

PDF Direct Print User Manual (CT4-LX)



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About This Manual

Thank you for using the SATO PDF Direct Print.

This document is intended for users who want to know how to configure SATO printers with PDF Direct Print function or system integrators who want to develop a solution that can send PDF data from their system and directly print the PDF data without graphics conversion on SATO printers with PDF Direct Print function.

This document describes only the information and instructions related to PDF Direct Print. For more details on other printer operations and settings, please refer to each printer's operator manual.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

Symbols

This document uses the following symbols:

Item	Description
^	The Caution symbol indicates potential risks or actions that may lead to software malfunction, data loss, errors, or unexpected behavior if not followed correctly.
Caution	
	The Note symbol indicates useful and supplemental information that you should know.
Note	
3	The Reference symbol indicates the link of relevant information.
Reference	



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- The contents of this document may be changed without prior notice.
- Great care has been taken in the preparation of this document, but if any problems, mistakes, or omissions are found, please contact your SATO reseller or technical support center.



• This manual uses the build version 6.6.5-UC1.1_r2 firmware in its descriptions.

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Software Updating Disclaimer

While all efforts have been taken to ensure the accuracy and currency of the information contained herein, there are instances where the contents of this document may be outdated. In that case, proceed to your local SATO regional website (https://www.sato-global.com/drivers/redirect.html) to check whether an updated document has been made available for your reference.

Introduction

Overview

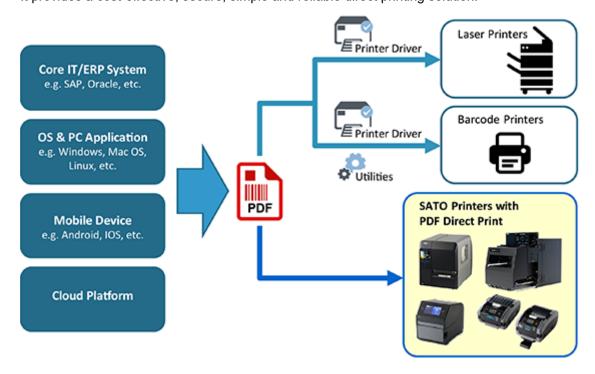
This document is intended for users who want to know how to configure SATO printers with PDF Direct Print function or system integrators who want to develop a solution that can send PDF data from their system and directly print the PDF data without graphics conversion on SATO printers with PDF Direct Print function.

About PDF Direct Print

PDF data becomes a standard document format for most of the ERP system, OS and PC applications, etc. However, when printing PDF data on most of the barcode printers, it requires a printer driver or custom software that converts PDF to graphic for printing.

SATO PDF Direct Print is the solution implemented as a special firmware installed on the printer. It allows users to print PDF files directly to the SATO printers without using any printer driver, utilities, middleware or application installed to the system.

It provides a cost-effective, secure, simple and reliable direct printing solution.



Supported Printers and Interfaces

The supported printer models of this function are CL4NX, CL6NX, CL4NX Plus, CL6NX Plus, CT4-LX, PW208NX, PW208mNX and S84NX/S86NX.

Users can send PDF data via any available interface of the supported printers, such as LAN, WLAN, USB, Bluetooth, etc.

Features

The features of SATO PDF Direct Print include:

Multilingual fonts and typefaces

PDF Direct Print supports all languages available in PDF and uses fonts embedded in the PDF file to prevent text garbling.

PC-less printing

PDF Direct Print resides in the printer memory and processes data internally. Thus, saving cost, space and time by eliminating the need to manage additional devices.

Split print feature

Split the PDF document into multiple images and print them individually.

Layout Adjustment

Enables quick and easy changes to the orientation of data and the avoidance of any blank spaces.

High Speed and Quality

PDF Direct Print generates clear and precise fonts and barcodes and controls color density alongside a high-speed internal processor to ensure high and consistent throughput.

Multiple Interfaces

PDF Direct Print supports every commonly used printer communication interface, including Wireless LAN, USB and Bluetooth, enabling flexible use across any business environment.

Cutter Options

Users can set to cut the label after a specified number of printouts printed from a single data source.

SATO AEP

SATO AEP (Application Enabled Printing) enables more sophisticated operations through the use of API.

Getting Started

Installation

There is no need for users to perform the firmware installation as the printer comes with the special firmware installed after purchasing the PDF Direct Print.

In the event of printer replacement, SATO technical support personnel will install the firmware and enable the PDF Direct Print function on the new printer.



Installation of PDF direct print firmware should be performed by SATO technical support personnel.

License Activation

The PDF Direct Print license is initially activated on the printer if the user has already purchased the license. A license activation key is required to perform the activation.

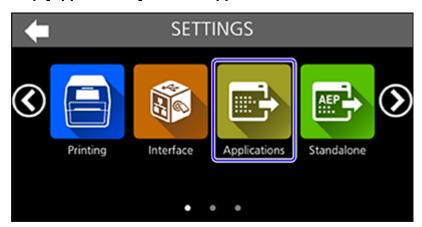
If the license is not activated, the PDF Direct Print will be running on Demo mode.



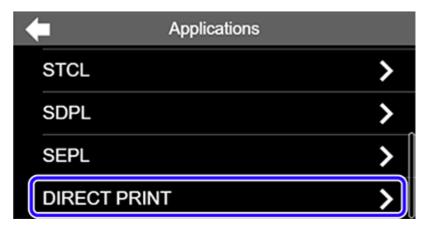
The license activation should be performed by SATO technical support personnel.

The license activation procedure intended for SATO technical support personnel is as follows:

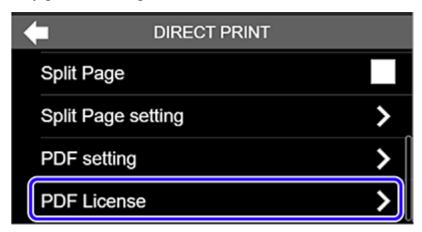
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



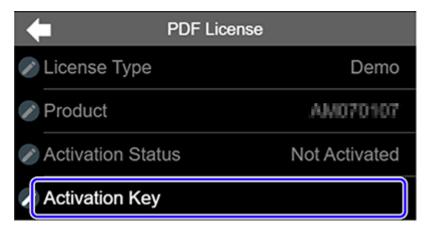
4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [PDF License].



6. Tap [Activation Key].



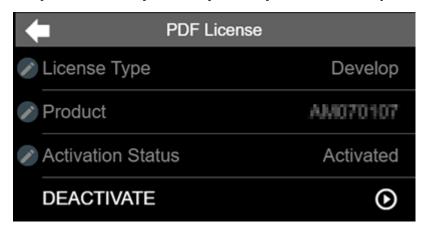
7. Enter the license activation key.

The activation key is an 8-digit number issued by the license management server.



8. Tap verte to save the entered activation key.

The [Activation Status] will show [Activated] if the activation key matches.





- [License Type], [Product] and [Activation Status] are read-only.
- The initial [License Type] is [Demo] and the [Activation Status] shows [Not Activated].
- The [Activation Status] will show [Key Error] if the activation key does not match.

Initial Printer Settings

To print the PDF data properly, you need to perform the following initial printer settings:

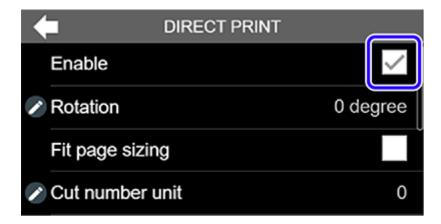
1. Make sure that the PDF direct print mode is enabled.

After the PDF Direct Print firmware is installed on the printer, the direct print mode is enabled by default.

The **DP** (Direct Print) status icon is shown on the status bar at the top of the display.



If the **DP** status icon is not shown, you can enable the direct print mode in the [SETTINGS] > [Applications] > [DIRECT PRINT] menu. Select the check box of [Enable] to enable the direct print mode.



2. Set the printer language.

Set the printer language in the [SETTINGS] > [Applications] > [Protocol] menus.



The options are as follows:

SBPL

Set when you use the SBPL printer language.

SZPL

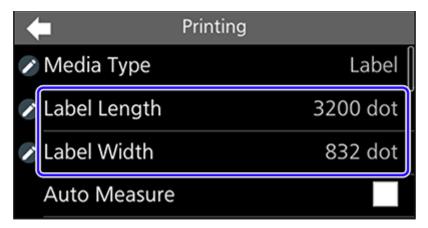
Set when you use the SZPL printer language.



- When [DIRECT PRINT] is set to [Enable], the [SETTINGS] > [Applications] > [Protocol] setting is [SBPL]. However, if [SZPL] was previously selected as the protocol, it will remain [SZPL].
- If you are using the older firmware with build version 6.4.0-u572_r1 or earlier, you must set the [Protocol] setting to [SBPL].
- If you need to set the [Protocol] to SIPL, STCL, SDPL or SEPL, you have to disable the [DIRECT PRINT] function first.
- Please reboot the printer after switching protocols.

3. Set the label size.

Set the length and width of the label in the [SETTINGS] > [Printing] > [Label Length] and the [SETTINGS] > [Printing] > [Label Width] menus.





The Auto Measure function is not recommended to be used for PDF direct print.
 Disable the [Auto Measure] and set the [Label Length] and [Label Width] of the label accordingly.

4. Set other printer settings to match the label.

Set the following printer settings based on the label used.

- [SETTINGS] > [Printing] > [Media Type]
- [SETTINGS] > [Printing] > [Printing Mode]
- [SETTINGS] > [Printing] > [Speed]
- [SETTINGS] > [Printing] > [Sensor Type]
- [SETTINGS] > [Printing] > [Darkness]



You can set all these settings with the Media Startup function by selecting [SETTINGS] > [Tools] > [Media Startup].

Follow the on-screen instructions to perform batch settings for the print settings that are appropriate for the type of media you are using, then you can apply them to the printer.

- If you are using multiple types of media, first use [SETTINGS] > [Tools] > [Media Profiles Editing] > [Media Profiles Registration] to register a profile for each media. After that, apply the profile for the media you are using to the printer.
- Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

Sending PDF Data to Printer

You need to set up the connection between your source (i.e. core IT system, PC application, mobile device, cloud, etc.) and the printer via the supported connectivity. The available interfaces (LAN, WLAN, USB, Bluetooth, RS-232C, IEEE 1284 and others) are depending on the printer.

Supported Print Data

- The PDF Direct Print function enables you to print documents and graphic data without using printer commands such as SBPL commands. The supported document format is PDF.
- Make sure that the font data is embedded in the PDF file. Otherwise, the data might not be printed correctly due to the printer will substitute the original font with its internal font.
- Do not use outlined PDF data as this will result in a larger file size. Recommended using PDF data (ISO 32000-1) that is not outlined.
- The maximum available file size that can be sent depends on the printer's memory. The recommended PDF file size is less than 50 MB.

Canceling the Print Job

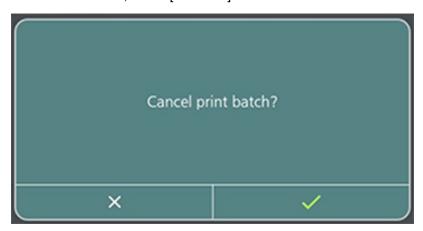
When the protocol is set to a different supported language, the job cancellation option are different.

Canceling the Print Job in SBPL

Canceling the Print Job in SZPL

Canceling the Print Job in SBPL

In the Offline mode, select [CANCEL].



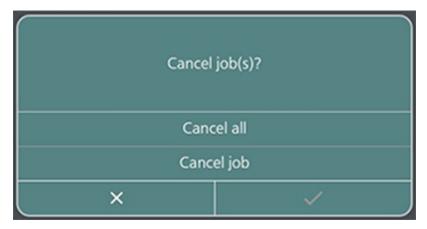
Cancel print batch

All print jobs sent before clicking 'Cancel print batch?' will be deleted. If you click 'Cancel print batch?' while the printer is still processing a split request, it will stop. The same applies to the data receiving process.

Canceling the Print Job in SZPL

In the Offline mode, select [CANCEL].

There are two options for cancellation.



Cancel all

All print jobs sent before clicking 'Cancel all' will be deleted. If you click 'Cancel all' while the printer is still processing a split request, it will stop. The same applies to the data receiving process.

Cancel job

Only the current image buffer will be deleted. The 'Cancel job' option will not affect the split or data receiving processes. Therefore, it is not recommended to use 'Cancel job' in PDF Direct Print.

Various Printout Settings

Rotating the Page Orientation

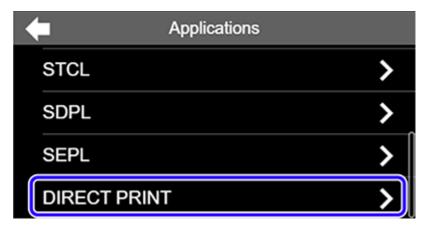
You can specify the rotating angle of the page orientation for PDF direct printing.

The setting procedure for rotating the page orientation is as follows:

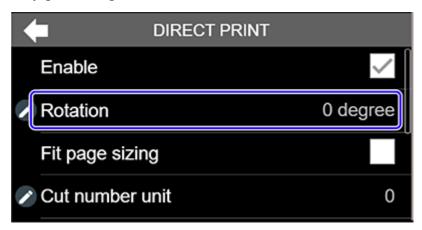
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [Rotation].



6. Tap to select the rotating angle of the page orientation.



The options are as follow:

[0 degree]

Prints the page without rotation.

[90 degree]

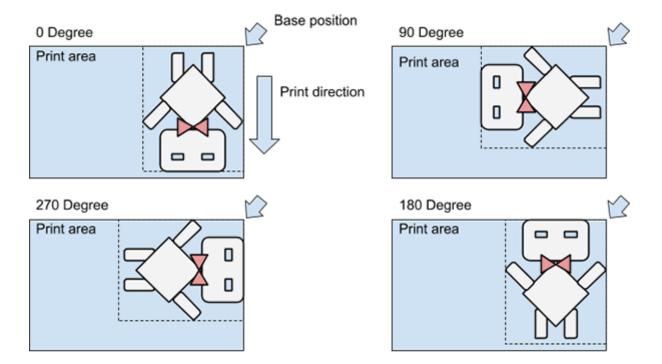
Rotates the page orientation 90 degrees clockwise.

[180 degree]

Rotates the page orientation 180 degrees.

[270 degree]

Rotates the page orientation 270 degrees clockwise.



- 7. Press the (b)((a) (Power/Home) button to show the Home screen.
- 8. Press the (b)((a) (Power/Home) button to enter Online mode.

You can print to check the page orientation.

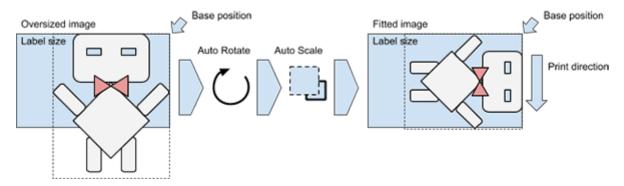


- The rotating angle cannot be set if the [Fit page sizing] is enabled.
- The initial setting of [Rotation] is 0 degrees.

Resizing the Image to Fit the Page

By enabling the [Fit page sizing] function, the printer automatically rotates, enlarges or reduces the print image to best fit the label page size.

This function is convenient for correcting the cropped printout if the print image is too big for the label size, or removing the whitespace if the print image is too small for the label size.

