

Label Printer

ntpweb Interface Description

PC Web Version

V2.1.20221230

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30th Dec. 2022

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1. dtpweb interface overview

dtpweb interface is a JavaScript interface based on the dtpweb Print Assistant provided by the label printer manufacturer. The purpose is to allow users to quickly and seamlessly complete the operation of the printer, shorten the development cycle and speed up the development process.

For different development environments, the dtpweb interface has good compatibility, supporting Chrome, Firefox, IE, Edge and other mainstream kernel browsers, of course, also supports 360 browser, Cheetah, QQ browser, Sogou and other third-party browsers. At the same time, any development language that supports http requests can use the dtpweb interface for printer-related operations.

The dtpweb interface has a wide range of system compatibility, supporting Windows, Kirin OS, UOS, Ubuntu, Debian and other mainstream desktop operating systems.

The dtpweb interface provides callers with easy-to-use methods that allow users to quickly complete operations related to label drawing and printing. The interface provides methods for drawing text, 1D barcodes, 2D codes, pictures, and various graphics, etc. It can also rotate the drawing object and rotate the drawing page, and the caller can call the methods to get the finished label picture for label preview, which makes the label drawing operation more convenient.

2. dtpweb interface brief description

dtpweb basic call flow of the interface is as follows:

Code

```
// Get DTPWeb Object
var api = dtpweb.DTPWeb.getInstance();
// 1. Connect the first paired printer
await api.openPrinter();
// 2. Start drawing task, pass parameters (page
width, page height)
await api.startJob({width: 40, height: 30});
// 3. Start drawing a page, drawing a text string
await api.drawText({text: content, x: 0, y: 0, fontHeight: 4});
// 4. End a draw job to commit it for printing
await api.commitJob();
// 5. Close printer
await api.closePrinter();
```

3. Interface initialization

3.1 getInstance Get an Interface Instance

The Interface class provides a static method for obtaining a global interface object in the following way:

Function	Create DTPWeb Object	
Method	DTPWeb.getInstance(opts?: InitOptions): DTPWeb	
Parameter	opts	Relevant initialization configuration information when obtaining an interface object.
Return Value	DTPWeb Instance: interface available. undefined: Plugin not available.	
Instructions	Null	

3.2 checkPlugin Check if the local dtpweb Print Assistant is available

The dtpweb interface requires the http Print Assistant provided by the printer manufacturer to print, so it is necessary to check whether the Print Assistant is available before use. The interface is checked as follows:

Function	Create DTPWeb Object	
Method	checkPlugin(callback?: (success: boolean) => void): Promise<boolean>	
Parameter	callback	Interface detects the callback function and the callback parameter indicates whether it is available or not.
Return Value	true: Local Print Assistant is detected and normal printing operations can be performed. false: Local print assistant not detected, Print Assistant needs to be installed.	
Instructions	Null	

4. Connect with printer

[LPA_Device](#) Printer device parameters

LPA_Device	Type	Description
LPA_Device.type	number	Printer device type, default is 1. 1: Indicates a local printer; 2: Indicates a printer on other computers on the LAN; 3: Indicates a printer with its own network function.
LPA_Device.name	string	Printer name
LPA_Device.ip	string	IP address of the host to the printer is connected
LPA_Device.port	number	Port number of the host to the printer is connected.
LPA_Device.hostname	string	Host name of the host to the printer is connected.

4.1 getPrinters Get all compliant printers

Function	Get all printer objects with the specified model name in the pair list.	
Method	getPrinters(options?: LPA_PrinterOptions): Promise<LPA_Device[]>;	
Parameter	options.onlyOnline	Whether to get online printer only, default is true (Window systems only).
	options.onlyLocal	Whether to get local printer only, true means you can get other eligible printers on the LAN. Default is false (Window systems only).
	options.onlySupported	Whether to get supported printer only, default is true (Window systems only).
	options.name	Get the printer of the specified model or name only (Linux only).
Return Value	Return a list of all printers with specified model. Printer device specific parameters are referenced: LPA_Device	
Instructions	Null	
Note		

4.2 openPrinter Open the specified printer

Function	Open the specified printer	
Method	openPrinter(options?: LPA_Device): Promise<boolean>;	
Parameter	options.name	Target Printer Name. Undefined or an empty string indicates printer has no limitations
	options.ip	Used to connect printers on other computers on the LAN.
	options.type	Printer type, default is 1. 1: Indicates a local printer; 2: Indicates printers on other computers on the LAN; 3: Indicates a printer with network function.
Return Value	ture or false	
Instructions	Null	
Note	This method, or same method, must be called before starting a print job.	

