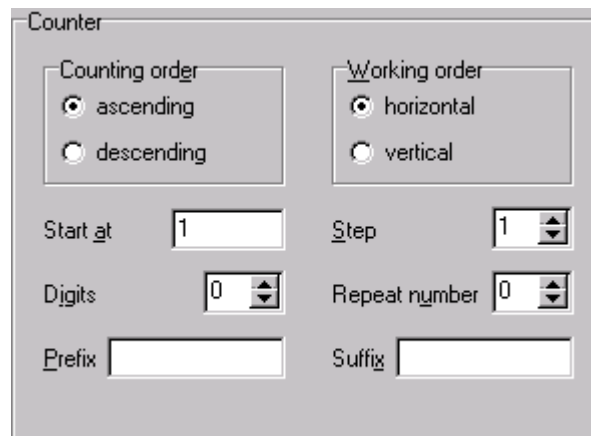
In the Counter panel you can specify the *Counting order* (*ascending* or *descending*) and the *Working order* (*horizontal, vertical*). The meaning of working order is explained in the following two examples:

Horizontal working order (e.g. 5 columns):

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

...

Vertical working order (e.g. 10 rows):

1	11	21	31	41
2	12	22	32	42
3	13	23	33	43

...

9	19	29	39	49
10	20	30	40	50

You can also specify the number to *Start at* and the *Step* width (for example: *Step* = 2 counts in increments of 2, e.g. 1, 3, 5, ..). In the edit-field *Digits* you can specify how many digits should be used. Missing digits will be filled with zeros. If the number you want to display has more than the specified number of digits, one or more of the first digits will not be displayed. In order to display all of the digits of a number, you will have to increment the number of *Digits*, or if you enter 0 here Label Designer will use as many digits as needed to display the number correctly.

In the edit-field *Repeat number* you can enter how often the same number shall be repeated. For example, if *Repeat number* has the value three, the counter will count 1, 1, 1, 2, 2, 2, 3, 3, 3, 4, etc.

Fields

In the last two edit-fields you can specify a *Prefix* which is added in front of the number and a *Suffix* which is added behind the number. The prefix and suffix can be text or a number.

Hexadecimal Fields   10.8.2

Hexadecimal fields are in principle the same as **numeric fields**. The only difference is that the number you enter in the edit-field *Start at* represents a hexadecimal number which are the numbers 0 to 9 and A to F. The *Step* increment you enter here is still displayed as a decimal number. Internally this field is the same as a numeric field, only the *Start at* number and the correct counter value are converted to hexadecimal.

Alphabetic Fields   10.8.3

Alphabetic fields are also principally the same as **numeric fields**. The *Start at* field contains a string with letters from A to Z. Numbers from 0 to 9 are not allowed. The *Step* is still displayed as a decimal number.

In this case the *Digits* means how many letters long the alphabetic field will be. Missing „*Digits*" are filled with spaces. If the string is too long (more letters than defined in *Digits*) the first letters will be cut of.

Internally this field is the same as a numeric field. The string you entered in the field *Start at* will be converted from alphabetic to a decimal number and reconverted to display the correct counter value in the alphabetic format.

Static Fields   10.8.4

Static fields represent constants or shortcuts. It is not possible to increment static fields. You can enter any information you like in a static field.

Column-dependent Information   10.8.5

When you select the Column-dependent Information field type, a list of all the columns will be displayed. The text that you enter for each column will be displayed throughout the rows in that column of your sheet.

The Row-dependent Information is basically the same as the ***Column-dependent Information***, except that the text that you enter for each row will be displayed throughout the columns in that row of your sheet.

