

# Xamarin TSPL Program Manual

**v3.4.4**

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## 1. Instruction

This manual describes how to implement TSPL printing. Constant variable are defined in TSPLConst class.

## 2. TSPLPrinter

### 2.1. TSPLPrinter

Constructor to create print objects.

TSPLPrinter(IDeviceConnection connection)

[Parameter]

➤ connection

Connected object, available via POSConnect.CreateDevice(deviceType).

### 2.2. Size

This method defines the label width and length.

TSPLPrinter SizeInch(int width, int height)

English system (inch)

TSPLPrinter SizeMm(int width, int height)

Metric system (mm)

[Parameter]

➤ width

Label width (inch/mm)

➤ height

Label height (inch/ mm)

[Return]

TSPLPrinter Instance

### 2.3. Gap

This method defines the gap distance between two labels

TSPLPrinter GapInch(double m, double n)

English system (inch)

TSPLPrinter GapMm(double m, double n)

Metric system (mm)

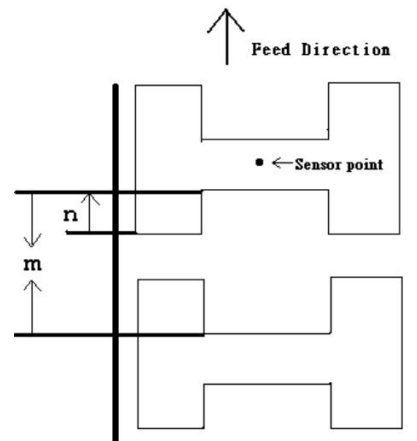
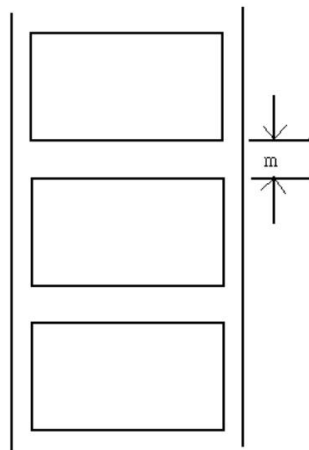
[Parameter]

➤ m

The gap distance between two labels

➤ n

The offset distance of the gap



[Return]

TSPLPrinter Instance

## 2.4. Speed

This method defines the print speed

TSPLPrinter Speed(double speed)

[Parameter]

➤ speed

Printing speed in inch per second

[Return]

TSPLPrinter Instance

## 2.5. density

This method sets the printing darkness.

TSPLPrinter Density(int density)

[Parameter]

➤ density

Darkness level, 0~15.

[Return]

TSPLPrinter Instance

## 2.6. Cls

This method clears the image buffer.

TSPLPrinter Cls()

[Return]

TSPLPrinter Instance

## 2.7. Offset

This method defines the selective, extra label feeding length each form feed takes, which, especially in peel-off mode and cutter mode, is used to adjust label stop position, so as for label to register at proper places for the intended purposes. The printer back tracks the extra feeding length before the next run of printing.

TSPLPrinter OffsetInch(double offset)

English system (inch)

TSPLPrinter OffsetMm(double offset)

Metric system (mm)

[Parameter]

➤ offset

The offset distance (inch or mm)

$-1 \leq \text{offset} \leq 1$  (inch)

[Return]

TSPLPrinter Instance

## 2.8. Direction

This method defines the printout direction and mirror image. This will be stored in the printer memory.

TSPLPrinter Direction(int direction)

