

Sanei Layout Designer 2

User's Manual

May 27, 2024 Rev1.08E

This manual provides information on the design guidelines concerning Sansei Layout Designer 2 that customers need to build Windows applications.



History of revision of this manual

Revision	Date	Description of revision
Rev1.00E	May 26, 2020	Release of 1st edition.
Rev1.01E	Jul 15, 2020	Added RAW data saving function and BMP data saving function.
Rev1.02E	Oct 9,2020	Added rotation function and HRI character function. Fixed undo function.
Rev1.03E	May 28,2021	The appearance of the cover has been changed.
Rev1.04E	Sep 13,2022	Windows 11 was added to the supported OS. Added "10. Standalone mode macro registration function".
Rev1.05E	Feb 8,2023	Extended the string specification for standalone macros. Fixed an issue where characters were garbled during WLAN printing. Changed the logic of reducing the image by simple binarization.
Rev1.06E	Feb 6,2024	Added SK5-31 series to compatible printers. Added "Don't use Page Mode" to Configuration. Printer text object can now print more than 2 lines. Added "5-4. Step moving an object". Added "buzzer sound settings" to standalone macro.
Rev1.07E	Mar 19,2024	We have made corrections because certain system languages were causing layout issues.
Rev1.08E	May 27, 2024	Supports SQRC(Security QR Code).

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1. Function overview

1-1. Function overview

With this software, you can lay out graphics, barcodes, etc. on the computer screen and print them out with a compatible printer via its printer driver. The created files can be managed as formatted data (file format *.sop). The parts that are to be positioned are called objects and are classified as follows:

- Text Object
- Printer Text Object
- Image Object
- Line Object
- Rectangle Object
- Fill Object
- 1D barcode Object
- 2D barcode Object
- Document Macro Object

1-2. Operating Environment

OS:

Microsoft Windows 10 (32bit / 64bit)

Microsoft Windows 11 (32bit / 64bit)

.NET Framework 4.5 or later

Supported printer models:

SM1-21 series

BLM-80 series

SM2-41 series

SM3-21 series

SM4-21/31 series

SK1-2x/3x/4x series

SK4-21/31 series

SK1-2x1/3x1 series

BL2-58 series

SD3-21/22 series

SK5-31 series

2. Application Startup and Shutdown

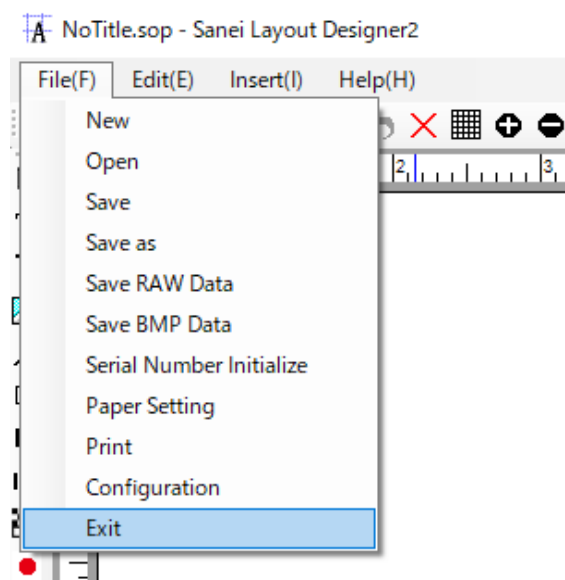
2-1. Starting up the app

Start up Layout Designer 2 from the icon below.

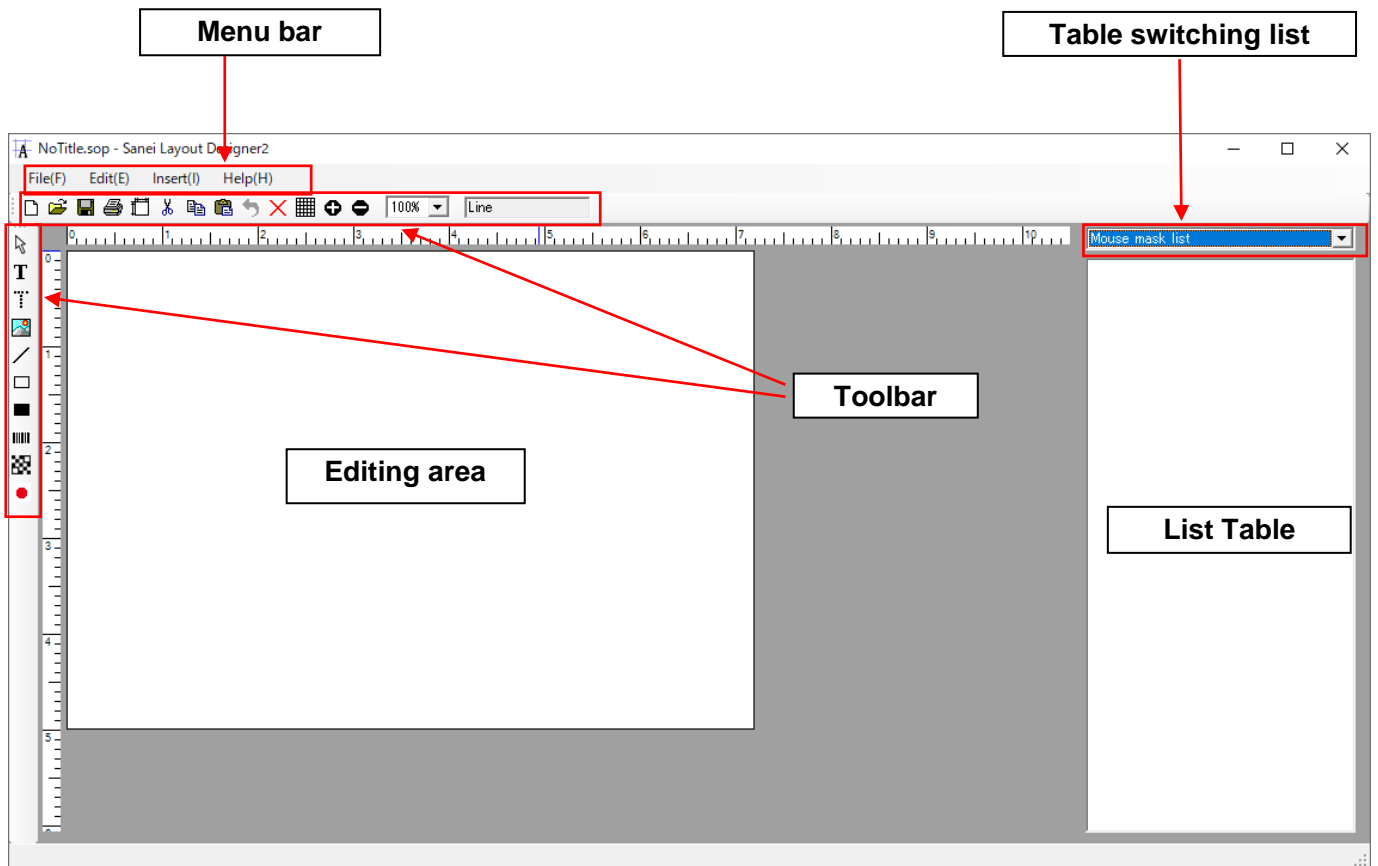


2-2. Shutting down the app

Select “Exit” from the file menu.



2-3. Description of the screen



Menu bar:

Refers to the menu bar containing the following labels: File, Edit, Insert, and Help.

Toolbar:

Refers to toolbars containing tool icons.

Editing area:

Document area for layout editing.

Objects are positioned in this editing area to create the print layout.

List Table:

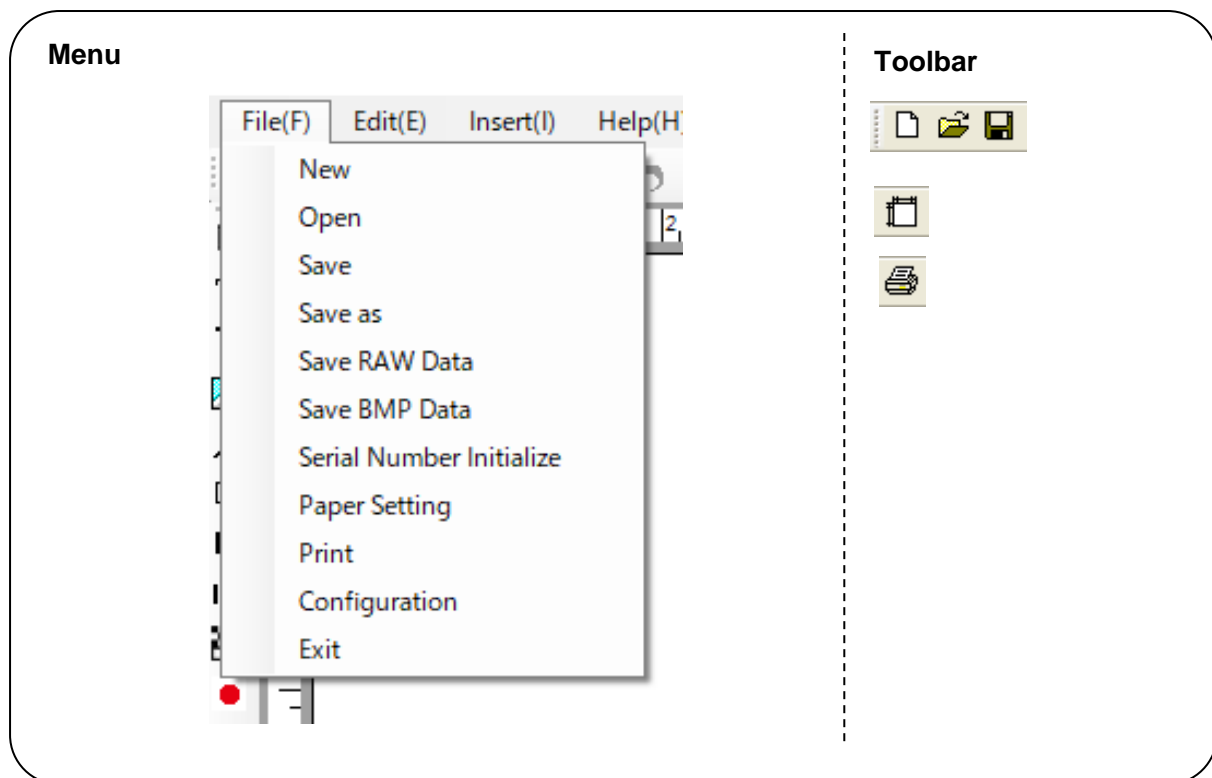
List table for setting object masking and object selection for object(s) positioned in the editing area.


Table switching list:


A list table function is selected.


3. File(F)

3-1. Menu



 **New:**
Creates a new layout file.

 **Open:**
Opens a saved layout file.


 **Save:**
Overwrites and saves a layout file that is currently open.

Save as:
Saves the layout file with the entered file name.

Save RAW Data:
Saves the RAW data file.

Save BMP Data:
Saves the BMP data file.

Serial Number Initialize:
Initializes the serial number registered within the layout file.

 **Paper Setting:**
Sets the editing area according to the paper setting from the selected printer model.

**Print:**

Prints the layout file.

Configuration:

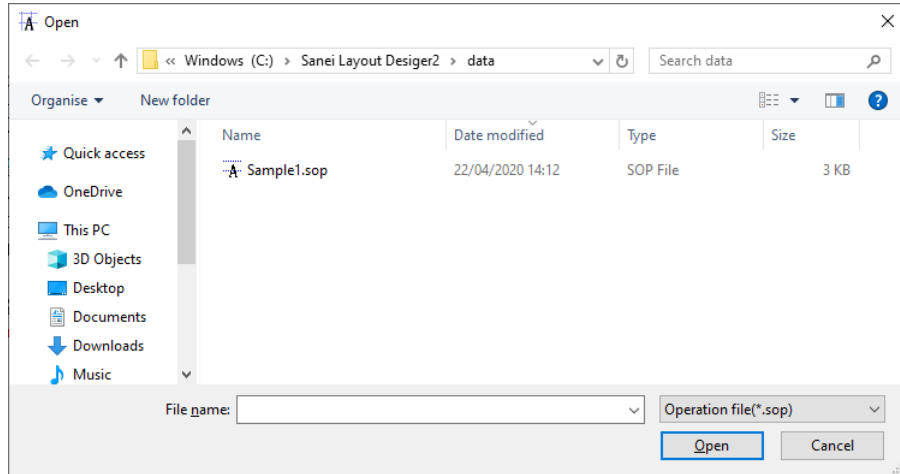
Sets the character code to be used within the layout file.

3-2. New

Opens a new editing window.

3-3. Open

A file window opens and a saved layout file opens.

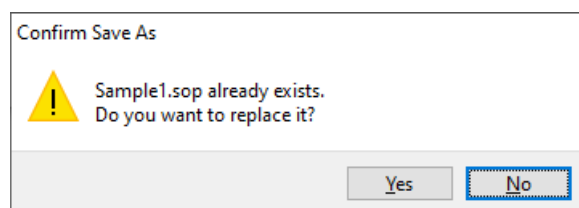
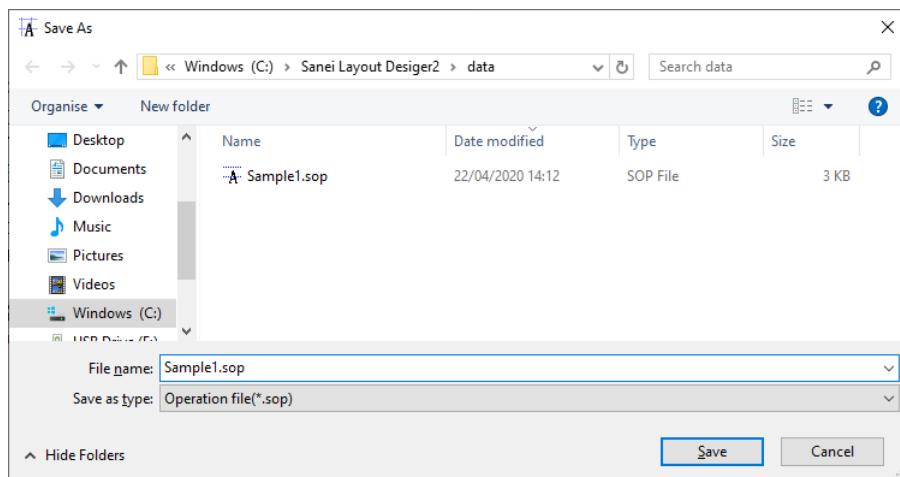


3-4. Save

Overwrites and saves a layout file that is currently open.

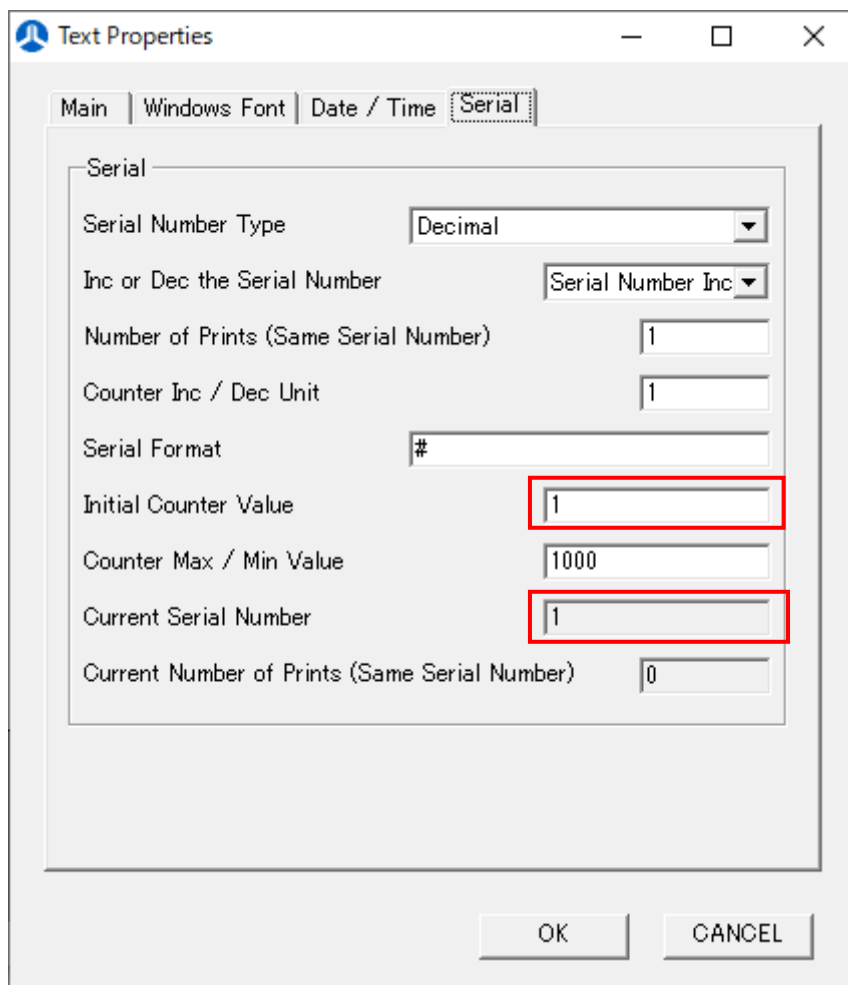
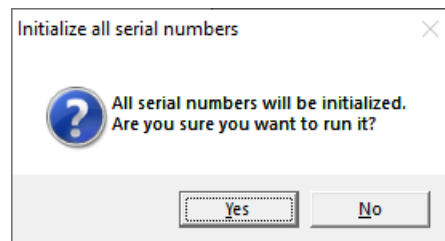
3-5. Save as

A file window opens and the layout file with the entered file name is saved.
If the file name that already exists is selected, it will be overwritten and saved.