4.3 getPrinterName Get the name of the connected printer

Function	Get the name of the connected printer	
Method	getPrinterName(): Promise<string>;	
Parameter	Null	
Return Value	Return the name of the corresponding printer if it is connected, otherwise return an error message.	
Instructions		
Note		

4.4 getParam Get relevant print parameters

[LPA_ParamID](#) Related print parameter types

LPA_ParamID	Value	Description
LPA_ParamID. gapType	1	Paper Type
LPA_ParamID. printDarkness	2	Print Darkness
LPA_ParamID. printSpeed	3	Print Speed
LPA_ParamID. printerDPI	4	Printer Resolution

[LPA_GapType](#) Paper type

LPA_GapType	Value	Description
LPA_GapType. unset	255	Setup with printer
LPA_GapType. none	0	Continuous paper (receipt paper)
LPA_GapType. hole	1	Positioning hole (obsolete)
LPA_GapType. gap	2	gap paper
LPA_GapType. black	3	black mark paper

[LPA_PrintSpeed](#) Common enumeration values for print speed:

LPA_PrintSpeed	Value	Description
LPA_PrintSpeed. unset	255	Setup with printer
LPA_PrintSpeed. min	0	Slowest
LPA_PrintSpeed. low	1	Slower
LPA_PrintSpeed. normal	2	Normal
LPA_PrintSpeed. high	3	Faster
LPA_PrintSpeed. max	4	Fastest

[LPA_PrintDarkness](#) Common enumeration values for print darkness:

LPA_PrintDarkness	Value	Description
LPA_PrintDarkness. unset	255	Setup with printer
LPA_PrintDarkness. min	0	Lightest
LPA_PrintDarkness. low	3	Lighter
LPA_PrintDarkness. normal	5	Normal
LPA_PrintDarkness. high	9	Darker
LPA_PrintDarkness. max	14	Darkest

Function	Get details of connected printers	
Method	getParam(id: LPA_ParamID): Promise<number>;	
Parameter	id	Print parameter type, with specific references: LPA_ParamID .
Return Value	Return the value of the corresponding print parameter.	

Instructions	Null
Note	

4.5 setParam Set print parameters

Function	Set print parameters	
Method	setParam(options: LPA_PrintParamOptions): Promise<boolean>	
Parameter	options.id	Parameter id, with specific references: LPA_ParamID .
	option.value	Value corresponding to print parameter in LPA_ParamID
Return Value	ture or false	
Instructions	Null	
Note	Print darkness (LPA_ParamID. printerDPI) Only get is supported, not settings.	

4.6 getGapType Get paper type of the connected printer.

Function	Get paper type of the connected printer.	
Method	getGapType(): Promise<number>;	
Parameter	Null	
Return Value	Return paper type of the current printer, value reference:LPA_GapType.	
Instructions		
Note	Printer needs to be turned on before calling this interface.	

4.7 setGapType Set paper type of the connected printer

Function	Set paper type of the connected printer	
Method	setGapType(value: LPA_GapType): Promise<boolean>;	
Parameter	value	Printer paper type, value reference: LPA_GapType .
Return Value	ture or false	
Instructions		
Note	Printer needs to be turned on before calling this interface.	

4.8 getPrintDarkness Get print darkness of the connected printer

Function	Get print darkness of the connected printer
Method	<code>getPrintDarkness(): Promise<number>;</code>
Parameter	Null
Return Value	Return current printer print darkness, value reference: LPA_PrintDarkness.
Instructions	
Note	Printer needs to be turned on before calling this interface.

4.9 setPrintDarkness Set print darkness of the connected printer

Function	Set print darkness of the connected printer
Method	<code>setPrintDarkness(value: LPA_PrintDarkness): Promise<boolean>;</code>
Parameter	value Printer prints darkness, value reference: LPA_PrintDarkness
Return Value	ture or false
Instructions	
Note	Printer needs to be turned on before calling this interface.

