

COMMANDS MANUAL

---

**mPLUS2**

**PLUS2**

**PLUS II**

**PLUS4**

**CUSTOM<sup>®</sup>**

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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.**

#### 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.

#### 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.
- Do not fix indissolubly the device or its accessories such as power supplies unless specifically provided in this manual.
- When positioning the device, make sure cables do not get damaged.
- [Only OEM equipment] The equipment must be installed in a kiosk or system that provides mechanical, electrical and fire protection.
- The mains power supply must comply with the rules in force in the Country where you intend to install the equipment.
- 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.
- Make sure the power cable provided with the appliance, or that you intend to use is suitable with the wall socket available in the system.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Before any type of work is done on the machine, disconnect the power supply.
- Use the type of electrical power supply indicated on the device label.
- These devices are intended to be powered by a separately certified power module having an SELV, non-energy hazardous output. (IEC60950-1 second edition).
- [Only POS equipment] The energy to the equipment must be provided by power supply approved by CUSTOM S.p.A.
- Take care the operating temperature range of equipment and its ancillary components.
- 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.
- The equipment must be accessible on these components only to trained, authorized personnel.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- 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.
- Use consumables approved by CUSTOM S.p.A.



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 2014/30/EU and 2014/35/EU inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55032 (*Electromagnetic compatibility of multimedia equipment - Emission Requirements*)
- EN 55024/EN55035 (*Electromagnetic compatibility of multimedia equipment - Immunity requirements*)
- EN IEC/EN62368-1 (*Audio/video, information and communication technology equipment*)

The device is in conformity with the essential requirements laid down in Directives 2014/53/EU about devices equipped with intentional radiators. The Declaration of Conformity and other available certifications can be downloaded from the site [www.custom4u.it](http://www.custom4u.it).



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 2012/19/EU, 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.

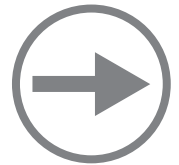


The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

INTRODUCTION



CUSTOM/POS EMULATION



PLUS EMULATION



FH190 EMULATION



ALIGNMENT







# INTRODUCTION

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# 1 CONSULTING COMMANDS MANUAL

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).

[Link to index](#)

Command value

Command function

Devices that use the command

0x0D
<CR>

**Print and carriage return**

---

Valid for	AAAA
	BBBB
	CCCC

---

[Format]      Hex      0x0D  
                 ASCII    CR

[Range]

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

[Notes]

This command sets the printing position to the beginning of the line.

**AAAA**  
**BBBB**

- This command sets the printing position to the beginning of the line.

**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 for devices AAAA, BBBB, CCC

Information valid only for devices AAAA, BBBB

Information valid only for device CCCC



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

[Format]	hexadecimal and ASCII 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.



## 2 IDENTIFICATION OF THE MODELS

NOMENCLATURE	DESCRIPTION
mPLUS2	mPLUS2 base configuration
PLUS2 STD	PLUS2 base configuration with 4 ÷ 7.5 Vdc power supply
PLUS2 8-42 V	PLUS2 with the optional 8 ÷ 42 Vdc extended range module plugged
PLUS II ECO	Serial RS232 + USB from 3.3 V to 8 V with RTCK
PLUS II-S	Serial RS232 5 V
PLUS II-S-0004	Serial RS232 with extended range (from 9 Vdc to 48 Vdc)
PLUS II-T	Serial TTL 5 V
PLUS II-C	Parallel Centronics 5 V
PLUS II-C-0004	Parallel Centronics with extended range (from 9 Vdc to 48 Vdc)
PLUS II-P	Parallel TTL 5V
PLUS II-USB	Serial RS232 + USB from 10 V to 32 V
PLUS4	PLUS4 base configuration

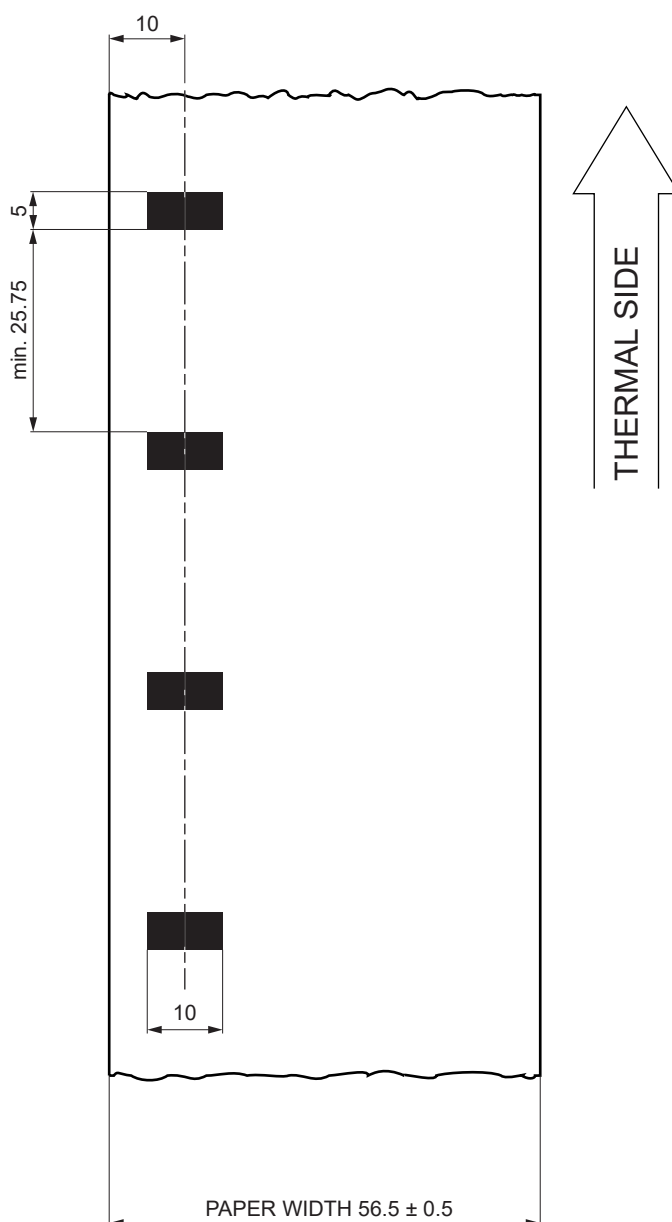
# 3 PAPER SPECIFICATION

All the dimensions shown in following figures are in millimetres.

**PLUS2 STD, PLUS2 8-42 V**  
**PLUS II-USB**

## **Paper with black mark on the thermal side**

The following image shows an example of black mark placement on the thermal side of the paper. For more information about the use of paper with labels see user manual.



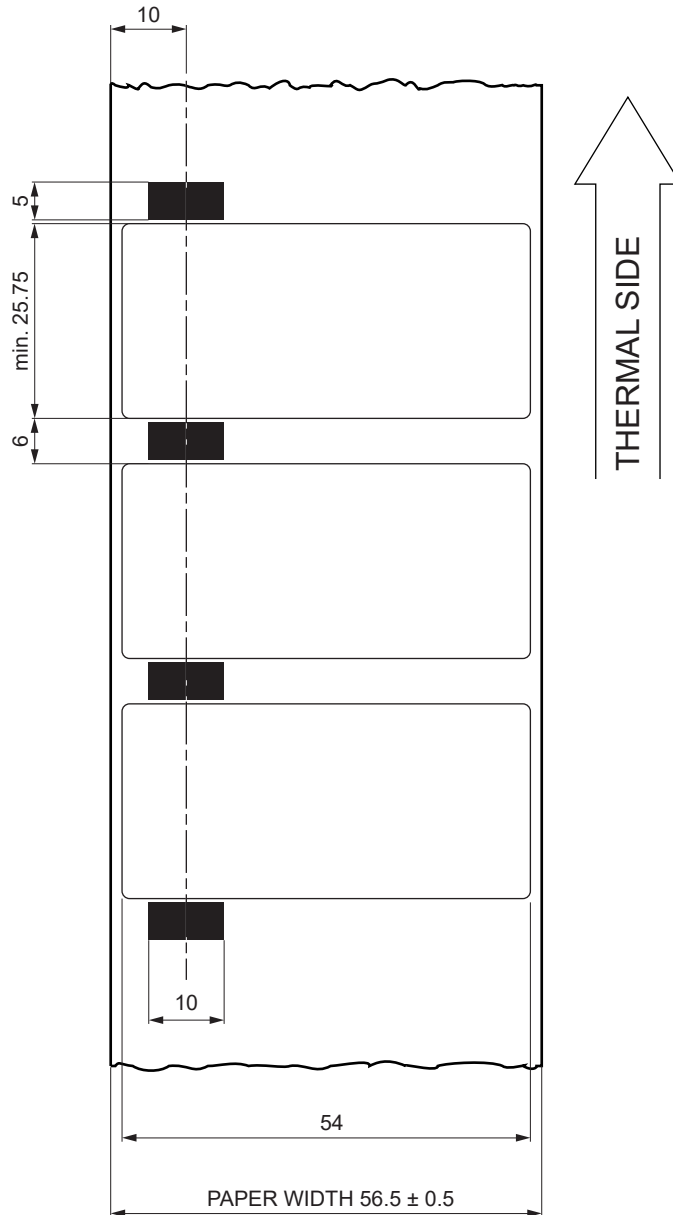


**PLUS2 STD, PLUS2 8-42 V**  
**PLUS II-USB**

**Paper with black mark and labels**

The following image shows a portion of paper with labels placement of the black mark on the thermal side of the paper. To properly use the alignment commands, you need to use paper with labels that comply with the dimensions shown in the following figure.

For more information about the use of paper with labels see user manual.



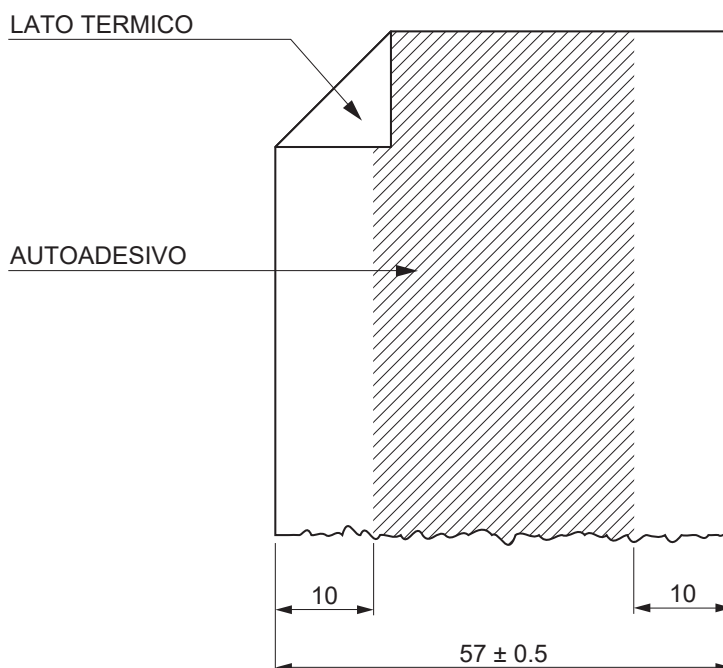


**PLUS2 STD, PLUS2 8-42 V**

**PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P**

**Linerless thermal paper**

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



**LINERLESS PAPER SPECIFICATIONS**

Self-adhesive	Water based acrylic
Self-adhesive mass	Permanent $16 \text{ g/m}^2 \pm 2 \text{ g}$
Total thickness	$93 \mu\text{m} \pm 2 \mu\text{m}$
Total weight	$96 \text{ g/m}^2 \pm 2 \text{ g}$
Recommended temperature	
Stick	from $+15 \text{ }^\circ\text{C}$ to $+40 \text{ }^\circ\text{C}$
Storage	from $+10 \text{ }^\circ\text{C}$ to $+40 \text{ }^\circ\text{C}$
Resistance after stick	from $-10 \text{ }^\circ\text{C}$ to $+50 \text{ }^\circ\text{C}$

**WARNING:**

Do not set "Print Density" parameter on "Linerless" mode during the device configuration (see user manual) when using the device with thermal paper.

In "Linerless" mode, if the device is turned off for a few hours, the first print line may be compressed when the device is switched on. It is recommended to perform one or more paper feeds before printing.





# CUSTOM/POS EMULATION

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# 1 COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	104
0x09	<HT>	105
0x0A	<LF>	79
0x0D	<CR>	80
0x10 0x04	<DLE EOT>	84
0x18	<CAN>	55
0x1B 0x20	<ESC SP>	56
0x1B 0x21	<ESC !>	57
0x1B 0x25	<ESC %>	60
0x1B 0x26	<ESC &>	61
0x1B 0x28 0x76	<ESC ( v>	106
0x1B 0x2A	<ESC *>	97
0x1B 0x2D	<ESC ->	62
0x1B 0x30	<ESC 0>	118
0x1B 0x32	<ESC 2>	77
0x1B 0x33	<ESC 3>	78
0x1B 0x34	<ESC 4>	63
0x1B 0x3D	<ESC =>	119
0x1B 0x3F	<ESC ?>	64
0x1B 0x40	<ESC @>	120
0x1B 0x44	<ESC D>	107
0x1B 0x45	<ESC E>	65
0x1B 0x47	<ESC G>	66
0x1B 0x4A	<ESC J>	81
0x1B 0x4D	<ESC M>	67
0x1B 0x52	<ESC R>	68



0x1B 0x56	<ESC V>	69
0x1B 0x5C	<ESC \>	109
0x1B 0x61	<ESC a>	110
0x1B 0x63 0x35	<ESC c 5>	121
0x1B 0x64	<ESC d>	82
0x1B 0x74	<ESC t>	70
0x1B 0x76	<ESC v>	90
0x1B 0x7B	<ESC {>	72
0x1B 0xC1		73
0x1B 0xFA		122
0x1B 0xFD		123
0x1B 0xFF		124
0x1C 0x25	<FS %>	74
0x1C 0x3D 0x46 0x31 0x39 0x30 0x3D	<FS = F 1 9 0 = >	125
0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D	<FS = P L U S = >	126
0x1C 0xC1		127
0x1C 0xEA		91
0x1D 0x21	<GS !>	75
0x1D 0x28 0x6B	<GS ( k>	24
0x1D 0x28 0x6B [Fn 065]	<GS ( k>	26
0x1D 0x28 0x6B [Fn 066]	<GS ( k>	27
0x1D 0x28 0x6B [Fn 067]	<GS ( k>	28
0x1D 0x28 0x6B [Fn 068]	<GS ( k>	29
0x1D 0x28 0x6B [Fn 069]	<GS ( k>	30
0x1D 0x28 0x6B [Fn 080]	<GS ( k>	32
0x1D 0x28 0x6B [Fn 081]	<GS ( k>	33



0x1D 0x28 0x6B [Fn 165]	<GS ( k>	34
0x1D 0x28 0x6B [Fn 166]	<GS ( k>	35
0x1D 0x28 0x6B [Fn 167]	<GS ( k>	39
0x1D 0x28 0x6B [Fn 169]	<GS ( k>	40
0x1D 0x28 0x6B [Fn 180]	<GS ( k>	41
0x1D 0x28 0x6B [Fn 181]	<GS ( k>	42
0x1D 0x28 0x6B [Fn 182]	<GS ( k>	43
0x1D 0x2A	<GS *>	99
0x1D 0x2F	<GS />	101
0x1D 0x3A	<GS :>	113
0x1D 0x42	<GS B>	76
0x1D 0x43 0x30	<GS C 0>	128
0x1D 0x43 0x31	<GS C 1>	129
0x1D 0x43 0x32	<GS C 2>	130
0x1D 0x43 0x3B	<GS C ;>	131
0x1D 0x48	<GS H>	45
0x1D 0x49	<GS I>	132
0x1D 0x4C	<GS L>	111
0x1D 0x50	<GS P>	134
0x1D 0x57	<GS W>	112
0x1D 0x5E	<GS ^>	114
0x1D 0x61	<GS a>	92
0x1D 0x63	<GS c>	135
0x1D 0x66	<GS f>	47
0x1D 0x68	<GS h>	48
0x1D 0x6B	<GS k>	49
0x1D 0x72	<GS r>	93
0x1D 0x76 0x30	<GS v 0>	102



0x1D 0x77 .....	<GS w>.....	53
0x1D 0x7C .....		83
0x1D 0xD0 .....		136
0x1D 0xE0 .....		94
0x1D 0xE3 .....		95
0x1D 0xE5 .....		96
0x1D 0xE7 .....		115
0x1D 0xF0 .....		137
0x1D 0xF6 .....		117
0x1D 0xFF 0x63 0x31 .....		138



# 2 COMMANDS LISTED BY FUNCTION

## COMMANDS FOR BARCODE PRINTING

---

0x1D 0x28 0x6B . . . . . <GS ( k> . . . . .	24
Print two-dimensional barcode	
0x1D 0x28 0x6B [Fn 065] . . . . . <GS ( k> . . . . .	26
Specify the number of columns of PDF417 barcode	
0x1D 0x28 0x6B [Fn 066] . . . . . <GS ( k> . . . . .	27
Specify the number of rows of PDF417 barcode	
0x1D 0x28 0x6B [Fn 067] . . . . . <GS ( k> . . . . .	28
Specify the width of a module of PDF417 barcode	
0x1D 0x28 0x6B [Fn 068] . . . . . <GS ( k> . . . . .	29
Specify the height of the module of PDF417 barcode	
0x1D 0x28 0x6B [Fn 069] . . . . . <GS ( k> . . . . .	30
Specify the error correction level of PDF417 barcode	
0x1D 0x28 0x6B [Fn 080] . . . . . <GS ( k> . . . . .	32
Store the data in the barcode save area for printing in PDF417 format	
0x1D 0x28 0x6B [Fn 081] . . . . . <GS ( k> . . . . .	33
Encodes the data in the barcode save area and prints it in PDF417 format	
0x1D 0x28 0x6B [Fn 165] . . . . . <GS ( k> . . . . .	34
Specify encoding scheme of QRcode barcode	
0x1D 0x28 0x6B [Fn 166] . . . . . <GS ( k> . . . . .	35
Specify QRcode barcode version	
0x1D 0x28 0x6B [Fn 167] . . . . . <GS ( k> . . . . .	39
Specify dot size of the module of the QRcode barcode	
0x1D 0x28 0x6B [Fn 169] . . . . . <GS ( k> . . . . .	40
Specify the error correction level of the QRcode barcode	
0x1D 0x28 0x6B [Fn 180] . . . . . <GS ( k> . . . . .	41
Store the data in the barcode save area for printing in QRcode format	
0x1D 0x28 0x6B [Fn 181] . . . . . <GS ( k> . . . . .	42
Prints the data stored in the barcode save area in QRcode format	
0x1D 0x28 0x6B [Fn 182] . . . . . <GS ( k> . . . . .	43
Transmit the QRcode barcode size in the barcode save area	
0x1D 0x48 . . . . . <GS H> . . . . .	45
Select printing position of HRI characters in 1D barcodes	
0x1D 0x66 . . . . . <GS f> . . . . .	47
Select font for HRI characters	



0x1D 0x68	<GS h>	48
Set 1D barcode height		
0x1D 0x6B	<GS k>	49
Print 1D barcode		
0x1D 0x77	<GS w>	53
Set 1D barcode width		

## CHARACTER COMMANDS

---

0x18	<CAN>	55
Cancel current line transmitted		
0x1B 0x20	<ESC SP>	56
Set right-side character spacing		
0x1B 0x21	<ESC !>	57
Select print modes		
0x1B 0x25	<ESC %>	60
Enable or disable user-defined characters		
0x1B 0x26	<ESC &>	61
Defines user-defined characters		
0x1B 0x2D	<ESC ->	62
Turn underline mode on or off		
0x1B 0x34	<ESC 4>	63
Turn italic mode on or off		
0x1B 0x3F	<ESC ?>	64
Cancel user-defined characters		
0x1B 0x45	<ESC E>	65
Turn bold mode on or off		
0x1B 0x47	<ESC G>	66
Turn double-strike mode on or off		
0x1B 0x4D	<ESC M>	67
Select character font		
0x1B 0x52	<ESC R>	68
Select an international character set		
0x1B 0x56	<ESC V>	69
Set 90° rotated print mode		
0x1B 0x74	<ESC t>	70
Select character code table		
0x1B 0x7B	<ESC {>	72
Turn upside-down printing mode on or off		



<b>0x1B 0xC1</b> .....	73
Select character pitch	
<b>0x1C 0x25</b> .....	74
Select the font type	
<b>0x1D 0x21</b> .....	75
Select character size	
<b>0x1D 0x42</b> .....	76
Turn black and white reverse printing mode on or off	

## LINE SPACING COMMANDS

---

<b>0x1B 0x32</b> .....	77
Select 1/6-inch line spacing	
<b>0x1B 0x33</b> .....	78
Set line spacing	

## PRINT COMMANDS

---

<b>0x0A</b> .....	79
Print and line feed	
<b>0x0D</b> .....	80
Print and carriage return	
<b>0x1B 0x4A</b> .....	81
Print and paper feed	
<b>0x1B 0x64</b> .....	82
Print and feed paper n lines	
<b>0x1D 0x7C</b> .....	83
Set printing density	

## STATUS COMMANDS

---

<b>0x10 0x04</b> .....	84
Real-time status transmission	
<b>0x1B 0x76</b> .....	90
Transmit paper sensor status	
<b>0x1C 0xEA</b> .....	91
Transmit the device serial number	
<b>0x1D 0x61</b> .....	92
Enable or disable Automatic Status Back (ASB)	



0x1D 0x72	<GS r>	93
Transmit status		
0x1D 0xE0		94
Enable or disable automatic FULL STATUS BACK		
0x1D 0xE3		95
Reading of length of printed paper		
0x1D 0xE5		96
Reading number of power up		

## BIT-IMAGE COMMANDS

---

0x1B 0x2A	<ESC *>	97
Select bit image mode		
0x1D 0x2A	<GS *>	99
Define received bit image		
0x1D 0x2F	<GS />	101
Print received bit image		
0x1D 0x76 0x30	<GS v 0>	102
Print raster bit image		

## PRINT POSITION COMMANDS

---

0x08	<BS>	104
Back space		
0x09	<HT>	105
Horizontal tab		
0x1B 0x28 0x76	<ESC ( v>	106
Set relative vertical print position		
0x1B 0x44	<ESC D>	107
Set horizontal tab positions		
0x1B 0x5C	<ESC \>	109
Set relative print position		
0x1B 0x61	<ESC a>	110
Select justification		
0x1D 0x4C	<GS L>	111
Set left margin		
0x1D 0x57	<GS W>	112
Set printing area width		



## MACRO FUNCTIONS COMMANDS

---

<b>0x1D 0x3A</b> .....	<b>&lt;GS ;&gt;</b> .....	<b>113</b>
Start or end of macro definition		
<b>0x1D 0x5E</b> .....	<b>&lt;GS ^&gt;</b> .....	<b>114</b>
Execute macro		

## ALIGNMENT COMMANDS

---

<b>0x1D 0xE7</b> .....		<b>115</b>
Set black mark distance		
<b>0x1D 0xF6</b> .....		<b>117</b>
Align the ticket with the printhead		

## MISCELLANEOUS COMMANDS

---

<b>0x1B 0x30</b> .....	<b>&lt;ESC 0&gt;</b> .....	<b>118</b>
Turn off the device		
<b>0x1B 0x3D</b> .....	<b>&lt;ESC =&gt;</b> .....	<b>119</b>
Select peripheral device		
<b>0x1B 0x40</b> .....	<b>&lt;ESC @&gt;</b> .....	<b>120</b>
Initialize device		
<b>0x1B 0x63 0x35</b> .....	<b>&lt;ESC c 5&gt;</b> .....	<b>121</b>
Enable or disable keys panel		
<b>0x1B 0xFA</b> .....		<b>122</b>
Print graphic bank (608x862 dots)		
<b>0x1B 0xFD</b> .....		<b>123</b>
Receive graphic page from communication port		
<b>0x1B 0xFF</b> .....		<b>124</b>
Receive the graphic page from the communication port		
<b>0x1C 0x3D 0x46 0x31 0x39 0x30 0x3D</b> .....	<b>&lt;FS = F 1 9 0 = &gt;</b> .....	<b>125</b>
Change device emulation to FH190		
<b>0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D</b> .....	<b>&lt;FS = P L U S = &gt;</b> .....	<b>126</b>
Change device emulation to PLUS		
<b>0x1C 0xC1</b> .....		<b>127</b>
Paper recovery		
<b>0x1D 0x43 0x30</b> .....	<b>&lt;GS C 0&gt;</b> .....	<b>128</b>
Select counter print mode		
<b>0x1D 0x43 0x31</b> .....	<b>&lt;GS C 1&gt;</b> .....	<b>129</b>
Select count mode (A)		



0x1D 0x43 0x32	<GS C 2>	130
Set counter		
0x1D 0x43 0x3B	<GS C ;>	131
Select count mode (B)		
0x1D 0x49	<GS l>	132
Transmit device ID		
0x1D 0x50	<GS P>	134
Set horizontal and vertical motion units		
0x1D 0x63	<GS c>	135
Print counter		
0x1D 0xD0		136
Set horizontal and vertical motion units		
0x1D 0xF0		137
Set print mode		
0x1D 0xFF 0x63 0x31		138
Set BaudRate		



# COMMANDS FOR BARCODE PRINTING

## 0x1D 0x28 0x6B

<GS ( k >

Print two-dimensional barcode

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

---

[Format] Hex 1D 28 6B pL pH cn fn  
ASCII GS ( k pL pH cn fn

[Range] cn = 0x30, 0x31, 0x33, 0x50, 0x51  
0x41 ≤ fn ≤ 0x45  
0x50 ≤ fn ≤ 0x52

[Description] Processes the data concerning two-dimensional barcode.  
• Barcode type is specified by cn  
• Function is specified by fn

cn	fn	FUNCTION	
0x30	0x41	<a href="#">Function 065</a>	PDF 417: Specify the number of columns
0x30	0x42	<a href="#">Function 066</a>	PDF 417: Specify the number of rows
0x30	0x43	<a href="#">Function 067</a>	PDF 417: Specify the width of module
0x30	0x44	<a href="#">Function 068</a>	PDF 417: Specify the module height
0x30	0x45	<a href="#">Function 069</a>	PDF 417: Specify the error correction level
0x30	0x50	<a href="#">Function 080</a>	PDF 417: Store the received data in the barcode save area
0x30	0x51	<a href="#">Function 081</a>	PDF 417: Print the barcode data in the barcode save area
0x31	0x41	<a href="#">Function 165</a>	QRcode: Specify encoding scheme
0x31	0x42	<a href="#">Function 166</a>	QRcode: Specify the selected version
0x31	0x43	<a href="#">Function 167</a>	QRcode: Specify size of barcode
0x31	0x45	<a href="#">Function 169</a>	QRcode: Specify the error correction level
0x31	0x50	<a href="#">Function 180</a>	QRcode: Store the received data in the barcode save area
0x31	0x51	<a href="#">Function 181</a>	QRcode: Print the barcode data
0x31	0x52	<a href="#">Function 182</a>	QRcode: Transmit the barcode size in the barcode save area



[Notes]

[Default]

[Reference]

[Example]

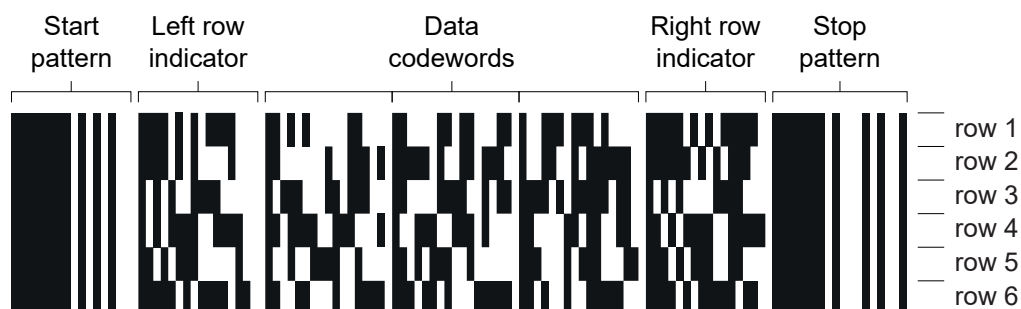


## 0x1D 0x28 0x6B [Fn 065]

<GS ( k>

Specify the number of columns of PDF417 barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4									
[Format]	Hex	1D	28	6B	pL	pH	30	41	n	
	ASCII	GS	(	k	pL	pH	0	A	n	
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00) 0x00 ≤ n ≤ 0x1E									
[Description]	Specifies the number of columns of PDF417 barcode. <ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• n = 0x00 specifies auto processing. When auto processing is specified, the maximum number of columns in the data area is 30 columns.</li> <li>• When n is not 0x00, specifies the number of columns of the data area as n code word.</li> </ul>									
[Notes]	<ul style="list-style-type: none"> <li>• The following data is not included in the number of columns: <ul style="list-style-type: none"> <li>- start pattern and stop pattern</li> <li>- indicator code word of left and right</li> </ul> </li> <li>• Settings are effective until <a href="#">0x1B 0x40</a> is executed or the device is reset or turned off.</li> </ul>									
[Default]	n = 0x00									
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]	To define 3 columns, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x41 0x03									

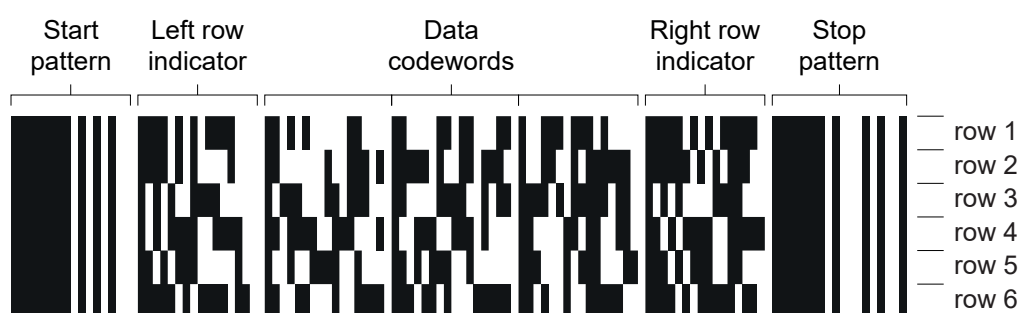


## 0x1D 0x28 0x6B [Fn 066]

<GS ( k>

Specify the number of rows of PDF417 barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4								
[Format]	Hex	1D	28	6B	pL	pH	30	42	n
	ASCII	GS	(	k	pL	pH	0	B	n
[Range]	$(pL + pH \times 256) = 3$ $(pL = 0x03, pH = 0x00)$ $n = 0x00$ $0x03 \leq n \leq 0x14$								
[Description]	Specifies the number of rows of PDF417 barcode. <ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• n = 0x00 specifies auto processing. When auto processing is specified, the maximum number of rows is 20.</li> <li>• When n is not 0x00, specifies the number of rows of the data area as n rows.</li> </ul>								
[Notes]	Settings are effective until <a href="#">0x1B 0x40</a> is executed or the device is reset or turned off.								
[Default]	n = 0x00								
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]	To define 6 rows, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x42 0x06								

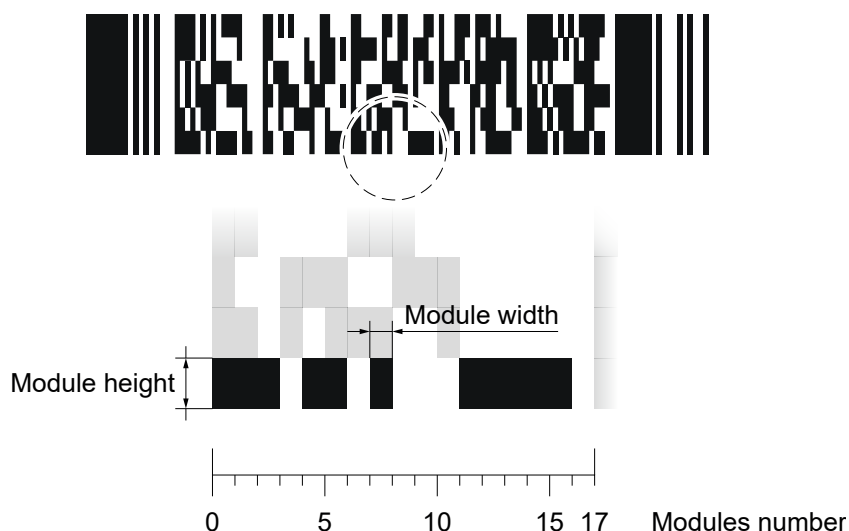


## 0x1D 0x28 0x6B [Fn 067]

<GS ( k>

Specify the width of a module of PDF417 barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4									
[Format]	Hex	1D	28	6B	pL	pH	30	43	n	
	ASCII	GS	(	k	pL	pH	0	C	n	
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00) 0x02 ≤ n ≤ 0x08									
[Description]	Specifies the width of a module of PDF417 barcode. • pL and pH specify the number of successive bytes to be sent.									
[Notes]	Settings are effective until <a href="#">0x1B 0x40</a> is executed or the device is reset or turned off.									
[Default]	n = 0x03									
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]	To set width = 4, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x43 0x04									

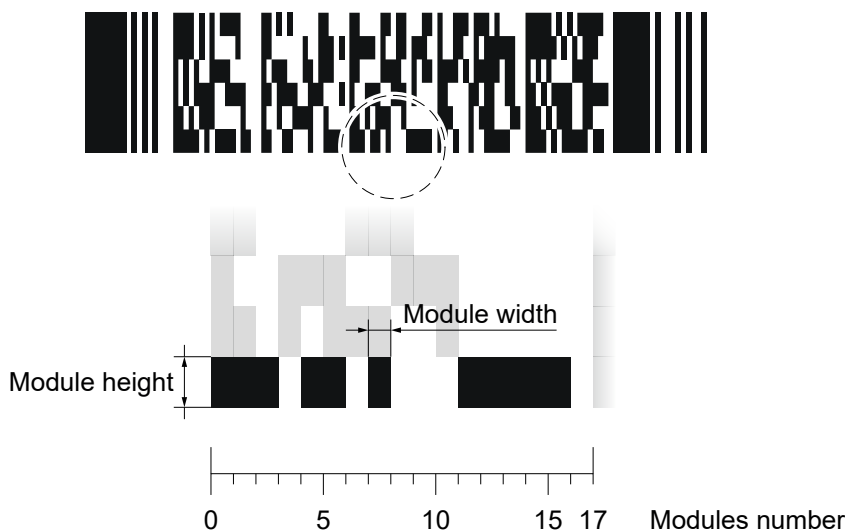


## 0x1D 0x28 0x6B [Fn 068]

<GS ( k>

Specify the height of the module of PDF417 barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4								
[Format]	Hex	1D	28	6B	pL	pH	30	44	n
	ASCII	GS	(	k	pL	pH	0	D	n
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00) 0x02 ≤ n ≤ 0x08								
[Description]	Specifies the height of the module of the PDF417 barcode. • pL and pH specify the number of successive bytes to be sent.								
[Notes]	Settings are effective until 0x1B 0x40 is executed or the device is reset or turned off.								
[Default]	n = 0x03								
[Reference]	0x1D 0x28 0x6B								
[Example]	To set height = 4, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x44 0x04								





## 0x1D 0x28 0x6B [Fn 069]

<GS ( k>

Specify the error correction level of PDF417 barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
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[Format]	Hex	1D	28	6B	pL	pH	30	45	m	n
	ASCII	GS	(	k	pL	pH	0	E	m	n

[Range]	(pL + pH × 256) = 4 (pL = 0x04, pH = 0x00) m = 0x30 0x30 ≤ n ≤ 0x38 m = 0x31 0x01 ≤ n ≤ 0x28
---------	--

[Description] Specifies the error correction level of PDF417 barcode. This error correction allows the barcode to endure some damage without causing loss of data. The error correction level depends on the amount of data that needs to be encoded, the size and the amount of symbol damage that could occur.

- pL and pH specify the number of successive bytes to be sent.
- The error correction level is specified by “level” when m = 0x30.
- The error correction level is specified by “ratio” when m = 0x31 [n × 10%].

[Notes]

- Error correction level is specified by either “level” or “ratio”.
- Error correction level specified by “level” (m = 0x30) is as follows. The number of the error correction code word is fixed regardless of the number of code words on the data area.

n	CORRECTION LEVEL	N. OF ERROR CORRECTION CODE WORD
0x30	Error correction level 0	2
0x31	Error correction level 1	4
0x32	Error correction level 2	8
0x33	Error correction level 3	16
0x34	Error correction level 4	32
0x35	Error correction level 5	64
0x36	Error correction level 6	128
0x37	Error correction level 7	256
0x38	Error correction level 8	512



- Error correction level specified by “ratio” (m = 0x31) is as follows. The error correction level is defined by the calculated value [number of data code word × n × 0.1 = (A)]. The number of the error correction code word is changeable in proportion to the number of the code words on the data area.

CALCULATED VALUE (A)	CORRECTION LEVEL	N. OF ERROR CORRECTION CODE WORD
0 - 3	Error correction level 1	4
4 - 10	Error correction level 2	8
11 - 20	Error correction level 3	16
21 - 45	Error correction level 4	32
46 - 100	Error correction level 5	64
101 - 200	Error correction level 6	128
201 - 400	Error correction level 7	256
> 400	Error correction level 8	512

Settings are effective until **0x1B 0x40** is executed or the device is reset or turned off.

