

COMMANDS MANUAL

**mPLUS2
PLUS II
PLUS2
PLUS4**

CUSTOM[®]

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THE IMAGES USED IN THIS MANUAL ARE USED AS AN ILLUSTRATIVE EXAMPLES. THEY COULDN'T REPRODUCE THE DESCRIBED MODEL FAITHFULLY.

UNLESS OTHERWISE SPECIFIED, THE INFORMATION GIVEN IN THIS MANUAL ARE REFERRED TO ALL MODELS IN PRODUCTION AT THE ISSUE DATE OF THIS DOCUMENT.



The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

GENERAL SAFETY INFORMATION

Your attention is drawn to the following actions that could compromise the characteristics of the product:

- Read and retain the instructions which follow.
- Follow all indications and instructions given on the device.
- Make sure that the surface on which the device rests is stable. If it is not, the device could fall, seriously damaging it.
- Make sure that the device rests on a hard (non-padded) surface and that there is sufficient ventilation.
- When positioning the device, make sure cables do not get damaged.
- Use the type of electrical power supply indicated on the device label. If uncertain, contact your dealer.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Do not block the ventilation openings.
- Do not insert objects inside the device as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not carry out repairs on the device yourself, except for the normal maintenance operations given in the user manual.
- Make sure that there is an easily-accessible outlet with a capacity of no less than 10A closely to where the device is to be installed.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- Before any type of work is done on the machine, disconnect the power supply.
- Do not touch the head heating line with bare hands or metal objects. Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

GENERAL INSTRUCTIONS

CUSTOM S.p.A. declines all responsibility for accidents or damage to persons or property occurring as a result of tampering, structural or functional modifications, unsuitable or incorrect installations, environments not in keeping with the equipment's protection degree or with the required temperature and humidity conditions, failure to carry out maintenance and periodical inspections and poor repair work.



THE CE MARK AFFIXED TO THE PRODUCT CERTIFY THAT THE PRODUCT SATISFIES THE BASIC SAFETY REQUIREMENTS.

The device is in conformity with the essential Electromagnetic Compatibility and Electric Safety requirements laid down in Directives 2006/95/CE and 2004/108/CE inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55022 Class B (*Limits and methods of measurements of radio disturbance characteristics of Information Technology Equipment*)
- EN 55024 (*Information Technology Equipment – Immunity characteristics – Limits and methods of measurement*)
- EN 60950-1 (*Safety of information equipment including electrical business equipment*)



GUIDELINES FOR THE DISPOSAL OF THE PRODUCT

The crossed-out rubbish bin logo means that used electrical and electronic products shall NOT be mixed with unsorted municipal waste. For more detailed information about recycling of this product, refer to the instructions of your country for the disposal of these products.

- Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the wellbeing of humans.
- In accordance with European Directive WEEE 2002/96/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.

INTRODUCTION



PLUS II EMULATION



ESC/POS™ EMULATION





INTRODUCTION

Each command reported in this manual is described as shown in the following picture. In the first heading field is reported the hexadecimal command value and the ASCII command value. In the second heading field reported the command function. In the third heading field are listed the devices on which it is possible to use the command (for example, device AAAA).

0x0D

<CR>

Command value

Print and carriage return

Command function

Valid for
AAAA
BBBB
CCCC

Devices that use the command

[Format]
ASCII CR
Hex 0D
Decimal 13

[Range]

[Description] When autofeed is "CR enabled", this command functions in the same way as 0x0A, otherwise it is disregarded.

[Notes] This command sets the print position to the beginning of the line. Information valid for devices AAAA, BBBB, CCC

AAAA
BBBB Information valid for devices AAAA, BBBB

• This command sets the print position to the beginning of the line.

CCCC Information valid for device CCCC

- This command is immediately executed even when the data buffer is full.
- This status is transmitted whenever data sequence is received.

[Default]

[Reference] 0x0A

[Example] Information valid only for the devices marked in bold

Information valid for all the devices listed in the third heading field



The fields shown in the scheme of the previous figure have the following meaning:

[Format]	ASCII, hexadecimal and decimal command value.
[Range]	Limits of the values the command and its variables can take
[Description]	Description of command function
[Notes]	Additional information about command use and settings .
[Default]	Default value of the command and its variables.
[Reference]	Pertaining commands related to described command.
[Example]	Example of using the command

Listed below are the meanings of some of symbols that may be found in the command description:

0x	indicates the representation of the command hexadecimal value (for example 0x40 means HEX 40).
n, m, t, x, y	are optional parameters that can have different values.



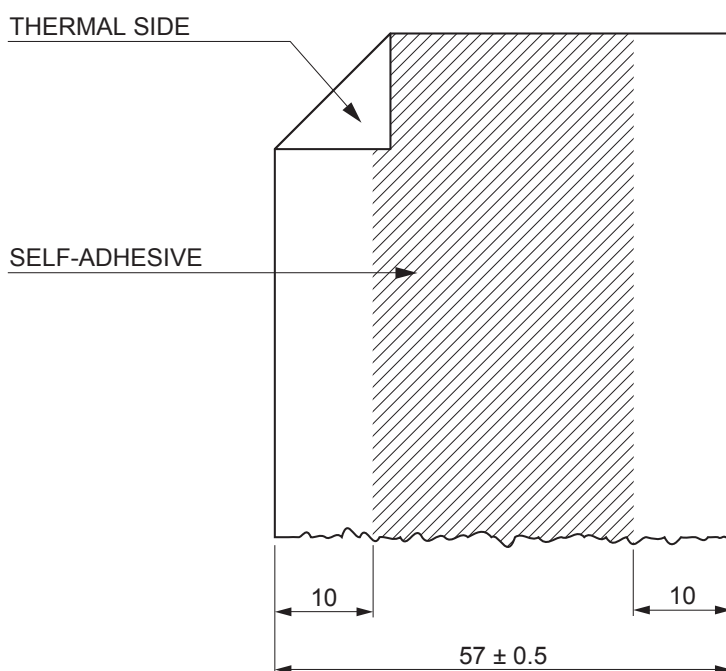
IDENTIFICATION OF THE MODELS

NOMENCLATURE	DESCRIPTION
PLUS II ECO	Serial RS232 + USB 3.3 - 8V with RTCK
PLUS II-S	Serial RS232 5V
PLUS II-S-0004	Serial RS232 with extended range (9-48VDC)
PLUS II-T	Serial TTL 5V
PLUS II-C	Parallel Centronics 5V
PLUS II-C-0004	Parallel Centronics with extended range (9-48VDC)
PLUS II-P	Parallel TTL 5V
PLUS II-USB	Serial RS232 + USB 10-32V

PAPER SPECIFICATIONS

- PLUS2
- PLUS II-C
- PLUS II-C-0004
- PLUS II ECO
- PLUS II-P
- PLUS II-S
- PLUS II-S-0004
- PLUS II-T

LINERLESS paper is a thermal paper with a self-adhesive layer without liner (on non-thermal side). For the better use with the printer the self-adhesive area must comply with the following dimensions:



LINERLESS PAPER SPECIFICATIONS

Self-adhesive	Water based acrylic
Self-adhesive mass	Permanent 16 gr/mq ± 2 gr
Total thickness	93 μ m ± 2 μ m
Total weight	96 gr/mq ± 2 gr
Recommended temperature	
Stick	from +15°C to +40°C
Storage	from +10°C to +40°C
Resistance after stick	from -10°C to +50°C

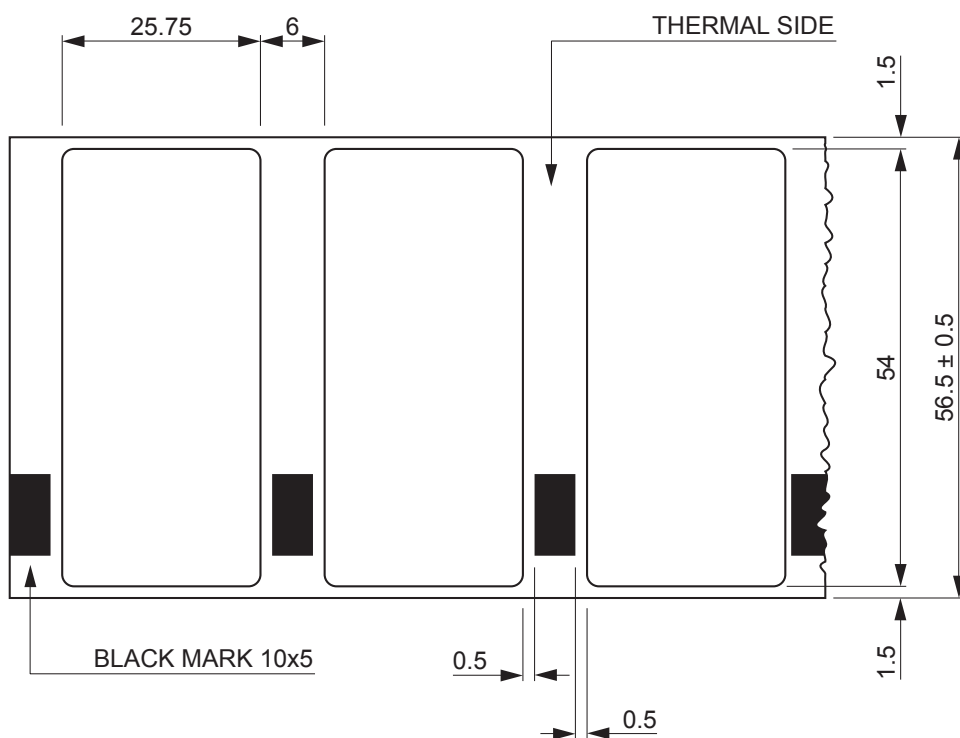
WARNING: Do not set "Printer Density" parameter on "Linerless" mode during the printer SETUP (see user manual) with common thermal paper.

WARNING: In "Linerless" mode, if the printer is turned off a few hours, the first row of the press could be compressed, during the turning on. It is recommended to perform one or more paper FEED before printing.

PLUS II-USB

Paper roll with alignment notch is permitted. To guarantee proper alignment, the “Notch Align.” parameter must be set to “Enable” during the SETUP procedure (see user manual).

The black mark must be placed on the heat-sensitive side of the ticket (printable area).





PLUSII EMULATION



COMMANDS LISTED IN ALPHANUMERIC ORDER

0x00	<NUL>	19
0x01	<SOH>	20
0x02	<STX>	21
0x03	<ETX>	22
0x04	<EOT>	23
0x0A	<LF>	35
0x0B	<VT>	36
0x0D	<CR>	41
0x0F	<SI>	42
0x11	<DC1>	43
0x12	<FF>	37
0x13	<DC3>	44
0x14	<DC4>	45
0x1B 0x30	<ESC 0>	46
0x1B 0x40	<ESC @>	47
0x1B 0x41	<ESC A>	38
0x1B 0x44	<ESC D>	48
0x1B 0x49	<ESC I>	24
0x1B 0x4B	<ESC K>	49
0x1B 0x4D	<ESC M>	50
0x1B 0x4E	<ESC N>	25
0x1B 0x51	<ESC Q>	26
0x1B 0x52	<ESC R>	27
0x1B 0x53	<ESC S>	51
0x1B 0x54	<ESC T>	52
0x1B 0x55	<ESC U>	53



0x1B 0x57	<ESC W>	54
0x1B 0x61	<ESC a>	55
0x1B 0x63	<ESC c>	17
0x1B 0x68	<ESC h>	28
0x1B 0x69	<ESC i>	29
0x1B 0x6D	<ESC m>	56
0x1B 0x71	<ESC q>	30
0x1B 0x73	<ESC s>	57
0x1B 0x74	<ESC t>	31
0x1B 0x76	<ESC v>	39
0x1B 0xFA		58
0x1C 0x25	<FS %>	34
0x1D 0x24	<GS \$>	59
0x1D 0x49	<GS I>	60
0x1D 0x55	<GS U>	61
0x1D 0x57	<GS W>	62



COMMANDS LISTED BY FUNCTION

BARCODE COMMANDS

0x1B 0x63	<ESC c>	17
Management of barcode printing		

CHARACTER COMMANDS

0x00	<NUL>	19
Small character printing		
0x01	<SOH>	20
Double width printing		
0x02	<STX>	21
Double height printing		
0x03	<ETX>	22
Expanded printing		
0x04	<EOT>	23
Restore small character printing		
0x1B 0x49	<ESC I>	24
Selects 24 columns		
0x1B 0x4E	<ESC N>	25
Set normal mode printing		
0x1B 0x51	<ESC Q>	26
Enable underlined printing		
0x1B 0x52	<ESC R>	27
Set reverse mode printing		
0x1B 0x68	<ESC h>	28
Selects 42 columns		
0x1B 0x69	<ESC i>	29
Selects 40 columns		
0x1B 0x71	<ESC q>	30
Disable underlined printing		
0x1B 0x74	<ESC t>	31
Select character code table		
0x1C 0x25	<FS %>	34
Select the font type		



PRINT COMMANDS

0x0A	<LF>	35
Forward feeds one line		
0x0B	<VT>	36
Forward feeds (n) lines		
0x12	<FF>	37
Print time and date		
0x1B 0x41	<ESC A>	38
Executes (n) dot line feed		

STATUS COMMANDS

0x1B 0x76	<ESC v>	39
Transmit printer status		

MISCELLANEOUS COMMANDS

0x0D	<CR>	41
Print the line buffer		
0x0F	<SI>	42
Set CRLF mode		
0x11	<DC1>	43
Graphic mode		
0x13	<DC3>	44
Set time and data in serial		
0x14	<DC4>	45
Transmit time and date in serial		
0x1B 0x30	<ESC 0>	46
Switch the printer off		
0x1B 0x40	<ESC @>	47
Reset the printer		
0x1B 0x44	<ESC D>	48
Enter the data in the line buffer		
0x1B 0x4B	<ESC K>	49
Turn on/off the status led		



0x1B 0x4D	.<ESC M>	50
Write the value (dd) in the print mode		
0x1B 0x53	.<ESC S>	51
Enable the printing of seconds		
0x1B 0x54	.<ESC T>	52
Enter time in the line buffer		
0x1B 0x55	.<ESC U>	53
Enter date (mm-dd-yy) in the line buffer		
0x1B 0x57	.<ESC W>	54
Print a graphic line at 203 dpi		
0x1B 0x61	.<ESC a>	55
Select the number of dot spaces		
0x1B 0x6D	.<ESC m>	56
Transmit the print mode in serial		
0x1B 0x73	.<ESC s>	57
Transmit the next character in serial		
0x1B 0xFA		58
Print graphic bank (384 x 85 dots)		
0x1D 0x24	.<GS \$>	59
Set absolute shift into a graphic line		
0x1D 0x49	.<GS I>	60
Transmit printer ID		
0x1D 0x55	.<GS U>	61
Resets the printer parameters to default		
0x1D 0x57	.<GS W>	62
Prints n byte of a 204 dpi graphic line		



BARCODE COMMANDS

0x1B 0x63

<ESC c>

Management of barcode printing

Valid for	mPLUS2 PLUS II (all models) PLUS2
-----------	---

[Format]	ASCII	ESC	c	[code] [height] [position] [options] [length] [data]
	Hex	1B	63	
	Decimal	27	99	

[Description] This command executes a barcode printing with the following settings:

[ASCII code] Type of barcode:

- I Interleaved 2/5
- C Code 39
- B CodaBar
- e EAN8
- E EAN13

[height] Number of dot lines in 1/8 mm. units.