4.10 getPrintSpeed Get print speed of the connected printer

Function	Get print speed of the connected printer
Method	<code>getPrintSpeed(): Promise<number>;</code>
Parameter	Null
Return Value	Return current printer print speed, value reference: LPA_PrintSpeed.
Instructions	
Note	Printer needs to be turned on before calling this interface.

4.11 setPrintSpeed Set print speed of the connected printer

Function	Set print speed of the connected printer
Method	<code>setPrintSpeed(value: LPA_PrintSpeed): Promise<boolean>;</code>
Parameter	value Printer print speed, value reference: LPA_PrintSpeed.
Return Value	ture or false
Instructions	
Note	Printer needs to be turned on before calling this interface.

4.12 getPrinterDPI Get print resolution of the connected printer

Function	Get print resolution of the connected printer
Method	getPrinterDPI(): Promise<number>;
Parameter	Null
Return Value	Return current printer resolution.
Instructions	
Note	Printer needs to be turned on before calling this interface.

4.13 isPrinterOpened Determine whether the current printer is turned on successfully

Function	Determine whether the current printer is turned on successfully
Method	isPrinterOpened(): Promise<boolean>;
Parameter	Null
Return Value	true: Indicates printer is successfully connected and ready to print. false: Indicates printer is not connected and needs to be connected before printing.
Instructions	
Note	

4.14 closePrinter Disconnect the currently connected printer

Function	Disconnect the currently connected printer
Method	closePrinter(): Promise<boolean>;
Parameter	Null
Return Value	Null
Instructions	This function can be used to disconnect the current printer after printing is complete.
Note	Try to avoid calling this function until the print is complete, otherwise it may cause the print job to terminate.

4.15 printImage Print images in BASE64 format

Function	Print images in BASE64 format
Method	printImage(opts: PrintImageOptions): Promise<boolean>;
Parameter	opts.data BASE64 image needs print. Recommend data with JS image"data:image/png;base64,"prefix.

	opts.printerName	Name of target printer, not specified indicates connect with first detected printer.
	opts.printWidth	The width of print area of the image (in mm), the default is 0, which means image is printed according to the actual width of image.
	opts.printHeight	The height of print area of the image (in mm), the default is 0, which means image is printed according to the actual height of image.
	opts.threshold	The grayscale threshold for drawing bitmap. 256 means drawing grayscale picture; 257 means drawing original color picture; 0 to 255 means drawing black and white picture. 256 means to draw grayscale image; 257 means to draw original color image; 0-255 means to draw black and white image, the points with original color > grayscale threshold will be considered as white, and the points with original color <= grayscale threshold will be considered as black. The default is 192.
	opts.orientation	Print clockwise rotation angle for image printing, 0/90/180/270. Default is 0. Indicates no rotation.
	opts.copies	Print copies, default 1.
	opts.jobName	Name of print task, can be empty.
Return Value	ture or false	
Instructions	1. Base64 image background color is recommended to be set to white. 2. Return ture only means operation was committed, it does not mean print successfully, the exact result will be notified through the callback function.	

5. Print task and draw page

5.1 startJob Start draw task

Function	Start draw task	
Method	startJob(opts: LPA_JobOptions): Promise<boolean>;	
Parameter	opts.width	Label width (based on draw view, label rotation isn't taken into account, in mm).
	opts.height	Label height (based on draw view, label rotation isn't taken into account, in mm).
	opts.orientation	Clockwise rotation angle of label page of the draw task, 0/90/180/270, default value 0.
	opts.jobName	Name of the print job, which can be unspecified.
Return Value	ture or false	
Instructions	This method is called when starting a draw task.	

Note	1. When you start a draw task, all previous tasks/data will be discarded. 2. Individual special names are only used to generate images and are not processed for printing: "###Transparent###": Used to generate image with transparent background colors. 3. "###Preview###": Used to generate image with white background colors.
------	--

5.2 commitJob Submit data to print

Function	Submit data to print	
Method	commitJob(opts?: PrintOptions): Promise<boolean>;	
	Opts.orientation	Print orientation, the value is: 0/90/180/270, default is 0, means no rotation.
	Opts.threshold	Threshold value when printing job black and white conversion, default: 192.
	Opts.speed	Print speed, values can be referred to: LPA_PrintSpeed .
	Opts.darkness	Print darkness, values can be referred to: LPA_PrintDarkness .
	Opts.gapType	Paper type, values can be referred to: LPA_GapType .
Return Value	ture or false	
Instructions	Submit a print job for real printing.	