[Default] m = 0x31, n = 0x01 [ratio: 10%]

[Reference] **0x1D 0x28 0x6B**

[Example] To set error correction = 0.2, the command sequence is:  
0x1D 0x28 0x6B 0x03 0x00 0x30 0x45 0x30 0x02



## 0x1D 0x28 0x6B [Fn 080]

<GS ( k>

Store the data in the barcode save area for printing in PDF417 format

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4									
[Format]	Hex	1D	28	6B	pL	pH	30	50	30	d1...dk
	ASCII	GS	(	k	pL	pH	0	P	0	d1...dk
[Range]	$0x00 \leq d \leq 0xFF$ $k = (pL + pH \times 256) - 3$ <ul style="list-style-type: none"> <li>• PDF417 barcode only with ASCII characters:  <math>4 \leq (pL + pH \times 256) \leq 1112</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x04)</li> <li>• PDF417 barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 1854</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x07)</li> <li>• PDF417 barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 2729</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x0A)</li> </ul>									
[Description]	Stores the data (d1...dk) in the barcode save area for printing in PDF417 format. <ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• k bytes of d1...dk are processed as barcode data.</li> </ul>									
[Notes]	<ul style="list-style-type: none"> <li>• Data stored in the barcode save area by this function are processed by <a href="#">Function 081</a> and then reserved.</li> <li>• Specify only the data code word of the barcode with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the device.</li> <li>• Settings are effective until <a href="#">0x1B 0x40</a> is executed or the device is reset or turned off.</li> </ul>									
[Default]										
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]										



## 0x1D 0x28 0x6B [Fn 081]

<GS ( k>

Encodes the data in the barcode save area and prints it in PDF417 format

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4								
[Format]	Hex	1D	28	6B	pL	pH	30	51	30
	ASCII	GS	(	k	pL	pH	0	Q	0
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00)								
[Description]	Encodes the data in the barcode save area and prints it in PDF417 format. • pL and pH specify the number of successive bytes to be sent.								
[Notes]	<ul style="list-style-type: none"> <li>• In standard mode, use this function when device is at the beginning of a line or there is no data in the print buffer.</li> <li>• A barcode that size exceeds the printing area cannot be printed.</li> <li>• If there is any error described below in the data of the barcode save area, it cannot be printed. <ul style="list-style-type: none"> <li>- There is no data (<a href="#">Function 080</a> is not processed).</li> <li>- If [(number of columns × number of rows) &lt; number of code word] when auto processing is specified for number of columns and number of rows.</li> <li>- Number of code word exceeds 928 in the data area.</li> </ul> </li> <li>• When auto processing (<a href="#">Function 065</a>) is specified, the number of columns is calculated by the current printing area, module width (<a href="#">Function 067</a>) and the code word in the data area. Maximum number of the columns is 30.</li> </ul>								
[Default]									
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]	To print the PDF417 barcode data the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x51 0x30								

## 0x1D 0x28 0x6B [Fn 165]

<GS ( k>

Specify encoding scheme of QRcode barcode

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Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
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[Format]	Hex	1D	28	6B	pL	pH	31	41	n1	n2
	ASCII	GS	(	k	pL	pH	1	A	n1	n2

[Range]	(pL+pH × 256) = 4	(pL = 0x04, pH = 0x00)
	0x32 ≤ n1 ≤ 0x33	
	n2 = 0x00	

[Description] Specifies encoding type of QRcode barcode, based on the value of n1 as follows:

n1	ENCODING SCHEME
0x32	QRcode model 2
0x33	MicroQR

- [Notes]
- QRcode: Encode all extended ASCII characters data up to a maximum length of 7089 numeric digits, 4296 alphabetic characters or 2953 bytes of data.
  - pL and pH specify the number of successive bytes to be sent.
  - MicroQR (a miniature version of the QRcode barcode for short message): Encode all numbers from 0 to 9 up to a maximum length of 35 characters.

[Default] n1 = 0x32, n2 = 0x00

[Reference] [0x1D 0x28 0x6B](#)

[Example]



QRcode Model 2



MicroQR



# 0x1D 0x28 0x6B [Fn 166]

<GS ( k>

## Specify QRcode barcode version

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
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[Format]	Hex            1D    28    6B    pL    pH    31    42    n
	ASCII          GS    (    k    pL    pH    1    B    n

[Range]	(pL + pH × 256) = 3    (pL = 0x03, pH = 0x00) 0x00 ≤ n ≤ 0x28
---------	--

[Description]	Defines QRcode version to be printed.
---------------	---------------------------------------

- [Notes]
- If selected version has not enough capacity to store the saved amount of data, next smallest version capable of that capacity will be printed.
  - For QRcode version capacity according to ECC (Error Correction Capability) and data type refer to following table.
  - With n = 0x00 the selection of the version occurs automatically according to the one that allows the printing of the requested data.

n	VERSION	MODULES	ECC LEVEL	NUMERIC	ALPHANUMERIC	BINARY
0x00	AUTO	-	-	-	-	-
0x01	1	21 x 21	L	40	24	16
			M	33	19	13
			Q	26	15	10
			H	16	9	6
0x02	2	25 x 25	L	76	46	31
			M	62	37	25
			Q	47	28	19
			H	33	19	13
0x03	3	29 x 29	L	126	76	52
			M	100	60	41
			Q	76	46	31
			H	57	34	23
0x04	4	33 x 33	L	186	113	77
			M	148	89	61
			Q	110	66	45
			H	81	49	33
0x05	5	37 x 37	L	254	153	105
			M	201	121	83
			Q	143	86	59
			H	105	63	43
0x06	6	41 x 41	L	321	194	133
			M	254	153	105
			Q	177	107	73
			H	138	83	57



n	VERSION	MODULES	ECC LEVEL	NUMERIC	ALPHANUMERIC	BINARY
0x07	7	45 x 45	L	369	223	153
			M	292	177	121
			Q	206	124	85
			H	153	92	63
0x08	8	49 x 49	L	460	278	191
			M	364	220	151
			Q	258	156	107
			H	201	121	83
0x09	9	53 x 53	L	551	334	229
			M	431	261	179
			Q	311	188	129
			H	234	142	97
0x0A	10	57 x 57	L	651	394	270
			M	512	310	212
			Q	363	220	150
			H	287	173	118
0x0B	11	61 x 61	L	771	467	320
			M	603	365	250
			Q	426	258	176
			H	330	199	136
0x0C	12	65 x 65	L	882	534	366
			M	690	418	286
			Q	488	295	202
			H	373	226	154
0x0D	13	69 x 69	L	1021	618	424
			M	795	482	330
			Q	579	351	240
			H	426	258	176
0x0E	14	73 x 73	L	1100	666	457
			M	870	527	361
			Q	620	375	257
			H	467	282	193
0x0F	15	77 x 77	L	1249	757	519
			M	990	599	411
			Q	702	425	291
			H	529	320	219
0x10	16	81 x 81	L	1407	853	585
			M	1081	655	449
			Q	774	469	321
			H	601	364	249
0x11	17	85 x 85	L	1547	937	643
			M	1211	733	503
			Q	875	530	363
			H	673	407	279
0x12	18	89 x 89	L	1724	1045	717
			M	1345	815	559
			Q	947	573	393
			H	745	451	309
0x13	19	93 x 93	L	1902	1152	791
			M	1499	908	623
			Q	1062	643	441
			H	812	492	337



n	VERSION	MODULES	ECC LEVEL	NUMERIC	ALPHANUMERIC	BINARY
0x14	20	97 x 97	L	2060	1248	857
			M	1599	969	665
			Q	1158	701	481
			H	918	556	381
0x15	21	101 x 101	L	2231	1351	928
			M	1707	1034	710
			Q	1223	741	508
			H	968	586	402
0x16	22	105 x 105	L	2408	1459	1002
			M	1871	1133	778
			Q	1357	822	564
			H	1055	639	438
0x17	23	109 x 109	L	2619	1587	1090
			M	2058	1247	856
			Q	1467	889	610
			H	1107	671	460
0x18	24	113 x 113	L	2811	1703	1170
			M	2187	1325	90
			Q	1587	92	60
			H	1227	73	50
0x19	25	117 x 117	L	3056	1852	1272
			M	2394	1450	96
			Q	1717	1040	74
			H	1285	78	54
0x1A	26	121 x 121	L	3282	198	1366
			M	2543	1541	1058
			Q	1803	1093	70
			H	1424	83	52
0x1B	27	125 x 125	L	3516	2131	1464
			M	2700	1636	1124
			Q	1932	1171	84
			H	1500	89	64
0x1C	28	129 x 129	L	3668	2222	1527
			M	2856	1731	118
			Q	2084	1262	87
			H	1580	97	67
0x1D	29	133 x 133	L	3908	2368	1627
			M	3034	1838	1263
			Q	2180	1321	97
			H	1676	1015	67
0x1E	30	137 x 137	L	4157	251	1731
			M	3288	1993	136
			Q	2357	1428	91
			H	1781	107	71
0x1F	31	141 x 141	L	4416	2676	183
			M	3485	2112	1451
			Q	2472	1498	102
			H	1896	114	69
0x20	32	145 x 145	L	4685	283	1951
			M	3692	2237	1537
			Q	266	1617	1111
			H	2021	1225	81



n	VERSION	MODULES	ECC LEVEL	NUMERIC	ALPHANUMERIC	BINARY
0x21	33	149 x 149	L	4964	3008	2067
			M	3908	2368	1627
			Q	2804	16	1167
			H	2156	1306	87
0x22	34	153 x 153	L	5252	3182	2187
			M	4133	2505	1721
			Q	2948	1786	1227
			H	2300	1393	97
0x23	35	157 x 157	L	5528	3350	2302
			M	4342	2631	1808
			Q	3080	1866	1282
			H	2360	1430	92
0x24	36	161 x 161	L	5835	3536	2430
			M	4587	277	1910
			Q	3243	1965	1350
			H	2523	152	1050
0x25	37	165 x 165	L	6152	3728	2562
			M	4774	2893	1988
			Q	3416	2070	1422
			H	2624	1590	1092
0x26	38	169 x 169	L	6478	3926	2698
			M	5038	3053	2098
			Q	3598	2180	1498
			H	2734	1657	1138
0x27	39	173 x 173	L	6742	4086	2808
			M	5312	321	2212
			Q	3790	2297	1578
			H	2926	1773	1218
0x28	40	177 x 177	L	7088	4295	2952
			M	5595	3390	2330
			Q	3992	241	1662
			H	3056	1851	1272

[Default] n = 0x00

[Reference] [0x1D 0x28 0x6B](#)

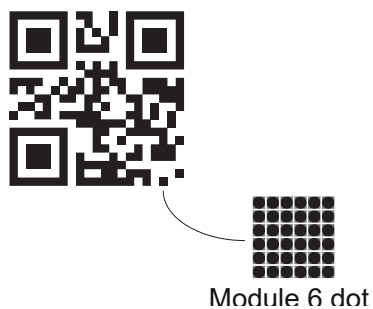
[Example] To select QRcode version 8 the command sequence is:  
0x1D 0x28 0x6B 0x03 0x00 0x31 0x42 0x08

## 0x1D 0x28 0x6B [Fn 167]

<GS ( k>

Specify dot size of the module of the QRcode barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4								
[Format]	Hex	1D	28	6B	pL	pH	31	43	n
	ASCII	GS	(	k	pL	pH	1	C	n
[Range]	$(pL + pH \times 256) = 3$ $(pL = 0x03, pH = 0x00)$ $0x02 \leq n \leq 0x18$								
[Description]	Specifies numbers of dots for each pixel of QRcode barcode.								
[Notes]	pL and pH specify the number of successive bytes to be sent.								
[Default]	n = 0x06								
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]									



# 0x1D 0x28 0x6B [Fn 169]

<GS ( k>

Specify the error correction level of the QRcode barcode

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1D 28 6B pL pH 31 45 n  
ASCII GS ( k pL pH 1 E n

[Range]  $(pL + pH \times 256) = 3$  ( $pL = 0x03, pH = 0x00$ )  
 $0x30 \leq n \leq 0x34$

[Description] Specifies the ECC level (Error Correction Capability) of QRcode barcode.


n	ECC level	
0x30	AUTO	
0x31	ECC L = approx 20% of symbol	Recovery Capability = approx 7%
0x32	ECC M = approx 37% of symbol	Recovery Capability = approx 15%
0x33	ECC Q = approx 55% of symbol	Recovery Capability = approx 25%
0x34	ECC H = approx 65% of symbol	Recovery Capability = approx 30%

[Notes] pL and pH specify the number of successive bytes to be sent.


[Default] n = 0x30

[Reference] [0x1D 0x28 0x6B](#)


[Example]




Level L




Level M






Level Q



Level H



Recover Capability

L	M	Q	H
			
7%	15%	25%	30%



## 0x1D 0x28 0x6B [Fn 180]

<GS ( k>

Store the data in the barcode save area for printing in QRcode format

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4									
[Format]	Hex	1D	28	6B	pL	pH	31	50	31	d1...dk
	ASCII	GS	(	k	pL	pH	1	P	1	d1...dk
[Range]	0x00 ≤ d ≤ 0xFF k = (pL + pH × 256) - 3 <ul style="list-style-type: none"> <li>QRcode barcode only with binary characters (8 bit): 4 ≤ (pL + pH × 256) ≤ 2957 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x0B)</li> <li>QRcode barcode only with alphanumeric characters: 4 ≤ (pL + pH × 256) ≤ 4300 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x10)</li> <li>QRcode barcode only with numeric characters: 4 ≤ (pL + pH × 256) ≤ 7093 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x1B)</li> </ul>									
[Description]	Store the data (d1...dk) in the barcode save area for printing in QRcode format.									
[Notes]	<ul style="list-style-type: none"> <li>Data stored in the barcode save area by this function are processed by <a href="#">Function 181</a> and then reserved.</li> <li>pL and pH specify the number of successive bytes to be sent.</li> <li>k bytes of d1...dk are processed as barcode data.</li> <li>Specify only the data code word of the barcode with this function.</li> </ul>									
[Default]										
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]										



## 0x1D 0x28 0x6B [Fn 181]

<GS ( k>

Prints the data stored in the barcode save area in QRcode format

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1D    28    6B    pL    pH    31    51    31 ASCII           GS    (    k    pL    pH    1    Q    1
[Range]	(pL + pH × 256) = 3    (pL = 0x03, pH = 0x00)
[Description]	Prints the data stored in the barcode save area in QRcode format.
[Notes]	pL and pH specify the number of successive bytes to be sent.
[Default]	
[Reference]	<a href="#">0x1D 0x28 0x6B</a>
[Example]	

---



## 0x1D 0x28 0x6B [Fn 182]

<GS ( k>

Transmit the QRcode barcode size in the barcode save area

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1D	28	6B	pL	pH	31	52	30
	ASCII	GS	(	k	pL	pH	1	R	0

[Range] (pL+pH × 256) = 3 (pL = 0x03, pH = 0x00)

[Description] Transmits the QRcode barcode size in the barcode save area.

- [Notes]
- To store the data in the device barcode save area use the [Function 180](#).
  - In standard mode, use this function when device is at the beginning of a line or when there is no data in the print buffer.
  - pL and pH specify the number of successive bytes to be sent.
  - The size information for each data is as follows:

SEND DATA	HEX	DATA
Header	37	1 byte
Identifier	36	1 byte
Horizontal size <sup>(1)</sup>	30-39	1 - 5 byte
Separator	1F	1 byte
Vertical size <sup>(1)</sup>	30-39	1 - 5 byte
Separator	1F	1 byte
Fixed value	31	1 byte
Separator	1F	1 byte
Other information <sup>(2)</sup>	30 or 31	1 byte
NUL	00	1 byte

(1) "Horizontal size" and "vertical size" indicate the number of dots of the symbol.

The values of the vertical size and horizontal size are converted to characters and sent starting from the high order end (ex: When horizontal size is 120 dots, horizontal size is 0x31 0x32 0x30, which is 3 bytes of data).

(2) "Other information" indicates whether printing of the data in the symbol storage area is possible or impossible. The "Other information" is the following:

HEX	CONDITION
30	Printing is possible
31	Printing is impossible



- Size information indicates size of symbol that is printed by [Function 181](#).
- The quiet zone is not included in the size information.
- If “other information” is “Printing is impossible“(0x31), use one of the solutions shown below:

CAUSE	SOLUTION
There are data in the print buffer in the standard mode	Clear the data in the print buffer by executing <a href="#">0x0A</a> , <a href="#">0x0D</a> , <a href="#">0x1B</a> <a href="#">0x4A</a> print commands.
Symbol is bigger than the current print area.	Expand the print area by <a href="#">0x1D 0x57</a> . Reduce the module size by using <a href="#">Function 167</a> . Lower the error correction level by using <a href="#">Function 169</a> .
The data in the symbol storage area is too large.	Send correct data by using <a href="#">Function 180</a> . Lower the error correction level by using <a href="#">Function 169</a> .
There is no data in the symbol storage area.	Send data to the symbol storage area by using <a href="#">Function 180</a> .

[Default]

[Reference]

[0x1D 0x28 0x6B](#)

[Example]

A possible device response can be:

0x37 0x36 0x31 0x32 0x36 0x1F 0x31 0x32 0x36 0x1F 0x31 0x1F 0x30 0x00

where:

0x37	header
0x36	identifier
0x31 0x32 0x36	horizontal size 126 dots (0x31 = 1, 0x32 = 2, 0x36 = 6)
0x1F	separator
0x31 0x32 0x36	vertical size 126 dots (0x31 = 1, 0x32 = 2, 0x36 = 6)
0x1F	separator
0x31	fixed value
0x1F	separator
0x30	printing possible
0x00	NUL (end of text character)



## 0x1D 0x48

<GS H>

Select printing position of HRI characters in 1D barcodes

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex                1D    48    n  
                          ASCII            GS    H    n

[Range]            0x00 ≤ n ≤ 0x03  
                          0x30 ≤ n ≤ 0x33

[Description]      Selects the print position of HRI (Human Readable Interpretation) characters when printing a 1D barcode, based on the value of n as follows:

n	FUNCTION
0x00, 0x30	Not printed
0x01, 0x31	Above the barcode
0x02, 0x32	Below the barcode
0x03, 0x33	Both above and below the barcode

[Notes]            HRI characters are printed using the font specified by [0x1D 0x66](#).

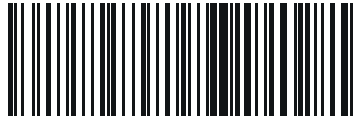
[Default]           n = 0x00

[Reference]        [0x1D 0x66](#), [0x1D 0x6B](#)



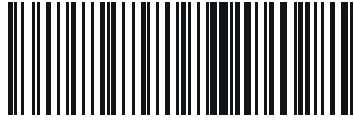
[Example]

Not printed



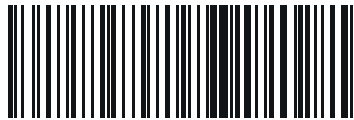
Above the barcode

ABCDEFGH123456



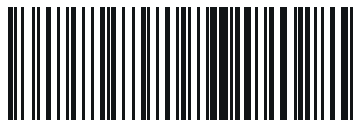
Below the barcode

ABCDEFGH123456



Both above and below the barcode

ABCDEFGH123456



ABCDEFGH123456

# 0x1D 0x66

<GS f>

## Select font for HRI characters

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

[Format] Hex 1D 66 n  
 ASCII GS f n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Selects a font for the HRI (Human Readable Interpretation) characters used when printing a 1D barcode, based on the value of n as follows:

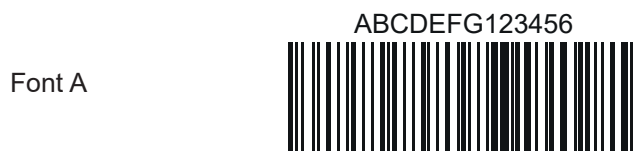
n	FONT
0x00, 0x30	Font A
0x01, 0x31	Font B

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

[Default] n = 0x00

[Reference] [0x1D 0x48](#), [0x1D 0x6B](#)

[Example]





## 0x1D 0x68

<GS h>

### Set 1D barcode height

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II-USB  
                         PLUS4

---

[Format]            Hex            1D    68    n  
                         ASCII            GS    h    n

[Range]             $0x01 \leq n \leq 0xFF$

[Description]       Sets the height of the 1D barcode.  
                         n specifies the number of vertical dots.

[Notes]

[Default]            n = 0xA2 (20.25 mm)

[Reference]          [0x1D 0x6B](#)

[Example]            To print a barcode with height of 15 mm, the command sequence is:  
                         0x1D 0x68 0x78

Where:

15 mm = 15 × 8 dots = 120 dots which converted in hexadecimal value = 0x78



# 0x1D 0x6B

<GS k>

## Print 1D barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

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

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

[Range]	Format 1	0x00 ≤ m ≤ 0x08,	m = 0x14
	Format 2	0x41 ≤ m ≤ 0x49,	m = 0x5A

[Description] Selects a 1D barcode system and prints the 1D barcode based on the value of m as follows:

### Format 1

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x00	UPC-A	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x01	UPC-E	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x02	EAN13 (JAN)	0x0C ≤ k ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x03	EAN8 (JAN)	0x07 ≤ k ≤ 0x08	0x30 ≤ d ≤ 0x39
0x04	CODE39	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x05	ITF	0x01 ≤ k (even number)	0x30 ≤ d ≤ 0x39
0x06	CODABAR	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x07	CODE93	0x01 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x08	CODE128	0x02 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x14	CODE32	0x08 ≤ k ≤ 0x09	0x30 ≤ d ≤ 0x39



## Format 2

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x41	UPC-A	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x42	UPC-E	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x43	EAN13 (JAN)	0x0C ≤ n ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x44	EAN8 (JAN)	0x07 ≤ n ≤ 0x08	0x30 ≤ d ≤ 0x39
0x45	CODE39	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x46	ITF	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39
0x47	CODABAR	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x48	CODE93	0x01 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x49	CODE128	0x02 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x4B	GS1 Databar	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4C	GS1 Databar Truncated	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4D	GS1 Databar Limited	n = 0x0D	0x30 ≤ d ≤ 0x39 (however d1 = 0x30, 0x31)
0x4E	GS1 Databar Expanded	0x02 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x61 ≤ d ≤ 0x7A, 0x20 ≤ d ≤ 0x22, 0x25 ≤ d ≤ 0x2F, 0x3A ≤ d ≤ 0x3F, d = 0x5F, 0x7B (however d1 = 0x28, 0x30 ≤ d2 ≤ 0x39, 0x30 ≤ d3 ≤ 0x39 when 0x30 ≤ d1 ≤ 0x39, 0x30 ≤ d2 ≤ 0x39)
0x5A	CODE32	0x08 ≤ n ≤ 0x09	0x30 ≤ d ≤ 0x39

### [Notes]

- If d is outside of the specified range, the device 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 device 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 (bold, 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 device 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 device 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 device 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 device ignores the last received data.

## Format 2

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

When CODE93 is used:

- The device prints an HRI character (o) as a start character at the beginning of the HRI character string.
- The device prints an HRI character (o) as a stop character at the end of the HRI character string.
- The device prints an HRI character (n) as a control character (0x00 to 0x1F and 0x7F).

When CODE128 is used, 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
SHIFT	{S	7B, 53
CODE A	{A	7B, 41
CODE B	{B	7B, 42
CODE C	{C	7B, 43
FNC1	{1	7B, 31
FNC2	{2	7B, 32
FNC3	{3	7B, 33
FNC4	{4	7B, 34
{“	{{	7B, 7B

When UPC-E is used, introducing the barcode characters, the device 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 for printing a CODE39 barcode:  
`0x1D 0x6B 0x04 0x54 0x45 0x53 0x54 0x00`

Format 2: Example for printing a CODE39 barcode:  
`0x1D 0x6B 0x45 0x04 0x54 0x45 0x53 0x54`



## 0x1D 0x77

<GS w>

### Set 1D barcode width

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex            1D    77    n  
                          ASCII           GS    w    n

[Range]            0x01 ≤ n ≤ 0x06

[Description]      Sets the horizontal size of the 1D barcode. n specifies the barcode width as follows:

n	MODULE WIDTH (mm)
0x01	0.125
0x02	0.25
0x03	0.375
0x04	0.5
0x05	0.625
0x06	0.75

n	WIDE BAR / NARROW BAR RATIO	
If n < 0x80	0x01, 0x02, 0x03, 0x04, 0x05, 0x06	3:1
	0x81	3:1
	0x82	2.5:1
	0x83	2.33:1
If n > 0x80	0x84	2.25:1
	0x85	3:1
	0x86	3:1

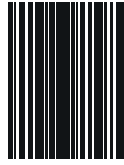
[Notes]            This command is enabled only when inserted at the beginning of a line.



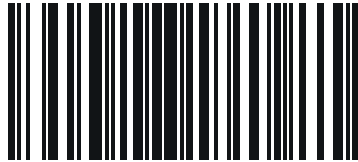
[Default] n = 0x03

[Reference] 0x1D 0x6B

[Example]



n = 0x01



n = 0x03



# CHARACTER COMMANDS

## 0x18

<CAN>

### Cancel current line transmitted

---

Valid for	mPLUS2
	PLUS2 STD, PLUS2 8-42 V
	PLUS II-USB
	PLUS4

---

[Format]	Hex	18
	ASCII	CAN

[Range]

[Description] Deletes current line transmitted.

[Notes]

- Sets the print position to the beginning of the line.
- This command does not clear the receive buffer.

[Default]

[Reference]

[Example]

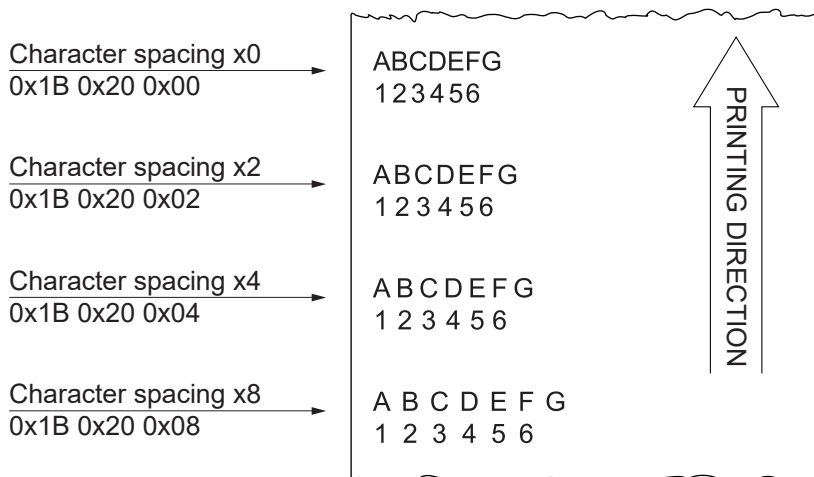
# 0x1B 0x20

<ESC SP>

## Set right-side character spacing

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4			
[Format]	Hex	1B	20	n
	ASCII	ESC	SP	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Sets the character spacing for the right side of the character to [n × horizontal or vertical motion units].			
[Notes]	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion units does not affect the current right side spacing.</li> <li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• The maximum right side spacing is 32 mm.</li> <li>• In standard mode, the horizontal motion unit is used.</li> </ul>			
[Default]	n = 0x00			
[Reference]	<a href="#">0x1D 0x50</a>			

[Example]





# 0x1B 0x21

<ESC !>

## Select print modes

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

[Format] Hex 1B 21 n  
 ASCII ESC ! n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Selects print modes based on the value of n as follows:

### mPLUS2, PLUS2, PLUS II-USB

BIT	OFF/ON	n	FUNCTION	13/17 dpi	17/22 dpi	22/17 dpi
0	Off	0x00	Character font A selected	16 x 24	12 x 24	9 x 24
	On	0x01	Character font B selected	12 x 24	9 x 24	12 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			



## PLUS4

BIT	OFF/ON	n	FUNCTION	11/15 dpi	15/20 dpi	20/15 dpi
0	Off	0x00	Character font A selected	18 x 24	14 x 24	10 x 24
	On	0x01	Character font B selected	14 x 24	10 x 24	14 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			

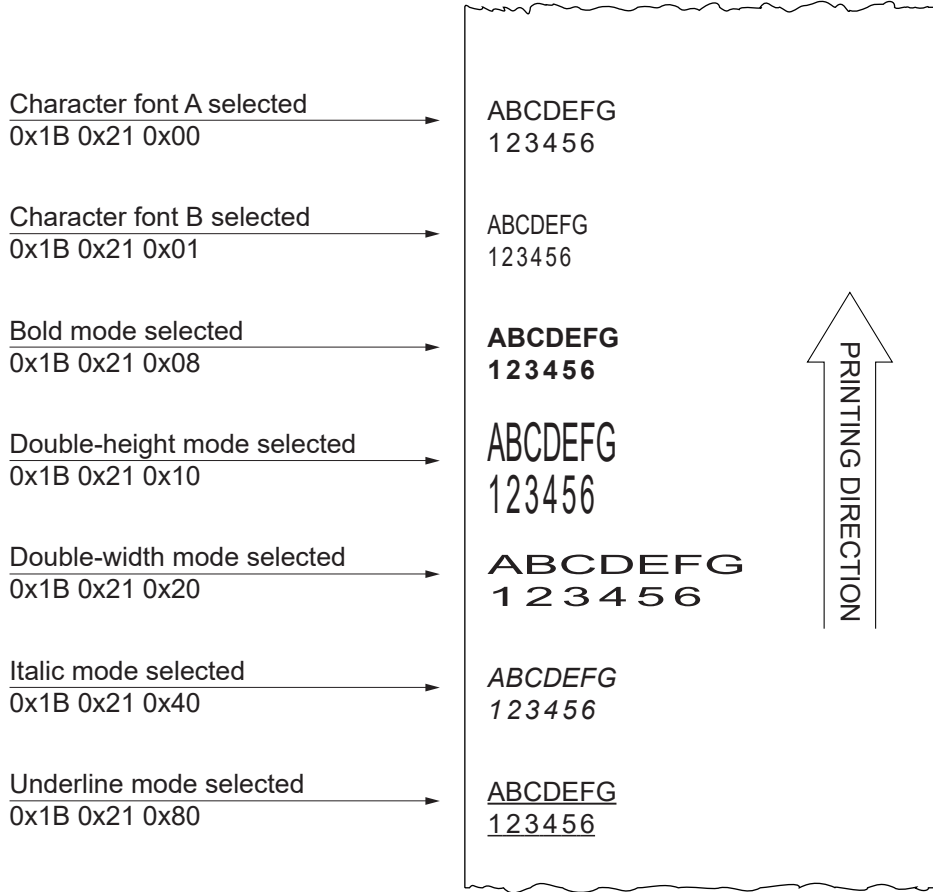
- [Notes]
- The device can underline all characters, but cannot underline the spaces set by [0x09](#), [0x1B 0x5C](#) and 90°/270° rotated characters.
  - This command resets the left and right margin at default value (see [0x1D 0x4C](#), [0x1D 0x57](#)).
  - [0x1B 0x45](#) can also be used to turn the bold mode on or off. However, the last-received setting command is the effective one.
  - [0x1B 0x2D](#) can also be used to turn the underlining mode on or off. However, the last-received setting command is the effective one.
  - [0x1D 0x21](#) can also be used to select character height or width. However, the last-received setting command is the effective one.
  - [0x1B 0x34](#) can also be used to turn the italic mode on or off. However, the last-received setting command is the effective one.
  - Commands that change the height and width of characters are effective on the x and y axes. In case of 90°/270° rotated characters, command [0x1B 0x21 0x10](#) selects double-width mode and command [0x1B 0x21 0x20](#) selects double-height mode.

[Default] n = 0x00

[Reference] [0x1B 0x2D](#), [0x1B 0x45](#), [0x1D 0x21](#), [0x1B 0x34](#)



[Example]





## 0x1B 0x25

<ESC %>

### Enable or disable user-defined characters

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1B    25    n ASCII          ESC   %    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Enables or disables the user-defined character set. When the Least Significant Bit (LSB) of n is 0, the user-defined character set is disabled. When the Least Significant Bit (LSB) of n is 1, the user-defined character set is enabled.
[Notes]	<ul style="list-style-type: none"><li>• Only the Least Significant Bit (LSB) of n is applicable.</li><li>• When the user-defined character set is disabled, the internal character set is automatically selected.</li></ul>
[Default]	n = 0x00
[Reference]	<a href="#">0x1B 0x26</a> , <a href="#">0x1B 0x3F</a>
[Example]	

---



## 0x1B 0x26

<ESC &>

Defines user-defined characters

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4						
[Format]	Hex	1B	26	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
	ASCII	ESC	&	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
[Range]	<b>mPLUS2, PLUS2, PLUS II-USB</b>			<b>PLUS4</b>			
	y = 0x03 0x20 ≤ c1 ≤ cn ≤ 0x7E 0x00 ≤ x ≤ 0x10 (font 16 x 24) 0x00 ≤ x ≤ 0x0C (font 12 x 24) 0x00 ≤ x ≤ 0x09 (font 9 x 24) 0x00 ≤ d0...dk ≤ 0xFF k = cn – c1 + 1			y = 0x03 0x20 ≤ c1 ≤ cn ≤ 0x7E 0x00 ≤ x ≤ 0x12 (font 18 x 24) 0x00 ≤ x ≤ 0x0E (font 14 x 24) 0x00 ≤ x ≤ 0x0A (font 10 x 24) 0x00 ≤ d0...dk ≤ 0xFF k = cn – c1 + 1			
[Description]	Defines user programmable characters. y specifies the number of bytes in the vertical direction. c1 specifies the start character code and cn specifies the final character code of the characters map area. x specifies the width of the character to be replaced. d0...dk specifies the new character definition.						
[Notes]	<ul style="list-style-type: none"> <li>• It is possible to define multiple characters for consecutive character codes. If only one character is desired, use c1 = cn.</li> <li>• if cn &lt; c1, the command is not executed.</li> <li>• 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.</li> <li>• The data to define a user-defined character is (x × y) bytes.</li> <li>• To print a dot, set the corresponding bit to 1; to not have it print, set to 0.</li> <li>• This command can define different user-defined character patterns for each font. To select the font, use <a href="#">0x1B 0x21</a>.</li> <li>• The user programmable character definitions are cleared when commands <a href="#">0x1B 0x40</a>, <a href="#">0x1D 0x2A</a> or <a href="#">0x1B 0x3F</a> are executed or the device is reset or turned off.</li> <li>• x1 [d0 ... dk] will be repeated for each character to be replaced.</li> </ul>						
[Default]	Internal character set						
[Reference]	<a href="#">0x1B 0x25</a> , <a href="#">0x1B 0x3F</a>						
[Example]	<p>To replace only the “A” character of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x41 0x10 [48 bytes of the new character definition].</p> <p>To replace “A” and “B” characters of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x42 0x10 [48 bytes of the new character definition] 0x10 [48 bytes of the new character definition].</p>						

# 0x1B 0x2D

<ESC ->

## Turn underline mode on or off

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

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

[Range] 0x00 ≤ n ≤ 0x02  
0x30 ≤ n ≤ 0x32

[Description] Turns underline mode on or off based on the value of n as follows:

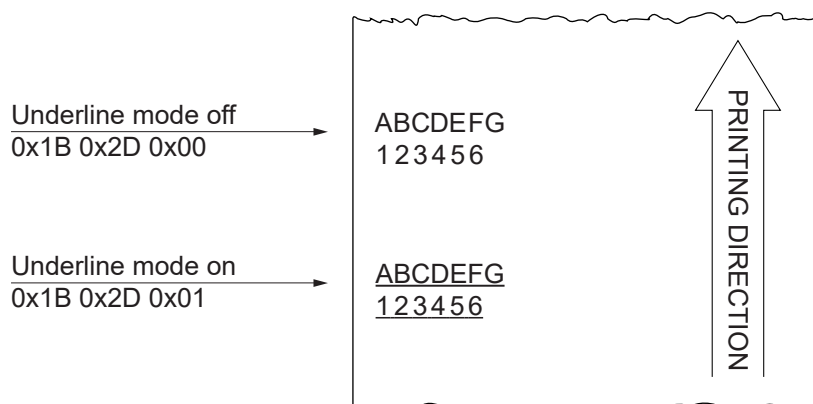
n	FUNCTION
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1 dot thick)
0x02, 0x32	Turns on underline mode (2 dot thick)

- [Notes]
- The device can underline all characters, but cannot underline the space and right-side character spacing set by command [0x09](#).
  - The device cannot underline 90°/270° rotated characters and white/black inverted characters.
  - When underline mode is turned off by setting the value of n to 0x00 or 0x30, the data which follows is not underlined.
  - Underline mode can also be turned on or off by using [0x1B 0x21](#). However, the last-received setting command is the effective one.

[Default] n = 0x00

[Reference] [0x1B 0x21](#)

[Example]



## 0x1B 0x34

<ESC 4>

### Turn italic mode on or off

Valid for  
 mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

[Format]      Hex            1B    34    n  
                  ASCII        ESC    4     n

[Range]        0x00 ≤ n ≤ 0x01  
                  0x30 ≤ n ≤ 0x31

[Description]    Turns italic mode on or off based on the value of n as follows:

n	FUNCTION
0x00, 0x30	Turns off italic mode
0x01, 0x31	Turns on italic mode

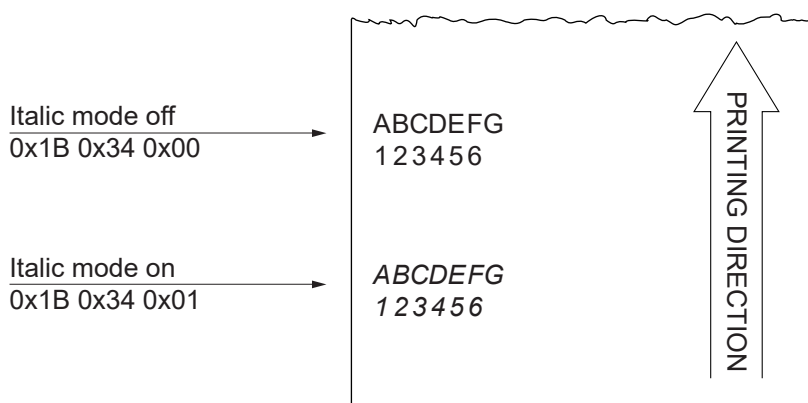
[Notes]

- The device can print any character in italic mode.
- When italic mode is turned off by setting the value of n to 0x00 or 0x30, the data which follows is printed in normal mode.
- Italic mode can also be turned on or off using [0x1B 0x21](#). However, the last-received setting command is the effective one.