[position] Left hand margin, expressed in 1/8 mm. units

[options] Specify the barcode options through a byte. In the following tables are listed all the possible values of single bit inside of byte:

BIT 0	FUNCTION	DESCRIPTION
0	Check digit is not printed	Check digit
1	Check digit is printed	

BIT 0	FUNCTION	DESCRIPTION
-	Not used	-

BIT 3	BIT 2	FUNCTION	DESCRIPTION
0	0	None	HRI position
0	1	Above	
1	0	Below	
1	1	Above and below	



BIT 5	BIT 4	FUNCTION	DESCRIPTION
0	0	Normal	
0	1	Double	Barcode width
1	0	Triple	
1	1	Not used	

BIT 6	FUNCTION	DESCRIPTION
-	Not used	-

BIT 7	FUNCTION	DESCRIPTION
-	Not used	-

[length] Specify the characters number to print trough a byte; in following are listed the maximum lengths allowed:
 Interleaved 2/5 = 12 characters
 Code 39 = 10 characters
 CodaBar = 10 characters
 EAN8 = 7 characters
 EAN13 = 12 characters

[data] Specify the characters to print expressed in ASCII.

[Notes]

- For EAN8 and EAN13 barcodes the check digit is automatic.
- When CODE 39 barcode is used with triple width function, if 6 characters + check digit are sent the print limits are exceeded, so the barcode can't be printed.

[Default]

[Reference]

[Example] In the following example is indicated the command sequence to print a barcode:
 0x1B, 'N', 0x1B, 'c', 'C', 0x50, 0x3C, 0x14, 0x04, 'PLUS'



where:

- 0x1B, 'N' (sets the printing in normal mode)
- 0x1B, 'c', (barcode printing command)
- 'C', (barcode type = Code 39)
- 0x50, (barcode height = 10 mm)
- 0x3C, (starting position = 7,5 mm)
- 0x14, (HRI printing below, barcode width double)
- 0x04, (characters number to print)
- 'PLUS' (characters to print)



CHARACTER COMMANDS

0x00

<NUL>

Small character printing

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	NUL
	Hex	00
	Decimal	0

[Range]

[Description] The printer prints in small characters (normal)

[Notes] • The commands from 0x00 to 0x09 do not cancel the print buffer
 • The commands which modify the direction of the characters are only active at the beginning of the line

[Default] Setting in option register by means of front keys

[Reference] 0x01, 0x02, 0x03, 0x04, 0x1B 0x4D

[Example]



0x01

<SOH>

Double width printing

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	SOH
	Hex	01
	Decimal	1

[Range]

[Description] The printer prints in double width format

[Notes]

- The commands from 0x00 to 0x09 do not cancel the print buffer.
- The commands which modify the direction of the characters are only active at the beginning of the line.

[Default] Setting in option register by means of front keys

[Reference] 0x00, 0x02, 0x03, 0x04, 0x1B 0x4D

[Example]



0x02

Double height printing

Valid for	mPLUS2 PLUS II (all models) PLUS2
-----------	---

[Format]	ASCII	STX
	Hex	02
	Decimal	2

[Range]

[Description] The printer prints in double height format

[Notes]

- The commands from 0x00 to 0x09 do not cancel the print buffer.
- The commands which modify the direction of the characters are only active at the beginning of the line.

[Default] Setting in option register by means of front keys.

[Reference] 0x00, 0x01, 0x03, 0x04, 0x1B 0x4D

[Example]



0x03

<ETX>

Expanded printing

Valid for	mPLUS2 PLUS II (all models) PLUS2
[Format]	ASCII ETX Hex 03 Decimal 3
[Range]	
[Description]	The printer prints in expanded character mode.
[Notes]	<ul style="list-style-type: none">• Commands from 0x00 to 0x09 do not cancel the print buffer.• The commands which modify the dimensions of the characters are only active at the beginning of the line.
[Default]	Setting in the option register by means of the front keys.
[Reference]	0x00, 0x01, 0x02, 0x04, 0x1B 0x4D
[Example]	



0x04

Restore small character printing

Valid for	mPLUS2 PLUS II (all models) PLUS2
[Format]	ASCII EOT Hex 04 Decimal 4
[Range]	
[Description]	The printer resumes printing with small characters.
[Notes]	<ul style="list-style-type: none">• The commands from 0x00 to 0x09 do not cancel the print buffer.• The commands which modify the dimensions of the characters are only active at the beginning of the line.
[Default]	Setting in the option register by means of the front keys
[Reference]	0x00, 0x01, 0x02, 0x03, 0x1B 0x4D
[Example]	



0x1B 0x49

<ESC I>

Selects 24 columns

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII ESC I
 Hex 1B 49
 Decimal 27 73

[Range]

[Description] On receiving this command, the printer enters 24-column per line printing mode.

[Notes]

[Default]

[Reference] 0x1B 0x69, 0x1B 0x68

[Example]



0x1B 0x4E

<ESC N>

Set normal mode printing

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format]	ASCII	ESC	N
	Hex	1B	4E
	Decimal	27	78

[Range]

[Description] Select normal mode printing the receipt feeds out of the printer with the printing upside down running from right to left.

[Notes]

[Default] Setting of parameter "Print Mode" in the printer setup.

[Reference] 0x1B 0x52

[Example]



0x1B 0x51

<ESC Q>

Enable underlined printing

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII ESC Q
 Hex 1B 51
 Decimal 27 81

[Range]

[Description] After this command has been received, the characters are printed underlined.

[Note]

[Default]

[Reference] 0x1B 0x71

[Example]

0x1B 0x52

<ESC R>

Set reverse mode printing

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII ESC R
 Hex 1B 52
 Decimal 27 82

[Range]

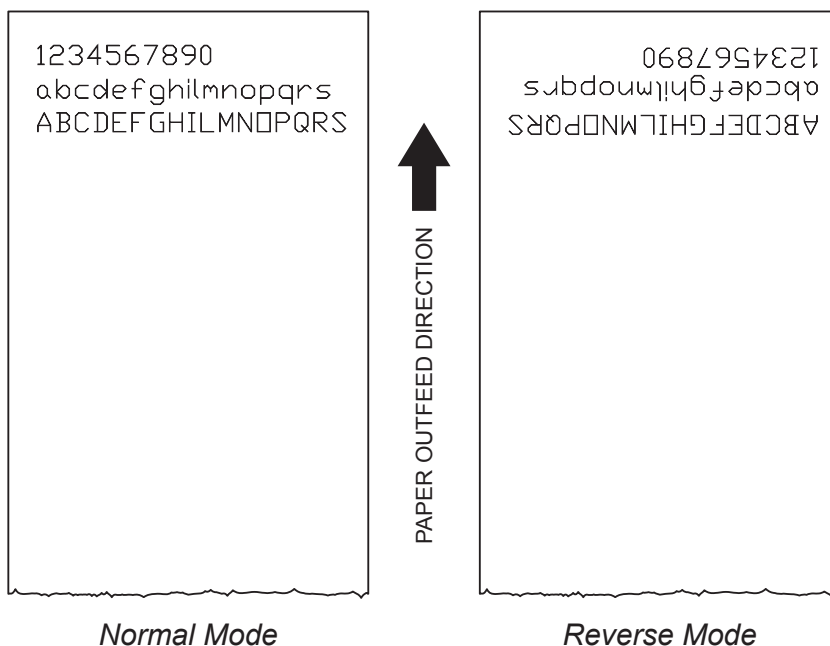
[Description] Selects printing in reverse mode: the receipt feeds out of the printer with the printing in normal mode running from left to right.

[Notes]

[Default] Setting in option register by means of front keys.

[Reference] 0x1B 0x4E

[Example]





0x1B 0x68

<ESC h>

Selects 42 columns

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	h
	Hex	1B	68
	Decimal	27	104

[Range]

[Description] On receiving this command, the printer enters 42-column per line printing mode.

[Notes]

[Default]

[Reference] 0x1B 0x49, 0x1B 0x69

[Example]



0x1B 0x69

<ESC i>

Selects 40 columns

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	i
	Hex	1B	69
	Decimal	27	105

[Range]

[Description] On receiving this command, the printer enters 40-column per line printing mode.

[Notes]

[Default]

[Reference] 0x1B 0x49, 0x1B 0x68

[Example]



0x1B 0x71

<ESC q>

Disable underlined printing

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII ESC q
 Hex 1B 71
 Decimal 27 113

[Range]

[Description] Disable underlined printing

[Notes]

[Default]

[Reference] 0x1B 0x51

[Example]



0x1B 0x74

<ESC t>

Select character code table

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n

[Range] **PLUSII-USB**

n = 0, 2, 3, 4, 5, 19, 255

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1 ≤ n ≤ 53
n = 255

[Description] Selects a page n from the character code table, as follows:

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n	PAGE
0	PC437 - U.S.A., Standard Europe
1	Katakana
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian/French
5	PC865 - Nordic
11	PC851 - Greek on request
12	PC853 - Turkish on request
13	PC857 - Turkish on request
14	PC737 - Greek on request
15	ISO8859-7 - Greek on request
16	WPC1252
17	PC866 - Cyrillic 2
18	PC852 - Latin 2 on request
19	PC858 for Euro symbol at position 213
20	KU42 - Thai on request
21	TIS11 - Thai on request



n	PAGE
26	TIS18 - Thai on request
30	TCVN_3 - Vietnamese on request
31	TCVN_3 - Vietnamese on request
32	PC720 - Arabic on request
33	WPC775 - Baltic Rim on request
34	PC855 - Cyrillic on request
35	PC861 - Icelandic on request
36	PC862 - Hebrew
37	PC864 - Arabic
38	PC869 - Greek on request
39	ISO8859-2 - Latin 2 on request
40	ISO8859-15 - Latin 9 on request
41	PC1098 - Farci on request
42	PC1118 - Lithuanian on request
43	PC1119 - Lithuanian on request
44	PC1125 - Ukranian on request
45	WPC1250 - Latin 2
46	WPC1251 - Cyrillic
47	WPC1253 - Greek
48	WPC1254 - Turkish
49	WPC1255 - Hebrew
50	WPC1256 - Arabic
51	WPC1257 - Baltic Rim
52	WPC1258 - Vietnamese
53	KZ1048 - Kazakhstan on request
255	Space page

PLUSII-USB

n	PAGE
0	PC437 - U.S.A., Standard Europe
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian-French
5	PC865 - Nordic
19	PC858 for Euro symbol at position 213
255	Space page



[Notes] • The tables are selectable only if the code pages are present on the machine. By selecting a code page not present on the machine, the code page remains the one currently in use.

mPLUS2
PLUS2

- Make sure to select the font type “INTERNATIONAL” with the command 0x1C 0x25 or with the parameter “FONT TYPE” in the setup.

[Default] n = 0

[Reference] 0x1C 0x25

[Example] For printing Euro symbol (€), the command sequence is: 1B, 74, 13, D5



0x1C 0x25

<FS %>

Select the font type

Valid for mPLUS2
 PLUS2

[Format] ASCII FS % n
 Hex 1C 25 n
 Decimal 28 37 n

[Range] n= 0, 1, 2

[Description] Select the font type.

n	FONT TYPE
0	International
1	Chinese GB18030
2	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese (GB18030-2000) or Korean (PC494).
- The selection made by this command is stored in the RAM memory. Turn off the machine reverts to the default value, that can be set with the parameter "FONT TYPE" in the setup.
- After selecting the font type "INTERNATIONAL" it must be selected the desired character code table using the command 0x1B 0x74.

[Default]

[Reference] 0x1B 0x74, See the command manual "Chinese fonts management".

[Example]



PRINT COMMANDS

0x0A

<LF>

Forward feeds one line

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	LF
	Hex	0A
	Decimal	10

[Range]

[Description] Forward feeds one line equivalent to a line of print.

[Notes]

- This command brings about the printing of the contents of the line buffer.
- If the line buffer is empty this command executes a line feed of 24 dots (= 3 mm). If the line buffer contains text the line feed is = (character height + spacing) dots (default = 4 mm).

[Default]

[Reference] 0x0B

[Example]



0x0B

<VT>

Forward feeds (n) lines

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII (n) VT
 Hex (n) 0B
 Decimal (n) 11

[Range]

[Description] Carries out the number of line feeds specified in (n).

[Notes] • The number must be ASCII and between 0 and 9 (when n=0 the command is ignored)
 • This command clears the line buffer.