Figure 10.5. Row Depending Information Panel

Row	Row-dependent Information
01	Information to display in row 1 on the sheet
02	Information to display in row 2 on the sheet
03	Information to display in row 3 on the sheet
04	...
05	
06	
07	
08	

Rack Type 10.8.7
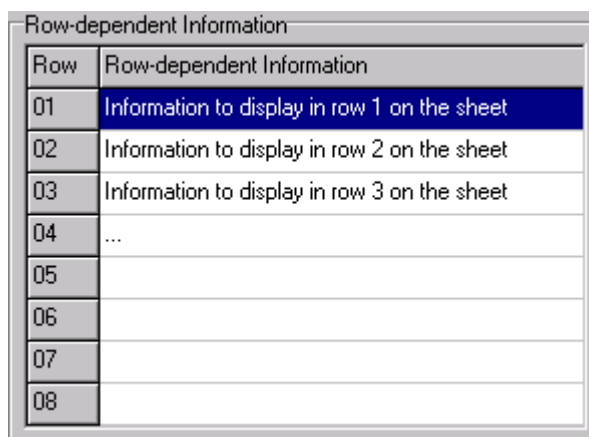
The Rack Type is a field type which allows you to create encoded labels for BEST-NMR (Bruker Efficiency Sample Transfer for Nuclear Magnetic Resonance). This field type is only available if Label Designer is running in conjunction with SampleTRACK on your system

Figure 10.6. Rack Type Panel
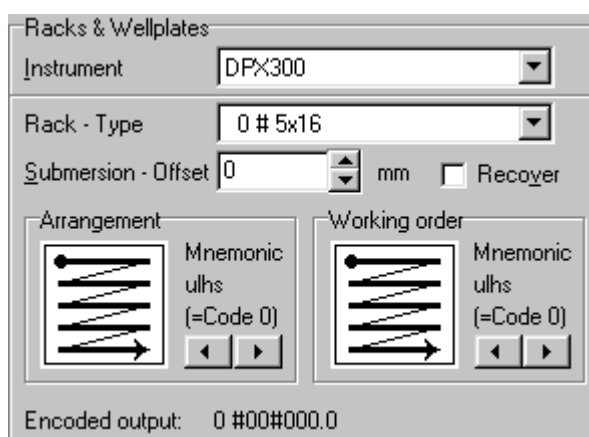
The first step to set up a Rack Type field is to select the instrument you want to print labels for (e.g. DPX300). Select the corresponding entry in the *Instrument* combobox. This combobox contains all instruments which are defined in Sample-

TRACK. The instruments can be configured in the SampleTRACK Client. See the corresponding manual for further information.

To display the racks that are available on the selected instrument, Label Designer requires the files RACKS.RC and RACKS.USE in the LIMS Communication directory. The communication directory can be set up for the corresponding instrument in the SampleTRACK Client, tabsheet *Communication Paths & Files*. The LIMS Communication path name is created by using the path from the *Report Path To Database* edit field, whereas the last subdirectory name is replaced by the subdirectory \best-nmr.

To select the rack for which you want to print labels, select an item from the *Type* combobox. It will be necessary to select the *Arrangement* (how you count through the rack), the *Working order* (the order in which the samples in the rack will be worked) and the *Submersion Offset*. The *Arrangement* and *Working order* will be encoded as a hexadecimal number. The *Submersion Offset* or the string „Rcovr" used for a recover-rack are displayed unencoded. The entire encoded information will be displayed in the lower part of the panel in the way it will be placed on your label.

If a rack carries one or more wellplates (e.g. rack type 205), the information arrangement, working order and submersion offset are not required. This information will not be displayed for setup or in the encoded label.

If the rack has a honeycombed structure for the vials, this is specified by a „w" behind the first hash (hash = #; for example: rack type „209 #w6x16"). In this case some of in the arrangements and the working orders are not allowed.

Wellplate Type   *10.8.8*

The Wellplate Type is very similar to the **_Rack Type_**. The only difference is that you have to select a wellplate from the *Type* combobox. Wellplates have a predefinied arrangement which can not be changed.

The Wellplate Type is only available if the files RACKS.RC and RACKS.USE have been found in the LIMS Communication Directory and contain valid Wellplate Type information.

Adding Fields to Elements   *10.9*

Recall the example from the beginning (**_"General" on page 31_**). We wanted to create a label using a barcode and a text element, both containing the same serial number. After you defined the serial number as described above (or used the predefined serial number), we now have to configure the barcode and the text element to use this defined field to display the information.