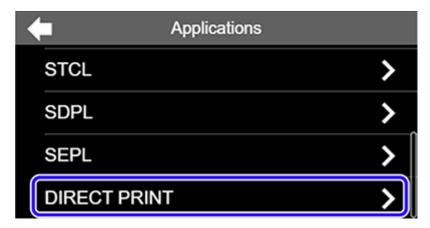


To enable this function, perform the following procedure.

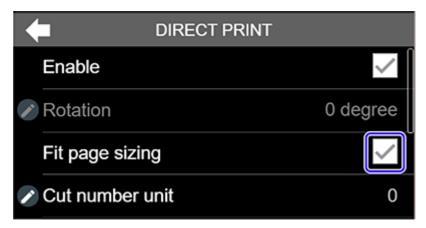
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap the [Fit page sizing] check box to select it.



The Fit page sizing function is enabled.

- 6. Press the (1)/(2) (Power/Home) button to show the Home screen.
- 7. Press the 心/⑥ (Power/Home) button to enter Online mode.

You can print to check the print image.



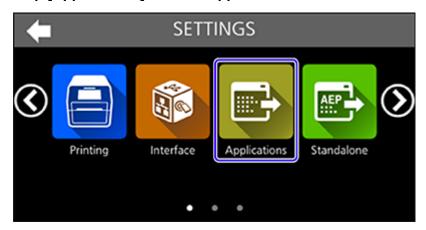
- When the [Fit page sizing] is enabled, the settings for the [Rotation] are invalid.
- The initial setting of [Fit page sizing] is disabled.

Specifying the Number of Labels Printed Before Cut

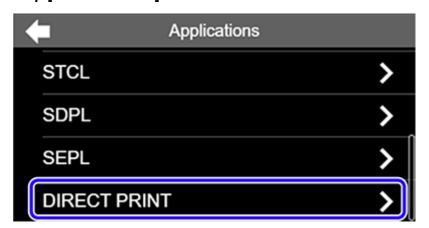
You can set to cut the label after the specified number of printouts are printed from a single data source.

The setting procedure for specifying the [Cut number unit] is as follows:

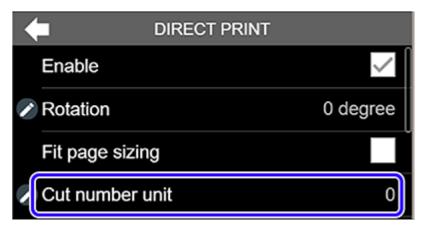
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



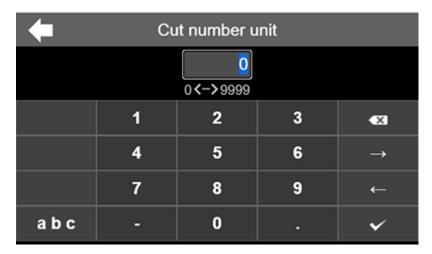
4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [Cut number unit].



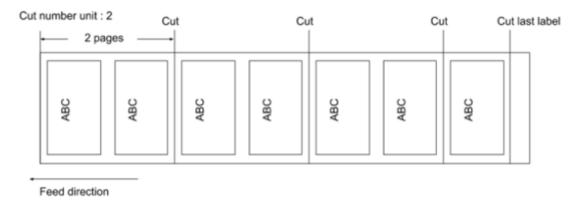
6. Set the [Cut number unit] value. Tap the on-screen keyboard to enter the number on the text box.



The setting range of the [Cut number unit] is from 0 to 9999.

If 0 or 1 is set, the printer will print and cut for each printout.

The printer will cut the last printout of the print data regardless of the specified number of [Cut number unit] as shown in the diagram below.



- 7. Tap volue.
- 8. Press the (1)/(2) (Power/Home) button to show the Home screen.

9. Press the ტ/ெ (Power/Home) button to enter Online mode.

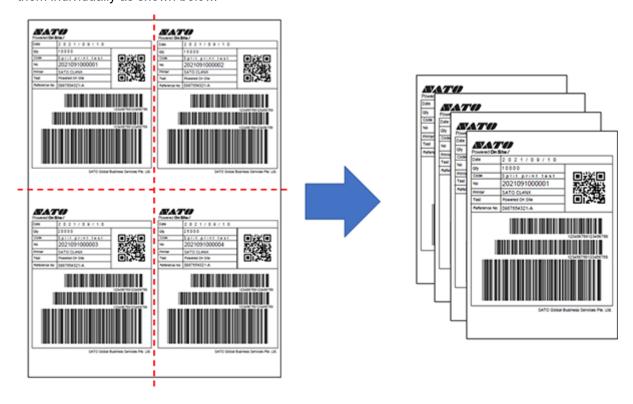
You can print to check the print image.



- This cutting feature only takes effect when the [Print Mode] is set as [Cutter], [Cut & Print], or [Partial cutter].
- The initial setting of [Cut number unit] is 0.
- When the [Cut number unit] is set to more than 1, the reprint function will not take effect.
- If the split function is enabled, the maximum [Cut number unit] is set at 1.

Splitting Images to Print Individually

By enabling the [Split Page] function, the printer can split the image of the PDF document and print them individually as shown below.



This function can also apply to the multiple pages PDF document.



If there is a blank split page, the printer will skip printing the blank label.





• If the printer operates on PDF Direct Print [Demo] mode, the printer will not skip printing the blank label.

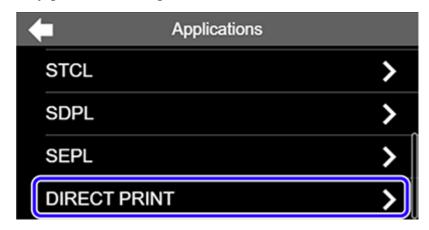
The number of split images, the print order, and the margins can be set in the [Split Page setting] menu.

To enable the [Split Page] function, perform the following procedure.

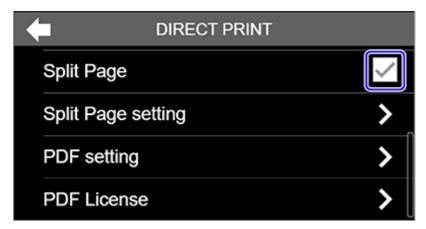
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap the [Split Page] check box to select it.



The Split page function is enabled.

6. Tap [Split Page setting] for more settings of the split print function.



7. After configuring the [Split Page setting] items, send the PDF data to the printer for printing.



When the printer is processing the split print function, the split print icon is shown on the status bar at the top of the display.



Configuring Split Page Settings

Test Printing for Split Print Function

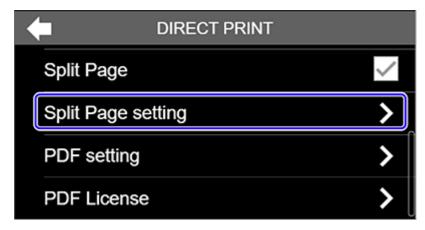
By enabling the [Split test] mode, you can perform test printing for the split print function. When the PDF data is sent to the printer, only the split images of the first page of the PDF document are printed.



This is useful for checking the printout after configuring the items in the [Split Page setting] menu.

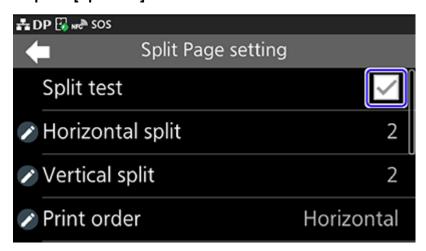
To enable the [Split test] mode, perform the following procedure.

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.

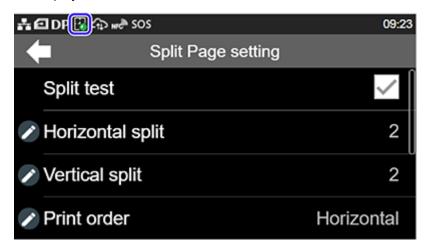


The [Split Page setting] screen appears.

2. Tap the [Split test] check box to select it.



When the [Split test] mode is enabled, the split test icon [] is shown on the status bar at the top of the display.



3. Send the PDF data to the printer for test printing.



After performing the test print, you must disable the [Split test] mode to resume back to the actual printing of the split print function.

Specifying the Number of Split Images

You can specify the number of split images on the page of the PDF document with the [Horizontal split] and [Vertical split] settings in the [Split Page setting] menu.

The [Horizontal split] specified the number of images to be split horizontally across the page.

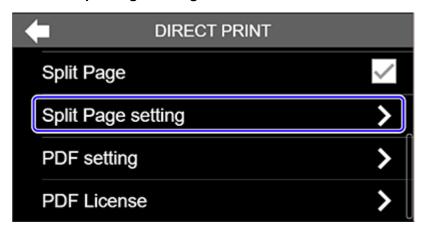
The [Vertical split] specified the number of images to be split vertically down the page.



In this examaple, Set the [Horizontal split] as 2. Set the [Vertical split] as 5.

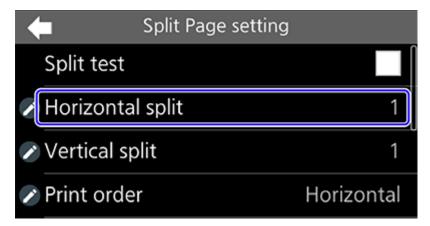
The setting procedure for specifying the number of split images is as follows:

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.



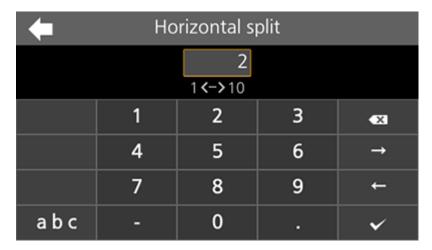
The [Split Page setting] screen appears.

2. Tap [Horizontal split].



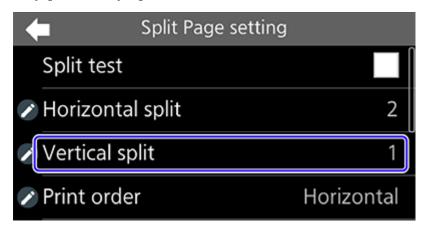
The [Horizontal split] screen appears.

3. Set the [Horizontal split] value. Tap the on-screen keyboard to enter the number on the text box.



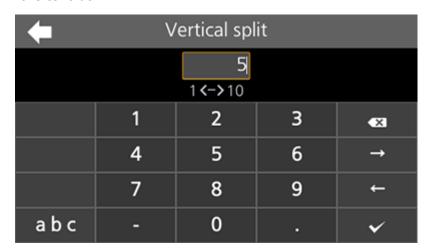
The setting range of the [Horizontal split] is from 1 to 10.

- 4. Tap 🔽 to save the value.
- 5. Tap [Vertical split].



The [Vertical split] screen appears.

6. Set the [Vertical split] value. Tap the on-screen keyboard to enter the number on the text box.



The setting range of the [Vertical split] is from 1 to 10.

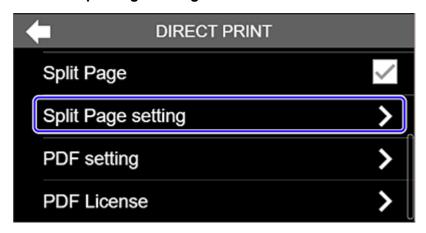
7. Tap v to save the value.

Setting the Print Order of the Split Images

You can set the sequence of the split images to be printed out.

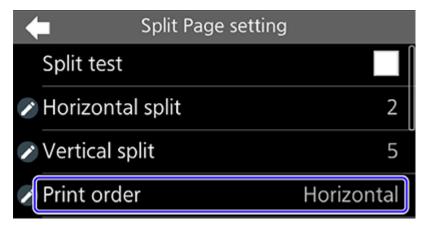
The setting procedure for the print order of the split images is as follows:

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.



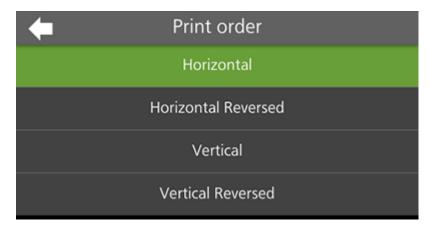
The [Split Page setting] screen appears.

2. Tap [Print order].



The [Print order] screen appears.

3. Tap the printing sequence of the split images to save the setting.



The options are as follow:

[Horizontal]

The printing sequence of the split images is from top left to top right, then bottom left to bottom right.

[Horizontal Reversed]

The printing sequence of the split images is from top right to top left, then bottom right to bottom left.

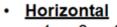
[Vertical]

The printing sequence of the split images is from top left to bottom left, then top right to bottom right.

[Vertical Reversed]

The printing sequence of the split images is from top right to bottom right, then top left to bottom left.





$$1 \rightarrow 2 \rightarrow 3 \rightarrow 4$$



· Horizontal Reversed

$$2 \rightarrow 1 \rightarrow 4 \rightarrow 3$$



Vertical

$$1 \rightarrow 3 \rightarrow 2 \rightarrow 4$$



Vertical Reversed

$$2 \rightarrow 4 \rightarrow 1 \rightarrow 3$$

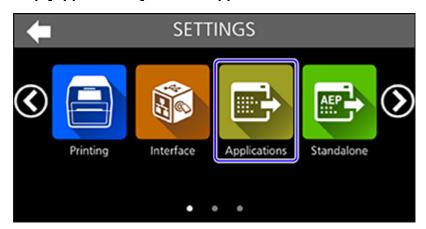


Setting the Margins of the PDF Document for Split Print Function

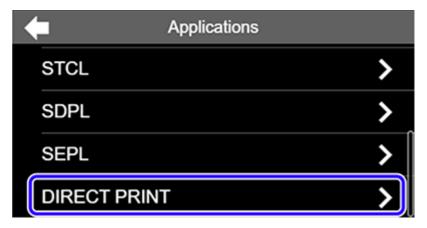
1. Measure the margins of the PDF document using the Measuring Tool of the Adobe Acrobat Reader software.

The margins of the original PDF document must be measured correctly to determine the values for entering to the [Split Page setting] menu.

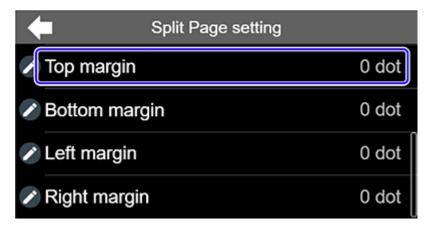
- Refer to the procedure of Measuring the Margin of the PDF Document.
- 2. Calculate the margins, if required, for entering the values to the [Split Page setting] menu.
 - Refer to the calculation method in Calculating the Margins for Split Page Settings.
- 3. Tap [SETTINGS] on the Home screen or Offline screen.
- 4. Enter the password if it is enabled.
- 5. Tap [Applications] to enter Applications mode.



6. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.

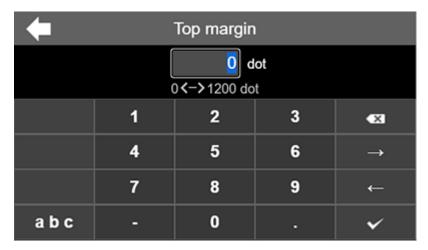


7. Tap [Top margin].

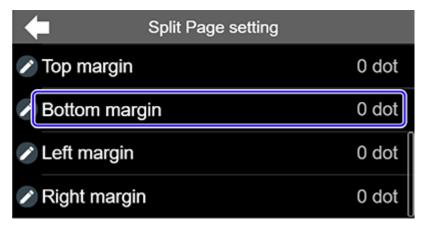


The [Top margin] screen appears.