[Default]

[Reference] 0x0A

[Example] To forward feed fast, 5 lines at a time:
 0x35 0x0B (or 5 and the command 0x0B)



0x12

<FF>

Print time and date

Valid for	PLUS II ECO	
[Format]	ASCII	FF
	Hex	12
	Decimal	18
[Range]		
[Description]	Prints the time and date in the following format: hh : mm dd - mm - yy	
[Notes]	<ul style="list-style-type: none">• If the expanded or double width formats are selected (i.e. with less than 15 characters per line), only the time will be printed.• If seconds printing is enabled, the format will be: hh:mm:ss dd - mm - yy• In any event this command resets the line.	
[Default]		
[Reference]		
[Example]		



0x1B 0x41

<ESC A>

Executes (n) dot line feed

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	A	nH	nL
	Hex	1B	41	nH	nL
	Decimal	27	65	nH	nL

[Range] $0 \leq nH, nL \leq 255$

[Description] Executes (N) dots line feed where $N = 256 \times nH + nL$.

- [Notes]
- 1 mm = 8 dot line.
 - The maximum paper line feed value is about 1 m.

[Default]

[Reference]

[Example] To forward feed 40mm send this sequence:

0x1B 0x41 0x01 0x40 (the ESC A command with 40mm x 8dot)



STATUS COMMANDS

0x1B 0x76

<ESC v>

Transmit printer status

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	v
	Hex	1B	76
	Decimal	27	118

[Range]

[Description] When this command is received, transmit the current status of the paper sensor.

[Notes] This command is executed immediately, even when the data buffer is full (Busy).

The status to be transmitted is shown in the table below:

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0,1	Off	00	0	Cover close, paper present
	On	03	3	Cover open or paper sensor not working
2,3	Off	00	0	Paper end sensor: paper present
	On	0C	12	Paper end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	Off	00	0	Head temperature correct
	On	20	32	Head temperature error
6	Off	00	0	Supply voltage correct
	On	40	64	Supply voltage error
7	Off	00	0	Not used. Fixed to Off

[Default]

[Reference]

[Example]





MISCELLANEOUS COMMANDS

0x0D

<CR>

Print the line buffer

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	CR
	Hex	0D
	Decimal	13

[Range]

[Description] This command prints the line buffer.

[Notes]

- If the line buffer is empty, the command is ignored.
- If the CRLF option is set, this command is ignored and printing can only be ordered through the command 0x0A.

[Default]

[Reference] 0x0F

[Example]



0x0F

<SI/>

Set CRLF mode

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	SI
	Hex	0F
	Decimal	15

[Range]

[Description] Inhibits the command 0x0D maintaining enabled only the command 0x0A for printing.

[Notes]

- To disable this option, reset the printer.
- This command clears the line buffer.
- On switching on the default value is in the Option Register.

[Default] Setting in the option register by means of the front keys.

[Reference] 0x0D

[Example]

0x11

<DC1>

Graphic mode

Valid for mPLUS2
PLUS II (all models)
PLUS2

[Format] ASCII DC1
Hex 11
Decimal 17

[Range]

[Description] Enables graphic mode:
a line in 24 column mode corresponds to 144 horizontal dots divided into 24 blocks of 6 dots each;
a line in 40 column mode corresponds to 240 horizontal dots divided into 40 blocks of 6 dots each.

[Notes] To obtain graphic printing, enter the command 0x11 at the beginning of each line. The format of the byte in graphic configuration is:

X	R	P6	P5	P4	P3	P2	P1
D7	D6	D5	D4	D3	D2	D1	D0

where:

X is not used (0 is recommended);
R must be fixed at level 1;
P1...P6 are the graphic dot data (1 prints, 0 does not print).

The P6 bit of the string of dots transmitted is printed on the left and the others follow from left to right (P5, P4, P3, P2, P1) as shown:

1st byte è ► 2nd byte è ► 3rd byte è ►
P6 P5 P4 P3 P2 P1 P6 P5 P4 P3 P2 P1 P6 P5 P4 P3 P2 P1

[Default]

[Reference]

[Example] To print a line of dots, transmit:
0x11, n x 0x7F (where n is the number of characters per line), 0x0D.
To print an empty line, transmit:
0x11, 0x40, 0x0D



0x13

<DC3>

Set time and data in serial

Valid for PLUS II ECO

[Format]

ASCII	DC3
Hex	13
Decimal	19

[Range]

[Description] Sets the time and date of the clock installed inside the printer. There are two ways of setting it: the first uses 24-hour clock and the second the 12 hour a.m., p.m. clock.

- In the first case the 10 ASCII characters corresponding to the time and date have to be transmitted, followed by the command 0x13. If, for example, we wish to enter “12.45 of 19.01.93” we have to send the following sequence:

HEX	0x31	0x32	0x34	0x35	0x31	0x39	0x30	0x31	0x39	0x33	0x13
ASCII	1	2	4	5	1	9	0	1	9	3	!!

- In the second case the 10 ASCII characters corresponding to the time and date preceded by “A” or “P”, to indicate ante- or post-meridian, are sent to the printer followed by the command 0x13. If, for example, we wish to enter “A12.45 of 19.01.93”, we have to send the following sequence:

HEX	0x41	0x31	0x32	0x34	0x35	0x31	0x39	0x30	0x31	0x39	0x33	0x13
ASCII	A	1	2	4	5	1	9	0	1	9	3	!!

[Notes] It is advisable to send the command 0x00 first (normal printing mode) in order to erase the print buffer so as to ensure that there are no characters residues.

[Default]

[Reference]

[Example]



0x14

<DC4>

Transmit time and date in serial

Valid for	PLUS II ECO	
[Format]	ASCII	DC4
	Hex	14
	Decimal	20
[Range]		
[Description]	Transmits the contents of the Real Time Clock to the printer's serial port in the format of 11 ASCII characters: hour / minutes / day / month / year + CR 0x0D	
[Notes]	<ul style="list-style-type: none">• If the seconds option is enabled, the seconds will be transmitted after the minutes.• This command can only be used if the serial port is being used.• if the parallel port is being used, the printer will not be able to print anything.	
[Default]		
[Reference]		
[Example]		



0x1B 0x30

<ESC 0>

Switch the printer off

Valid for	PLUS II-C
	PLUS II-C-0004
	PLUS II ECO
	PLUS II-P
	PLUS II-S
	PLUS II-S-0004
	PLUS II-T

[Format]	ASCII	ESC	0
	Hex	1B	30
	Decimal	27	48

[Range]

[Description] Switch off the printer and bring it back to low-consumption mode if was disabled the Auto POWER-ON function.

[Notes]

[Default]

[Reference]

[Example]



0x1B 0x40

<ESC @>

Reset the printer

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	@
	Hex	1B	40
	Decimal	27	64

[Range]

[Description] Cancels all the data in the print buffer and resets the printer mode, restoring the mode which was enabled at the moment of switching on.

[Notes]

- Same as hardware reset.
- After the command has been transmitted, 1.5 seconds elapse before the printer is enabled.

[Default]

[Reference]

[Example]



0x1B 0x44

<ESC D>

Enter the data in the line buffer

Valid for	PLUS II ECO		
-----------	-------------	--	--

[Format]	ASCII	ESC	D
	Hex	1B	44
	Decimal	27	68

[Range]

[Description] This command is used to insert in the line buffer, the date of real time clock mounted on board the printer. The date format is dd-mm-yy.

[Notes] • This command can be used for entering the date in the context of a sentence without zero-setting the line buffer. If, for example, you wish to write:

DATA : 11-09-93 TEST OK

you will send:

DATA : 0x1B 0x44 TEST OK 0x0D

• If you only wish to print the date, it is enough to transmit 0x1B 0x44 0x0D. The date is transmitted in 8 characters and, if there is not sufficient space left in the line buffer, it is not printed.

[Default]

[Reference]

[Example]



0x1B 0x4B

<ESC K>

Turn on/off the status led

Valid for	PLUS II-USB			
[Format]	ASCII	ESC	K	n
	Hex	1B	4B	n
	Decimal	27	75	n
[Range]	n = 0, 1			
[Description]	Turns the status led on or off, based on the following values of n:			
	n = 0	Turns off status led		
	n = 1	Turns on status led		
[Notes]				
[Default]	n=1			
[Reference]				
[Example]				



0x1B 0x4D

<ESC M>

Write the value (dd) in the print mode

Valid for	mPLUS2				
	PLUS II (all models)				
	PLUS2				
[Format]	ASCII	dH	dL	ESC	M
	Hex	dH	dL	1B	4D
	Decimal	dH	dL	27	77
[Range]	dH = 48				
	48 ≤ dL ≤ 51				
[Description]	Sets the print mode default parameters. ASCII characters (dd) identify an hexadecimal byte as follows:				
	0x00	small character printing			
	0x01	double width printing			
	0x02	double height printing			
	0x03	expanded printing			
[Notes]					
[Default]	Setting in option register by means of front keys.				
[Reference]	0x00, 0x02, 0x03, 0x04, 0x1B 0x6D				
[Example]	For double height printing, transmit: 0x30 0x32 0x1B 0x4D				



0x1B 0x53

<ESC S>

Enable the printing of seconds

Valid for	PLUS II ECO		
[Format]	ASCII	ESC	S
	Hex	1B	53
	Decimal	27	83
[Range]			
[Description]	Enables the printing of seconds when the time is requested with command 0x1B 0x54. When the printer is switched on the default value, which determines whether or not the seconds are to be printed, is contained in the flag of a byte called the “option register”; this flag can be manipulated by programming, using the two keys on the front panel of the printer.		
[Notes]			
[Default]			
[Reference]	0x1B 0x54		
[Example]			



0x1B 0x54

<ESC T>

Enter time in the line buffer

Valid for	PLUS II ECO		
-----------	-------------	--	--

[Format]	ASCII	ESC	T
	Hex	1B	54
	Decimal	27	84

[Range]

[Description] This command is used for entering in the line buffer, the time of the Real Time Clock mounted on board the printer. The format of the time is hh-mm.

[Notes] • This command can be used for entering the time in the context of a sentence without zero-setting the line buffer. If, for example, you wish to write:

TIME : 16.45 TEST OK

you will send:

TIME : 0x1B 0x54 TEST OK 0x0D

• If you only wish to print the time, it is enough to transmit 0x1B 0x54 0x0D. The time is transmitted in 5 characters and, if the seconds option is enabled in 8 characters; if there is not sufficient space left in the line buffer, it is not printed.

[Default]

[Reference]

[Example]



0x1B 0x55

<ESC U>

Enter date (mm-dd-yy) in the line buffer

Valid for	PLUS II ECO		
[Format]	ASCII	ESC	U
	Hex	1B	55
	Decimal	27	85
[Range]			
[Description]	This command is used to insert in the line buffer, the date in American format mm-dd-yy of the Real Time Clock mounted on board the printer.		
[Notes]	<ul style="list-style-type: none">• This command can be used for entering the date in the context of a sentence without zero-setting the line buffer. If, for example, you wish to write: DATA : 09-11-93 TEST OK you will send: DATA : 0x1B 0x55 TEST OK 0x0D• If you only wish to print the date, it is enough to transmit 0x1B 0x55 0x0D. The date is transmitted in 8 characters and, if the seconds option is enabled in 8 characters; if there is not sufficient space left in the line buffer, it is not printed.		
[Default]			
[Reference]			
[Example]			



0x1B 0x57

<ESC W>

Print a graphic line at 203 dpi

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	W
	Hex	1B	57
	Decimal	27	87

[Range]

[Description] After receiving this command, the printer waits for 48 bytes which correspond to an entire graphic line. In fact, 48 bytes of 8 bits each correspond to 384 dots per line.

[Notes]

[Default]

[Reference]

[Example]



0x1B 0x61

<ESC a>

Select the number of dot spaces

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	(dd)	ESC	a
	Hex	(dd)	1B	61
	Decimal	(dd)	27	97

[Range]

[Description] By using (dd) parameters it's possible to select the dot line number between one print line and another.

[Notes] (dd) are two ASCII characters (selected between '0', '1' ... '9', 'A', 'B' ... 'F') which identifies number from 0 to 127 in hexadecimal form and corresponds to the number of dot lines between one print line and another. The acceptable range is from 0x00 to 0x7F.

[Default] 0

[Reference]

[Example]



0x1B 0x6D

<ESC m>

Transmit the print mode in serial

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	m
	Hex	1B	6D
	Decimal	27	109

[Range]

[Description] Transmits the print mode configuration on the serial port.

[Notes]

- If the printer is using the parallel protocol, nothing will be transmitted.
- If the print mode setting is 0x04 the printer answer 0x30 0x30 (normal character).

[Default] Setting in the option register by means of the front keys.

[Reference]

[Example] The response is on two bytes. For example if you receive:

0x30, 0x32

it means that printing is in double height mode



0x1B 0x73

<ESC s>

Transmit the next character in serial

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII ESC s
 Hex 1B 73
 Decimal 27 115

[Range]

[Description] Transmits the next character it receives on the serial port.

[Notes]

[Default]

[Reference]

[Example] If you transmit:

0x1B 0x73 0x41

the last character, A (0x41), will not be printed but immediately transmitted on the serial line.



0x1B 0xFA

Print graphic bank (384 x 85 dots)

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	ESC	0xFA	n1	n2
	Hex	1B	FA	n1	n2
	Decimal	27	250	n1	n2

[Range] $0 \leq n1, n2 \leq 255$

[Description] Prints the graphics bank from flash.
n1 specifies the starting dot line ($1 \div 85$).
n2 specifies the number of lines to print.

[Notes] If $n1 + n2 > 85$ the printer only prints $85 - n1 + 1$ dot lines.

[Default]

[Reference]

[Example] To print the graphic bank from dotline 10 to dotline 40, send:
0x1B 0xFA 0x0A 0x1E



0x1D 0x24

<GS \$>

Set absolute shift into a graphic line

Valid for	mPLUS2			
	PLUS II (all models)			
	PLUS2			

[Format]	ASCII	GS	\$	n
	Hex	1D	24	n
	Decimal	29	36	n

[Range] $0 \leq n \leq 47$

[Description] Set the print beginning position into a graphic line based on the current value of n that indicate the byte number of shift from left margin.

[Notes] Settings outside the specified printable area are ignored.