3-6. Serial Number Initialize

Selecting “Yes” when a dialog is displayed initializes the serial number registered within the layout file.



3-7. Paper Setting

A dialog opens, and the editing area is set according to the paper setting information from the selected printer model.

Clicking the “OK” button switches the editing area.

Paper Setting

Printer Type: SK1-31

DPI: 8dot/mm(203dpi)

Paper / Print Width: Paper width 80mm/Print Width 72mm(576dot)

☐ Set a Print Width Other than the above

Print Width: 72 mm 576 dot

Page Height: 50 mm 400 dot

Print Margin Setting

Top: 0 mm 0 dot

Left: 0 mm 0 dot

Grid Setting

Grid Distance: 2 mm 16 dot

☐ Align Objects to Grid Lines

OK CANCEL

Printer Type:

Selects the printer model for printing. (The dot density is reflected.)

Paper / Print Width:

Selects the paper/print width for printing.

When setting the desired paper width, check “Set a Print Width Other than the above ” and enter the print width and page height.

Page Height:

Enter the paper length for printing.

Print Margin Setting:

Set the margin for printing.

Top: Top margin setting

Left: Left margin setting

If the print width and page height exceed the editing area due to the print margin setting, that data will not be printed.

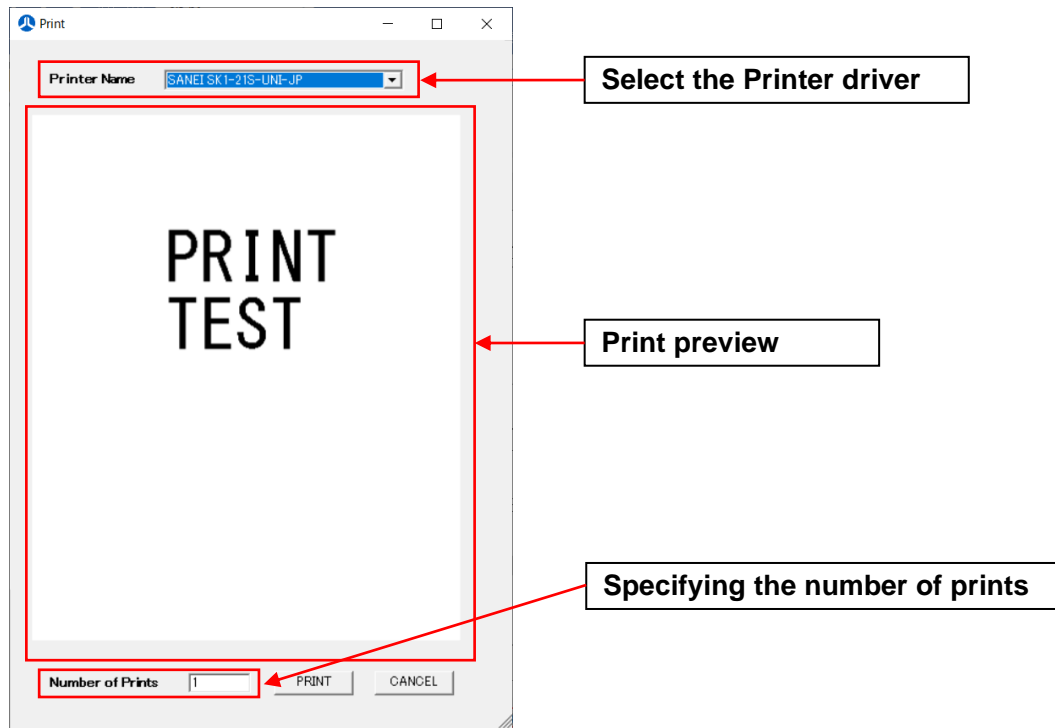
Grid Setting:

Sets the grid spacing inside the editing area.

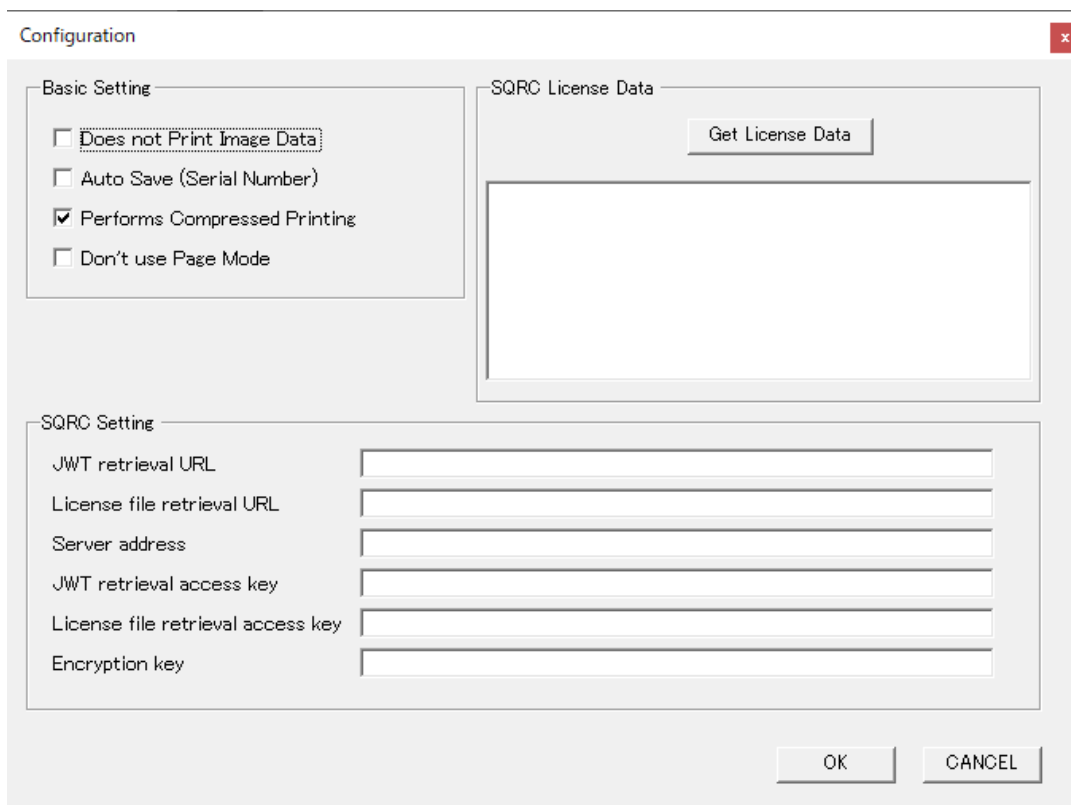
When aligning an object to a grid position, check “Align Objects to Grid Lines.”

3-8. Print

The printer selection and print preview can be confirmed, and the number of prints can be specified. Printing can be done with the print button. When selecting the printer name, the printer driver installed on the PC is displayed. Specify the printer driver corresponding to the printer model selected in the paper settings.



3-9. Configuration



Basic Setting

Does not Print Image Data:

When checked, the following image data will not be printed.

- Windows text font
- Image data
- Line data
- Rectangle data
- Fill data

Auto Save (Serial Number):

Automatically updates and overwrites the serial number each time the image data is printed.

Performs Compressed Printing:

Prints the image data by converting it to compressed print data.

Don't use Page Mode:

Do not use page mode when printing.

Since overlapping is no longer possible, printer text cannot be used, but instead the paper length limit is expanded to a maximum of 1000 mm.

SQRC Setting

Enter the contents of the Q platform license notice that will be distributed when you sign a contract with DENSO WAVE.

JWT retrieval URL:

Enter the contents of the JWT acquisition field of the access destination URL.

License file retrieval URL:

Enter the contents of the license file acquisition field of the access destination URL.

Server address:

Enter the contents of the server address field of the access destination URL.

JWT retrieval access key:

Enter the contents of the server address field of the access destination URL.

License file retrieval access key:

Enter the contents of the access key field for license acquisition.

Encryption key:

Enter the contents of the encryption key that will be distributed separately from the license notification.

SQRC license data

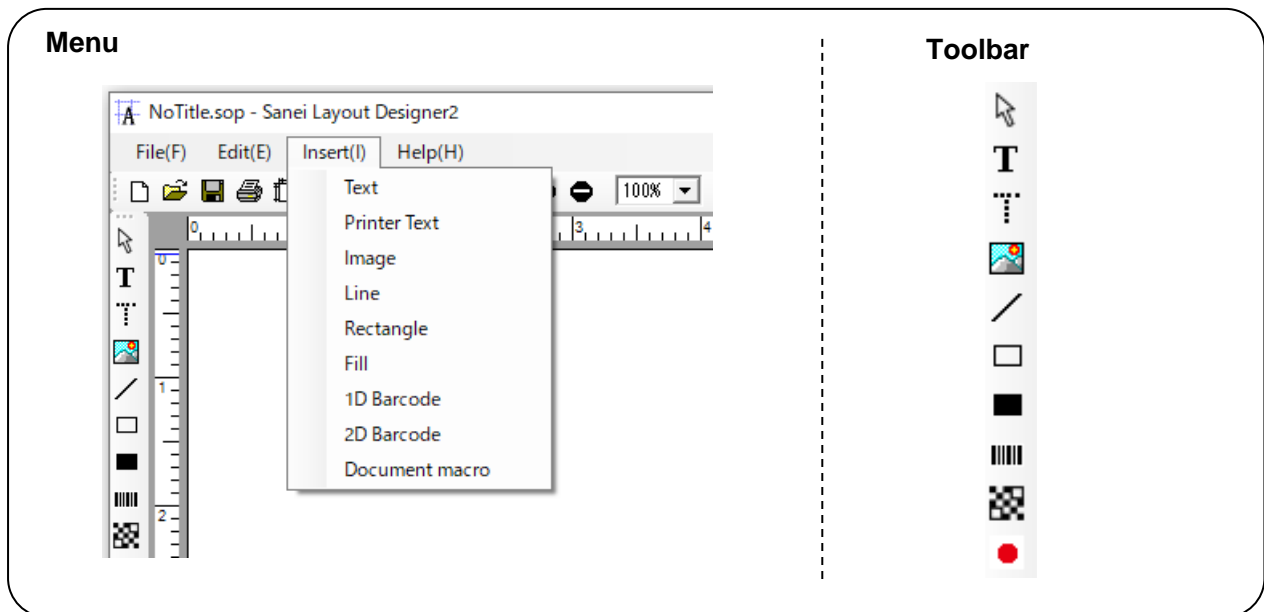
This item is used to obtain the license file required when renewing the license contract.

Get License Data:

Click this button to obtain the contents of the license file in the text box below.
Copy the text box and save the copied content to a file using a text editor, etc.
Please be connected to the internet when clicking this button.

4. Insert(I)

4-1. Menu



T Text:
Inserts a Windows font text object.

Printer Text:
Inserts a printer font text object.

Image:
Inserts an image object.

Line:
Inserts a line object.

Rectangle:
Inserts a rectangle object.

Fill:
Inserts a filled object.

1D Barcode:
Inserts a 1D barcode object.

2D Barcode:
Inserts an object in 2D code.

Document macro:
Sets the document macro.

Text Properties

Main | Windows Font | Date / Time | Serial

Object Name: TEXT000000

Object Position

X: 92 Width: 140

Y: 71 Height: 69

☒ Auto Size

Angle: 0

Text Source: Text Data

Text Data

OK CANCEL

Text properties consist of the following tab menus.

- (1) Main
- (2) Windows Font
- (3) Date / Time (*1)
- (4) Serial (*1)

*1. Setting is possible when the function is enabled in the text source.
If setting is not possible, the tab is grayed out to indicate that the setting is invalid.

(1) Main

The image shows a 'Text Properties' dialog box with the following fields and settings:

- Object Name:** TEXT000000
- Object Position:**
 - X: 92
 - Y: 71
 - Width: 140
 - Height: 69
- Auto Size:** ☒
- Angle:** 0
- Text Source:** Text Data
- Text Data:** (Empty input box)

Buttons: OK, CANCEL

Object position and text data are specified/entered.

Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Auto Size:

Automatically adjusts the size of the object according to the text data.
When checked, the object coordinate size input is grayed out

Angle:

Specifies the rotation angle of the object.

Text Source:

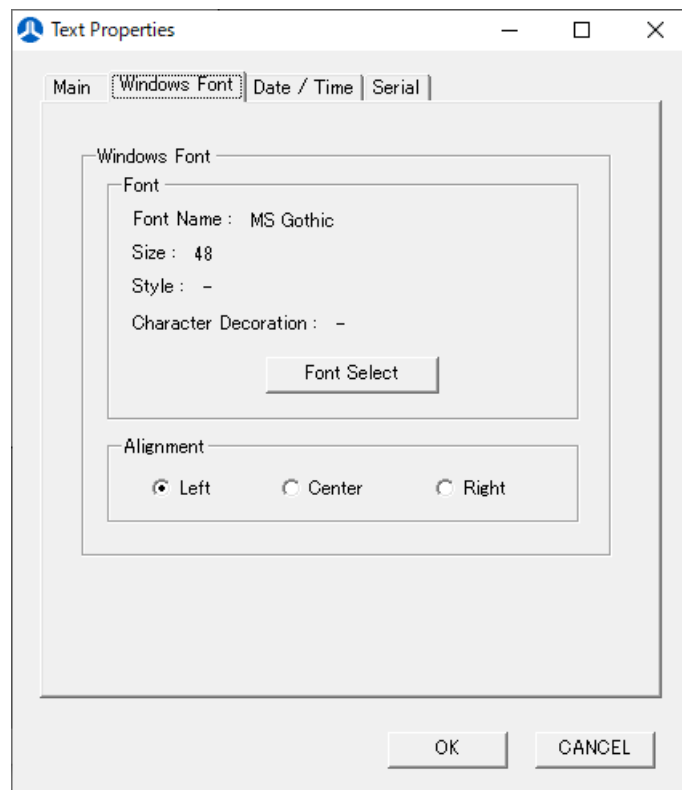
Specify the source of the text data.

- Text Data: Use the data entered in the text data box.
- Date/Time: Date and time data set in Date/Time is used.
- Serial: Serial number data is used.

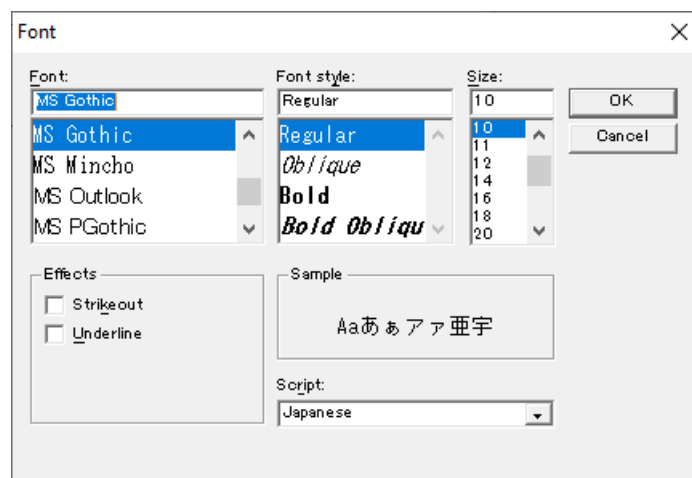
Text Data:

Enter the text data for printing.

(2) Windows Font



Click the [Font Select] button and set the Windows font type to be used from the Windows font setting dialog.



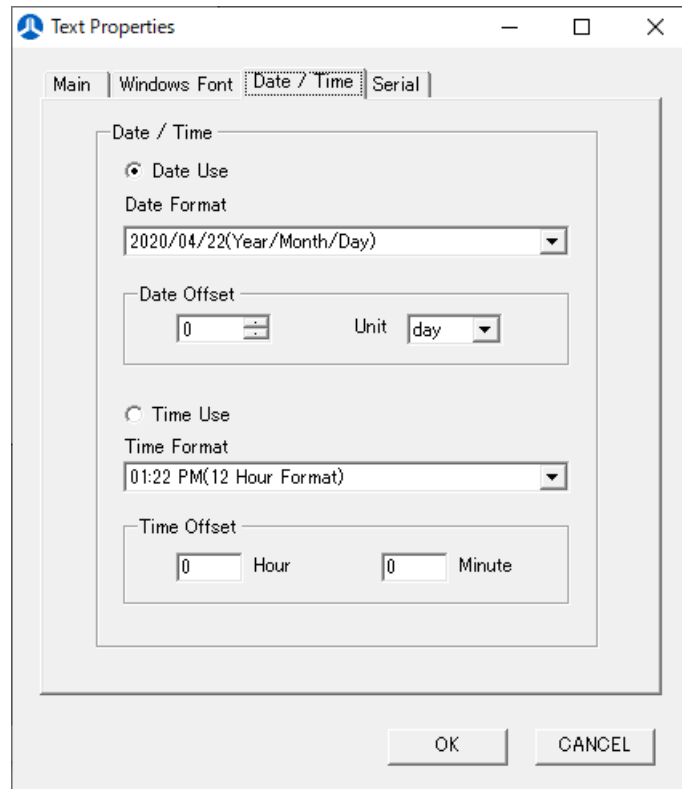
The font to be used must be installed on your PC.

The size of the actually printed image may be slightly different, so check the print layout with the actual print out.

Alignment (Left / Center / Right):

Select the text position (left, center, right) within the object rectangle.

(3) Date / Time



Date Use:

Allows the use of dates (if checked).

Date Format:

Select the date format to be used.

Date Offset:

Number: Add a positive or negative date to the current date.
Set positive (future date)/negative (past date).

Unit: Select the unit from year, month, or day.

Time Use:

Place a check here to allow the use of time.

Time Format:

Select the time format to be used.