[Default]        n = 0x00

[Reference]      [0x1B 0x21](#)

[Example]





## 0x1B 0x3F

<ESC ?>

### Cancel user-defined characters

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1B    3F    n ASCII          ESC   ?    n
[Range]	0x20 ≤ n ≤ 0x7E
[Description]	Cancels user-defined characters.
[Notes]	<ul style="list-style-type: none"><li>• This command cancels the pattern defined for the character code specified by n.</li><li>• This command deletes the pattern defined for the specified character code in the font selected by <a href="#">0x1B 0x21</a>.</li><li>• If the user-defined character has not been defined for the specified character code, the device ignores this command.</li></ul>
[Default]	
[Reference]	<a href="#">0x1B 0x26</a> , <a href="#">0x1B 0x25</a>
[Example]	

## 0x1B 0x45

<ESC E>

Turn bold mode on or off

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

[Format]            Hex            1B    45    n  
                          ASCII           ESC    E    n

[Range]            0x00 ≤ n ≤ 0xFF

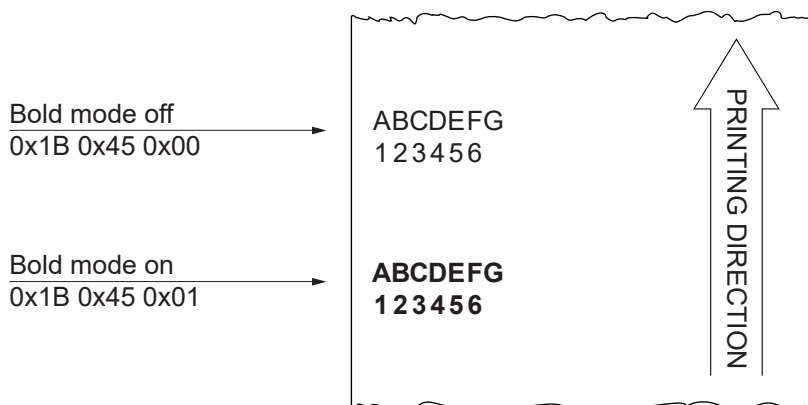
[Description]      Turns bold mode on or off, based on the n value:  
 - when the Least Significant Bit (LSB) of n is 0, the bold mode is off.  
 - when the Least Significant Bit (LSB) of n is 1, the bold mode is on.

[Notes]            • Only the Least Significant Bit (LSB) of n is effective.  
 • [0x1B 0x21](#) also turns on and off the bold mode. However, the last received command is the effective one.

[Default]           n = 0x00

[Reference]        [0x1B 0x21](#)

[Example]



# 0x1B 0x47

<ESC G>

## Turn double-strike mode on or off

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1B 47 n  
ASCII ESC G n

[Range]  $0x00 \leq n \leq 0xFF$

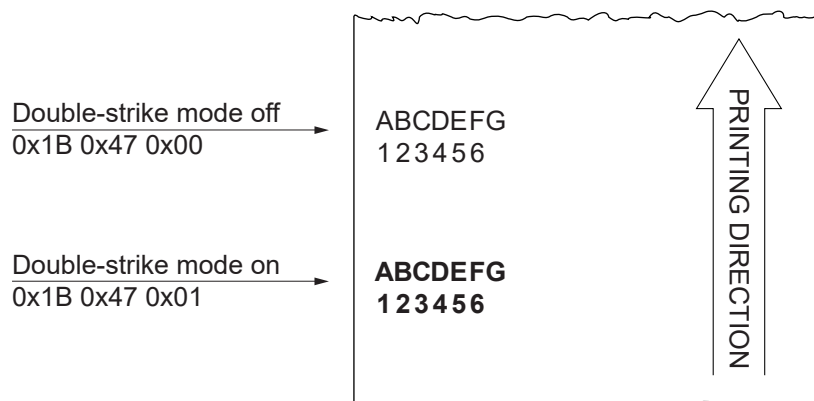
[Description] Turns double-strike mode on or off, based on the n value:  
- when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.  
- when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

[Notes] • Only the Least Significant Bit (LSB) of n is effective.  
• Device output is the same in double-strike and bold mode.

[Default] n = 0x00

[Reference] [0x1B 0x21](#), [0x1B 0x45](#)

[Example]





## 0x1B 0x4D

<ESC M>

### Select character font

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex                1B    4D    n  
                          ASCII            ESC    M    n

[Range]            n = 0x00, 0x01, 0x30, 0x31

[Description]      Selects characters font depending of cpi value set (Char/Inch) as follows

#### **mPLUS2, PLUS2, PLUS II-USB**

CHAR/INCH	n	FUNCTION
A = 13 cpi	0x00, 0x30	Font 13 cpi (16x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)
A = 17 cpi	0x00, 0x30	Font 17 cpi (12x24)
B = 22 cpi	0x01, 0x31	Font 22 cpi (9x24)
A = 22 cpi	0x00, 0x30	Font 22 cpi (9x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)

#### **PLUS4**

CHAR/INCH	n	FUNCTION
A = 11 cpi	0x00, 0x30	Font 11 cpi (18x24)
B = 15 cpi	0x01, 0x31	Font 15 cpi (14x24)
A = 15 cpi	0x00, 0x30	Font 15 cpi (14x24)
B = 20 cpi	0x01, 0x31	Font 20 cpi (10x24)
A = 20 cpi	0x00, 0x30	Font 20 cpi (10x24)
B = 15 cpi	0x01, 0x31	Font 15 cpi (14x24)

[Notes]

[Default]

[Reference]        [0x1B 0xC1](#)

[Example]



## 0x1B 0x52

<ESC R>

### Select an international character set

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1B 52 n  
ASCII ESC R n

[Range] 0x00 ≤ n ≤ 0x0A

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

n	HEX	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
n	CHARACTER SET												
0x00	U.S.A.	#	\$	@	[	\	]	^	`	{		}	~
0x01	France	#	\$	à	°	ç	§	^	`	é	ù	è	“
0x02	Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
0x03	United Kingdom	£	\$	@	[	\	]	^	`	{		}	~
0x04	Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
0x05	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
0x06	Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
0x07	Spain I	Pt	\$	@	i	Ñ	¿	^	`	“	ñ	}	~
0x08	Japan	#	\$	@	[	¥	]	^	`	{		}	~
0x09	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
0x0A	Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü

[Notes]

[Default] n = 0x00

[Reference]

[Example]

# 0x1B 0x56

<ESC V>

## Set 90° rotated print mode

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1B 56 n  
ASCII ESC V n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Turns 90° rotation mode on or off based on the value of n as follows:

n	FUNCTION
0x00, 0x30	Disable 90° rotation mode
0x01, 0x31	Enable 90° rotation mode

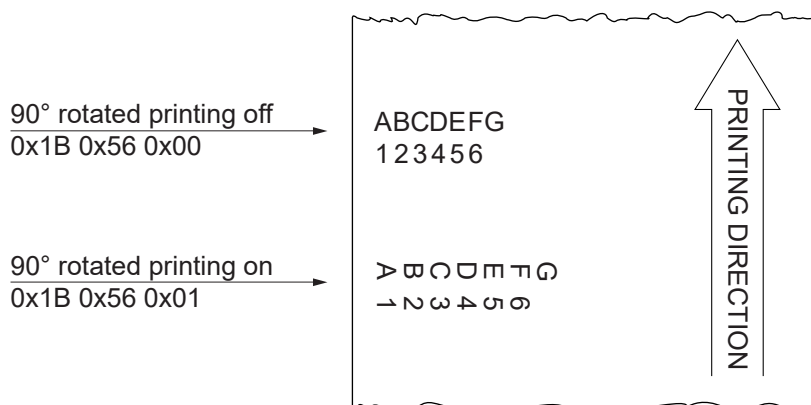
[Notes]

- When underlined mode is turned on, the device 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 = 0x00

[Reference] [0x1B 0x21](#), [0x1B 0x2D](#)

[Example]





# 0x1B 0x74

<ESC t>

## Select character code table

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

[Format]	Hex            1B    74    n ASCII           ESC   t    n
----------	--

[Range]            0x01 ≤ n ≤ 0x35, n = 0xFF

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

n	PAGINA	mPLUS2	PLUS2	PLUS II-USB	PLUS4
0x00	PC437 - U.S.A., Standard Europe				
0x01	Katakana			-	
0x02	PC850 - Multilingual				
0x03	PC860 - Portuguese				
0x04	PC863 - Canadian/French				
0x05	PC865 - Nordic				
0x06	VISCII - Vietnamese Standard Code	on request	on request	-	on request
0x0B	PC851 - Greek	on request	on request	-	on request
0x0C	PC853 - Turkish	on request	on request	-	on request
0x0D	PC857 - Turkish	on request	on request	-	on request
0x0E	PC737 - Greek	on request	on request	-	on request
0x0F	ISO8859-7 - Greek	on request	on request	-	on request
0x10	WPC1252 - Scandinavian			-	
0x11	PC866 - Cyrillic 2			-	
0x12	PC852 - Latin 2	on request	on request	-	on request
0x13	PC858 for Euro symbol in position 0xD5				
0x14	KU42 - Thai	on request	on request	-	on request
0x15	TIS11 - Thai	on request	on request	-	on request
0x1A	TIS18 - Thai	on request	on request	-	on request
0x1E	TCVN_3 - Vietnamese	on request	on request	-	on request
0x1F	TCVN_3 - Vietnamese	on request	on request	-	on request
0x20	PC720 - Arabic	on request	on request	-	on request
0x21	WPC775 - Baltic Rim	on request	on request	-	on request
0x22	PC855 - Cyrillic	on request	on request	-	on request



0x23	PC861 - Icelandic	on request	on request	-	on request
0x24	PC862 - Hebrew			-	
0x25	PC864 - Arabic			-	
0x26	PC869 - Greek	on request	on request	-	on request
0x27	ISO8859-2 - Latin 2	on request	on request	-	on request
0x28	ISO8859-15 - Latin 9	on request	on request	-	on request
0x29	PC1098 - Farsi	on request	on request	-	on request
0x2A	PC1118 - Lithuanian	on request	on request	-	on request
0x2B	PC1119 - Lithuanian	on request	on request	-	on request
0x2C	PC1125 - Ukrainian	on request	on request	-	on request
0x2D	WPC1250 - Latin 2			-	
0x2E	WPC1251 - Cyrillic			-	
0x2F	WPC1253 - Greek			-	
0x30	WPC1254 - Turkish			-	
0x31	WPC1255 - Hebrew			-	
0x32	WPC1256 - Arabic			-	
0x33	WPC1257 - Baltic Rim			-	
0x34	WPC1258 - Vietnamese			-	
0x35	KZ1048 - Kazakh	on request	on request	-	on request
0xFF	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.
- Make sure to select the font type “International” with the command `0x1C 0x25` or with the “Font type” parameter during the setup procedure (refer to the user manual of the device).

[Default]

n = 0x00

[Reference]

`0x1C 0x25`

[Example]

For printing Euro symbol (€), the command sequence is:  
`0x1B, 0x74, 0x13, 0xD5`

# 0x1B 0x7B

<ESC {>

## Turn upside-down printing mode on or off

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1B 7B n  
ASCII ESC { n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Turns upside-down printing mode on or off, based on the value of n:  
- when the Least Significant Bit (LSB) of n is 0, the upside-down printing mode is on.  
- when the Least Significant Bit (LSB) of n is 1, the upside-down printing mode is off.

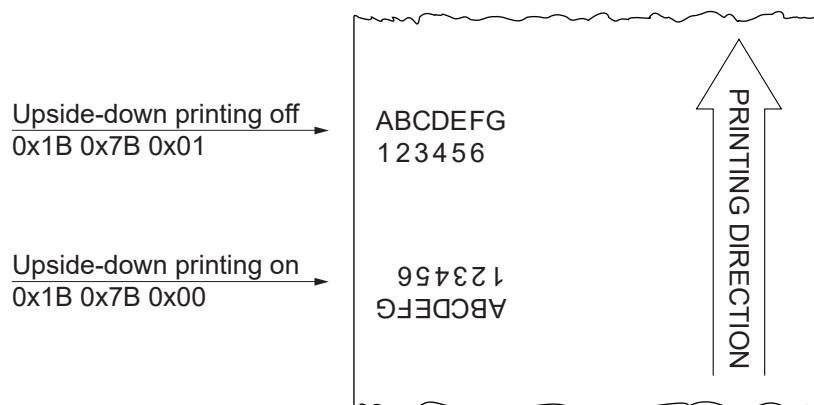
[Notes]

- Only the Least Significant Bit (LSB) of n is effective.
- This command is valid only if entered at the beginning of a line.
- In upside-down printing mode, the device rotates the line to be printed 180° and then prints it.

[Default] n = 0x00

[Reference]

[Example]



## 0x1B 0xC1

### Select character pitch

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1B	C1	n
	ASCII	ESC	0xC1	n

[Range]	0x00 ≤ n ≤ 0x02 0x30 ≤ n ≤ 0x32
---------	------------------------------------

[Description] This command selects the character pitch expressed in cpi (characters per inch) based on the values of n as follows:

#### mPLUS2, PLUS2, PLUS II-USB

n	PITCH	
0x00, 0x30	Font A = 13 cpi	Font B = 17 cpi
0x01, 0x31	Font A = 17 cpi	Font B = 22 cpi
0x02, 0x32	Font A = 22 cpi	Font B = 17 cpi

#### PLUS4

n	PITCH	
0x00, 0x30	Font A = 11 cpi	Font B = 15 cpi
0x01, 0x31	Font A = 15 cpi	Font B = 20 cpi
0x02, 0x32	Font A = 20 cpi	Font B = 15 cpi

[Notes]

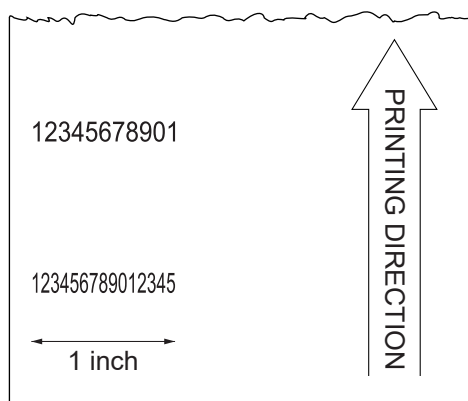
[Default] n = 0x00

[Reference] [0x1B 0x21](#)

[Example]

Character pitch 11 cpi  
0x1B 0xC1 0x00 →

Character pitch 15 cpi  
0x1B 0xC1 0x01 →





## 0x1C 0x25

<FS %>

### Select the font type

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS4

---

[Format]            Hex            1C    25    n  
                          ASCII          FS    %    n

[Range]            0x00 ≤ n ≤ 0x02

[Description]      Select the font type based on the value of n as follows:

n	FONT TYPE
0x00	International
0x01	Chinese GB18030
0x02	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese font (GB18030) or Korean font (PC949).
- The selection made by this command is stored in the RAM memory. Turning off the device reverts to the default value, that can be set with the “Font type” parameter during the setup procedure (refer to the user manual of the device).
- After selecting the font type “International” it must be selected the desired character code table using the command [0x1B 0x74](#).

[Default]            n = 0x00

[Reference]        [0x1B 0x74](#), see the Chinese fonts management commands manual.

[Example]



# 0x1D 0x21

<GS !>

## Select character size

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1D 21 n  
ASCII GS ! n

[Range] 0x00 ≤ n ≤ 0x07 0x10 ≤ n ≤ 0x17  
0x20 ≤ n ≤ 0x27 0x30 ≤ n ≤ 0x37  
0x40 ≤ n ≤ 0x47 0x50 ≤ n ≤ 0x57  
0x60 ≤ n ≤ 0x67 0x70 ≤ n ≤ 0x77

[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		Table 2 Select character height	
HEX	WIDTH	HEX	HEIGHT
00	1 (normal)	00	1 (normal)
10	2 (width = 2x)	01	2 (height = 2x)
20	3 (width = 3x)	02	3 (height = 3x)
30	4 (width = 4x)	03	4 (height = 4x)
40	5 (width = 5x)	04	5 (height = 5x)
50	6 (width = 6x)	05	6 (height = 6x)
60	7 (width = 7x)	06	7 (height = 7x)
70	8 (width = 8x)	07	8 (height = 8x)

[Notes] • This command is effective for all characters (except HRI characters).  
• If n falls outside the defined range, this command is ignored.  
• Characters enlarged to different heights on the same line are aligned at the baseline or top line.  
• 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one.  
• This command is effective on the x and y axes. In case of 90°/270° rotated characters, bit from 0 to 3 select character width and bit from 4 to 7 select character height.

[Default] n = 0x00

[Reference] 0x1B 0x21

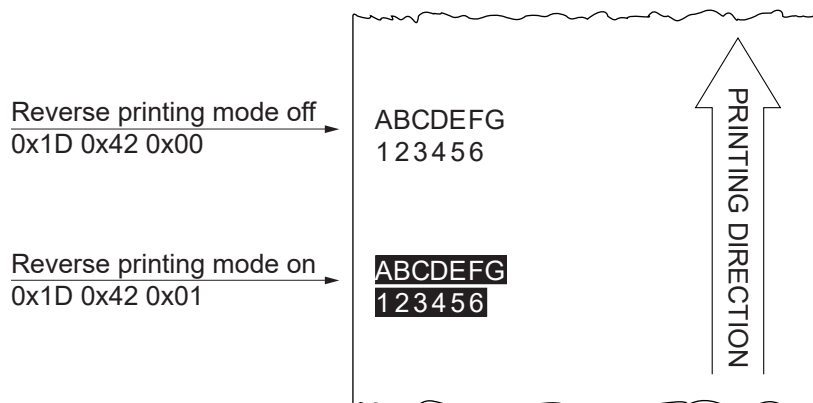
[Example] For printing a character with 6x width and height the command sequence is:  
0x1D 0x21 0x55

## 0x1D 0x42

<GS B>

### Turn black and white reverse printing mode on or off

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4			
[Format]	Hex	1D	42	n
	ASCII	GS	B	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Turns black and white reverse printing mode on or off, based on the value of n: - when the Least Significant Bit (LSB) of n is 0, white/black reverse printing is turned off. - when the Least Significant Bit (LSB) of n is 1, white/black reverse printing is turned on.			
[Notes]	<ul style="list-style-type: none"> <li>• Only the Least Significant Bit (LSB) of n is effective.</li> <li>• This command is available for both built-in and user-defined characters.</li> <li>• This command does not affect bit image, downloaded bit image, barcode, HRI characters and spacing skipped by 0x09 and 0x1B 0x5C.</li> <li>• This command does not affect white space between lines.</li> <li>• 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 black and white reverse mode is selected.</li> </ul>			
[Default]	n = 0x00			
[Reference]				
[Example]				



# LINE SPACING COMMANDS

## 0x1B 0x32

<ESC 2>

Select 1/6-inch line spacing

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex            1B    32  
                          ASCII           ESC    2

[Range]

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

[Notes]

[Default]

[Reference]        [0x1B 0x33](#)

[Example]

1/6-inch line spacing  
 0x1B 0x32 →

ABCDEFGH  
 123456

1/8-inch line spacing  
 0x1B 0x32 →

ABCDEFGH  
 123456





## 0x1B 0x33

<ESC 3>

### Set line spacing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex            1B    33    n ASCII           ESC   3    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Sets line spacing to [n × (vertical or horizontal motion unit)].
[Notes]	<ul style="list-style-type: none"><li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion unit does not affect the current line spacing.</li><li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li><li>• The maximum spacing is 32.5 mm.</li></ul>
[Default]	n = 0x40 (1/6 inch)
[Reference]	<a href="#">0x1B 0x32</a> , <a href="#">0x1D 0x50</a>
[Example]	

# PRINT COMMANDS

## 0x0A

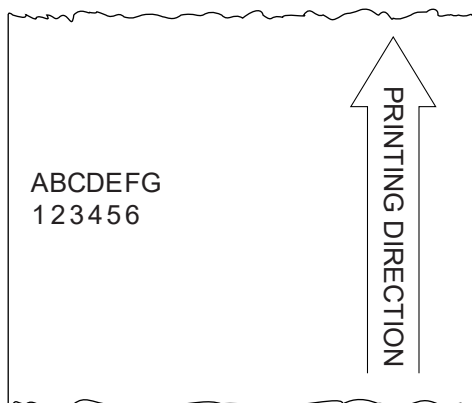
<LF>

### Print and line feed

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            0A ASCII         LF
[Range]	
[Description]	This command sets the print position to the beginning of the line printing the data in the buffer and feeding one line based on the line spacing set with the command <a href="#">0x1B 0x32</a> .
[Notes]	If the buffer is empty, the printing feeds of a value equal to the sum of the character height and line spacing.
[Default]	1/6-inch (32 dots)
[Reference]	<a href="#">0x1B 0x32</a> , <a href="#">0x1B 0x33</a> , <a href="#">0x0D</a>
[Example]	

---



To print the ticket shown in figure the command sequence is:  
ABCDEFGH 0x0A 123456 0x0A

# 0x0D

<CR>

## Print and carriage return

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

[Format] Hex 0D  
 ASCII CR

[Range]

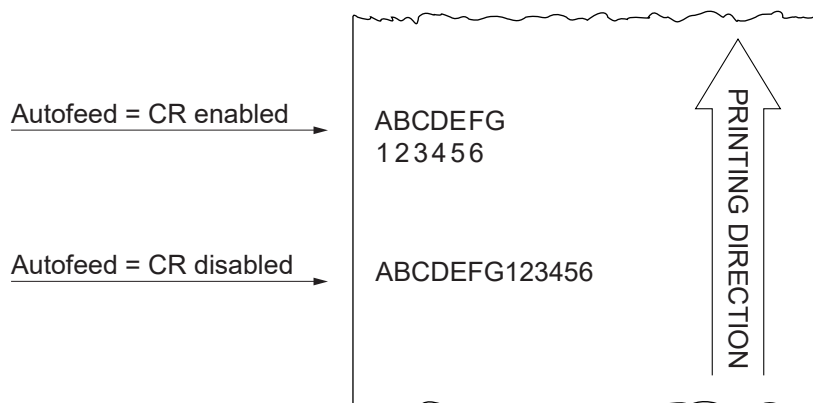
[Description] This command handles the end of a line text.

[Notes] If “Autofeed” setup parameter is set to “CR enabled”, this command works in the same way as [0x0A](#), otherwise it is disregarded.

[Default] See “Autofeed” setup parameter (refer to the user manual of the device).

[Reference] [0x0A](#)

[Example]



To print the ticket shown in figure the command sequence is:  
 ABCDEFGH 0x0D 123456 0x0D



## 0x1B 0x4A

<ESC J>

### Print and paper feed

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1B    4A    n ASCII          ESC   J    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Prints the data saved in the print buffer and feeds the paper [n × vertical or horizontal motion unit].
[Notes]	<ul style="list-style-type: none"><li>• After printing has been completed, this command sets the print starting position to the beginning of the line.</li><li>• The paper feed amount set by this command does not affect the values set by <a href="#">0x1B 0x32</a> or <a href="#">0x1B 0x33</a>.</li><li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>.</li><li>• <a href="#">0x1D 0x50</a> can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li></ul>
[Default]	
[Reference]	<a href="#">0x1D 0x50</a>
[Example]	

---



## 0x1B 0x64

<ESC d>

### Print and feed paper n lines

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex            1B    64    n ASCII           ESC   d    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Prints the data saved in the print buffer and feeds the paper n lines.
[Notes]	<ul style="list-style-type: none"><li>• n rows paper feed is equivalent to (n × char height + line spacing set).</li><li>• Sets the print starting position at the beginning of the line.</li><li>• This command does not affect the line spacing set by 0x1B 0x32 or 0x1B 0x33.</li><li>• The maximum paper feed amount is 254 lines. Even if a paper feed amount of more than 254 lines is set, the device feeds the paper only 254 lines.</li></ul>
[Default]	
[Reference]	0x1B 0x32, 0x1B 0x33
[Example]	

## 0x1D 0x7C

### Set printing density

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 1D 7C n  
ASCII GS 0x7C n

[Range]  $0x00 \leq n \leq 0x09$   
 $0x30 \leq n \leq 0x39$

[Description] Sets printing density. n specifies printing density as follows:

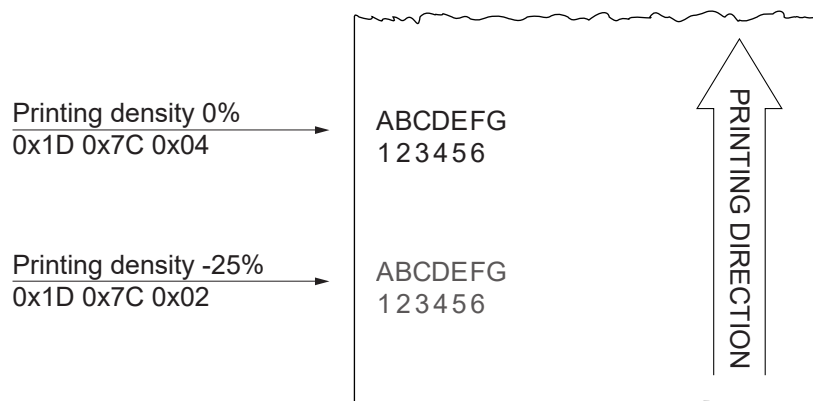
n	PRINTING DENSITY
0x00, 0x30	- 50%
0x01, 0x31	- 37%
0x02, 0x32	- 25%
0x03, 0x33	- 12.5%
0x04, 0x34	0%
0x05, 0x35	+ 12.5%
0x06, 0x36	+ 25%
0x07, 0x37	+ 37%
0x08, 0x38	+ 50%
0x09, 0x39	Linerless (PLUS2, PLUS II-USB)

[Notes] Printing density reverts to the default value when the device is reset or turned off.

[Default] n = 0x04

[Reference]

[Example]





# STATUS COMMANDS

## 0x10 0x04

<DLE EOT>

### Real-time status transmission

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex            10    04    n
	ASCII           DLE   EOT   n

[Range]	0x01 ≤ n ≤ 0x04 n = 0x11, 0x14, 0x15
---------	---

[Description]            Transmits the selected status when this command is received. The status to be transmitted is indicated in the following table:

---

n = 0x01	transmits device status
n = 0x02	transmits off-line status
n = 0x03	transmits error status
n = 0x04	transmits paper roll sensor status
n = 0x14	transmits full status
n = 0x15	transmits device ID

---

Device status (n = 0x01)

---

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	On-line
	On	08	Off-line
4	On	10	Not used. Fixed to on
5	-	-	RESERVED
6	Off	00	LF key released
	On	40	LF key pressed
7	Off	00	Not used. Fixed to off

---



Off-line status (n = 0x02)

### mPLUS2, PLUS2, PLUS4

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Paper isn't fed by FEED key
	On	08	Paper is fed by FEED key
4	On	10	Not used. Fixed to on
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to off

### PLUS II-USB with cover open sensor (optional)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Cover closed
	On	04	Cover open
3	Off	00	Paper isn't fed by FEED key
	On	08	Paper is fed by FEED key
4	On	10	Not used. Fixed to on
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to off



#### Error status (n = 0x03)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Not used. Fixed to off
4	On	10	Not used. Fixed to on
5	Off	00	Not used. Fixed to off
6	Off	00	No auto-recoverable error
	On	40	Auto-recoverable error
7	Off	00	Not used. Fixed to off

#### Paper roll sensor status (n = 0x04)

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



Full status (n = 0x14, 6 bytes)

1st byte = 0x10 (DLE)

2nd byte = 0x0F

3rd byte = Paper status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Paper present
	On	01	Paper not present
1	-	-	RESERVED
2	Off	00	Not used. Fixed to off
3	-	-	RESERVED
4	-	-	RESERVED
5	-	-	RESERVED
6	-	-	RESERVED
7	Off	00	Notch is placed over the sensor
	On	80	Notch is not placed over the sensor

4th byte = User status

**mPLUS2, PLUS2, PLUS4**

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



### PLUS II-USB with cover open sensor (optional)

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

5th byte = Recoverable status error

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Head temperature ok
	On	01	Head temperature error
1	Off	00	No COM error
	On	02	RS232 COM error
2	-	-	RESERVED
3	Off	00	Power supply voltage ok
	On	08	Power supply voltage error
4	-	-	RESERVED
5	Off	00	Acknowledge command
	On	20	Not acknowledge command error
6	Off	00	Free paper path
	On	40	Paper jam
7	Off	00	Notch search ok
	On	80	Error in notch search



6th byte = Unrecoverable error status

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

Transmit device ID (n = 0x15)

1st byte = (refer to command [0x1D 0x49](#))

[Notes]

This command is immediately executed even when the data buffer is full.

[Default]

[Reference]

[Example]

Request for device status transmission:

0x10 0x04 0x01

Device response:

0x80            LF key pressed



## 0x1B 0x76

<ESC v>

### Transmit paper sensor status

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

---

[Format] Hex 1B 76  
ASCII ESC v

[Range]

[Description] When this command is received, transmit the current status of the paper sensor. The status to be transmitted is shown in the table below:

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

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

[Default]

[Reference] [0x10 0x04](#)

[Example]



## 0x1C 0xEA

### Transmit the device serial number

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS4
[Format]	Hex            1C    EA    n ASCII          FS    0xEA   n
[Range]	n = 0x52, 0x72
[Description]	Transmits the device serial number.
[Notes]	<ul style="list-style-type: none"><li>• The serial number is a string of 16 alphanumeric characters.</li><li>• If the printer serial number is not defined, the device returns a string of 16 characters with a value of 0x00.</li></ul>
[Default]	
[Reference]	
[Example]	To read the device serial number the command sequence is: 0x1C 0xEA 0x52  The device returns a string of 16 alphanumeric characters just like the following: 'ABC0123456789012'



## 0x1D 0x61

<GS a>

### Enable or disable Automatic Status Back (ASB)

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS4

[Format] Hex 1D 61 n  
ASCII GS a n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Enable or disable basic Automatic Status Back (ASB) based on the value of n as follows:

BIT	OFF/ON	n	FUNCTION
0	-	-	Undefined
1	Off	00	Disable cover open + FEED button status
	On	02	Enable cover open + FEED button user status
2	Off	00	Disable recoverable error and online status
	On	04	Enable recoverable error and online status
3, 4, 5	-	-	Undefined
6	Off	00	Disable FEED button status
	On	40	Enable FEED button status
7	-	-	Undefined

- [Notes]
- ASB is the function that transmit the status of cover open or close and Online or offline from the device automatically. If you use ASB, application can acquire the device change in a real-time and passively.
  - Select any status enabled (except n = 0x00) and basic ASB starts. Then transmit the current basic ASB status. After that, while ASB is active the selected enabled basic ASB status is transmitted whenever the status changes.
  - When n = 0x00, basic ASB is disabled. When ASB is disabled, basic ASB status is not transmitted.
  - Multiple status items can be selected.
  - When ASB is active, ASB status is transmitted whenever the status changes even if the device is disabled by [0x1B 0x3D](#).
  - Settings are effective until [0x1B 0x40](#) is executed or the device is reset or turned off.

[Default]

[Reference]

[Example] [0x10 0x04](#)



## 0x1D 0x72

<GS r>

### Transmit status

Valid for

- mPLUS2
- PLUS2 STD, PLUS2 8-42 V
- PLUS II-USB
- PLUS4

[Format]

Hex	1D	72	n
ASCII	GS	r	n

[Range] n = 0x01, 0x31

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

n	FUNCTION
0x01, 0x31	Transmit paper sensor status as 0x1B 0x76

Paper sensor status:

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



## 0x1D 0xE0

### Enable or disable automatic FULL STATUS BACK

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1D	E0	n
	ASCII	GS	0xE0	n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Enable or disable automatic full status back. n specifies the composition of full status as follows:

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Disable paper status
	On	01	Enable paper status
1	Off	00	Disable user status
	On	02	Enable user status
2	Off	00	Disable recoverable error status
	On	04	Enable recoverable error status
3	Off	00	Disable unrecoverable error status
	On	08	Enable unrecoverable error status
4	-	-	Undefined
5	-	-	Undefined
6	-	-	Undefined
7	-	-	Undefined

[Notes] Once enable at least one byte of the full status, for each change of at least one of the bits which compose the required status, the status sent in automatic from the device will be so composed as follows:  
1st Byte = 0x10 (DLE)  
2nd Byte = n

[Default]

[Reference] [0x10 0x04](#)

[Example]



## 0x1D 0xE3

### Reading of length of printed paper

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1D	E3
	ASCII	GS	0xE3

[Range]

[Description] Reading of length expressed in centimetre of printed paper.

[Notes] The command returns a string indicating how much paper is printed.

[Default]

[Reference]

[Example] If the device has printed about 388.9 m, the answer will be:  
'38890cm'



## 0x1D 0xE5

### Reading number of power up

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II-USB  
                         PLUS4

---

[Format]            Hex            1D    E5  
                         ASCII           GS    0xE5

[Range]

[Description]       Reading number of power up of the device.

[Notes]             The command returns a string indicating the number of device power ups.

[Default]

[Reference]

[Example]           If the device is turned on 512 times, the answer will be:  
                         '512on'



# BIT-IMAGE COMMANDS

## 0x1B 0x2A

<ESC \*>

### Select bit image mode

---

Valid for            mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

---

[Format]            Hex            1B    2A    m    nL    nH    d1...dk  
 ASCII            ESC    \*    m    nL    nH    d1...dk

[Range]            m = 0x00, 0x01, 0x20, 0x21  
 0x00 ≤ nL ≤ 0xFF  
 0x00 ≤ nH ≤ 0x03  
 0x00 ≤ d ≤ 0xFF

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

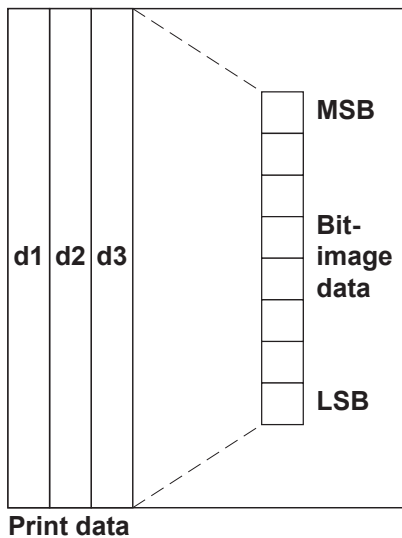
m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION	
		N. DOTS	DPI	DPI	N. DATA (k)
0x00	8 dots single density	8	67	100	nL + nH × 256
0x01	8 dots double density	8	67	200	nL + nH × 256
0x20	24 dots single density	24	200	100	(nL + nH × 256) × 3
0x21	24 dots double density	24	200	200	(nL + nH × 256) × 3

- [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 device returns to normal data processing mode.
  - This command is not affected by the bold, double-strike, underline (etc.) print modes, except for the upside-down mode.