Information to display

Field select

Field properties

To do this, select either the barcode or the text element in the element list and then select menu item *Setup* from the *Elements* menu, or press the *Setup* button on the right side of the window to open the element setup window. In the Setup Window you will find a button called *Fields* where the element-type specific properties are displayed. When you press this button the following texteditor (***"Text Editor Window" on page 39***) will be opened:

Figure 10.7. Text Editor Window
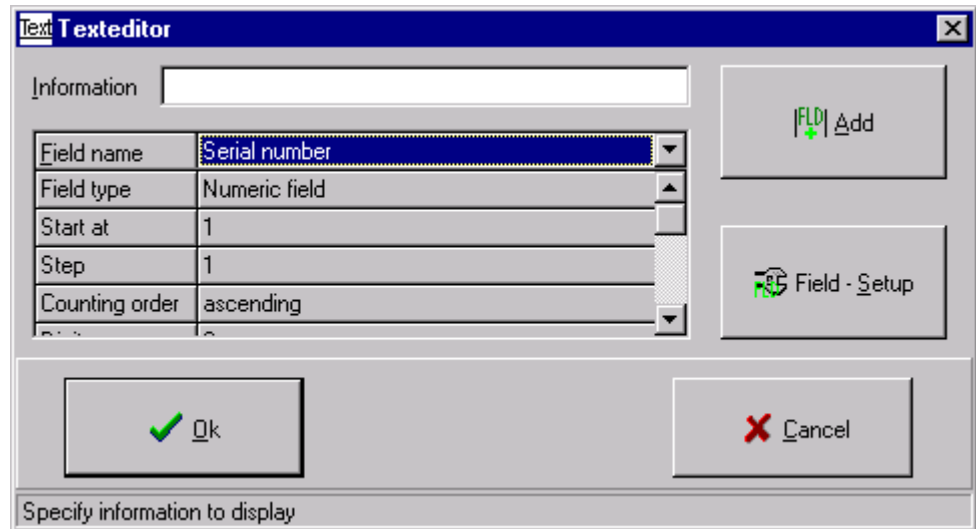
You will notice an edit field named *Information* (empty in the figure above) containing the information you have already entered in the element setup. Below this you will find a combobox where you can select one the predefined fields. Below this combobox is a list of all the properties of this field (which you have entered in the field setup, see ***"Field Setup Form" on page 32***).

To add a field name to the information edit field the following steps must be performed:

1. First, you have to select the field you want to add from the combobox (e.g. `Serial number`).

2. Now place the cursor in the *Information* edit field on the position where you want to add the field. As the *Information* edit field in our example is empty in the moment, place the cursor at the beginning.

3. Press the *Add* button and the text |`Serial number`| will be displayed in the *Information* edit field.

4. Press the *OK* button to finish the process.

The field name is separated from normal text by two vertical lines (|). This tells Label Designer to look for a field called `Serial number` and to replace this field

name (including the vertical lines) with the correct field content which will be displayed or printed on the label.

⇨ *Notice:*

Field names are case sensitive!

If you place the cursor in the *Information* edit field between two letters, the button *Add* will change to *Insert*. If you mark some of the letters within the *Information* edit field, this button will change to *Replace*.

This is all that you have to do to add a field name to a text, barcode or image element. You can, of course place more than one field name in an element edit field.

Image Elements and Fields   *10.9.1*

An image element can contain fields in the filename, which provides the advantage of allowing you to show a sequence of images on the labels you print.

For example: assume that you have image files named `image0001.bmp` to `image0100.bmp` in the main directory of you harddisk (`C:\`). If you want to print these images, define a numeric field (for example called MyImageCounter) counting from 1 to 100 with 4 digits and enter the information

`C:\image|MyImageCounter|.bmp`

in the *Filename* edit-field. This will force Label Designer to calculate the correct number first. Now the string `|MyImageCounter|` (including the two vertical lines) will be replaced with the 4-digit-number and the corresponding image will be loaded.

Make sure that the field is setup correctly. If the file is not found, because the field content (= filename) is not correct, no image or error message will be displayed.

Databases

11

Sometimes it is useful to connect fields to databases. This can provide an advantage when printing labels sequentially with a time frame (for example more than one week) between printing. To avoid printing the same number twice, which is a requirement when printing Sample ID´s (a probe must have an unique identifier in an analytical laboratory) , you have to annotate this number separately.

Label Designer allows you make this annotation in a database. Then it is guaranteed that every number is only printed once. By linking to databases you are also able to define ranges of numbers for different users, so you can identify the user by the number´s range. Each user can then print Sample ID´s using their own number range.