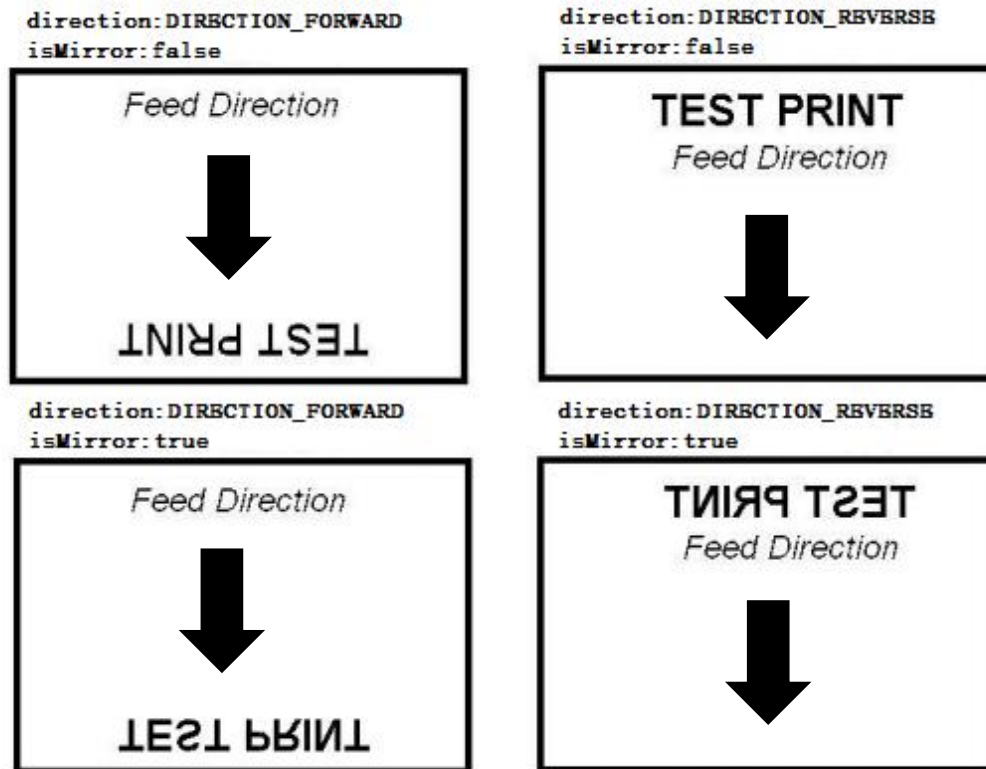
TSPLPrinter Direction(int direction, boolean isMirror)

[Parameter]

➤ direction

Printout direction

Variable	Description
DirectionForward	FORWARD
DirectionReverse	REVERSE



➤ isMirror

mirror image(true or false),Default value:false.

[Return]

TSPLPrinter Instance

## 2.9. Feed

This method feeds label with the specified length. The length is specified by dot.

TSPLPrinter Feed(int length)

[Parameter]

➤ length

Length,unit: dot

$1 \leq \text{length} \leq 9999$

[Return]

TSPLPrinter Instance

## 2.10. Reference

This method defines the reference point of the label. The reference (origin) point varies with the print direction.

TSPLPrinter Reference(int x, int y)

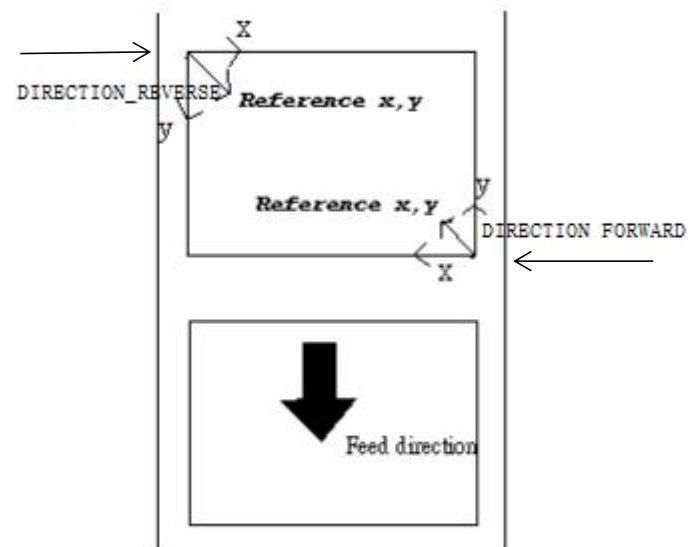
[Parameter]

➤ x

Horizontal coordinate (in dots)

➤ y

Vertical coordinate (in dots)



[Return]

TSPLPrinter Instance

## 2.11. Bar

This method draws a bar on the label format.

TSPLPrinter Bar(int x, int y, int width, int height)

[Parameter]

➤ x

The upper left corner x-coordinate (in dots)

➤ y

The upper left corner y-coordinate (in dots)

➤ width

width Bar width (in dots)

➤ height

height Bar height (in dots)

[Return]

TSPLPrinter Instance

## 2.12. Box

This method draws rectangles on the label.

