

MPT Series NV Bit Image Printing Command

FS p n m

[Name] Print NV bit image

[Format] ASCII FS p n m
 Hex 1C 70 n m
 Decimal 28 112 n m

[Range] $1 \leq n \leq 255$; $0 \leq m \leq 3$, $48 \leq m \leq 51$

[Description] Prints NV bit image n using the mode specified by m.

m Mode Vertical Dot Density Horizontal Dot Density

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	203.2 dpi	203.2 dpi
1, 49	Double-width	203.2 dpi	101.6 dpi
2, 50	Double-height	101.6 dpi	203.2 dpi
3, 51	Quadruple	101.6 dpi	101.6 dpi

- n is the number of the NV bit image (defined using the **FS q** command).
- m specifies the bit image mode.

[Detail] • NV bit image is a bit image defined in non-volatile memory by

FS q and printed by **FS p**.

- This command is not effective when the specified NV bit image has not been defined.

- In standard mode, this command is effective only when there is no data in the print buffer.

- In page mode, this command is not effective.

- This command is not affected by print modes (emphasized, double-strike, underline, character size, white/black reverse printing, or 90° rotated characters, etc.), except upside-down printing mode.

- If the printing area width set by **GS L** and **GS W** for the NV bit image is less than one vertical line, the following processing is performed only on the line in question. However, in NV bit image mode, one vertical line means 1 dot in normal mode (m=0, 48) and in double-height mode (m=2, 50), and it means 2 dots in double-width mode (m=1, 49) and in quadruple mode (m=3, 51).

- The printing area width is extended to the right in NV bit image mode up to one line vertically. In this case, printing does not exceed the printable area.

- If the printing area width cannot be extended by one line vertically, the left margin is reduced to accommodate one line vertically.

- If the downloaded bit-image to be printed exceeds one line, the excess data is not printed.

- This command feeds dots (for the height n of the NV bit image) in normal and double-width modes, and (for the height $n \div 2$ of the NV bit image) in double height and quadruple modes, regardless of the line spacing specified by **ESC**

2 or ESC 3.

- After printing the bit image, this command sets the print position to the beginning of the line and processes the data that follows as normal data.

[References] **ESC ***, **FS q**, **GS /**, **GS v 0**

FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n

[Name] Define NV bit image

[Format] ASCII FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
Hex 1C 71 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
Decimal 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n

[Range] $1 \leq n \leq 255$

$0 \leq xL \leq 255$

$0 \leq xH \leq 3$ (when $1 \leq (xL + xH \cdot 256) \leq 1023$)

$0 \leq yL \leq 255$

$0 \leq yH \leq 1$ (when $1 \leq (yL + yH \cdot 256) \leq 288$)

$0 \leq d \leq 255$

$k = (xL + xH \cdot 256) \cdot (yL + yH \cdot 256) \cdot 8$

Total defined data area = 192K bytes

[Description] Define the NV bit image specified by n.

- n specifies the number of the defined NV bit image.
- xL, xH specifies $(xL + xH \cdot 256) \cdot 8$ dots in the horizontal direction for the NV bit image you are defining.
- yL, yH specifies $(yL + yH \cdot 256) \cdot 8$ dots in the vertical direction for the NV bit image you are defining.

[Notes] • Frequent write command executions may damage the NV memory. Therefore, it is recommended to write the NV memory 10 times or less a day.

- The printer performs a hardware reset after the procedure to place the image into the NV memory. Therefore, user-defined characters, downloaded bit images, and macros should be defined only after completing this command. The printer clears the receive and print buffers and resets the mode to the mode that was in effect at power on. At this time, DIP switch settings are checked again.

- This command cancels all NV bit images that have already been defined by this command. The printer cannot redefine only one of several data definitions previously defined. In this case, all data needs to be sent again.

- From the beginning of the processing of this command till the finish of hardware reset, mechanical operations (including initializing the position of the print head when the cover is open, paper feeding using the FEED button, etc.) cannot be performed.

- During processing of this command, the printer is BUSY when writing data to the user NV memory and stops receiving data. Therefore it is prohibited to transmit the data, including real-time commands, during the execution of this command.

- NV bit image is a bit image defined in non-volatile memory by **FS q** and

printed by **FS p.**

[Example] When $xL = 64$, $xH = 0$, $yL = 96$, $yH = 0$