Time Offset:

Number: Add a positive or negative time to the current time.
Set positive (future time) and negative (past time).

The date and time displayed in the editing area is the time when the object was added or changed.
When printing, calculate the offset from the time (date and time) of printing, and then print.

(4) Serial

Text Properties

Main | Windows Font | Date / Time | **Serial**

Serial

Serial Number Type: Decimal

Inc or Dec the Serial Number: Serial Number Inc

Number of Prints (Same Serial Number): 1

Counter Inc / Dec Unit: 1

Serial Format: #

Initial Counter Value: 1

Counter Max / Min Value: 1000

Current Serial Number: 1

Current Number of Prints (Same Serial Number): 0

OK CANCEL

Serial Number Type:

Only decimal numbers can be selected.

Inc or Dec the Serial Number:

Sets the increase/decrease in the serial number after printing.

Counter Inc /Dec Unit: Sets a numerical counter for the increase/decrease.

Serial Number Inc: Increases the value specified in the counter increment/decrement unit up to the value specified in the maximum/minimum counter value.

Serial Number Dec: Decreases the value specified in counter increment/decrement unit up to the value specified in the maximum/minimum counter value.

Number of Prints (Same Serial Number):

Sets the number of prints before the serial number is updated.

Serial Format:

Sets the format for printing the serial number.

Input “#” to display and print the serial number counter.

If the half-width character “0” is entered after #, how many times 0 is entered determines the number of decimal places.

Example1: #

The print result is a zero suppressed serial number printed as text data.

Example2: #000

The print result is a printout with 0 added at the beginning so that three digits are aligned, such as “001.”

The image shows a software dialog box titled "Printer Text Properties". It has four tabs: "Main", "Printer Font", "Date / Time", and "Serial". The "Main" tab is active. Inside the dialog, there is a section for "Object Name" with a text field containing "PTEXT000000". Below this is an "Object Position" section with four input fields: "X" (136), "Y" (93), "Width" (173), and "Height" (109). There is also an "Angle" section with a dropdown menu set to "0". The "Text Source" section has a dropdown menu set to "Text Data". Below this is a "Text Data" section with a large empty text area. At the bottom right, there are "OK" and "CANCEL" buttons.

Printer text consists of the following tab menus.

- (1) Main**
- (2) Printer Font**
- (3) Date / Time (*1) (Refer to page 18 for settings items)**
- (4) Serial (*1) (Refer to page 19 for settings items)**

*1. Setting is possible when the function is enabled in the text source.

If setting is not possible, the tab is grayed out to indicate that the setting is invalid

(1) Main

Printer Text Properties

Main | Printer Font | Date / Time | Serial

Object Name: PTTEXT000000

Object Position

X: 136 Width: 173

Y: 93 Height: 109

Angle: 0

Text Source: Text Data

Text Data

OK CANCEL

The position of the object and the text data to be printed can be specified and entered

Object Name:

Enter the name of this object.
This is responsible for identifying the object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Angle:

Specifies the rotation angle of the object.

Auto Size:

The size of the object is automatically adjusted according to the text data.
When checked, the object coordinate size input is grayed out.

Text Source:

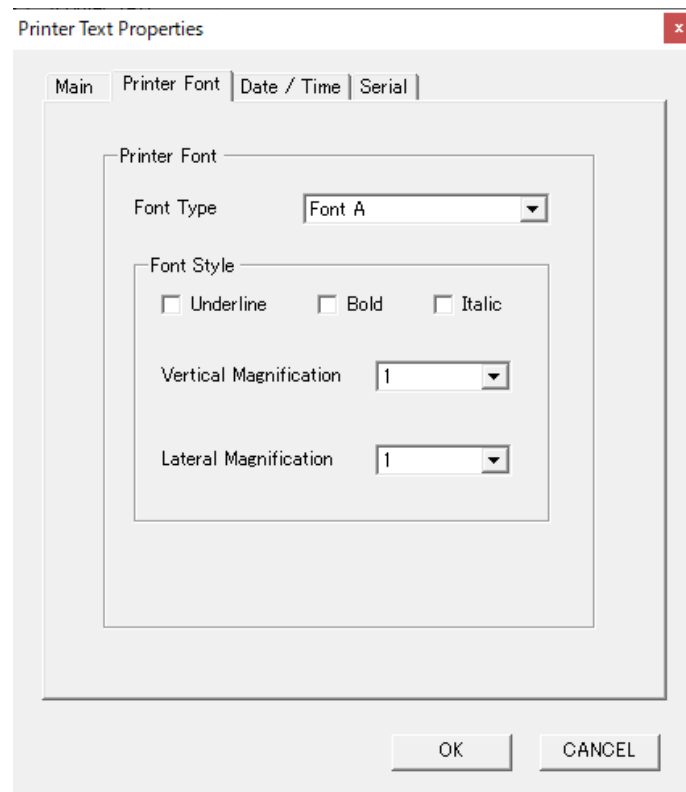
Specify the source of the text data.

Text Data: Use the data entered in the text data box.
Date/Time: The date and time data set in Date/Time is used.
Serial: Serial number data is used.

Text Data:

Enter the text data for printing.

(2) Printer Font



Font Type:

The printer font type is selected.

Font Style:

The printer font style is selected.

Underline: Sets the font style to “underline.”

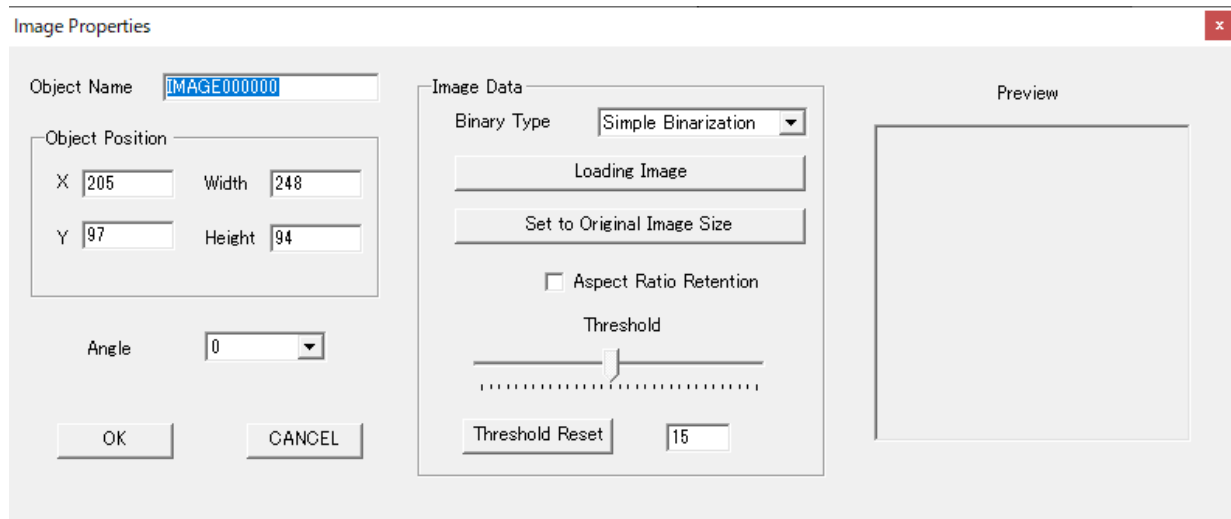
Bold: Sets the font style to “bold.”

Italic: Sets the font style to “italic.”

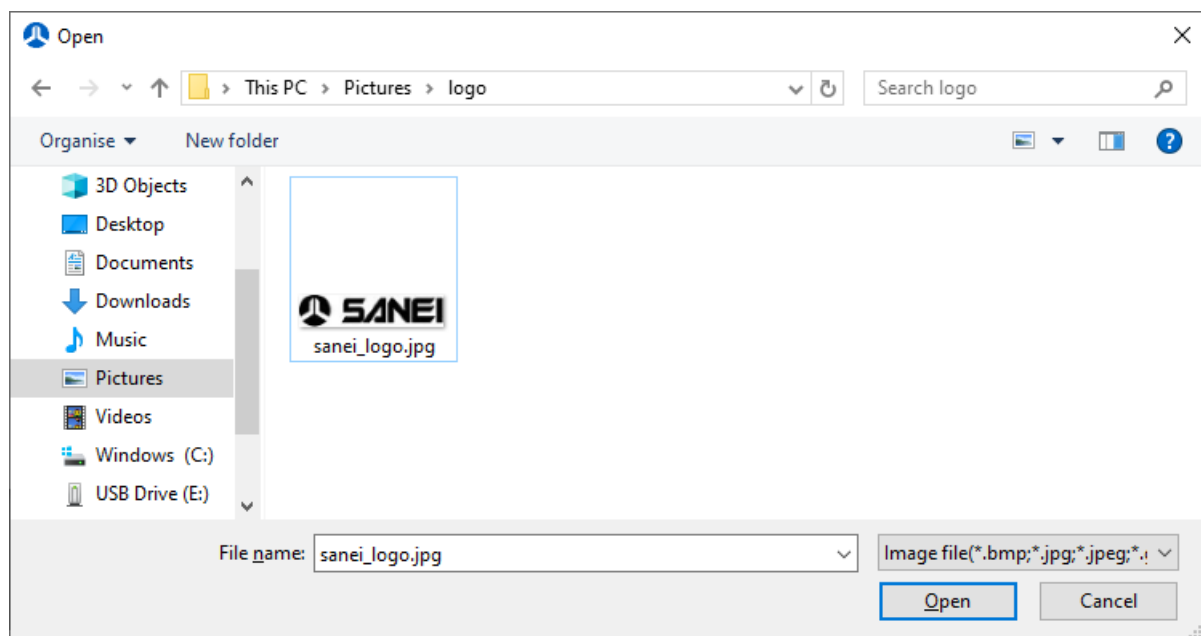
Vertical Magnification: Sets the vertical magnification (1 to 8).

Lateral Magnification: Sets the lateral magnification (1 to 8).

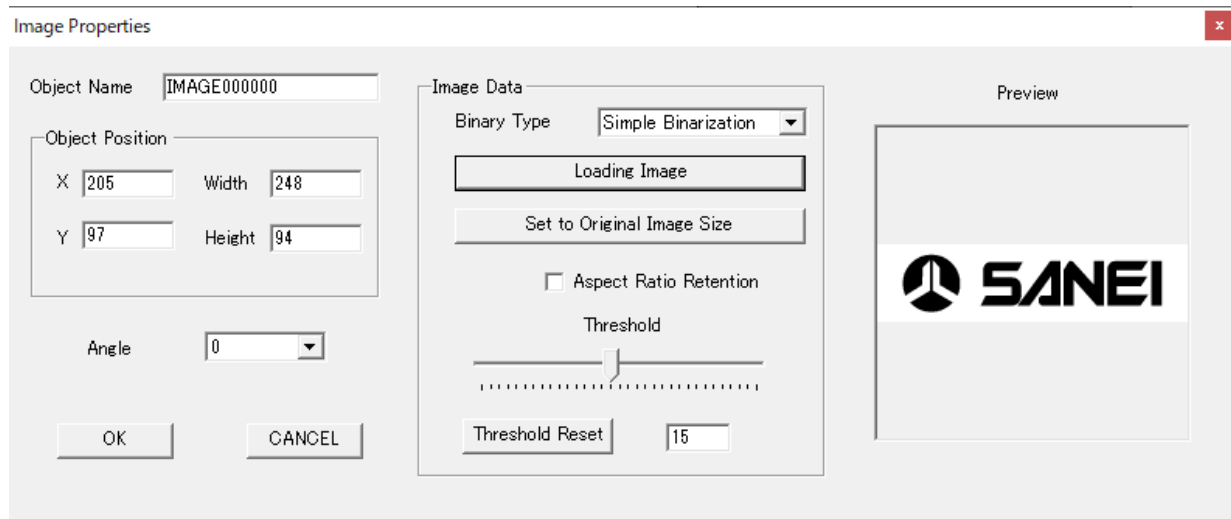
4-4. Image



Click the “Loading Image” button. Select the image file to be inserted.
Selectable file formats are bmp/jpg/gif/png.



The loaded image file is displayed on the preview screen.



Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Angle:

Specifies the rotation angle of the object.

Binary Type:

Select the image binarization method from the following:

- Simple Binarization
- Dither Conversion
- Error Diffusion Method

For dither conversion and error diffusion method, set the image to the original size.

Loading Image:

An image file is loaded according to the current settings.

Every time a setting such as the binarization type is changed, perform “Loading Image” each time.

Set to Original Image Size:

The size of the object is automatically adjusted according to the image data size.

Aspect Ratio Retention:

Used when scaling the image data.

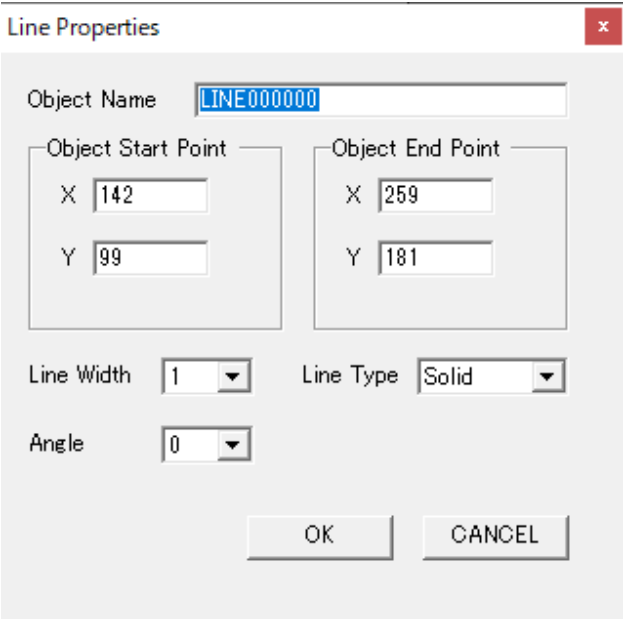
Resized while maintaining the vertical/horizontal ratio.

Threshold:

Set the threshold for binarization (0 to 32).

Threshold Reset:

The threshold for binarization is reset to the initial value of 15.



The image shows a 'Line Properties' dialog box with a title bar containing a close button. The dialog contains the following fields and controls:

- Object Name:** A text field containing 'LINE000000'.
- Object Start Point:** A group box containing two text fields: 'X' with '142' and 'Y' with '99'.
- Object End Point:** A group box containing two text fields: 'X' with '259' and 'Y' with '181'.
- Line Width:** A dropdown menu showing '1'.
- Line Type:** A dropdown menu showing 'Solid'.
- Angle:** A dropdown menu showing '0'.
- Buttons:** 'OK' and 'CANCEL' buttons at the bottom right.

Object Name:

Enter the name of this object.

Object Start Point (X / Y):

Enter the start point coordinates of the line object.

Object End Point (X / Y):

Enter the end point coordinates of the line object.

Line Width:

Select the line thickness (in dots).

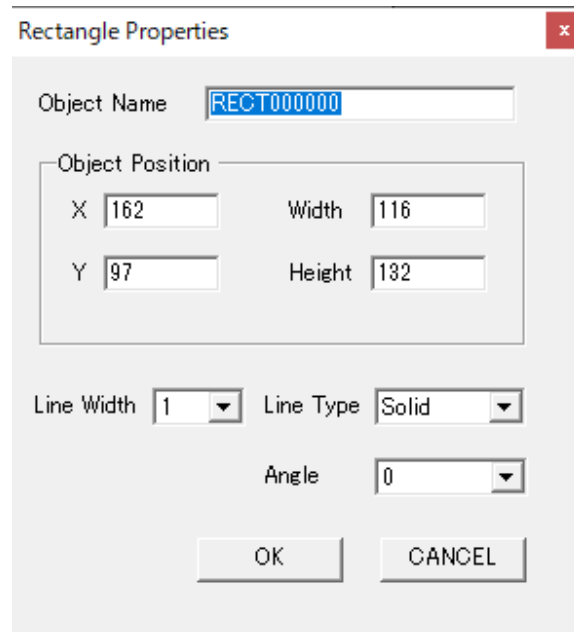
Line Type:

Select the line type from the following:

- Solid
- Dash
- Dot
- 1-dot chain
- 2-dot chain

Angle:

Specifies the rotation angle of the object.



The image shows a 'Rectangle Properties' dialog box with a red close button in the top right corner. It contains several input fields and dropdown menus. The 'Object Name' field is at the top with the text 'RECT000000'. Below it is a section titled 'Object Position' which contains four fields: 'X' (162), 'Y' (97), 'Width' (116), and 'Height' (132). Below this section are 'Line Width' (1) and 'Line Type' (Solid) dropdown menus. At the bottom is an 'Angle' dropdown menu set to 0. At the very bottom are 'OK' and 'CANCEL' buttons.

Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Line Width:

Select the line thickness (in dots).

Line Type:

Select the line type from the following:

- Solid
- Dash
- Dot
- 1-dot chain
- 2-dot chain

Angle:

Specifies the rotation angle of the object.

The screenshot shows a 'Fill Properties' dialog box. At the top is the title bar 'Fill Properties' with a red close button. Below it is the 'Object Name' field containing 'FILL000000'. Underneath is the 'Object Position' section with four input fields: 'X' (112), 'Y' (104), 'Width' (298), and 'Height' (215). Below these are 'Fill Color' (set to 'Black') and 'Angle' (set to '0'). At the bottom are 'OK' and 'CANCEL' buttons.

Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Fill Color:

Black: Set the fill color of the specified area to black.

White: Set the fill color of the specified area to white.

Reverse: Reverse the fill color of the specified area.

Angle:

Specifies the rotation angle of the object.

