

Instruction of how to use water mark print function on BTP-2002NP printer

1. Function Introduction

The water mark printing function has following features:

Watermark function can be enabled and disenabled by EEPROM setting.

There are two printing mode for watermark printing:

- (1) To print watermark when paper feed
- (2) To print watermark when print start

There are three aligning mode for watermark printing:

- (1) Align to the left side
- (2) Align to the right side
- (3) Centralize

Watermark is enlargeable:

Water mark can be enlarged 1 – 6 times in vertical and horizontal direction, so that you could also use the small bitmap image in Flash as the water mark logo to print.

Watermark brightness adjustable

The brightness of the printed watermark is adjustable from 0-255 grades. The larger the number, the darker the watermark printed.

You may choose which bitmap image in the Flash as watermark logo to print

Any bitmap (Number 1-255) in Flash can be selected as watermark logo to print.

The Corresponding EEPROM setting address for the above mentioned features are:

EEPROM Address	Function	Range and Description
0x89	Enable watermark function	0: Disable 1: Enable >1: Disable
0x8a	Watermark printing modes	0: Print watermark when paper feed 1: Print watermark when print start >1: Print watermark when print start
0x8b	Watermark aligning modes	0: Align to left side 1: Centralized 2: Align to right side >2: centralized
0x8c	Watermark enlargement	Low byte: Horizontal 1-6 times

		High byte: Vertical 1-6 times Default value: No enlargement
0x8d	Watermark brightness	Watermark brightness: 0-255 grades
0x8e	Watermark image	Number of bitmap in Flash: 1- 255

Table 1.1

2. How to print watermark

1) To download the bitmap into Flash by Flash bitmap downloading tools such as Printer Utility.

Any bitmap in Flash can be selected by changing EEPROM address 0x8e.

For example, if you download 3 bitmaps to the printer and need select the first one as the watermark image, please send "1B 73 42 45 92 9A 01 00 8E" by Printertest.

For example: Take Serial interface as example.