8. Set the [Top margin] value. Tap the on-screen keyboard to enter the number on the text box.

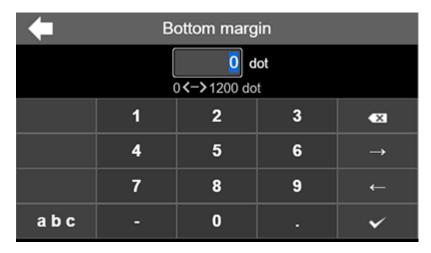


- 9. Tap vo to save the value.
- 10. Tap [Bottom margin].

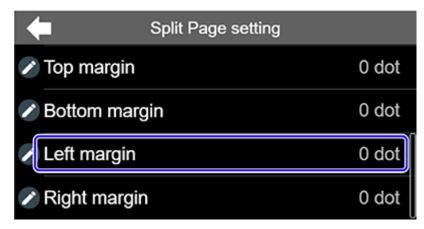


The [Bottom margin] screen appears.

11. Set the [Bottom margin] value. Tap the on-screen keyboard to enter the number on the text box.

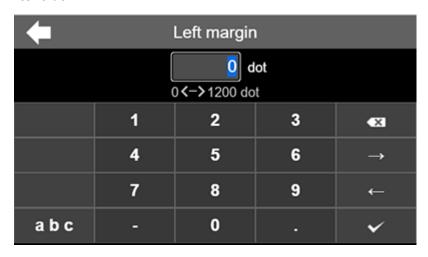


- 12. Tap vo to save the value.
- 13. Tap [Left margin].



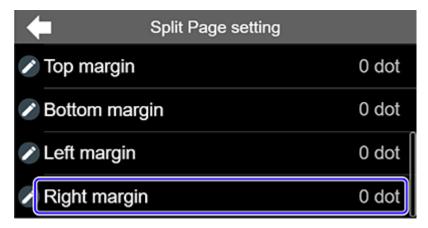
The [Left margin] screen appears.

14. Set the [Left margin] value. Tap the on-screen keyboard to enter the number on the text box.



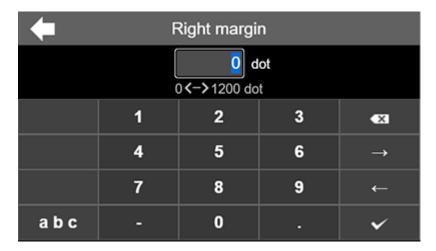
15. Tap volue.

16. Tap [Right margin].



The [Right margin] screen appears.

17. Set the [Right margin] value. Tap the on-screen keyboard to enter the number on the text box.



18. Tap volue.



- You can change the units to dots, " (inches), or mm in the [Settings] > [System] > [Regional] > [Unit] screen.
- The setting range of the margins is as follows:

Resolution	Setting range
203 dpi (1 dot = 0.125 mm (0.0049"))	0 to 800 dots
305 dpi (1 dot = 0.083 mm (0.0033"))	0 to 1200 dots

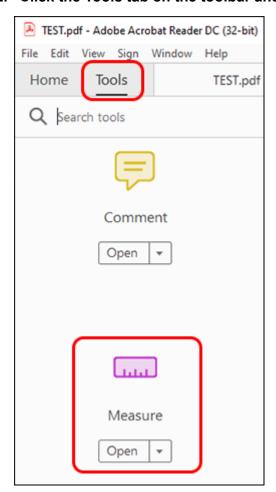
Measuring the Margin of the PDF Document

This is a recommended guide to measure the margins of the PDF document using Adobe Acrobat Reader DC software.

To get the latest version of the free Adobe Acrobat Reader software, go to https://www.adobe.com/



- Do not manually measure the printed PDF document as office automation printers
 may shrink or enlarge the PDF documents accordingly. This measurement may not be
 accurate for margins setting.
- 1. Open the PDF document using the Adobe Acrobat Reader software.
- 2. Click the Tools tab on the toolbar and select Measure.

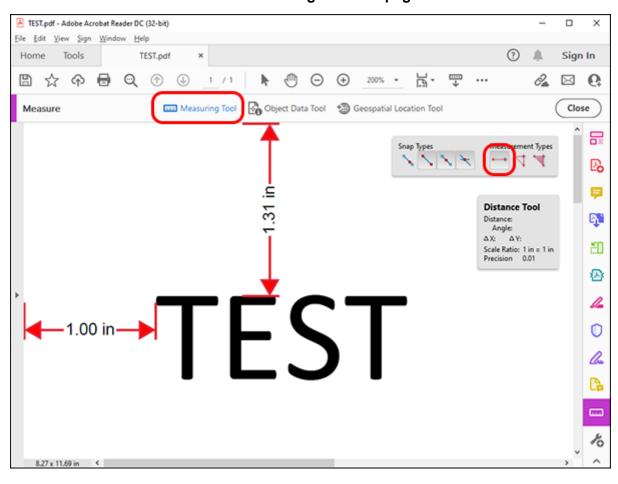


The measurement toolset is shown in the secondary toolbar.

3. In the secondary toolbar, click Measuring Tool.

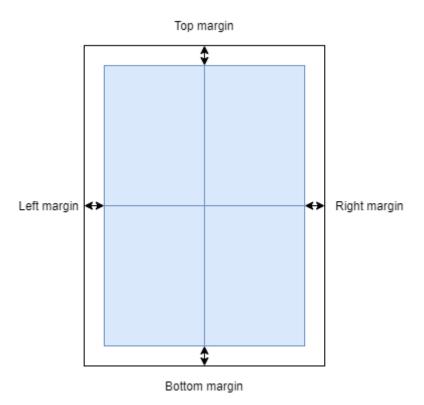
The Measuring toolbar and the Measurement Info panel are shown.

4. Use the Distance Tool to measure the margins of the page.



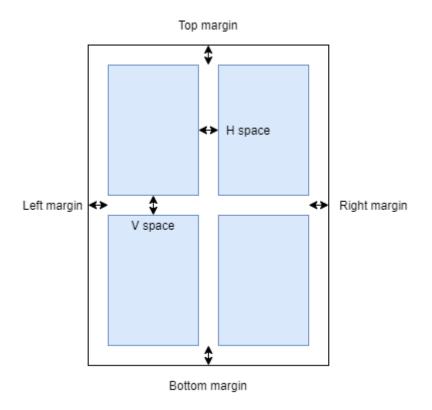
For PDF documents with no space in between the images

Measure the top margin, bottom margin, left margin and right margin of the page.



For PDF documents with space in between the images

Measure the top margin, bottom margin, left margin and right margin of the page, and measure the H space and V space in between the images.



5. Record all the measurements and proceed to the following procedure accordingly.

For PDF documents with no space in between the images

You can use the measured values to enter [Top margin], [Bottom margin], [Left margin], and [Right margin] in the [Split Page setting] menu accordingly.

Proceed to step 3 of <u>Setting the Margins of the PDF Document for Split Print Function</u>.

For PDF documents with space in between the images

Using the values that you have measured, calculate the values to be entered in the [Split Page setting] menu.

Refer to the calculation method in Calculating the Margins for Split Page Settings.

Calculating the Margins for Split Page Settings

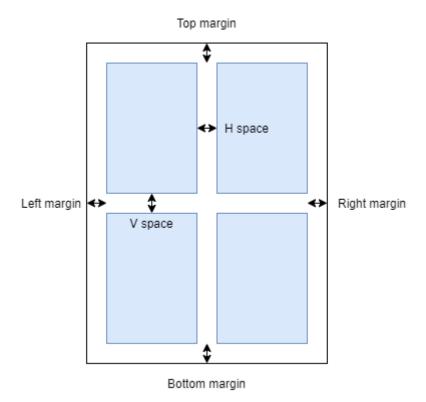
When the layout of the PDF document has spacing in between the images, we must calculate the value of the margins to be entered in the [Split Page setting] menu.

You can download our Calculation sheet from this link. https://www.sato-global.com/files/Labelling/PDF %20DP/HowCalculateMargin.xlsx



- This calculation method is suggested for a basic PDF document layout with the same V space and the same H space between the images.
- If you get a negative value from the calculation, you may need other adjustments to properly split the images. Please contact your SATO technical support center or visit https://www.sato-global.com/contact/ for an assistant.

The calculation method is explained as follows.

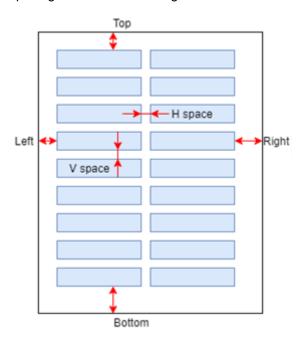


[Top margin]	= measured Top margin - (measured V space / 2)
[Bottom margin]	= measured Bottom margin - (measured V space / 2)
[Left margin]	= measured Left margin - (measured H space / 2)
[Right margin]	= measured Right margin - (measured H space / 2)

Enter the calculated value of the respective margins in the [Split Page setting] menu accordingly.

Example

This example uses the PDF document with [Horizontal split] as 2, [Vertical split] as 9 and there is spacing in between the images.



The measurements taken from the PDF document are recorded as below:

Measured Margins	Measured values (inches)
Тор	0.17
Bottom	0.60
Left	0.20
Right	0.18
H space	0.08
V space	0.08

Using the above calculation method, the calculated results are shown as below:

[Top margin]	= 0.17 - (0.08 / 2)	= 0.13 inches
[Bottom margin]	= 0.06 - (0.08 / 2)	= 0.56 inches
[Left margin]	= 0.20 - (0.08 / 2)	= 0.16 inches
[Right margin]	= 0.18 - (0.08 / 2)	= 0.14 inches

When using the printer with 203 dpi resolution, the converted value from inches to dots are as follow:

[Top margin] = 0.13 * 203 = 27 dots

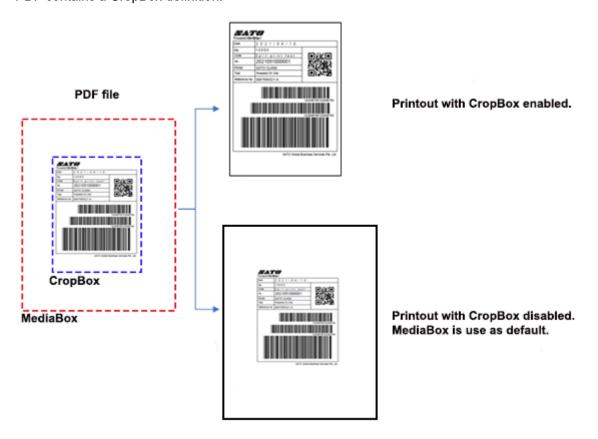
[Bottom margin] = 0.56 * 203 = 114 dots

[Left margin] = 0.16 * 203 = 33 dots

[Right margin] = 0.14×203 = 29 dots

Using CropBox Mode

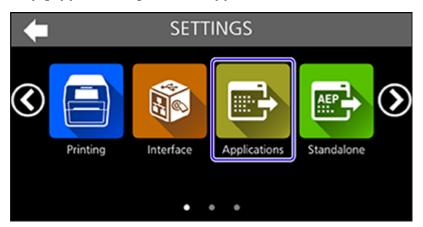
By enabling the [Use CropBox] mode, you can print out the contents based on the boundary set if a PDF contains a CropBox definition.



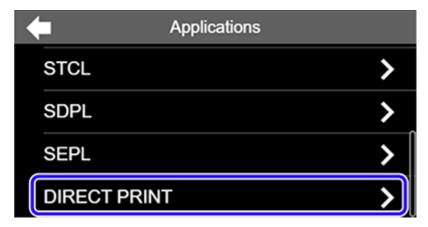


- MediaBox and CropBox standards are based on PDF specification.
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.

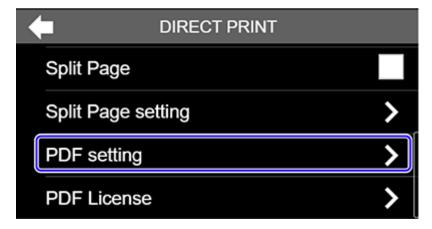
3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.

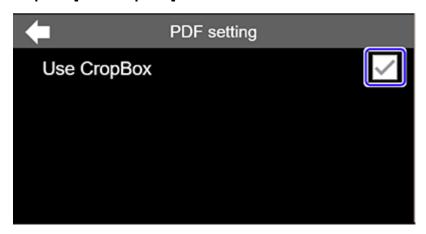


5. Tap [PDF setting].



The [PDF setting] screen appears.

6. Tap the [Use CropBox] check box to select it.



The Use CropBox function is enabled.

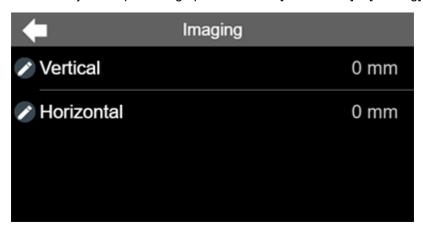
- 7. Press the 小偷 (Power/Home) button to show the Home screen.
- 8. Press the ப்/ெ (Power/Home) button to enter Online mode.

You can print to check the print image.

Adjusting the Print Image Position

Depending on the PDF data, you may need to adjust the print image position.

You can adjust the print image position in the [SETTINGS] > [Printing] > [Imaging] menu.

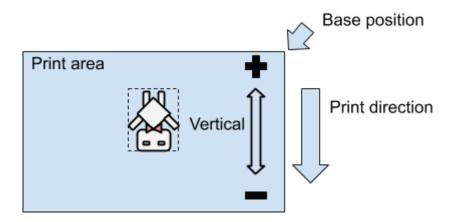


Set the print reference position in the vertical and horizontal directions.

[Vertical]

Set the print position in the vertical direction.

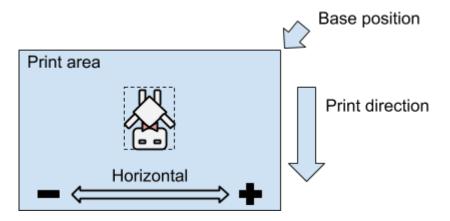
Set the correction value from the print reference position as "-" for the direction of the paper feed and "+" for the direction opposite to the paper feed.



[Horizontal]

Set the print position in the horizontal direction.

Set the correction value from the print reference position when facing the product as "+" to adjust to the right side and "-" to adjust to the left side.



Frequently Asked Questions

Below is some information that may be helpful when using the PDF Direct Print function:

1. How to reset the printer after a firmware update?

You can reset the printer in the [SETTINGS] > [Tools] menu. Tap [Reset] to show the [Select] menu, then select the items to be initialized.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

2. How to set the label size?

Please refer to step 2 in Initial Printer Settings.

3. How to set the image rotation of the page orientation?

Please refer to Rotating the Page Orientation.

4. How can I set the number of labels to be printed before they are cut out from the printer?

Please refer to Specifying the Number of Labels Printed Before Cut.

5. How to split a PDF document into multiple images and print them individually?

Please refer to Splitting Images to Print Individually.