TSPLPrinter Box(int x, int y, int width, int height, int thickness)

[Parameter]

➤ x

Specify x-coordinate of upper left corner (in dots)

➤ y

Specify y-coordinate of upper left corner (in dots)

➤ width

width rectangles width (in dots)

➤ height

height rectangles height (in dots)

➤ thickness

line thickness Line thickness (in dots)

[Return]

TSPLPrinter Instance

## 2.13. BackFeed

This method feeds the label in reverse. The length is specified by dot.

TSPLPrinter BackFeed(int length)

[Parameter]

➤ length

Length unit: dot

$1 \leq \text{length} \leq 9999$

[Return]

TSPLPrinter Instance

## 2.14. FormFeed

This method feeds label to the beginning of next label.

TSPLPrinter FormFeed()

[Return]

TSPLPrinter Instance

## 2.15. home

This method will feed label until the internal sensor has determined the origin. Size and gap of the label should be defined before using this method.

TSPLPrinter Home()

[Return]

TSPLPrinter Instance

## 2.16. Print

This method prints the label format currently stored in the image buffer. `PrintWithResponse` will callback the printing status, only applicable to some models.

`void Print()`

`void Print(int count)`

`void PrintWithResponse(int count, int timeout, IStatusCallback callback)`

[Parameter]

➤ count

Specifies how many sets of labels will be printed. Default value:1.

➤ timeout

Waiting for response timeout

➤ callback

Print result callback- 1 indicates timeout, -2 indicates disconnection, and  $\geq 0$  indicates the current status of the printer, as shown in the table below

status(HEX)	Description
00	Normal
01	Head opened
02	Paper Jam



03	Paper Jam and head opened
04	Out of paper
05	Out of paper and head opened
08	Out of ribbon
09	Out of ribbon and head opened
0A	Out of ribbon and paper jam
0B	Out of ribbon, paper jam and head opened
0C	Out of ribbon and out of paper
0D	Out of ribbon, out of paper and head opened
10	Pause
20	Printing
80	Other error
-1	Receive timeout

[Return]

void

## 2.17. CodePage

This method defines the code page of international character set.

TSPLPrinter CodePage(String page)

[Parameter]

➤ page

Name or number of code page.

7-bit code page		8-bit code page		Windows code page		ISO code page	
page	Name	page	Name	page	Name	page	Name
<b>USA</b>	USA	<b>437</b>	United States	<b>1250</b>	Central Europe	<b>8859-1</b>	Latin 1
<b>BRI</b>	British	<b>737</b>	Greek	<b>1251</b>	Cyrillic	<b>8859-2</b>	Latin 2
<b>GER</b>	German	<b>850</b>	Multilingual	<b>1252</b>	Latin I	<b>8859-3</b>	Latin 3
<b>FRE</b>	French	<b>851</b>	Greek 1	<b>1253</b>	Greek	<b>8859-4</b>	Baltic
<b>DAN</b>	Danish	<b>852</b>	Slavic	<b>1254</b>	Turkish	<b>8859-5</b>	Cyrillic
<b>ITA</b>	Italian	<b>855</b>	Cyrillic	<b>1255</b>	Hebrew	<b>8859-6</b>	Arabic
<b>SPA</b>	Spanish	<b>857</b>	Turkish	<b>1256</b>	Arabic	<b>8859-7</b>	Greek
<b>SWE</b>	Swedish	<b>860</b>	Portuguese	<b>1257</b>	Baltic	<b>8859-8</b>	Hebrew
<b>SWI</b>	Swiss	<b>861</b>	Icelandic	<b>1258</b>	Vietnam	<b>8859-9</b>	Turkish
		<b>862</b>	Hebrew	<b>932</b>	Japanese Shift-JIS	<b>8859-10</b>	Latin 6
		<b>863</b>	Canadian/French	<b>936</b>	Simplified Chinese GBK	<b>8859-15</b>	Latin 9
		<b>864</b>	Arabic	<b>949</b>	Korean		

		<b>865</b>	Nordic	<b>950</b>	Traditional Chinese Big5		
		<b>866</b>	Russian	<b>UTF-8</b>	UTF 8		
		<b>869</b>	Greek 2				

[Return]

TSPLPrinter Instance

## 2.18. Sound

This method controls the sound frequency of the beeper. There are 10 levels of sounds. The timing control can be set by the "interval" parameter.