[Default]

[Reference]

[Example]



0x1D 0x49

<GS I>

Transmit printer ID

Valid for mPLUS2
 PLUS II (all models)
 PLUS2

[Format] ASCII GS I n
 Hex 1D 49 n
 Decimal 29 73 n

[Range] $1 \leq n \leq 3$
 $49 \leq n \leq 51$

[Description] Transmits the printer ID specified by n follows:

n	PRINTER ID		SPECIFICATION
1, 49	Printer model ID	0x9F	PLUSII-USB
		0x1B	PLUS II-S PLUS II-S-0004 PLUS II-T PLUS II-C PLUS II-C-0004 PLUS II-P PLUS II ECO mPLUS2 PLUS2
2, 50	Not used		Fixed to 0x00
3, 51	ROM version ID		Depends on ROM version (4 char)

[Notes] This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]

[Reference]

[Example]



0x1D 0x55

<GS U>

Resets the printer parameters to default

Valid for	mPLUS2
	PLUS II (all models)
	PLUS2

[Format]	ASCII	GS	U
	Hex	1D	55
	Decimal	29	85

[Range]

[Description] Resets the printer parameters to the default configuration.

[Notes] After executing this command the printer is initialized.

[Default]

[Reference]

[Example]



0x1D 0x57

<GS W>

Prints n byte of a 204 dpi graphic line

Valid for	mPLUS2 PLUS II (all models) PLUS2				
[Format]	ASCII	GS	W	n	d1...dn
	Hex	1D	57	n	d1...dn
	Decimal	29	87	n	d1...dn
[Range]	1 ≤ n ≤ 48 0 ≤ d1...dn ≤ 255				
[Description]	Print n byte of a 200 dpi graphic line where: n specifies the number of byte to print; d1...dn specify the bytes to print.				
[Notes]	<ul style="list-style-type: none"> • If the bit image data input exceeds the number of dots to be printed on a line, the excess data are processed as printable characters. • d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot. • This command is not affected by the emphasized, double-strike, underline (etc.) print modes and the upside-down mode. 				
[Default]					
[Reference]					
[Example]	For printing 12 bytes the command sequence is: 0x1D 0x57 0x0C 0xFF 0x00 0xFF 0x00 0xFF 0x00 0xFF 0x00 0xFF 0x00 0xFF 0x00				

ESC/POS™ EMULATION



COMMANDS LISTED IN ALPHANUMERIC ORDER

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0x0D	<CR>	102
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0x1B 0x21	<ESC !>	80
0x1B 0x24	<ESC \$>	123
0x1B 0x26	<ESC &>	82
0x1B 0x2A	<ESC *>	116
0x1B 0x2D	<ESC ->	84
0x1B 0x30	<ESC 0>	97
0x1B 0x32	<ESC 2>	98
0x1B 0x33	<ESC 3>	99
0x1B 0x3D	<ESC =>	130
0x1B 0x40	<ESC @>	131
0x1B 0x44	<ESC D>	124
0x1B 0x45	<ESC E>	85
0x1B 0x47	<ESC G>	86
0x1B 0x4A	<ESC J>	103
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0x1B 0x4D	<ESC M>	87
0x1B 0x52	<ESC R>	88
0x1B 0x56	<ESC V>	89
0x1B 0x5C	<ESC \>	125
0x1B 0x61	<ESC a>	126
0x1B 0x64	<ESC d>	104



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0x1C 0x82		106
0x1C 0x83		107
0x1C 0x84		135
0x1D 0x21	<GS !>	95
0x1D 0x2A	<GS *>	118
0x1D 0x2A	<GS *>	137
0x1D 0x2F	<GS />	121
0x1D 0x42	<GS B>	96
0x1D 0x48	<GS H>	71
0x1D 0x49	<GS I>	139
0x1D 0x4C	<GS L>	127
0x1D 0x50	<GS P>	128
0x1D 0x57	<GS W>	129
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0x1D 0x68	<GS h>	73
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COMMANDS LISTED BY FUNCTION

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0x1B 0x52	<ESC R>	88
Select international character set		
0x1B 0x56	<ESC V>	89
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0x1B 0x74	<ESC t>	90
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BARCODE COMMANDS

0x1D 0x48

<GS H>

Select printing position of Human Readable Interpretation (HRI) characters

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

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

[Range]

- $0 \leq n \leq 3$
- $48 \leq n \leq 51$

[Description] Selects the printing position of HRI characters when printing barcodes. n selects the printing positions as follows:

n	FUNCTION
0, 48	Not printed
1, 49	Above the barcode
2, 50	Below the barcode
3, 51	Both above and below the barcode

[Notes]

[Default] n = 0

[Reference] 0x1D 0x6B

[Example]



0x1D 0x66

<GS f>

Select font for HRI characters

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	GS	f	n
	Hex	1D	66	n
	Decimal	29	102	n

[Range] n = 0, 1, 48, 49

[Description] Selects a font for the HRI characters used when printing a barcode. n selects a font from the following table:

n	FONT
0, 48	Font A
1, 49	Font B

[Notes] HRI characters are printed at the position specified by 0x1D 0x48.

[Default] n = 0

[Reference] 0x1D 0x48, 0x1D 0x6B

[Example]



0x1D 0x68

<GS h>

Set barcode height

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	GS	h	n
	Hex	1D	68	n
	Decimal	29	104	n

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

[Description] Sets the height of the barcode.
n specifies the number of vertical dots.

[Notes]

[Default] n = 162 (20.25 mm)

[Reference] 0x1D 0x6B

[Example]



0x1D 0x6B

<GS k>

Print barcode

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format 1]	ASCII	GS	k	m	NUL	[d1..dk]
	Hex	1D	6B	m	00	[d1..dk]
	Decimal	29	107	m	0	[d1..dk]

[Format 2]	ASCII	GS	k	m	n	[d1..dn]
	Hex	1D	6B	m	n	[d1..dn]
	Decimal	29	107	m	n	[d1..dn]

[Range]	Format 1:	$0 \leq m \leq 8$ $m = 20$
	Format 2:	$65 \leq m \leq 73$ $m = 90$

[Description] Select a barcode system and prints the barcode. m selects a barcode system as follows:

Format 1:

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0	UPC-A	$11 \leq k \leq 12$	$48 \leq d \leq 57$
1	UPC-E	$11 \leq k \leq 12$	$48 \leq d \leq 57$
2	EAN13 (JAN)	$12 \leq k \leq 13$	$48 \leq d \leq 57$
3	EAN8 (JAN)	$7 \leq k \leq 8$	$48 \leq d \leq 57$
4	CODE39	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
5	ITF	$1 \leq k$ (even number)	$48 \leq d \leq 57$
6	CODABAR	$1 \leq k$	$48 \leq d \leq 57, 65 \leq d \leq 68, 36, 43, 45, 46, 47, 58$
7	CODE93	$1 \leq k \leq 255$	$1 \leq d \leq 127$
8	CODE128	$2 \leq k \leq 255$	$1 \leq d \leq 127$
20	CODE32	$8 \leq k \leq 9$	$48 \leq d \leq 57$



Format 2:

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
65	UPC-A	$11 \leq n \leq 12$	$48 \leq d \leq 57$
66	UPC-E	$11 \leq n \leq 12$	$48 \leq d \leq 57$
67	EAN13 (JAN)	$12 \leq n \leq 13$	$48 \leq d \leq 57$
68	EAN8 (JAN)	$7 \leq n \leq 8$	$48 \leq d \leq 57$
69	CODE39	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
70	ITF	$1 \leq n \leq 255$	$48 \leq d \leq 57$
71	CODABAR	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d1 \leq 68, 36, 43, 45, 46, 47, 58$
72	CODE93	$1 \leq n \leq 255$	$0 \leq d \leq 127$
73	CODE128	$2 \leq n \leq 255$	$0 \leq d \leq 127$
90	CODE32	$8 \leq n \leq 9$	$48 \leq d \leq 57$

[Notes]

- If d is outside of the specified range, the printer prints the following message: “BARCODE GENERATOR IS NOT OK!” and processes the data which follows as normal data.
- If the horizontal size exceeds the printing area, the printer only feeds the paper.
- This command feeds as much paper as is required to print the barcode, regardless of the line spacing specified by 0x1B 0x32 or 0x1B 0x33.
- After printing the barcode, this command sets the print position to the beginning of the line.
- This command is not affected by print modes (emphasized, double-strike, underline or character size), except for upside-down and justification mode.

Format 1:

- This command ends with a NUL code.
- When the barcode system used is UPC-A or UPC-E, the printer prints the barcode data after receiving 11 (without check digit) or 12 (with check digit) bytes barcode data.
- When the barcode system used is EAN13, the printer prints the barcode data after receiving 12 (without check digit) or 13 (with check digit) bytes barcode data.
- When the barcode system used is EAN8, the printer prints the barcode data after receiving 7 (without check digit) or 8 (with check digit) bytes barcode data.
- The number of data for ITF barcode must be even numbers. When an odd number of data is input, the printer ignores the last received data.

Format 2:

- If n is outside of the specified range, the printer stops command processing and processes the following data as normal data.

When CODE93 is used the printer:

- prints an HRI character (o) as a start character at the beginning of the HRI character string
- prints an HRI character (o) as a stop character at the end of the HRI character string.
- The printer prints an HRI character (n) as a control character (00H to 1FH and 7FH).



When CODE128 is used:

- When using CODE128 in this printer, please note the following regarding data transmission:
- The top part of the barcode data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
- Special characters are defined by combining two characters “{” and one character. ASCII character “{” is defined by transmitting “{{” twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION		
	ASCII	HEX	DECIMAL
SHIFT	{S	7B, 53	123, 83
CODE A	{A	7B, 41	123, 65
CODE B	{B	7B, 42	123, 66
CODE C	{C	7B, 43	123, 67
FNC1	{1	7B, 31	123, 49
FNC2	{2	7B, 32	123, 50
FNC3	{3	7B, 33	123, 51
FNC4	{4	7B, 34	123, 52
{	{{	7B, 7B	123, 123

When UPC-E is used, introducing the barcode characters, the printer prints:

TRANSMITTED DATA											PRINTED DATA					
d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11						
0	0-9	0-9	0	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	0
0	0-9	0-9	1	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	1
0	0-9	0-9	2	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	2
0	0-9	0-9	3-9	0	0	0	0	0	0-9	0-9	d2	d3	d4	d10	d11	3
0	0-9	0-9	0-9	1-9	0	0	0	0	0	0-9	d2	d3	d4	d5	d11	4
0	0-9	0-9	0-9	0-9	1-9	0	0	0	0	5-9	d2	d3	d4	d5	d6	d11

[Default]

[Reference] 0x1D 0x48, 0x1D 0x66, 0x1D 0x68, 0x1D 0x77

[Example] Format 1: Example of Barcode 39 printing
1D 6B 04 54 45 53 54 00

Format 2: Example of Barcode 39 printing
1D 6B 45 04 54 45 53 54



0x1D 0x77

<GS w>

Set barcode width

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	GS	w	n
	Hex	1D	77	n
	Decimal	29	119	n

[Range]	0x1 ≤ n ≤ 0x6
	0x81 ≤ n ≤ 0x86

[Description] Sets the horizontal size of the barcode. n specifies the barcode width (referred to the narrow bar) as follows:

n	MODULE WIDTH (mm)
0x1, 0x81	0.125
0x2, 0x82	0.25
0x3, 0x83	0.375
0x4, 0x84	0.5
0x5, 0x85	0.625
0x6, 0x86	0.75

If barcode “ CODE128 the wide and narrow bar ratio is the following:

	n	WIDE/NARROW BAR RATIO
If n < 0x80	0x1, 0x2, 0x3, 0x4, 0x5, 0x6	3:1
	0x81	3:1
	0x82	2,5:1
	0x83	2,33:1
	0x84	2,25:1
	0x85	3:1
If n > 0x80	0x86	3:1

[Notes]

[Default] n = 3

[Reference] 0x1D 0x6B

[Example]





CHARACTER COMMANDS

0x1B 0x20

<ESC SP>

Set right-side character spacing

Valid for	mPLUS2			
	PLUS4			
	PLUS II-USB			
	PLUS2			

[Format]	ASCII	ESC	SP	n
	Hex	1B	20	n
	Decimal	27	32	n

[Range] 0 ≤ n ≤ 255

[Description] Sets the character spacing for the right side of the character to [n x horizontal or vertical motion units].

[Notes]

- The right character spacing for double-width mode is twice the normal value. When the characters are enlarged, the right side character spacing is m (2 or 8) times the normal value.
- The horizontal and vertical motion units are specified by 0x1D 0x50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
- The 0x1D 0x50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
- The maximum right side character spacing is 32 mm.
- In standard mode, the horizontal motion unit is used.

[Default] n = 0

[Reference] 0x1D 0x50

[Example]



0x1B 0x21

<ESC !>

Set printing mode

Valid for
 mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format] ASCII ESC ! n
 Hex 1B 21 n
 Decimal 27 33 n

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

[Description] Selects printing mode using n (see tables below):

BIT	OFF/ON	HEX	DECIMAL	FUNCTION	13/17 dpi	17/22 dpi
0	Off	00	0	Character font A selected	16 x 24	12 x 24
	On	01	1	Character font B selected	12 x 24	9 x 24
1	-	-	-	Undefined		
2	-	-	-	Undefined		
3	Off	00	0	Expanded mode not selected		
	On	08	8	Expanded mode selected		
4	Off	00	0	Double-height mode not selected		
	On	10	16	Double-height mode selected		
5	Off	00	0	Double-width mode not selected		
	On	20	32	Double-width mode selected		
6	Off	00	0	Italic mode not selected		
	On	40	64	Italic mode selected		
7	Off	00	0	Underline mode not selected		
	On	80	128	Underline mode selected		



PLUS4

BIT	OFF/ON	HEX	DECIMAL	FUNCTION	11/15 dpi	15/20 dpi	20/15 dpi
0	Off	00	0	Character font A selected	18 x 24	14 x 24	10 x 24
	On	01	1	Character font selected	14 x 24	10 x 24	-
1	-	-	-	Undefined			
2	-	-	-	Undefined			
3	Off	00	0	Expanded mode not selected			
	On	08	8	Expanded mode selected			
4	Off	00	0	Double-height mode not selected			
	On	10	16	Double-height mode selected			
5	Off	00	0	Double-width mode not selected			
	On	20	32	Double-width mode selected			
6	Off	00	0	Italic mode not selected			
	On	40	64	Italic mode selected			
7	Off	00	0	Underline mode not selected			
	On	80	128	Underline mode selected			

[Notes]

- The printer can underline all characters, but cannot underline the spaces set by 0x09, 0x1B 0x24, 0x1B 0x5C and 90°/270° rotated characters.
- This command resets the left and right margin at default value (see 0x1D 0x4C, 0x1D 0x57).
- 0x1B 0x45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
- 0x1B 0x2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.
- 0x1D 0x21 can also be used to select character height/width. However, the last-received setting command is the effective one.