6. How to set the Gap/I-mark sensor?

You can set the Gap/I-mark sensor in the [Settings] > [Printing] menu. Tap [Sensor Type] to set the sensor type for detecting the label.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

7. How to activate the PDF Direct Print license?

Please refer to License Activation.

8. Why is the size of the print image shrunk or enlarged?

You have enabled the [Fit page sizing] function.

To disable the [Fit page sizing] function, refer to Resizing the Image to Fit the Page and clear the check box of [Fit page sizing] in step 5.

9. Can I save frequently used settings for different PDF documents?

You can save your frequently used setting for different PDF documents in the [Settings] > [Tools] > [Profiles] menu.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

10. Why is there extra space before the image?

The setting of the label size may be incorrect. Please refer to step 2 in <u>Initial Printer Settings</u>.

11. Why some of the texts printed out are different from the image?

The font data may not be embedded in the PDF document.

Please make sure that the font data is embedded in the PDF document before being sent for printing.

12. Why does the printer only print out the first page of the PDF document in Split Print Function?

You may have enabled the [Split test] function.

To disable the [Split test] function, refer to <u>Test Printing for Split Print Function</u> and select [Disabled].

13. Why is the print image not printed out or shifted?

• The PDF document may have the CropBox definition set.

Enable the [Use CropBox] mode to print the content based on the CropBox definition set in the PDF document. Please refer to <u>Using CropBox Mode</u>.

The setting of the print reference position may be incorrect or the values are too large.

You can adjust the print image position in the [Settings] > [Printing] > [Imaging] menu. Please refer to Adjusting the Print Image Position.

14. Why the PDF document is not printed out when the [Split Page] function is [Enable]?

The PDF document may not have the MediaBox definition.

Set your PDF document with the MediaBox definition using your PDF viewer application. Please contact your SATO technical support center for more information.

15. Why is the print image not printed out or shifted?

The setting of the print reference position may be incorrect or the values are too large. You can adjust the print image position in the [Settings] > [Printing] > [Imaging] menu. Please refer to Adjusting the Print Image Position.

16. Why do PDF documents seem to print much slower?

If the PDF document contains many objects such as fonts, images, lines and barcodes, the printers may need more time to process.



 The print result varies depending on the PDF document. If you need any further clarification, please contact your SATO technical support center for more information.

PDF Direct Print Menu

This section describes the details of each item in the [DIRECT PRINT] menu.



The operation using the [DIRECT PRINT] menu can also be performed via a Web configuration page using any browser.

For detailed information on accessing the Web configuration page, refer to each printer's operator manual.

Check out the TOP > Various Settings of the Product > Configuring the Product Settings from a Web Browser section of the operator manual.



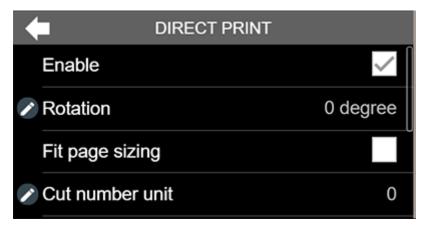
Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

The [DIRECT PRINT] Menu

After you have the PDF Direct Print firmware installed in the printer, you can access the [DIRECT PRINT] menu.

On the Home screen or Offline screen, tap [SETTINGS] > [Applications] > [DIRECT PRINT] to show the [DIRECT PRINT] menu.



The following settings are available in the [DIRECT PRINT] menu:

[Enable]

Enable or disable the direct print mode.

- When a check mark shows on the check box of [Enable], the direct print mode is enabled.
 The **DP** (Direct Print) status icon is shown on the status bar at the top of the display.
- When the check box of [Enable] is cleared, the direct print mode is disabled.
 The **DP** status icon is not shown on the status bar at the top of the display.



• After the PDF Direct Print firmware is installed on the printer, the direct print mode is enabled by default.

[Rotation]

Set the rotating angle of the page orientation for PDF direct printing.

The options are as follow:

[0 degree]

Prints the page without rotation.

[90 degree]

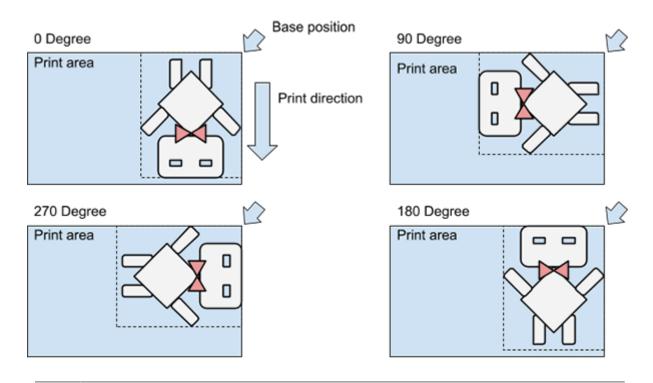
Rotates the page orientation 90 degrees clockwise.

[180 degree]

Rotates the page orientation 180 degrees.

[270 degree]

Rotates the page orientation 270 degrees clockwise.



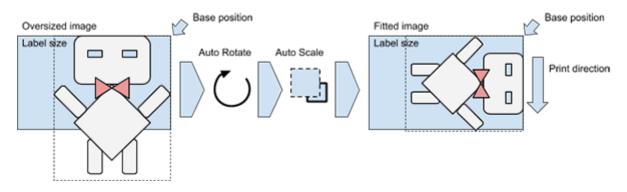


- The rotating angle cannot be set if the [Fit page sizing] is enabled.
- The initial setting of [Rotation] is 0 degrees.

[Fit page sizing]

By enabling the [Fit page sizing] function, the printer automatically rotates, enlarges or reduces the print image to best fit the label page size.

This function is convenient for correcting the cropped printout if the print image is too big for the label size, or removing the whitespace if the print image is too small for the label size.





- When the [Fit page sizing] is enabled, the settings for the [Rotation] are invalid.
- The initial setting of [Fit page sizing] is disabled.

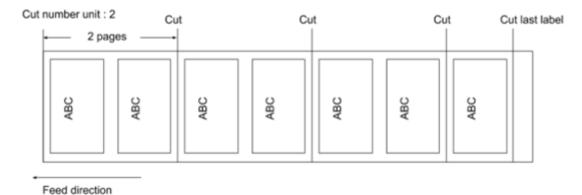
[Cut number unit]

You can set to cut the label after the specified number of printouts are printed from a single data source.

The setting range of the [Cut number unit] is from 0 to 9999.

If 0 or 1 is set, the printer will print and cut for each printout.

The printer will cut the last printout of the print data regardless of the specified number of [Cut number unit] as shown in the diagram below.

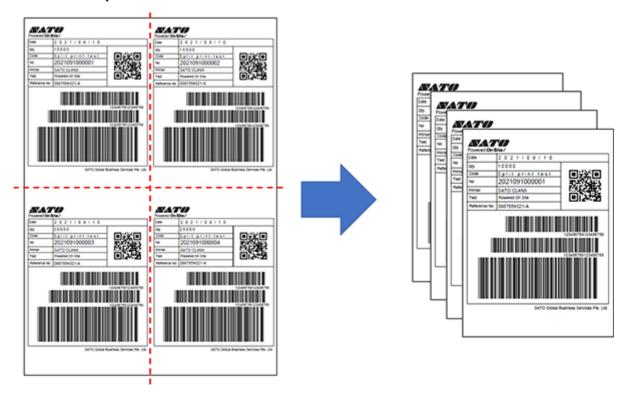


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- This cutting feature only takes effect when the [Print Mode] is set as [Cutter], [Cut & Print], or [Partial cutter].
- The initial setting of [Cut number unit] is 0.
- When the [Cut number unit] is set to more than 1, the reprint function will not take effect.
- If the split function is enabled, the maximum [Cut number unit] is set at 1.

[Split Page]

By enabling the [Split Page] function, the printer can split the image of the PDF document and print them individually as shown below.



This function can also apply to the multiple pages PDF document.



If there is a blank split page, the printer will skip printing the blank label.

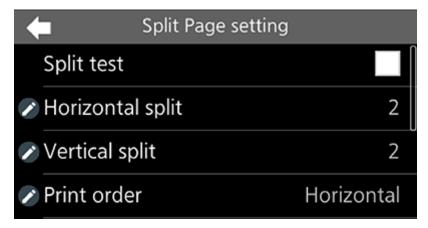




• If the printer operates on PDF Direct Print [Demo] mode, the printer will not skip printing the blank label.

[Split Page setting]

Tap to show the [Split Page setting] screen.



The following information and settings are available in the [Split Page setting] menu:

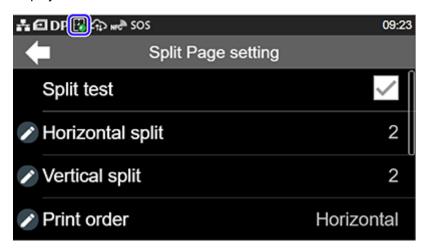
[Split test]

By enabling the [Split test] mode, you can perform test printing for the split print function. When the PDF data is sent to the printer, only the split images of the first page of the PDF document are printed.



This is useful for checking the printout after configuring the items in the [Split Page setting] menu.

When the [Split test] mode is enabled, the split test icon [is shown on the status bar at the top of the display.





After performing the test print, you must disable the [Split test] mode to resume back to the actual printing of the split print function.

[Horizontal split]

The [Horizontal split] specified the number of images to be split horizontally across the page.

[Vertical split]

The [Vertical split] specified the number of images to be split vertically down the page.

[Print order]

You can set the sequence of the split images to be printed out.

The options are as follow:

[Horizontal]

The printing sequence of the split images is from top left to top right, then bottom left to bottom right.

[Horizontal Reversed]

The printing sequence of the split images is from top right to top left, then bottom right to bottom left.

[Vertical]

The printing sequence of the split images is from top left to bottom left, then top right to bottom right.

[Vertical Reversed]

The printing sequence of the split images is from top right to bottom right, then top left to bottom left.



Horizontal
 1 → 2 → 3 → 4



Horizontal Reversed
 2 → 1 → 4 → 3



Vertical
 1 → 3 → 2 → 4



Vertical Reversed
 2 → 4 → 1 → 3



[Top margin]

Set the top margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[Bottom margin]

Set the bottom margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[Left margin]

Set the left margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:





[Right margin]

Set the right margin for the split print function after proper measurement and calculation to determine the value.

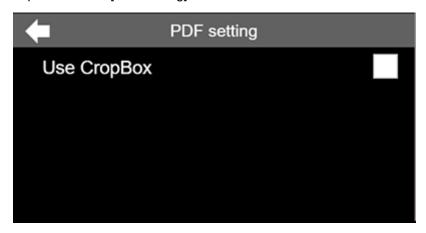
Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[PDF setting]

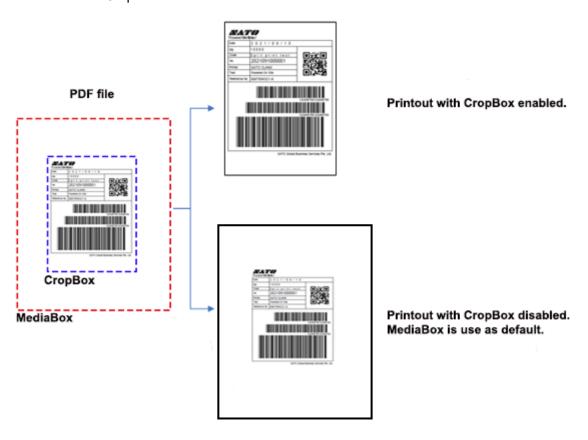
Tap to show the [PDF setting] screen.



The following information and settings are available in the [PDF setting] menu:

[Use CropBox]

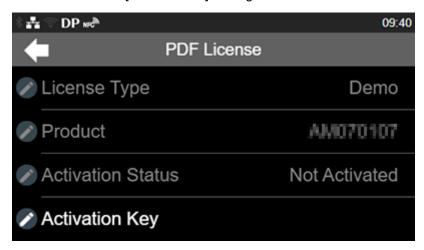
By enabling the [Use CropBox] mode, you can print out the contents based on the boundary set if a PDF contains a CropBox definition.



MediaBox and CropBox standards are based on PDF specification.

[PDF License]

Select to show the [PDF License] management screen.



The following information and settings are available in the [PDF License] menu:

[License Type]

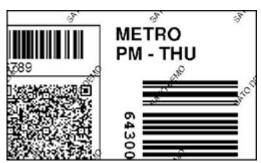
Shows the type of PDF Direct Print license registered for this printer. Once the PDF Direct Print firmware is installed, the printer is initially set as demo mode.

There are three types of licenses available.

[Demo]

If you have not activated the PDF Direct Print license, the printer will work in demo mode.

In the demo mode, PDF printing is possible but the printed content has SATO DEMO watermarks printed across the label.



[Develop]

The development license is only used by SATO resellers and technical support for internal verification without sales. It is strictly not for commercial use.

To activate the license, you need an activation key issued by the license management server.

[Commercial]

The commercial license is for users who purchased the PDF Direct Print.

To activate the license, you need an activation key issued by the license management server.

[Product]

Shows the printer serial number. This serial number is used for registration and generating the license activation key at the license management server.

[Activation Status]

Shows the activation status of the PDF Direct Print license.

There are three types of activation status.

[Not Activated]

Shows when the license is not activated.

[Key Error]

Shows when the entered activation key is wrong or is not registered for this printer serial number.

[Activated]

Shows when the entered activation key is valid and is registered for this printer serial number. The PDF Direct Print license is activated.

[Activation Key]

The [Activation Key] shows only when the PDF Direct Print license is not activated.

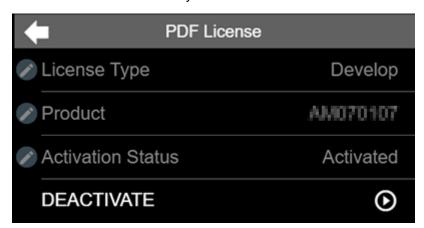
Select the [Activation Key] to show the input screen to enter the 8-digit activation key issued by the license management server.



The license activation should be performed by SATO technical support personnel.

[DEACTIVATE]

This selection item shows only when the PDF Direct Print license is activated.



Select [DEACTIVATE] only if you want to deactivate the license.

When you select [DEACTIVATE], a screen to confirm deactivation appears.



 Make sure that you need to deactivate the license before doing it. Once deactivated, you need to contact SATO technical support personnel to activate the license again.

After you deactivated the license, the [License Type] returns to [Demo] and the [Activation Status] shows [Key Error].

Maintenance Support

SATO provides maintenance support to ensure the reliable operation of your product.

A separate printer maintenance contract bundle is highly recommended for users regardless of the license type of the PDF Direct Print function.

In the event of printer replacement, the user without a maintenance contract will need to purchase a new PDF Direct Print license for the new printer. Whereas, the user who has purchased a maintenance contract can continue using the new printer with the purchased license transferred to it.

SATO technical support personnel will assist to install the firmware, transfer the original license or activate the new license for users.

For details on the maintenance contract, contact your SATO reseller or technical support center for more information.

Contact Information for When You Are in Trouble

Access the following site to send us your questions or comments.

https://www.sato-global.com/contact/



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About This Manual

Thank you for using the SATO PDF Direct Print.

This document is intended for users who want to know how to configure SATO printers with PDF Direct Print function or system integrators who want to develop a solution that can send PDF data from their system and directly print the PDF data without graphics conversion on SATO printers with PDF Direct Print function.