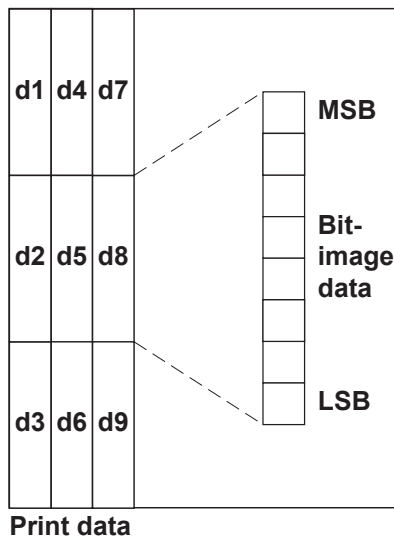


- The relationship between the image data and the dots to be printed is as follows:

8-dot bit image



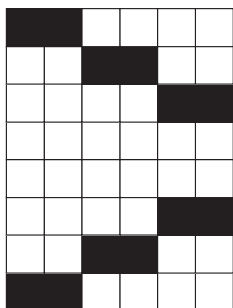
24-dot bit image



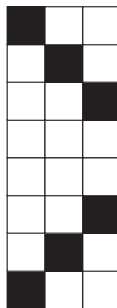
[Default]

[Reference]

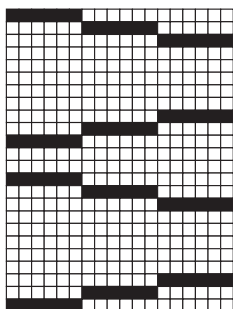
[Example]



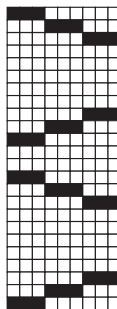
8 dots single density



8 dots double density



24 dots single density



24 dots double density





## 0x1D 0x2A

<GS \*>

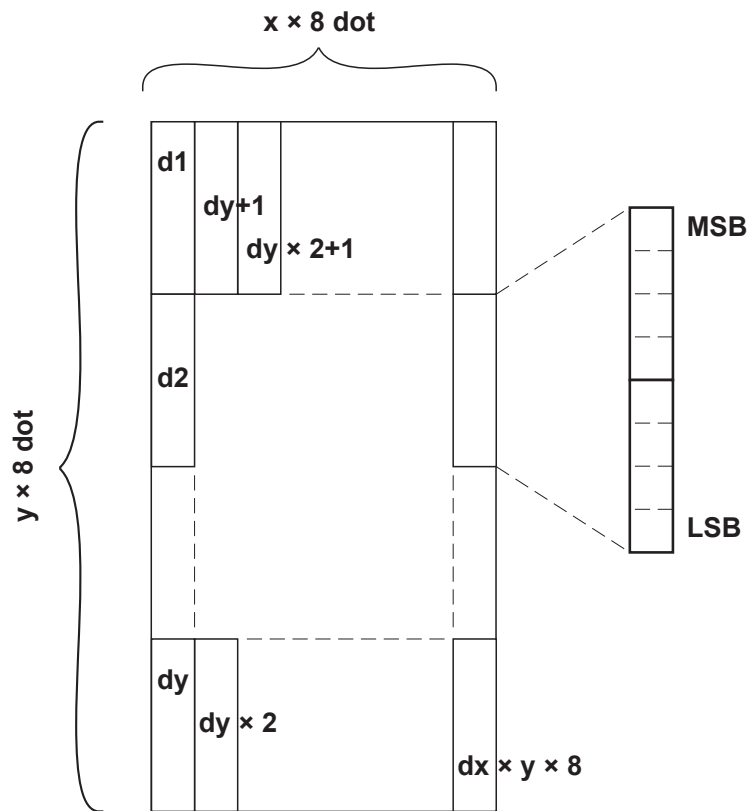
### Define received bit image

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS4					
[Format]	Hex	1D	2A	x	y	d1...d(x × y × 8)
	ASCII	GS	*	x	y	d1...d(x × y × 8)
[Range]	0x01 ≤ x ≤ 0xFF 0x01 ≤ y ≤ 0x30 x × y ≤ 1536 0x00 ≤ d ≤ 0xFF					
[Description]	Defines a received bit image using the number of dots specified by x and y. <ul style="list-style-type: none"> <li>• x specifies the number of bytes in the horizontal direction.</li> <li>• y specifies the number of bytes in the vertical direction.</li> </ul>					
[Notes]	<ul style="list-style-type: none"> <li>• The number of bytes in horizontal and vertical directions (x and y) are the horizontal and vertical size of the starting image divided by 8.</li> <li>• If x × y is out of the specified range, this command is disabled.</li> <li>• The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.</li> <li>• The received bit image definition is cleared when: <ul style="list-style-type: none"> <li>- 0x1B 0x40 is executed.</li> <li>- 0x1B 0x26 is executed.</li> <li>- Device is reset or the power is turned off.</li> </ul> </li> <li>• The image is saved in the graphic memory of the device.</li> </ul>					
[Default]						
[Reference]						



[Example]

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





## 0x1D 0x2F

<GS />

### Print received bit image

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS4

---

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

[Range]            0x00 ≤ m ≤ 0x03  
                          0x30 ≤ m ≤ 0x33

[Description]       Prints a received bit image using the mode specified by m as follows:

m	MODE
0x00, 0x30	Normal
0x01, 0x31	Double width
0x02, 0x32	Double height
0x03, 0x33	Quadruple

[Notes]

- This command is ignored if a received 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 bold, underline, character size, or white/black reverse printing), except for upside-down printing mode (180° rotation).
- If the received 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.

[Default]

[Reference]        [0x1D 0x2A](#)

[Example]



## 0x1D 0x76 0x30

<GS v 0>

### Print raster bit image

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS4

---

[Format] Hex 1D 76 30 m xL xH yL yH d1...dk  
ASCII GS v 0 m xL xH yL yH d1...dk

[Range]  $0x00 \leq m \leq 0x03$ ,  $0x30 \leq m \leq 0x31$   
 $0x00 \leq xL \leq 0xFF$   
 $0x00 \leq xH \leq 0xFF$  ( $1 \leq xL + xH \times 256 \leq 65535$ )  
 $0x00 \leq yL \leq 0xFF$   
 $0x00 \leq yH \leq 0x08$  ( $1 \leq yL + yH \times 256 \leq 2047$ )  
 $0x00 \leq d \leq 0xFF$   
 $k = (xL + xH \times 256) + (yL + yH \times 256)$   
(except for  $k = 0$ )

[Description] Selects raster bit image mode. The value of m selects the mode as follows:

m	MODE
0x00, 0x30	Normal
0x01, 0x31	Double width
0x02, 0x32	Double height
0x03, 0x33	Quadruple

- xL, xH selects the number of data bytes ( $xL + xH \times 256$ ) in the horizontal direction for the bit image.
- yL, yH selects the number of data bytes ( $yL + yH \times 256$ ) in the vertical direction for the bit image.
- k shows the number of data of the image. It's an explanation parameter so it isn't necessary to transmit it.
- d shows the data of the image.

[Notes]

- In standard mode for receipt paper, this command is effective only when there is no data in the print buffer.
- The data (d) identify as 1 a printed bit and as 0 a non printed bit.
- If a raster bit image is longer than one line, the surplus data aren't printed.
- This command has no effect in all print modes (character size, bold, upside-down, underline, white/black reverse printing, etc.) for raster bit image, except the reverse mode (90° anticlockwise rotation).
- This command feed the paper as much as is necessary to print the raster bit image, though the spacing set by 0x1B 0x32 or 0x1B 0x33.



- Don't use this command during a macro execution because it can't be included in a macro.
- After the printing, the printing position moves to the beginning of the line.
- The following table shows the relationship between the downloaded bit image and the printed data:

d1	d2	...	dx
dX+1	dX+2	...	dX x 2
:	:	...	:
...	dk-2	dk-1	d

[Default]

[Reference]

[Example]



# PRINT POSITION COMMANDS

## 0x08

<BS>

Back space

---

Valid for	mPLUS2
	PLUS2 STD, PLUS2 8-42 V
	PLUS II-USB
	PLUS4

---

[Format]	Hex	08
	ASCII	BS

[Range]

[Description] Moves print position to previous character.

[Notes] This command can be used to put two characters at the same position.

[Default]

[Reference]

[Example]

# 0x09

<HT>

## Horizontal tab

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] Hex 09  
ASCII HT

[Range]

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

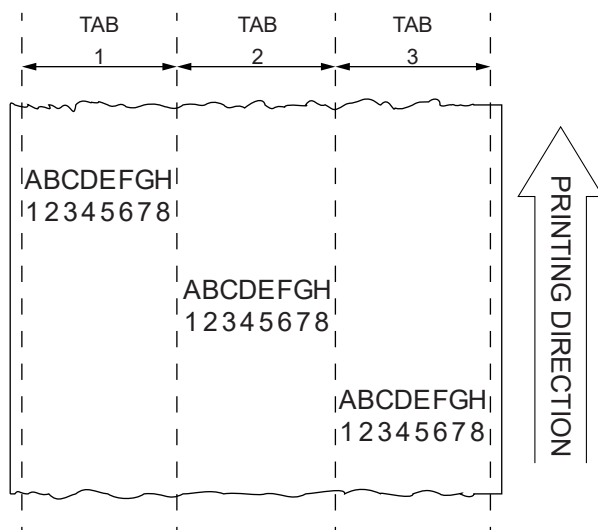
[Notes]

- Horizontal tab position are set using [0x1B 0x44](#).
- 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 device executes print buffer full printing and horizontal tab processing from the beginning of the next line.

[Default] Default tab positions are set at intervals of 8 characters (9, 17, 25, ...) when the right-side character spacing is 0.

[Reference] [0x1B 0x44](#)

[Example]





## 0x1B 0x28 0x76

<ESC ( v>

### Set relative vertical print position

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4					
[Format]	Hex	1B	28	76	nL	nH
	ASCII	ESC	(	v	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF					
[Description]	Sets the print vertical position based on the current position by using the horizontal or vertical motion unit. This command sets the distance from the current position to [(nL + nH × 256) × horizontal or vertical motion unit].					
[Notes]	<ul style="list-style-type: none"> <li>• When the starting position is specified by N motion unit to the bottom: <math>nL + nH \times 256 = N</math>.</li> <li>• When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: <math>nL + nH \times 256 = 65536 - N</math>.</li> <li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>.</li> <li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• In standard mode, the vertical motion unit is used.</li> </ul>					
[Default]						
[Reference]	<a href="#">0x1D 0x50</a>					
[Example]						



## 0x1B 0x44

<ESC D>

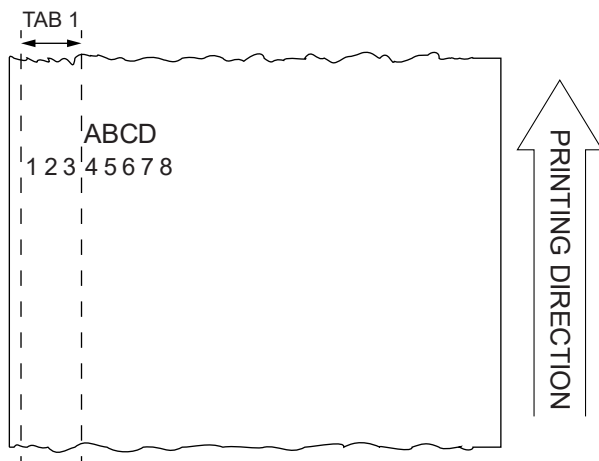
### Set horizontal tab positions

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4				
[Format]	Hex	1B	44	n1...nk	00
	ASCII	ESC	D	n1...nk	NUL
[Range]	0x01 ≤ n ≤ 0xFF 0x00 ≤ k ≤ 0x20				
[Description]	Sets horizontal tab positions <ul style="list-style-type: none"> <li>• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.</li> <li>• k indicates the total number of horizontal tab positions to be set.</li> </ul>				
[Notes]	<ul style="list-style-type: none"> <li>• The horizontal tab position is stored as a value of [character width × 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.</li> <li>• This command cancels previous tab settings.</li> <li>• Up to 32 tab positions (k = 0x20) can be set. Data exceeding 32 tab positions is processed as normal data.</li> <li>• 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.</li> <li>• 0x1B 0x44 0x00 cancels all horizontal tab positions.</li> <li>• The previously specified horizontal tab position does not change, even if the character width is modified.</li> </ul>				
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) when the right-side character spacing is 0.				
[Reference]	<a href="#">0x09</a>				



[Example]

To set a tabulation to column 4 send the command:  
0x1B 0x44 0x03 0x00



To print the string 'ABCD' to the tabulation previously set, the command sequence is:  
0x09 'ABCD'

where:

0x09            move the print position to the set horizontal tab (4th column).  
'ABCD'        is the string to be printed.



## 0x1B 0x5C

<ESC |>

### Set relative print position

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4				
[Format]	Hex	1B	5C	nL	nH
	ASCII	ESC	\	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF				
[Description]	Sets the print starting position based on the current position by using the horizontal or vertical motion unit. Sets the distance from the current position to [(nL+ nH × 256) × horizontal or vertical motion unit].				
[Notes]	<ul style="list-style-type: none"> <li>• When the starting position is specified by N motion units to the right: nL + nH × 256 = N.</li> <li>• 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.</li> <li>• If setting exceeds the printing area width, the left or right margin is set to the default value.</li> <li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>.</li> <li>• <a href="#">0x1D 0x50</a> can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• In standard mode, the horizontal motion unit is used.</li> <li>• 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 device mechanism and then begins a new row.</li> </ul>				
[Default]					
[Reference]	<a href="#">0x1D 0x50</a>				
[Example]					

# 0x1B 0x61

<ESC a>

## Select justification

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

[Format] 0x00 ≤ n ≤ 0x02  
0x30 ≤ n ≤ 0x32

[Description] This command selects the type of justification based on the value of n as follows:

n	JUSTIFICATION
0x00, 0x30	Left justification
0x01, 0x31	Centered
0x02, 0x32	Right justification

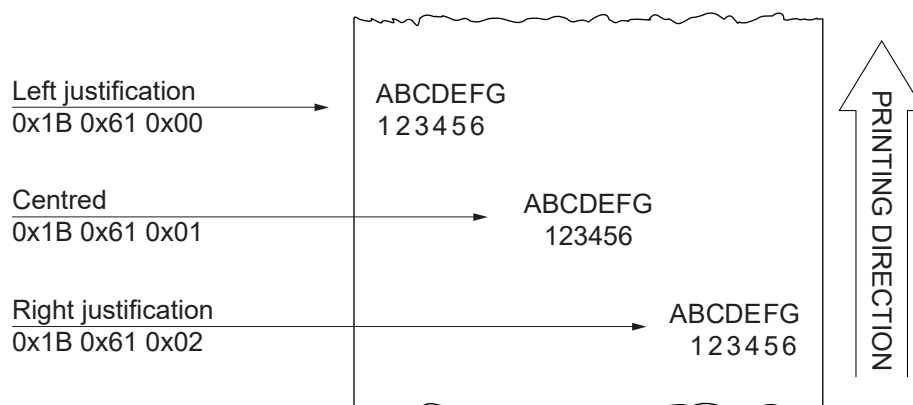
[Notes]
 

- Lines are justified within the specified printing area.
- Spaces set by 0x09 and 0x1B 0x5C will be justified according to the previously-entered mode.

[Default] n = 0x00

[Reference]

[Example]



# 0x1D 0x4C

<GS L>

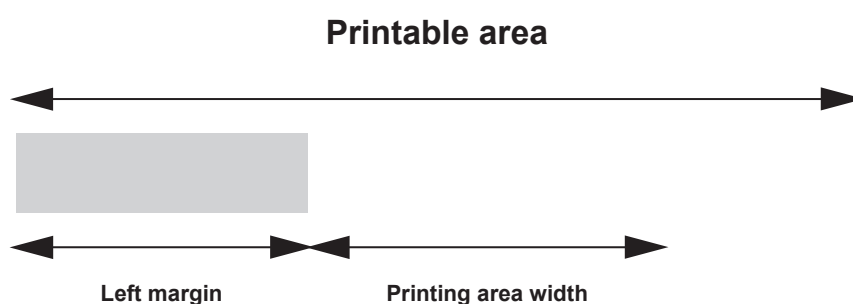
## Set left margin

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

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

[Range] 0x00 ≤ nL, nH ≤ 0xFF

[Description] Sets the left margin to [(nL + nH × 256) × horizontal motion unit].



- [Notes]
- 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 0x57

<GS W>

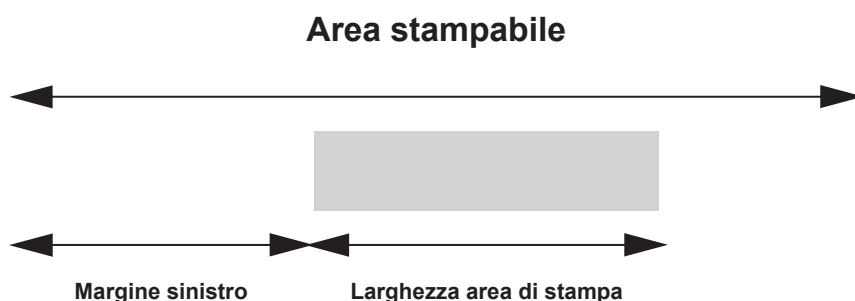
### Set printing area width

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

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

[Range]	$0 \leq nL, nH \leq 0xFF$ $0 \leq (nL + nH \times 256) \leq 640$
---------	---

[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]	<ul style="list-style-type: none"> <li>• This command is only enabled if set at the beginning of the line.</li> <li>• If the right margin is greater than the printable area, the printing area width is set at maximum value.</li> <li>• If the printing area width = 0, it is set at the maximum value.</li> <li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion unit does not affect the current left margin.</li> <li>• The <a href="#">0x1D 0x50</a> 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.</li> </ul>
---------	--

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

[Reference]	<a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x50</a>
-------------	---

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



# MACRO FUNCTIONS COMMANDS

## 0x1D 0x3A

<GS :>

Start or end of macro definition

---

Valid for	mPLUS2
	PLUS2 STD, PLUS2 8-42 V
	PLUS II-USB
	PLUS4

---

[Format]	Hex	1D	3A
	ASCII	GS	:

[Range]

[Description] Starts or ends macro definition.

[Notes]

- Macro definition starts when this command is received during normal operation.
- When [0x1D 0x5E](#) is received during macro definition, the device ends macro definition and clears all definitions.
- Macros are not defined when power is turned on to the machine.
- Macro content is not cancelled by the [0x1B 0x40](#) command. Therefore, [0x1B 0x40](#) may be included in the content of macro definitions.
- If the device receives [0x1D 0x3A](#) a second time after previously receiving [0x1D 0x3A](#), the device remains in macro undefined status.
- The contents of the macro can be defined up to 1024 bytes. If the macro definition exceeds 1024 bytes, excess data is not stored.

[Default]

[Reference] [0x1D 0x5E](#)

[Example]



## 0x1D 0x5E

<GS ^>

### Execute macro

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4					
[Format]	Hex	1D	5E	r	t	m
	ASCII	GS	^	r	t	m
[Range]	0x00 ≤ r, t ≤ 0xFF 0x00 ≤ m ≤ 0x01					
[Description]	<p>Executes a macro.</p> <ul style="list-style-type: none"> <li>• r specifies the number of times to execute the macro.</li> <li>• t specifies the waiting time for executing the macro. The waiting time is t × 100 ms for each macro execution.</li> <li>• m specifies macro executing mode:             <ul style="list-style-type: none"> <li>When the Least Significant Bit (LSB) of m = 0, the macro is executed r times continuously at the interval specified by t.</li> <li>When the Least Significant Bit (LSB) of m = 1, after waiting for the period specified by t, the LED indicator blinks and the device waits for the FEED button to be pressed. After the button is pressed, the device executes the macro once. The device repeats the operation r times.</li> </ul> </li> </ul>					
[Notes]	<ul style="list-style-type: none"> <li>• This command has an interval of (t × 100 ms) after a macro is executed by t.</li> <li>• If this command is received while a macro is being defined, the macro definition is aborted and the definition is cleared.</li> <li>• If the macro is not defined or if r is 0x00, nothing is executed.</li> <li>• When the macro is executed by pressing the FEED button (m = 0x01), the paper cannot be fed using the FEED button.</li> </ul>					
[Default]						
[Reference]	<a href="#">0x1D 0x3A</a>					
[Example]						



# ALIGNMENT COMMANDS

## 0x1D 0xE7

### Set black mark distance

---

Valid for	PLUS2 STD, PLUS2 8-42 V				
	PLUS II-USB				
	PLUS4				

---

[Format]	Hex	1D	E7	nL	nH
	ASCII	GS	0xE7	nL	nH

[Range]      0x00 ≤ nH ≤ 0xFF  
              0x00 ≤ nL ≤ 0xFF

[Description]      Sets black mark distance in tenth of millimeter of the alignment point from the edge of the black mark. This value is expressed as [(nH × 256) + nL] where:  
- if nH ≤ 0x7F , the value will be positive.  
- if nH > 0x7F , the value will be negative.

[Notes]            • The maximum value is 99.9 mm.  
                      • The minimum value is -9 mm.  
                      • The distance is saved in nonvolatile memory: it is therefore recommended not to send this command for each printed ticket, because the number of rewrites is limited. In many devices, however, is checked the diversity of the data before performing the rescue to avoid reaching the limit of rewrites.

[Default]           nH = 0x00  
                      nL = 0x00

[Reference]



[Example]

To set a distance of the alignment point from the black mark equal to 8 mm = 80 tenths of a millimeter, send the command:

```
0x1D 0xE7 0x00 0x50
```

where:

0x00            the most significant bit (MSB = 0) defines the sign +

0x00 0x50       the absolute value defines the distance = 80 tenths of a millimeter

To set a distance of the alignment point from the black mark equal to - 8 mm, send the command:

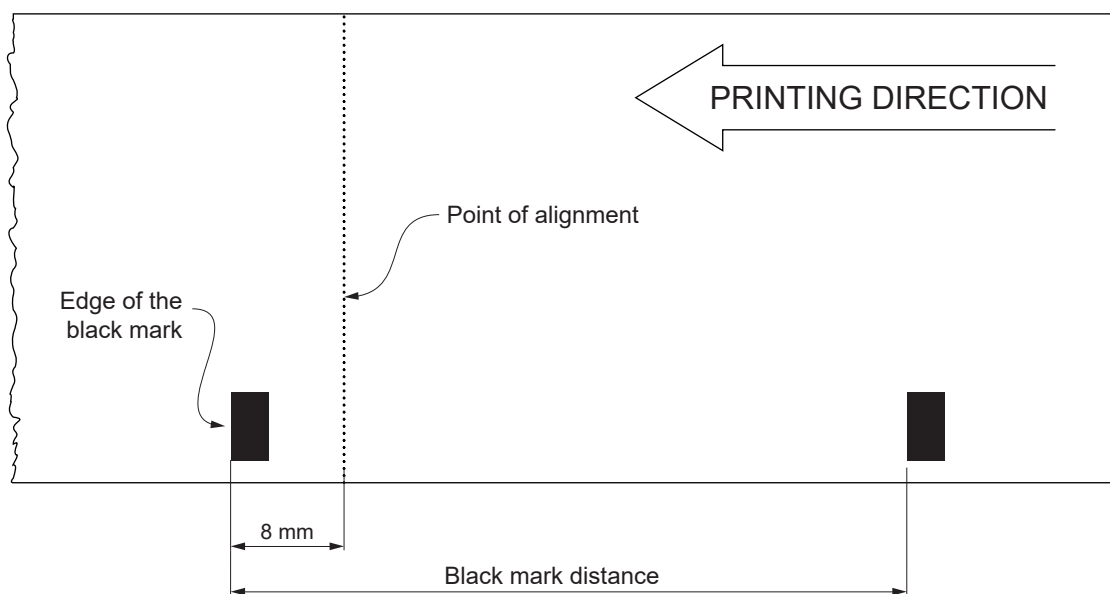
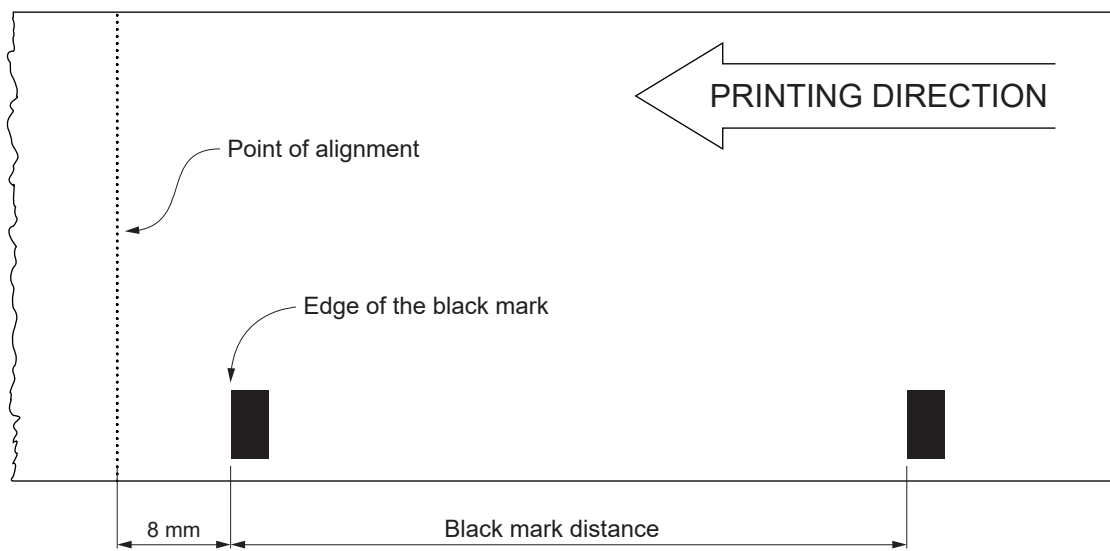
```
0x1D 0xE7 0x80 0x50
```

where:

0x80            the most significant bit (MSB = 1) defines the sign -

0x80 0x50       the absolute value defines the distance = 80 tenths of a millimeter

The following images show tickets with alignment point positioned at 8 mm and -8 mm from the black mark.





## 0x1D 0xF6

### Align the ticket with the printhead

---

Valid for	PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4		
[Format]	Hex	1D	F6
	ASCII	GS	0xF6
[Range]			
[Description]	This command align the edge of black mark to the alignment point (see <a href="#">ALIGNMENT</a> section for further explanation).		
[Notes]	<ul style="list-style-type: none"><li>• Use <a href="#">0x1D 0xE7</a> command to set the distance between the edge of black mark and the alignment point.</li><li>• Use this alignment command even to print more tickets without cutting.</li></ul>		
[Default]			
[Reference]	<a href="#">0x1D 0xE7</a>		
[Example]			



# MISCELLANEOUS COMMANDS

## 0x1B 0x30

<ESC 0>

Turn off the device

---

Valid for            mPLUS2  
                      PLUS2 STD, PLUS2 8-42 V  
                      PLUS II-USB  
                      PLUS4

---

[Format]            Hex            1B    30  
                      ASCII        ESC   0

[Range]

[Description]        Switch off the device and bring it back to low consumption mode if was disabled the Auto Power-On function.

[Notes]              The setup parameter "Power Off Command" must be enabled.

[Default]

[Reference]

[Example]



## 0x1B 0x3D

<ESC =>

### Select peripheral device

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex                1B    3D    n  
                          ASCII            ESC    =    n

[Range]            0x01 ≤ n ≤ 0x03

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

n	FUNCTION
0x01, 0x03	Device enabled
0x02	Device disabled

[Notes]            When the device is disabled, it ignores all transmitted data until the device is enabled through this command.

[Default]           n = 0x01

[Reference]

[Example]



## 0x1B 0x40

<ESC @>

### Initialize device

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1B	40
	ASCII	ESC	@

[Range]

[Description] Clears the data in the print buffer and resets the device 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 0x63 0x35

<ESC c 5>

### Enable or disable keys panel

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1B    63    35    n ASCII        ESC   c    5    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Enables or disables the keys panel, based on the value of n - when the Least Significant Bit (LSB) of n is 0, the keys panel is enabled. - when the Least Significant Bit (LSB) of n is 1, the keys panel is disabled.
[Notes]	<ul style="list-style-type: none"><li>• Only the Least Significant Bit (LSB) of n is effective.</li><li>• When the keys panel is disabled, the keys may only be used after the device has been reset.</li></ul>
[Default]	n = 0x00
[Reference]	
[Example]	

---



## 0x1B 0xFA

### Print graphic bank (608x862 dots)

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1B	FA	n	xH	xL	yH	yL
	ASCII	ESC	0xFA	n	xH	xL	yH	yL

[Range]	0x00 ≤ n ≤ 0x02 0x00 ≤ xH, xL, yH, yL ≤ 0xFF
---------	---

[Description] Prints graphic logo from flash or current graphic page located in RAM based on the value of n as follows:

n	FUNCTION
0x00	Print graphic page from RAM used at the moment
0x01	Print logo 1 from flash
0x02	Print logo 2 from flash

- [Notes]
- Printable maximum vertical dimension is 862 dots:  
xL + xH × 256 specifies the starting dot line (1 ÷ 862).  
yL + yH × 256 specifies the number of lines to print.
  - If (xL + (xH × 256)) > 862 the device does not execute the command.
  - If (xL + (xH × 256) + yL + (yH × 256)) > 862 the device only prints 862 - xL + (xH × 256) + 1 dotline.

[Default]

[Reference]

[Example] To print from RAM bank dotline 100 to dotline 299, send the command sequence  
0x1B 0xFA 0x00 0x00 0x64 0x00 0xC7



## 0x1B 0xFD

### Receive graphic page from communication port

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS4
[Format]	Hex            1B    FD    nL    nH ASCII          ESC   0xFD   nL    nH
[Range]	0x00 ≤ nL, nH ≤ 0xFF
[Description]	Receives [nL + (nH × 256)] words from the port and puts them into the RAM bank.
[Notes]	<ul style="list-style-type: none"><li>• For serial communication, set setup parameter “RS232 handshaking” to “Hardware”.</li><li>• The number of received data bytes is [nL + (nH × 256)] × 2.</li><li>• Every word is received first as MSB and then as LSB.</li></ul> <p><b>mPLUS2, PLUS2</b></p> <ul style="list-style-type: none"><li>• In the horizontal dotline there are 24 words.</li><li>• If [nL + (nH × 256)] is more than 32736, the following data are processed as normal data.</li><li>• The flash bank for graphic print dimensions are: 384 horizontal dots (48 bytes/line) × 682 vertical dots (32736 bytes).</li></ul> <p><b>PLUS4</b></p> <ul style="list-style-type: none"><li>• In the horizontal dotline there are 52 words.</li><li>• If [nL + (nH × 256)] is more than 65520, the following data are processed as normal data.</li><li>• The flash bank for graphic print dimensions are: 832 horizontal dots (104 bytes/line) × 630 vertical dots (65520 bytes).</li></ul>
[Default]	
[Reference]	0x1B 0xFA
[Example]	



## 0x1B 0xFF

Receive the graphic page from the communication port

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS4
-----------	--

[Format]	Hex            1B    FF    n       nL    nH ASCII           ESC   0xFA   n       nL    nH
----------	--

[Range]	n = 0x01, 0x02 0x00 ≤ nL, nH ≤ 0xFF
---------	--

[Description]            Receives [nL + (nH × 256)] words from the communication port and save them in the flash bank based on the value of n as follows:

n	FUNCTION
0x01	Save logo in the flash bank 1
0x02	Save logo in the flash bank 2

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

### **mPLUS2, PLUS2**

- In the horizontal dotline there are 24 words.
- If [nL + (nH × 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) × 682 vertical dots (32736 bytes).

### **PLUS4**

- In the horizontal dotline there are 52 words.
- If [nL + (nH × 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) × 630 vertical dots (65520 bytes).

[Default]

[Reference]            [0x1B 0xFA](#)

[Example]



## 0x1C 0x3D 0x46 0x31 0x39 0x30 0x3D

<FS = F 1 9 0 = >

Change device emulation to FH190

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]	Hex	1C	3D	46	31	39	30	3D
	ASCII	FS	=	F	1	9	0	=

[Range]

[Description] Change device emulation to FH190.

[Notes]

[Default]

[Reference]

[Example]



# 0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D

<FS = PLUS =>

## Change device emulation to PLUS

---

Valid for	mPLUS2							
	PLUS2 STD, PLUS2 8-42 V							

---

[Format]	Hex	1C	3D	50	4C	55	53	3D
	ASCII	FS	=	P	L	U	S	=

[Range]

[Description] Change device emulation to PLUS.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0xC1

### Paper recovery

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II-USB  
                         PLUS4

---

[Format]            Hex            1C    C1    0x80   n  
                         ASCII            FS    0xC1   0x80   n

[Range]            0xA0 ≤ n ≤ 0xF0

[Description]      Set the paper moving (in millimetres) toward the printhead.

[Notes]

[Default]

[Reference]

[Example]



## 0x1D 0x43 0x30

<GS C 0>

### Select counter print mode

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II-USB  
                          PLUS4

---

[Format]            Hex            1D    43    30    n    m  
                          ASCII           GS    C    0    n    m

[Range]            0x00 ≤ n ≤ 0x05  
                          m = 0x00, 0x01, 0x02, 0x30, 0x31, 0x32

[Description]      Selects a print mode for the serial number counter.

- n specifies the number of digits to be printed as follows:  
 when n = 0x00, the device prints the actual digits indicated by the number value.  
 when n = 0x01 to 0x05, this command sets the number of digits to be printed.
- m specifies the printing position within the entire range of printed digits, as follows:

m	PRINTING POSITION	PROCESSING OF DIGITS LESS THAN THOSE SPECIFIED
0x00, 0x30	Align right	Adds spaces to the left.
0x01, 0x31	Align right	Adds '0' to the left.
0x02, 0x32	Align left	Adds spaces to the right

[Notes]            • If n or m is out of the defined range, the previously set print mode is not changed.  
                          • If n = 0x00, m does not have any meaning.

[Default]           n = 0x00, m = 0x00

[Reference]        [0x1D 0x43 0x31](#), [0x1D 0x43 0x32](#), [0x1D 0x43 0x3B](#), [0x1D 0x63](#)

[Example]           n = 0x03, m = 0x00      n = 0x03, m = 0x01      n = 0x03, m = 0x02  
                          □ □ 1                        001                            1 □ □

□ indicates a space



## 0x1D 0x43 0x31

<GS C 1>

### Select count mode (A)

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4									
[Format]	Hex	1D	43	31	aL	aH	bL	bH	n	r
	ASCII	GS	C	1	aL	aH	bL	bH	n	r
[Range]	0x00 ≤ aL, aH ≤ 0xFF 0x00 ≤ bL, bH ≤ 0xFF 0x00 ≤ n, r ≤ 0xFF									
[Description]	Selects a count mode for the serial number counter. <ul style="list-style-type: none"> <li>• aL, aH o bL, bH specify the counter range.</li> <li>• n specify the stepping amount when counting up or down.</li> <li>• r indicates the repetition number when the counter value is fixed.</li> </ul>									
[Notes]	<ul style="list-style-type: none"> <li>• Count-up mode is specified when: [aL + (aH × 256)] &lt; [bL + (bH × 256)] and n ≠ 0x00 and r ≠ 0x00</li> <li>• Count-down mode is specified when: [aL + (aH × 256)] &gt; [bL + (bH × 256)] and n ≠ 0x00 and r ≠ 0x00</li> <li>• Counting stops when: [aL + (aH × 256)] = [bL + (bH × 256)] or n = 0x00 or r = 0x00</li> <li>• In setting count-up mode, the minimum value of the counter is [aL + (aH × 256)] and the maximum value is [bL + (bH × 256)]. If counting up reaches a value exceeding the maximum, it is resumed with the minimum value.</li> <li>• In setting count-down mode, the maximum value of the counter is [aL + (aH × 256)] and the minimum value is [bL + (bH × 256)]. If counting down reaches a value less than minimum, it is resumed with the maximum value.</li> <li>• When the command is executed, the internal count that indicates the repetition number specified by r is cleared.</li> </ul>									
[Default]	aL = 0x01, aH = 0x00, bL = 0xFF, bH = 0xFF, n = 0x01, r = 0x01									
[Reference]	<a href="#">0x1D 0x43 0x30</a> , <a href="#">0x1D 0x43 0x32</a> , <a href="#">0x1D 0x43 0x3B</a> , <a href="#">0x1D 0x63</a>									
[Example]	Send the command sequence:									
	0x1D	0x43	0x31	0x01	0x00	0x0A	0x00	0x01	0x02	
				↓	↓	↓	↓	↓	↓	
				aL	aH	bL	bH	n	r	
	The counter is set from 1 [aL + (aH × 256)] to 10 [bL + (bH × 256)].									
	The counter is incremented by 1 (n) repeating the same value of 2 times (r).									



## 0x1D 0x43 0x32

<GS C 2>

### Set counter

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex	1D	43	32	nL	nH
	ASCII	GS	C	2	nL	nH

[Range] 0x00 ≤ nL, nH ≤ 0xFF

[Description] Sets the serial number counter value.  
• nL and nH determine the value of the serial number counter set by [nL + (nH × 256)].

[Notes]

- In count-up mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, it is forced to convert to the minimum value by 0x1D 0x63.
- In count-down mode, if the counter value specified by this command goes out of the counter operation range specified by 0x1D 0x43 0x31 or 0x1D 0x43 0x3B, it is forced to convert to the maximum value by 0x1D 0x63.

[Default] nL = 0x01, nH = 0x00

[Reference] 0x1D 0x43 0x30, 0x1D 0x43 0x31, 0x1D 0x43 0x3B, 0x1D 0x63

[Example] Send the command sequence:

0x1D	0x43	0x32	0x05	0x00
			↓	↓
			nL	nH

The counter is set starting from 5 [nL + (nH × 256)].