[Default]

n = 0

[Reference]

0x1B 0x2D, 0x1B 0x45, 0x1D 0x21

[Example]



0x1B 0x26

<ESC &>

Defines user-defined characters

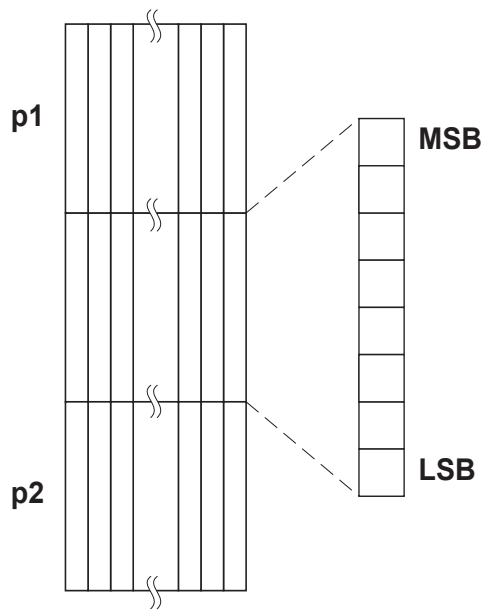
Valid for	mPLUS2 PLUS II-USB PLUS2																		
[Format]	<table border="1"> <tr> <td>ASCII</td> <td>ESC</td> <td>&</td> <td>y</td> <td>c1</td> <td>c2</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>26</td> <td>y</td> <td>c1</td> <td>c2</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>37</td> <td>y</td> <td>c1</td> <td>c2</td> </tr> </table>	ASCII	ESC	&	y	c1	c2	Hex	1B	26	y	c1	c2	Decimal	27	37	y	c1	c2
ASCII	ESC	&	y	c1	c2														
Hex	1B	26	y	c1	c2														
Decimal	27	37	y	c1	c2														
[Range]	<p>y = 3 $32 \leq c1 \leq c2 \leq 126$ $0 \leq x \leq 16$ (Font (18 x 24)) $0 \leq x \leq 13$ (Font (13 x 24)) $0 \leq x \leq 10$ (Font 10 x 24) $0 \leq d1 \dots d (y \times xk) \leq 255$ $k = c2 - c1 + 1$</p>																		
[Description]	<p>Defines user-defined characters. Y specifies the number of bytes in the vertical direction. C1 specifies the beginning character code for the definition, and C2 specifies the final code. X specifies the number of dots in the horizontal direction.</p>																		
[Notes]	<ul style="list-style-type: none"> • The allowable character code range is from ASCII 0x20 (32) to 0x7E (126) (95 characters). • It is possible to define multiple characters for consecutive character codes. If only one character is desired, use $c1 = c2$. • if $c2 < c1$, the command is not executed. • d is the dot data for the characters. The dot pattern is in the horizontal direction starting from the left. Any remaining dots on the right remain blank. • The data to define a user-defined character is (X × Y) bytes. • To print a dot, set the corresponding bit to 1; to not have it print, set to 0. • This command can define different user-defined character patterns for each font. To select the font, use 0x1B 0x21. • The user-defined character definitions are cleared when: 0x1B 0x40 or 0x1D 0x2A are executed or the printer is reset or the power shut off. 																		
[Default]	Internal character set.																		
[Reference]																			



[Example]

18 dots (11 cpi)

14 dots (15 cpi)





0x1B 0x2D

<ESC ->

Turn underline mode on/off

Valid for	mPLUS2			
	PLUS4			
	PLUS II-USB			
	PLUS2			

[Format]	ASCII	ESC	-	n
	Hex	1B	2D	n
	Decimal	27	45	n

[Range]	$0 \leq n \leq 2$
	$48 \leq n \leq 50$

[Description]	Turns underline mode on or off, based on the following values of n:
	n = 0, 48 Turns off underline mode
	n = 1, 49 Turns on underline mode (1-dot thick)
	n = 2, 50 Turns on underline mode (2-dot thick)

[Notes]	<ul style="list-style-type: none"> • The printer can underline all characters, but cannot underline the space and right-side character spacing (command 0x09). • The printer cannot underline 90°/270° rotated characters and white/black inverted characters. • When underline mode is turned off by setting the value of n to 0 or 48, the data which follows is not underlined. • Underline mode can also be turned on or off by using 0x1B 0x21. Note, however, that the last received command is the effective one.
---------	--

[Default]	n = 0
-----------	-------

[Reference]	0x1B 0x21
-------------	-----------

[Example]	
-----------	--



0x1B 0x45

<ESC E>

Turn emphasized mode on/off

Valid for	mPLUS2			
	PLUS4			
	PLUS II-USB			
	PLUS2			

[Format]	ASCII	ESC	E	n
	Hex	1B	45	n
	Decimal	27	69	n

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

[Description] Turns expanded mode on/off.

- When the LSB of n is 0, the expanded mode is off.
- When the LSB of n is 1, the expanded mode is on.

[Notes]

- Only the LSB of n is effective.
- 0x1B 0x21 also turns on and off the expanded mode. However, the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1B 0x47

<ESC G>

Turn double-strike mode on/off

Valid for	mPLUS2			
	PLUS4			
	PLUS II-USB			
	PLUS2			

[Format]	ASCII	ESC	G	n
	Hex	1B	47	n
	Decimal	27	71	n

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

[Description] Turns double-strike mode on or off.

- When the LSB of n is 0, the double-strike mode is off.
- When the LSB of n is 1, the double-strike mode is on.

[Notes]

- Only the LSB of n is effective.
- Printer output is the same in double-strike and emphasized mode.

[Default] n = 0

[Reference] 0x1B 0x45

[Example]



0x1B 0x4D

<ESC M>

Select character font

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	M	n
Hex	1B	4D	n
Decimal	27	77	n

[Range] n = 0, 1, 48, 49

[Description] Selects characters font.

n	FUNCTION
0, 48	Character font A (14x24) selected
1, 49	Character font B (10x24) selected

PLUS4

n	FUNCTION
0, 48	Character font A selected (see user manual)
1, 49	Character font B selected (see user manual)

[Notes]

[Reference]

[Example]



0x1B 0x52

<ESC R>

Select international character set

Valid for
 mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format] ASCII ESC R n
 Hex 1B 52 n
 Decimal 27 82 n

[Range] $0 \leq n \leq 10$

[Description] Select the international character set n according to the table below:

	HEX	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
n	CHARACTER SET												
0	U.S.A.	#	\$	@	[\]	^	`	{		}	~
1	France	#	\$	à	°	ç	§	^	`	é	ù	è	“
2	Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	b
3	United Kingdom	£	\$	@	[\]	^	`	{		}	~
4	Denmark I	#	\$	@	Æ	Æ	Å	^	`	æ	f	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	\$	@	i	Ñ	¿	^	`	“	ñ	}	~
8	Japan	#	\$	@	[¥]	^	`	{		}	~
9	Norway	#	¤	É	Æ	Æ	Å	Ü	é	æ	f	å	ü
10	Denmark II	#	\$	É	Æ	Æ	Å	Ü	é	æ	f	å	ü

[Notes]

[Default] n = 0

[Reference]

[Example]



0x1B 0x56

<ESC V>

Set 90° rotated print mode

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	V	n
Hex	1B	56	n
Decimal	27	86	n

[Range]

- $0 \leq n \leq 1$
- $48 \leq n \leq 49$

[Description] Turns 90° rotation mode on/off. n is used as follows:

n	FUNCTION
0, 48	Disable 90° rotation mode
1, 49	Enable 90° rotation mode

[Notes]

- When underlined mode is turned on, the printer does not underline 90° rotated characters. All the same it's possible select the underline mode.
- Double-width and double-height commands in 90° rotation mode enlarge characters in the opposite directions from double-height and double-width commands in normal mode.

[Default] n = 0

[Reference] 0x1B 0x21, 0x1B 0x2D

[Example]



0x1B 0x74

<ESC t>

Select characters code table

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n

[Range] **PLUSII-USB**

n = 0, 2, 3, 4, 5, 19, 255

mPLUS2
PLUS4
PLUS2

1 ≤ n ≤ 53, n = 255

[Description] Select a page n from the character code table, as follows:

mPLUS2
PLUS4
PLUS2

n	PAGE
0	PC437 - U.S.A., Standard Europe
1	Katakana
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian/French
5	PC865 - Nordic
11	PC851 - Greek on request
12	PC853 - Turkish on request
13	PC857 - Turkish on request
14	PC737 - Greek on request
15	ISO8859-7 - Greek on request
16	WPC1252
17	PC866 - Cyrillic 2
18	PC852 - Latin 2 on request
19	PC858 for Euro symbol at position 213



n	PAGE
20	KU42 - Thai on request
21	TIS11 - Thai on request
26	TIS18 - Thai on request
30	TCVN_3 - Vietnamese on request
31	TCVN_3 - Vietnamese on request
32	PC720 - Arabic on request
33	WPC775 - Baltic Rim on request
34	PC855 - Cyrillic on request
35	PC861 - Icelandic on request
36	PC862 - Hebrew
37	PC864 - Arabic
38	PC869 - Greek on request
39	ISO8859-2 - Latin 2 on request
40	ISO8859-15 - Latin 9 on request
41	PC1098 - Farci on request
42	PC1118 - Lithuanian on request
43	PC1119 - Lithuanian on request
44	PC1125 - Ukranian on request
45	WPC1250 - Latin 2
46	WPC1251 - Cyrillic
47	WPC1253 - Greek
48	WPC1254 - Turkish
49	WPC1255 - Hebrew
50	WPC1256 - Arabic
51	WPC1257 - Baltic Rim
52	WPC1258 - Vietnamese
53	KZ1048 - Kazakhstan on request
255	Space page

PLUSII-USB

n	PAGE
0	PC437 - U.S.A., Standard Europe
2	PC850 - Multilingual
3	PC860 - Portuguese
4	PC863 - Canadian-French
5	PC865 - Nordic



19	PC858 for Euro symbol at position 213
255	Space page

[Notes] • The tables are selectable only if the code pages are present on the machine. By selecting a code page not present on the machine, the code page remains the one currently in use.

mPLUS2

PLUS4

PLUS2

- Make sure to select the font type "INTERNATIONAL" with the command 0x1C 0x25 or with the parameter "FONT TYPE" in the setup.

[Default] n = 0

[Reference] 0x1C 0x25

[Example] For printing Euro symbol (€), the command sequence is: 1B, 74, 13, D5

0x1B 0x7B

<ESC {>

Set / cancel upside-down character printing

Valid for
 mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format] ASCII ESC { n
 Hex 1B 7B n
 Decimal 27 123 n

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

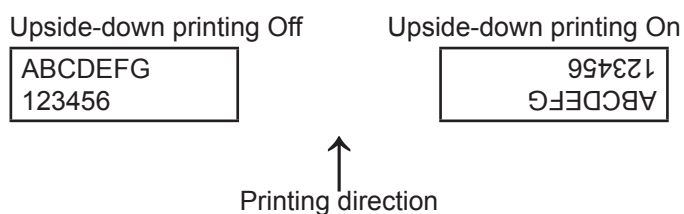
[Description] Turns upside-down printing mode on or off.
 • When the LSB of n is 0, the upside-down printing mode is off.
 • When the LSB of n is 1, the upside-down printing mode is on.

[Notes] • Only the LSB of n is effective.
 • This command is valid only if entered at the beginning of a line.
 • In upside-down printing mode, the printer rotates the line to be printed 180° and then prints it.

[Default] n = 0

[Reference]

[Example]





0x1C 0x25

<FS %>

Select the font type

Valid for mPLUS2
 PLUS4
 PLUS2

[Format] ASCII FS % n
 Hex 1C 25 n
 Decimal 28 37 n

[Range] n= 0, 1, 2

[Description] Select the font type.

n	FONT TYPE
0	International
1	Chinese GB18030
2	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese (GB18030-2000) or Korean (PC949).
- The selection made by this command is stored in the RAM memory. Turn off the machine reverts to the default value, that can be set with the parameter "FONT TYPE" in the setup.
- After selecting the font type "INTERNATIONAL" it must be selected the desired character code table using the command 0x1B 0x74.

[Default]

[Reference] 0x1B 0x74, See the command manual "Chinese fonts management".

[Example]



0x1D 0x21

<GS !>

Select character size

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	GS	!	n
	Hex	1D	21	n
	Decimal	29	33	n

[Range]	$0 \leq n \leq 7$
	$16 \leq n \leq 23$
	$32 \leq n \leq 39$
	$48 \leq n \leq 55$
	$64 \leq n \leq 71$
	$80 \leq n \leq 87$
	$96 \leq n \leq 103$
	$112 \leq n \leq 119$

[Description] Selects character height and width, as follows:

- Bits 0 to 3: to select character height (see table 2).
- Bits 4 to 7: to select character width (see table 1).

Table 1 Select character width

HEX	DECIMAL	WIDTH
00	0	1 (normal)
10	16	2 (width = 2x)
20	32	3 (width = 3x)
30	48	4 (width = 4x)
40	64	5 (width = 5x)
50	80	6 (width = 6x)
60	96	7 (width = 7x)
70	112	8 (width = 8x)

Table 2 Select character height

HEX	DECIMAL	HEIGHT
00	0	1 (normal)
01	1	2 (height = 2x)
02	2	3 (height = 3x)
03	3	4 (height = 4x)
04	4	5 (height = 5x)
05	5	6 (height = 6x)
06	6	7 (height = 7x)
07	7	8 (height = 8x)

[Notes]

- If n falls outside the defined range, this command is ignored.
- 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one.