This document describes only the information and instructions related to PDF Direct Print. For more details on other printer operations and settings, please refer to each printer's operator manual.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

Symbols

This document uses the following symbols:

Item	Description
^	The Caution symbol indicates potential risks or actions that may lead to software malfunction, data loss, errors, or unexpected behavior if not followed correctly.
Caution	
	The Note symbol indicates useful and supplemental information that you should know.
Note	
3	The Reference symbol indicates the link of relevant information.
Reference	



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- The contents of this document may be changed without prior notice.
- Great care has been taken in the preparation of this document, but if any problems, mistakes, or omissions are found, please contact your SATO reseller or technical support center.



• This manual uses the build version 6.6.5-UC1.1_r2 firmware in its descriptions.

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Software Updating Disclaimer

While all efforts have been taken to ensure the accuracy and currency of the information contained herein, there are instances where the contents of this document may be outdated. In that case, proceed to your local SATO regional website (https://www.sato-global.com/drivers/redirect.html) to check whether an updated document has been made available for your reference.

Introduction

Overview

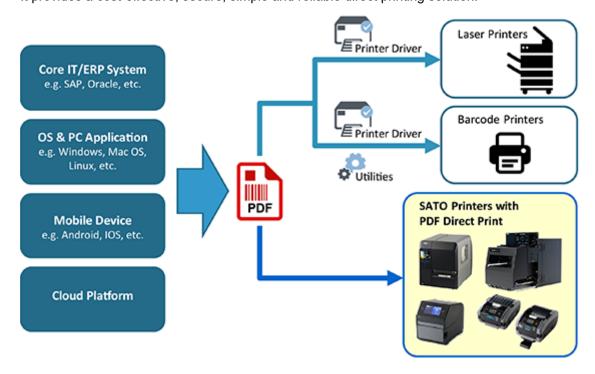
This document is intended for users who want to know how to configure SATO printers with PDF Direct Print function or system integrators who want to develop a solution that can send PDF data from their system and directly print the PDF data without graphics conversion on SATO printers with PDF Direct Print function.

About PDF Direct Print

PDF data becomes a standard document format for most of the ERP system, OS and PC applications, etc. However, when printing PDF data on most of the barcode printers, it requires a printer driver or custom software that converts PDF to graphic for printing.

SATO PDF Direct Print is the solution implemented as a special firmware installed on the printer. It allows users to print PDF files directly to the SATO printers without using any printer driver, utilities, middleware or application installed to the system.

It provides a cost-effective, secure, simple and reliable direct printing solution.



Supported Printers and Interfaces

The supported printer models of this function are CL4NX, CL6NX, CL4NX Plus, CL6NX Plus, CT4-LX, PW208NX, PW208mNX and S84NX/S86NX.

Users can send PDF data via any available interface of the supported printers, such as LAN, WLAN, USB, Bluetooth, etc.

Features

The features of SATO PDF Direct Print include:

Multilingual fonts and typefaces

PDF Direct Print supports all languages available in PDF and uses fonts embedded in the PDF file to prevent text garbling.

PC-less printing

PDF Direct Print resides in the printer memory and processes data internally. Thus, saving cost, space and time by eliminating the need to manage additional devices.

Split print feature

Split the PDF document into multiple images and print them individually.

Layout Adjustment

Enables quick and easy changes to the orientation of data and the avoidance of any blank spaces.

High Speed and Quality

PDF Direct Print generates clear and precise fonts and barcodes and controls color density alongside a high-speed internal processor to ensure high and consistent throughput.

Multiple Interfaces

PDF Direct Print supports every commonly used printer communication interface, including Wireless LAN, USB and Bluetooth, enabling flexible use across any business environment.

Cutter Options

Users can set to cut the label after a specified number of printouts printed from a single data source.

SATO AEP

SATO AEP (Application Enabled Printing) enables more sophisticated operations through the use of API.

Getting Started

Installation

There is no need for users to perform the firmware installation as the printer comes with the special firmware installed after purchasing the PDF Direct Print.

In the event of printer replacement, SATO technical support personnel will install the firmware and enable the PDF Direct Print function on the new printer.



Installation of PDF direct print firmware should be performed by SATO technical support personnel.

License Activation

The PDF Direct Print license is initially activated on the printer if the user has already purchased the license. A license activation key is required to perform the activation.

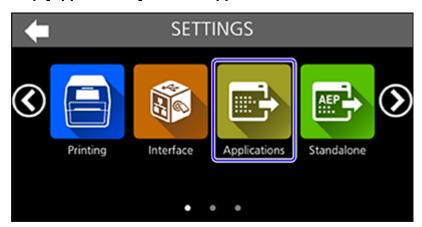
If the license is not activated, the PDF Direct Print will be running on Demo mode.



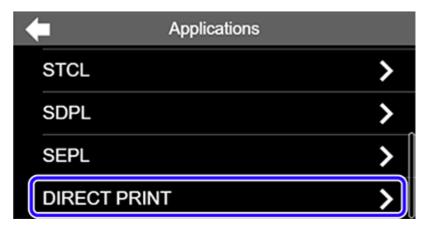
The license activation should be performed by SATO technical support personnel.

The license activation procedure intended for SATO technical support personnel is as follows:

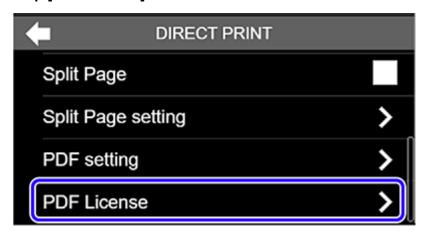
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



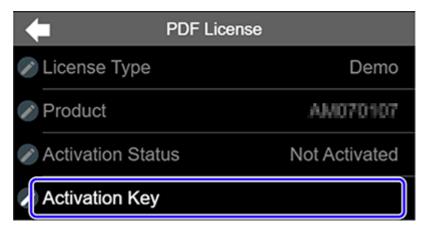
4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [PDF License].



6. Tap [Activation Key].



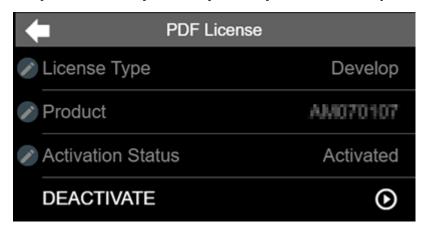
7. Enter the license activation key.

The activation key is an 8-digit number issued by the license management server.



8. Tap verte to save the entered activation key.

The [Activation Status] will show [Activated] if the activation key matches.





- [License Type], [Product] and [Activation Status] are read-only.
- The initial [License Type] is [Demo] and the [Activation Status] shows [Not Activated].
- The [Activation Status] will show [Key Error] if the activation key does not match.

Initial Printer Settings

To print the PDF data properly, you need to perform the following initial printer settings:

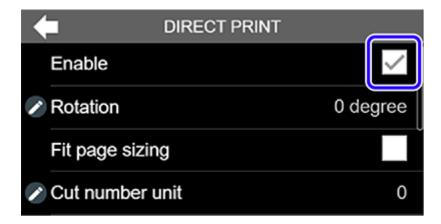
1. Make sure that the PDF direct print mode is enabled.

After the PDF Direct Print firmware is installed on the printer, the direct print mode is enabled by default.

The **DP** (Direct Print) status icon is shown on the status bar at the top of the display.



If the **DP** status icon is not shown, you can enable the direct print mode in the [SETTINGS] > [Applications] > [DIRECT PRINT] menu. Select the check box of [Enable] to enable the direct print mode.



2. Set the printer language.

Set the printer language in the [SETTINGS] > [Applications] > [Protocol] menus.



The options are as follows:

SBPL

Set when you use the SBPL printer language.

SZPL

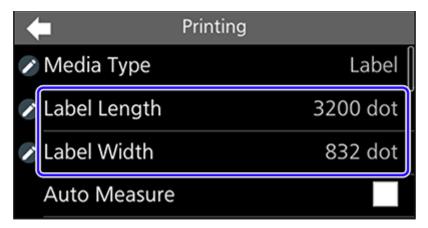
Set when you use the SZPL printer language.



- When [DIRECT PRINT] is set to [Enable], the [SETTINGS] > [Applications] > [Protocol] setting is [SBPL]. However, if [SZPL] was previously selected as the protocol, it will remain [SZPL].
- If you are using the older firmware with build version 6.4.0-u572_r1 or earlier, you must set the [Protocol] setting to [SBPL].
- If you need to set the [Protocol] to SIPL, STCL, SDPL or SEPL, you have to disable the [DIRECT PRINT] function first.
- Please reboot the printer after switching protocols.

3. Set the label size.

Set the length and width of the label in the [SETTINGS] > [Printing] > [Label Length] and the [SETTINGS] > [Printing] > [Label Width] menus.





The Auto Measure function is not recommended to be used for PDF direct print.
 Disable the [Auto Measure] and set the [Label Length] and [Label Width] of the label accordingly.

4. Set other printer settings to match the label.

Set the following printer settings based on the label used.

- [SETTINGS] > [Printing] > [Media Type]
- [SETTINGS] > [Printing] > [Printing Mode]
- [SETTINGS] > [Printing] > [Speed]
- [SETTINGS] > [Printing] > [Sensor Type]
- [SETTINGS] > [Printing] > [Darkness]



You can set all these settings with the Media Startup function by selecting [SETTINGS] > [Tools] > [Media Startup].

Follow the on-screen instructions to perform batch settings for the print settings that are appropriate for the type of media you are using, then you can apply them to the printer.

- If you are using multiple types of media, first use [SETTINGS] > [Tools] > [Media Profiles Editing] > [Media Profiles Registration] to register a profile for each media. After that, apply the profile for the media you are using to the printer.
- Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

Sending PDF Data to Printer

You need to set up the connection between your source (i.e. core IT system, PC application, mobile device, cloud, etc.) and the printer via the supported connectivity. The available interfaces (LAN, WLAN, USB, Bluetooth, RS-232C, IEEE 1284 and others) are depending on the printer.

Supported Print Data

- The PDF Direct Print function enables you to print documents and graphic data without using printer commands such as SBPL commands. The supported document format is PDF.
- Make sure that the font data is embedded in the PDF file. Otherwise, the data might not be printed correctly due to the printer will substitute the original font with its internal font.
- Do not use outlined PDF data as this will result in a larger file size. Recommended using PDF data (ISO 32000-1) that is not outlined.
- The maximum available file size that can be sent depends on the printer's memory. The recommended PDF file size is less than 50 MB.

Canceling the Print Job

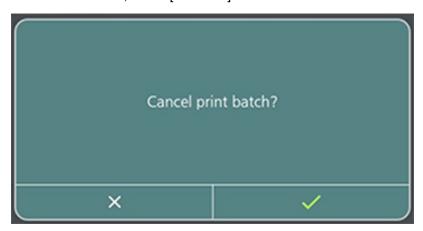
When the protocol is set to a different supported language, the job cancellation option are different.

Canceling the Print Job in SBPL

Canceling the Print Job in SZPL

Canceling the Print Job in SBPL

In the Offline mode, select [CANCEL].



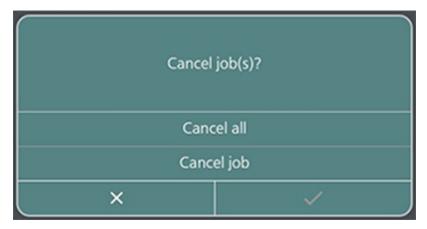
Cancel print batch

All print jobs sent before clicking 'Cancel print batch?' will be deleted. If you click 'Cancel print batch?' while the printer is still processing a split request, it will stop. The same applies to the data receiving process.

Canceling the Print Job in SZPL

In the Offline mode, select [CANCEL].

There are two options for cancellation.



Cancel all

All print jobs sent before clicking 'Cancel all' will be deleted. If you click 'Cancel all' while the printer is still processing a split request, it will stop. The same applies to the data receiving process.

Cancel job

Only the current image buffer will be deleted. The 'Cancel job' option will not affect the split or data receiving processes. Therefore, it is not recommended to use 'Cancel job' in PDF Direct Print.

Various Printout Settings

Rotating the Page Orientation

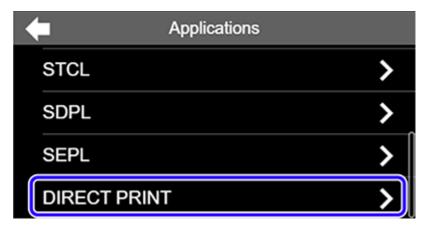
You can specify the rotating angle of the page orientation for PDF direct printing.

The setting procedure for rotating the page orientation is as follows:

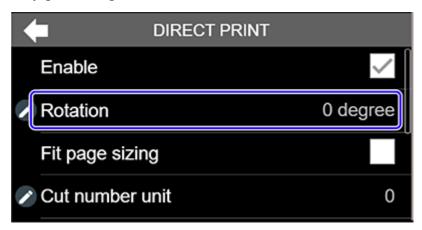
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [Rotation].



6. Tap to select the rotating angle of the page orientation.



The options are as follow:

[0 degree]

Prints the page without rotation.

[90 degree]

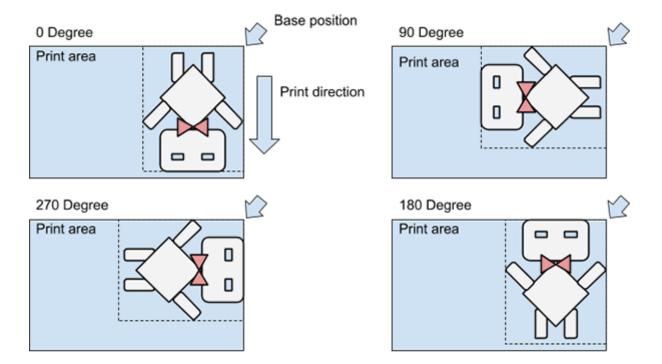
Rotates the page orientation 90 degrees clockwise.

[180 degree]

Rotates the page orientation 180 degrees.

[270 degree]

Rotates the page orientation 270 degrees clockwise.



- 7. Press the (b)((a) (Power/Home) button to show the Home screen.
- 8. Press the (b)((a) (Power/Home) button to enter Online mode.

You can print to check the page orientation.

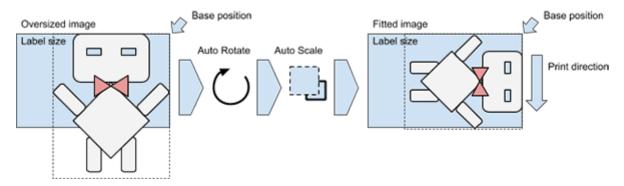


- The rotating angle cannot be set if the [Fit page sizing] is enabled.
- The initial setting of [Rotation] is 0 degrees.

Resizing the Image to Fit the Page

By enabling the [Fit page sizing] function, the printer automatically rotates, enlarges or reduces the print image to best fit the label page size.

This function is convenient for correcting the cropped printout if the print image is too big for the label size, or removing the whitespace if the print image is too small for the label size.