5.3 startPage Start draw a page

Function	Start draw a page
Method	startPage(): Promise<boolean>;
Parameter	Null
Return Value	ture or false
Instructions	Start a print page.

5.4 endPage Endj draw a page

Function	End draw a page
Method	endPage(): Promise<boolean>;
Parameter	Null
Return Value	Null
Instructions	End a print page.

5.5 endJob End draw task

Function	End draw task	
Method	endJob(): Promise<boolean>;	
Parameter	Null	
Return Value	Null	
Instructions	End a draw task.	

6. Draw text string

[LPA_ItemAlignment](#) Data alignments

LPA_ItemAlignment	Value	Description
LPA_ItemAlignment.Start	0	Horizontal left / vertical top
LPA_ItemAlignment.Center	1	Horizontal center / vertical center
LPA_ItemAlignment.End	2	Horizontal right / vertical bottom
LPA_ItemAlignment.Stretch	3	Horizontal (vertical) stretch (fill in excess space by blank)
LPA_ItemAlignment.Expand	4	Zoom in (fill in extra space by zooming in)

[LPA_FontStyle](#) Font styles

LPA_FontStyle	Value	Description
LPA_FontStyle.Regular	0	Normal
LPA_FontStyle.Bold	1	Bold
LPA_FontStyle.Italic	2	Italic
LPA_FontStyle.BoldItalic	3	Bold and Italic
LPA_FontStyle.Underline	4	Underline
LPA_FontStyle.Strikeout	8	Strikethrough

[LPA_AutoReturnMode](#) Auto line feed mode for strings

LPA_AutoReturnMode	Value	Description
LPA_AutoReturnMode. None	0	Single line mode, no line feed
LPA_AutoReturnMode. Char	1	Line feed by character
LPA_AutoReturnMode. Word	2	Line feed by word

6.1 pound2Mm Pound converts to millimeters

Function	Pound converts to millimeters	
Method	pound2Mm(value: number): number;	
Parameter	value	Value to be converted, in lbs

Return Value	Converted values in millimeters
Instructions	The pound to millimeter conversion is usually used for font size conversion when drawing text.

6.2 pound2Mm Millimeters converts to pound

Function	Millimeters converts to pound	
Method	mm2Pound(value: number): number;	
Parameter	value	Value to be converted, in mm
Return Value	Converted values in lbs	
Instructions	The pound to millimeter conversion is usually used for font size conversion when drawing text.	

6.3 drawText Draw text strings

Function	Draw text strings	
Method	drawText(opts: LPA_DrawTextOptions): Promise<boolean>;	
Parameter	opts.text	Text string to be drawn.
	opts.x	Horizontal position of the drawn text box with the upper left corner as the reference point (in mm).
	opts.y	Vertical position of the drawn text box with the upper left corner as the reference point (in mm).
	opts.width	Horizontal width (in mm) of the drawn text box. If width is 0, text will be aligned left-center-right based on the current alignment with x as the datum according to the display width of the drawn text. The default is 0.
	opts.height	Vertical height (in mm) of the drawn text box. If height is 0, text will be aligned with y as the datum according to the display height of the drawn text. The default is 0.
	opts.fontHeight	Text size (in mm).
	opts.fontStyle	Font style, values can be referred to: LPA_FontStyle . Default value is Normal.
	opts.fontName	Font name, default Gothic.
	opts.autoReturn	String line feed mode, values can be referred to: LPA_AutoReturnMode , default LPA_AutoReturnMode.Char, indicates line feed by character.
	opts.charSpace	Character spacing in mm, value default is 0.