[Default] n = 0

[Reference] 0x1B 0x21

[Example]



0x1D 0x42

<GS B>

Turn white/black reverse printing mode on/off

Valid for	mPLUS2 PLUS4 PLUS II-USB PLUS2												
[Format]	<table border="1"> <tr> <td>ASCII</td> <td>GS</td> <td>B</td> <td>n</td> </tr> <tr> <td>Hex</td> <td>1D</td> <td>42</td> <td>n</td> </tr> <tr> <td>Decimal</td> <td>29</td> <td>66</td> <td>n</td> </tr> </table>	ASCII	GS	B	n	Hex	1D	42	n	Decimal	29	66	n
ASCII	GS	B	n										
Hex	1D	42	n										
Decimal	29	66	n										
[Range]	$0 \leq n \leq 255$												
[Description]	<p>Turns white/black reverse printing mode on or off.</p> <ul style="list-style-type: none"> • When the LSB of n is 0, white/black reverse printing is turned off. • When the LSB of n is 1, white/black reverse printing is turned on. 												
[Notes]	<ul style="list-style-type: none"> • Only the LSB of n is effective. • This command is available for both built-in and user-defined characters. • This command does not affect bit image, downloaded bit image, barcode, HRI characters and spacing skipped by 0x09, 0x1B 0x24 and 0x1B 0x5C. • This command does not affect white space between lines. • White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it will be disabled (but not cancelled) when white/black reverse mode is selected. 												
[Default]	n = 0												
[Reference]													
[Example]													



LINE SPACING COMMANDS

0x1B 0x30

<ESC 0>

Select 1/8-inch line spacing

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	ESC	0
	Hex	1B	30
	Decimal	27	48

[Range]

[Description] Selects 1/8-inch line spacing.

[Notes]

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33

[Example]



0x1B 0x32

<ESC 2>

Select 1/6-inch line spacing

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	2
Hex	1B	32
Decimal	27	50

[Range]

[Description] Selects 1/6-inch line spacing.

[Notes]

[Default]

[Reference] 0x1B 0x30, 0x1B 0x33

[Example]



0x1B 0x33

<ESC 3>

Set line spacing using minimum units

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	ESC	3	n
	Hex	1B	33	n
	Decimal	27	51	n

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

[Description] Sets line spacing to [n * (vertical or horizontal motion unit)] inches.

[Notes]

- The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current line spacing.
- The 0x1D 0x50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.
- In standard mode, the vertical motion unit is used.
- The maximum spacing is 32,5 mm.

[Default] n = 64 (1/6 inch)

[Reference] 0x1B 0x32, 0x1D 0x50

[Example]





PRINT COMMANDS

0x0A

<LF>

Print and line feed

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	LF
	Hex	0A
	Decimal	10

[Range]

[Description] Prints the data in the buffer and feeds one line based on the current line spacing.

[Notes]

- Sets the print position to the beginning of the line.
- If the buffer is empty, the printing feeds of (character height + spacing gap) dot. (default 32 dot).

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33, 0x0D

[Example]



0x0D

<CR>

Print and carriage return

Valid for mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format] ASCII CR
 Hex 0D
 Decimal 13

[Range]

[Description] When autofeed is “CR enabled”, this command functions in the same way as 0x0A, otherwise it is disregarded.

[Notes] Sets the print position to the beginning of the line.

[Default] See “Autofeed in setup” parameter.

[Reference] 0x0A

[Example]



0x1B 0x4A

<ESC J>

Print and paper feed

Valid for	mPLUS2 PLUS4 PLUS II-USB PLUS2
-----------	---

[Format]	ASCII	ESC	J	n
	Hex	1B	4A	n
	Decimal	27	74	n

[Range]	$0 \leq n \leq 255$
---------	---------------------

[Description]	Prints the data in the print buffer and feeds the paper [n * (vertical or horizontal motion unit)] inches.
---------------	---

[Notes]	<ul style="list-style-type: none">• After printing has been completed, this command sets the print starting position to the beginning of the line.• The paper feed amount set by this command does not affect the values set by 0x1B 0x32 or 0x1B 0x33.• The horizontal and vertical motion units are specified by 0x1D 0x50.• 0x1D 0x50 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.• In standard mode, the vertical motion unit is used.• The maximum paper feed amount is 500 mm.
---------	---

[Default]	
-----------	--

[Reference]	0x1D 0x50
-------------	-----------

[Example]	
-----------	--



0x1B 0x64

<ESC d>

Print and feed paper n lines

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	ESC	d	n
	Hex	1B	64	n
	Decimal	27	100	n

[Range] 0 ≤ n ≤ 255

[Description] Prints the data in the print buffer and feeds the paper n rows.

[Notes]

- n rows paper feed is equivalent to (n x char height + line spacing set).
- Sets the print starting position at the beginning of the line.
- This command does not affect the line spacing set by 0x1B 0x32 or 0x1B 0x33.
- The maximum paper feed amount is 254 rows. Even if a paper feed amount of more than 254 rows is set, the printer feeds the paper only 254 rows.

[Default]

[Reference] 0x1B 0x32, 0x1B 0x33

[Example]



0x1B 0xFF

Receive the graphic page from the communication port

Valid for	mPLUS2
	PLUS4
	PLUS2

[Format]	ASCII	ESC	0xFF	n	nL	nH
	Hex	1B	FF	n	nL	nH
	Decimal	27	255	n	nL	nH

[Range]

$n = 1, 2$
 $0 \leq nL$
 $nH \leq 255$

[Description] Receive $[nL + (nH \times 256)]$ word from the communication port and save them in the flash bank specified by n as shown in the following table:

n	FUNCTION
1	Save logo in the flash bank 1
2	Save logo in the flash bank 2

- [Notes]
- For serial communication, set parameter “RS232 handshaking” to “Hardware”.
 - The number of received data bytes is $[nL + (nH \times 256)] \times 2$.
 - Every word is received first as MSByte and then as LSByte.

mPLUS2, PLUS2

- In the horizontal dotline there are 24 words.
- If $[nL + (nH \times 256)]$ is more than 32736, the following data are processed as normal data.
- The flash bank for graphic print dimensions are: 384 horizontal dots (48 bytes/line) \times 682 vertical dots (32736 bytes).

PLUS4

- In the horizontal dotline there are 52 words.
- If $[nL + (nH \times 256)]$ is more than 65520, the following data are processed as normal data.
- The flash bank for graphic print dimensions are: 832 horizontal dots (104 bytes/line) \times 630 vertical dots (65520 bytes).

[Default]

[Reference]

[Example]



0x1C 0x82

Print date

Valid for	PLUS II ECO		
-----------	-------------	--	--

[Format]	ASCII	FS	0x82
	Hex	1C	82
	Decimal	28	130

[Range]

[Description] Prints date in the format specified by the command 0x1C 0x84 with the parameter n='D'.

[Notes]

[Default] "dd/mm/yy"

[Reference] 0x1C 0x83, 0x1C 0x84

[Example]



0x1C 0x83

Print time

Valid for	PLUS II ECO		
[Format]	ASCII	FS	0x83
	Hex	1C	83
	Decimal	28	131
[Range]			
[Description]	Prints date in the format specified by the command 0x1C 0x84 with the parameter n='T'.		
[Notes]			
[Default]	"hh:mm:ss"		
[Reference]	0x1C 0x82, 0x1C 0x84		
[Example]			



STATUS COMMAND

0x10 0x04

<DLE EOT>

Real-time status transmission

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	DLE	EOT	n
Hex	10	04	n
Decimal	16	4	n

[Range] $1 \leq n \leq 4$; $n = 20$

[Description] Transmits the selected printer status specified by n in real time according to the following parameters:

- n = 1 transmit printer status
- n = 2 transmit off-line status
- n = 3 transmit error status
- n = 4 transmit paper roll sensor status
- n = 20 transmit full status

[Notes] Immediately executed even when the data buffer is full.
 This status is transmitted whenever data sequence 0x10 0x04 n ($1 \leq n \leq 4$) is received.

[Default]

[Reference]

[Example] n=1: Printer status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	On-line
	On	08	8	Off-line
4	On	10	16	Not used. Fixed to On
5	-	-	-	Undefined
6	Off	00	0	Key realised
	On	40	64	Key pressed
7	Off	00	0	Not used. Fixed to Off



n=2: Off-line status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Paper is not being fed by FEED key
	On	08	8	Paper is being fed by FEED key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	No paper end stop
	On	20	32	Printing stops due to paper end
6	Off	00	0	No error
	On	40	64	Error
7	Off	00	0	Not used. Fixed to Off

PLUS II-USB with cover open sensor (optional)

n=2: off-line status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Cover closed
	On	04	4	Cover open
3	Off	00	0	Paper is not being fed by FEED key
	On	08	8	Paper is being fed by FEED key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	No paper end stop
	On	20	32	Printing stops due to paper end
6	Off	00	0	No error
	On	40	64	Error
7	Off	00	0	Not used. Fixed to Off



n=3: Error status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Not used. Fixed to Off
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Not used. Fixed to Off
6	Off	00	0	No auto-recoverable error
	On	40	64	Auto-recoverable error (over-temperature, parity, wrong command)
7	Off	00	0	Not used. Fixed to Off

n=4: Paper roll sensor status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Not used. Fixed to Off
3	Off	00	0	Not used. Fixed to Off
4	On	10	16	Not used. Fixed to On
5, 6	Off	00	0	Paper present
	On	60	96	Paper not present
7	Off	00	0	Not used. Fixed to Off

n=20: FULL status (6 bytes)

1° Byte = 0x10 (DLE), 2° Byte = 0x0F, 3° Byte = paper status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Not used. Fixed to Off
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED



4° Byte = User status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	Off	00	0	Not used. Fixed to Off
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	-	-	-	Undefined
	-	-	-	Undefined
7	-	-	-	RESERVED

PLUS II-USB with cover open sensor (optional)

4° Byte = User status

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	Off	00	0	Cover closed
	On	02	2	Cover open
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	-	-	-	Undefined
7	-	-	-	RESERVED



5° Byte = Error status recoverable

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	Head temperature ok
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	-	-	-	RESERVED
7	-	-	-	Undefined
	-	-	-	Undefined

6°Byte = Error status unrecoverable

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	-	-	-	Undefined
1	-	-	-	RESERVED
2	-	-	-	Undefined
3	-	-	-	Undefined
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	Undefined
7	-	-	-	RESERVED



0x1B 0x76

<ESC v>

Transmit paper sensor status

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	v
Hex	1B	76
Decimal	27	118

[Range]

[Description] When this command is received, transmit the current status of the paper sensor.

[Notes] This command is executed immediately, even when the data buffer is full (Busy). The status to be transmitted is shown in the table below:

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	-	-	-	Undefined
1	-	-	-	Undefined
2,3	Off	00	0	Paper end sensor: paper present
	On	0C	12	Paper end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Default]

[Reference] 0x10 0x04

[Example]





0x1D 0x72

<GS r>

Transmit status

Valid for mPLUS2
PLUS4
PLUS II-USB
PLUS2

[Format] ASCII GS r n
Hex 1D 72 n
Decimal 29 114 n

[Range] n = 1, 49

[Description] Transmit the status specified by n as follows:

n	FUNCTION
1, 49	Transmit paper sensor status (as for 0x1B 0x76)

Paper sensor status (n = 1, 49)

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	-	-	-	Undefined
1	-	-	-	Undefined
2,3	Off	00	0	Paper end sensor: paper present
	On	0C	12	Paper end sensor: paper not present
4	Off	00	0	Not used. Fix to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fix to Off

[Notes] This command is executed when the data is processed in the data buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on data buffer status.