TSPLPrinter Sound(int level, int interval)

[Parameter]

➤ level

Sound level:0~9

➤ interval

Sound interval: 1~4095.(in ms)

[Return]

TSPLPrinter Instance

## 2.19. LimitFeed

Limit the maximum length of the fixed clearance correction execution, and if the gap presence cannot be measured within this length range, set the sensor mode in the continuous paper mode.

TSPLPrinter LimitFeedInch(int length)

English system (inch)

TSPLPrinter LimitFeedMm(int length)

Metric system (mm)

[Parameter]

➤ length

The maximum length for sensor detecting

[Return]

TSPLPrinter Instance

## 2.20. BarCode

This method prints 1D barcodes.

```
TSPLPrinter Barcode(int x, int y, String codeType, int height, String content)
```

```
public TSPLPrinter Barcode(int x, int y, String codeType, int height, boolean readable, int rotation,  
String content)
```

```
TSPLPrinter Barcode(int x, int y, String codeType, int height, int readable, int rotation, int narrow,  
int wide, String content)
```

[Parameter]

➤ x

Specify the x-coordinate bar code on the label

➤ y

Specify the y-coordinate bar code on the label

➤ codeType

Code type

Variable	Description
CodeType128	Code 128, switching code subset automatically.
CodeType128M	Code 128, switching code subset manually.
CodeTypeEan128	EAN128, switching code subset automatically.
CodeType25	Interleaved 2 of 5.
CodeType25C	Interleaved 2 of 5 with check digit.
CodeType39	Code 39, switching standard and full ASCII mode automatically.
CodeType39C	Code 39 with check digit.
CodeType93	Code 93.
CodeTypeEan13	EAN 13.
CodeTypeEan132	EAN 13 with 2 digits add-on.
CodeTypeEan135	EAN 13 with 5 digits add-on.
CodeTypeEan8	EAN 8.
CodeTypeEan82	EAN 8 with 2 digits add-on.
CodeTypeEan85	EAN 8 with 5 digits add-on.
CodeTypeCoda	Codabar.
CodeTypePost	Postnet.
CodeTypeUpca	UPC-A.
CodeTypeUpca2	UPC-A with 2 digits add-on.
CodeTypeUpca5	UPC-A with 5 digits add-on.
CodeTypeUpce	UPC-E.
CodeTypeUpce2	UPC-E with 2 digits add-on.
CodeTypeUpce5	UPC-E with 5 digits add-on.
CodeTypeCpost	China post.
CodeTypeMsi	MSI.
CodeTypeMsic	MSI with check digit.

CodeTypePlessey	PLESSEY.
CodeTypeItf14	ITF14.
CodeTypeEan14	EAN14.
CodeType11	Code 11.
CodeTypeTelepen	Telepen.
CodeTypeTelepenn	Telepen number.
CodeTypePlanet	Planet.
CodeTypeCode49	Code 49.
CodeTypeDpi	Deutsche Post Identcode.
CodeTypeDpl	Deutsche Post Leitcode.

➤ height

Bar code height (in dots)

➤ readable

human readable , Default value:ReadableLeft

Variable	Description
ReadableNone	not readable
ReadableLeft	human readable aligns to left
ReadableCenter	human readable aligns to center
ReadableRight	human readable aligns to right

➤ rotation

Default value:Rotation0

Variable	Description
Rotation0	No rotation
Rotation90	Rotate 90 degrees clockwise
Rotation180	Rotate 180 degrees clockwise
Rotation270	Rotate 270 degrees clockwise

➤ narrow

Width of narrow element (in dots), Default value:2

➤ wide

Width of wide element (in dots),Default value:2

➤ content

Content of barcode

[Return]

TSPLPrinter Instance

## 2.21. Bitmap

This method draws bitmap images.