	opts.lineSpace	Line space in mm or as an enumeration string (1_0, 1_2, 1_5, 2_0). The default is 1_0, which is single-spaced.
	opts.leadingIndentChars	Indent the first line according to specified number of Chinese characters. The value can be a decimal. For example, 1.5 means 1.5 Chinese characters / 3 English characters. Value > 0 indicates first line is indented to the left. < 0 indicates first line is indented to the right.
	opts.leadingIndentMM	Indent the first line according to the specified number of millimeters. > 0 means the first line is indented to the left. < 0 means the first line is indented to the right.
	opts.leadingIndentColon	Indicate the first line is indented to the left to the Chinese colon, English colon, English colon + English space. space.
	opts.regionCorners	Deletion rectangles for the four corners of display area, upper left, upper right, lower right, and left bottom, in the format: `[Width, Height, Width, Height, Width, Height, Width, Height]` in mm.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
	opts.horizontalAlignment	Horizontal alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates left alignment.
	opts.verticalAlignment	Vertical alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates top alignment.
Return Value	ture or false	
Instructions	- If you invoke this method directly without invoking startPage before, this method will invoke startPage automatically to start drawing a page, and then draw a text string. The upper left corner vertical position, horizontal width, and vertical height of the drawing are based on the vertical directions of the current drawing page. - fontHeight is in millimeters as unit. - The conversion formula for font size and millimeter is that: - Font size = mm * 72 / 25.4 - For example: Size 9 is 3.175 mm, size 12 is 4.233 mm - This method sets font style of the drawn text according to font style setter contained in the string data.	

7. Draw Barcode

[LPA_BarcodeType](#) Barcode types

BarcodeType	Value	Description
LPA_BarcodeType.UPC_A	20	

LPA_BarcodeType.UPC_E	21	
LPA_BarcodeType.EAN13	22	
LPA_BarcodeType.EAN8	23	
LPA_BarcodeType.CODE39	24	
LPA_BarcodeType.ITF25	25	
LPA_BarcodeType.CODABAR	26	
LPA_BarcodeType.CODE93	27	
LPA_BarcodeType.CODE128	28	
LPA_BarcodeType.ISBN	29	
LPA_BarcodeType.ECODE39	30	
LPA_BarcodeType.AUTO	60	

[LPA_QREccLevel](#) Centralized error correction level of QR codes:

LPA_QREccLevel	Value	Description
LPA_QREccLevel. EccLevel_L	0	
LPA_QREccLevel. EccLevel_M	1	
LPA_QREccLevel. EccLevel_Q	2	
LPA_QREccLevel. EccLevel_H	3	

[LPA_QRTextEncoding](#) Centralized error correction level of QR codes:

LPA_QRTextEncoding	Value	Description
LPA_QRTextEncoding. Unicode	0	
LPA_QRTextEncoding. Ansi	1	
LPA_QRTextEncoding. UTF8	2	

[LPA_P417EccLevel](#) Centralized error correction level of QR codes:

LPA_P417EccLevel	Value	Description
LPA_P417EccLevel. EccLevel_Auto	0	
LPA_P417EccLevel. EccLevel_1	1	
LPA_P417EccLevel. EccLevel_2	2	
LPA_P417EccLevel. EccLevel_3	3	
LPA_P417EccLevel. EccLevel_4	4	
LPA_P417EccLevel. EccLevel_5	5	
LPA_P417EccLevel. EccLevel_6	6	
LPA_P417EccLevel. EccLevel_7	7	
LPA_P417EccLevel. EccLevel_8	8	

7.1 draw1DBarcode Draw Barcode

Function	Draw Barcode	
Method	draw1DBarcode(opts: DrawBarcodeOptions): Promise<boolean>;	
Parameter	opts.text	Content of the barcode that needs to be drawn.
	opts.type	Barcode type (LPA_BarcodeType), default AUTO.
	opts.x	Horizontal position of the upper left corner of barcode (in mm).
	opts.y	Vertical position of the upper left corner of barcode (in mm).
	opts.width	The overall display width of barcode.
	opts.height	Display height of barcode (including human readable text).
	opts.textHeight	Height of human-readable text (in mm), default is 0, indicates not display the string below the barcode.
	opts.fontName	Font name of the human-readable text in barcode is "Gothic" by default.
	opts.fontStyle	Font style of human-readable text in barcode, value reference: LPA_FontStyle , default is Normal.
	opts.textAlignment	Alignment of human-readable text in barcode, value reference: LPA_ItemAlignment , default is center alignment.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
	opts.horizontalAlignment	Horizontal alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates left alignment.
	opts.verticalAlignment	Vertical alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates top alignment.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw the barcode string. - Horizontal and vertical position, width, and height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

7.2 draw2DQRCode Draw QR Code

Function	Draw QR Code	
Method	draw2DQRCode(opts: DrawQrcodeOptions): Promise<boolean>;	
	opts.text	Content of the QR Code that needs to be drawn.
	opts.x	Horizontal position of the upper left corner of QR Code (in mm).
	opts.y	Vertical position of the upper left corner of QR Code (in mm).