## 0x1D 0x43 0x3B

<GS C ;>

### Select count mode (B)

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
[Format]	Hex            1D   43   3B   sa   3B   sb   3B   sn   3B   sr   3B   sc   3B ASCII           GS   C   ;   sa   ;   sb   ;   sn   ;   sr   ;   sc   ;
[Range]	0x00 ≤ sa, sb, sc ≤ 0xFFFF 0x00 ≤ sn, sr ≤ 0xFF These values are all character strings.
[Description]	Selects a count mode for the serial number counter and specifies the value of the counter. <ul style="list-style-type: none"> <li>• sa, sb, sn, sr and sc are all displayed in ASCII characters using the codes from '0' to '9'.</li> <li>• sa and sb specify the counter range.</li> <li>• sn indicates the stepping amount for counting up or down.</li> <li>• sr indicates the repetition number with the counter value fixed.</li> <li>• sc indicates the counter value.</li> </ul>
[Notes]	<ul style="list-style-type: none"> <li>• Count-up mode is specified when: sa &lt; sb and sn ≠ 0x00 and sr ≠ 0x00</li> <li>• Count-down mode is specified when: sa &gt; sb and sn ≠ 0x00 and sr ≠ 0x00</li> <li>• Counting stops when: sa = sb or sn = 0x00 or sr = 0x00</li> <li>• In setting count-up mode, the minimum value of the counter is sa and the maximum is sb. If counting up reaches a value exceeding the maximum, it is resumed with the minimum value. If the counter value set by sc is outside the counter operation range, the counter value is forced to convert to the minimum value by executing <a href="#">0x1D 0x63</a>.</li> <li>• In setting count-down mode, the maximum value of the counter is sa and the minimum value is sb. If counting down reaches a value less than the minimum, it is resumed with the maximum value. If the counter value set by sc is outside the counter operation range, the counter value is forced to convert to the maximum value by executing <a href="#">0x1D 0x63</a>.</li> <li>• Parameters sa to sc can be omitted. If omitted, these values remain unchanged.</li> <li>• Parameters sa to sc must not contain characters, with the exception of those from '0' to '9'.</li> </ul>
[Default]	sa = 0x01, sb = 0xFFFF, sn = 0x01, sr = 0x01, sc = 0x01
[Reference]	<a href="#">0x1D 0x43 0x30</a> , <a href="#">0x1D 0x43 0x31</a> , <a href="#">0x1D 0x43 0x32</a> , <a href="#">0x1D 0x63</a>
[Example]	<p>Send the command sequence:</p> <pre> 0x1D 0x43 0x3B 0x30 0x3B 0x31 0x30 0x3B 0x31 0x3B 0x31 0x3B 0x32 0x3B   ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓  "GS"  "C"   "j"   "0"   " ,"  "1"  "0"  " ,"  "1"  " ,"  "1"  " ,"  "2"  " ,"                         ↓      ↓      ↓      ↓      ↓      ↓      ↓      ↓                         sa   ;   sb   ;   sn   ;   sr   ;   sc   ; </pre> <p>The counter is set from 0 (sa) to 10 (sb) starting from 2 (sc). The counter is incremented by 1 (sn) repeating the same value of 1 time (sr).</p>



# 0x1D 0x49

<GS />

## Transmit device ID

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II-USB  
 PLUS4

[Format] Hex 1D 49 n  
 ASCII GS | n

[Range] 0x01 ≤ n ≤ 0x03  
 0x31 ≤ n ≤ 0x33  
 n = 0xFF

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

### PLUS II-USB

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0x09
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)

### mPLUS2, PLUS2, PLUS4

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0xFF (resend the command with n = 0xFF)
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)
0xFF	Device model ID (2 bytes)	0x02 0x0E mPLUS2 RX63 0x02 0x77 mPLUS2 RX65 0x02 0x14 PLUS2 RX63 0x02 0x76 PLUS2 RX65 0x02 0x0C PLUS4



n = 0x02, 0x32 Type ID

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	2 bytes characters codes not supported
	On	02	Not used. Fixed to on
2	Off	00	Thermal paper w/o label
	On	04	Thermal paper label
3	-	-	Undefined
4	Off	00	Not used. Fixed to off
5	-	-	Undefined
6	-	-	Undefined
7	Off	00	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 0x50

<GS P>

### Set horizontal and vertical motion units

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	0x00 ≤ x, y ≤ 0xFF				
[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"> <li>• The horizontal direction is perpendicular to the paper feed direction.</li> <li>• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):  Commands using x: <a href="#">0x1B 0x20</a>, <a href="#">0x1B 0x5C</a>, <a href="#">0x1D 0x4C</a>, <a href="#">0x1D 0x57</a>. Commands using y: <a href="#">0x1B 0x33</a>, <a href="#">0x1B 0x4A</a>.</li> </ul> <ul style="list-style-type: none"> <li>• This command does not affect the previously specified values.</li> <li>• 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.</li> </ul>				
[Default]	x = 0xCC, y = 0x198				
[Reference]	<a href="#">0x1B 0x20</a> , <a href="#">0x1B 0x5C</a> , <a href="#">0x1B 0x33</a> , <a href="#">0x1B 0x4A</a> , <a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x57</a>				
[Example]					



## 0x1D 0x63

<GS c>

### Print counter

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4
-----------	---

---

[Format]	Hex            1D    63 ASCII           GS    c
----------	--

[Range]

[Description]        Sets the serial counter value in the print buffer and increments or decrements the counter value.

[Notes]

- After setting the current counter value in the print buffer as print data (a character string), the device counts up or down based on the count mode set. The counter value in the print buffer is printed when the device receives a print command or the buffer is full.
- The counter print mode is set by [0x1D 0x43 0x30](#).
- The counter mode is set by [0x1D 0x43 0x31](#) or [0x1D 0x43 0x3B](#).
- In count-up mode, if the counter value set by this command goes out of the counter operation range set by [0x1D 0x43 0x31](#) or [0x1D 0x43 0x3B](#), it is forced to convert to the minimum value.
- In count-down mode, if the counter value set by this command goes out of the counter operation range set by [0x1D 0x43 0x31](#) or [0x1D 0x43 0x3B](#), it is forced to convert to the maximum value.

[Default]

[Reference]        [0x1D 0x43 0x30](#), [0x1D 0x43 0x31](#), [0x1D 0x43 0x32](#), [0x1D 0x43 0x3B](#)

[Example]



## 0x1D 0xD0

### Set horizontal and vertical motion units

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II-USB PLUS4						
[Format]	Hex	1D	D0	xH	xL	yH	yL
	ASCII	GS	0xD0	xH	xL	yH	yL
[Range]	$0 \leq [(xH \times 256) + xL] \leq 2040$ $0 \leq [(yH \times 256) + yL] \leq 4080$						
[Description]	<p>Sets the horizontal and vertical motion units to <math>1/[(xH \times 256) + xL]</math> inch and <math>1/[(yH \times 256) + yL]</math> inch respectively.</p> <p>When x is set to 0, the default setting value is used.</p> <p>When y is set to 0, the default setting value is used.</p>						
[Notes]	<ul style="list-style-type: none"> <li>The horizontal direction is perpendicular to the paper feed direction.</li> <li>In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):</li> </ul> <p>Commands using x: <a href="#">0x1B 0x20</a>, <a href="#">0x1B 0x5C</a>, <a href="#">0x1D 0x4C</a>, <a href="#">0x1D 0x57</a>.</p> <p>Commands using y: <a href="#">0x1B 0x33</a>, <a href="#">0x1B 0x4A</a>.</p> <ul style="list-style-type: none"> <li>This command does not affect the previously specified values.</li> <li>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.</li> </ul>						
[Default]	x = 0xCC, y = 0x198						
[Reference]	<a href="#">0x1B 0x20</a> , <a href="#">0x1B 0x5C</a> , <a href="#">0x1B 0x33</a> , <a href="#">0x1B 0x4A</a> , <a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x57</a>						
[Example]							



## 0x1D 0xF0

### Set print mode

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II-USB  
                         PLUS4

---

[Format]            Hex            1D    F0    n  
                         ASCII           GS    0xF0   n

[Range]             $0x00 \leq n \leq 0x02$

[Description]      Sets print mode based on the value of n as follows:

---

n	PRINT MODE
0x00	High quality
0x01	Normal
0x02	High speed

---

[Notes]            Print mode reverts to the default value when the device is reset or turned off.

[Default]           n = 0x02

[Reference]

[Example]



## 0x1D 0xFF 0x63 0x31

### Set BaudRate

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II-USB  
PLUS4

---

[Format] Hex 1D FF 63 31 x  
ASCII GS 0xFF c 1 x

[Range]  $0x01 \leq x \leq 0x08$

[Description] This command sets BaudRate value based on the following values of x:

x	BAUDRATE
0x01	1200
0x02	2400
0x03	4800
0x04	9600
0x05	19200
0x06	38400
0x07	57600
0x08	115200

[Notes] The set value is saved into device Flash.

[Default]  $x = 0x04$

[Reference]

[Example]



# PLUS EMULATION

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0x04	<EOT>	163
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# 2 COMMANDS LISTED BY FUNCTION

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---

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---

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0x04	<EOT>	163
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<b>0x1B 0x71</b> .....	<b>&lt;ESC q&gt;</b> .....	<b>179</b>
Disable underlined printing		
<b>0x1B 0x74</b> .....	<b>&lt;ESC t&gt;</b> .....	<b>180</b>
Select character code table		
<b>0x1B 0x7B</b> .....	<b>&lt;ESC {&gt;</b> .....	<b>182</b>
Turn upside-down printing mode on or off		
<b>0x1B 0xC1</b> .....		<b>183</b>
Select character pitch		
<b>0x1C 0x25</b> .....	<b>&lt;FS %&gt;</b> .....	<b>184</b>
Select the font type		
<b>0x1D 0x21</b> .....	<b>&lt;GS !&gt;</b> .....	<b>185</b>
Select character size		

## LINE SPACING COMMANDS

---

<b>0x1B 0x32</b> .....	<b>&lt;ESC 2&gt;</b> .....	<b>186</b>
Select 1/6-inch line spacing		
<b>0x1B 0x33</b> .....	<b>&lt;ESC 3&gt;</b> .....	<b>187</b>
Set line spacing		
<b>0x1B 0x41</b> .....	<b>&lt;ESC A&gt;</b> .....	<b>188</b>
Executes n dot lines feed		
<b>0x1B 0x61</b> .....	<b>&lt;ESC a&gt;</b> .....	<b>189</b>
Select the number of dots space		



## PRINT COMMANDS

---

0x0A	<LF>	190
Perform a line feed		
0x0B	<VT>	191
Perform n line feeds		
0x1B 0x4A	<ESC J>	192
Print and paper feed		
0x1B 0x57	<ESC W>	193
Print a graphic line at 203 dpi		
0x1B 0x64	<ESC d>	194
Print and feed paper n lines		

## STATUS COMMANDS

---

0x10 0x04	<DLE EOT>	195
Real-time status transmission		
0x1D 0x72	<GS r>	201
Transmit status		

## BIT-IMAGE COMMANDS

---

0x1B 0x2A	<ESC *>	202
Select bit image mode		
0x1D 0x2A	<GS *>	204
Define received bit image		

## LOGOS MANAGEMENT COMMANDS

---

0x1D 0x70	<GS p>	206
Print logo		

## PRINT POSITION COMMANDS

---

0x08	<BS>	208
Back space		
0x09	<HT>	209
Horizontal tab		
0x1B 0x44	<ESC D>	210
Set horizontal tab positions		



0x1B 0x5C	<ESC \>	212
Set relative print position		
0x1D 0x4C	<GS L>	213
Set left margin		
0x1D 0x57	<GS W>	214
Set printing area width		

## ALIGNMENT COMMANDS

---

0x1D 0xF6		215
Align the ticket with the printhead		

## MISCELLANEOUS COMMANDS

---

0x0D	<CR>	216
Print the line buffer		
0x0F	<SI>	217
Set CRLF mode		
0x11	<DC1>	218
Enable graphic mode		
0x1B 0x30	<ESC 0>	219
Turn off the device		
0x1B 0x3D	<ESC =>	220
Select peripheral device		
0x1B 0x40	<ESC @>	221
Initialize device		
0x1B 0x4B	<ESC K>	222
Turn off or on the status LED		
0x1B 0x6D	<ESC m>	223
Transmit the print mode configuration on the serial port		
0x1B 0x73	<ESC s>	224
Transmit the next character in serial		
0x1B 0xFA		225
Print graphic bank (384 x 85 dots)		
0x1C 0x3D 0x45 0x50 0x4F 0x53 0x3D	<FS = E P O S = >	226
Change device emulation to CUSTOM/POS		
0x1C 0x3D 0x46 0x31 0x39 0x30 0x3D	<FS = F 1 9 0 = >	227
Change device emulation to FH190		
0x1C 0xC1		228
Paper recovery		



0x1C 0xEA .....	229
Transmit the device serial number	
0x1D 0x24 .....	230
Set absolute print position into a graphic line	
0x1D 0x49 .....	231
Transmit device ID	
0x1D 0x50 .....	233
Set horizontal and vertical motion units	
0x1D 0x55 .....	234
Reset the device parameters to the default configuration	



# COMMANDS FOR BARCODE PRINTING

## 0x1B 0x63

<ESC c>

### Management of barcode printing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

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

- [Description] This command executes a barcode printing with the following settings:
- [ASCII code] Type of barcode:
    - I Interleaved 2 of 5
    - C Code 39
    - B Codabar
    - e EAN-8
    - E EAN-13
  - [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 trough 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 of 5 = 12 characters
  - Code 39 = 10 characters
  - Codabar = 10 characters
  - EAN-8 = 7 characters
  - EAN-13 = 12 characters
- [data] Specify the characters to print expressed in ASCII.

[Notes]

- For EAN-8 and EAN-13 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 0x4E, 0x1B 0x63, 'C', 0x50, 0x3C, 0x14, 0x04, 'PLUS'

where:

- 0x1B 0x4E (sets the printing in normal mode)
- 0x1B 0x63 (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)



## 0x1D 0x48

<GS H>

Select printing position of HRI characters in 1D barcodes

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                          PLUS II-USB

---

[Format]            Hex            1D    48    n  
                          ASCII           GS    H    n

[Range]            0x00 ≤ n ≤ 0x03  
                          0x30 ≤ n ≤ 0x33

[Description]      Selects the print position of HRI (Human Readable Interpretation) characters when printing a 1D barcode, based on the value of n as follows:

n	FUNCTION
0x00, 0x30	Not printed
0x01, 0x31	Above the barcode
0x02, 0x32	Below the barcode
0x03, 0x33	Both above and below the barcode

[Notes]

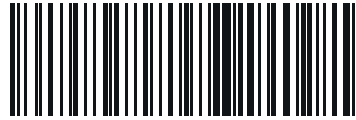
[Default]            n = 0x00

[Reference]         [0x1D 0x6B](#)



[Example]

Not printed



Above the barcode



Below the barcode



Both above and below the barcode





## 0x1D 0x68

<GS h>

### Set 1D barcode height

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
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---

[Format]	Hex            1D    68    n ASCII           GS    h    n
----------	--

[Range]             $0x01 \leq n \leq 0xFF$

[Description]      Sets the height of the 1D barcode.  
n specifies the number of vertical dots.

[Notes]

[Default]           n = 0xA2 (20.25 mm)

[Reference]        [0x1D 0x6B](#)

[Example]           To print a barcode with height of 15 mm, the command sequence is:  
0x1D 0x68 0x78

Where:

15 mm = 15 × 8 dots = 120 dots which converted in hexadecimal value = 0x78



## 0x1D 0x6B

<GS k>

### Print 1D barcode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB					
-----------	---	--	--	--	--	--

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

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

[Range]	Format 1	0x00 ≤ m ≤ 0x08,	m = 0x14
	Format 2	0x41 ≤ m ≤ 0x49,	m = 0x5A

[Description] Selects a 1D barcode system and prints the 1D barcode based on the value of m as follows:

#### Format 1

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x00	UPC-A	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x01	UPC-E	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x02	EAN13 (JAN)	0x0C ≤ k ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x03	EAN8 (JAN)	0x07 ≤ k ≤ 0x08	0x30 ≤ d ≤ 0x39
0x04	CODE39	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x05	ITF	0x01 ≤ k (even number)	0x30 ≤ d ≤ 0x39
0x06	CODABAR	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x07	CODE93	0x01 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x08	CODE128	0x02 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x14	CODE32	0x08 ≤ k ≤ 0x09	0x30 ≤ d ≤ 0x39



## Format 2

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x41	UPC-A	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x42	UPC-E	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x43	EAN13 (JAN)	0x0C ≤ n ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x44	EAN8 (JAN)	0x07 ≤ n ≤ 0x08	0x30 ≤ d ≤ 0x39
0x45	CODE39	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x46	ITF	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39
0x47	CODABAR	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x48	CODE93	0x01 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x49	CODE128	0x02 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x4B	GS1 Databar	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4C	GS1 Databar Truncated	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4D	GS1 Databar Limited	n = 0x0D	0x30 ≤ d ≤ 0x39 (however d1 = 0x30, 0x31)
0x4E	GS1 Databar Expanded	0x02 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x61 ≤ d ≤ 0x7A, 0x20 ≤ d ≤ 0x22, 0x25 ≤ d ≤ 0x2F, 0x3A ≤ d ≤ 0x3F, d = 0x5F, 0x7B (however d1 = 0x28, 0x30 ≤ d2 ≤ 0x39, 0x30 ≤ d3 ≤ 0x39 when 0x30 ≤ d1 ≤ 0x39, 0x30 ≤ d2 ≤ 0x39)
0x5A	CODE32	0x08 ≤ n ≤ 0x09	0x30 ≤ d ≤ 0x39

### [Notes]

- If d is outside of the specified range, the device 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 device 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 (bold, 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 device 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 device 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 device 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 device ignores the last received data.

## Format 2

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

When CODE93 is used:

- The device prints an HRI character (o) as a start character at the beginning of the HRI character string.
- The device prints an HRI character (o) as a stop character at the end of the HRI character string.
- The device prints an HRI character (n) as a control character (0x00 to 0x1F and 0x7F).

When CODE128 is used, 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
SHIFT	{S	7B, 53
CODE A	{A	7B, 41
CODE B	{B	7B, 42
CODE C	{C	7B, 43
FNC1	{1	7B, 31
FNC2	{2	7B, 32
FNC3	{3	7B, 33
FNC4	{4	7B, 34
{“	{{	7B, 7B

When UPC-E is used, introducing the barcode characters, the device 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 0x68, 0x1D 0x77`

[Example]

Format 1: Example for printing a CODE39 barcode:  
`0x1D 0x6B 0x04 0x54 0x45 0x53 0x54 0x00`

Format 2: Example for printing a CODE39 barcode:  
`0x1D 0x6B 0x45 0x04 0x54 0x45 0x53 0x54`



## 0x1D 0x77

<GS w>

### Set 1D barcode width

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB			
-----------	--	--	--	--

[Format]	Hex	1D	77	n
	ASCII	GS	w	n

[Range]  $0x01 \leq n \leq 0x06$

[Description] Sets the horizontal size of the 1D barcode. n specifies the barcode width as follows:

n	MODULE WIDTH (mm)
0x01	0.125
0x02	0.25
0x03	0.375
0x04	0.5
0x05	0.625
0x06	0.75

	n	WIDE BAR / NARROW BAR RATIO
If n < 0x80	0x01, 0x02, 0x03, 0x04, 0x05, 0x06	3:1
	0x81	3:1
If n > 0x80	0x82	2.5:1
	0x83	2.33:1
	0x84	2.25:1
	0x85	3:1
	0x86	3:1

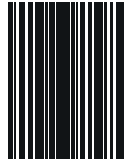
[Notes] This command is enabled only when inserted at the beginning of a line.



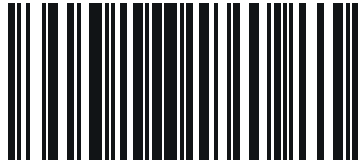
[Default] n = 0x03

[Reference] 0x1D 0x6B

[Example]



n = 0x01



n = 0x03



# CHARACTERS COMMANDS

## 0x00

<NUL>

### Small character printing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB		
[Format]	Hex	00	
	ASCII	NUL	
[Range]			
[Description]	The printer prints in small characters (normal)		
[Notes]	<ul style="list-style-type: none"><li>• The commands from 0x00 to 0x09 do not cancel the print buffer</li><li>• The commands which modify the direction of the characters are only active at the beginning of the line</li></ul>		
[Default]			
[Reference]	<a href="#">0x01</a> , <a href="#">0x02</a> , <a href="#">0x03</a> , <a href="#">0x04</a> , <a href="#">0x1B</a> <a href="#">0x4D</a>		
[Example]			

---



## 0x01

<SOH>

### Double width printing

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

[Format]            Hex            01  
                         ASCII            SOH

[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]

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

[Example]



## 0x02

### Double height printing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex            02 ASCII          STX
----------	---

[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]

[Reference]            [0x00](#), [0x01](#), [0x03](#), [0x04](#), [0x1B](#) [0x4D](#)

[Example]



## 0x03

<ETX>

### Expanded printing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
[Format]	Hex            03 ASCII         ETX
[Range]	
[Description]	The printer prints in expanded character mode.
[Notes]	<ul style="list-style-type: none"><li>• Commands from 0x00 to 0x09 do not cancel the print buffer.</li><li>• The commands which modify the dimensions of the characters are only active at the beginning of the line.</li></ul>
[Default]	
[Reference]	<a href="#">0x00</a> , <a href="#">0x01</a> , <a href="#">0x02</a> , <a href="#">0x04</a> , <a href="#">0x1B</a> <a href="#">0x4D</a>
[Example]	



## 0x04

<EOT>

### Restore small character printing

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

[Format]            Hex            04  
                         ASCII           EOT

[Range]

[Description]        The printer resumes printing with small characters.

[Notes]              • 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]

[Reference]           0x00, 0x01, 0x02, 0x03, 0x1B 0x4D

[Example]



## 0x18

<CAN>

### Cancel current line transmitted

---

Valid for            mPLUS2  
                      PLUS2 STD, PLUS2 8-42 V  
                      PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                      PLUS II-USB

---

[Format]            Hex                18  
                      ASCII             CAN

[Range]

[Description]       Deletes current line transmitted.

[Notes]             • Sets the print position to the beginning of the line.  
                      • This command does not clear the receive buffer.

[Default]

[Reference]

[Example]

## 0x1B 0x21

<ESC !>

### Select print modes

Valid for	mPLUS2		
	PLUS2 STD, PLUS2 8-42 V		
	PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB		

[Format]	Hex	1B	21	n
	ASCII	ESC	!	n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Selects print modes based on the value of n as follows:

BIT	OFF/ON	n	FUNCTION	13/17 dpi	17/22 dpi	22/17 dpi
0	Off	0x00	Character font A selected	16 x 24	12 x 24	9 x 24
	On	0x01	Character font B selected	12 x 24	9 x 24	12 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			

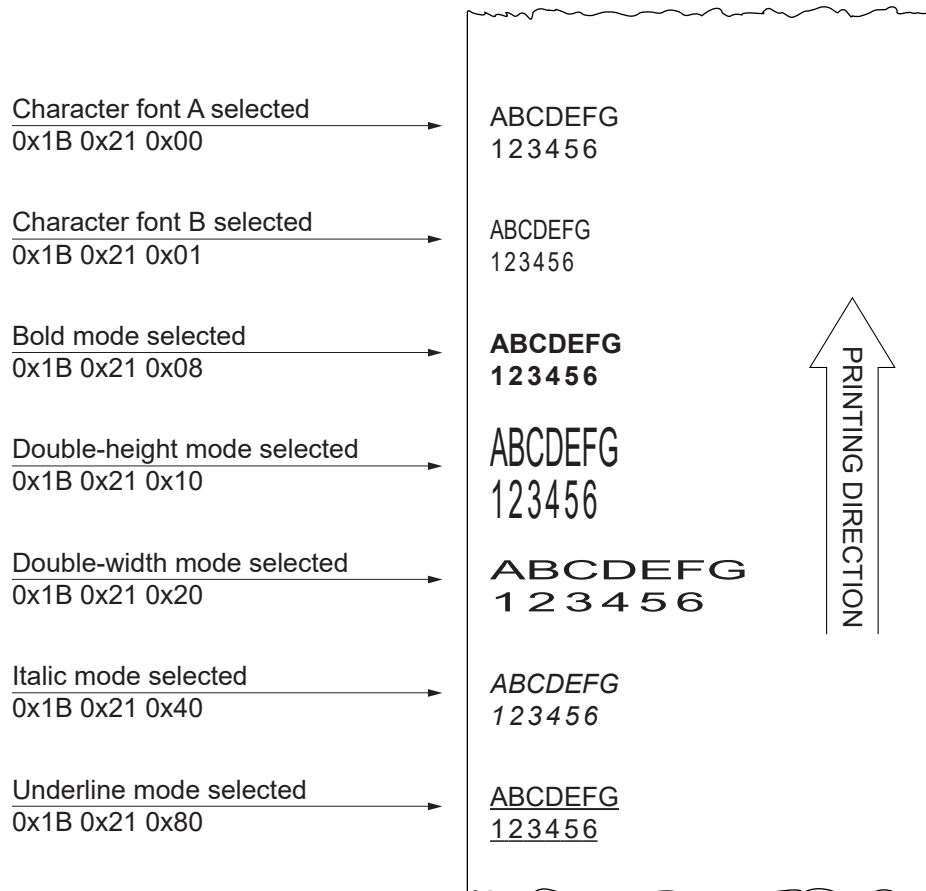
- [Notes]
- The device can underline all characters, but cannot underline the spaces set by [0x09](#) and [0x1B 0x5C](#) and 90°/270° rotated characters.
  - This command resets the left and right margin at default value (see [0x1D 0x4C](#), [0x1D 0x57](#)).
  - [0x1B 0x45](#) can also be used to turn the bold mode on or off. However, the last-received setting command is the effective one.
  - [0x1B 0x2D](#) can also be used to turn the underlining mode on or off. However, the last-received setting command is the effective one.
  - [0x1D 0x21](#) can also be used to select character height or width. However, the last-received setting command is the effective one.
  - Commands that change the height and width of characters are effective on the x and y axes. In case of 90°/270° rotated characters, command [0x1B 0x21 0x10](#) selects double-width mode and command [0x1B 0x21 0x20](#) selects double-height mode.



[Default] n = 0x00

[Reference] 0x1B 0x2D, 0x1B 0x45, 0x1D 0x21

[Example]



## 0x1B 0x26

<ESC &>

### Defines user-defined characters

Valid for	mPLUS2						
	PLUS2 STD, PLUS2 8-42 V						
	PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB						
[Format]	Hex	1B	26	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
	ASCII	ESC	&	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
[Range]	<p>y = 0x03</p> <p>0x20 ≤ c1 ≤ cn ≤ 0x7E</p> <p>0x00 ≤ x ≤ 0x10 (font 16 x 24)</p> <p>0x00 ≤ x ≤ 0x0C (font 12 x 24)</p> <p>0x00 ≤ x ≤ 0x09 (font 9 x 24)</p> <p>0x00 ≤ d0...dk ≤ 0xFF</p> <p>k = cn – c1 + 1</p>						
[Description]	<p>Defines user programmable characters.</p> <p>y specifies the number of bytes in the vertical direction.</p> <p>c1 specifies the start character code and cn specifies the final character code of the characters map area.</p> <p>x specifies the width of the character to be replaced.</p> <p>d0...dk specifies the new character definition.</p>						
[Notes]	<ul style="list-style-type: none"> <li>• It is possible to define multiple characters for consecutive character codes. If only one character is desired, use c1 = cn.</li> <li>• if cn &lt; c1, the command is not executed.</li> <li>• 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.</li> <li>• The data to define a user-defined character is (x × y) bytes.</li> <li>• To print a dot, set the corresponding bit to 1; to not have it print, set to 0.</li> <li>• This command can define different user-defined character patterns for each font. To select the font, use <a href="#">0x1B 0x21</a>.</li> <li>• The user programmable character definitions are cleared when commands <a href="#">0x1B 0x40</a> or <a href="#">0x1D 0x2A</a> are executed or the device is reset or turned off.</li> <li>• x1 [d0 ... dk] will be repeated for each character to be replaced.</li> </ul>						
[Default]	Internal character set						
[Reference]							
[Example]	<p>To replace only the “A” character of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x41 0x10 [48 bytes of the new character definition].</p> <p>To replace “A” and “B” characters of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x42 0x10 [48 bytes of the new character definition] 0x10 [48 bytes of the new character definition].</p>						

# 0x1B 0x2D

<ESC ->

## Turn underline mode on or off

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

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

[Range] 0x00 ≤ n ≤ 0x02  
 0x30 ≤ n ≤ 0x32

[Description] Turns underline mode on or off based on the value of n as follows:

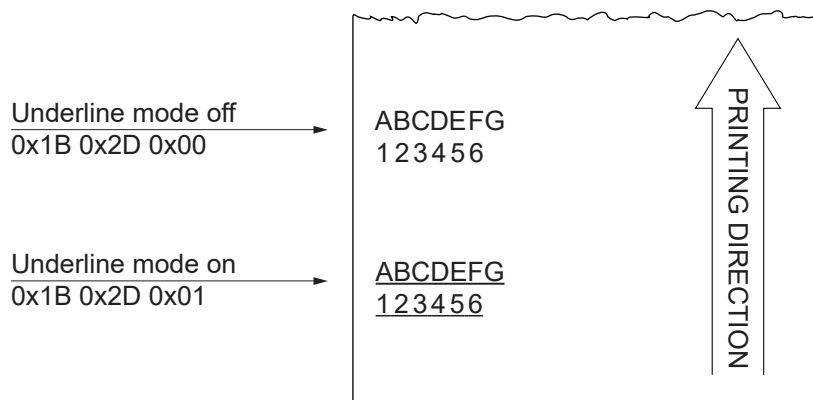
n	FUNCTION
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1 dot thick)
0x02, 0x32	Turns on underline mode (2 dot thick)

- [Notes]
- The device can underline all characters, but cannot underline the space and right-side character spacing set by command 0x09.
  - The device cannot underline 90°/270° rotated characters and white/black inverted characters.
  - When underline mode is turned off by setting the value of n to 0x00 or 0x30, the data which follows is not underlined.
  - Underline mode can also be turned on or off by using 0x1B 0x21. However, the last-received setting command is the effective one.

[Default] n = 0x00

[Reference] 0x1B 0x21

[Example]



## 0x1B 0x45

<ESC E>

### Turn bold mode on or off

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                          PLUS II-USB

---

[Format]            Hex            1B    45    n  
                          ASCII        ESC    E      n

[Range]             $0x00 \leq n \leq 0xFF$

[Description]      Turns bold mode on or off, based on the n value:  
                          - when the Least Significant Bit (LSB) of n is 0, the bold mode is off.  
                          - when the Least Significant Bit (LSB) of n is 1, the bold mode is on.

[Notes]            • Only the Least Significant Bit (LSB) of n is effective.  
                          • [0x1B 0x21](#) also turns on and off the bold mode. However, the last received command is the effective one.

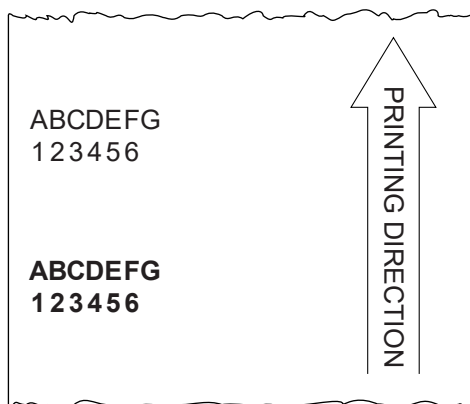
[Default]           n = 0x00

[Reference]        [0x1B 0x21](#)

[Example]

Bold mode off  
 0x1B 0x45 0x00

Bold mode on  
 0x1B 0x45 0x01



# 0x1B 0x47

<ESC G>

## Turn double-strike mode on or off

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
 PLUS II-USB

[Format] Hex 1B 47 n  
 ASCII ESC G n

[Range] 0x00 ≤ n ≤ 0xFF

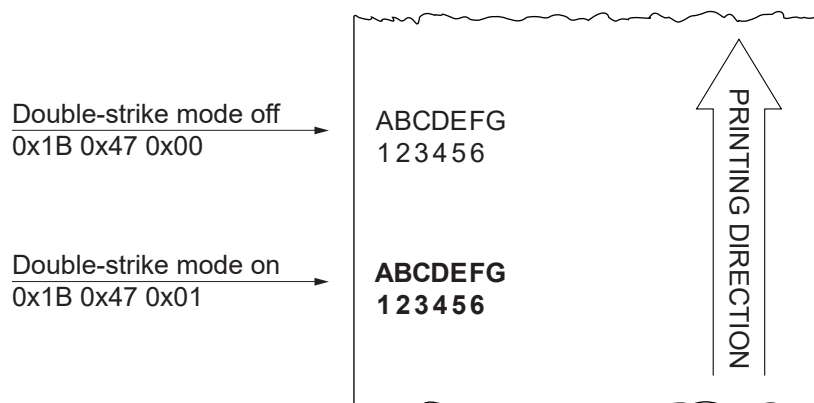
[Description] Turns double-strike mode on or off, based on the n value:  
 - when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.  
 - when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

[Notes] • Only the Least Significant Bit (LSB) of n is effective.  
 • Device output is the same in double-strike and bold mode.

[Default] n = 0x00

[Reference] [0x1B 0x21](#), [0x1B 0x45](#)

[Example]





## 0x1B 0x49

<ESC I>

### Select 24 columns

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	49
	ASCII	ESC	I

[Range]

[Description] On receiving this command, the device enters 24 columns per line printing mode.

[Notes]

[Default]

[Reference] [0x1B 0x69](#), [0x1B 0x68](#)

[Example]



# 0x1B 0x4D

<ESC M>

## Select character font

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
 PLUS II-USB

[Format] Hex 1B 4D n  
 ASCII ESC M n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Selects characters font depending of cpi value set (Char/Inch) as follows

CHAR/INCH	n	FUNCTION
A = 13 cpi	0x00, 0x30	Font 13 cpi (16x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)
A = 17 cpi	0x00, 0x30	Font 17 cpi (12x24)
B = 22 cpi	0x01, 0x31	Font 22 cpi (9x24)
A = 22 cpi	0x00, 0x30	Font 22 cpi (9x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)

[Notes]

[Default]

[Reference] [0x1B 0xC1](#)

[Example]

# 0x1B 0x4E

<ESC N>

## Set normal mode printing

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                          PLUS II-USB

[Format]            Hex            1B    4E  
                          ASCII            ESC    N

[Range]

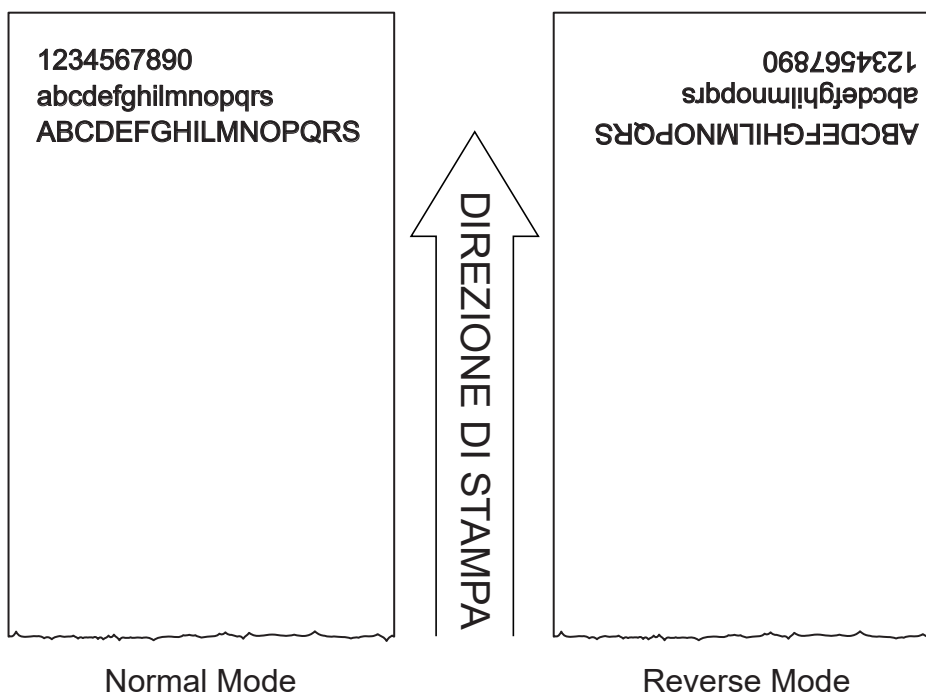
[Description]      Set normal mode printing: the receipt exits from the device with the printing upside down running from right to left.

[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  
                      PLUS2 STD, PLUS2 8-42 V  
                      PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                      PLUS II-USB

---

[Format]            Hex            1B    51  
                      ASCII        ESC    Q

[Range]

[Description]        On receiving this command, the characters are printed underlined.

[Note]

[Default]

[Reference]          [0x1B 0x71](#)

[Example]

# 0x1B 0x52

<ESC R>

## Set reverse mode printing

---

Valid for            mPLUS2  
                      PLUS2 STD, PLUS2 8-42 V  
                      PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                      PLUS II-USB

---

[Format]            Hex            1B    52  
                      ASCII          ESC   R

[Range]

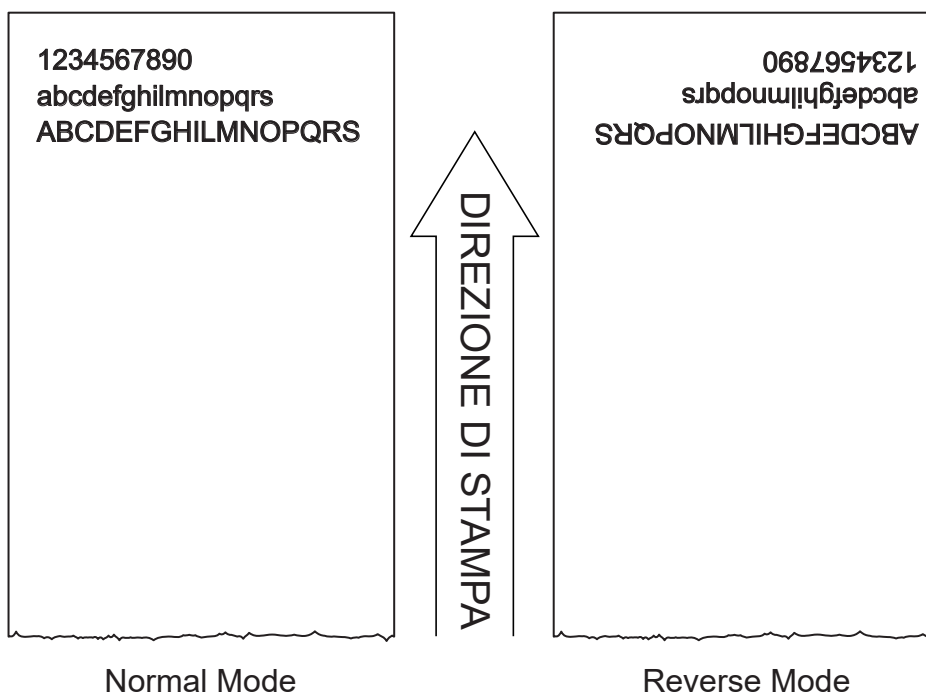
[Description]        Set reverse mode printing: the receipt exits from the device with the printing not upside down running from left to right.