1D Barcode Properties

Main | Barcode Attribute | Serial

Object Name: BAR1000000

Object Position

X	70	Width	276
Y	105	Height	53

Angle: 0

Text Data

Text Source: Text Data

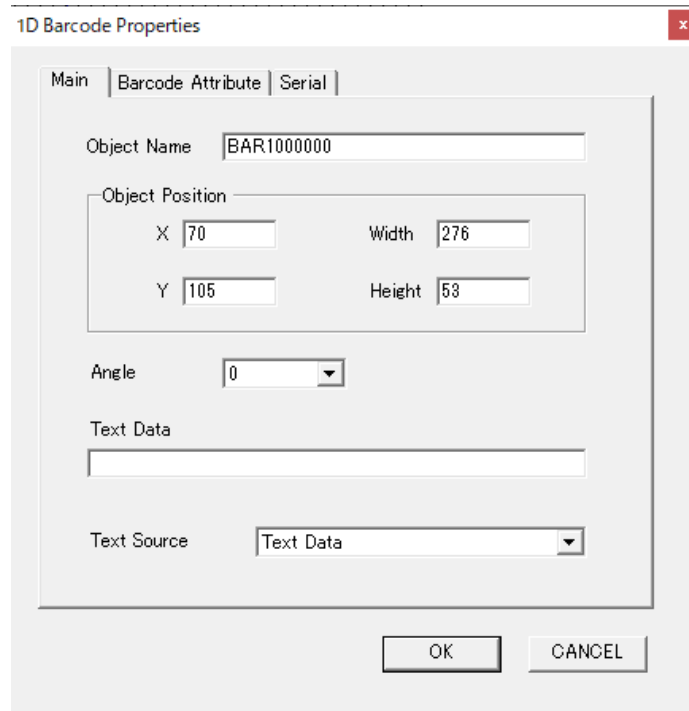
OK CANCEL

The 1D barcode consists of the following tab menus.

- (1) Main
- (2) Barcode Attribute
- (3) Serial (*1) (Refer to page 19 for settings items)

*1. Setting is possible when the function is enabled in the text source.
If setting is not possible, the tab is grayed out to indicate that the setting is invalid.

(1) Main



The image shows a '1D Barcode Properties' dialog box with three tabs: 'Main', 'Barcode Attribute', and 'Serial'. The 'Main' tab is active. It contains the following fields:

- Object Name:** A text box containing 'BAR1000000'.
- Object Position:** A group box containing four text boxes: 'X' (70), 'Y' (105), 'Width' (276), and 'Height' (53).
- Angle:** A dropdown menu set to '0'.
- Text Data:** An empty text box.
- Text Source:** A dropdown menu set to 'Text Data'.

At the bottom right are 'OK' and 'CANCEL' buttons.

Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

Width: Set the maximum range.

The actual bar code width is automatically adjusted based on the input value and bar code data.

Height: Specify the input range (2 to 255).

Angle:

Specifies the rotation angle of the object.

Text Source:

Specify the source of the text data.

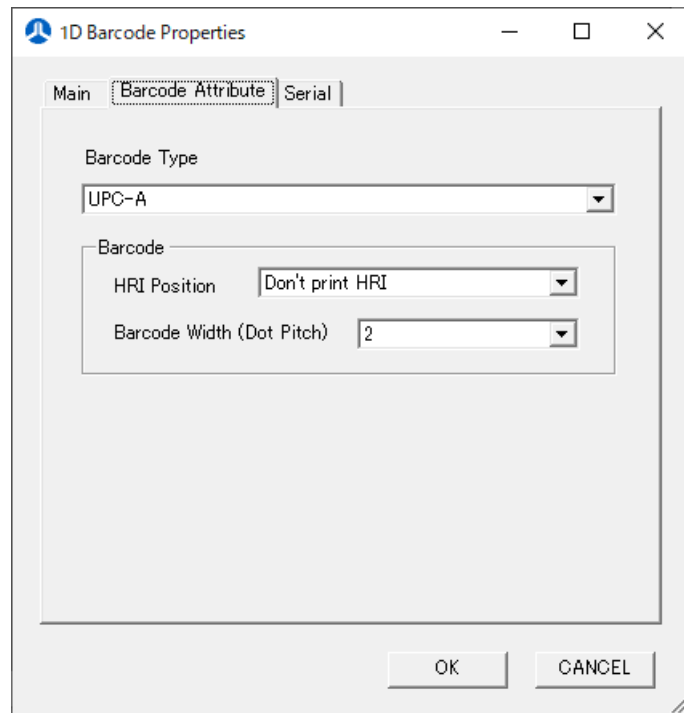
Text Data: Use the data entered in the text data box.

Serial: Use serial number data.

Text Data:

Enter the text data of the 1D barcode.

(2) Barcode Attribute



Barcode Type:

Select the barcode type from the following:

· UPC-A / UPC-E / JAN13 / JAN8 / Code39 / ITF / Codabar / Code128 / Code93

HRI Position:

Select the print position of the HRI character.

- Don't print HRI
- Print above the barcode
- Print under the barcode
- Print above the other

Barcode Width (Dot Pitch):

Select the barcode width type.

Please see the command reference for the narrow/wide width relationship.

2D Barcode Properties

Main | Barcode Attribute | Serial | Sqrc

Object Name:

Object Position

X: Width:

Y: Height:

Angle:

Text Data:

Text Source:

OK CANCEL

The 2D barcode consists of the following tab menus:

- (1) Main
- (2) Barcode Attribute
- (3) Serial (*1) (Refer to page 19 for settings items)
- (4) Sqrc (*2)

- *1. Setting is possible when the function is enabled in the text source.
If setting is not possible, the tab is grayed out to indicate that the setting is invalid.
- *2. This can be entered when the barcode type is SQRC.
If input is not possible, it will be displayed in gray as input is invalid.
To use SQRC, a separate contract with DENSO WAVE is required.

(1) Main

The screenshot shows a dialog box titled "2D Barcode Properties" with a close button (X) in the top right corner. The dialog has four tabs: "Main", "Barcode Attribute", "Serial", and "Src". The "Main" tab is selected. Inside the "Main" tab, there are several input fields and a dropdown menu. The "Object Name" field contains the text "BAR2000000". Below it, the "Object Position" section contains four input fields: "X" (153), "Y" (119), "Width" (141), and "Height" (154). Below these, the "Angle" field is a dropdown menu showing "0". The "Text Data" field is an empty text box. The "Text Source" field is a dropdown menu showing "Text Data". At the bottom right of the dialog are "OK" and "CANCEL" buttons.

Object Name:

Enter the name of this object.

Object Position (X / Y / Width / Height):

Enter the coordinates (X, Y) and size (Width, Height) of the object.

The size (Width, Height) is automatically set according to the cell size and symbol size.

Angle:

Specifies the rotation angle of the object.

Text Source:

Specify the source of the text data.

Text Data: Use the data entered in the text data box.

Serial: Use serial number data.

Text Data:

Enter the text data of the 2D barcode.

(2) Barcode Attribute

The screenshot shows a dialog box titled "2D Barcode Properties" with a red close button in the top right corner. It has four tabs: "Main", "Barcode Attribute" (which is selected), "Serial", and "Sqr". The "Barcode Attribute" tab contains a "Barcode Type" dropdown menu set to "QR CODE". Below this is a "Setting Value" section with four sub-items, each with a dropdown menu: "Number of Dots per Cell" set to "3", "Symbol Size" set to "4 (QR, MicroQR)", "ECC Level" set to "L (7%)", and "Number of Columns" set to "1". At the bottom of the dialog are "OK" and "CANCEL" buttons.

Barcode Type:

Select the barcode type from the following:

QR CODE / MICRO QR CODE / PDF417 / MICRO PDF417 / DATA MATRIX /
MAXI CODE / SQRC

Number of Dots per Cell:

Select the number of dots per cell.

Symbol Size:

Select the symbol size of the 2D Barcode.

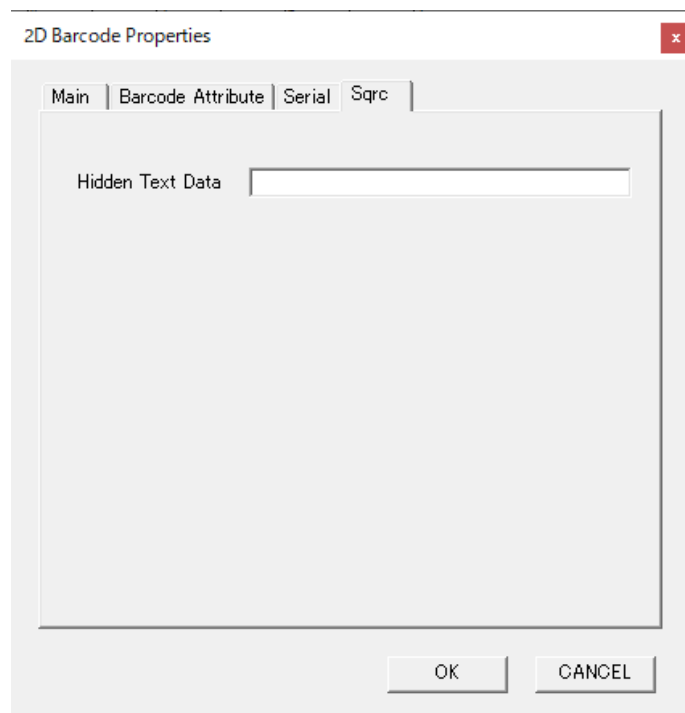
ECC Level:

Select the ECC level.

Number of Columns:

Select the number of columns.

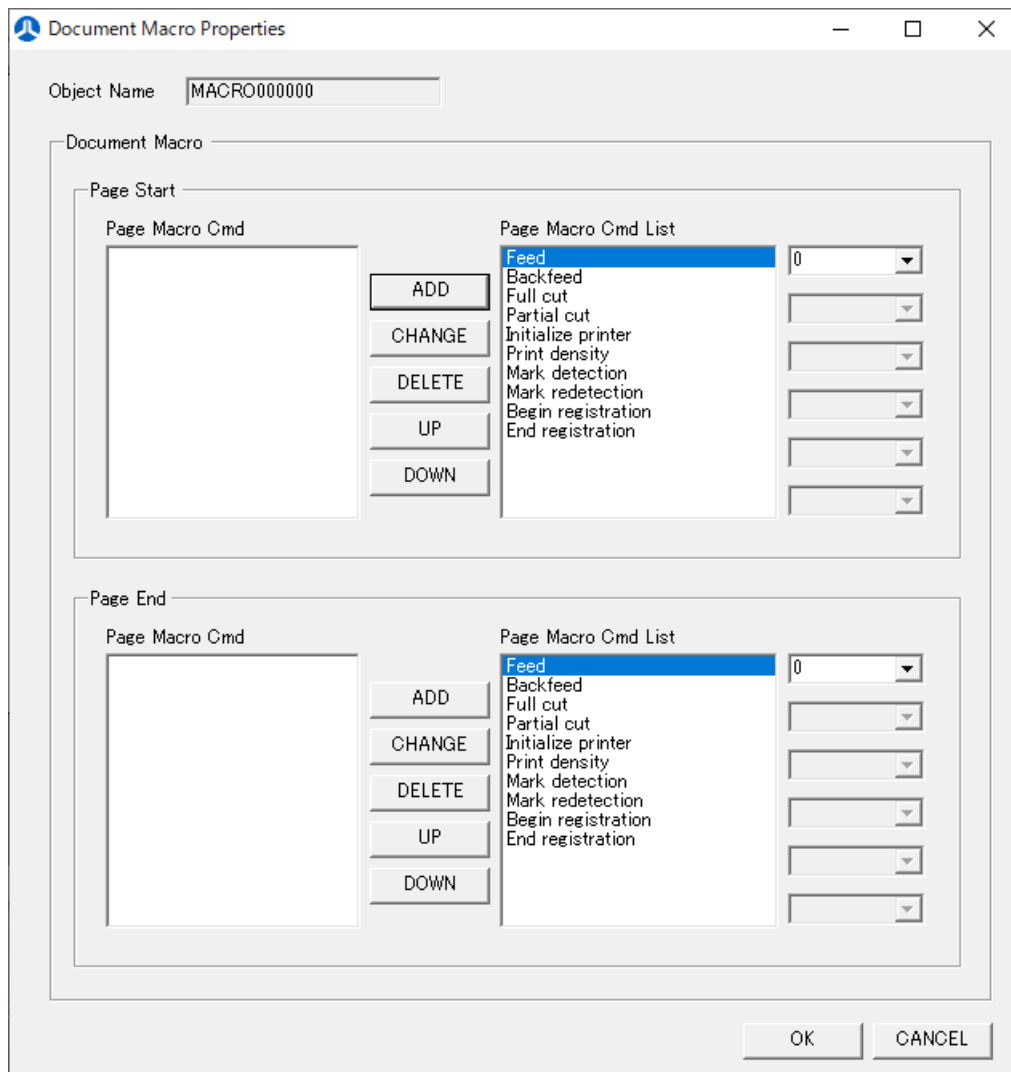
(4) Sqr



The image shows a software dialog box titled "2D Barcode Properties". It has a tabbed interface with four tabs: "Main", "Barcode Attribute", "Serial", and "Sqr". The "Sqr" tab is currently selected. Inside the dialog, there is a label "Hidden Text Data" followed by a text input field. At the bottom right of the dialog, there are two buttons: "OK" and "CANCEL".

Hidden Text Data:

Enter the text to be set as hidden data in SQRC.

**Object Name:**

The object name of the document macro is displayed.

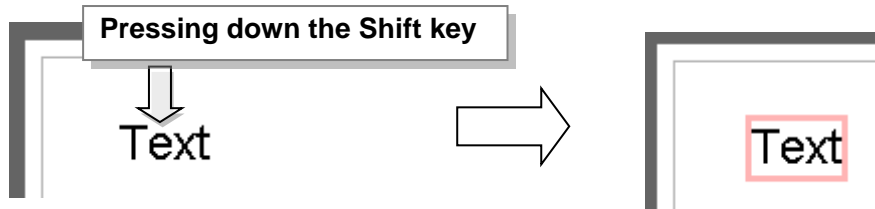
The object name cannot be changed.

Macros that can be set differ depending on the specified “printer model.”

5. Changing an Object

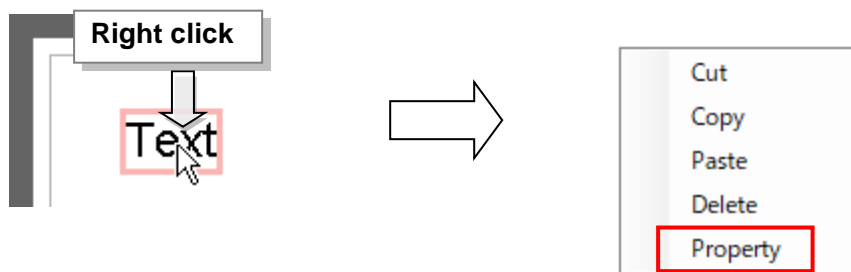
5-1. Focus

An object can be focused by pressing down the Shift key over the object.



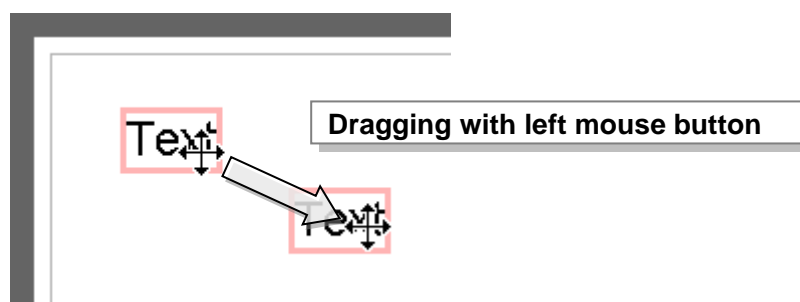
5-2. Changing the property of an object

With an object in focus, right click the mouse and select "Property."



5-3. Moving an object

With an object in focus, move the object by dragging it with the left mouse button.



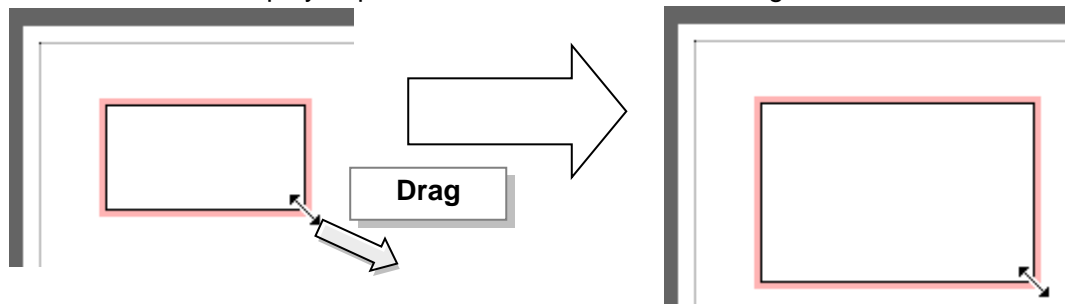
5-4. Step moving an object

With the object in focus, press the cursor key to move the object in steps.
Step movement allows you to move vertically and horizontally in 1-dot units.

5-5. Resizing an object

With an object in focus, drag the specified area with the left mouse button.

- Area near the right side of the rectangle object
To resize the width. The mouse cursor changes to \leftrightarrow .
- Area near the bottom of the rectangle object
To resize the height. The mouse cursor changes to \updownarrow .
- Area near the lower right corner of the rectangle object
To resize the width and height at the same time. The mouse cursor changes to $\nwarrow\swarrow$.
- The mouse cursor display depends on the Windows OS settings.