Databases Structure   *11.2*

Label Designer is connected to two tables in the SampleTRACK database structure:

1. Sample_ID_Organisation
2. Sample_IDs

The Sample_ID_Organisation (*"Database Table Sample ID Origranisation" on page 42*) table contains information about which sample range is used by which blockname. It also contains information about which methods (analytical methods like NMR, MS..) are valid for this sample range, the prefix and suffix that you defined and so on. This information can be set with the Sample ID Explorer program. Refer to the Sample ID Explorer manual for more information about creating and administrating sample ranges.

The following table contains an example of the Sample_ID_Organisation table:

Databases

Table 11.1.   Database Table Sample_ID_Origranisation

Blockname	Start at	Stop at	Digits	Prefix	Suffix	Methods
User 1	100001	200000	6	A	W	NMR, MS
User 2	200001	300000	6	B	X	XRAY, MS
User 3	300001	400000	6	C	Y	NMR, IR
User 4	400001	600000	6	D	Z	NMR
User 1	600001	700000	6	A	W	NMR, MS

The table Sample_IDs contains information about all of the printed samples (Sample ID´s) with their method. SampleTRACK can then check each incoming Sample ID to see if it is valid. This table is written or updated every time a label is printed.

Table 11.2.   Database Table Sample_IDs

Sample ID	Method	Blockname	Status	Date print	Sample Number
A100001W	NMR	User 1	printed	17.05.99	100001
A100002W	NMR	User 1	printed	17.05.99	100002
A100002W	MS	User 1	printed	17.05.99	100002
C300001Y	IR	User 3	printed	17.05.99	300001
C300002Y	IR	User 3	printed	17.05.99	300002

Database log-in   11.3

When starting Label Designer you must log-in to the databases. If the log-in fails or you cancel the log-in procedure, it is not possible to connect fields to database.

To log-in to the database, enter your user name and password when the LogIn window () appears.

<< Formular einfügen !!! >>

Connecting Fields to Database 11.4

To connect a field to the database, open the field setup by selecting *Setup* from the *Fields* menu, select the field you want to connect to database and check the checkbox *Connect to database*.

Figure 11.1. Database Connection in the Field Setup
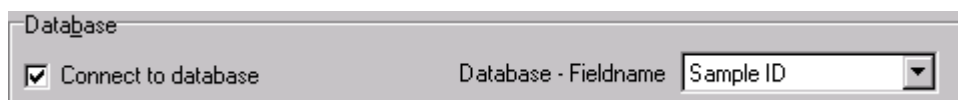
A combobox called *Database fieldname* will then be enabled containing three entrys:

1. Sample ID

2. Method

3. Blockname

A Sample ID is a unique number (combined with a method) which is used to identify each probe, and thus lets SampleTRACK know what to do with that probe. You can connect only one field to the database Sample ID field.

The Sample ID is a **_numic field_** with the starting number calculated from the last used Sample ID incremented by 1, if this number is in a valid sample range (see **_"Database Table Sample_ID_Origranisation" on page 42_**). If no valid start number is found, Label Designer sets the *Start at* field and the *Prefix* and *Suffix* fields to „No free samples found".

Only the *Repeat number* and *Working order* fields are enabled, all other information is constant and defined with the Sample ID Explorer.

Method represents an analytical method. You can select the method from a combobox which contains all of the SampleTRACK methods.

A method can be **_static field_**, **_Row-dependent_** or **_Column-dependent Information_**. It is possible to create more than one field which connects to the same or to different methods.

Label Designer does not verify that the methods you select are valid for the block where you want to print samples, as this information might not be currently available, because you may not have specified a blockname. Label Designer simply shows all the methods which are allowed by SampleTRACK, you have to determine if they are valid for your individual block, otherwise the label will be crossed out when it is printed.

When you are printing labels which contain a Sample ID (refer to **_"Printing Labels containing Sample ID´s" on page 50_**), make sure that you have placed the correct method on your label. If there is no method defined (connected to database) or placed on your label, Label Designer assumes that you want to print la-

bels using the default method, which is stored in the SampleTRACK registry (normally NMR).