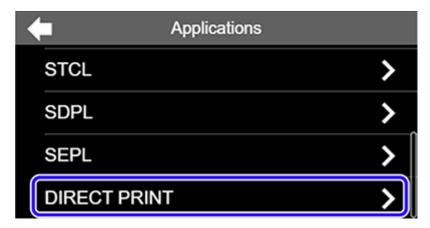


To enable this function, perform the following procedure.

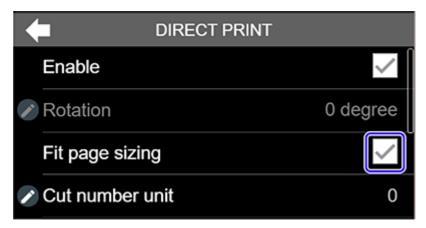
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap the [Fit page sizing] check box to select it.



The Fit page sizing function is enabled.

- 6. Press the (1)/(2) (Power/Home) button to show the Home screen.
- 7. Press the 心/⑥ (Power/Home) button to enter Online mode.

You can print to check the print image.



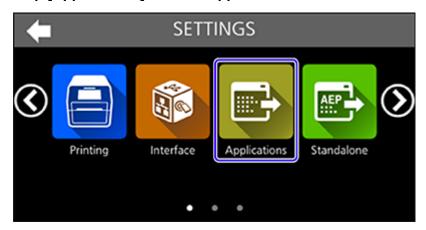
- When the [Fit page sizing] is enabled, the settings for the [Rotation] are invalid.
- The initial setting of [Fit page sizing] is disabled.

Specifying the Number of Labels Printed Before Cut

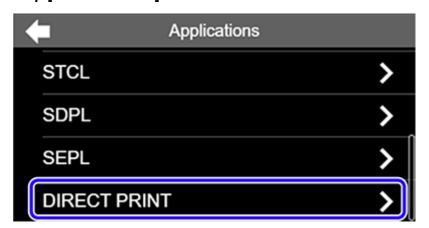
You can set to cut the label after the specified number of printouts are printed from a single data source.

The setting procedure for specifying the [Cut number unit] is as follows:

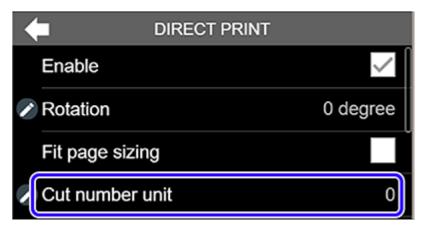
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



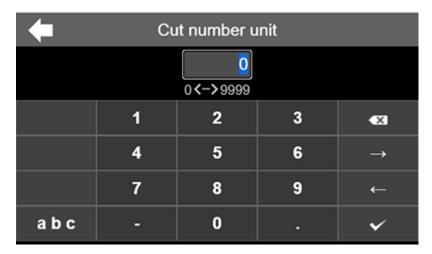
4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap [Cut number unit].



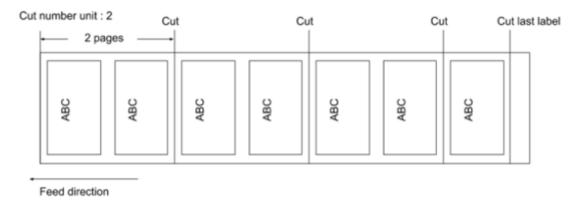
6. Set the [Cut number unit] value. Tap the on-screen keyboard to enter the number on the text box.



The setting range of the [Cut number unit] is from 0 to 9999.

If 0 or 1 is set, the printer will print and cut for each printout.

The printer will cut the last printout of the print data regardless of the specified number of [Cut number unit] as shown in the diagram below.



- 7. Tap volue.
- 8. Press the (1)/(2) (Power/Home) button to show the Home screen.

9. Press the ტ/ெ (Power/Home) button to enter Online mode.

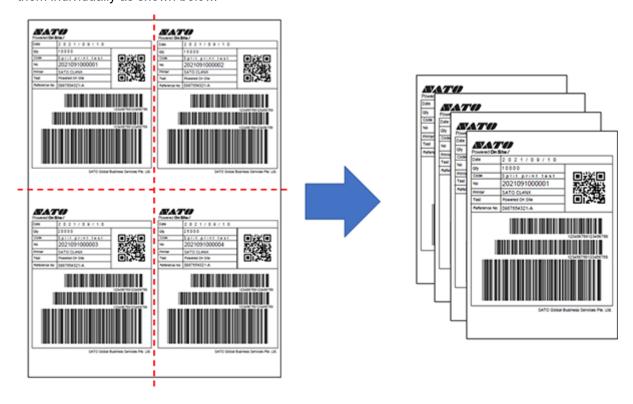
You can print to check the print image.



- This cutting feature only takes effect when the [Print Mode] is set as [Cutter], [Cut & Print], or [Partial cutter].
- The initial setting of [Cut number unit] is 0.
- When the [Cut number unit] is set to more than 1, the reprint function will not take effect.
- If the split function is enabled, the maximum [Cut number unit] is set at 1.

Splitting Images to Print Individually

By enabling the [Split Page] function, the printer can split the image of the PDF document and print them individually as shown below.



This function can also apply to the multiple pages PDF document.



If there is a blank split page, the printer will skip printing the blank label.





• If the printer operates on PDF Direct Print [Demo] mode, the printer will not skip printing the blank label.

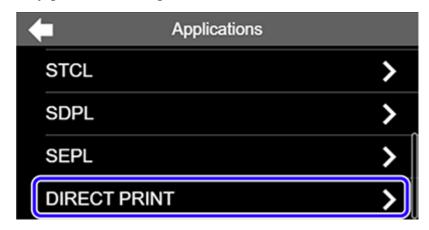
The number of split images, the print order, and the margins can be set in the [Split Page setting] menu.

To enable the [Split Page] function, perform the following procedure.

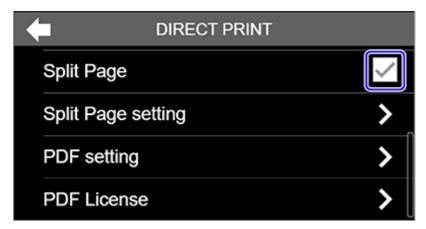
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.
- 3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.



5. Tap the [Split Page] check box to select it.



The Split page function is enabled.

6. Tap [Split Page setting] for more settings of the split print function.



7. After configuring the [Split Page setting] items, send the PDF data to the printer for printing.



When the printer is processing the split print function, the split print icon is shown on the status bar at the top of the display.



Configuring Split Page Settings

Test Printing for Split Print Function

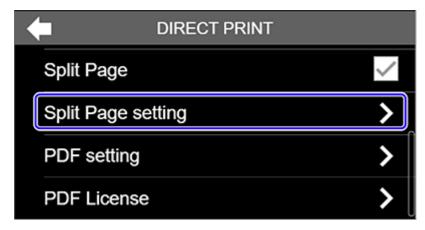
By enabling the [Split test] mode, you can perform test printing for the split print function. When the PDF data is sent to the printer, only the split images of the first page of the PDF document are printed.



This is useful for checking the printout after configuring the items in the [Split Page setting] menu.

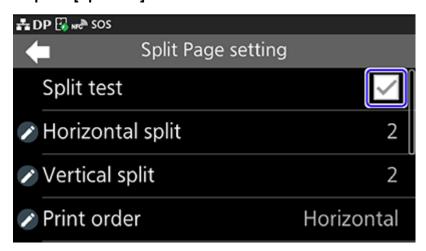
To enable the [Split test] mode, perform the following procedure.

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.

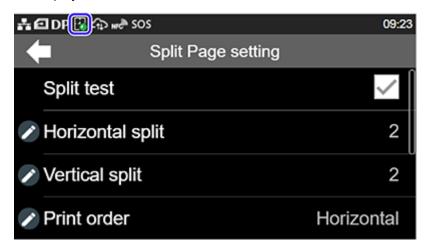


The [Split Page setting] screen appears.

2. Tap the [Split test] check box to select it.



When the [Split test] mode is enabled, the split test icon [] is shown on the status bar at the top of the display.



3. Send the PDF data to the printer for test printing.



After performing the test print, you must disable the [Split test] mode to resume back to the actual printing of the split print function.

Specifying the Number of Split Images

You can specify the number of split images on the page of the PDF document with the [Horizontal split] and [Vertical split] settings in the [Split Page setting] menu.

The [Horizontal split] specified the number of images to be split horizontally across the page.

The [Vertical split] specified the number of images to be split vertically down the page.



In this examaple, Set the [Horizontal split] as 2. Set the [Vertical split] as 5.

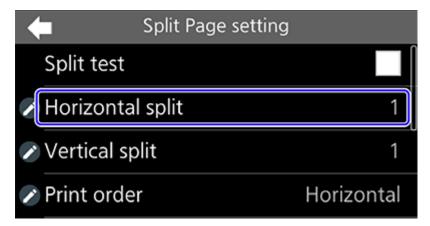
The setting procedure for specifying the number of split images is as follows:

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.



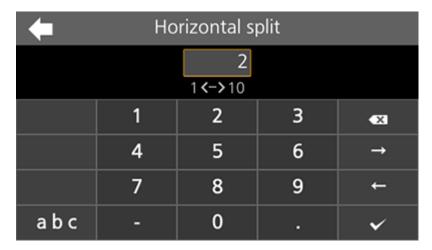
The [Split Page setting] screen appears.

2. Tap [Horizontal split].



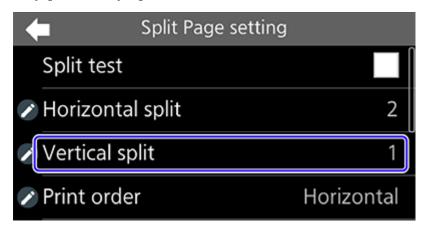
The [Horizontal split] screen appears.

3. Set the [Horizontal split] value. Tap the on-screen keyboard to enter the number on the text box.



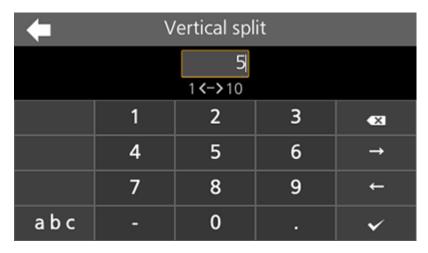
The setting range of the [Horizontal split] is from 1 to 10.

- 4. Tap 🔽 to save the value.
- 5. Tap [Vertical split].



The [Vertical split] screen appears.

6. Set the [Vertical split] value. Tap the on-screen keyboard to enter the number on the text box.



The setting range of the [Vertical split] is from 1 to 10.

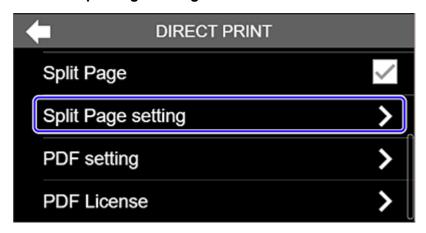
7. Tap v to save the value.

Setting the Print Order of the Split Images

You can set the sequence of the split images to be printed out.

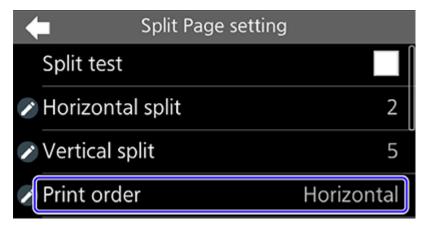
The setting procedure for the print order of the split images is as follows:

1. In the [Settings] > [Applications] > [DIRECT PRINT] menu, tap [Split Page setting] to enter Split Page setting mode.



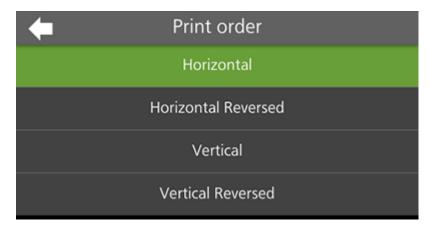
The [Split Page setting] screen appears.

2. Tap [Print order].



The [Print order] screen appears.

3. Tap the printing sequence of the split images to save the setting.



The options are as follow:

[Horizontal]

The printing sequence of the split images is from top left to top right, then bottom left to bottom right.

[Horizontal Reversed]

The printing sequence of the split images is from top right to top left, then bottom right to bottom left.

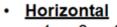
[Vertical]

The printing sequence of the split images is from top left to bottom left, then top right to bottom right.

[Vertical Reversed]

The printing sequence of the split images is from top right to bottom right, then top left to bottom left.





$$1 \rightarrow 2 \rightarrow 3 \rightarrow 4$$



· Horizontal Reversed

$$2 \rightarrow 1 \rightarrow 4 \rightarrow 3$$



Vertical

$$1 \rightarrow 3 \rightarrow 2 \rightarrow 4$$



Vertical Reversed

$$2 \rightarrow 4 \rightarrow 1 \rightarrow 3$$

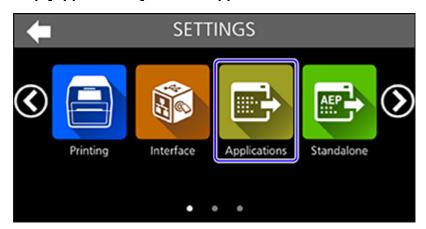


Setting the Margins of the PDF Document for Split Print Function

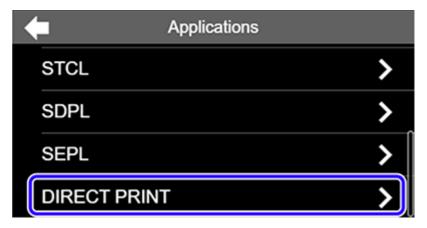
1. Measure the margins of the PDF document using the Measuring Tool of the Adobe Acrobat Reader software.

The margins of the original PDF document must be measured correctly to determine the values for entering to the [Split Page setting] menu.

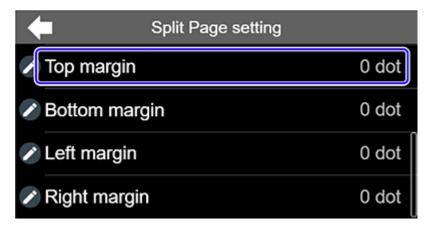
- Refer to the procedure of Measuring the Margin of the PDF Document.
- 2. Calculate the margins, if required, for entering the values to the [Split Page setting] menu.
 - Refer to the calculation method in Calculating the Margins for Split Page Settings.
- 3. Tap [SETTINGS] on the Home screen or Offline screen.
- 4. Enter the password if it is enabled.
- 5. Tap [Applications] to enter Applications mode.



6. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.

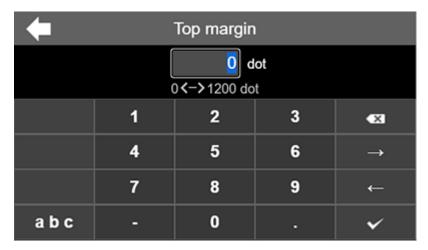


7. Tap [Top margin].

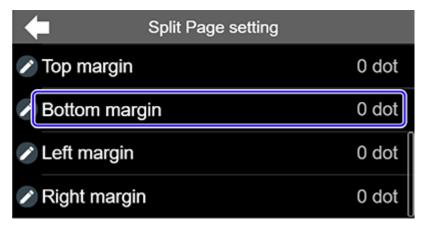


The [Top margin] screen appears.