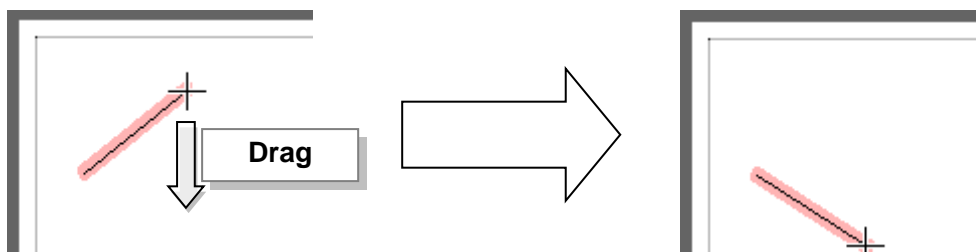


- Text object
When automatic size adjustment is enabled (checked), resizing by dragging cannot be performed.
- Image object
When “Aspect Ratio Retention” is checked, the width and height will change at the same time.
- Bar code object
The QR code cannot be resized. The width of other barcodes cannot be resized.

5-6. Moving the start and end points of a line object

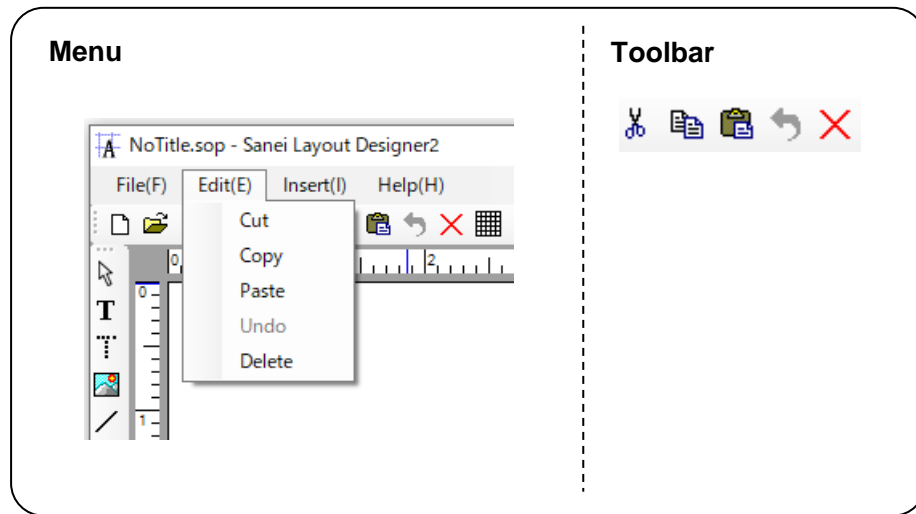
The start point or end point of a line object can be moved by focusing the area around the start point or end point and dragging the left mouse button.

The mouse cursor changes to \oplus .



6. Editing and Deleting the Clipboard

6-1. Overview



The clipboard of an object is operated from the edit menu or toolbar.

Cut:

The object is transferred to the clipboard and deleted.

Copy:

The object is transferred to the clipboard.

Paste:

Data on the clipboard is pasted.

Undo:

Reverts the editing operation (insert, delete, move, etc.) to the previous state. After a layout file has been loaded, it does not revert to the previous state.

Delete:

The object is deleted from the layout data.

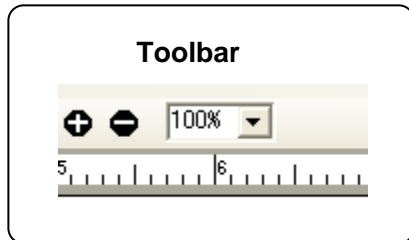
6-2. Pasting images


A pasted image is inserted into the layout data as a binary monochrome image object.


7. Displaying the Editing area

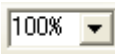
7-1. Zooming

Zooming operations can be performed from the toolbar.

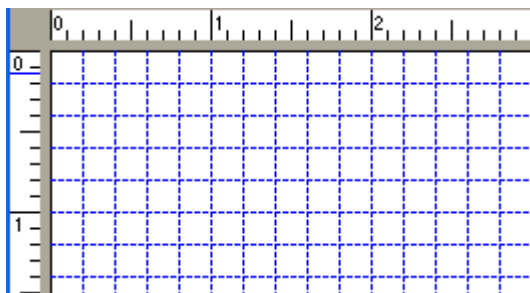
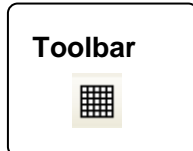


 Zoom in button:
Enlarges the editing area by 25%.

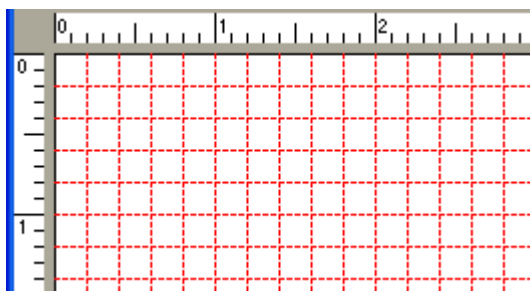
 Zoom out button:
Reduces the editing area by 25%.

 Zoom bar:
The editing area can be displayed within a specified range of 25% to 500%.

7-2. Grid display

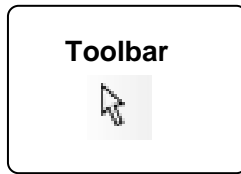


· Checking "Align Objects to Grid Lines" from the page setup property changes the displayed grid lines to red.



8. Object Selection

8-1. Overview

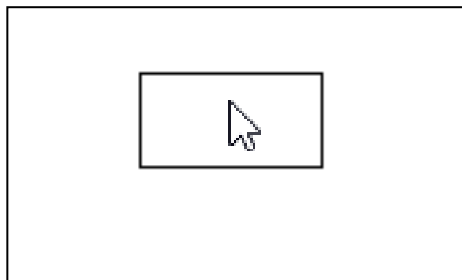


In selection mode, multiple objects can be selected for moving, copying, or deleting.

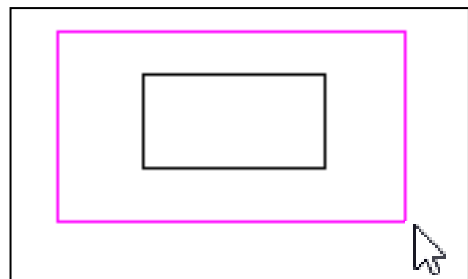
8-2. Operation

· Selecting from the editing area

Click target objects one by one from the editing area. Alternatively, the objects can be selected by enclosing them in a frame.



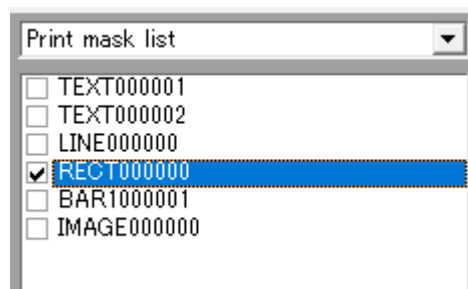
Selecting objects by clicking on them one by one.



Selecting objects by putting them all together inside a grid.

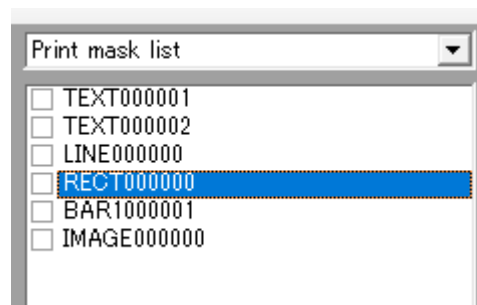
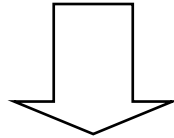
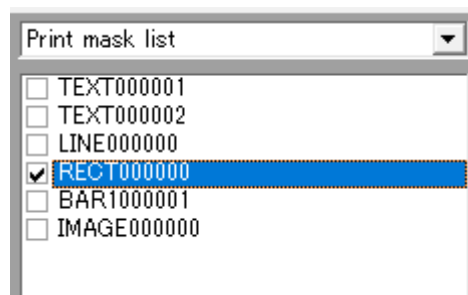
· Selecting objects from the list table.

Putting a check on target objects from the "Select Objects List" in the list table.



·Deselecting objects

Uncheck target objects from the “Select Objects List” in the list table.



9. Mask Function

9-1. Overview

•Mouse mask

Objects for which a mouse mask has been specified cannot be selected.

Editing errors can be prevented by specifying objects not intended to be changed or deleted.

•Print mask

Objects for which a print mask has been specified are excluded from printing.

Annotations and marks intended to be displayed on the editing area screen can inserted.

•View mask

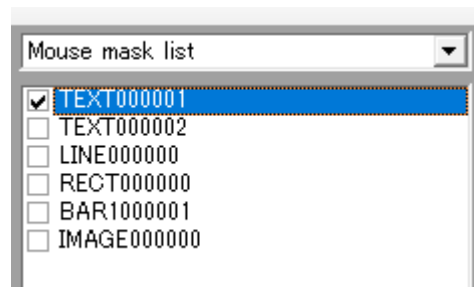
Objects for which a display mask has been specified are no longer displayed in the editing area.

When an editing area is mixed with objects that editing area can be cleaned up.

9-2. Masking

Put a check on the target object from the “Mask list” in the list table.

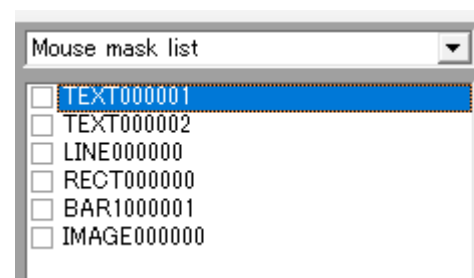
After selecting, the target object will be masked.



9-3. Unmasking

Uncheck the target object from “Mask list” in the list table.

After selecting, the target object is unmasked



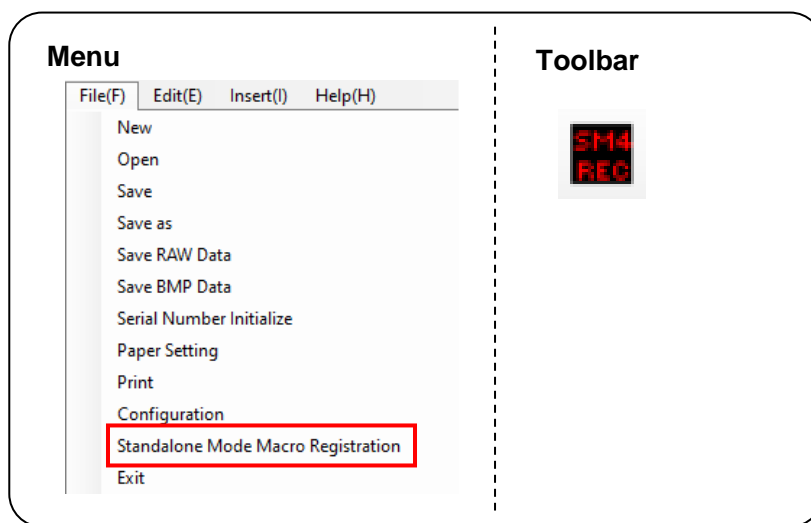
10. Standalone mode macro registration function

10-1. Features

Stand-alone mode is a mode in which the printer can print receipts that can be used as templates by itself. The "Selected display name" is selected with the operation keys, and the printer prints the receipt. In this macro registration mode, you can register a print operation macro for templating.

10-2. Start up

Select "Standalone Mode Macro Registration" from the File menu, or start it from the toolbar icon.



Tool window:

The 'Standalone Mode Macro Regist' window contains the following elements:

- Select No:** A dropdown menu showing '1'.
- Select Display Name:** A text field containing '1 reserve'.
- Macro Cmd:** A list box containing the following commands:
 - PRT_INIT x 1
 - CR x 9
 - FONT_SIZE,1 x 1
 - TIME_PRINT,0 x 1
 - CR x 1
 - OFFSET_TIME_PRINT,101,7,0 x 1
 - CR x 3
 - ALIGNMENT,1 x 1
 - FONT_SIZE,17 x 1
 - COUNTER_PRINT x 1
 - CR x 12
- Macro Cmd List:** A list box containing the following commands:
 - Feed
 - Backfeed
 - Initialize printer
 - Print density
 - New Line
 - Space
 - Alignment
 - Font size
 - Time Printing
 - Time Reading
 - Offset Time Printing
 - Counter Printing
 - Zero Suppression setting
 - Counter Inc/Dec setting
- Buttons:** ADD, CHANGE, DELETE, UP, DOWN.
- Argument:** A text field containing '1'.
- Quantity:** A text field containing '1'.
- Barcode String:** An empty text field.
- String for Variables:** An empty text field.
- Counter Initial Value:** A text field containing '1'.
- Printer Name:** A dropdown menu showing 'SANEI SM4-21-UNI-JP'.
- Buttons:** REGIST, CANCEL, SAVE, LOAD.

Select No: Specify the macro number (1 to 3) to be registered in the printer

Select Display Name: Register a "display name to be selected" on the printer's display screen.
Enter the name using up to 15 single-byte alphanumeric characters.

Macro Cmd: List of print operation macros corresponding to the selection number is displayed.

ADD: Add the data selected from the "Macro Cmd List" to the macro command.

CHANGE: Change the selected data in the "Macro Cmd".

DELETE: Deletes the data selected in the "Macro Cmd".

UP: Moves up one level of the selected data in the "Macro Cmd".

DOWN: Moves down one level of the selected data in the "Macro Cmd".

Barcode String: Input QR Code print data.
For details, refer to "10-4. QR Code Format". (Command input is available.)

String for Variables: Input the characters corresponding to the "String for variables".
Input up to 15 one-byte numbers.

Counter Initial Value: Enter the initial value corresponding to "Print of counter".
The printer will return to this initial value when the printer is turned off.

Printer Name: Specify the printer driver.

REGIST: Register macro data to the printer.

CANCEL: Exit without registering macro data.

SAVE: Saves the macro data file on the PC.
The file is saved in the same folder as the layout file.
When the macro data is saved without a layout file, such as when creating a new layout file,
the file is saved on the desktop.

Macro data file name: standalone_macro.dat

LOAD: Loads the macro data file.
The file is loaded to the same folder as the layout file.

Macro data file name: standalone_macro.dat

The macro functions that can be registered are as follows

- **Feed**

Functions: Feed the specified number of dots.

Arguments: Specify the number of dots (1 to 255) to feed.

- **Back feed**

Functions: Back feed the specified number of dots.

Arguments: Specify the number of dots (1 to 255) to Back feed.

- **Initialize printer**

Functions: Initialize the printer.

- **Print density**

Functions: Sets the print density of the printer.

Arguments: Specify the print density (50 to 150%).

- **New Line**

Functions: Feeds the one line.

- **Space**

Functions: Inserts a one-byte single-digit space.

- **Alignment**

Functions: Aligns one line of printed data to a specified position.

Arguments: Specify the position (0 to 2).

0: Left alignment

1: Center alignment

2: Right alignment

- **Font size**

Functions: Specify the font size (height and width).

Arguments: 0: 1x height and width

17: 2x height and width

34: 3x height and width

51: 4x height and width

68: 5x height and width

85: 6x height and width

102: 7x height and width

119: 8x height and width

▪ Time Printing

Functions: Performs date/time printing.

Arguments: Specify the date/time printing format.

To print "year, month, day, date", specify the Kanji code selection macro in advance.

Date/Time can be operated by enabling the WLAN/ROUTER mode of the printer.

- 0: YYYY/MM/DD hh:mm
- 1: YY/MM/DD hh:mm
- 2: YYYY年MM月DD日 hh時mm分
- 3: YY年MM月DD日 hh時mm分
- 4: YYYY/MM/DD

▪ Time Reading

Functions: Reads date/time.

Normally, this setting is not necessary because the printer automatically reads the date/time at the time of macro operation.

▪ Offset Time Printing

Functions: Prints the date and time by adding the offset of the specified date and time.

Arguments1: Specifies the offset type.

- 100: Month
- 101: Day
- 102: Hour

Arguments2: Specify the number to offset.

- Offset type month: 0 to 12
- Offset type day: 0 to 31
- Offset type hour: 0 to 24

Arguments3: Specifies the time format to be printed.

- 0: YYYY/MM/DD hh:mm
- 1: YY/MM/DD hh:mm
- 2: YYYY年MM月DD日 hh時mm分
- 3: YY年MM月DD日 hh時mm分
- 4: YYYY/MM/DD

▪ Counter Printing

Functions: Prints the counter memory in the increment function.

▪ Zero Suppression setting

Functions: Sets the number of print digits and zero suppression for the increment function.

Arguments1: Specifies the number of digits to be printed (1 to 6).

Arguments2: Specify zero suppression (0 to 2).

- 0: Convert zero suppressed digits to spaces.
- 1: Zero suppresses are not performed.
- 2: Left-justify the number of zero suppressed digits.

- **Counter Inc/Dec setting**

Functions: Sets the increment/decrement settings for counter print.

Arguments1: Sets the increment event.

(Fixed to "0": Performed when counter printing is executed.)

Arguments2: Specify the number of increment/decrement (1 to 255).

Arguments3: Specify the number of prints (1 to 255) before the increment/decrement is executed.

Arguments4: 0: Increment the count.

1: Decrement the count.

- **Kanji code selection**

Functions: Specifies the Kanji code mode.

- **QR Code**

Functions: Prints a QR code.

Arguments1: Specifies the symbol size (1 to 40).

Arguments2: Specify ECC LV (1=L, 2=M, 3=Q, 4=H).

- **Full cut**

Functions: Performs full cut.

- **Partial cut**

Functions: Performs partial cut.

- **Mark detection**

Functions: Detects marking positions.

- **Batch printing**

Functions: Prints the layout data registered in the printer.

- **String variables set**

Functions: Sets string variables for data strings.

Up to 8 data strings can be registered.

