GS ∗ x y *d1...d* (x × y × 8)

[Name] Define downloaded bit image

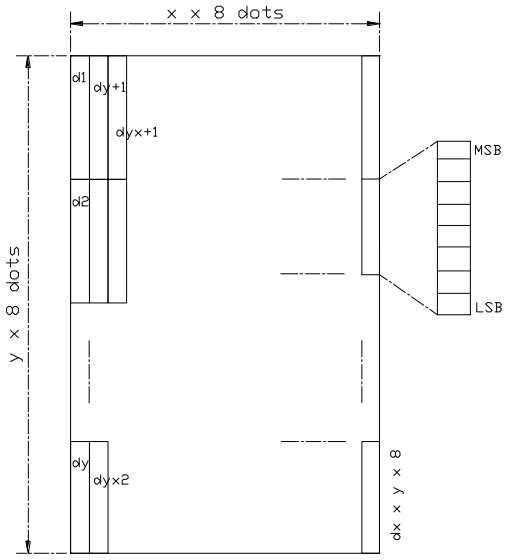
[Format]

ASCII	GS	∗	*x*	*y*	*d1* ... *d* (*x* x *y* x 8)
Hex	1D	2A	*x*	*y*	*d1* ... *d* (*x* x *y* x 8)
Decimal	29	42	*x*	*y*	*d1* ... *d* (*x* x *y* x 8)

[Range]
$1 \le x \le 255$
$1 \le y \le 48$
$x \times y \le 1536$
$0 \le d \le 255$

[Description] Defines a downloaded bit image with the number of dots specified by *x* and *y*.
·*x* indicates the number of dots in the horizontal direction.
·*y* indicates he number of dots in the vertical direction.

[Details]
·The number of dots in the horizontal direction is *x* x 8, in the vertical direction it is *y* x 8.
·If *x* x *y* is out of the specified range, this command is disabled.
·The d indicates bit-image data. Data *(d)* specifies a bit printed to 1 and not printed to 0.
·The downloaded bit image definition is cleared when:
① ESC@ is executed.
② ESC & is executed.
③ FS q is executed.
④ Printer is reset or the power is turned off.
·The following figure shows the relationship between the downloaded bit image and the printed data.



[Reference] **GS** \

GS / *m*

[Name] Print down-loaded bit image

[Format]

ASCII	GS	/	*m*	
Hex		1D	2F	*m*
Decimal		29	47	*m*

[Range] $0 \le m \le 3, 48 \le m \le 51$

[Description] Prints a downloaded bit image using the mode specified by *m*.
m selects a mode from the table below:

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	180 DPI	180 DPI
1, 49	Double-width	180 DPI	90 DPI
2, 50	Double-height	90 DPI	180 DPI
3, 51	Quadruple	90DPI	90 DPI

[dpi : dots per 25.4 mm {1"}]

[Details]
- ·This command is ignored if a downloaded bit image has not been defined.
- ·In standard mode, this command is effective only when the on data exists in the print buffer.
- ·This command is not affected by print modes (emphasized, double-strike, underline, or character size, white/black reverse printing), except for upside down mode.
- ·If the downloaded bit-image to be printed exceeds the printable area, the excess data is not printed.

·If the printing area width set by GS L and GS W is less than one line vertical, the following processing is performed only on the line in question:

① The printing area width is extended to the right up to one line in vertical. In this case, printing does not exceed the printable area.

② If the printing area width cannot be extended by one line in vertical, the left margin is reduced to accommodate one line in vertical.

[Reference] **GS ***

GS :

[Name] Start/end macro definition

[Format]

ASCII	GS	:
Hex	1D	3A
Decimal	29	58

[Description] Starts or ends macro definition.

[Details]

·Macro definition starts when this command is received during normal operation.

·Macro definition ends when this command is received during macro definition.

·When **GS ^** is received during macro definition, the printer ends macro definition and clears the definition.

·Macro is not defined when the power is turned on.

·The defined contents of the macro are not cleared by **ESC** @. Therefore, **ESC @** can be included in the contents of the macro definition.

·If the printer receives **GS :** again immediately after previously receiving **GS :** the printer remains in the macro undefined state.

·The contents of the macro can be defined up to 2048 bytes. If the macro definition exceed 2048 bytes, excess data is not stored.

[Reference] **GS ^**

GS B *n*

[Name] Turn white/black reverse printing mode

[Format]

ASCII	GS	B	*n*
Hex	1D	42	*n*
Decimal	29	66	*n*

[Range] $0 \le n \le 255$

[Description] Turns on or off white/black reverse printing mode.
·When the LSB of *n* is 0, white/black reverse printing mode is turned off.
·When the LSB of *n* is 1, white/black reverse printing mode is turned on.

[Details] ·Only the LSB of *n* is effective.
·This command is available for built-in characters and user-defined characters.
·When white/black reverse printing mode is on, it also applied to character spacing set by **ESC SP**.
·This command does not affect bit image, user-defined bit image, bar code, HRI characters, and spacing skipped by **H**T, **ESC $**, and **ESC** \ .
·This command does not affect the space between lines.

·White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it is disabled (but not canceled) when white/black reverse mode is selected.

[Default] *n* = 0

GS H *n*

[Name] Select printing position of HRI characters

[Format]

ASCII	GS	H	*n*
Hex	1D	48	*n*
Decimal	29	72	*n*

[Range] $0 \le n \le 3, 48 \le n \le 51$

[Description] Selects the printing position of HRI characters when printing a bar code.
n selects the printing position as follows:

n	Printing position
0, 48	Not printed
1, 49	Above the bar code
2, 50	Below the bar code
3, 51	Both above and below the bar code

[Details] ·HRI means Human Readable Interpretation.
·HRI characters are printed using the font specified by **GS f**.

[Default] *n* = 0

[Reference] **GS f, GS k**