8. Set the [Top margin] value. Tap the on-screen keyboard to enter the number on the text box.

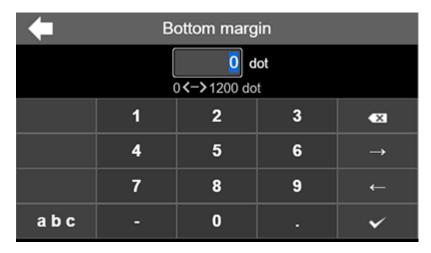


- 9. Tap vo to save the value.
- 10. Tap [Bottom margin].

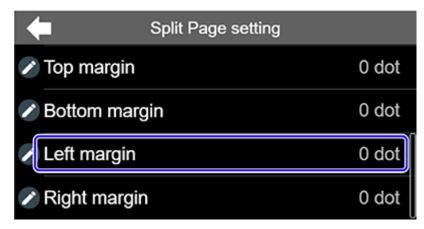


The [Bottom margin] screen appears.

11. Set the [Bottom margin] value. Tap the on-screen keyboard to enter the number on the text box.

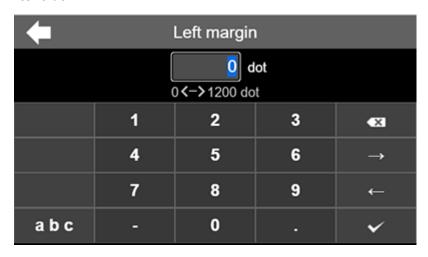


- 12. Tap vo to save the value.
- 13. Tap [Left margin].



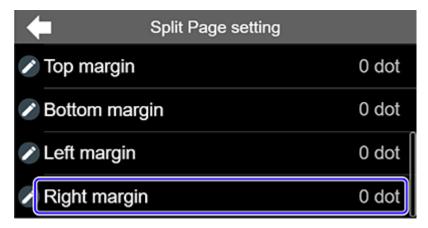
The [Left margin] screen appears.

14. Set the [Left margin] value. Tap the on-screen keyboard to enter the number on the text box.



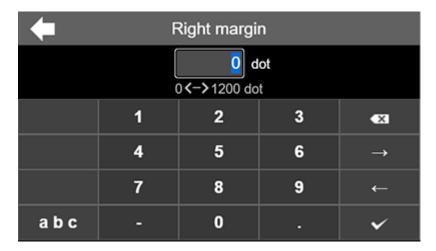
15. Tap volue.

16. Tap [Right margin].



The [Right margin] screen appears.

17. Set the [Right margin] value. Tap the on-screen keyboard to enter the number on the text box.



18. Tap volue.



- You can change the units to dots, " (inches), or mm in the [Settings] > [System] > [Regional] > [Unit] screen.
- The setting range of the margins is as follows:

Resolution	Setting range
203 dpi (1 dot = 0.125 mm (0.0049"))	0 to 800 dots
305 dpi (1 dot = 0.083 mm (0.0033"))	0 to 1200 dots

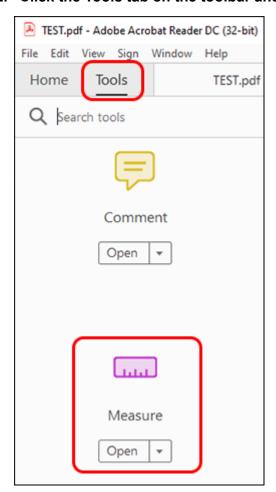
Measuring the Margin of the PDF Document

This is a recommended guide to measure the margins of the PDF document using Adobe Acrobat Reader DC software.

To get the latest version of the free Adobe Acrobat Reader software, go to https://www.adobe.com/



- Do not manually measure the printed PDF document as office automation printers
 may shrink or enlarge the PDF documents accordingly. This measurement may not be
 accurate for margins setting.
- 1. Open the PDF document using the Adobe Acrobat Reader software.
- 2. Click the Tools tab on the toolbar and select Measure.

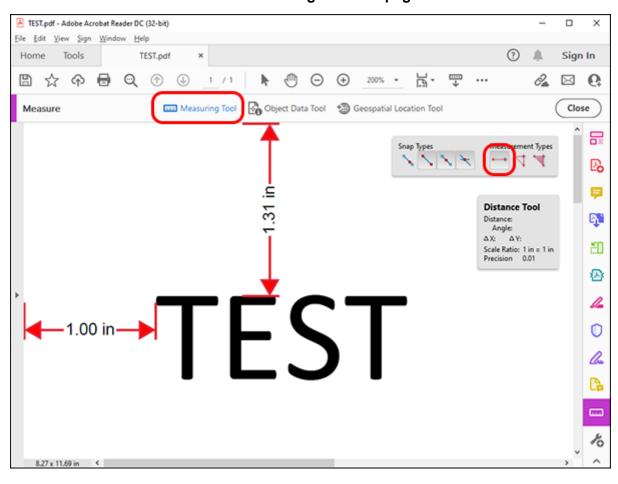


The measurement toolset is shown in the secondary toolbar.

3. In the secondary toolbar, click Measuring Tool.

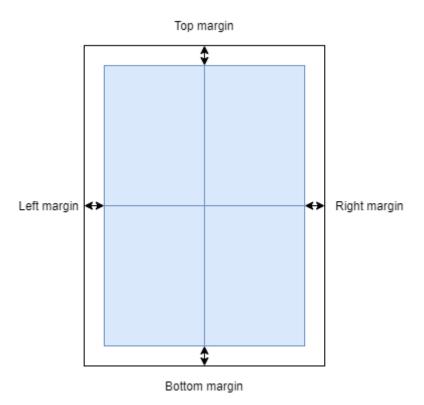
The Measuring toolbar and the Measurement Info panel are shown.

4. Use the Distance Tool to measure the margins of the page.



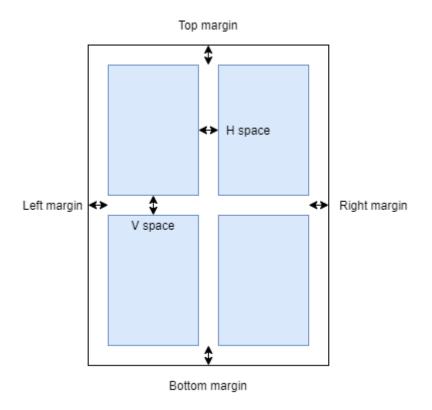
For PDF documents with no space in between the images

Measure the top margin, bottom margin, left margin and right margin of the page.



For PDF documents with space in between the images

Measure the top margin, bottom margin, left margin and right margin of the page, and measure the H space and V space in between the images.



5. Record all the measurements and proceed to the following procedure accordingly.

For PDF documents with no space in between the images

You can use the measured values to enter [Top margin], [Bottom margin], [Left margin], and [Right margin] in the [Split Page setting] menu accordingly.

Proceed to step 3 of <u>Setting the Margins of the PDF Document for Split Print Function</u>.

For PDF documents with space in between the images

Using the values that you have measured, calculate the values to be entered in the [Split Page setting] menu.

Refer to the calculation method in Calculating the Margins for Split Page Settings.

Calculating the Margins for Split Page Settings

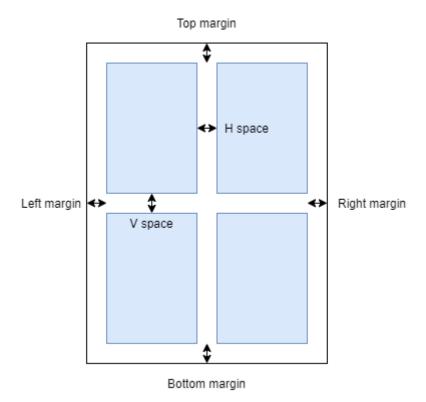
When the layout of the PDF document has spacing in between the images, we must calculate the value of the margins to be entered in the [Split Page setting] menu.

You can download our Calculation sheet from this link. https://www.sato-global.com/files/Labelling/PDF %20DP/HowCalculateMargin.xlsx



- This calculation method is suggested for a basic PDF document layout with the same V space and the same H space between the images.
- If you get a negative value from the calculation, you may need other adjustments to properly split the images. Please contact your SATO technical support center or visit https://www.sato-global.com/contact/ for an assistant.

The calculation method is explained as follows.

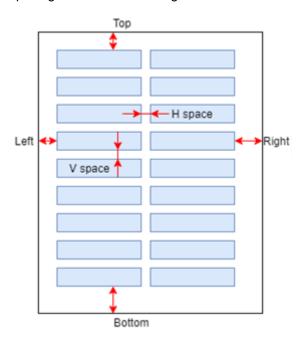


[Top margin]	= measured Top margin - (measured V space / 2)
[Bottom margin]	= measured Bottom margin - (measured V space / 2)
[Left margin]	= measured Left margin - (measured H space / 2)
[Right margin]	= measured Right margin - (measured H space / 2)

Enter the calculated value of the respective margins in the [Split Page setting] menu accordingly.

Example

This example uses the PDF document with [Horizontal split] as 2, [Vertical split] as 9 and there is spacing in between the images.



The measurements taken from the PDF document are recorded as below:

Measured Margins	Measured values (inches)
Тор	0.17
Bottom	0.60
Left	0.20
Right	0.18
H space	0.08
V space	0.08

Using the above calculation method, the calculated results are shown as below:

[Top margin]	= 0.17 - (0.08 / 2)	= 0.13 inches
[Bottom margin]	= 0.06 - (0.08 / 2)	= 0.56 inches
[Left margin]	= 0.20 - (0.08 / 2)	= 0.16 inches
[Right margin]	= 0.18 - (0.08 / 2)	= 0.14 inches

When using the printer with 203 dpi resolution, the converted value from inches to dots are as follow:

[Top margin] = 0.13 * 203 = 27 dots

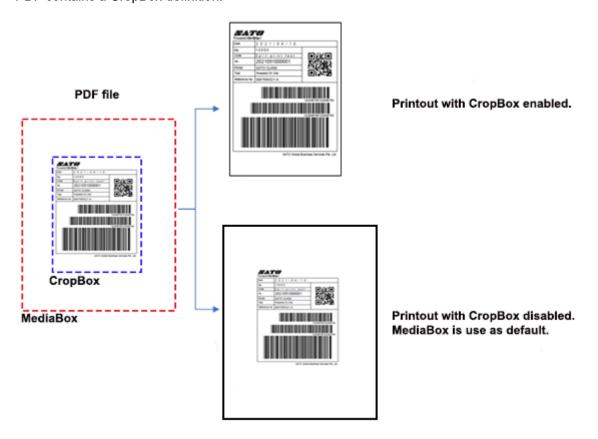
[Bottom margin] = 0.56 * 203 = 114 dots

[Left margin] = 0.16 * 203 = 33 dots

[Right margin] = 0.14×203 = 29 dots

Using CropBox Mode

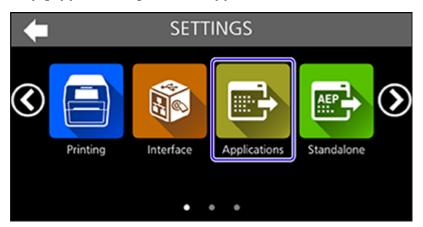
By enabling the [Use CropBox] mode, you can print out the contents based on the boundary set if a PDF contains a CropBox definition.



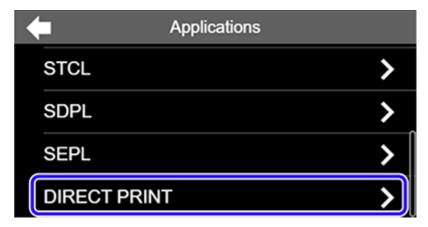


- MediaBox and CropBox standards are based on PDF specification.
- 1. Tap [SETTINGS] on the Home screen or Offline screen.
- 2. Enter the password if it is enabled.

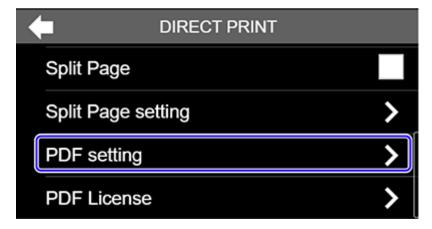
3. Tap [Applications] to enter Applications mode.



4. Tap [DIRECT PRINT] to enter DIRECT PRINT mode.

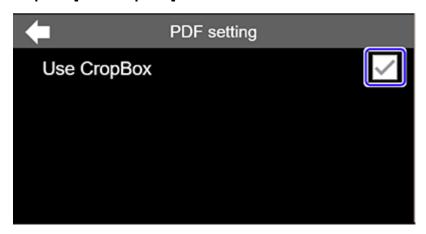


5. Tap [PDF setting].



The [PDF setting] screen appears.

6. Tap the [Use CropBox] check box to select it.



The Use CropBox function is enabled.

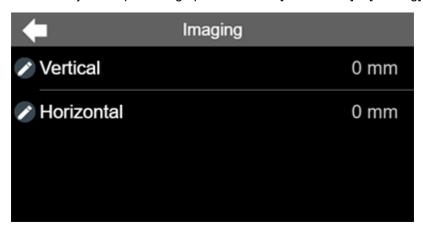
- 7. Press the 小偷 (Power/Home) button to show the Home screen.
- 8. Press the ப்/ெ (Power/Home) button to enter Online mode.

You can print to check the print image.

Adjusting the Print Image Position

Depending on the PDF data, you may need to adjust the print image position.

You can adjust the print image position in the [SETTINGS] > [Printing] > [Imaging] menu.

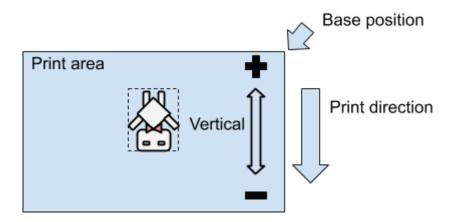


Set the print reference position in the vertical and horizontal directions.

[Vertical]

Set the print position in the vertical direction.

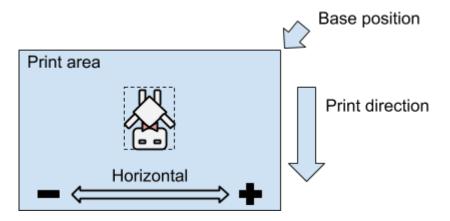
Set the correction value from the print reference position as "-" for the direction of the paper feed and "+" for the direction opposite to the paper feed.



[Horizontal]

Set the print position in the horizontal direction.

Set the correction value from the print reference position when facing the product as "+" to adjust to the right side and "-" to adjust to the left side.



Frequently Asked Questions

Below is some information that may be helpful when using the PDF Direct Print function:

1. How to reset the printer after a firmware update?

You can reset the printer in the [SETTINGS] > [Tools] menu. Tap [Reset] to show the [Select] menu, then select the items to be initialized.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

2. How to set the label size?

Please refer to step 2 in Initial Printer Settings.

3. How to set the image rotation of the page orientation?

Please refer to Rotating the Page Orientation.

4. How can I set the number of labels to be printed before they are cut out from the printer?

Please refer to Specifying the Number of Labels Printed Before Cut.

5. How to split a PDF document into multiple images and print them individually?

Please refer to Splitting Images to Print Individually.

6. How to set the Gap/I-mark sensor?

You can set the Gap/I-mark sensor in the [Settings] > [Printing] menu. Tap [Sensor Type] to set the sensor type for detecting the label.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

7. How to activate the PDF Direct Print license?

Please refer to License Activation.