Arguments: Specify registration numbers (0 to 7).

Input string data in the "String for Variables" field.

- **Cell size set**

Functions: Set the QR Code cell size.

Arguments: Specify the cell size (3 to 20).

- **Buzzer sound settings**

Functions: Set the buzzer sound.

Arguments: For the buzzer sound setting string, see "ESC r" on page 68 of the SM4-21/31 Command Reference.

Only one sound can be entered in the buzzer sound setting string.

If you want to set multiple sounds, separate them into multiple macros.

The format of data to be entered in the data code field of the QR Code is as follows.
For fixed data, input alphanumeric characters as they are.

The following variable data formats can also be specified.

- (1) Date/Time Data: Input date/time data acquired via wireless (WLAN).

This function is available when WLAN communication is enabled.

\$TIM0: YYYYMMDDhhmm

\$TIM1: YYMMDDhhmm

\$TIM2: YYYYMMDDhhmm

\$TIM3: YYMMDDhhmm

\$TIM4: YYYYMMDD

- (2) Date/Time Data (offset):

Date/time data acquired via wireless (WLAN) is input with an offset added to the data.

This function is available when WLAN communication is enabled.

Enter \$TIM followed by the offset type, offset time, and time format.

Input example: Offset type = day, offset date = 07th, date type = YYYY/MM/DD,

The data to be entered is \$TIMe074.

Offset type

d: Month

e: day

f: hour

Offset time

Offset type month: 0 to 12

Offset type day: 0 to 31

Offset type hour: 0 to 24

Time format

0: YYYYMMDDhhmm

1: YYMMDDhhmm

2: YYYYMMDDhhmm

3: YYMMDDhhmm

4: YYYYMMDD

- (3) Count: Input the count data to be incremented for each print.

\$INC: Increment/Decrement count

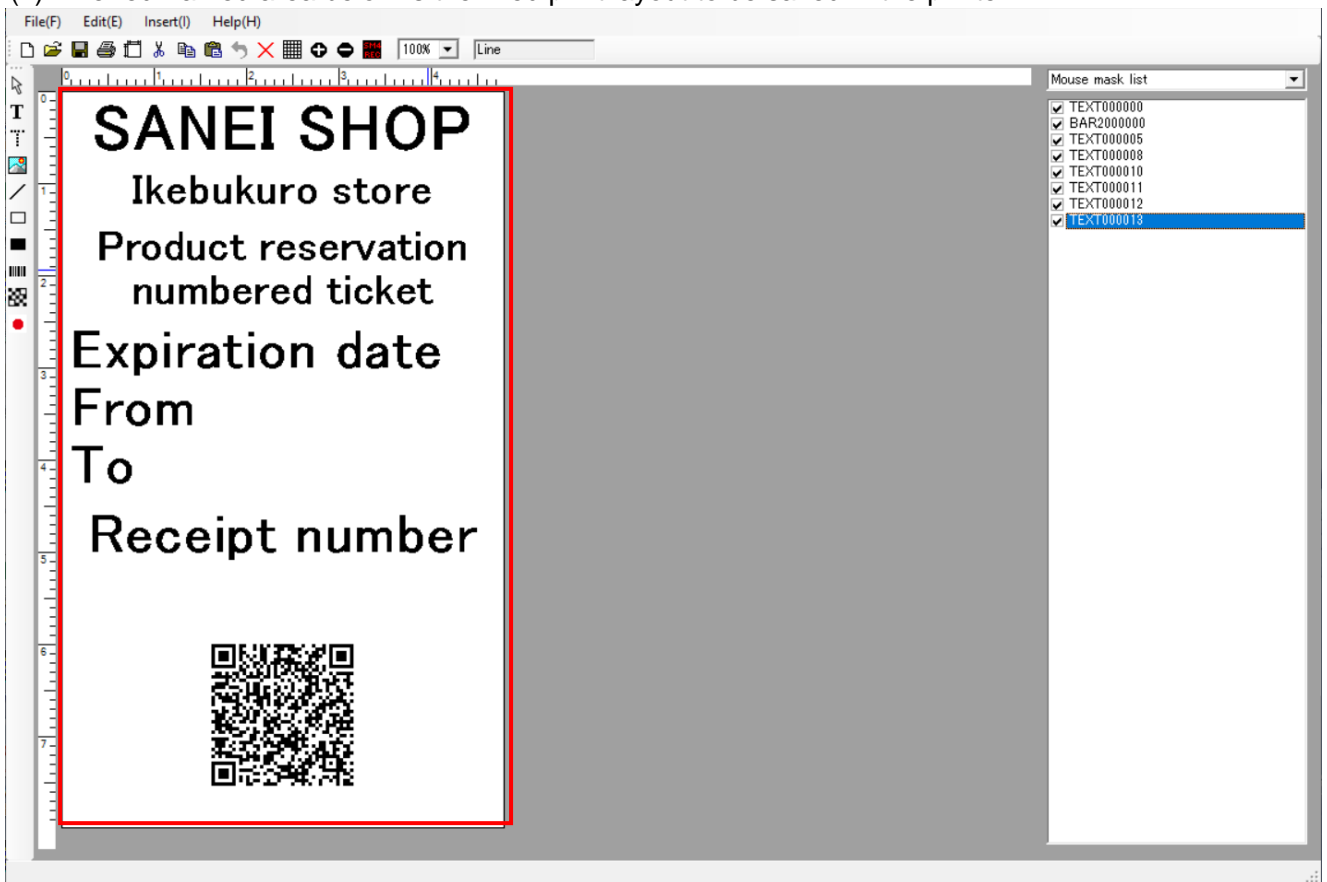
- (4) String for variables: Input alphanumeric data registered in \$STRn (n=0 to 7) of string variable.

\$STR0 to \$STR7: Alphanumeric data registered in character string variables

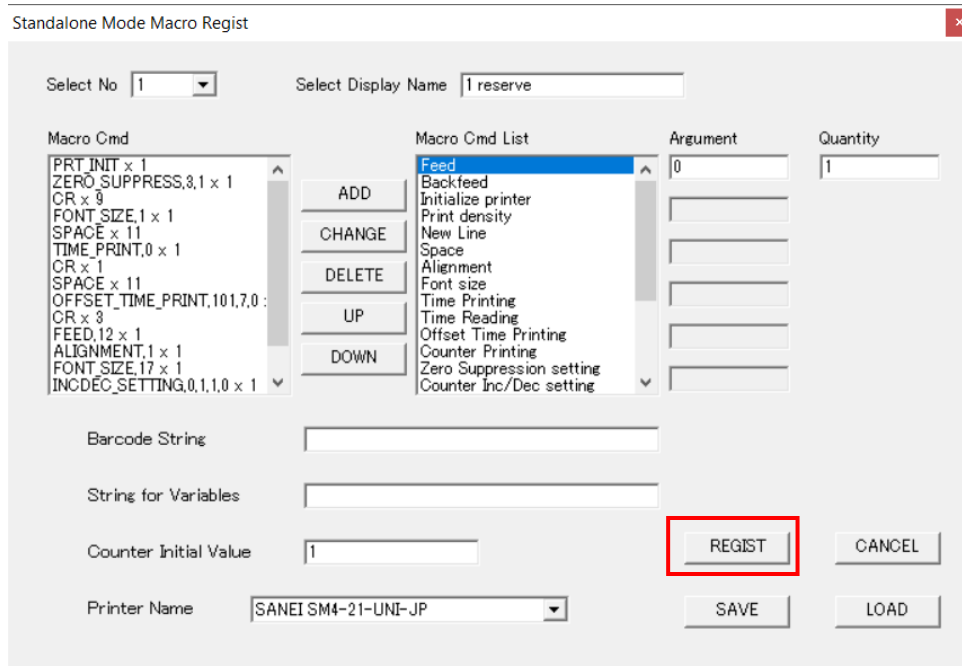
10-5. Macro registration example

The following is a description of sample data for macro registration.

- (1) Open the sample layout file (Numbered ticket.sop).
- (2) The red framed area below is the fixed print layout to be saved in the printer.



- (3) Open the Macro Registration screen and press the Regist button to save the macro to the printer



Thereafter, start the printer in stand-alone mode and execute printing.

*Please refer to the printer's technical manual for setting details.

<Printing result>

SANEI SHOP
Ikebukuro store
Product reservation
numbered ticket


Expiration date

From 2022/09/13 16:05 ← TIME PRINT

To 2022/09/20 16:05 ← OFFSET TIME PRINT

Receipt number

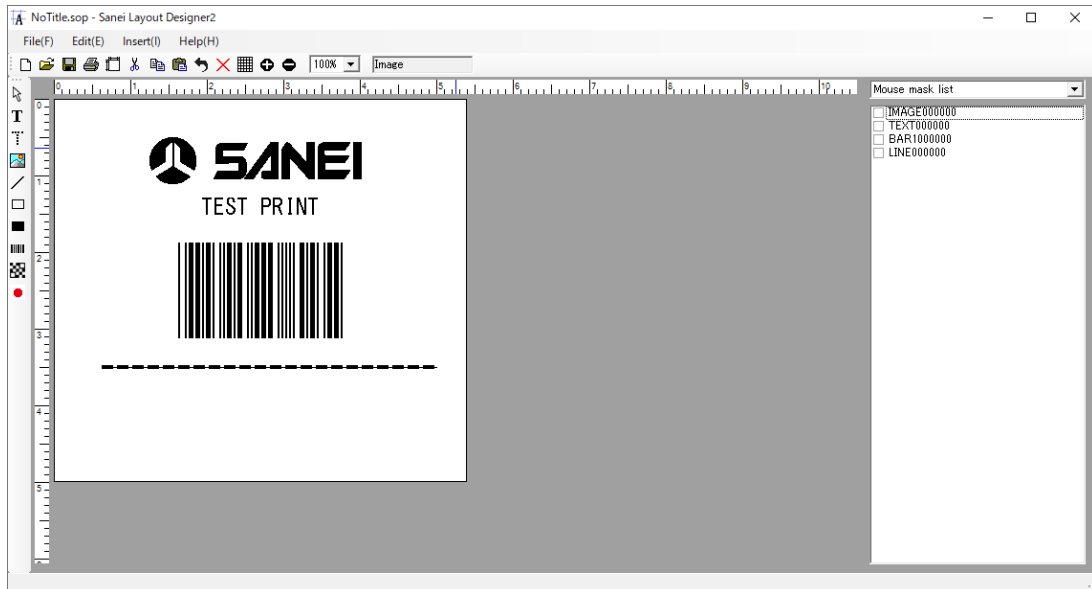
001 ← COUNTER PRINT



11. Sample Layout Data Creation

This section describes how to use Layout Designer while actually creating a sample layout. SK1-21 will be used as the printer to print the sample.

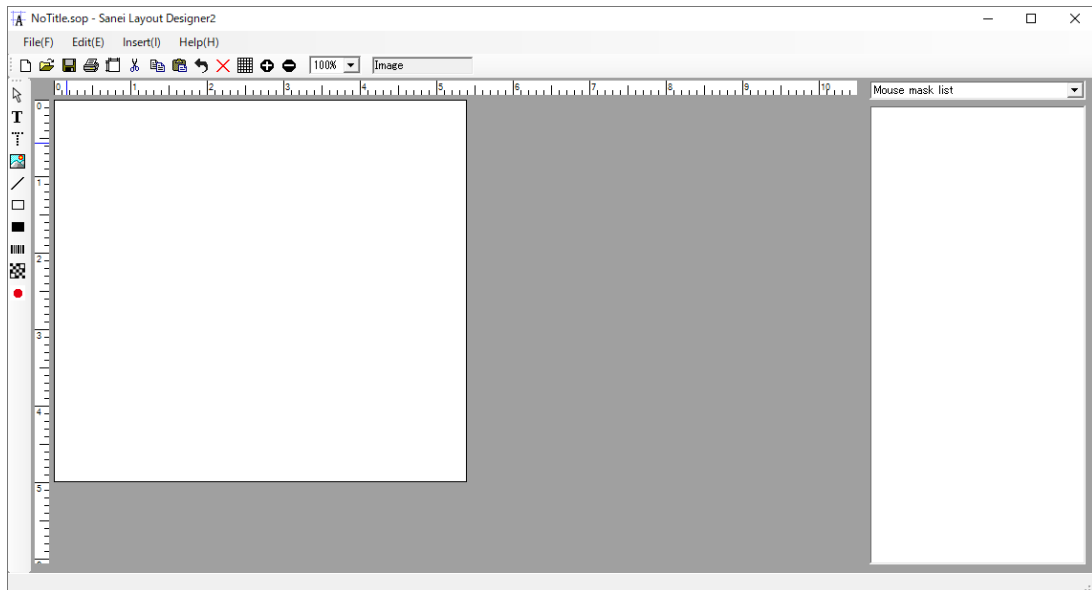
The sample layout design to be created is as follows.



Sample layout configuration

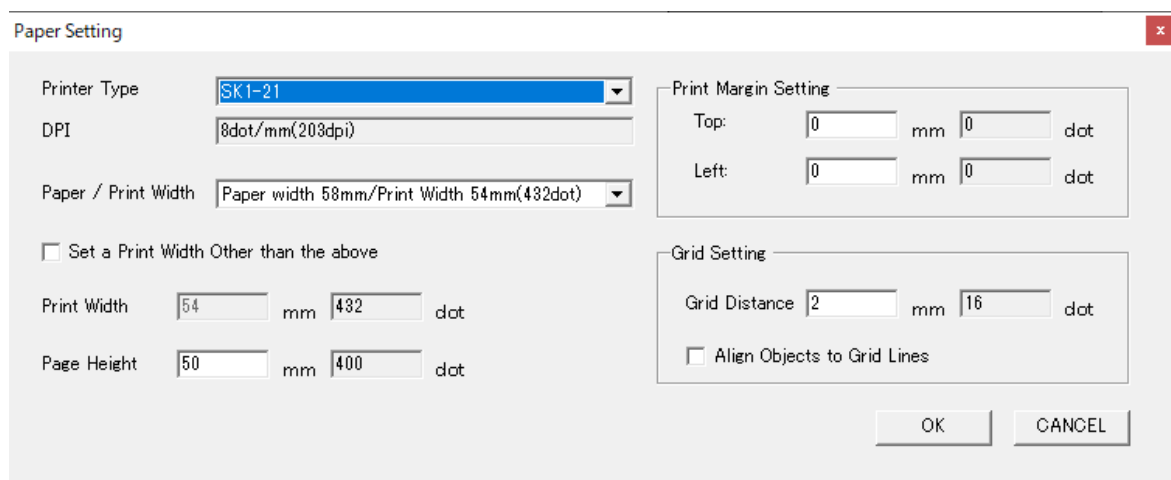
- Image Object
 - Data Format: JPEG
 - Image Size: width 223 pixel, height 50 pixel
- Text Object
 - Font Name: MS Gothic
 - Font Size: 18pt
- 1D Barcode Object
 - Barcode Type: Code39
 - Barcode Data: 1234
- Line Object
 - Line Width: 4 dots
 - Line Type: Dash
- Document Object Macro
 - Insert "Mark detection" command in Page End

1. Launch Layout Designer 2.



The default display magnification of the editing area is set to 100%.
If necessary, set the display magnification from the zoom menu on the toolbar.

2. Perform Paper Setting for the layout.



2-1. Select “File” - “Paper Setting” on the menu bar or click the “Paper Setting” button on the Toolbar.

2-2. Select the printer to be used from Printer Type. (Select SK1-21 here)

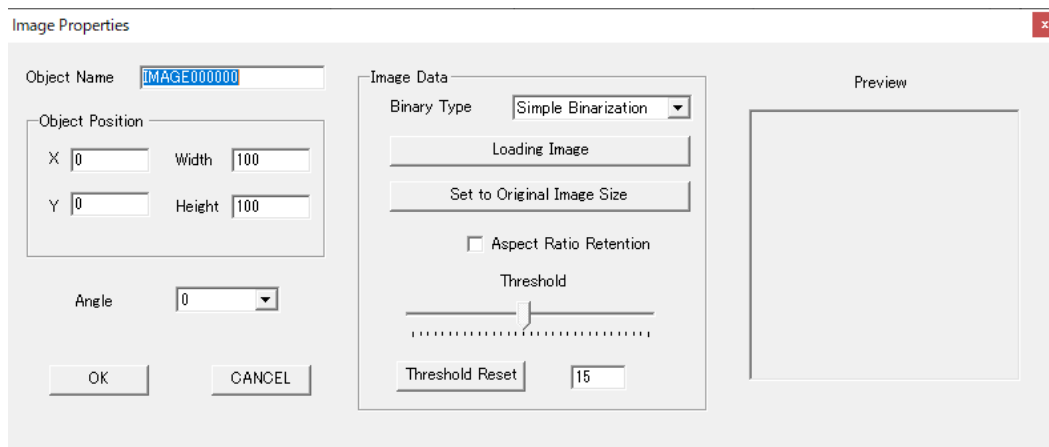
2-3. Select Paper/Print Width.
(Select Paper Width 58 mm / Print Width 54 mm here.)

2-4. Specify Page Height. (Specify 50 mm here.)