[Notes]

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

[Reference]          [0x1B 0x4E](#)

[Example]



# 0x1B 0x56

<ESC V>

## Set 90° rotated print mode

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

[Format] Hex 1B 56 n  
 ASCII ESC V n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Turns 90° rotation mode on or off based on the value of n as follows:

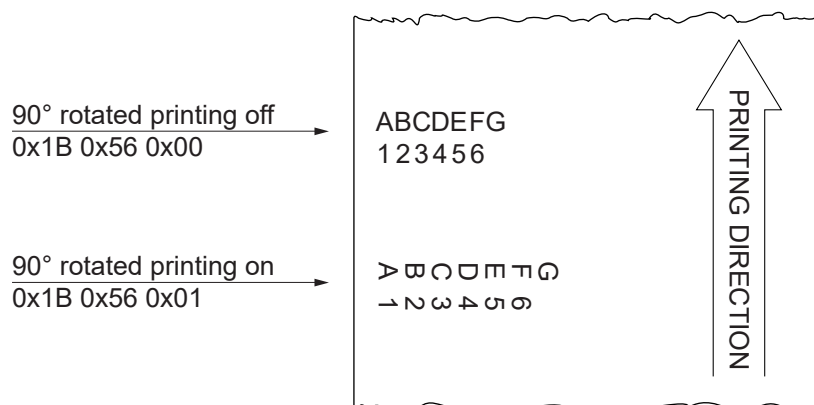
n	FUNCTION
0x00, 0x30	Disable 90° rotation mode
0x01, 0x31	Enable 90° rotation mode

- [Notes]
- When underlined mode is turned on, the device 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 = 0x00

[Reference] [0x1B 0x21](#), [0x1B 0x2D](#)

[Example]





## 0x1B 0x68

<ESC h>

### Select 42 columns

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	68
	ASCII	ESC	h

[Range]

[Description] On receiving this command, the device enters 42 columns per line printing mode.

[Notes]

[Default]

[Reference] [0x1B 0x49](#), [0x1B 0x69](#)

[Example]



## 0x1B 0x69

<ESC i>

### Select 40 columns

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex            1B    69 ASCII           ESC    i
----------	---

[Range]

[Description]            On receiving this command, the device enters 40 columns per line printing mode.

[Notes]

[Default]

[Reference]            [0x1B 0x49](#), [0x1B 0x68](#)

[Example]



## 0x1B 0x71

<ESC q>

### Disable underlined printing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	71
	ASCII	ESC	q

[Range]

[Description] Disabled underlined printing.

[Note]

[Default]

[Reference] [0x1B 0x51](#)

[Example]



## 0x1B 0x74

<ESC t>

### Select character code table

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

[Format] Hex 1B 74 n  
ASCII ESC t n

[Range]  $0x01 \leq n \leq 0x35$ ,  $n = 0xFF$

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

n	PAGINA	mPLUS2	PLUS2	PLUS II-USB
0x00	PC437 - U.S.A., Standard Europe			
0x01	Katakana			-
0x02	PC850 - Multilingual			
0x03	PC860 - Portuguese			
0x04	PC863 - Canadian/French			
0x05	PC865 - Nordic			
0x06	VISCII - Vietnamese Standard Code	on request	on request	-
0x0B	PC851 - Greek	on request	on request	-
0x0C	PC853 - Turkish	on request	on request	-
0x0D	PC857 - Turkish	on request	on request	-
0x0E	PC737 - Greek	on request	on request	-
0x0F	ISO8859-7 - Greek	on request	on request	-
0x10	WPC1252 - Scandinavian			-
0x11	PC866 - Cyrillic 2			-
0x12	PC852 - Latin 2	on request	on request	-
0x13	PC858 for Euro symbol in position 0xD5			
0x14	KU42 - Thai	on request	on request	-
0x15	TIS11 - Thai	on request	on request	-
0x1A	TIS18 - Thai	on request	on request	-
0x1E	TCVN_3 - Vietnamese	on request	on request	-
0x1F	TCVN_3 - Vietnamese	on request	on request	-
0x20	PC720 - Arabic	on request	on request	-
0x21	WPC775 - Baltic Rim	on request	on request	-
0x22	PC855 - Cyrillic	on request	on request	-
0x23	PC861 - Icelandic	on request	on request	-



0x24	PC862 - Hebrew			-
0x25	PC864 - Arabic			-
0x26	PC869 - Greek	on request	on request	-
0x27	ISO8859-2 - Latin 2	on request	on request	-
0x28	ISO8859-15 - Latin 9	on request	on request	-
0x29	PC1098 - Farsi	on request	on request	-
0x2A	PC1118 - Lithuanian	on request	on request	-
0x2B	PC1119 - Lithuanian	on request	on request	-
0x2C	PC1125 - Ukrainian	on request	on request	-
0x2D	WPC1250 - Latin 2			-
0x2E	WPC1251 - Cyrillic			-
0x2F	WPC1253 - Greek			-
0x30	WPC1254 - Turkish			-
0x31	WPC1255 - Hebrew			-
0x32	WPC1256 - Arabic			-
0x33	WPC1257 - Baltic Rim			-
0x34	WPC1258 - Vietnamese			-
0x35	KZ1048 - Kazakh	on request	on request	-
0xFF	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.
- Make sure to select the font type “International” with the command `0x1C 0x25` or with the “Font type” parameter during the setup procedure (refer to the user manual of the device).

[Default]

n = 0x00

[Reference]

`0x1C 0x25`

[Example]

For printing Euro symbol (€), the command sequence is:  
`0x1B, 0x74, 0x13, 0xD5`

# 0x1B 0x7B

<ESC {>

## Turn upside-down printing mode on or off

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

[Format] Hex 1B 7B n  
 ASCII ESC { n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Turns upside-down printing mode on or off, based on the value of n:  
 - when the Least Significant Bit (LSB) of n is 0, the upside-down printing mode is on.  
 - when the Least Significant Bit (LSB) of n is 1, the upside-down printing mode is off.

[Notes]
 

- Only the Least Significant Bit (LSB) of n is effective.
- This command is valid only if entered at the beginning of a line.
- In upside-down printing mode, the device rotates the line to be printed 180° and then prints it.

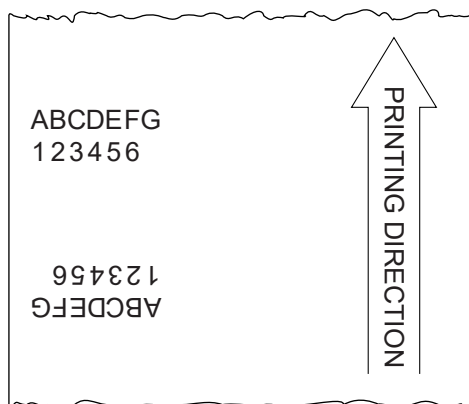
[Default] n = 0x00

[Reference]

[Example]

Upside-down printing off  
 0x1B 0x7B 0x01

Upside-down printing on  
 0x1B 0x7B 0x00



## 0x1B 0xC1

### Select character pitch

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

[Format] Hex 1B C1 n  
ASCII ESC 0xC1 n

[Range]  $0x00 \leq n \leq 0x02$   
 $0x30 \leq n \leq 0x32$

[Description] This command selects the character pitch expressed in cpi (characters per inch) based on the values of n as follows:

n	PITCH	
0x00, 0x30	Font A = 13 cpi	Font B = 17 cpi
0x01, 0x31	Font A = 17 cpi	Font B = 22 cpi
0x02, 0x32	Font A = 22 cpi	Font B = 17 cpi

[Notes]

[Default] n = 0x00

[Reference] [0x1B 0x21](#)

[Example]

Character pitch 11 cpi  
0x1B 0xC1 0x00 →

12345678901

Character pitch 15 cpi  
0x1B 0xC1 0x01 →

123456789012345

← 1 inch →





## 0x1C 0x25

<FS %>

### Select the font type

---

Valid for            mPLUS2  
                          PLUS2 STD, PLUS2 8-42 V  
                          PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                          PLUS II-USB

---

[Format]            Hex            1C    25    n  
                          ASCII         FS     %     n

[Range]            0x00 ≤ n ≤ 0x02

[Description]      Select the font type based on the value of n as follows:

n	FONT TYPE
0x00	International
0x01	Chinese GB18030
0x02	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese font (GB18030) or Korean font (PC949).
- The selection made by this command is stored in the RAM memory. Turning off the device reverts to the default value, that can be set with the “Font type” parameter during the setup procedure (refer to the user manual of the device).
- After selecting the font type “International” it must be selected the desired character code table using the command [0x1B 0x74](#).

[Default]            n = 0x00

[Reference]         [0x1B 0x74](#), see the Chinese fonts management commands manual.

[Example]

## 0x1D 0x21

### Select character size

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB		
-----------	---	--	--

[Format]	Hex	1D	21	n
	ASCII	GS	!	n

[Range]	0x00 ≤ n ≤ 0x07	0x10 ≤ n ≤ 0x17
	0x20 ≤ n ≤ 0x27	0x30 ≤ n ≤ 0x37
	0x40 ≤ n ≤ 0x47	0x50 ≤ n ≤ 0x57
	0x60 ≤ n ≤ 0x67	0x70 ≤ n ≤ 0x77

[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		Table 2 Select character height	
HEX	WIDTH	HEX	HEIGHT
00	1 (normal)	00	1 (normal)
10	2 (width = 2x)	01	2 (height = 2x)
20	3 (width = 3x)	02	3 (height = 3x)
30	4 (width = 4x)	03	4 (height = 4x)
40	5 (width = 5x)	04	5 (height = 5x)
50	6 (width = 6x)	05	6 (height = 6x)
60	7 (width = 7x)	06	7 (height = 7x)
70	8 (width = 8x)	07	8 (height = 8x)

[Notes]

- This command is effective for all characters (except HRI characters).
- If n falls outside the defined range, this command is ignored.
- Characters enlarged to different heights on the same line are aligned at the baseline or top line.
- **0x1B 0x21** can also be used to select character size. However, the setting of the last received command is the effective one.
- This command is effective on the x and y axes. In case of 90°/270° rotated characters, bit from 0 to 3 select character width and bit from 4 to 7 select character height.

[Default] n = 0x00

[Reference] [0x1B 0x21](#)

[Example] For printing a character with 6x width and height the command sequence is:  
0x1D 0x21 0x55



# LINE SPACING COMMANDS

## 0x1B 0x32

<ESC 2>

Select 1/6-inch line spacing

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

[Format]            Hex            1B    32  
                         ASCII            ESC    2

[Range]

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

[Notes]

[Default]

[Reference]            [0x1B 0x33](#)

[Example]



## 0x1B 0x33

<ESC 3>

### Set line spacing

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB			
[Format]	Hex	1B	33	n
	ASCII	ESC	3	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Sets line spacing to [n × (vertical or horizontal motion unit)].			
[Notes]	<ul style="list-style-type: none"><li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion unit does not affect the current line spacing.</li><li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li><li>• The maximum spacing is 32.5 mm.</li></ul>			
[Default]	n = 0x40 (1/6 inch)			
[Reference]	<a href="#">0x1B 0x32</a> , <a href="#">0x1D 0x50</a>			
[Example]				

---



## 0x1B 0x41

<ESC A>

Executes n dot lines feed

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

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

[Range]             $0x00 \leq nH, nL \leq 0xFF$

[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 perform a 40 mm feed the command sequence is:

0x1B 0x41 0x01 0x40



## 0x1B 0x61

<ESC a>

Select the number of dots space

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
[Format]	Hex (dd) 1B 61 ASCII (dd) ESC a
[Range]	0x00 ≤ (dd) ≤ 0x7F
[Description]	By using (dd) parameters it's possible to select the dots line number between one print line and another.
[Notes]	(dd) are two ASCII characters which identifies number from 0 to 127 in Hex form and corresponds to the number of dot lines between one print line and another.
[Default]	0x00
[Reference]	
[Example]	



# PRINT COMMANDS

## 0x0A

<LF>

### Perform a line feed

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

[Format]            Hex            0A  
                         ASCII           LF

[Range]

[Description]       Perform a line feed 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 equal to character height + spacing dots (default = 4 mm).

[Default]

[Reference]        0x0B

[Example]



## 0x0B

<VT>

### Perform n line feeds

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB		
[Format]	Hex	n	0B
	ASCII	n	VT
[Range]			
[Description]	Perform as many line feeds as are specified by parameter n.		
[Notes]	<ul style="list-style-type: none"><li>• The number must be ASCII and between 0 and 9 (when n = 0 the command is ignored)</li><li>• This command clears the line buffer.</li></ul>		
[Default]			
[Reference]	<a href="#">0x0A</a>		
[Example]	To perform 5 line feeds the command sequence is: 0x35 0x0B		

---



## 0x1B 0x4A

<ESC J>

### Print and paper feed

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB			
[Format]	Hex	1B	4A	n
	ASCII	ESC	J	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Prints the data saved in the print buffer and feeds the paper [n × vertical or horizontal motion unit].			
[Notes]	<ul style="list-style-type: none"><li>• After printing has been completed, this command sets the print starting position to the beginning of the line.</li><li>• The paper feed amount set by this command does not affect the values set by <a href="#">0x1B 0x32</a> or <a href="#">0x1B 0x33</a>.</li><li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>.</li><li>• <a href="#">0x1D 0x50</a> can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li></ul>			
[Default]				
[Reference]	<a href="#">0x1D 0x50</a>			
[Example]				



## 0x1B 0x57

<ESC W>

Print a graphic line at 203 dpi

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	57
	ASCII	ESC	W

[Range]

[Description] After receiving this command, the device waits for 48 bytes which correspond to an entire graphic line.

[Notes] 48 bytes of 8 bits each correspond to 384 dots per line.

[Default]

[Reference]

[Example]



## 0x1B 0x64

<ESC d>

### Print and feed paper n lines

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
PLUS II-USB

---

[Format] Hex 1B 64 n  
ASCII ESC d n

[Range]  $0x00 \leq n \leq 0xFF$

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

[Notes]

- n rows paper feed is equivalent to  $(n \times \text{char height} + \text{line spacing set})$ .
- 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 lines. Even if a paper feed amount of more than 254 lines is set, the device feeds the paper only 254 lines.

[Default]

[Reference] [0x1B 0x32](#), [0x1B 0x33](#)

[Example]



# STATUS COMMANDS

## 0x10 0x04

<DLE EOT>

### Real-time status transmission

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	---

---

[Format]	Hex	10	04	n
	ASCII	DLE	EOT	n

[Range]	0x01 ≤ n ≤ 0x04 n = 0x11, 0x14, 0x15
---------	---

[Description] Transmits the selected status when this command is received. The status to be transmitted is indicated in the following table:

---

n = 0x01	transmits device status
n = 0x02	transmits off-line status
n = 0x03	transmits error status
n = 0x04	transmits paper roll sensor status
n = 0x14	transmits full status
n = 0x15	transmits device ID

---

Device status (n = 0x01)

---

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	On-line
	On	08	Off-line
4	On	10	Not used. Fixed to on
5	-	-	RESERVED
6	Off	00	LF key released
	On	40	LF key pressed
7	Off	00	Not used. Fixed to off

---



Off-line status (n = 0x02)

**mPLUS2, PLUS2**

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Paper isn't fed by FEED key
	On	08	Paper is fed by FEED key
4	On	10	Not used. Fixed to on
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to off

**PLUS II-USB with cover open sensor (optional)**

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Cover closed
	On	04	Cover open
3	Off	00	Paper isn't fed by FEED key
	On	08	Paper is fed by FEED key
4	On	10	Not used. Fixed to on
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to off



#### Error status (n = 0x03)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Not used. Fixed to off
4	On	10	Not used. Fixed to on
5	Off	00	Not used. Fixed to off
6	Off	00	No auto-recoverable error
	On	40	Auto-recoverable error
7	Off	00	Not used. Fixed to off

#### Paper roll sensor status (n = 0x04)

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



Full status (n = 0x14, 6 bytes)

1st byte = 0x10 (DLE)

2nd byte = 0x0F

3rd byte = Paper status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Paper present
	On	01	Paper not present
1	-	-	RESERVED
2	Off	00	Not used. Fixed to off
3	-	-	RESERVED
4	-	-	RESERVED
5	-	-	RESERVED
6	-	-	RESERVED
7	Off	00	Notch is placed over the sensor
	On	80	Notch is not placed over the sensor

4th byte = User status

**mPLUS2, PLUS2**

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



### PLUS II-USB with cover open sensor (optional)

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

5th byte = Recoverable status error

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Head temperature ok
	On	01	Head temperature error
1	Off	00	No COM error
	On	02	RS232 COM error
2	-	-	RESERVED
3	Off	00	Power supply voltage ok
	On	08	Power supply voltage error
4	-	-	RESERVED
5	Off	00	Acknowledge command
	On	20	Not acknowledge command error
6	Off	00	Free paper path
	On	40	Paper jam
7	Off	00	Notch search ok
	On	80	Error in notch search



6th byte = Unrecoverable error status

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

Transmit device ID (n = 0x15)

1st byte = (refer to command [0x1D 0x49](#))

[Notes] This command is immediately executed even when the data buffer is full.

[Default]

[Reference]

[Example] Request for device status transmission:  
 0x10 0x04 0x01  
 Device response:  
 0x80            LF key pressed



## 0x1D 0x72

<GS r>

### Transmit status

---

Valid for mPLUS2  
PLUS2 STD, PLUS2 8-42 V  
PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

---

[Format] Hex 1D 72 n  
ASCII GS r n

[Range] n = 0x01, 0x31

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

n	FUNCTION
0x01, 0x31	Transmit status

Device status:

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Cover closed
	On	03	Cover open
2, 3	Off	00	Paper end sensor: paper present
	On	0C	Paper end sensor: paper not present
4	Off	00	Not used. Fixed to Off
5	Off	00	Head temperature ok
	On	20	Head temperature error
6	Off	00	Power supply voltage ok
	On	40	Power supply voltage error
7	Off	00	Not used. Fixed 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]

[Example]

# BIT-IMAGE COMMANDS

## 0x1B 0x2A

<ESC \*>

### Select bit image mode

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB						
-----------	---	--	--	--	--	--	--

[Format]	Hex	1B	2A	m	nL	nH	d1...dk
	ASCII	ESC	*	m	nL	nH	d1...dk

[Range]	m = 0x00, 0x01, 0x20, 0x21 0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0x03 0x00 ≤ d ≤ 0xFF						
---------	---	--	--	--	--	--	--

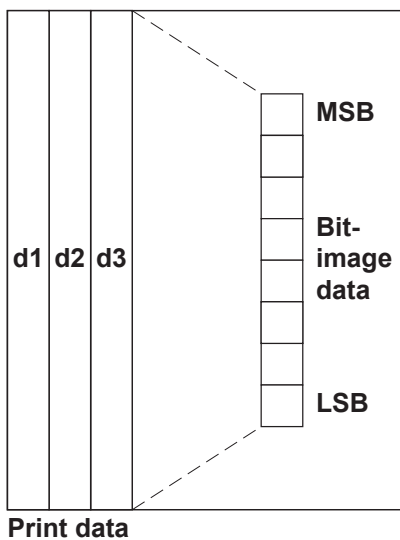
[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION	
		N. DOTS	DPI	DPI	N. DATA (k)
0x00	8 dots single density	8	67	100	nL + nH × 256
0x01	8 dots double density	8	67	200	nL + nH × 256
0x20	24 dots single density	24	200	100	(nL + nH × 256) × 3
0x21	24 dots double density	24	200	200	(nL + nH × 256) × 3

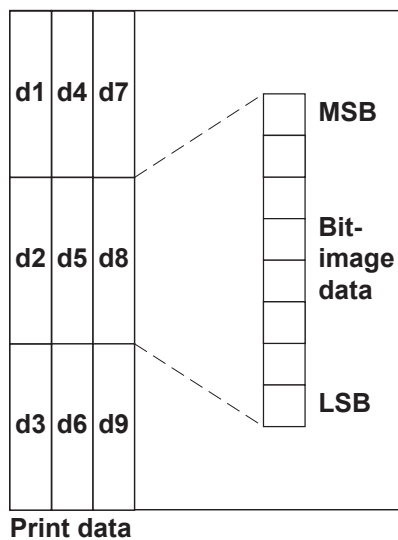
- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH × 256.
  - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
  - d indicates the bit image 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 [0x1B 0x4A](#) or [0x1B 0x64](#).
  - After printing a bit image, the device returns to normal data processing mode.
  - This command is not affected by the bold, 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



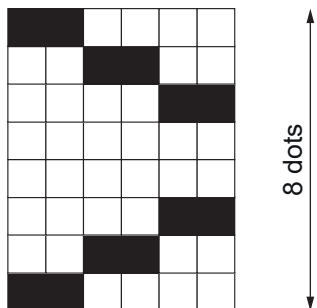
24-dot bit image



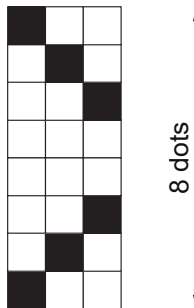
[Default]

[Reference]

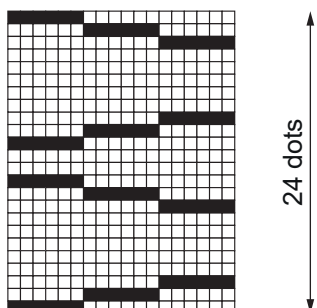
[Example]



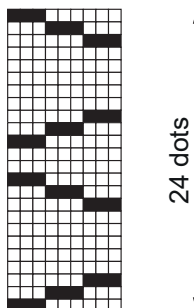
8 dots single density



8 dots double density



24 dots single density



24 dots double density



## 0x1D 0x2A

<GS \*>

### Define received bit image

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
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[Format]	Hex	1D	2A	x	y	d1...d(x × y × 8)
	ASCII	GS	*	x	y	d1...d(x × y × 8)

[Range]	0x01 ≤ x ≤ 0xFF 0x01 ≤ y ≤ 0x30 x × y ≤ 1536 0x00 ≤ d ≤ 0xFF
---------	---

[Description]	Defines a received bit image using the number of dots specified by x and y. <ul style="list-style-type: none"> <li>• x specifies the number of bytes in the horizontal direction.</li> <li>• y specifies the number of bytes in the vertical direction.</li> </ul>
---------------	--

[Notes]	<ul style="list-style-type: none"> <li>• The number of bytes in horizontal and vertical directions (x and y) are the horizontal and vertical size of the starting image divided by 8.</li> <li>• If x × y is out of the specified range, this command is disabled.</li> <li>• The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.</li> <li>• The received bit image definition is cleared when: <ul style="list-style-type: none"> <li>- 0x1B 0x40 is executed.</li> <li>- 0x1B 0x26 is executed.</li> <li>- Device is reset or the power is turned off.</li> </ul> </li> <li>• The image is saved in the graphic memory of the device.</li> </ul>
---------	--

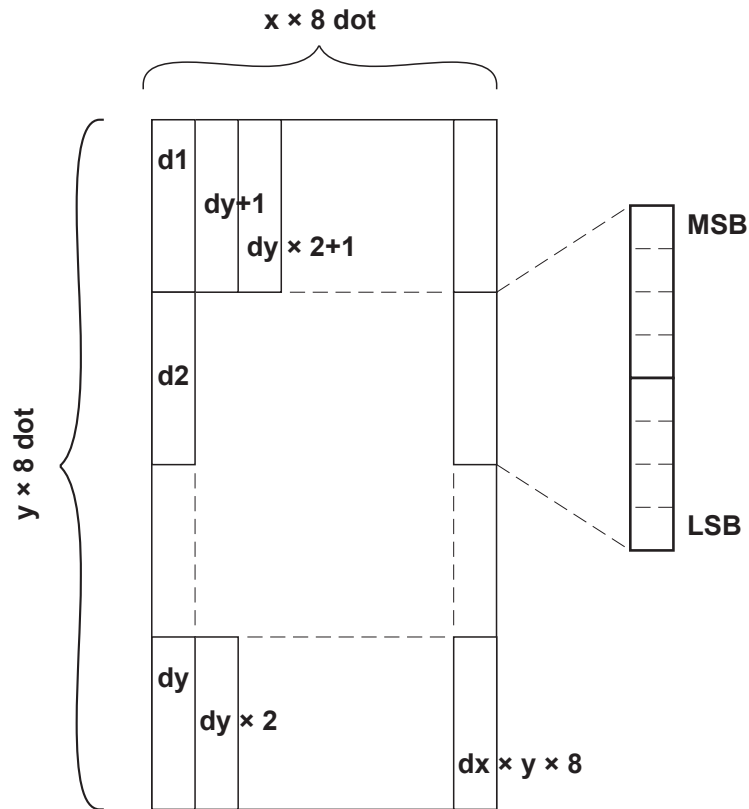
[Default]

[Reference]



[Example]

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



# LOGOS MANAGEMENT COMMANDS

## 0x1D 0x70

<GS p>

### Print logo

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
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[Format]	Hex	1D	70	m	n
	ASCII	GS	p	m	n

[Range]	0x00 ≤ m ≤ 0x03 (Logo number) n = 0x00, 0x01, 0x02, 0x03
---------	---

[Description] The bit image specified by m (if stored in flash memory) is printed in the mode indicated by n as described in the following table:

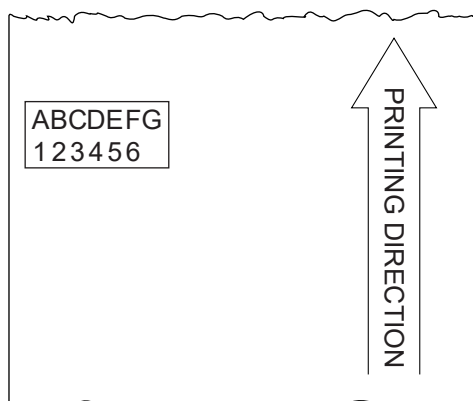
n	PRINT MODE
0x00	Normal
0x01	Double width
0x02	Double height
0x03	Double width and double height

[Notes]

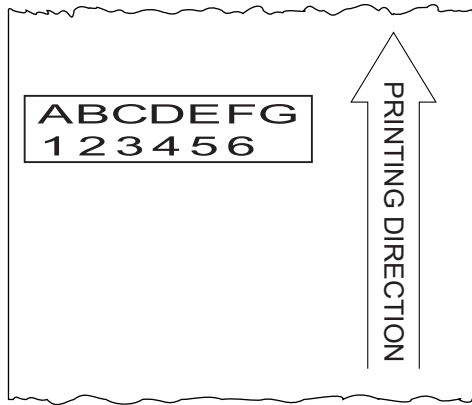
[Default]

[Reference]

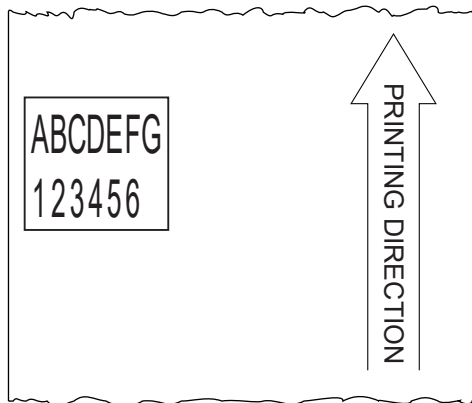
[Example] n = 0x00



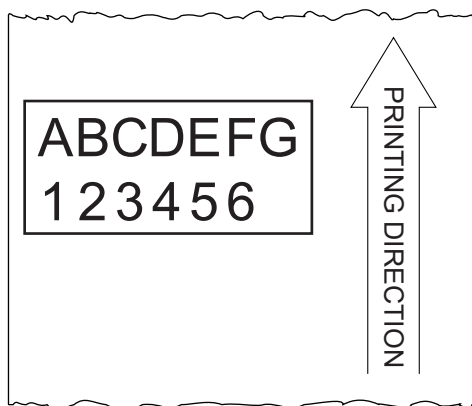
n = 0x01: Double width



n = 0x02: Double height



n = 0x03: Double width and double height





# PRINT POSITION COMMANDS

## 0x08

<BS>

### Back space

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
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[Format]	Hex	08
	ASCII	BS

#### [Range]

[Description] Moves print position to previous character.

[Notes] This command can be used to put two characters at the same position.

#### [Default]

#### [Reference]

#### [Example]

# 0x09

<HT>

## Horizontal tab

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

[Format] Hex 09  
 ASCII HT

[Range]

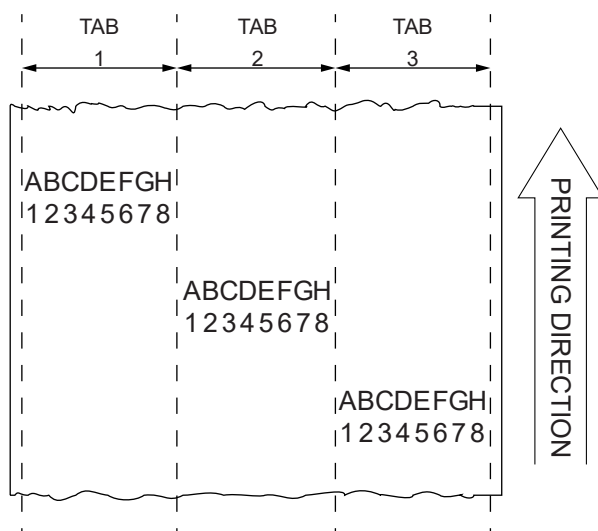
[Description] Moves the print position to the next horizontal tab position.

- [Notes]
- Horizontal tab position are set using [0x1B 0x44](#).
  - 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 device executes print buffer full printing and horizontal tab processing from the beginning of the next line.

[Default] Default tab positions are set at intervals of 8 characters (9, 17, 25, ...) when the right-side character spacing is 0.

[Reference] [0x1B 0x44](#)

[Example]





## 0x1B 0x44

<ESC D>

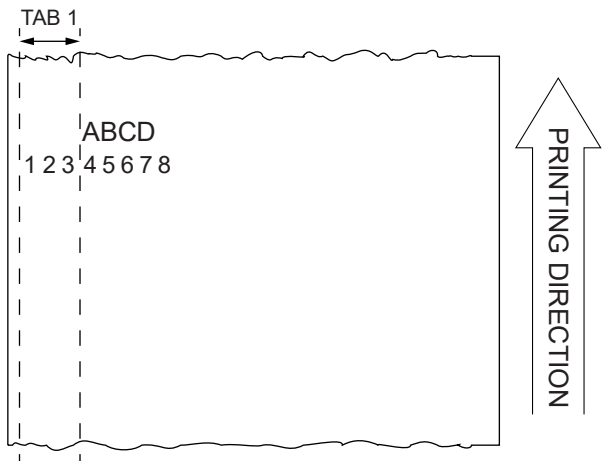
### Set horizontal tab positions

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB				
[Format]	Hex	1B	44	n1...nk	00
	ASCII	ESC	D	n1...nk	NUL
[Range]	0x01 ≤ n ≤ 0xFF 0x00 ≤ k ≤ 0x20				
[Description]	Sets horizontal tab positions <ul style="list-style-type: none"> <li>• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.</li> <li>• k indicates the total number of horizontal tab positions to be set.</li> </ul>				
[Notes]	<ul style="list-style-type: none"> <li>• The horizontal tab position is stored as a value of [character width × 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.</li> <li>• This command cancels previous tab settings.</li> <li>• Up to 32 tab positions (k = 0x20) can be set. Data exceeding 32 tab positions is processed as normal data.</li> <li>• 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.</li> <li>• 0x1B 0x44 0x00 cancels all horizontal tab positions.</li> <li>• The previously specified horizontal tab position does not change, even if the character width is modified.</li> </ul>				
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) when the right-side character spacing is 0.				
[Reference]	<a href="#">0x09</a>				



[Example]

To set a tabulation to column 4 send the command:  
0x1B 0x44 0x03 0x00



To print the string 'ABCD' to the tabulation previously set, the command sequence is:  
0x09 'ABCD'

where:

- 0x09                    move the print position to the set horizontal tab (4th column).
- 'ABCD'                is the string to be printed.



## 0x1B 0x5C

<ESC I>

### Set relative print position

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB				
[Format]	Hex	1B	5C	nL	nH
	ASCII	ESC	\	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF				
[Description]	Sets the print starting position based on the current position by using the horizontal or vertical motion unit. Sets the distance from the current position to [(nL + nH × 256) × horizontal or vertical motion unit].				
[Notes]	<ul style="list-style-type: none"> <li>• When the starting position is specified by N motion units to the right: nL + nH × 256 = N.</li> <li>• 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.</li> <li>• If setting exceeds the printing area width, the left or right margin is set to the default value.</li> <li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>.</li> <li>• <a href="#">0x1D 0x50</a> can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• In standard mode, the horizontal motion unit is used.</li> <li>• 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 device mechanism and then begins a new row.</li> </ul>				
[Default]					
[Reference]	<a href="#">0x1D 0x50</a>				
[Example]					

## 0x1D 0x4C

<GS L>

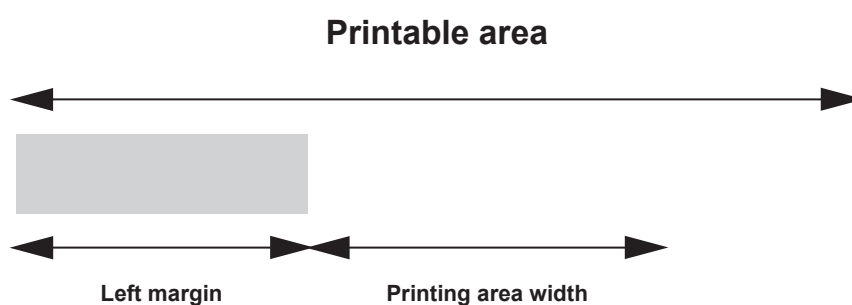
### Set left margin

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB				
-----------	---	--	--	--	--

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

[Range] 0x00 ≤ nL, nH ≤ 0xFF

[Description] Sets the left margin to [(nL + nH × 256) × horizontal motion unit].



- [Notes]
- 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 0x57

<GS W>

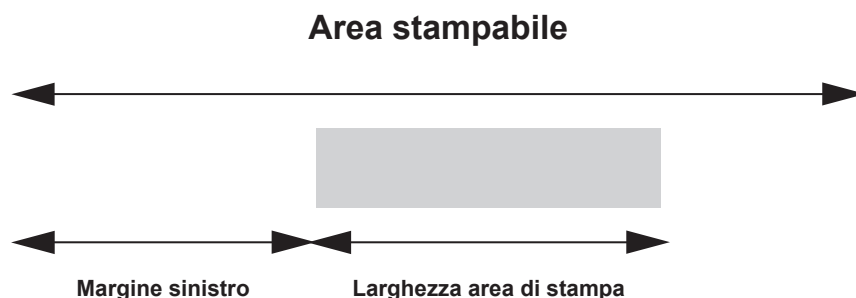
### Set printing area width

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB				
-----------	---	--	--	--	--

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

[Range]	$0 \leq nL, nH \leq 0xFF$ $0 \leq (nL + nH \times 256) \leq 640$
---------	---

[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]	<ul style="list-style-type: none"> <li>• This command is only enabled if set at the beginning of the line.</li> <li>• If the right margin is greater than the printable area, the printing area width is set at maximum value.</li> <li>• If the printing area width = 0, it is set at the maximum value.</li> <li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion unit does not affect the current left margin.</li> <li>• The <a href="#">0x1D 0x50</a> 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.</li> </ul>
---------	--

[Default]

[Reference] [0x1D 0x4C](#), [0x1D 0x50](#)

[Example]



# ALIGNMENT COMMANDS

## 0x1D 0xF6

Align the ticket with the printhead

---

Valid for	PLUS2 STD, PLUS2 8-42 V
	PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

---

[Format]	Hex	1D	F6
	ASCII	GS	0xF6

[Range]

[Description] This command align the edge of black mark to the alignment point (see [ALIGNMENT](#) section for further explanation).

[Notes] Use this alignment command even to print more tickets without cutting.

[Default]

[Reference]

[Example]



# MISCELLANEOUS COMMANDS

## 0x0D

<CR>

Print the line buffer

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	0D
	ASCII	CR

[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 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex            0F ASCII          SI
----------	--

[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.

[Default]

[Reference]            [0x0D](#)

[Example]



# 0x11

<DC1>

## Enable graphic mode

Valid for mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
 PLUS II-USB

[Format] Hex 11  
 ASCII DC1

[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, the command sequence is:  
 0x11, n x 0x7F (where n is the number of characters per line), 0x0D.

To print an empty line, the command sequence is:  
 0x11, 0x40, 0x0D



## 0x1B 0x30

<ESC 0>

### Turn off the device

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	30
	ASCII	ESC	0

[Range]

[Description] Switch off the device and bring it back to low consumption mode if was disabled the Auto Power-On function.

[Notes] The setup parameter "Power Off Command" must be enabled.

[Default]

[Reference]

[Example]



## 0x1B 0x3D

<ESC =>

### Select peripheral device

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	3D	n
	ASCII	ESC	=	n

[Range]  $0x01 \leq n \leq 0x03$

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

n	FUNCTION
0x01, 0x03	Device enabled
0x02	Device disabled

[Notes] When the device is disabled, it ignores all transmitted data until the device is enabled through this command.

[Default] n = 0x01

[Reference]

[Example]



## 0x1B 0x40

<ESC @>

### Initialize device

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	40
	ASCII	ESC	@

[Range]

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

[Notes] The data in the receiver buffer is not cleared.

[Default]

[Reference]

[Example]



## 0x1B 0x4B

<ESC K>

### Turn off or on the status LED

---

Valid for            mPLUS2  
 PLUS2 STD, PLUS2 8-42 V  
 PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
 PLUS II-USB

---

[Format]            Hex            1B    4B    n  
 ASCII            ESC    K    n

[Range]            n = 0x00, 0x01

[Description]      Turns on or off the status LED based on the value of n as follow:

n	FUNCTION
0x00	Turn off the status LED
0x01	Turn on the status LED

[Notes]

[Default]            n = 0x01

[Reference]

[Example]



## 0x1B 0x6D

<ESC m>

Transmit the print mode configuration on the serial port

---

Valid for	mPLUS2
	PLUS2 STD, PLUS2 8-42 V
	PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB

---

[Format]	Hex	1B	6D
	ASCII	ESC	m

[Range]

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

[Notes]

- If the device is using the parallel protocol, nothing will be transmitted.
- If the print mode setting is [0x04](#) the printer answer 0x30 0x30 (normal character).
- The response is on two bytes.

[Default]

[Reference]

[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 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

[Format]	Hex	1B	73
	ASCII	ESC	s

[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, 0x41, will not be printed but immediately transmitted on the serial.