All samples are defined in blocks. Samples can be blocked by customer, department or company. Every block contains a specific number of free samples and methods that are allowed (see the Sample ID Explorer manual). It is possible to connect only one field to the database Blockname field.

If there is no defined field connected to the blockname, Label Designer assumes the blockname „default block". In this case be sure that this blockname is defined as a valid block by the Sample ID Explorer.

It is also possible to use the database log-in name (not the Windows NT log - in name!) as blockname. In this case a block with the same name as the log-in name is required in the database table. This name is also case sensitive.

If the blockname you have selected is not found in the Sample_ID_Organisation table, or there are no available free samples in this block, the field which is connected to Sample ID will contain the string „No more free samples". This string will then be displayed instead of a correct Sample ID on your label.

Crossed-Out Labels *11.5*

Sometimes you will find your label crossed out with two red lines. This can occur while designing the label or while printing the label.

When a label is crossed out, this indicates that an error has occured during the database connection. There are several reasons, why an error can occur:

1. Blockname Error
   As you know every sample must be in a block specified by a blockname. Even if you don´t want to use blocks there must be one block called „default block" (small letters!) defined in the database-table Sample_ID_Organisation.

   If you have selected a blockname in Label Designer which is not defined in the Sample-ID-Organisation table, the label will be crossed out. This error can occur if a defined block has been filled up with printed samples and no other block with the same blockname is defined and empty.

2. Method Error
   A method error occurs if two different methods are used in one element or in one label (which uses Sample ID´s). In this case Label Designer does not know which method to use and strikes out the label.
   To avoid this error be sure to place only elements on the label, which contain fields pointing to the same method. If you are using two or more different methods be sure that on every label only one method is visible. Use the ***visibility*** field in the element setup to mark fields (red) which contain methods you don´t

want to display on the corresponding label!

⇨ *Notice:*

If you have selected the *Common label* in the view setup (see **_"View Setup" on page 47_**), the preview label can contain two or more methods at the same time. It helps you to create the label by placing two elements containing different methods overlaying at the same position. You can also change the view mode to a *Specific label* (see also **_"View Setup" on page 47_**), whereas it is no longer allowed to have two different methods on your label as Label Designer displays the label as it will be printed.

Databases

View 12

Select the menu item *Setup* from the *View* menu to display then following window:

Figure 12.1. View Setup
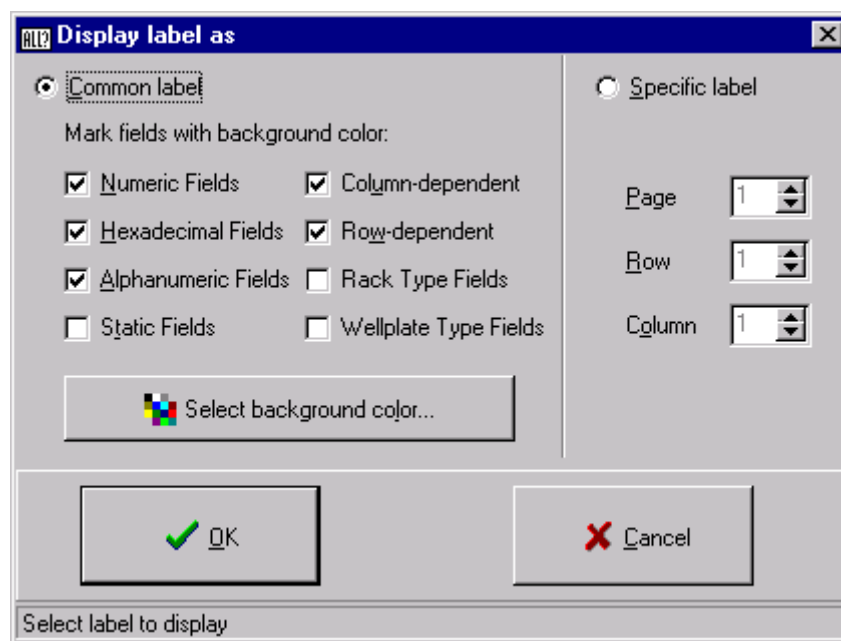
In this window you can select whether you want to see a *Common label* or a *Specific label*.