[Default]

[Reference] 0x10 0x04, 0x1B 0x76

[Example]



BIT IMAGE COMMANDS

0x1B 0x2A

<ESC *>

Select image print mode

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	*	m	nL	nH	d1...dk
Hex	1B	2A	m	nL	nH	d1...dk
Decimal	27	42	m	nL	nH	d1...dk

[Range]

- m = 0, 1, 32, 33
- 0 ≤ nL ≤ 255
- 0 ≤ nH ≤ 3
- 0 ≤ d ≤ 255

[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

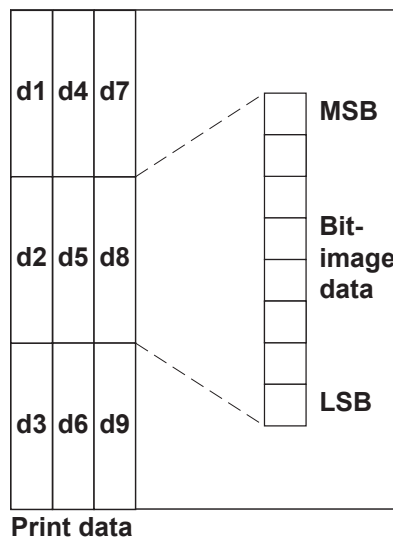
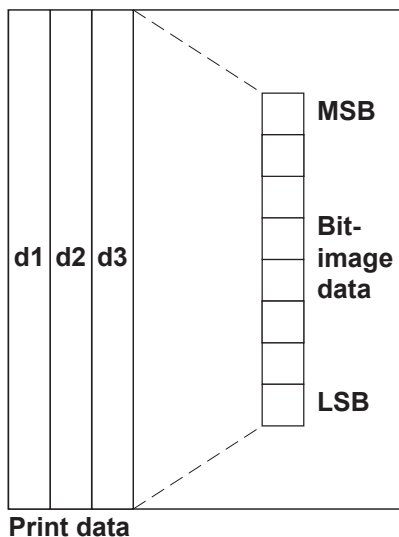
m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION (*1)	
		N. DOTS	DPI	DPI	N. DATA (k)
0	8 dot single density	8	67	100	nL + nH x 256
1	8 dot double density	8	67	200	nL + nH x 256
32	24 dot single density	24	200	100	(nL + nH x 256) x 3
33	24 dot double density	24	200	200	(nL + nH x 256) x 3

- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH * 256.
 - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
 - d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.
 - If the value of m is outside the specified range, nL and data following it are processed as normal data.
 - If the width of the printing area set by 0x1D 0x4C and 0x1D 0x57 is less than the width required by the data set using 0x1B 0x2A, the excess data are ignored.
 - To print the bit image use 0x0A 0x0D, 0x1B 0x4A or 0x1B 0x64.
 - After printing a bit image, the printer returns to normal data processing mode.
 - This command is not affected by the emphasized, double-strike, underline (etc.) print modes, except for the upside-down mode.
 - The relationship between the image data and the dots to be printed is as follows:



8-dot bit image

24-dot bit image



[Default]

[Reference]

[Example]



0x1D 0x2A

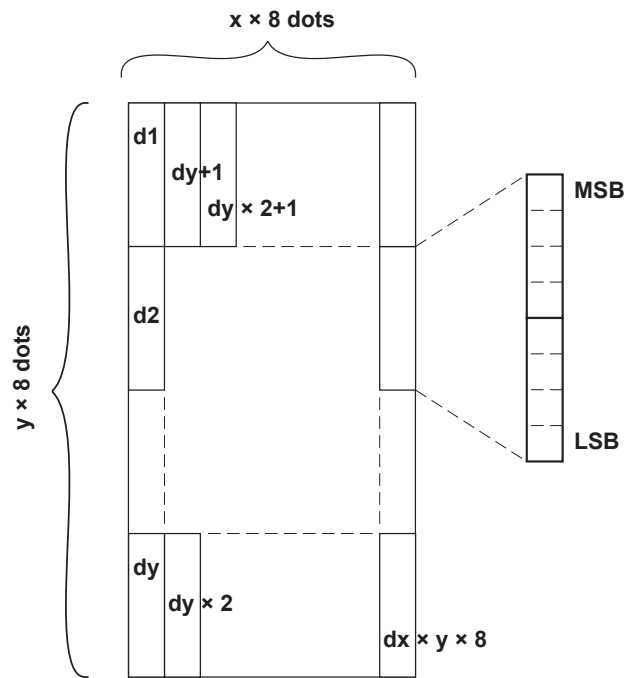
<GS *>

Define downloaded bit image

Valid for	mPLUS2 PLUS4 PLUS2					
[Format]	ASCII	GS	*	x	y	d1...d(x × y × 8)
	Hex	1D	2A	x	y	d1...d(x × y × 8)
	Decimal	29	42	x	y	d1...d(x × y × 8)
[Range]	1 ≤ x ≤ 255 1 ≤ y ≤ 48 x × y ≤ 1536 0 ≤ d ≤ 255					
[Description]	<p>Defines a downloaded bit image using the number of dots specified by x and y.</p> <ul style="list-style-type: none"> • x specifies the number of dots in the horizontal direction. • y specifies the number of dots in the vertical direction. 					
[Notes]	<ul style="list-style-type: none"> • The number of dots in the horizontal direction is x × 8, in the vertical direction it is y × 8. • If 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: <ol style="list-style-type: none"> 1) 0x1B 0x40 is executed. 2) 0x1B 0x26 is executed. <p>Printer is reset or the power is turned off.</p>					



- The following figure shows the relationship between the downloaded bit image and the printed data.



[Reference]

[Example]





0x1D 0x2F

<GS />

Print downloaded bit image

Valid for	mPLUS2
	PLUS4
	PLUS2

[Format]	ASCII	GS	/	m
	Hex	1D	2F	m
	Decimal	29	47	m

[Range]

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

m	MODE
0,48	Normal
1, 49	Double width
2, 50	Double height
3, 51	Quadruple

- [Notes]
- This command is ignored if a downloaded bit image has not been defined.
 - In standard mode, this command is effective only when there is no data in the print buffer.
 - This command has no effect in the print modes (emphasized, underline, character size, or white/black reverse printing), except for upside-down printing 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 0x1D 0x4C and 0x1D 0x57 is less than one line in 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] 0x1D 0x2A

[Example]



PRINT POSITION COMMAND

0x09

<HT>

Horizontal tab

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	HT
	Hex	09
	Decimal	9

[Range]

[Description] Moves the print position to the next horizontal tab position.

[Notes]

- Ignored unless the next horizontal tab position has been set.
- If the command is received when the printing position is at the right margin, the printer executes print buffer full printing and horizontal tab processing from the beginning of the next line.
- Horizontal tab positions are set using 0x1B 0x44.

[Default]

[Reference] 0x1B 0x44

[Example]



0x1B 0x24

<ESC \$>

Set absolute printing position

Valid for	mPLUS2 PLUS II-USB PLUS2				
[Format]	ASCII	ESC	\$	nL	nH
	Hex	1B	24	nL	nH
	Decimal	27	36	nL	nH
[Range]	0 ≤ nL ≤ 255 0 ≤ nH ≤ 255				
[Description]	Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed. The distance from the beginning of the line to the print position is [(nL + nH * 256) * (vertical or horizontal motion unit)] inches.				
[Notes]	<ul style="list-style-type: none"> • Settings outside the specified printable area are ignored. • The horizontal and vertical motion unit are specified by 0x1D 0x50. • 0x1D 0x50 can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount. • In standard mode, the horizontal motion unit (x) is used. • If the setting is outside the printing area width, it sets the absolute print position, but the left or right margin is set at default value. 				
[Default]					
[Reference]	0x1B 0x5C, 0x1D 0x50				
[Example]					



0x1B 0x44

<ESC D>

Set horizontal tab position

Valid for	mPLUS2 PLUS4 PLUS II-USB PLUS2															
[Format]	<table border="1"> <tr> <td>ASCII</td> <td>ESC</td> <td>D</td> <td>n1...nk</td> <td>NUL</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>44</td> <td>n1...nk</td> <td>00</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>68</td> <td>n1...nk</td> <td>0</td> </tr> </table>	ASCII	ESC	D	n1...nk	NUL	Hex	1B	44	n1...nk	00	Decimal	27	68	n1...nk	0
ASCII	ESC	D	n1...nk	NUL												
Hex	1B	44	n1...nk	00												
Decimal	27	68	n1...nk	0												
[Range]	$1 \leq n \leq 255$ $0 \leq k \leq 32$															
[Description]	<p>Sets horizontal tab positions</p> <ul style="list-style-type: none"> n specifies the column number for setting a horizontal tab position calculated from the beginning of the line. k indicates the total number of horizontal tab positions to be set. 															
[Notes]	<ul style="list-style-type: none"> The horizontal tab position is stored as a value of [character width x n] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters. This command cancels previous tab settings. When setting n = 8, the print position is moved to column 9 sending 0x09. Up to 32 tab positions (k = 32) can be set. Data exceeding 32 tab positions is processed as normal data. Send [n] k in ascending order and place a 0 NUL code at the end. When [n] k is less than or equal to the preceding value [n] k-1, the setting is complete and the data which follows is processed as normal data. 0x1B 0x44 00 cancels all horizontal tab positions. The previously specified horizontal tab position does not change, even if the character width is modified. 															
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) for Font A when the right-side character spacing is 0.															
[Reference]	0x09															
[Example]																



0x1B 0x5C

<ESC I>

Set relative printing position

Valid for	mPLUS2 PLUS4 PLUS II-USB PLUS2															
[Format]	<table border="1"> <tr> <td>ASCII</td> <td>ESC</td> <td>\</td> <td>nL</td> <td>nH</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>5C</td> <td>nL</td> <td>nH</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>92</td> <td>nL</td> <td>nH</td> </tr> </table>	ASCII	ESC	\	nL	nH	Hex	1B	5C	nL	nH	Decimal	27	92	nL	nH
ASCII	ESC	\	nL	nH												
Hex	1B	5C	nL	nH												
Decimal	27	92	nL	nH												
[Range]	$0 \leq nL \leq 255$ $0 \leq nH \leq 255$															
[Description]	<p>Sets the print starting position based on the current position by using the horizontal or vertical motion unit.</p> <p>Sets the distance from the current position to $[(nL + nH * 256) * (\text{horizontal or vertical motion unit})]$.</p>															
[Notes]	<ul style="list-style-type: none"> It's possible to print further on the right margin set for every font. In this case the printing continues up to the maximum border of the printer mechanism and then begins a new row. When the starting position is specified by N motion units to the right: $nL + nH * 256 = N$ When the starting position is specified by n motion units to the left (negative direction), use the complement of 65536: $nL + nH * 256 = 65536 - N$ If setting exceeds the printing area width, the left or right margin is set to the default value. The horizontal and vertical motion unit are specified by 0x1D 0x50. 0x1D 0x50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount. In standard mode, the horizontal motion unit is used. Setting the right value, it's possible to print characters over the right edge. 															
[Default]																
[Reference]	0x1B 0x24, 0x1D 0x50															
[Example]																



0x1B 0x61

<ESC a>

Select justification

Valid for
 mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format] ASCII ESC a n
 Hex 1B 61 n
 Decimal 27 97 n

[Range] $0 \leq n \leq 2$
 $48 \leq n \leq 50$

[Description] Aligns all data in one line to the specified position. n selects the type of justification as follows:

n	JUSTIFICATION
0, 48	Flush left
1, 49	Centered
2, 50	Flush right

- [Notes]
- This command is only enabled when inserted at the beginning of a line.
 - Lines are justified within the specified printing area.
 - Spaces set by 0x09, 0x1B 0x24 and 0x1B 0x5C will be justified according to the previously-entered mode.

[Default] n = 0

[Reference]

[Example]

Flush left	Centered	Flush right
ABC ABCD ABCDE	ABC ABCD ABCDE	ABC ABCD ABCDE

0x1D 0x4C

<GS L>

Set left margin

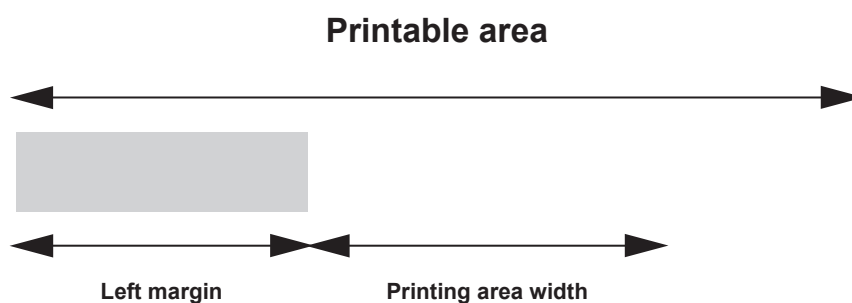
Valid for
 mPLUS2
 PLUS4
 PLUS II-USB
 PLUS2

[Format]	ASCII	GS	L	nL	nH
	Hex	1D	4C	nL	nH
	Decimal	29	76	nL	nH

[Range] $0 \leq nL, nH \leq 255$

[Description] Sets the left margin.

The left margin is set to $[(nL + nH \times 256) \times (\text{horizontal motion unit})]$ inches.



- [Notes]
- This command is enabled only if set at the beginning of the line.
 - If the setting exceeds the printable area, the maximum value of the printable area is used.
 - If the left margin + printing area width is greater than the printable area, the printing area width is set at maximum value.
 - The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 command can change the horizontal (and vertical) motion unit.
 - However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default]

[Reference] 0x1D 0x50, 0x1D 0x57

[Example]



0x1D 0x50

<GS P>

Set horizontal and vertical motion units

Valid for	mPLUS2 PLUS4 PLUS II-USB PLUS2				
[Format]	ASCII	GS	P	x	y
	Hex	1D	50	x	y
	Decimal	29	80	x	y
[Range]	$0 \leq nL, nH \leq 255$				
[Description]	Sets the horizontal and vertical motion units to 1/x inch and 1/y inch respectively. When x is set to 0, the default setting value is used. When y is set to 0, the default setting value is used.				
[Notes]	<ul style="list-style-type: none"> The horizontal direction is perpendicular to the paper feed direction. In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation): <p style="margin-left: 40px;">Commands using x: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1D 0x4C, 0x1D 0x57.</p> <p style="margin-left: 40px;">Commands using y: 0x1B 0x33, 0x1B 0x4A.</p> This command does not affect the previously specified values. The calculated result from combining this command with others is truncated to the minimum value of the mechanical pitch or an exact multiple of that value. 				
[Default]	x = 204, y = 408				
[Reference]	0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1B 0x33, 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57				
[Example]					

0x1D 0x57

<GS W>

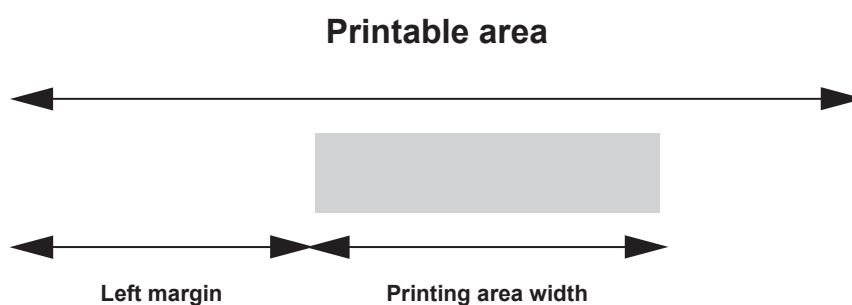
Set printing area width

Valid for	mPLUS2
	PLUS4
	PLUS II-USB
	PLUS2

[Format]	ASCII	GS	W	nL	nH
	Hex	1D	57	nL	nH
	Decimal	29	87	nL	nH

[Range]	$0 \leq nL, nH \leq 255$
	$0 \leq nL + nH \times 256 \leq 384$

[Description] Sets the printing area width to the area specified by nL and nH.
The left margin is set to $[(nL + nH \times 256) \times (\text{horizontal motion unit})]$ inches.