Parameter	opts.width	Horizontal width of the drawn QR Code (in mm).
	opts.height	Vertical height of the drawn QR Code (in mm). Not specified means that the width and height is equal.
	opts.textEncoding	Encoding method of QR code string, value reference : LPA_QRTextEncoding , default:
	opts.qrcPixels	Number of pixels per logical point of the QR code. Defaults to 0, indicating number of pixels is based on the display width automatically calculated.
	opts.eccLevel	Error correction level, value reference: LPA_QREccLevel , default LPA_QREccLevel_EccLevel_L .
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
	opts.horizontalAlignment	Horizontal alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates left alignment.
	opts.verticalAlignment	Vertical alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates top alignment.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw the barcode string. - Horizontal and vertical position, width, and height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

7.3 draw2DPdf417 Draw PDF417 QR Code

Function	Draw PDF417 QR Code	
Method	draw2DPdf417(opts: DrawPdf417Options): Promise<boolean>;	
Parameter	opts.text	Content of the PDF417 QR Code that needs to be drawn.
	opts.x	Horizontal position of the upper left corner of PDF417 QR Code (in mm).
	opts.y	Vertical position of the upper left corner of PDF417 QR Code (in mm).
	opts.width	Horizontal width of the drawn PDF417 QR Code (in mm).
	opts.height	Vertical height of the drawn PDF417 QR Code (in mm).
	opts.p417Pixels	Number of pixels per logical point of the QR code. Defaults to 0, indicating number of pixels is based on the display width automatically calculated.
	opts.eccLevel	Error correction level, value reference: LPA_P417EccLevel , default is Auto.

	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
	opts.horizontalAlignment	Horizontal alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates left alignment.
	opts.verticalAlignment	Vertical alignment of drawn content, values can be referred to: LPA_ItemAlignment , default is LPA_ItemAlignment.Start , indicates top alignment.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw PDF417 QR Code string. - Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

8. Draw vector graphics

8.1 drawRectangle Draw a rectangular box with the specified line width

Function	Draw a rectangular box with the specified line width	
Method	drawRectangle(opts: DrawRectOptions): Promise<boolean>;	
Parameter	opts.x	Horizontal position of upper left corner of the drawn rectangular box (in mm).
	opts.y	Vertical position of upper left corner of the drawn rectangular box (in mm).
	opts.width	Horizontal width of the drawn rectangular box (in mm).
	opts.height	Vertical height of the drawn rectangular box (in mm).
	opts.lineWidth	Line width of rectangular box. Line width of rectangular frame is extended toward inside of the rectangular frame (in mm).
	opts.cornerWidth	Rounded corner width (in mm). Unspecified means draw a regular rectangle.
	opts.cornerHeight	Rounded corner height (in mm). Default value same as cornerWidth.
	opts.fill	Whether need draw fill rectangle, default is false, means draw rectangle only.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw rectangle. - Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

8.2 drawEllipse Draw an ellipse / circle with the specified line width

Function	Draw an ellipse / circle with the specified line width	
Method	drawEllipse(opts: DrawRectOptions): Promise<boolean>;	
Parameter	opts.x	Horizontal position of upper left corner of drawn ellipse (in mm).
	opts.y	Vertical position of upper left corner of drawn ellipse (in mm).
	opts.width	Horizontal width of the drawn ellipse (in mm).
	opts.height	Vertical height of the drawn ellipse (in mm). Default value same as width, that is drawing circle.
	opts.lineWidth	Line width of ellipse. Line width of the ellipse frame is extended to the inside of the ellipse (in mm).
	opts.fill	Whether need draw fill ellipse, default is false, means draw ellipse only.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
Return Value	ture or false	
Instructions	● If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw ellipse string. ● Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page. ● Width equals height is to print circle.	