TSPLPrinter Bitmap(int x, int y, int mode, int width, Bitmap bmp)

TSPLPrinter Bitmap(int x, int y, int mode, int width, Bitmap bmp, AlgorithmType algorithmType)

Transferring images to printers through compression, only applicable to some models

TSPLPrinter BitmapCompression(int x, int y, int mode, int width, Bitmap bmp, AlgorithmType algorithmType)

[Parameter]

➤ x

Specify the x-coordinate

➤ y

Specify the y-coordinate

➤ mode

Graphic modes listed below:

Variable	Description
BmpModeOverwrite	OVERWRITE, Only applicable to bitmap method
BmpModeOr	OR, Only applicable to bitmap method
BmpModeXor	XOR, Only applicable to bitmap method
BmpModeOverwriteC	OVERWRITE, Only applicable to bitmapCompression method
BmpModeOrC	OR, Only applicable to bitmapCompression method
BmpModeXorC	XOR, Only applicable to bitmapCompression method

➤ width

Print width of picture

➤ bmp

Bitmap data

➤ algorithmType

Algorithm type. Default is AlgorithmType.Threshold.

AlgorithmType.Dithering

AlgorithmType.Threshold

[Return]

TSPLPrinter Instance

## 2.22. Qrcode

This method prints QR code.

TSPLPrinter Qrcode(int x, int y, int cellWidth, int rotation, String data)

TSPLPrinter Qrcode(int x, int y, String ecLevel, int cellWidth, int rotation, String data)

TSPLPrinter Qrcode(int x, int y, String ecLevel, int cellWidth, String mode, int rotation, String data)

TSPLPrinter Qrcode(int x, int y, String ecLevel, int cellWidth, String mode, int rotation, String model, String mask, String data)

[Parameter]

➤ x

The upper left corner x-coordinate of the QR code

➤ y

The upper left corner y-coordinate of the QR code

➤ ecLevel

Error correction recovery level

Variable	Description
EcLevelL	Error correction Level L (7%)
EcLevelM	Error correction Level M (15%)
EcLevelQ	Error correction Level Q (25%)
EcLevelH	Error correction Level H (30%)

➤ cellWidth

Cell size:1~10

➤ mode

Auto / manual encode

Variable	Description
QrcodeModeAuto	Auto
QrcodeModeManual	Manual

➤ rotation

Clockwise rotation angle, Default value:Rotation0

Variable	Description
Rotation0	0 degree
Rotation90	90 degree
Rotation180	180 degree
Rotation270	270 degree

➤ model

Variable	Description
QrcodeModelM1	(default), original version
QrcodeModelM2	enhanced version (Almost smart phone is supported by this version.)

➤ mask

S0~S8, default is S7

➤ data

QRCode data content.

[Return]

TSPLPrinter Instance

## 2.23. text

This method prints text on label.

TSPLPrinter text(int x, int y, String font, String content)

TSPLPrinter text(int x, int y, String font, int xRatio, int yRatio, String content)

TSPLPrinter text(int x, int y, String font, int rotation, int xRatio, int yRatio, String content)

[Parameter]

➤ x

The x-coordinate of the text

➤ y

The y-coordinate of the text

➤ font

Font name

Variable	Description
Fnt812	8 x 12 fixed pitch dot font
Fnt1220	12 x 20 fixed pitch dot font
Fnt1624	16 x 24 fixed pitch dot font
Fnt2432	24 x 32 fixed pitch dot font
Fnt3248	32 x 48 dot fixed pitch font
Fnt1419	14 x 19 dot fixed pitch font OCR-B
Fnt1425	14 x 25 dot fixed pitch font OCR-A
Fnt2127	21 x 27 dot fixed pitch font OCR-B
FntSimplifiedChinese	Simplified Chinese 24x24
FntTraditionalChinese	Traditional Chinese 24x24
FntKorean	Korean text 24x24

➤ rotation

Clockwise rotation angle, Default value:Rotation0

Variable	Description
Rotation0	0 degree
Rotation90	90 degree
Rotation180	180 degree
Rotation270	270 degree

➤ xRatio

Horizontal multiplication, up to 10x

Available factors: 1~10

➤ yRatio

Vertical multiplication, up to 10x

Available factors: 1~10

➤ content

Content of text string

[Return]

TSPLPrinter Instance

## 2.24. Erase

This method clears a specified region in the image buffer.