A *Common label* is helpful when creating labels as all of the elements from the element list are displayed regardless of the **_visibility_** settings in the element setup. In this case it is also allowed to place two different analytical methods connected to the database on one label (see also **_Method Error_**)

You can also mark elements which contain specific field types with a background color. This helps you to identify elements containing fields with the selected **_field types_** during the creation process, as their content may change during printing.

When you select *Specific label*, the label whose page, row and column you have selected will be displayed exactly as it will be printed. All the fields will contain the correct content, except the Sample ID (because Label Designer will not calculate how many Sample ID´s will be placed on the labels beforehand)

View

Printing Labels

13

Before you can print labels with the Label Designer, you need to provide some information in the print setup:

Figure 13.1. Print Setup Form

Printer selection —

Labels to print —

Break specification —

First, select the correct printer from the combobox. You can also set this printer as the default printer for Label Designer by pressing the button *Accept printer*. This is sometimes necessary when testing if **barcodes** can be printed properly with this printer. If the resolution of the printer is too small for printing barcode elements properly, the barcode elements will be crossed out (refer to **"What about crossed out barcodes ?" on page 21**) on the screen and on the printed labels themselves.

Printing Labels

You must also specify the range of labels that you want to print. Select the *Start Page* and the *Start Label*. Setting a start page value other than 1 will start the printing at the defined page without printing empty pages. Setting a start label value other than 1 will start the printing on the label you specified. When you specify the start label, count the labels just as you read them, for example: Label Nr. 7 is the third label in the second row if you have 4 labels per row. Now you can either specify an *End Page* and an *End Label*, or the total amount of labels you want to print.

It is possible to print more than one copy of the same page. Just enter the number of copies in the *Copies* field. This field is disabled when printing labels containing Sample ID´s, because Sample ID´s are always unique.

Label Designer also has a feature necessary for printing labels with a laser printer. Due to the high temperature during printing, glue from the labels may flow out and jam the printer mechanics or glue the next page labels to the printer. In the printer setup you can specify a pause (e.g. 30 to 60 seconds) between page printing to avoid this problem.

After pressing the *Print* button Label Designer waits the specified time before printing the next page. It is not possible to work with the Label Designer while printing labels (to avoid the labels being modified). Instead during the printing process you will receive information about how many pages have been printed or how long you have to wait before printing the next page.

You can also abort printing by pressing the *Stop printing* button whenever you like.

Print Preview *13.2*

To preview the pages you want to print, press the *Preview* button. A window will open containing a white sheet which will be filled with your labels you want to print. You can cancel the preview by pressing the *Stop preview* button. You can zoom in or out be setting the *Zoom* scale between 1 and 10.

Printing Labels containing Sample ID´s *13.3*

Printing Sample ID´s is the same as printing labels without Sample ID´s, except that the database table Sample_IDs will be updated after printing each label, thus it will take a little more time to print a page. If Label Designer doesn´t find any more free samples in the current block during printing, it will try to find another free block with the same blockname and use the Sample ID´s from that new block. If no block is found with the same blockname and available space, Label Designer stops printing and displays the error message „No more free samples found!".

This error message only occurs during printing. Label Designer does not check before printing if there are enough free samples available.

To avoid the print interruption be sure that there are enough free samples in your block to print.

When you are printing labels which contain a Sample ID, make sure that you have placed the correct method on your label. If there is no method defined (connected to database, refer to _**"Connecting Fields to Database" on page 43**_) or placed on your label (see _**Visibility**_ in the Element Setup), Label Designer assumes that you want to print labels using the default method, which is stored in the Sample-TRACK registry (normally NMR).

Preview containing Sample ID´s   _13.4_

Normally, the print preview and the actual printout are identical. However, when a Sample ID is used on a label, it is possible that the preview and the final printout are different.

This results from the fact that when Label Designer starts a label print job containing Sample ID´s, it must first look to see what the current available range of valid Sample ID´s for a specific blockname is. This can be a rather difficult process if the current block of valid Sample ID´s for that blockname is not large enough for the entire print job. If this is the case, Label Designer may need to use two or more different blocks (with the same blockname) to complete the print job.