- [Notes]
- This command is only enabled if set at the beginning of the line.
 - If the right margin is greater than the printable area, the printing area width is set at maximum value.
 - If the printing area width = 0, it is set at the maximum value.
 - The horizontal and vertical motion units are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current left margin.
 - The 0x1D 0x50 command can change the horizontal (and vertical) motion unit.
 - However, the value cannot be less than the minimum horizontal movement amount and it must be in even units of the minimum horizontal movement amount.

[Default]

[Reference] 0x1D 0x4C, 0x1D 0x50

[Example]



MISCELLANEOUS COMMAND

0x1B 0x3D

<ESC =>

Select peripherals device

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	ESC	=	n
Hex	1B	3D	n
Decimal	27	61	n

[Range] $1 \leq n \leq 3$

[Description] Select the device to which the host computer sends data, using n as follows:

n = 1, n = 3	Printer Enable
n = 2	Printer Disabled

[Notes]

- When the printer is disabled, it ignores all transmitted data until the printer is enabled through this command.
- When the pass-through function is enabled, all transmitted data are send to the second serial port.

[Default] n = 1

[Reference]

[Example]



0x1B 0x40

<ESC @>

Initialize printer

Valid for	mPLUS2
	PLUS4
	PLUS2

[Format]	ASCII	ESC	@
	Hex	1B	40
	Decimal	27	64

[Range]

[Description] Clears the data in the print buffer and resets the printer mode to that in effect when power was turned on.

- [Notes]
- The data in the receiver buffer is not cleared.
 - The macro definitions are not cleared.

[Default]

[Reference]

[Example]



0x1B 0x4B

<ESC K>

Turn on/off the status led

Valid for	PLUS II-USB			
[Format]	ASCII	ESC	K	n
	Hex	1B	4B	n
	Decimal	27	75	n
[Range]	n = 0, 1			
[Description]	Turns the status led on or off, based on the following values of n:			
	n = 0	Turns off status led		
	n = 1	Turns on status led		
[Notes]				
[Default]	n=1			
[Reference]				
[Example]				



0x1C 0x80

Read date/time of the real time clock

Valid for	PLUS II ECO			
-----------	-------------	--	--	--

[Format]	ASCII	FS	0x80	m
	Hex	1C	80	m
	Decimal	28	128	m

[Range] $0 \leq m \leq 3$

[Description] Read date/time of the real time clock in the format specified by m values as follows:

m	FORMAT
0	DD/MM/YY hh:mm:ss
1	DDMMYYhhmmss
2	YYMMDDhhmmss
3	YYMMDDkkmmssd

where:

DD	=	represents the day of the date
MM	=	represents the month of the date
YY	=	represents the year of the date
hh	=	represents the hour of the time
mm	=	represents the minutes of the time
ss	=	represents the seconds of the time
d	=	represents the day of the week

[Notes] Before send the date/time, if the m parameter is valid the printer transmits the ACK (0x06) followed by the number of bytes to sent, otherwise return NACK (0x015).

[Default]

[Reference]

[Example] To read date/time in the “DDYYMMhhmmss” format, transmit:

Host			
HEX	0x1C	0x80	0x01
ASCII	FS	{ }	m

For example if the current date/time are “15 September 2006 at 10:56:20 (AM)” the printer’s answer is as follows:

HEX	0x06	0x0C	0x31	0x35	0x30	0x39	0x30	0x36	0x31	0x30	0x35	0x36	0x32	0x30
ASCII	ACK	FF	1	5	0	9	0	6	1	0	5	6	2	0



0x1C 0x81

Set date/time of the real time clock

Valid for	PLUS II ECO					
-----------	-------------	--	--	--	--	--

[Format]	ASCII	FS	0x81	m	n	d0...dn
	Hex	1C	81	m	n	d0...dn
	Decimal	28	129	m	n	d0...dn

[Range]	0 ≤ m ≤ 3
	0 ≤ d0, dn ≤ 255

[Description] Set date/time of the real time clock in the format specified by m values as follows:

m	FORMAT
0	DD/MM/YY hh:mm:ss
1	DDMMYYhhmmss
2	YYMMDDhhmmss
3	YYMMDDkkmmssd

where:

DD	=	represents the day of the date
MM	=	represents the month of the date
YY	=	represents the year of the date
hh	=	represents the hour of the time
mm	=	represents the minutes of the time
ss	=	represents the seconds of the time
d	=	represents the day of the wee

- n specifies the number of characters to send
- d0...dn are the ASCII characters relative to the date and time to set

[Notes]

- If the transmission has been received correctly and the command is valid, the printer returns the ACK (0x06), otherwise return NACK (0x015).
- The day of the week is calculated automatically from the printer and then it's possible that the returned value is different from the one transmitted.

[Default]

[Reference]

[Example] For example to set the date and time to "29 September 2006 at 13:51:00 (PM)" in the "YYMMDDh-hmmss" format, transmit:

Host																
Hex	0x1C	0x81	0x02	0x0C	0x30	0x36	0x30	0x39	0x32	0x39	0x31	0x33	0x35	0x31	0x30	0x30
ASCII	FS	{ }	STX	FF	0	6	0	9	2	9	1	3	5	1	0	0

The printer's answer ACK (0x06) if the transmission is OK otherwise NACK (0x15).



0x1C 0x84

Set user-defined date/time format

Valid for	PLUS II ECO					
-----------	-------------	--	--	--	--	--

[Format]	ASCII	FS	0x84	n	d1...dk	NUL
	Hex	1C	84	n	d1...dk	0x00
	Decimal	28	132	n	d1...dk	0

[Range]

n = 'D'
n = 'T'
0 ≤ d0, dK ≤ 255

[Description]

Sets the format string for date and time used to printing.

- n specifies which user-defined string format is set
 - D for date
 - T for time
- d0..dk are the ASCII characters relative to user-defined date/time formats.
- The maximum length of the user-defined date/time format string is 64 chars.
- The following table shows characters used to create user-defined date/time formats:

CHARACTER	DESCRIPTION
I	Select italian language
E	Select english language (default language)
c	Select default date/time
d	Displays the day as a number without a leading zero (1-31)
dd	Displays the day as a number with a leading zero (01-31)
ddd	Displays the day as an abbreviation (for example, Sun)
dddd	Displays the day as a full name (for example, Sunday)
dddddd	Displays the date as a complete date in the short format where date values are formatted with day, month and year (the short date format is dd/mm/yy)
ddddddd	Displays the date as a complete date in the extended format where date values are formatted with day, month and year (the extended date format is dd mmmm, yyyy)
m	Displays the month as a number without a leading zero (1-12). If the character m is immediately after the character h or hh, displays minutes instead of month (see also the n character formatting)
mm	Displays the month as a number with a leading zero (01-12). If the character m is immediately after the character h or hh, displays minutes instead of month (see also the n character formatting)
mmm	Displays the month as an abbreviation (for example, Jan)
mmmm	Displays the month as a full name (for example, January)
yy	Displays the year in two-digits numeric format with a leading zero
yyyy	Displays the year in four-digits numeric format



CHARACTER	DESCRIPTION
h	Displays the hour as a number without leading zeros (0-23)
hh	Displays the hour as a number with leading zeros (00-23)
n	Displays the minutes as a number without leading zeros (0-59)
nn	Displays the minutes as a number with leading zeros (00-59)
s	Displays the seconds as a number without leading zeros (0-59)
ss	Displays the seconds as a number with leading zeros (00-59)
tttt	Displays the time in the extended format where time values are formatted with hour, minutes and seconds (the extended time format is h:mm:ss).
AM/PM	Using the 12-hour clock and displays the AM prefix in uppercase next to the hours that preceding midday and the PM prefix in uppercase next to the hours between midday and midnight.
am/pm	Using the 12-hour clock and displays the am prefix in lowercase next to the hours that preceding midday and the pm prefix in lowercase next to the hours between midday and midnight.
A/P	Using the 12-hour clock and displays the A prefix in uppercase next to the hours that preceding midday and the a prefix in uppercase next to the hours between midday and midnight.
a/p	Using the 12-hour clock and displays the a prefix in lowercase next to the hours that preceding midday and the a prefix in lowercase next to the hours between midday and midnight.

[Notes]

[Default]

[Reference]

[Example]

For example to print the current time with the string format 'yy/mm/dd hh:mm:ss' follow these steps:

1. Send the following command to define the user-defined Time string format:

HEX	0x1C 0x84 0x54 0x79 0x79 0x2F 0x6D 0x6D 0x2F 0x64 0x64 0x20
ASCII	FS {} T y y / m m / d d h
	0x68 0x68 0x3A 0x6E 0x68 0x3A 0x73 0x73 0x00
	h : n n : s s NUL

The printer's answer ACK (0x06) if the transmission is OK otherwise NACK(0x15).

2. Send the following command to print the time:

HEX	0x1C 0x83 0x0A
ASCII	FS {} LF

Note : The character 0x0A feeds one line based on the current line spacing.

If the date and time is 22 October 2006 at 17:35:27 (PM) the output string printed will be:

06/10/22 17:35:27



0x1D 0x2A

<GS *>

Download logo extra

Valid for	PLUS II-USB				
[Format]	ASCII	GS	*	m	monochromatic BMP image file
	Hex	1D	2A	m	monochromatic BMP image file
	Decimal	29	42	m	monochromatic BMP image file
[Range]	0 ≤ m ≤ 4				
[Description]	Stores a logo in memory place specified by m. The following table contains a description of the contents of a BMP file.				

OFFSET	FIELD	SIZE	CONTENTS
0000h	Identified	2 bytes	The characters identifying the bitmap. The following entries are possible: 'BM' - Windows 2K3, XP, VISTA
0002h	File Size	1 dword	Complete file size of BMP image in bytes
0006h	Reserved	1 dword	Reserved for later use
000Ah	Bitmap Data Offset	1 dword	Offset from beginning of file to beginning of bitmap data
000Eh	Bitmap Header Size	1 dword	Length of the Bitmap Info header used to describe the bitmap colours, compression, etc... The following sizes are possible : 3Eh - Windows 2K3, XP, VISTA
0012h	Width	1 dword	Horizontal width of bitmap in pixels
0016h	Height	1 dword	Vertical height of bitmap in pixels
001Ah	Planes	1 dword	Number of planes in this bitmap 1 - single plane
001Ch	Bits Per Pixel	1 dword	Bits per pixel used to store palette entry information. This also identifies in an indirect way the number of possible colours. Possible values are: 1 - Monochrome bitmap 4 - 16 colour bitmap 8 - 256 colour bitmap 16 - 16bit (high colour) bitmap 24 - 24bit (true colour) bitmap 32 - 32bit (true colour) bitmap
001Eh	Compression	1 dword	Compression specifications. The following values are possible: 0 - none (Also identified by BI_RGB) 1 - RLE 8-bit / pixel (Also identified by BI_RLE4) 2 - RLE 4-bit / pixel (Also identified by BI_RLE8) 3 - Bitfields (Also identified by BI_BITFIELDS)
0022h	Bitmap Data Size	1 dword	Size of the bitmap data in bytes. This number must be rounded to the next 4 byte boundary
0026h	HResolution	1 dword	Horizontal resolution expressed in pixel per meter
002Ah	VResolution	1 dword	Vertical resolution expressed in pixels per meter



002Eh	Colors	1 dword	Number of colours used by this bitmap. For a 8-bit / pixel bitmap this will be 100h or 256.
0032h	Important Colors	1 dword	Number of important colours. This number will be equal to the number of colours when every colour is important.
0036h	Palette	N*4 bytes	The palette specification. For every entry in the palette four bytes are used to describe the RGB values of the colour in the following way: 1 byte for blue component 1 byte for green component 1 byte for red component 1 byte filler which is set to 0 (zero)
0436h	Bitmap Data	x bytes	Depending on the compression specifications, this field contains all the bitmap data bytes which represent indices in the colour palette.

[Notes]

- Simple monochrome images must be used.
- Maximum BMP size is 32 kbytes
- The following sizes were used in the specification above:

SIZE	BYTES	SIGN
char	1	signed
word	2	unsigned
dword	4	unsigned

[Default]

[Reference]

[Example]



0x1D 0x49

<GS I>

Transmit printer ID

Valid for

- mPLUS2
- PLUS4
- PLUS II-USB
- PLUS2

[Format]

ASCII	GS	I	n
Hex	1D	49	n
Decimal	29	73	n

[Range]

- $1 \leq n \leq 3$
- $49 \leq n \leq 51$
- $n = 255$

[Description] Transmits the printer ID specified by n follows:

mPLUS2
PLUS II-USB
PLUS2

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID	0x9F PLUSII-USB, mPLUS2 PLUS2
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 character)

PLUS4

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID	0xFF (resend the command with n=255)
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 character)
255	Printer model ID (2 bytes)	0x02 0x0C PLUS4



n = 2, 50 Type ID

BIT	OFF/ON	HEX	DECIMAL	FUNCTION
0	Off	00	0	2-byte character codes not supported
1	Off	02	2	Not used. Fixed to On
2	Off	00	0	Thermal paper w/o label
	On	04	4	Thermal paper w/o label
3	-	-	-	Undefined
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Notes] This command is executed when the data is processed in the data buffer. Therefore, there could be a time lag between command reception and data transmission, depending on data buffer status.

[Default]

[Reference]

[Example]



0x1D 0x70

<GS p>

Print logo

Valid for PLUS II-USB

[Format]	ASCII	GS	p	m	n
	Hex	1D	70	m	n
	Decimal	29	47	m	n

[Range] $0 \leq m \leq 4$ (No. logo)
 n = 0, 1, 2, 3

[Description] Print bit image specified by m if stored in flash :

N	PRINT MODE
0	Normal
1	Double width
2	Double height
3	Double width and Double height

[Notes]

[Default]

[Reference]

[Example]



0x1D 0xF6

Ticket align

Valid for	PLUS II-USB		
-----------	-------------	--	--

[Format]	ASCII	GS	0xF6
	Hex	1D	F6
	Decimal	29	246

[Range]

[Description] This command searches an alignment notch on paper and then align the ticket.

[Notes]

[Default]

[Reference]

[Example]

CUSTOM[®]

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