8. Why is the size of the print image shrunk or enlarged?

You have enabled the [Fit page sizing] function.

To disable the [Fit page sizing] function, refer to Resizing the Image to Fit the Page and clear the check box of [Fit page sizing] in step 5.

9. Can I save frequently used settings for different PDF documents?

You can save your frequently used setting for different PDF documents in the [Settings] > [Tools] > [Profiles] menu.

Please refer to the CT4-LX operator manual for more detailed information.

Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

10. Why is there extra space before the image?

The setting of the label size may be incorrect. Please refer to step 2 in <u>Initial Printer Settings</u>.

11. Why some of the texts printed out are different from the image?

The font data may not be embedded in the PDF document.

Please make sure that the font data is embedded in the PDF document before being sent for printing.

12. Why does the printer only print out the first page of the PDF document in Split Print Function?

You may have enabled the [Split test] function.

To disable the [Split test] function, refer to <u>Test Printing for Split Print Function</u> and select [Disabled].

13. Why is the print image not printed out or shifted?

• The PDF document may have the CropBox definition set.

Enable the [Use CropBox] mode to print the content based on the CropBox definition set in the PDF document. Please refer to <u>Using CropBox Mode</u>.

The setting of the print reference position may be incorrect or the values are too large.

You can adjust the print image position in the [Settings] > [Printing] > [Imaging] menu. Please refer to Adjusting the Print Image Position.

14. Why the PDF document is not printed out when the [Split Page] function is [Enable]?

The PDF document may not have the MediaBox definition.

Set your PDF document with the MediaBox definition using your PDF viewer application. Please contact your SATO technical support center for more information.

15. Why is the print image not printed out or shifted?

The setting of the print reference position may be incorrect or the values are too large. You can adjust the print image position in the [Settings] > [Printing] > [Imaging] menu. Please refer to Adjusting the Print Image Position.

16. Why do PDF documents seem to print much slower?

If the PDF document contains many objects such as fonts, images, lines and barcodes, the printers may need more time to process.



 The print result varies depending on the PDF document. If you need any further clarification, please contact your SATO technical support center for more information.

PDF Direct Print Menu

This section describes the details of each item in the [DIRECT PRINT] menu.



The operation using the [DIRECT PRINT] menu can also be performed via a Web configuration page using any browser.

For detailed information on accessing the Web configuration page, refer to each printer's operator manual.

Check out the TOP > Various Settings of the Product > Configuring the Product Settings from a Web Browser section of the operator manual.



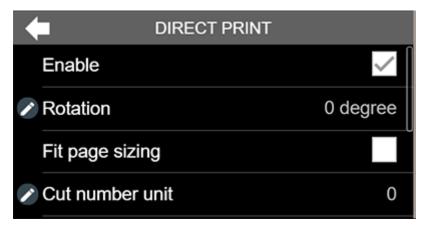
Click the link below for the CT4-LX operator manual.

https://www.manual.sato-global.com/printer/ct4-lx/main/index.html

The [DIRECT PRINT] Menu

After you have the PDF Direct Print firmware installed in the printer, you can access the [DIRECT PRINT] menu.

On the Home screen or Offline screen, tap [SETTINGS] > [Applications] > [DIRECT PRINT] to show the [DIRECT PRINT] menu.



The following settings are available in the [DIRECT PRINT] menu:

[Enable]

Enable or disable the direct print mode.

- When a check mark shows on the check box of [Enable], the direct print mode is enabled.
 The **DP** (Direct Print) status icon is shown on the status bar at the top of the display.
- When the check box of [Enable] is cleared, the direct print mode is disabled.
 The **DP** status icon is not shown on the status bar at the top of the display.



• After the PDF Direct Print firmware is installed on the printer, the direct print mode is enabled by default.

[Rotation]

Set the rotating angle of the page orientation for PDF direct printing.

The options are as follow:

[0 degree]

Prints the page without rotation.

[90 degree]

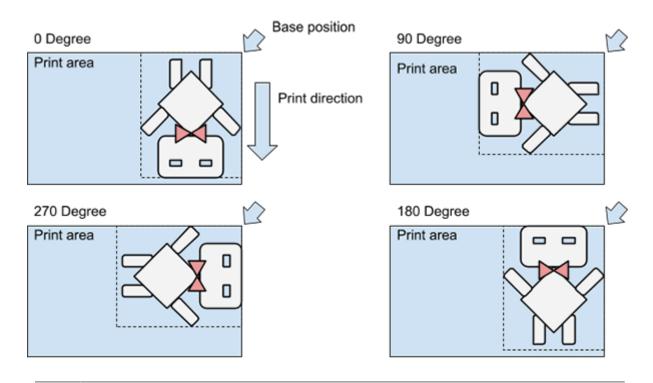
Rotates the page orientation 90 degrees clockwise.

[180 degree]

Rotates the page orientation 180 degrees.

[270 degree]

Rotates the page orientation 270 degrees clockwise.



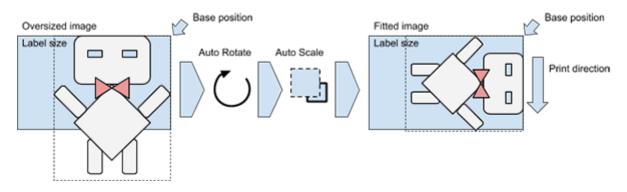


- The rotating angle cannot be set if the [Fit page sizing] is enabled.
- The initial setting of [Rotation] is 0 degrees.

[Fit page sizing]

By enabling the [Fit page sizing] function, the printer automatically rotates, enlarges or reduces the print image to best fit the label page size.

This function is convenient for correcting the cropped printout if the print image is too big for the label size, or removing the whitespace if the print image is too small for the label size.





- When the [Fit page sizing] is enabled, the settings for the [Rotation] are invalid.
- The initial setting of [Fit page sizing] is disabled.

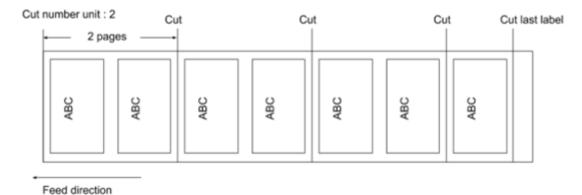
[Cut number unit]

You can set to cut the label after the specified number of printouts are printed from a single data source.

The setting range of the [Cut number unit] is from 0 to 9999.

If 0 or 1 is set, the printer will print and cut for each printout.

The printer will cut the last printout of the print data regardless of the specified number of [Cut number unit] as shown in the diagram below.

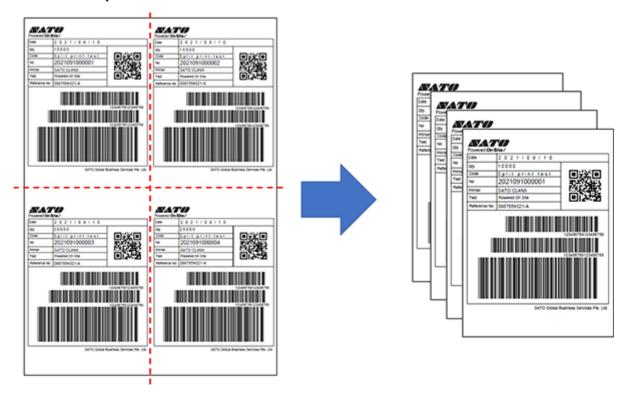


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- This cutting feature only takes effect when the [Print Mode] is set as [Cutter], [Cut & Print], or [Partial cutter].
- The initial setting of [Cut number unit] is 0.
- When the [Cut number unit] is set to more than 1, the reprint function will not take effect.
- If the split function is enabled, the maximum [Cut number unit] is set at 1.

[Split Page]

By enabling the [Split Page] function, the printer can split the image of the PDF document and print them individually as shown below.



This function can also apply to the multiple pages PDF document.



If there is a blank split page, the printer will skip printing the blank label.

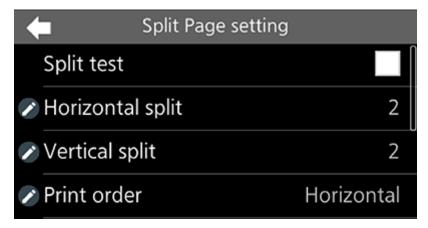




• If the printer operates on PDF Direct Print [Demo] mode, the printer will not skip printing the blank label.

[Split Page setting]

Tap to show the [Split Page setting] screen.



The following information and settings are available in the [Split Page setting] menu:

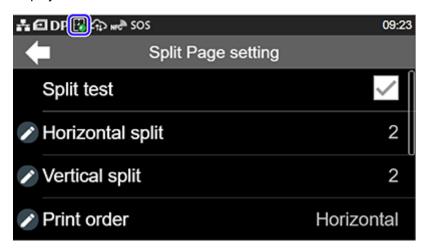
[Split test]

By enabling the [Split test] mode, you can perform test printing for the split print function. When the PDF data is sent to the printer, only the split images of the first page of the PDF document are printed.



This is useful for checking the printout after configuring the items in the [Split Page setting] menu.

When the [Split test] mode is enabled, the split test icon [is shown on the status bar at the top of the display.





After performing the test print, you must disable the [Split test] mode to resume back to the actual printing of the split print function.

[Horizontal split]

The [Horizontal split] specified the number of images to be split horizontally across the page.

[Vertical split]

The [Vertical split] specified the number of images to be split vertically down the page.

[Print order]

You can set the sequence of the split images to be printed out.

The options are as follow:

[Horizontal]

The printing sequence of the split images is from top left to top right, then bottom left to bottom right.

[Horizontal Reversed]

The printing sequence of the split images is from top right to top left, then bottom right to bottom left.

[Vertical]

The printing sequence of the split images is from top left to bottom left, then top right to bottom right.

[Vertical Reversed]

The printing sequence of the split images is from top right to bottom right, then top left to bottom left.



Horizontal
 1 → 2 → 3 → 4



Horizontal Reversed
 2 → 1 → 4 → 3



Vertical
 1 → 3 → 2 → 4



Vertical Reversed
 2 → 4 → 1 → 3



[Top margin]

Set the top margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[Bottom margin]

Set the bottom margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[Left margin]

Set the left margin for the split print function after proper measurement and calculation to determine the value.

Refer to the following links:





[Right margin]

Set the right margin for the split print function after proper measurement and calculation to determine the value.

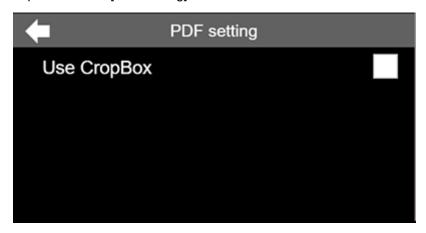
Refer to the following links:

Measuring the Margin of the PDF Document

Calculating the Margins for Split Page Settings

[PDF setting]

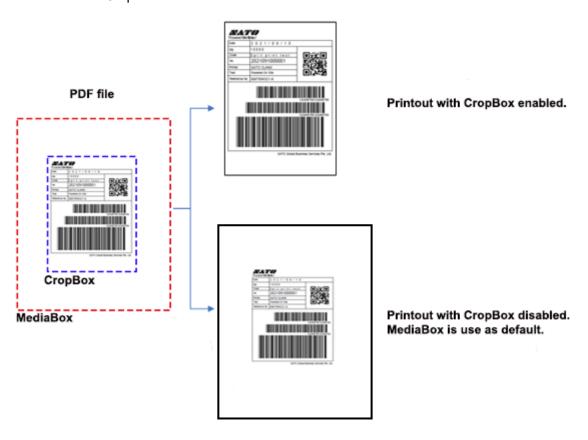
Tap to show the [PDF setting] screen.



The following information and settings are available in the [PDF setting] menu:

[Use CropBox]

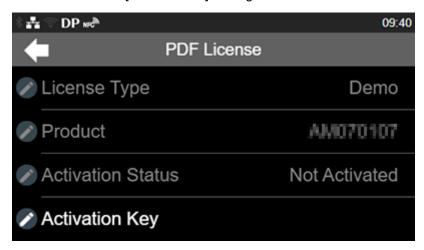
By enabling the [Use CropBox] mode, you can print out the contents based on the boundary set if a PDF contains a CropBox definition.



MediaBox and CropBox standards are based on PDF specification.

[PDF License]

Select to show the [PDF License] management screen.



The following information and settings are available in the [PDF License] menu:

[License Type]

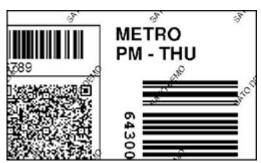
Shows the type of PDF Direct Print license registered for this printer. Once the PDF Direct Print firmware is installed, the printer is initially set as demo mode.

There are three types of licenses available.

[Demo]

If you have not activated the PDF Direct Print license, the printer will work in demo mode.

In the demo mode, PDF printing is possible but the printed content has SATO DEMO watermarks printed across the label.



[Develop]

The development license is only used by SATO resellers and technical support for internal verification without sales. It is strictly not for commercial use.

To activate the license, you need an activation key issued by the license management server.

[Commercial]

The commercial license is for users who purchased the PDF Direct Print.

To activate the license, you need an activation key issued by the license management server.

[Product]

Shows the printer serial number. This serial number is used for registration and generating the license activation key at the license management server.

[Activation Status]

Shows the activation status of the PDF Direct Print license.

There are three types of activation status.

[Not Activated]

Shows when the license is not activated.

[Key Error]

Shows when the entered activation key is wrong or is not registered for this printer serial number.

[Activated]

Shows when the entered activation key is valid and is registered for this printer serial number. The PDF Direct Print license is activated.

[Activation Key]

The [Activation Key] shows only when the PDF Direct Print license is not activated.

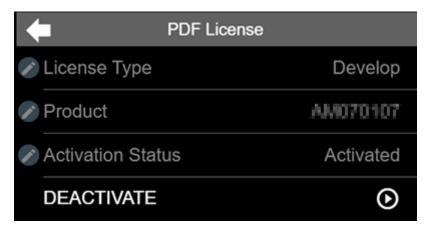
Select the [Activation Key] to show the input screen to enter the 8-digit activation key issued by the license management server.



The license activation should be performed by SATO technical support personnel.

[DEACTIVATE]

This selection item shows only when the PDF Direct Print license is activated.



Select [DEACTIVATE] only if you want to deactivate the license.

When you select [DEACTIVATE], a screen to confirm deactivation appears.



 Make sure that you need to deactivate the license before doing it. Once deactivated, you need to contact SATO technical support personnel to activate the license again.

After you deactivated the license, the [License Type] returns to [Demo] and the [Activation Status] shows [Key Error].

Maintenance Support

SATO provides maintenance support to ensure the reliable operation of your product.

A separate printer maintenance contract bundle is highly recommended for users regardless of the license type of the PDF Direct Print function.

In the event of printer replacement, the user without a maintenance contract will need to purchase a new PDF Direct Print license for the new printer. Whereas, the user who has purchased a maintenance contract can continue using the new printer with the purchased license transferred to it.

SATO technical support personnel will assist to install the firmware, transfer the original license or activate the new license for users.

For details on the maintenance contract, contact your SATO reseller or technical support center for more information.

Contact Information for When You Are in Trouble

Access the following site to send us your questions or comments.

https://www.sato-global.com/contact/