The difference in the print preview and the actual printout is a result of the fact that during the actual printout all of the printed Sample ID´s are added immediately to that block in the database. If the block is completely filled, Label Designer will automatically look for a new block with the same blockname, which has available space (refer to _**"Printing Labels containing Sample ID´s" on page 50**_). In contrast the print preview **does not** add any Sample ID to the database table, thus when Label Designer must find another block of valid Sample ID´s to complete the print preview, it will keep using the same block over and over again because it doesn´t recognize that the first available block has been already used for print preview.

It must be understood that this occurs only with the print preview, the actual printout will contain the proper Sample ID´s.

Printing Labels

Settings

14

General *14.1*

This chapter discusses some options that can be set up in Label Designer and saved to disk.

The Settings Window *14.2*

You can open the settings window by selecting menu item *Settings* from the *File* menu.

Figure 14.1. Settings Window
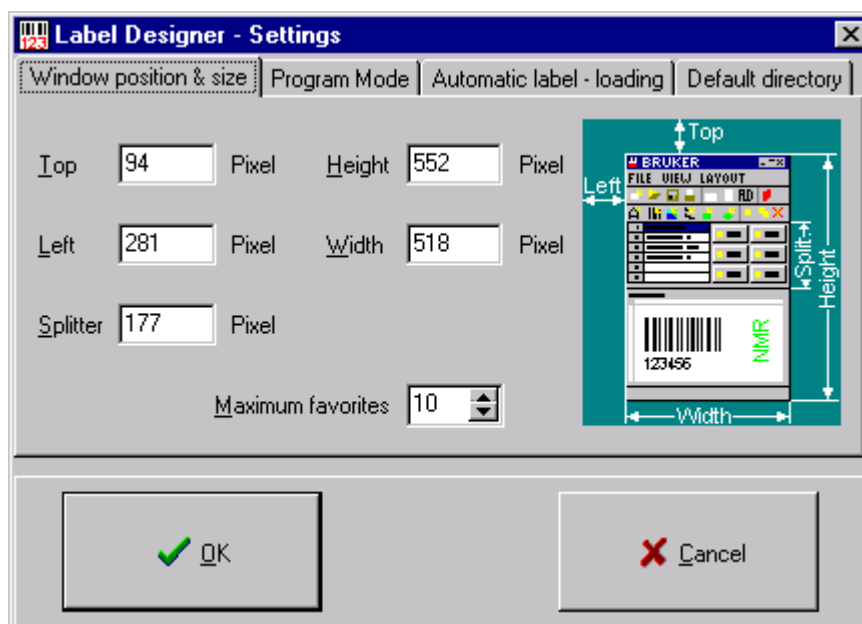
The settings window contains four tabsheets which allow you to set various Label Designer options. These tabsheets will be discussed in the following sections:

Window Size and Position *14.3*

This tabsheet allows you to enter the window size and position you want to display when Label Designer is started. If you move the main window (refer to *"Main*

Window" on page 12) on the screen, the edit fields will always contain the current position and size.

The splitter position represents the height of the element panel in pixels.

The field *Maximum favorites* limits the number of files listed in your favorite list (see *"Favorites" on page 28*).

Program Mode   14.4

Label Designer can be run in two modes: *Master Mode* and *Client Mode*.

Master Mode allows you to

create elements and *fields*,

modify elements, *fields* and the label (e.g. *"Sheet Layout Setup" on page 13*), and

delete elements and *fields*.

In *Client Mode* a lot of these functions are disabled. While running the program in client mode the user can only load and print labels. All other function (except exiting the program) are disabled which prevents a client from modifying a field, a element or the label.

To run the Label Designer in master mode, you have to be assigned this right in the SampleTRACK registry.

Automatic Label Loading   14.5

This option allows you to load a previously created label automatically when starting Label Designer. This improves your work efficiency if you repeatedly use the same label.

Default Directory   14.6

This tabsheet allows you to enter a default directory. While *opening a label file* or *graphic image*, if a filename is not found, Label Designer will look for that file in the default directory.

Saving Settings *14.7*

The settings can be saved by pressing the *Save settings* toolbutton in the main toolbar. These settings will be saved in the Label Designer directory as <program name>.SET. If you have a previous settings file, it will be overwritten. The settings will be loaded automatically when Label Designer is started. To avoid loading the old settings, just rename or delete the *.SET file.

Settings

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