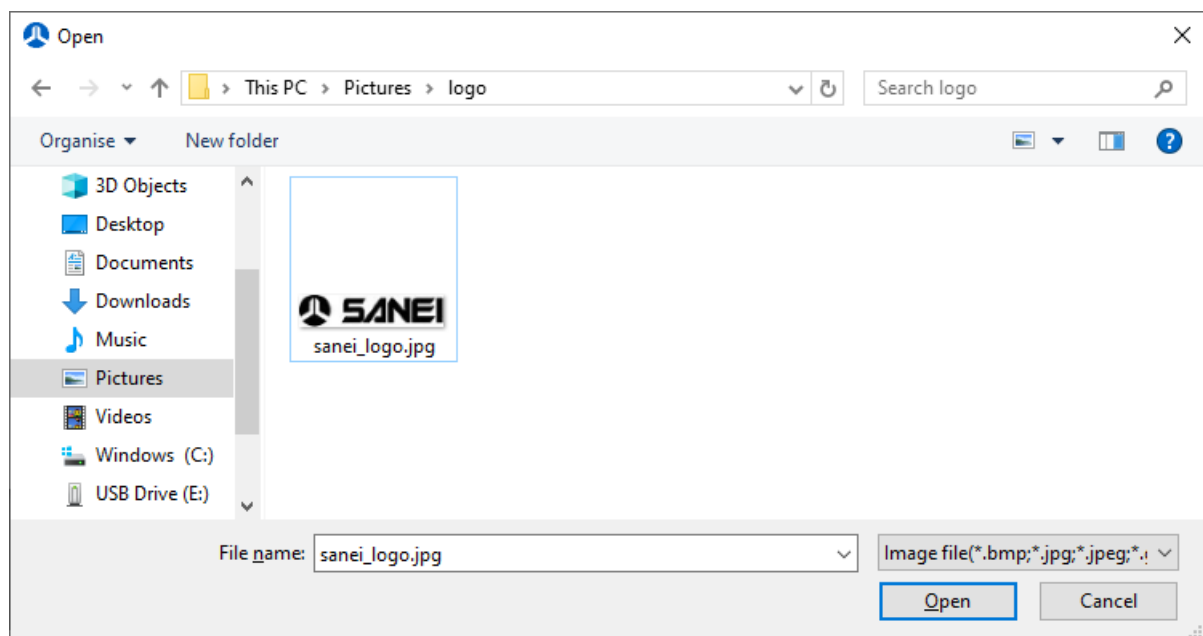
2-5. Click the “OK” button.

3. Add the Image Object.

3-1. Select “Insert” - “Image” from the menu bar to display the following dialog.

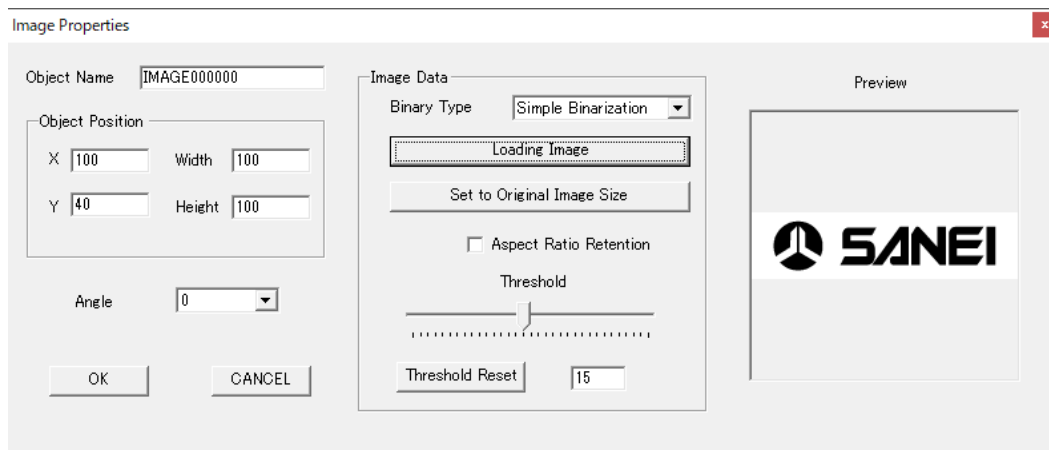


3-2. Click Loading Image and select the image file intended to be inserted.

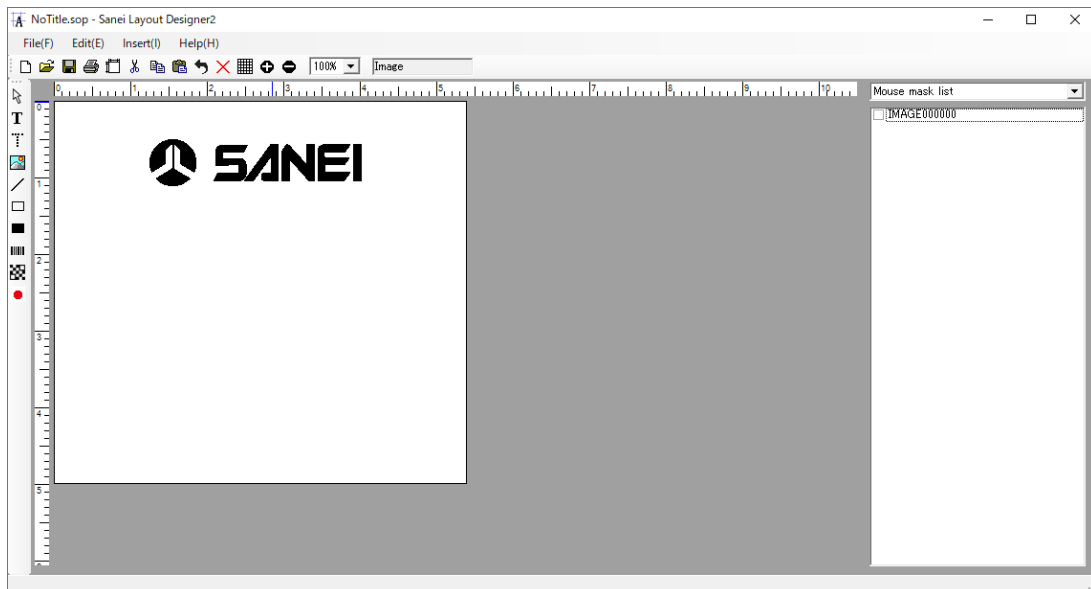


The supported file formats are bmp/jpeg/gif/png.

- 3-3. After selecting, press the Open button to display the following dialog.
Enter Object Position “X:100, Y:40,” click “Set to Original Image Size,” and click “OK.”

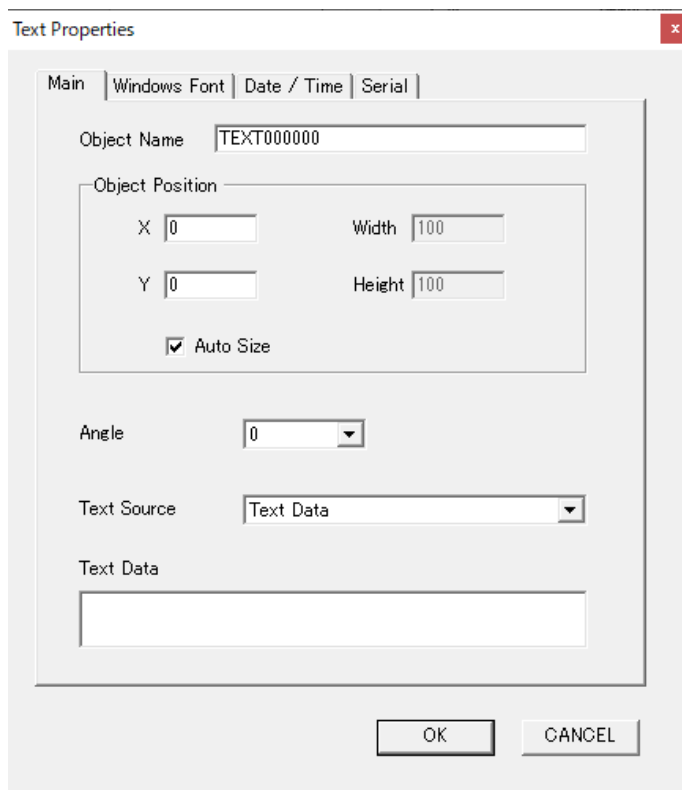


- 3-4. Image data is displayed in the editing area.



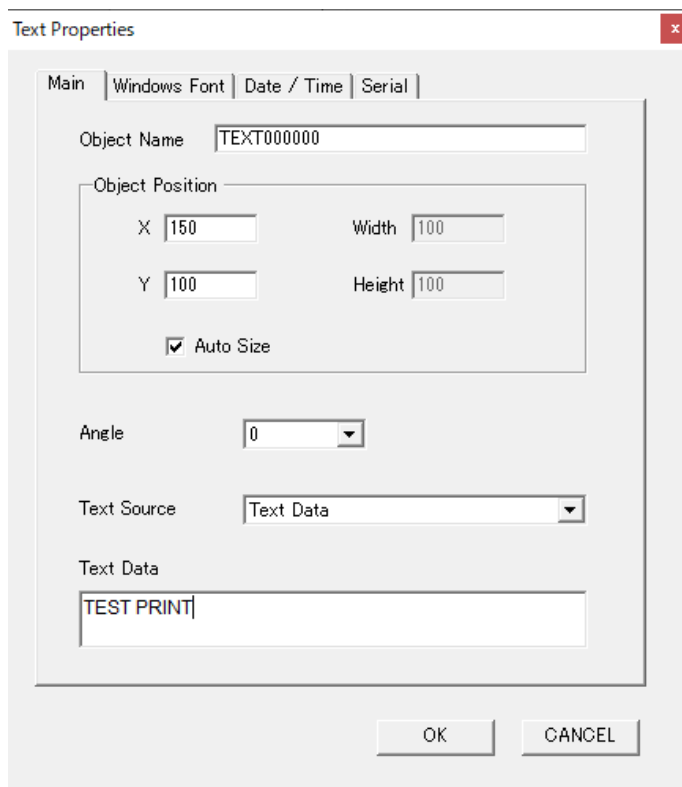
4. Add the Text Object.

4-1. Select “Insert” - “Text” from the menu bar to display the following text form.



The image shows the 'Text Properties' dialog box with the 'Main' tab selected. The 'Object Name' field contains 'TEXT000000'. The 'Object Position' section has 'X' set to 0, 'Y' set to 0, 'Width' set to 100, and 'Height' set to 100. The 'Auto Size' checkbox is checked. The 'Angle' dropdown is set to 0. The 'Text Source' dropdown is set to 'Text Data'. The 'Text Data' text box is empty. At the bottom are 'OK' and 'CANCEL' buttons.

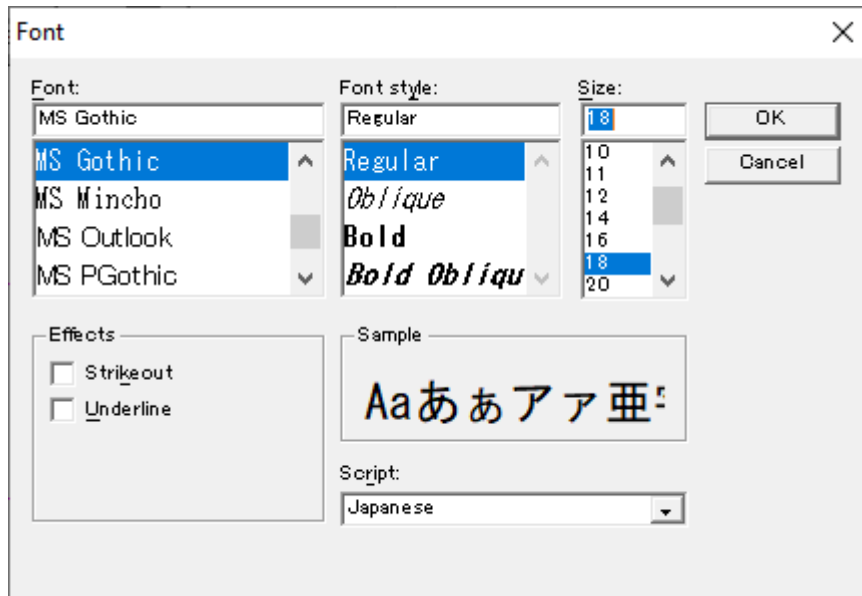
4-2. Enter “TEST PRINT” in Text Data box.



The image shows the 'Text Properties' dialog box with the 'Main' tab selected. The 'Object Name' field contains 'TEXT000000'. The 'Object Position' section has 'X' set to 150, 'Y' set to 100, 'Width' set to 100, and 'Height' set to 100. The 'Auto Size' checkbox is checked. The 'Angle' dropdown is set to 0. The 'Text Source' dropdown is set to 'Text Data'. The 'Text Data' text box now contains the text 'TEST PRINT'. At the bottom are 'OK' and 'CANCEL' buttons.

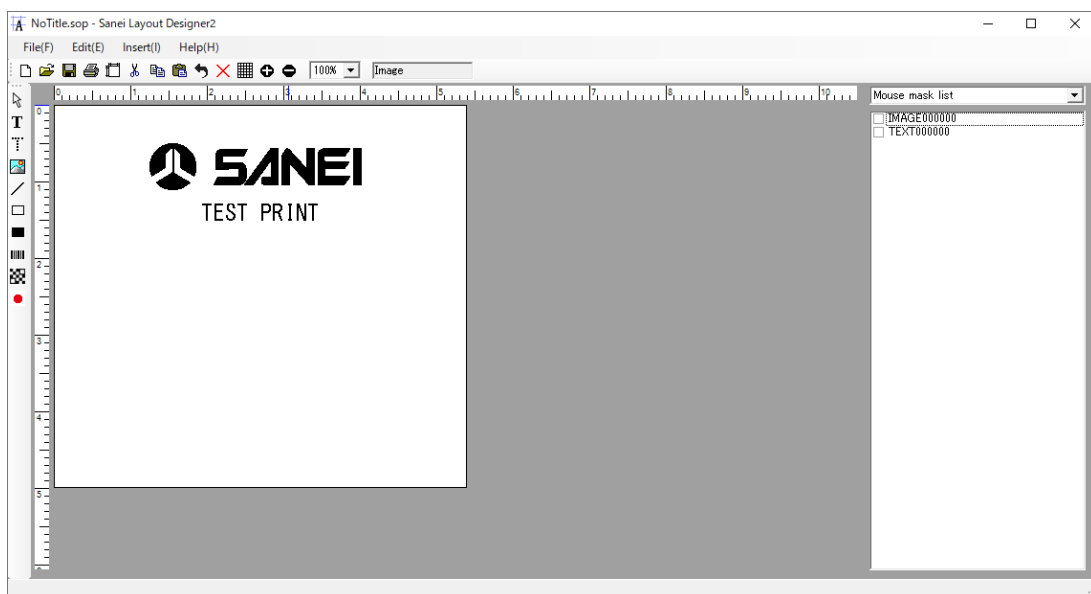
4-3. Enter “X:150, Y:100” in the Object Position box.

4-4. From Font Select on the “Windows Font” tab, specify Font Size as 18 and click “OK.”



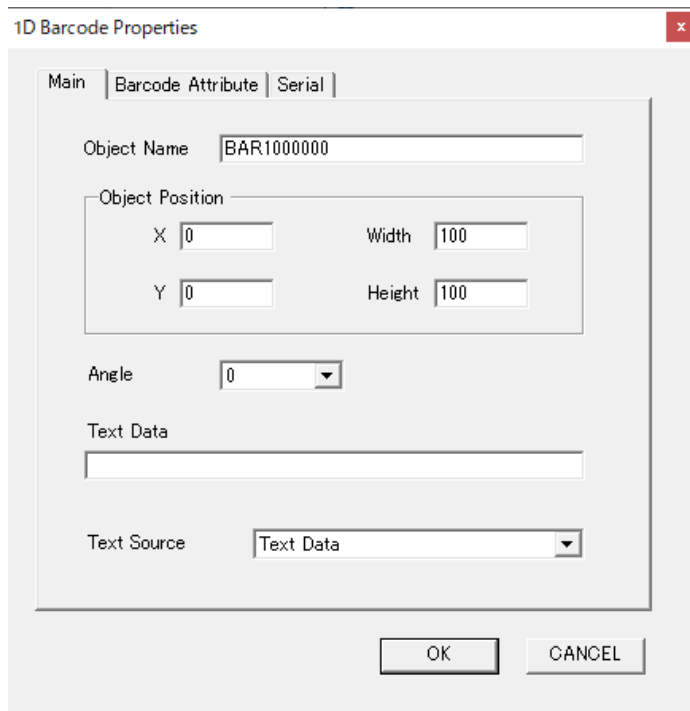
4-5. Click “OK” in Text Properties.

4-6. Text data is displayed in the editing area.



5. Add the 1D Barcode Object.

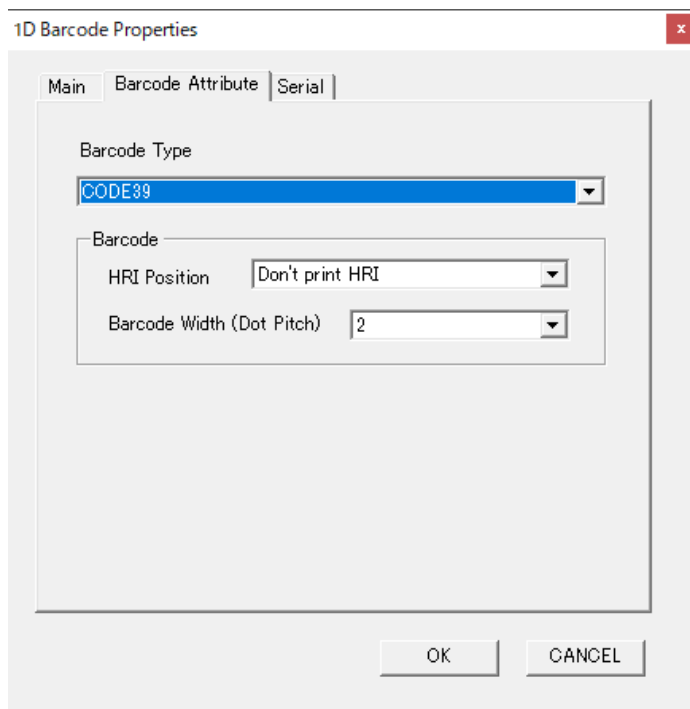
5-1. Select “Insert” - “1D Barcode” from the menu bar to display the following properties:



The "1D Barcode Properties" dialog box is shown with the "Main" tab selected. It contains the following fields and controls:

- Object Name:** A text field containing "BAR1000000".
- Object Position:** A group box containing four text fields: "X" (0), "Y" (0), "Width" (100), and "Height" (100).
- Angle:** A dropdown menu set to "0".
- Text Data:** A text field.
- Text Source:** A dropdown menu set to "Text Data".
- Buttons:** "OK" and "CANCEL" buttons at the bottom right.