## 0x1B 0xFA

### Print graphic bank (384 x 85 dots)

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

---

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

[Range] 0x00 ≤ n1, n2 ≤ 0xFF

[Description] Prints the graphics bank from flash based on the values of n1 and n2 where:

- n1 specifies the starting dot line (1 ÷ 85).
- n2 specifies the number of lines to print.

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

[Default]

[Reference]

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



## 0x1C 0x3D 0x45 0x50 0x4F 0x53 0x3D

<FS = E P O S = >

Change device emulation to CUSTOM/POS

---

Valid for	mPLUS2
	PLUS2 STD, PLUS2 8-42 V

---

[Format]	Hex	1C	3D	45	50	4F	53	3D
	ASCII	FS	=	E	P	O	S	=

[Range]

[Description] Change device emulation to CUSTOM/POS.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0x3D 0x46 0x31 0x39 0x30 0x3D

<FS = F 1 9 0 = >

Change device emulation to FH190

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]	Hex	1C	3D	46	31	39	30	3D
	ASCII	FS	=	F	1	9	0	=

[Range]

[Description] Change device emulation to FH190.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0xC1

### Paper recovery

---

Valid for            mPLUS2  
                         PLUS2 STD, PLUS2 8-42 V  
                         PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                         PLUS II-USB

---

[Format]            Hex            1C    C1    0x80   n  
                         ASCII          FS    0xC1   0x80   n

[Range]             $0xA0 \leq n \leq 0xF0$

[Description]      Set the paper moving (in millimetres) toward the printhead.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0xEA

### Transmit the device serial number

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
[Format]	Hex            1C    EA    n ASCII         FS    0xEA   n
[Range]	n = 0x52, 0x72
[Description]	Transmits the device serial number.
[Notes]	<ul style="list-style-type: none"><li>• The serial number is a string of 16 alphanumeric characters.</li><li>• If the printer serial number is not defined, the device returns a string of 16 characters with a value of 0x00.</li></ul>
[Default]	
[Reference]	
[Example]	To read the device serial number the command sequence is: 0x1C 0xEA 0x52  The device returns a string of 16 alphanumeric characters just like the following: 'ABC0123456789012'



## 0x1D 0x24

<GS \$>

### Set absolute print position into a graphic line

---

Valid for	PLUS2 STD, PLUS2 8-42 V			
-----------	-------------------------	--	--	--

---

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

[Range] 0x00 ≤ n ≤ 0x2F

[Description] Set the beginning print 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 device ID

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB
-----------	--

[Format]	Hex            1D    49    n ASCII            GS    I    n
----------	---

[Range]	0x01 ≤ n ≤ 0x03 0x31 ≤ n ≤ 0x33 n = 0xFF
---------	--

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

#### PLUS II-USB

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0x09
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)

#### mPLUS2, PLUS2

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0xFF (resend the command with n = 0xFF)
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)
0xFF	Device model ID (2 bytes)	0x02 0x0E mPLUS2 RX63 0x02 0x77 mPLUS2 RX65 0x02 0x14 PLUS2 RX63 0x02 0x76 PLUS2 RX65



n = 0x02, 0x32 Type ID

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	2 bytes characters codes not supported
	On	02	Not used. Fixed to on
2	Off	00	Thermal paper w/o label
	On	04	Thermal paper label
3	-	-	Undefined
4	Off	00	Not used. Fixed to off
5	-	-	Undefined
6	-	-	Undefined
7	Off	00	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 0x50

<GS P>

### Set horizontal and vertical motion units

---

Valid for	mPLUS2 PLUS2 STD, PLUS2 8-42 V PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P, PLUS II-USB				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	0x00 ≤ x, y ≤ 0xFF				
[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"><li>• The horizontal direction is perpendicular to the paper feed direction.</li><li>• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):  Commands using x: <a href="#">0x1B 0x5C</a>, <a href="#">0x1D 0x4C</a>, <a href="#">0x1D 0x57</a>. Commands using y: <a href="#">0x1B 0x33</a>, <a href="#">0x1B 0x4A</a>.</li><li>• This command does not affect the previously specified values.</li><li>• 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.</li></ul>				
[Default]	x = 0xCC, y = 0x198				
[Reference]	<a href="#">0x1B 0x5C</a> , <a href="#">0x1B 0x33</a> , <a href="#">0x1B 0x4A</a> , <a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x57</a>				
[Example]					



## 0x1D 0x55

<GS U>

Reset the device parameters to the default configuration

---

Valid for            mPLUS2  
                      PLUS2 STD, PLUS2 8-42 V  
                      PLUS II ECO, PLUS II-S, PLUS II-S-0004, PLUS II-T, PLUS II-C, PLUS II-C-0004, PLUS II-P,  
                      PLUS II-USB

---

[Format]            Hex            1D    55  
                      ASCII        GS    U

[Range]

[Description]        Reset the device parameters to the default configuration.

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

[Default]

[Reference]

[Example]



# FH190 EMULATION

1	COMMANDS LISTED IN ALPHANUMERIC ORDER .....	236
2	COMMANDS LISTED BY FUNCTION .....	239



# 1 COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	292
0x09	<HT>	293
0x0A	<LF>	277
0x10 0x04	<DLE EOT>	281
0x18	<CAN>	254
0x1B 0x21	<ESC !>	255
0x1B 0x26	<ESC &>	257
0x1B 0x2A	<ESC *>	286
0x1B 0x2D	<ESC ->	258
0x1B 0x3D	<ESC =>	300
0x1B 0x40	<ESC @>	301
0x1B 0x41	<ESC A>	275
0x1B 0x44	<ESC D>	294
0x1B 0x45	<ESC E>	259
0x1B 0x47	<ESC G>	260
0x1B 0x49	<ESC I>	261
0x1B 0x4A	<ESC J>	278
0x1B 0x4B	<ESC K>	302
0x1B 0x4D	<ESC M>	262
0x1B 0x4E	<ESC N>	263
0x1B 0x51	<ESC Q>	264
0x1B 0x52	<ESC R>	265
0x1B 0x56	<ESC V>	266
0x1B 0x57	<ESC W>	279
0x1B 0x5C	<ESC \>	296



0x1B 0x61	<ESC a>	276
0x1B 0x63	<ESC c>	243
0x1B 0x64	<ESC d>	280
0x1B 0x68	<ESC h>	267
0x1B 0x69	<ESC i>	268
0x1B 0x6D	<ESC m>	303
0x1B 0x71	<ESC q>	269
0x1B 0x73	<ESC s>	304
0x1B 0x74	<ESC t>	270
0x1B 0xC1		272
0x1B 0xFA		305
0x1C 0x25	<FS %>	273
0x1C 0x3D 0x45 0x50 0x4F 0x53 0x3D	<FS = E P O S = >	306
0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D	<FS = P L U S = >	307
0x1C 0xC1		308
0x1C 0xEA		309
0x1D 0x21	<GS !>	274
0x1D 0x24	<GS \$>	310
0x1D 0x2A	<GS *>	288
0x1D 0x48	<GS H>	245
0x1D 0x49	<GS I>	311
0x1D 0x4C	<GS L>	297
0x1D 0x50	<GS P>	312
0x1D 0x55	<GS U>	313
0x1D 0x57	<GS W>	298
0x1D 0x68	<GS h>	247
0x1D 0x6B	<GS k>	248
0x1D 0x70	<GS p>	290



0x1D 0x72	.....<GS r> .....	285
0x1D 0x77	.....<GS w>.....	252
0x1D 0xF6	.....	299
0x1F 0xCC	.....	314



## 2 COMMANDS LISTED BY FUNCTION

### COMMANDS FOR BARCODE PRINTING

---

0x1B 0x63	. . . . . <ESC c>	243
Management of barcode printing		
0x1D 0x48	. . . . . <GS H>	245
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---

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0x1B 0x4E	. . . . . <ESC N>	263
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## LINE SPACING COMMANDS

---

<b>0x1B 0x41</b> .....	<b>&lt;ESC A&gt;</b> .....	<b>275</b>
Executes n dot lines feed		
<b>0x1B 0x61</b> .....	<b>&lt;ESC a&gt;</b> .....	<b>276</b>
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## PRINT COMMANDS

---

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Print and paper feed		
<b>0x1B 0x57</b> .....	<b>&lt;ESC W&gt;</b> .....	<b>279</b>
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## STATUS COMMANDS

---

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## BIT-IMAGE COMMANDS

---

0x1B 0x2A	.....<ESC *> .....	286
Select bit image mode		
0x1D 0x2A	.....<GS *> .....	288
Define received bit image		

## LOGOS MANAGEMENT COMMANDS

---

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## PRINT POSITION COMMANDS

---

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0x1B 0x44	.....<ESC D> .....	294
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Set relative print position		
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## ALIGNMENT COMMANDS

---

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Align the ticket with the printhead		



## MISCELLANEOUS COMMANDS

---

0x1B 0x3D	<ESC =>	300
Select peripheral device		
0x1B 0x40	<ESC @>	301
Initialize device		
0x1B 0x4B	<ESC K>	302
Turn off or on the status LED		
0x1B 0x6D	<ESC m>	303
Transmit the print mode configuration on the serial port		
0x1B 0x73	<ESC s>	304
Transmit the next character in serial		
0x1B 0xFA		305
Print graphic bank (384 x 85 dots)		
0x1C 0x3D 0x45 0x50 0x4F 0x53 0x3D	<FS = E P O S = >	306
Change device emulation to CUSTOM/POS		
0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D	<FS = P L U S = >	307
Change device emulation to PLUS		
0x1C 0xC1		308
Paper recovery		
0x1C 0xEA		309
Transmit the device serial number		
0x1D 0x24	<GS \$>	310
Set absolute print position into a graphic line		
0x1D 0x49	<GS I>	311
Transmit device ID		
0x1D 0x50	<GS P>	312
Set horizontal and vertical motion units		
0x1D 0x55	<GS U>	313
Reset the device parameters to the default configuration		
0x1F 0xCC		314
Turn off the device		

# COMMANDS FOR BARCODE PRINTING

## 0x1B 0x63

<ESC c>

### Management of barcode printing

---

Valid for	PLUS2 STD, PLUS2 8-42 V
-----------	-------------------------

---

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

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

- [ASCII code] Type of barcode:
  - I Interleaved 2 of 5
  - C Code 39
  - B Codabar
  - e EAN-8
  - E EAN-13
- [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 of 5 = 12 characters
  - Code 39 = 10 characters
  - Codabar = 10 characters
  - EAN-8 = 7 characters
  - EAN-13 = 12 characters
- [data] Specify the characters to print expressed in ASCII.

- [Notes]
- For EAN-8 and EAN-13 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 0x4E, 0x1B 0x63, 'C', 0x50, 0x3C, 0x14, 0x04, 'PLUS'

where:

- 0x1B 0x4E (sets the printing in normal mode)
- 0x1B 0x63 (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)



## 0x1D 0x48

<GS H>

Select printing position of HRI characters in 1D barcodes

Valid for	PLUS2 STD, PLUS2 8-42 V													
[Format]	Hex	1D	48	n										
	ASCII	GS	H	n										
[Range]	0x00 ≤ n ≤ 0x03 0x30 ≤ n ≤ 0x33													
[Description]	Selects the print position of HRI (Human Readable Interpretation) characters when printing a 1D barcode, based on the value of n as follows:													
	<table border="1"> <thead> <tr> <th>n</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0x00, 0x30</td> <td>Not printed</td> </tr> <tr> <td>0x01, 0x31</td> <td>Above the barcode</td> </tr> <tr> <td>0x02, 0x32</td> <td>Below the barcode</td> </tr> <tr> <td>0x03, 0x33</td> <td>Both above and below the barcode</td> </tr> </tbody> </table>				n	FUNCTION	0x00, 0x30	Not printed	0x01, 0x31	Above the barcode	0x02, 0x32	Below the barcode	0x03, 0x33	Both above and below the barcode
n	FUNCTION													
0x00, 0x30	Not printed													
0x01, 0x31	Above the barcode													
0x02, 0x32	Below the barcode													
0x03, 0x33	Both above and below the barcode													
[Notes]														
[Default]	n = 0x00													
[Reference]	<a href="#">0x1D 0x6B</a>													



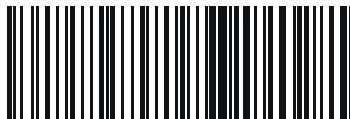
[Example]

Not printed



Above the barcode

ABCDEFGH123456



Below the barcode

ABCDEFGH123456



Both above and below the barcode

ABCDEFGH123456



ABCDEFGH123456



## 0x1D 0x68

<GS h>

### Set 1D barcode height

---

Valid for	PLUS2 STD, PLUS2 8-42 V			
[Format]	Hex	1D	68	n
	ASCII	GS	h	n
[Range]	$0x01 \leq n \leq 0xFF$			
[Description]	Sets the height of the 1D barcode. n specifies the number of vertical dots.			
[Notes]				
[Default]	n = 0xA2 (20.25 mm)			
[Reference]	<a href="#">0x1D 0x6B</a>			
[Example]	To print a barcode with height of 15 mm, the command sequence is: 0x1D 0x68 0x78  Where: 15 mm = 15 × 8 dots = 120 dots which converted in hexadecimal value = 0x78			



# 0x1D 0x6B

<GS k>

## Print 1D barcode

Valid for PLUS2 STD, PLUS2 8-42 V

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

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

[Range]	Format 1	0x00 ≤ m ≤ 0x08,	m = 0x14
	Format 2	0x41 ≤ m ≤ 0x49,	m = 0x5A

[Description] Selects a 1D barcode system and prints the 1D barcode based on the value of m as follows:

### Format 1

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x00	UPC-A	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x01	UPC-E	0x0B ≤ k ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x02	EAN13 (JAN)	0x0C ≤ k ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x03	EAN8 (JAN)	0x07 ≤ k ≤ 0x08	0x30 ≤ d ≤ 0x39
0x04	CODE39	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x05	ITF	0x01 ≤ k (even number)	0x30 ≤ d ≤ 0x39
0x06	CODABAR	0x01 ≤ k	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x07	CODE93	0x01 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x08	CODE128	0x02 ≤ k ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x14	CODE32	0x08 ≤ k ≤ 0x09	0x30 ≤ d ≤ 0x39



## Format 2

m	BARCODE SYSTEM	NUMBER OF CHARACTERS	REMARKS
0x41	UPC-A	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x42	UPC-E	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x43	EAN13 (JAN)	0x0C ≤ n ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x44	EAN8 (JAN)	0x07 ≤ n ≤ 0x08	0x30 ≤ d ≤ 0x39
0x45	CODE39	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x46	ITF	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39
0x47	CODABAR	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d1 ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x48	CODE93	0x01 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x49	CODE128	0x02 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x4B	GS1 Databar	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4C	GS1 Databar Truncated	n = 0x0D	0x30 ≤ d ≤ 0x39
0x4D	GS1 Databar Limited	n = 0x0D	0x30 ≤ d ≤ 0x39 (however d1 = 0x30, 0x31)
0x4E	GS1 Databar Expanded	0x02 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x61 ≤ d ≤ 0x7A, 0x20 ≤ d ≤ 0x22, 0x25 ≤ d ≤ 0x2F, 0x3A ≤ d ≤ 0x3F, d = 0x5F, 0x7B (however d1 = 0x28, 0x30 ≤ d2 ≤ 0x39, 0x30 ≤ d3 ≤ 0x39 when 0x30 ≤ d1 ≤ 0x39, 0x30 ≤ d2 ≤ 0x39)
0x5A	CODE32	0x08 ≤ n ≤ 0x09	0x30 ≤ d ≤ 0x39

### [Notes]

- If d is outside of the specified range, the device 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 device only feeds the paper.
- This command feeds as much paper as is required to print the barcode, regardless of the line spacing.
- After printing the barcode, this command sets the print position to the beginning of the line.
- This command is not affected by print modes (bold, 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 device 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 device 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 device 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 device ignores the last received data.

#### Format 2

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

When CODE93 is used:

- The device prints an HRI character (o) as a start character at the beginning of the HRI character string.
- The device prints an HRI character (o) as a stop character at the end of the HRI character string.
- The device prints an HRI character (n) as a control character (0x00 to 0x1F and 0x7F).

When CODE128 is used, 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
SHIFT	{S	7B, 53
CODE A	{A	7B, 41
CODE B	{B	7B, 42
CODE C	{C	7B, 43
FNC1	{1	7B, 31
FNC2	{2	7B, 32
FNC3	{3	7B, 33
FNC4	{4	7B, 34
{‘	{{	7B, 7B

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

TRANSMITTED DATA											PRINTED DATA					
d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d2	d3	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 0x68, 0x1D 0x77`

[Example]

Format 1: Example for printing a CODE39 barcode:  
`0x1D 0x6B 0x04 0x54 0x45 0x53 0x54 0x00`

Format 2: Example for printing a CODE39 barcode:  
`0x1D 0x6B 0x45 0x04 0x54 0x45 0x53 0x54`



# 0x1D 0x77

<GS w>

## Set 1D barcode width

Valid for PLUS2 STD, PLUS2 8-42 V

[Format]	Hex	1D	77	n
	ASCII	GS	w	n

[Range] 0x01 ≤ n ≤ 0x06

[Description] Sets the horizontal size of the 1D barcode. n specifies the barcode width as follows:

n	MODULE WIDTH (mm)
0x01	0.125
0x02	0.25
0x03	0.375
0x04	0.5
0x05	0.625
0x06	0.75

	n	WIDE BAR / NARROW BAR RATIO
If n < 0x80	0x01, 0x02, 0x03, 0x04, 0x05, 0x06	3:1
	0x81	3:1
If n > 0x80	0x82	2.5:1
	0x83	2.33:1
	0x84	2.25:1
	0x85	3:1
	0x86	3:1

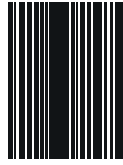
[Notes] This command is enabled only when inserted at the beginning of a line.



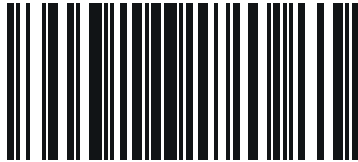
[Default] n = 0x03

[Reference] 0x1D 0x6B

[Example]



n = 0x01



n = 0x03



# CHARACTERS COMMANDS

**0x18**

**<CAN>**

Cancel current line transmitted

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]            Hex            18  
                     ASCII            CAN

[Range]

[Description]        Deletes current line transmitted.

[Notes]              • Sets the print position to the beginning of the line.  
                         • This command does not clear the receive buffer.

[Default]

[Reference]

[Example]

## 0x1B 0x21

<ESC !>

### Select print modes

Valid for PLUS2 STD, PLUS2 8-42 V

[Format] Hex 1B 21 n  
ASCII ESC ! n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Selects print modes based on the value of n as follows:

BIT	OFF/ON	n	FUNCTION	13/17 dpi	17/22 dpi	22/17 dpi
0	Off	0x00	Character font A selected	16 x 24	12 x 24	9 x 24
	On	0x01	Character font B selected	12 x 24	9 x 24	12 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			

- [Notes]
- The device can underline all characters, but cannot underline the spaces set by [0x09](#) and [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 bold mode on or off. However, the last-received setting command is the effective one.
  - [0x1B 0x2D](#) can also be used to turn the underlining mode on or off. However, the last-received setting command is the effective one.
  - [0x1D 0x21](#) can also be used to select character height or width. However, the last-received setting command is the effective one.

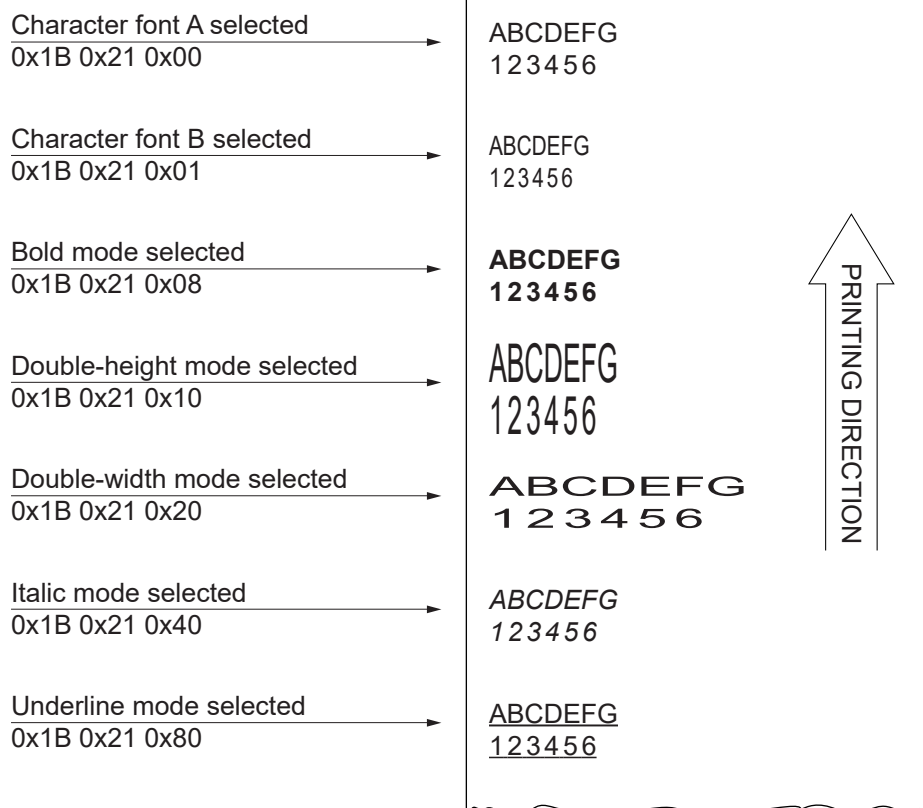


• Commands that change the height and width of characters are effective on the x and y axes. In case of 90°/270° rotated characters, command 0x1B 0x21 0x10 selects double-width mode and command 0x1B 0x21 0x20 selects double-height mode.

[Default] n = 0x00

[Reference] 0x1B 0x2D, 0x1B 0x45, 0x1D 0x21

[Example]



## 0x1B 0x26

<ESC &>

Defines user-defined characters

Valid for	PLUS2 STD, PLUS2 8-42 V						
[Format]	Hex	1B	26	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
	ASCII	ESC	&	y	c1	cn	x1[d0...dk] ... xn[d0...dk]
[Range]	<p>y = 0x03</p> <p>0x20 ≤ c1 ≤ cn ≤ 0x7E</p> <p>0x00 ≤ x ≤ 0x10 (font 16 x 24)</p> <p>0x00 ≤ x ≤ 0x0C (font 12 x 24)</p> <p>0x00 ≤ x ≤ 0x09 (font 9 x 24)</p> <p>0x00 ≤ d0...dk ≤ 0xFF</p> <p>k = cn – c1 + 1</p>						
[Description]	<p>Defines user programmable characters.</p> <p>y specifies the number of bytes in the vertical direction.</p> <p>c1 specifies the start character code and cn specifies the final character code of the characters map area.</p> <p>x specifies the width of the character to be replaced.</p> <p>d0...dk specifies the new character definition.</p>						
[Notes]	<ul style="list-style-type: none"> <li>• It is possible to define multiple characters for consecutive character codes. If only one character is desired, use c1 = cn.</li> <li>• if cn &lt; c1, the command is not executed.</li> <li>• 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.</li> <li>• The data to define a user-defined character is (x × y) bytes.</li> <li>• To print a dot, set the corresponding bit to 1; to not have it print, set to 0.</li> <li>• This command can define different user-defined character patterns for each font. To select the font, use <a href="#">0x1B 0x21</a>.</li> <li>• The user programmable character definitions are cleared when commands <a href="#">0x1B 0x40</a> or <a href="#">0x1D 0x2A</a> are executed or the device is reset or turned off.</li> <li>• x1 [d0 ... dk] will be repeated for each character to be replaced.</li> </ul>						
[Default]	Internal character set						
[Reference]							
[Example]	<p>To replace only the “A” character of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x41 0x10 [48 bytes of the new character definition].</p> <p>To replace “A” and “B” characters of the 11 cpi font table (font 18x24), the command sequence is: 0x1B 0x26 0x03 0x41 0x42 0x10 [48 bytes of the new character definition] 0x10 [48 bytes of the new character definition].</p>						

# 0x1B 0x2D

<ESC ->

## Turn underline mode on or off

Valid for PLUS2 STD, PLUS2 8-42 V

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

[Range] 0x00 ≤ n ≤ 0x02  
 0x30 ≤ n ≤ 0x32

[Description] Turns underline mode on or off based on the value of n as follows:

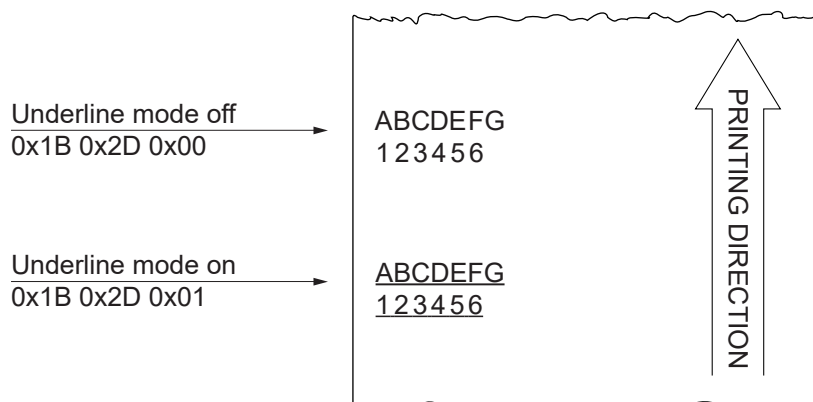
n	FUNCTON
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1 dot thick)
0x02, 0x32	Turns on underline mode (2 dot thick)

- [Notes]
- The device can underline all characters, but cannot underline the space and right-side character spacing set by command 0x09.
  - The device cannot underline 90°/270° rotated characters and white/black inverted characters.
  - When underline mode is turned off by setting the value of n to 0x00 or 0x30, the data which follows is not underlined.
  - Underline mode can also be turned on or off by using 0x1B 0x21. However, the last-received setting command is the effective one.

[Default] n = 0x00

[Reference] 0x1B 0x21

[Example]

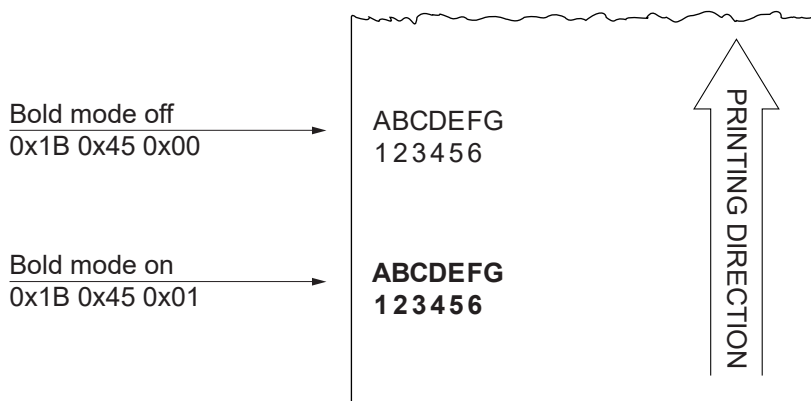


## 0x1B 0x45

### Turn bold mode on or off

Valid for	PLUS2 STD, PLUS2 8-42 V			
[Format]	Hex	1B	45	n
	ASCII	ESC	E	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Turns bold mode on or off, based on the n value: - when the Least Significant Bit (LSB) of n is 0, the bold mode is off. - when the Least Significant Bit (LSB) of n is 1, the bold mode is on.			
[Notes]	<ul style="list-style-type: none"> <li>• Only the Least Significant Bit (LSB) of n is effective.</li> <li>• <a href="#">0x1B 0x21</a> also turns on and off the bold mode. However, the last received command is the effective one.</li> </ul>			
[Default]	n = 0x00			
[Reference]	<a href="#">0x1B 0x21</a>			

[Example]



# 0x1B 0x47

<ESC G>

Turn double-strike mode on or off

Valid for PLUS2 STD, PLUS2 8-42 V

[Format] Hex 1B 47 n  
 ASCII ESC G n

[Range] 0x00 ≤ n ≤ 0xFF

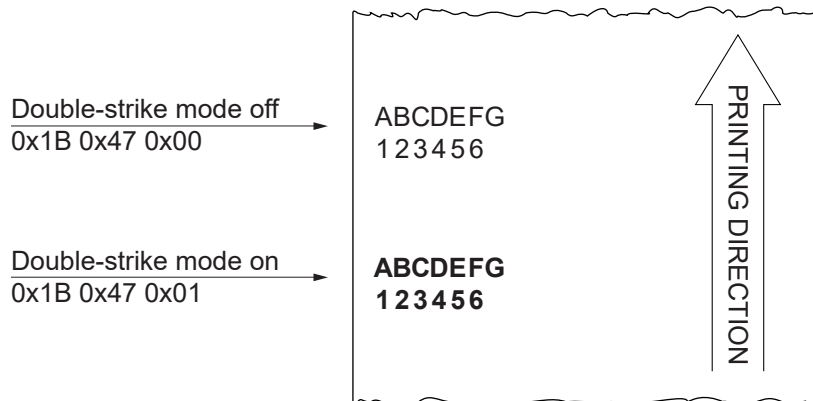
[Description] Turns double-strike mode on or off, based on the n value:  
 - when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.  
 - when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

[Notes] • Only the Least Significant Bit (LSB) of n is effective.  
 • Device output is the same in double-strike and bold mode.

[Default] n = 0x00

[Reference] [0x1B 0x21](#), [0x1B 0x45](#)

[Example]





## 0x1B 0x49

<ESC I>

### Select 24 columns

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	49
	ASCII	ESC	I
[Range]			
[Description]	On receiving this command, the device enters 24 columns per line printing mode.		
[Notes]			
[Default]			
[Reference]	<a href="#">0x1B 0x69</a> , <a href="#">0x1B 0x68</a>		
[Example]			



## 0x1B 0x4D

<ESC M>

### Select character font

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format] Hex 1B 4D n  
 ASCII ESC M n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Selects characters font depending of cpi value set (Char/Inch) as follows

CHAR/INCH	n	FUNCTION
A = 13 cpi	0x00, 0x30	Font 13 cpi (16x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)
A = 17 cpi	0x00, 0x30	Font 17 cpi (12x24)
B = 22 cpi	0x01, 0x31	Font 22 cpi (9x24)
A = 22 cpi	0x00, 0x30	Font 22 cpi (9x24)
B = 17 cpi	0x01, 0x31	Font 17 cpi (12x24)

[Notes]

[Default]

[Reference] [0x1B 0xC1](#)

[Example]



## 0x1B 0x4E

<ESC N>

### Set normal mode printing

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	4E
	ASCII	ESC	N
[Range]			
[Description]	Set normal mode printing: the receipt exits from the device with the printing upside down running from right to left.		
[Notes]			
[Default]	Setting of parameter "Print mode" in the printer setup.		
[Reference]	<a href="#">0x1B 0x52</a>		
[Example]			



## 0x1B 0x51

<ESC Q>

### Enable underlined printing

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
-----------	-------------------------	--	--

---

[Format]	Hex	1B	51
	ASCII	ESC	Q

[Range]

[Description] On receiving this command, the characters are printed underlined.

[Note]

[Default]

[Reference] [0x1B 0x71](#)

[Example]



## 0x1B 0x52

<ESC R>

### Set reverse mode printing

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	52
	ASCII	ESC	R
[Range]			
[Description]	Set reverse mode printing: the receipt exits from the device with the printing not upside down running from left to right.		
[Notes]			
[Default]	Setting of parameter "Print mode" in the printer setup.		
[Reference]	<a href="#">0x1B 0x4E</a>		
[Example]			

# 0x1B 0x56

<ESC V>

## Set 90° rotated print mode

Valid for PLUS2 STD, PLUS2 8-42 V

[Format] Hex 1B 56 n  
 ASCII ESC V n

[Range] n = 0x00, 0x01, 0x30, 0x31

[Description] Turns 90° rotation mode on or off based on the value of n as follows:

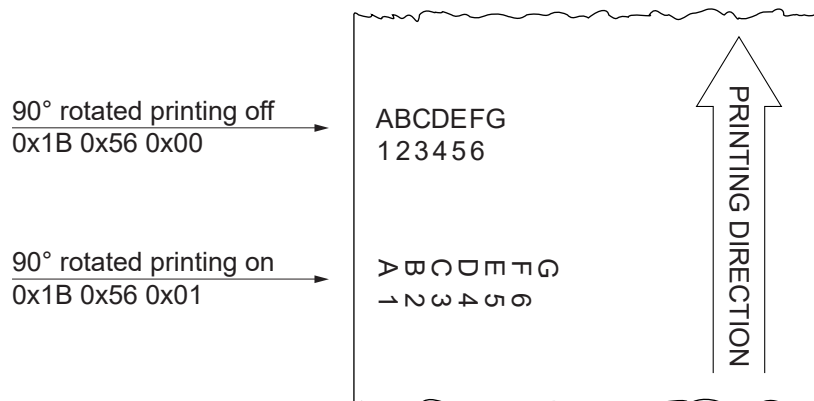
n	FUNCTION
0x00, 0x30	Disable 90° rotation mode
0x01, 0x31	Enable 90° rotation mode

- [Notes]
- When underlined mode is turned on, the device 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 = 0x00

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

[Example]





## 0x1B 0x68

<ESC h>

### Select 42 columns

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	68
	ASCII	ESC	h
[Range]			
[Description]	On receiving this command, the device enters 42 columns per line printing mode.		
[Notes]			
[Default]			
[Reference]	<a href="#">0x1B 0x49</a> , <a href="#">0x1B 0x69</a>		
[Example]			



## 0x1B 0x69

<ESC i>

### Select 40 columns

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	69
	ASCII	ESC	i
[Range]			
[Description]	On receiving this command, the device enters 40 columns per line printing mode.		
[Notes]			
[Default]			
[Reference]	<a href="#">0x1B 0x49</a> , <a href="#">0x1B 0x68</a>		
[Example]			



## 0x1B 0x71

<ESC q>

### Disable underlined printing

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
-----------	-------------------------	--	--

---

[Format]	Hex	1B	71
	ASCII	ESC	q

[Range]

[Description] Disabled underlined printing.

[Note]

[Default]

[Reference] [0x1B 0x51](#)

[Example]



# 0x1B 0x74

<ESC t>

## Select character code table

Valid for PLUS2 STD, PLUS2 8-42 V

[Format]	Hex	1B	74	n
	ASCII	ESC	t	n

[Range] 0x01 ≤ n ≤ 0x35, n = 0xFF

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

n	PAGINA	
0x00	PC437 - U.S.A., Standard Europe	
0x01	Katakana	
0x02	PC850 - Multilingual	
0x03	PC860 - Portuguese	
0x04	PC863 - Canadian/French	
0x05	PC865 - Nordic	
0x06	VISCII - Vietnamese Standard Code	on request
0x0B	PC851 - Greek	on request
0x0C	PC853 - Turkish	on request
0x0D	PC857 - Turkish	on request
0x0E	PC737 - Greek	on request
0x0F	ISO8859-7 - Greek	on request
0x10	WPC1252 - Scandinavian	
0x11	PC866 - Cyrillic 2	
0x12	PC852 - Latin 2	on request
0x13	PC858 for Euro symbol in position 0xD5	
0x14	KU42 - Thai	on request
0x15	TIS11 - Thai	on request
0x1A	TIS18 - Thai	on request
0x1E	TCVN_3 - Vietnamese	on request
0x1F	TCVN_3 - Vietnamese	on request
0x20	PC720 - Arabic	on request
0x21	WPC775 - Baltic Rim	on request
0x22	PC855 - Cyrillic	on request
0x23	PC861 - Icelandic	on request
0x24	PC862 - Hebrew	
0x25	PC864 - Arabic	



0x26	PC869 - Greek	on request
0x27	ISO8859-2 - Latin 2	on request
0x28	ISO8859-15 - Latin 9	on request
0x29	PC1098 - Farsi	on request
0x2A	PC1118 - Lithuanian	on request
0x2B	PC1119 - Lithuanian	on request
0x2C	PC1125 - Ukrainian	on request
0x2D	WPC1250 - Latin 2	
0x2E	WPC1251 - Cyrillic	
0x2F	WPC1253 - Greek	
0x30	WPC1254 - Turkish	
0x31	WPC1255 - Hebrew	
0x32	WPC1256 - Arabic	
0x33	WPC1257 - Baltic Rim	
0x34	WPC1258 - Vietnamese	
0x35	KZ1048 - Kazakh	on request
0xFF	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.
  - Make sure to select the font type “International” with the command `0x1C 0x25` or with the “Font type” parameter during the setup procedure (refer to the user manual of the device).