8.3 drawCircle Draw a circle centered on the specified position

Function	Draw a circle centered on the specified position	
Method	drawCircle(opts: DrawCircleOptions): Promise<boolean>;	
Parameter	opts.x	Center of the x-axis of the drawn circle (in mm).
	opts.y	Center of the y-axis of the drawn circle (in mm).
	opts.radius	Radius of the circle (in mm).
	opts.lineWidth	Line width of circle. Line width of the circle frame is extended to the inside of the circle (in mm).
	opts.fill	Whether need draw fill circle, default is false, means draw circle only.
Return Value	ture or false	
Instructions	● If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw circle string. ● Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

8.4 drawLine Draw line (straight/slash)

Function	Draw line (straight/slash)	
Method	drawLine(opts: DrawLineOptions): Promise<boolean>;	
Parameter	opts.x1	Horizontal position of the start point of the line (in mm).
	opts.y1	Vertical position of the start point of the line (in mm).
	opts.x2	Horizontal position of the end point of the line (in mm).
	opts.y2	Vertical position of the end point of the line (in mm).
	opts.lineWidth	Line width (in mm). Line width is extended toward the bottom of the line.
	opts.dashLens	Array of dashed line segments (in mm), unspecified or an empty array means that a straight line is drawn.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then line (straight/slash) string. - Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

9. Draw image

9.1 drawImage Draw an image from specified file

Function	Draw an image from specified file	
Method	drawImage(opts: DrawImageUrlOptions);	
Parameter	opts.imageFile	Image path.
	opts.x	The position of the print object in the horizontal direction (in mm).
	opts.y	The position of the print object in the vertical direction (in mm).
	opts.width	Width of the print object (in mm). If width is 0, then use width of the loaded bitmap. The default value is 0.
	opts.height	Height of the print object (in mm). If height is 0, then use height of the loaded bitmap. The default value is 0.
	opts.threshold	The grayscale threshold for drawing bitmap. 256 means drawing grayscale picture, 257 means drawing primary color picture, 0~255 means drawing black and white picture. The points with original color > grayscale threshold will be considered as white, and the points with original color <= grayscale threshold will be considered as black. Default is 192.

	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw image string. - Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page.	

9.2 drawImageD Draw images in BASE64 format

Function	Draw images in BASE64 format	
Method	drawImageD(opts: DrawImageDataOptions): Promise<boolean>;	
Parameter	opts.data	BASE64 image needs print. Recommend data with JS image"data:image/png;base64,"prefix.
	opts.x	The position of the bitmap in the horizontal direction (in mm).
	opts.y	The position of the bitmap in the vertical direction (in mm).
	opts.width	Width of the bitmap (in mm). If width is 0, then use width of the loaded bitmap. The default value is 0.
	opts.height	Height of the bitmap (in mm). If height is 0, then use height of the loaded bitmap. The default value is 0.
	opts.threshold	The grayscale threshold for drawing bitmap. 256 means drawing grayscale picture, 257 means drawing primary color picture, 0~255 means drawing black and white picture. The points with original color > grayscale threshold will be considered as white, and the points with original color <= grayscale threshold will be considered as black. Default is 192.
	opts.orientation	Rotation angle of the drawn content, 0/90/180/270, default value 0.
Return Value	ture or false	
Instructions	- If this method is called directly without calling startPage, then this method will automatically call startPage to start drawing a page. Then draw bitmap. - Horizontal and vertical position, horizontal width, and vertical height of the drawn upper-left corner are based on the horizontal and vertical orientation of the currently drawn page. - Bitmaps are scaled to the specified width and height when they are drawn.	

Document Modification Records

SN	Version	Descriptions	Modifier	Date
1	V0.1.20210427	Document Creation	Yang Lingmei	2021-04-27
2	V0.2.20170812	Synchronized updates based on actual code	Hu Dianxing	2017-08-12
3	V1.0.20171010	Interface refinement, official release	Hu Dianxing	2017-10-10
4	V1.1.20171111	Document Detection and Optimization	Yang Lingmei	2017-11-11
5	V1.2.20190330	Add documentation on print parameters	Hu Dianxing	2019-03-30
6	V1.3.20190401	Modify Document Format	Yang Lingmei	2019-04-01
7	V2.0.20220309	Upgrade interface structure, use objects as passed parameters and asynchronous requests for http requests	Hu Dianxing	2022-03-09
8	V2.1.20220627	Add Linux compatibility	Hu Dianxing	2022-06-27