Figure 2.1 Open port



Figure 2.2 Download 3 bitmaps to Flash

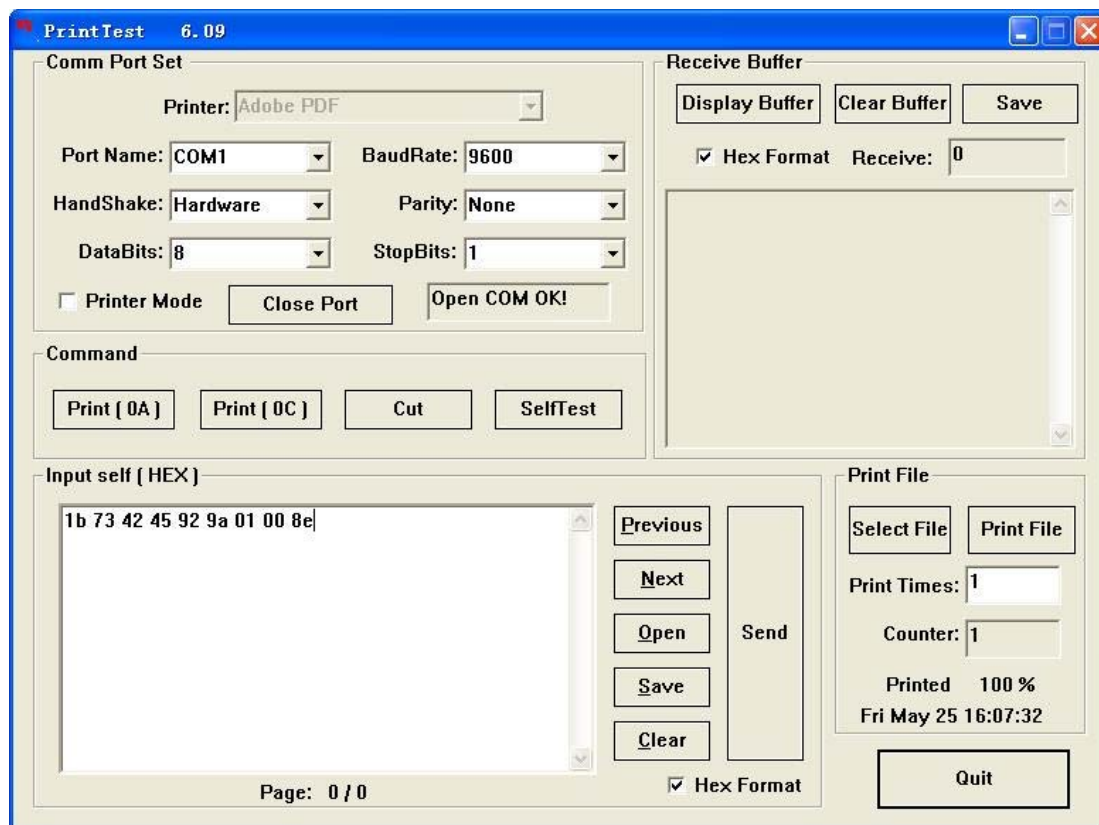


Figure 2.3 Select the first bitmap ("Bird.bmp") as watermark

2) To set up the property of watermark according to the needs, please send the corresponding changing EEPROM

command to set the right value according to **Tabel 1.1**.

For example:

Set watermark aligning modes to left side, please send "1B 73 42 45 92 9A 00 00 8B"

Enlarge watermark 2 times, please send "1B 73 42 45 92 9A 02 00 8C".

Set watermark brightness to 32 (0x20), please send "1B 73 42 45 92 9A 20 00 8D".

3) To power off and then power on the printer.

Notes:

Printer watermark with printer driver still needs the watermark function offered by printer driver itself.

3. Watermark function command

There are two ways to set the watermark property and open the watermark function: One way is by EEPROM setting and the other way is by command setting.

There are three Watermark function commands, including **set watermark bitmap parameters command**, **enter watermark mode command**, **quit watermark mode command**.

The explanation of these commands is shown as below:

(1) Set watermark bitmap parameters

[Function] Set watermark bitmap parameters and enter watermark mode

[Format] ASCII GS { w f n1 n2 n3 n4 n5
Hex 1D 7B 77 02 n1 n2 n3 n4 n5
Decimal 29 123 119 02 n1 n2 n3 n4 n5

[Range] n1 = 0, 1;
n2 = 0, 1, 2;
 $0 \leq n4 \leq 255$
 $1 \leq n5 \leq 255$

[Notes]

- This command should be used at the beginning of the line, otherwise it is not effective.
- This command is only effective in line mode and not effective in page mode.
- Please use **FS q** to define the bitmap before using this command.
- n1 specifies watermark printing mode:
 - 0: To print watermark when paper feed
 - 1: To print watermark when print start
- n2 specifies watermark aligning mode:
 - 0: Align to left side
 - 1: Centralized
 - 2: Align to right side
- n3 specifies Watermark enlargement option:

Bit	0/1	Hex	Decimal	Function
0-3				Character height option (Refer to Figure2)
4-7				Character width option (Refer to Figure2)

Figure 1

Character height option			Character width option		
Hex	Decimal	Horizontal	Hex	Decimal	Vertical
10	16	1 (Normal)	01	1	1 (Normal)
20	32	2 (Double width)	02	2	2 (Double height)
30	48	3	03	3	3
40	64	4	04	4	4
50	80	5	05	5	5
60	96	6	06	6	6

Figure2

- n4 specifies Watermark brightness and recommended value is 0x20.
- n5 specifies number of bitmap in Flash (Defined by **FS q**).

[Example] 1D 7B 77 02 01 00 22 40 01

Explanation:

- n1=0x01; To print watermark when print start
- n2=0x00; Align to left side
- n3=0x22; Double width and double height
- n4=0x40; Watermark brightness is 0x40
- n5=0x01; Use the number 1 bitmap in Flash as watermark image

(2) Enter watermark mode

[Function] Enter watermark mode

[Format] ASCII GS { w f
Hex 1D 7B 77 01
Decimal 29 123 119 01

- [Notes]
- This command should be used at the beginning of the line, otherwise it is not effective.
 - If using this command without using watermark property setting command, the watermark property will use the setting value by EEPROM.

(3) Quit watermark mode

[Function] Quit watermark mode

[Format] ASCII GS { w f
Hex 1D 7B 77 00
Decimal 29 123 119 00

- [Note]
- This command should be used at the beginning of the line, otherwise it is not effective.