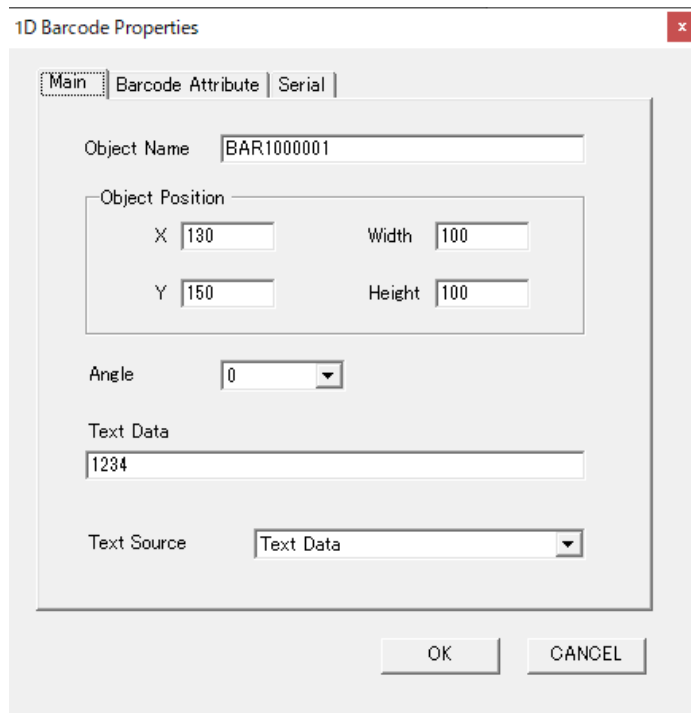
5-2. Select “CODE 39” for Barcode Type.



The "1D Barcode Properties" dialog box is shown with the "Barcode Attribute" tab selected. It contains the following fields and controls:

- Barcode Type:** A dropdown menu set to "CODE39".
- Barcode:** A group box containing two dropdown menus: "HRI Position" (set to "Don't print HRI") and "Barcode Width (Dot Pitch)" (set to "2").
- Buttons:** "OK" and "CANCEL" buttons at the bottom right.

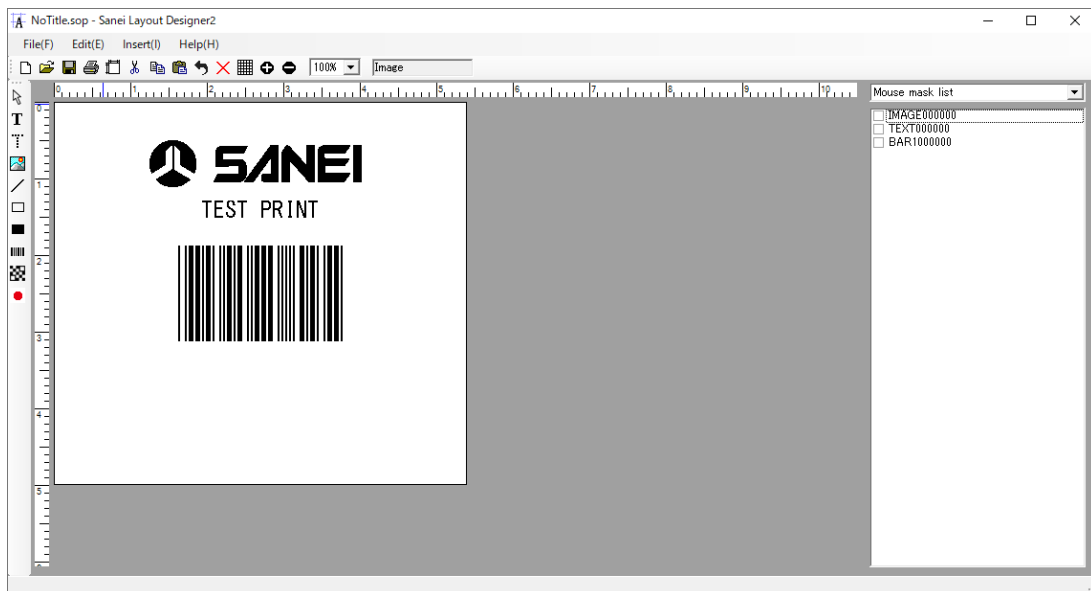
5-3. Enter “1234” in the Text Data box.



5-4. Enter “X:130, Y:150” in the Object Position box.

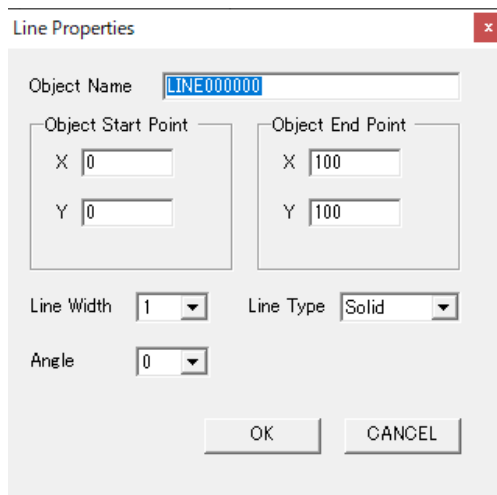
5-5. Click “OK” in 1D Barcode Properties.

5-6. Bar code data is displayed in the editing area.



6. Add the Line Object.

6-1. Select “Insert” - “Line” from the menu bar to display the following dialog:

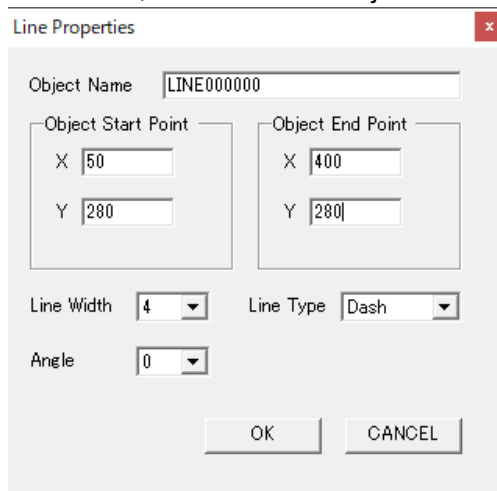


The 'Line Properties' dialog box is shown. It has a title bar with a close button. The 'Object Name' field contains 'LINE000000'. The 'Object Start Point' section has 'X' and 'Y' fields both set to '0'. The 'Object End Point' section has 'X' and 'Y' fields both set to '100'. The 'Line Width' dropdown is set to '1'. The 'Line Type' dropdown is set to 'Solid'. The 'Angle' dropdown is set to '0'. At the bottom are 'OK' and 'CANCEL' buttons.

6-2. Select Line Width “4.”

6-3. Select Line Type “Dash.”

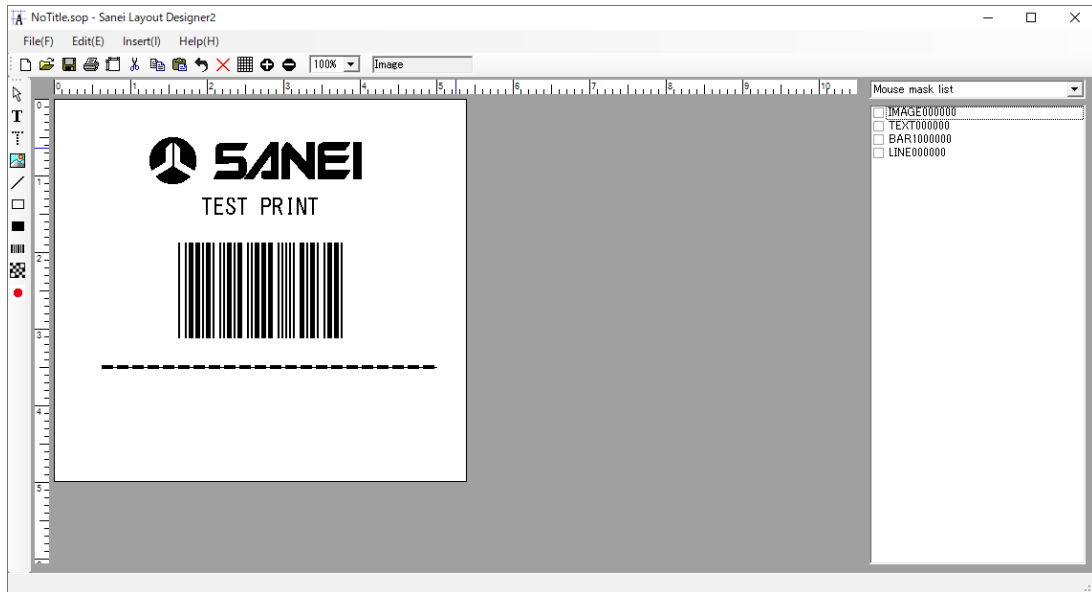
6-4. Enter “X:250, Y:280” for the Object Start Point and “X:580, Y:280” for the Object End Point.



The 'Line Properties' dialog box is shown with updated values. The 'Object Name' field contains 'LINE000000'. The 'Object Start Point' section has 'X' set to '50' and 'Y' set to '280'. The 'Object End Point' section has 'X' set to '400' and 'Y' set to '280'. The 'Line Width' dropdown is set to '4'. The 'Line Type' dropdown is set to 'Dash'. The 'Angle' dropdown is set to '0'. At the bottom are 'OK' and 'CANCEL' buttons.

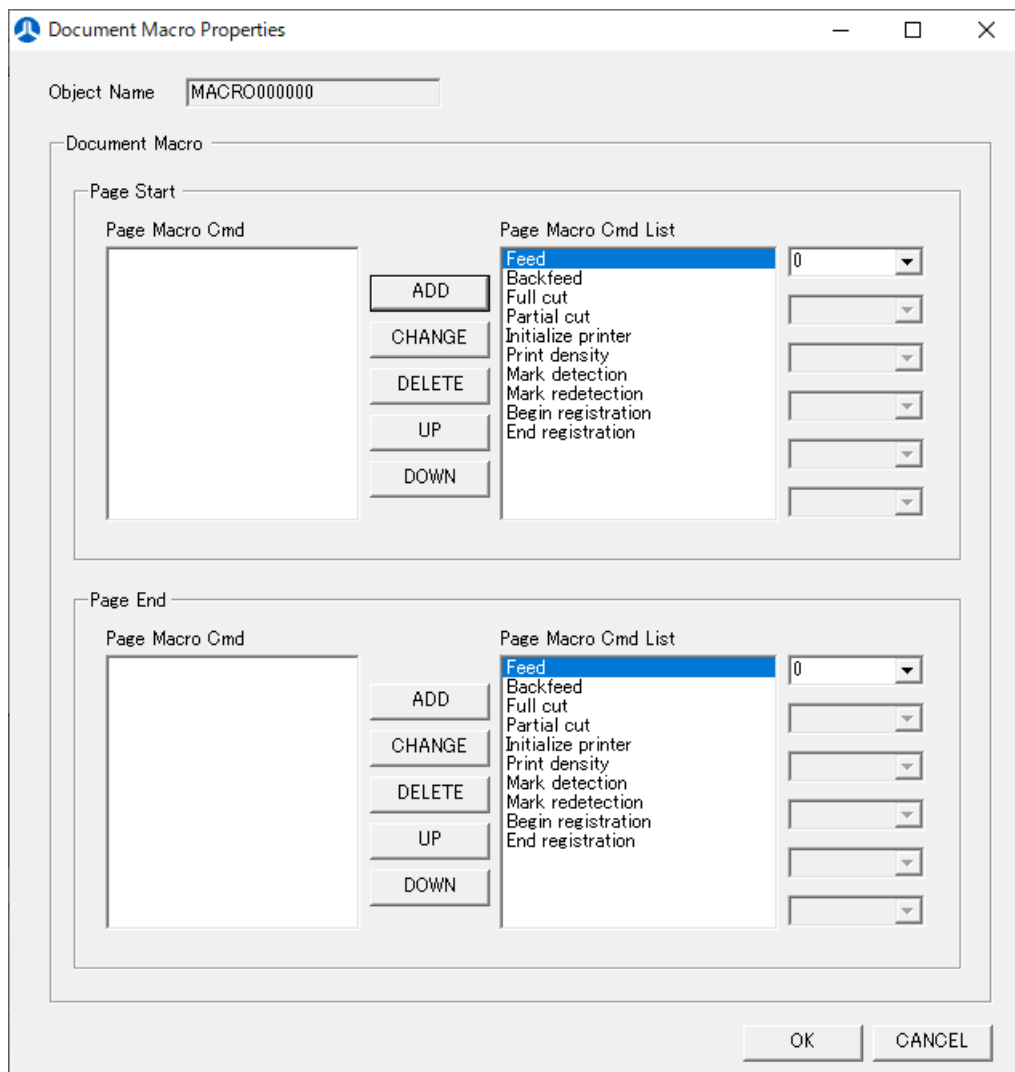
6-5. Click “OK” in Line Properties.

6-6. Line data is displayed in the editing area.

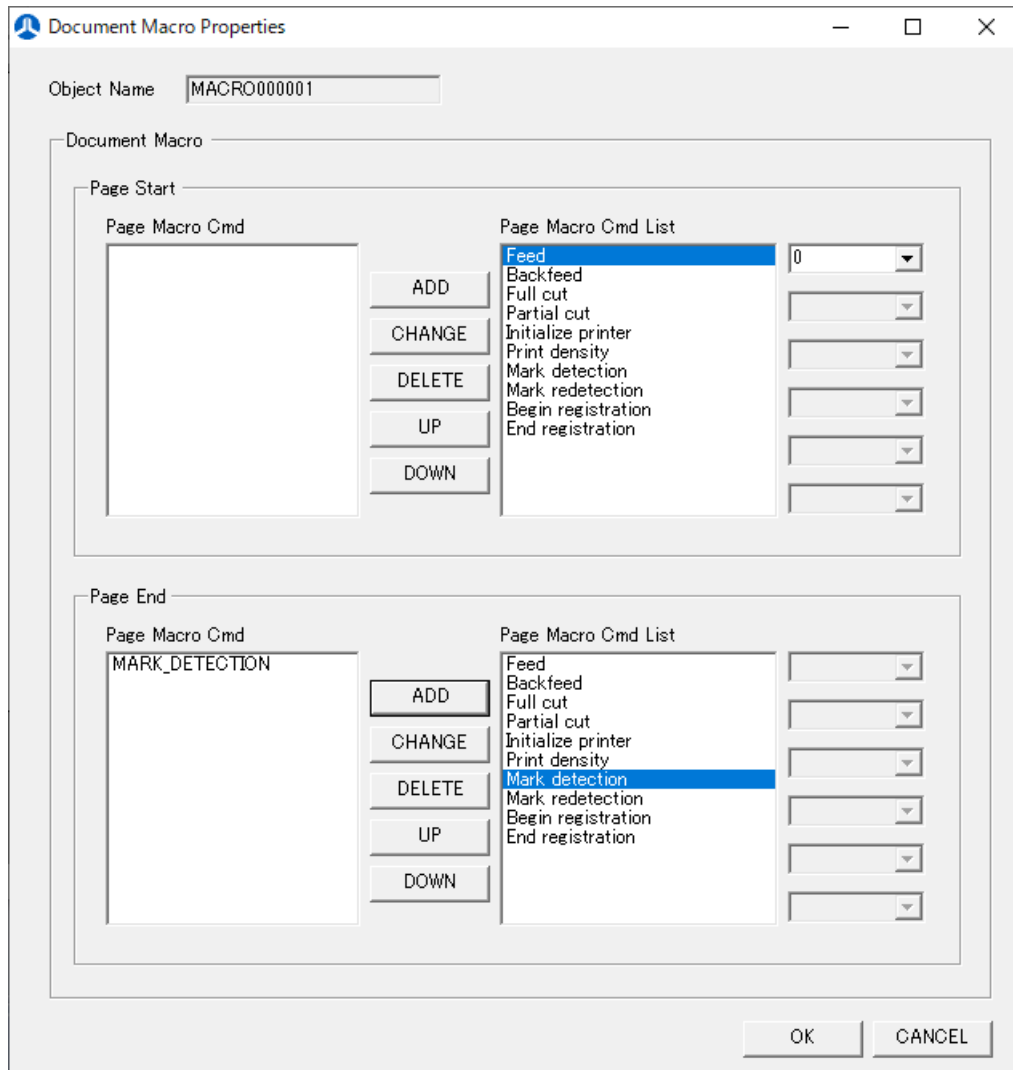


7. Add the Document Macro Object.

7-1. Select “Insert” – “Document Macro” from the menu bar to display the following dialog:



7-2. Select “Mark detection” from Page Macro Cmd List for Page End and click ADD.



7-3. MARK_PRINT is displayed on Page Custom Cmd.

7-4. Click “OK.”

8. Printing the Layout File

8-1. Select "File" – "Print" from the menu bar to display the following dialog:



8-2. Select the "SANEI SK1-21" printer driver, enter the number of copies, and press the OK button to start printing.

Print result