TSPLPrinter Erase(int x, int y, int width, int height)

[Parameter]

➤ x

The x-coordinate of the starting point (in dots)

➤ y

The y-coordinate of the starting point (in dots)

➤ width

The region width in x-axis direction (in dots)

➤ height

The region height in y-axis direction (in dots)

[Return]

TSPLPrinter Instance

## 2.25. Reverse

This method reverses a region in image buffer.

TSPLPrinter Reverse(int x, int y, int width, int height)

[Parameter]

➤ x

The x-coordinate of the starting point (in dots)

➤ y

The y-coordinate of the starting point (in dots)

➤ width

X-axis region width (in dots)

➤ height

Y-axis region height (in dots)

[Return]

TSPLPrinter Instance



## 2.26. Cut

This command activates the cutter to immediately cut the labels without back feeding the label.

TSPLPrinter Cut()

[Return]

TSPLPrinter Instance

## 2.27. SetPeel

This method is used to enable/disable the self-peeling function. The default setting for this function is false. When this function is set true, the printer stops after each label printing, and does not print the next label until the peeled label is taken away. This setting will be saved in printer memory when turning off the power.

TSPLPrinter SetPeel(boolean isOpen)

[Parameter]

➤ isOpen

true:Enable the self-peeling function

false:Disable the self-peeling function

[Return]

TSPLPrinter Instance

## 2.28. SetTear

This method is used to enable/disable feeding of labels to gap/black mark position for tearing off.

This setting will be saved in printer memory when turning off the power

TSPLPrinter setTear(boolean isOpen)

[Parameter]

➤ isOpen

true:The label gap will stop at the tear off position after print.

false:The label gap will NOT stop at the tear off position after print. The beginning of label will be aligned to print head.

[Return]

TSPLPrinter Instance

## 2.29. Bline

This method sets the height of the black line and the user-defined extra label feeding length each form feed takes.

TSPLPrinter BlineInch(double m, double n)

English system (inch)

TSPLPrinter BlineMm(double m, double n)

Metric system (mm)

[Parameter]

➤ m

The height of black line either in inch or mm

➤ n

The extra label feeding length

$0 \leq n \leq \text{label length}$

[Return]

TSPLPrinter Instance

## 2.30. SetCutter

This method is used to set the cutter working mode.

TSPLPrinter SetCutter(int pieces)

[Parameter]

➤ pieces

Set number of printing labels per cut. CutterOff=Turn off the cutter function, CutterBatch=Cut paper after printing job, 1-65535=Number of labels for cut page.

[Return]

TSPLPrinter Instance

## 2.31. PutBmp

Print images in local BMP format

TSPLPrinter PutBmp(int x, int y, String fileName)

[Parameter]

➤ x

The x-coordinate of the bmp

➤ y

The y-coordinate of the bmp

➤ fileName

The file name in local BMP format, including the suffix name.

[Return]

TSPLPrinter Instance

## 2.32. PrinterStatus

Get printer status

void PrinterStatus(IStatusCallback callback)

void PrinterStatus(int timeout, IStatusCallback callback)

[Parameter]

➤ timeout

Receive timeout, Unit is ms, Default is 5000ms

➤ callback

The callback content is the corresponding printer state

```
public interface IStatusCallback {  
    void Receive(int status);  
}
```

status(HEX)	Description
00	Normal
01	Head opened
02	Paper Jam
03	Paper Jam and head opened
04	Out of paper
05	Out of paper and head opened
08	Out of ribbon
09	Out of ribbon and head opened
0A	Out of ribbon and paper jam
0B	Out of ribbon, paper jam and head opened
0C	Out of ribbon and out of paper
0D	Out of ribbon, out of paper and head opened
10	Pause
20	Printing
80	Other error
-1	Receive timeout

## 2.33. SetCharSet

Set character encoding, Default is "gbk"

void SetCharSet(String charSet)

[Parameter]

➤ charSet

Character set name.

## 2.34. SendData

This function is used to send data to the printer.

TSPLPrinter SendData(byte[] data)

TSPLPrinter SendData(List<byte[]> datas)

[Parameter]

➤ data

Byte array to be sent

➤ datas

Byte array collection to be sent

[Return]

TSPLPrinter Instance