[Default] n = 0x00

[Reference] `0x1C 0x25`

[Example] For printing Euro symbol (€), the command sequence is:  
`0x1B, 0x74, 0x13, 0xD5`

## 0x1B 0xC1

### Select character pitch

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]           Hex           1B    C1    n  
                   ASCII        ESC  0xC1 n

[Range]           0x00 ≤ n ≤ 0x02  
                   0x30 ≤ n ≤ 0x32

[Description]     This command selects the character pitch expressed in cpi (characters per inch) based on the values of n as follows:

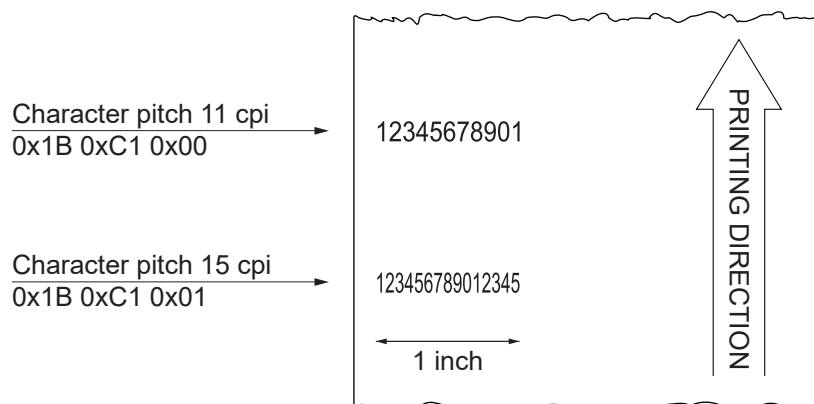
n	PITCH	
0x00, 0x30	Font A = 13 cpi	Font B = 17 cpi
0x01, 0x31	Font A = 17 cpi	Font B = 22 cpi
0x02, 0x32	Font A = 22 cpi	Font B = 17 cpi

[Notes]

[Default]        n = 0x00

[Reference]     [0x1B 0x21](#)

[Example]





## 0x1C 0x25

<FS %>

### Select the font type

Valid for	PLUS2 STD, PLUS2 8-42 V			
-----------	-------------------------	--	--	--

[Format]	Hex	1C	25	n
	ASCII	FS	%	n

[Range] 0x00 ≤ n ≤ 0x02

[Description] Select the font type based on the value of n as follows:

n	FONT TYPE
0x00	International
0x01	Chinese GB18030
0x02	Korean PC949

[Notes]

- This command can be used only for the models with Extended Chinese font (GB18030) or Korean font (PC949).
- The selection made by this command is stored in the RAM memory. Turning off the device reverts to the default value, that can be set with the “Font type” parameter during the setup procedure (refer to the user manual of the device).
- After selecting the font type “International” it must be selected the desired character code table using the command [0x1B 0x74](#).

[Default] n = 0x00

[Reference] [0x1B 0x74](#), see the Chinese fonts management commands manual.

[Example]



## 0x1D 0x21

<GS !>

### Select character size

Valid for	PLUS2 STD, PLUS2 8-42 V		
-----------	-------------------------	--	--

[Format]	Hex	1D	21	n
	ASCII	GS	!	n

[Range]	0x00 ≤ n ≤ 0x07	0x10 ≤ n ≤ 0x17
	0x20 ≤ n ≤ 0x27	0x30 ≤ n ≤ 0x37
	0x40 ≤ n ≤ 0x47	0x50 ≤ n ≤ 0x57
	0x60 ≤ n ≤ 0x67	0x70 ≤ n ≤ 0x77

[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	WIDTH
00	1 (normal)
10	2 (width = 2x)
20	3 (width = 3x)
30	4 (width = 4x)
40	5 (width = 5x)
50	6 (width = 6x)
60	7 (width = 7x)
70	8 (width = 8x)

Table 2 Select character height

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

[Notes]

- This command is effective for all characters (except HRI characters).
- If n falls outside the defined range, this command is ignored.
- Characters enlarged to different heights on the same line are aligned at the baseline or top line.
- [0x1B 0x21](#) can also be used to select character size. However, the setting of the last received command is the effective one.
- This command is effective on the x and y axes. In case of 90°/270° rotated characters, bit from 0 to 3 select character width and bit from 4 to 7 select character height.

[Default] n = 0x00

[Reference] [0x1B 0x21](#)

[Example] For printing a character with 6x width and height the command sequence is:  
0x1D 0x21 0x55



# LINE SPACING COMMANDS

## 0x1B 0x41

<ESC A>

Executes n dot lines feed

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

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

[Range] 0x00 ≤ nH, nL ≤ 0xFF

[Description] Executes n dots line feed where N = 256 x nH + nL.

[Notes]

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

[Default]

[Reference]

[Example] To perform a 40 mm feed the command sequence is:

0x1B 0x41 0x01 0x40



## 0x1B 0x61

<ESC a>

Select the number of dots space

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	(dd)	1B 61
	ASCII	(dd)	ESC a
[Range]	0x00 ≤ (dd) ≤ 0x7F		
[Description]	By using (dd) parameters it's possible to select the dots line number between one print line and another.		
[Notes]	(dd) are two ASCII characters which identifies number from 0 to 127 in Hex form and corresponds to the number of dot lines between one print line and another.		
[Default]	0x00		
[Reference]			
[Example]			



# PRINT COMMANDS

## 0x0A

<LF>

### Perform a line feed

---

Valid for	PLUS2 STD, PLUS2 8-42 V	
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---

[Format]	Hex	0A
	ASCII	LF

[Range]

[Description] Perform a line feed 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 equal to character height + spacing dots (default = 4 mm).

[Default]

[Reference]

[Example]



## 0x1B 0x4A

<ESC J>

### Print and paper feed

---

Valid for	PLUS2 STD, PLUS2 8-42 V			
[Format]	Hex	1B	4A	n
	ASCII	ESC	J	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Prints the data saved in the print buffer and feeds the paper [n × vertical or horizontal motion unit].			
[Notes]	<ul style="list-style-type: none"><li>• After printing has been completed, this command sets the print starting position to the beginning of the line.</li><li>• The horizontal and vertical motion units are specified by <a href="#">0x1D 0x50</a>.</li><li>• <a href="#">0x1D 0x50</a> can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li></ul>			
[Default]				
[Reference]	<a href="#">0x1D 0x50</a>			
[Example]				



## 0x1B 0x57

<ESC W>

Print a graphic line at 203 dpi

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
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---

[Format]	Hex	1B	57
	ASCII	ESC	W

[Range]

[Description] After receiving this command, the device waits for 48 bytes which correspond to an entire graphic line.

[Notes] 48 bytes of 8 bits each correspond to 384 dots per line.

[Default]

[Reference]

[Example]



## 0x1B 0x64

<ESC d>

### Print and feed paper n lines

---

Valid for	PLUS2 STD, PLUS2 8-42 V			
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---

[Format]	Hex	1B	64	n
	ASCII	ESC	d	n

[Range] 0x00 ≤ n ≤ 0xFF

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

[Notes]

- n rows paper feed is equivalent to (n × char height + line spacing set).
- Sets the print starting position at the beginning of the line.
- The maximum paper feed amount is 254 lines. Even if a paper feed amount of more than 254 lines is set, the device feeds the paper only 254 lines.

[Default]

[Reference]

[Example]



# STATUS COMMANDS

## 0x10 0x04

<DLE EOT>

### Real-time status transmission

Valid for	PLUS2 STD, PLUS2 8-42 V		
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[Format]	Hex	10	04	n
	ASCII	DLE	EOT	n

[Range]	0x01 ≤ n ≤ 0x04 n = 0x11, 0x14, 0x15
---------	---

[Description] Transmits the selected status when this command is received. The status to be transmitted is indicated in the following table:

n = 0x01	transmits device status
n = 0x02	transmits off-line status
n = 0x03	transmits error status
n = 0x04	transmits paper roll sensor status
n = 0x14	transmits full status
n = 0x15	transmits device ID

Device status (n = 0x01)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	On-line
	On	08	Off-line
4	On	10	Not used. Fixed to on
5	-	-	RESERVED
6	Off	00	LF key released
	On	40	LF key pressed
7	Off	00	Not used. Fixed to off



#### Off-line status (n = 0x02)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Paper isn't fed by FEED key
	On	08	Paper is fed by FEED key
4	On	10	Not used. Fixed to on
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to off

#### Error status (n = 0x03)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	Off	00	Not used. Fixed to off
3	Off	00	Not used. Fixed to off
4	On	10	Not used. Fixed to on
5	Off	00	Not used. Fixed to off
6	Off	00	No auto-recoverable error
	On	40	Auto-recoverable error
7	Off	00	Not used. Fixed to off

#### Paper roll sensor status (n = 0x04)

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



Full status (n = 0x14, 6 bytes)

1st byte = 0x10 (DLE)

2nd byte = 0x0F

3rd byte = Paper status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Paper present
	On	01	Paper not present
1	-	-	RESERVED
2	Off	00	Not used. Fixed to off
3	-	-	RESERVED
4	-	-	RESERVED
5	-	-	RESERVED
6	-	-	RESERVED
7	Off	00	Notch is placed over the sensor
	On	80	Notch is not placed over the sensor

4th byte = User status

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



5th byte = Recoverable status error

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Head temperature ok
	On	01	Head temperature error
1	Off	00	No COM error
	On	02	RS232 COM error
2	-	-	RESERVED
3	Off	00	Power supply voltage ok
	On	08	Power supply voltage error
4	-	-	RESERVED
5	Off	00	Acknowledge command
	On	20	Not acknowledge command error
6	Off	00	Free paper path
	On	40	Paper jam
7	Off	00	Notch search ok
	On	80	Error in notch search

6th byte = Unrecoverable error status

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

Transmit device ID (n = 0x15)

1st byte = (refer to command [0x1D 0x49](#))

[Notes] This command is immediately executed even when the data buffer is full.

[Default]

[Reference]

[Example] Request for device status transmission:

0x10 0x04 0x01

Device response:

0x80 LF key pressed



## 0x1D 0x72

<GS r>

### Transmit status

Valid for PLUS2 STD, PLUS2 8-42 V

[Format]	Hex	1D	72	n
	ASCII	GS	r	n

[Range] n = 0x01, 0x31

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

n	FUNCTION
0x01, 0x31	Transmit status

Device status:

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Cover closed
	On	03	Cover open
2, 3	Off	00	Paper end sensor: paper present
	On	0C	Paper end sensor: paper not present
4	Off	00	Not used. Fixed to Off
5	Off	00	Head temperature ok
	On	20	Head temperature error
6	Off	00	Power supply voltage ok
	On	40	Power supply voltage error
7	Off	00	Not used. Fixed 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]

[Example]



# BIT-IMAGE COMMANDS

## 0x1B 0x2A

<ESC \*>

### Select bit image mode

Valid for	PLUS2 STD, PLUS2 8-42 V						
-----------	-------------------------	--	--	--	--	--	--

[Format]	Hex	1B	2A	m	nL	nH	d1...dk
	ASCII	ESC	*	m	nL	nH	d1...dk

[Range] m = 0x00, 0x01, 0x20, 0x21  
 0x00 ≤ nL ≤ 0xFF  
 0x00 ≤ nH ≤ 0x03  
 0x00 ≤ d ≤ 0xFF

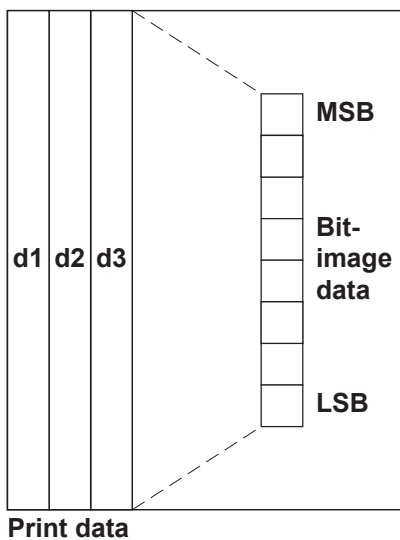
[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION	
		N. DOTS	DPI	DPI	N. DATA (k)
0x00	8 dots single density	8	67	100	nL + nH × 256
0x01	8 dots double density	8	67	200	nL + nH × 256
0x20	24 dots single density	24	200	100	(nL + nH × 256) × 3
0x21	24 dots double density	24	200	200	(nL + nH × 256) × 3

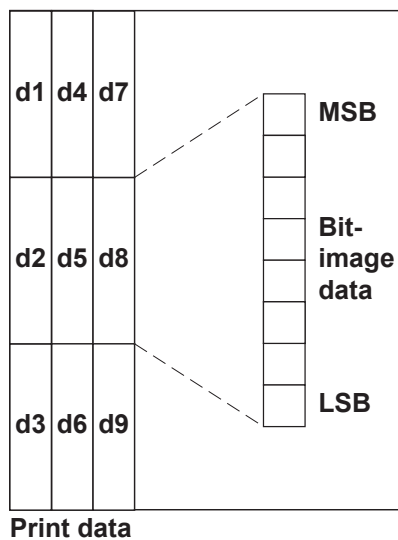
- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH × 256.
  - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
  - d indicates the bit image 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 0x1B 0x4A or 0x1B 0x64.
  - After printing a bit image, the device returns to normal data processing mode.
  - This command is not affected by the bold, 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



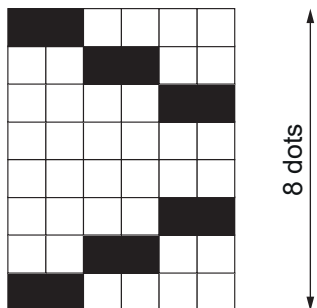
24-dot bit image



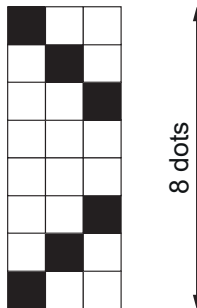
[Default]

[Reference]

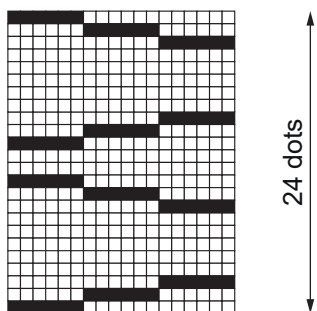
[Example]



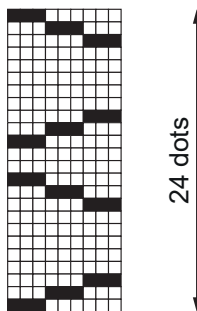
8 dots single density



8 dots double density



24 dots single density



24 dots double density



## 0x1D 0x2A

<GS \*>

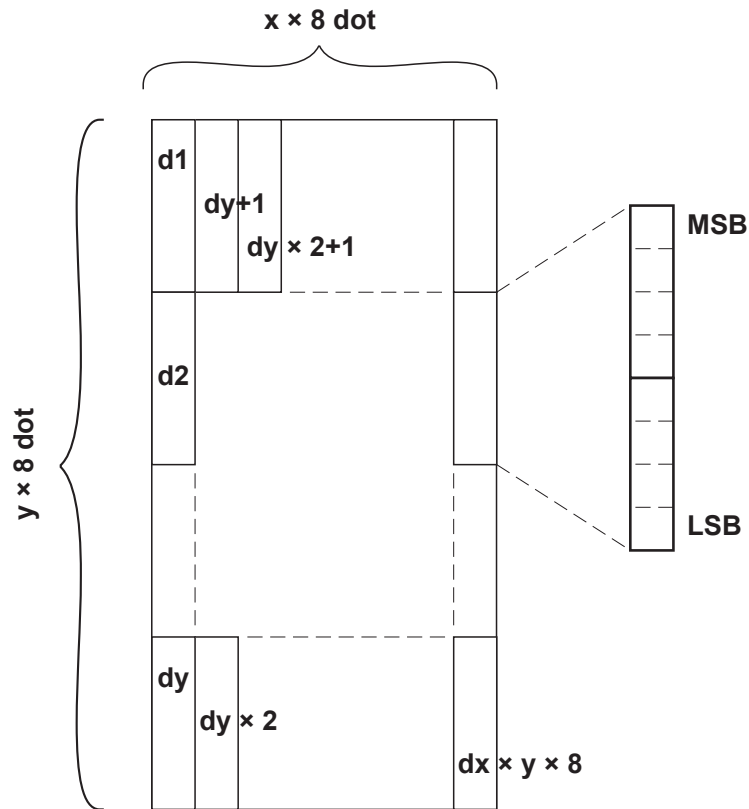
### Define received bit image

Valid for	PLUS2 STD, PLUS2 8-42 V					
[Format]	Hex	1D	2A	x	y	d1...d(x × y × 8)
	ASCII	GS	*	x	y	d1...d(x × y × 8)
[Range]	$0x01 \leq x \leq 0xFF$ $0x01 \leq y \leq 0x30$ $x \times y \leq 1536$ $0x00 \leq d \leq 0xFF$					
[Description]	Defines a received bit image using the number of dots specified by x and y. <ul style="list-style-type: none"> <li>• x specifies the number of bytes in the horizontal direction.</li> <li>• y specifies the number of bytes in the vertical direction.</li> </ul>					
[Notes]	<ul style="list-style-type: none"> <li>• The number of bytes in horizontal and vertical directions (x and y) are the horizontal and vertical size of the starting image divided by 8.</li> <li>• If x × y is out of the specified range, this command is disabled.</li> <li>• The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.</li> <li>• The received bit image definition is cleared when:             <ul style="list-style-type: none"> <li>- 0x1B 0x40 is executed.</li> <li>- 0x1B 0x26 is executed.</li> <li>- Device is reset or the power is turned off.</li> </ul> </li> <li>• The image is saved in the graphic memory of the device.</li> </ul>					
[Default]						
[Reference]						



[Example]

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





# LOGOS MANAGEMENT COMMANDS

## 0x1D 0x70

<GS p>

Print logo

Valid for PLUS2 STD, PLUS2 8-42 V

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

[Range] 0x00 ≤ m ≤ 0x03 (Logo number)  
n = 0x00, 0x01, 0x02, 0x03

[Description] The bit image specified by m (if stored in flash memory) is printed in the mode indicated by n as described in the following table:

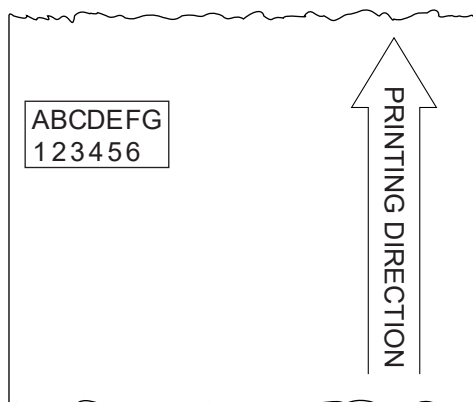
n	PRINT MODE
0x00	Normal
0x01	Double width
0x02	Double height
0x03	Double width and double height

[Notes]

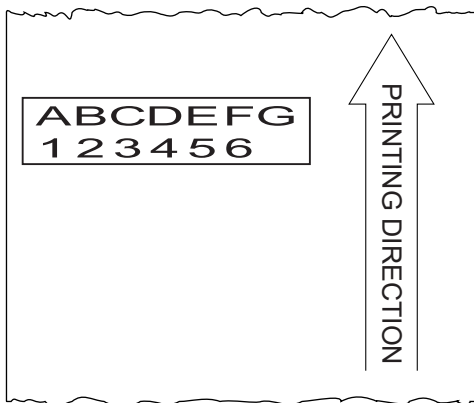
[Default]

[Reference]

[Example] n = 0x00



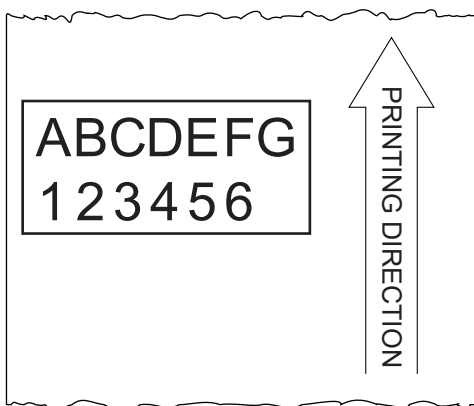
n = 0x01: Double width



n = 0x02: Double height



n = 0x03: Double width and double height





# PRINT POSITION COMMANDS

## 0x08

<BS>

Back space

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]           Hex            08  
                  ASCII         BS

[Range]

[Description]       Moves print position to previous character.

[Notes]             This command can be used to put two characters at the same position.

[Default]

[Reference]

[Example]

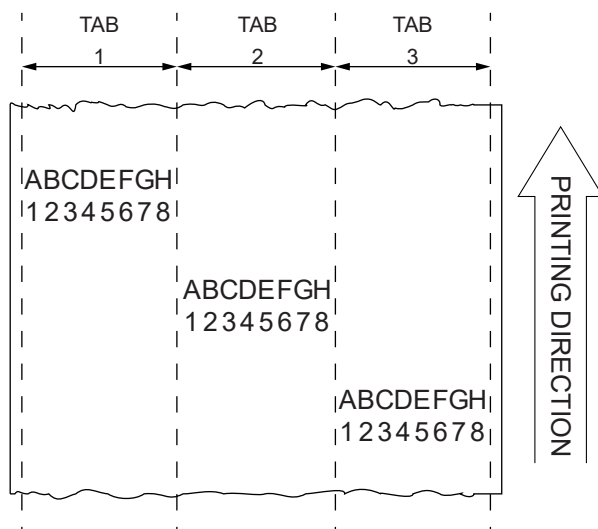
# 0x09

<HT>

## Horizontal tab

Valid for	PLUS2 STD, PLUS2 8-42 V	
[Format]	Hex	09
	ASCII	HT
[Range]		
[Description]	Moves the print position to the next horizontal tab position.	
[Notes]	<ul style="list-style-type: none"><li>• Horizontal tab position are set using <a href="#">0x1B 0x44</a>.</li><li>• Ignored unless the next horizontal tab position has been set.</li><li>• If the command is received when the printing position is at the right margin, the device executes print buffer full printing and horizontal tab processing from the beginning of the next line.</li></ul>	
[Default]	Default tab positions are set at intervals of 8 characters (9, 17, 25, ...) when the right-side character spacing is 0.	
[Reference]	<a href="#">0x1B 0x44</a>	

[Example]





## 0x1B 0x44

<ESC D>

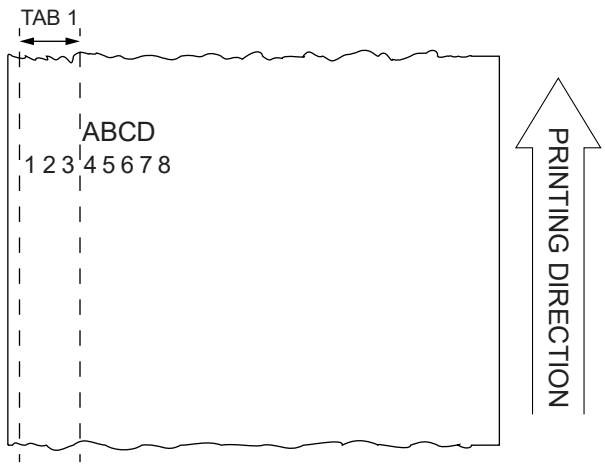
### Set horizontal tab positions

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1B	44	n1...nk	00
	ASCII	ESC	D	n1...nk	NUL
[Range]	0x01 ≤ n ≤ 0xFF 0x00 ≤ k ≤ 0x20				
[Description]	<p>Sets horizontal tab positions</p> <ul style="list-style-type: none"> <li>• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.</li> <li>• k indicates the total number of horizontal tab positions to be set.</li> </ul>				
[Notes]	<ul style="list-style-type: none"> <li>• The horizontal tab position is stored as a value of [character width × 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.</li> <li>• This command cancels previous tab settings.</li> <li>• Up to 32 tab positions (k = 0x20) can be set. Data exceeding 32 tab positions is processed as normal data.</li> <li>• 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.</li> <li>• 0x1B 0x44 0x00 cancels all horizontal tab positions.</li> <li>• The previously specified horizontal tab position does not change, even if the character width is modified.</li> </ul>				
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) when the right-side character spacing is 0.				
[Reference]	<a href="#">0x09</a>				



[Example]

To set a tabulation to column 4 send the command:  
0x1B 0x44 0x03 0x00



To print the string 'ABCD' to the tabulation previously set, the command sequence is:  
0x09 'ABCD'

where:

- 0x09                    move the print position to the set horizontal tab (4th column).
- 'ABCD'                is the string to be printed.



## 0x1B 0x5C

<ESC I>

### Set relative print position

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1B	5C	nL	nH
	ASCII	ESC	\	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF				
[Description]	Sets the print starting position based on the current position by using the horizontal or vertical motion unit. Sets the distance from the current position to [(nL+ nH × 256) × horizontal or vertical motion unit].				
[Notes]	<ul style="list-style-type: none"> <li>• When the starting position is specified by N motion units to the right: nL + nH × 256 = N.</li> <li>• 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.</li> <li>• If setting exceeds the printing area width, the left or right margin is set to the default value.</li> <li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>.</li> <li>• <a href="#">0x1D 0x50</a> can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• In standard mode, the horizontal motion unit is used.</li> <li>• 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 device mechanism and then begins a new row.</li> </ul>				
[Default]					
[Reference]	<a href="#">0x1D 0x50</a>				
[Example]					

## 0x1D 0x4C

<GS L>

### Set left margin

---

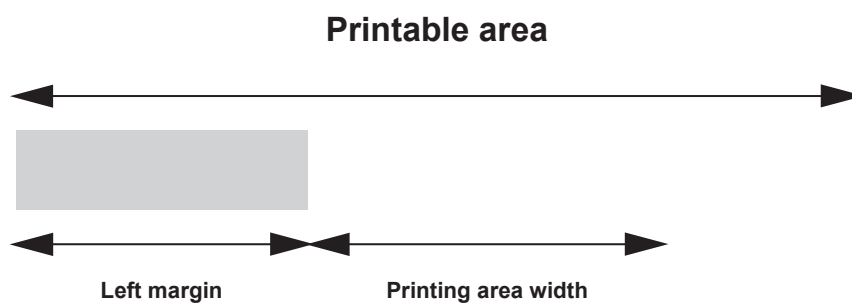
Valid for PLUS2 STD, PLUS2 8-42 V

---

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

[Range]             $0x00 \leq nL, nH \leq 0xFF$

[Description]      Sets the left margin to  $[(nL + nH \times 256) \times \text{horizontal motion unit}]$ .



- [Notes]
- 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 0x57

<GS W>

### Set printing area width

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1D	57	nL	nH
	ASCII	GS	W	nL	nH
[Range]	$0 \leq nL, nH \leq 0xFF$ $0 \leq (nL + nH \times 256) \leq 640$				
[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.				

#### Area stampabile



- [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]



# ALIGNMENT COMMANDS

## 0x1D 0xF6

Align the ticket with the printhead

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1D	F6
	ASCII	GS	0xF6
[Range]			
[Description]	This command align the edge of black mark to the alignment point (see <a href="#">ALIGNMENT</a> section for further explanation).		
[Notes]	<ul style="list-style-type: none"><li>• Use this alignment command even to print more tickets without cutting.</li></ul>		
[Default]			
[Reference]			
[Example]			



# MISCELLANEOUS COMMANDS

## 0x1B 0x3D

<ESC =>

Select peripheral device

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]            Hex            1B    3D    n  
                     ASCII           ESC    =    n

[Range]             $0x01 \leq n \leq 0x03$

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

n	FUNCTION
0x01, 0x03	Device enabled
0x02	Device disabled

[Notes]            When the device is disabled, it ignores all transmitted data until the device is enabled through this command.

[Default]           n = 0x01

[Reference]

[Example]



## 0x1B 0x40

<ESC @>

### Initialize device

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	40
	ASCII	ESC	@
[Range]			
[Description]	Clears the data in the print buffer and resets the device mode to that in effect when power was turned on.		
[Notes]	The data in the receiver buffer is not cleared.		
[Default]			
[Reference]			
[Example]			



## 0x1B 0x4B

<ESC K>

### Turn off or on the status LED

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format] Hex 1B 4B n  
ASCII ESC K n

[Range] n = 0x00, 0x01

[Description] Turns on or off the status LED based on the value of n as follow:

n	FUNCTION
0x00	Turn off the status LED
0x01	Turn on the status LED

[Notes]

[Default] n = 0x01

[Reference]

[Example]



## 0x1B 0x6D

<ESC m>

Transmit the print mode configuration on the serial port

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	6D
	ASCII	ESC	m
[Range]			
[Description]	Transmits the print mode configuration on the serial port.		
[Notes]	<ul style="list-style-type: none"><li>• If the device is using the parallel protocol, nothing will be transmitted.</li><li>• The response is on two bytes.</li></ul>		
[Default]			
[Reference]			
[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	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1B	73
	ASCII	ESC	s
[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, 0x41, will not be printed but immediately transmitted on the serial.		



## 0x1B 0xFA

### Print graphic bank (384 x 85 dots)

---

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1B	FA	n1	n2
	ASCII	ESC	0xFA	n1	n2
[Range]	$0x00 \leq n1, n2 \leq 0xFF$				
[Description]	Prints the graphics bank from flash based on the values of n1 and n2 where: <ul style="list-style-type: none"><li>• n1 specifies the starting dot line (1 ÷ 85).</li><li>• n2 specifies the number of lines to print.</li></ul>				
[Notes]	If $n1 + n2 > 85$ the device only prints $85 - n1 + 1$ dot lines.				
[Default]					
[Reference]					
[Example]	To print the graphic bank from dotline 10 to dotline 40, the command sequence is: 0x1B 0xFA 0x0A 0x1E				



## 0x1C 0x3D 0x45 0x50 0x4F 0x53 0x3D

<FS = E P O S = >

Change device emulation to CUSTOM/POS

---

Valid for	PLUS2 STD, PLUS2 8-42 V							
-----------	-------------------------	--	--	--	--	--	--	--

---

[Format]	Hex	1C	3D	45	50	4F	53	3D
	ASCII	FS	=	E	P	O	S	=

[Range]

[Description] Change device emulation to CUSTOM/POS.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0x3D 0x50 0x4C 0x55 0x53 0x3D

<FS = P L U S = >

### Change device emulation to PLUS

---

Valid for	PLUS2 STD, PLUS2 8-42 V							
[Format]	Hex	1C	3D	50	4C	55	53	3D
	ASCII	FS	=	P	L	U	S	=
[Range]								
[Description]	Change device emulation to PLUS.							
[Notes]								
[Default]								
[Reference]								
[Example]								



## 0x1C 0xC1

### Paper recovery

---

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1C	C1	0x80	n
	ASCII	FS	0xC1	0x80	n
[Range]	0xA0 ≤ n ≤ 0xF0				
[Description]	Set the paper moving (in millimetres) toward the printhead.				
[Notes]					
[Default]					
[Reference]					
[Example]					



## 0x1C 0xEA

### Transmit the device serial number

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
[Format]	Hex	1C	EA n
	ASCII	FS	0xEA n
[Range]	n = 0x52, 0x72		
[Description]	Transmits the device serial number.		
[Notes]	<ul style="list-style-type: none"><li>• The serial number is a string of 16 alphanumeric characters.</li><li>• If the printer serial number is not defined, the device returns a string of 16 characters with a value of 0x00.</li></ul>		
[Default]			
[Reference]			
[Example]	To read the device serial number the command sequence is: 0x1C 0xEA 0x52  The device returns a string of 16 alphanumeric characters just like the following: 'ABC0123456789012'		



## 0x1D 0x24

<GS \$>

### Set absolute print position into a graphic line

---

Valid for	PLUS2 STD, PLUS2 8-42 V			
[Format]	Hex	1D	24	n
	ASCII	GS	\$	n
[Range]	0x00 ≤ n ≤ 0x2F			
[Description]	Set the beginning print 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 device ID

Valid for	PLUS2 STD, PLUS2 8-42 V		
-----------	-------------------------	--	--

[Format]	Hex	1D	49	n
	ASCII	GS	I	n

[Range]

0x01 ≤ n ≤ 0x03  
 0x31 ≤ n ≤ 0x33  
 n = 0xFF

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

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0xFF (resend the command with n = 0xFF)
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)
0xFF	Device model ID (2 bytes)	0x02 0x14 PLUS2 RX63 0x02 0x76 PLUS2 RX65

n = 0x02, 0x32 Type ID

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	2 bytes characters codes not supported
	On	02	Not used. Fixed to on
2	Off	00	Thermal paper w/o label
	On	04	Thermal paper label
3	-	-	Undefined
4	Off	00	Not used. Fixed to off
5	-	-	Undefined
6	-	-	Undefined
7	Off	00	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 0x50

<GS P>

### Set horizontal and vertical motion units

Valid for	PLUS2 STD, PLUS2 8-42 V				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	0x00 ≤ x, y ≤ 0xFF				
[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"><li>• The horizontal direction is perpendicular to the paper feed direction.</li><li>• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):</li></ul> <p>Commands using x: <a href="#">0x1B 0x5C</a>, <a href="#">0x1D 0x4C</a>, <a href="#">0x1D 0x57</a>. Commands using y: <a href="#">0x1B 0x4A</a>.</p> <ul style="list-style-type: none"><li>• This command does not affect the previously specified values.</li><li>• 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.</li></ul>				
[Default]	x = 0xCC, y = 0x198				
[Reference]	<a href="#">0x1B 0x5C</a> , <a href="#">0x1B 0x4A</a> , <a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x57</a>				
[Example]					



## 0x1D 0x55

<GS U>

Reset the device parameters to the default configuration

---

Valid for PLUS2 STD, PLUS2 8-42 V

---

[Format]           Hex           1D   55  
                  ASCII        GS    U

[Range]

[Description]       Reset the device parameters to the default configuration.

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

[Default]

[Reference]

[Example]



## 0x1F 0xCC

### Turn off the device

---

Valid for	PLUS2 STD, PLUS2 8-42 V		
-----------	-------------------------	--	--

---

[Format]	Hex	1F	CC
	ASCII	US	0xCC

[Range]

[Description] Switch off the device and bring it back to low consumption mode if was disabled the Auto Power-On function.

[Notes] The setup parameter "Power Off Command" must be enabled.

[Default]

[Reference]

[Example]



# ALIGNMENT

1	ALIGNMENT COMMANDS .....	316
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# 1 ALIGNMENT COMMANDS

Devices listed in this manual are equipped with sensors that allow the use of alignment notch in order to handle rolls of with pre-printed and fixed length fields.

For further information, refer to the user manual of each device.

The commands available for managing the alignment of the ticket are the following:

- `0x1D 0xE7`: sets the distance between the point of alignment and the notch (value of “Black Mark Distance” parameter).
- `0x1D 0xF6`: perform the alignment of ticket, which is advanced to cut the ticket at the first alignment point available.

Print a ticket with alignment requires the following sequence of commands:

1. General settings of the ticket (character formatting, print density, margins etc.)
2. Alignment command: `0x1D 0xF6`.
3. Ticket printout (printing text, logos or any graphic).
4. Alignment command: `0x1D 0xF6`.

The settings take effect from next ticket to the one already in the device.

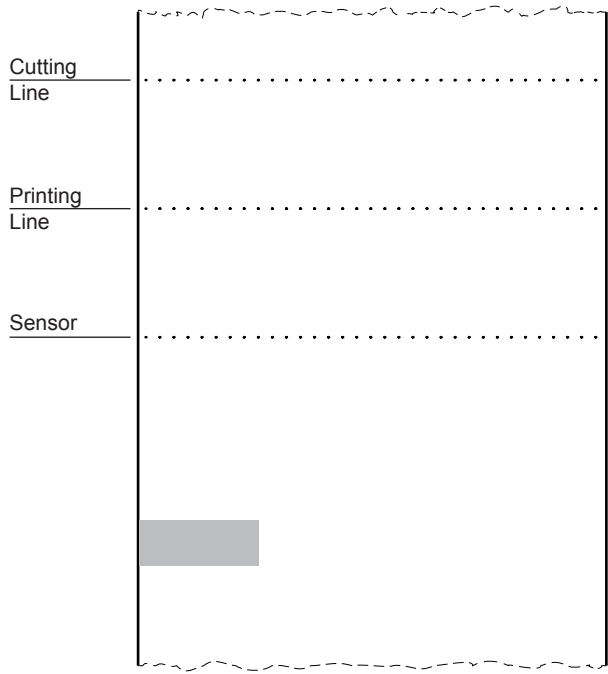
In the following examples, are described some sequences of commands to manage the alignment.



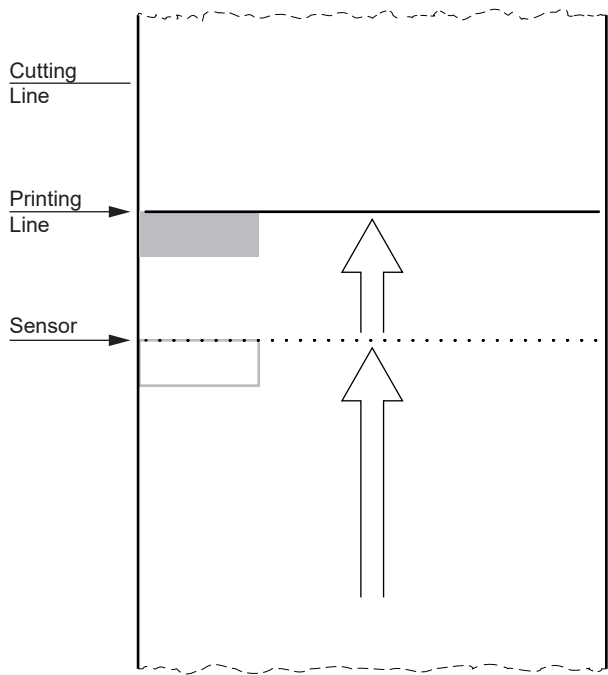
[Example 1]

Commands sequence to print tickets with “alignment point” set to the edge of the notch (“Black Mark Distance” parameter = 0 mm set in the setup procedure).

Start  
Paper with black mark not aligned.



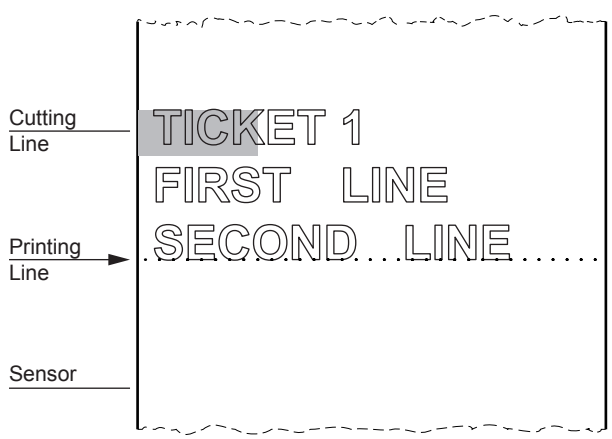
Alignment command `0x1D 0xF6`.  
Paper is fed. The black mark is recognized by the sensor and aligned under the printing line.





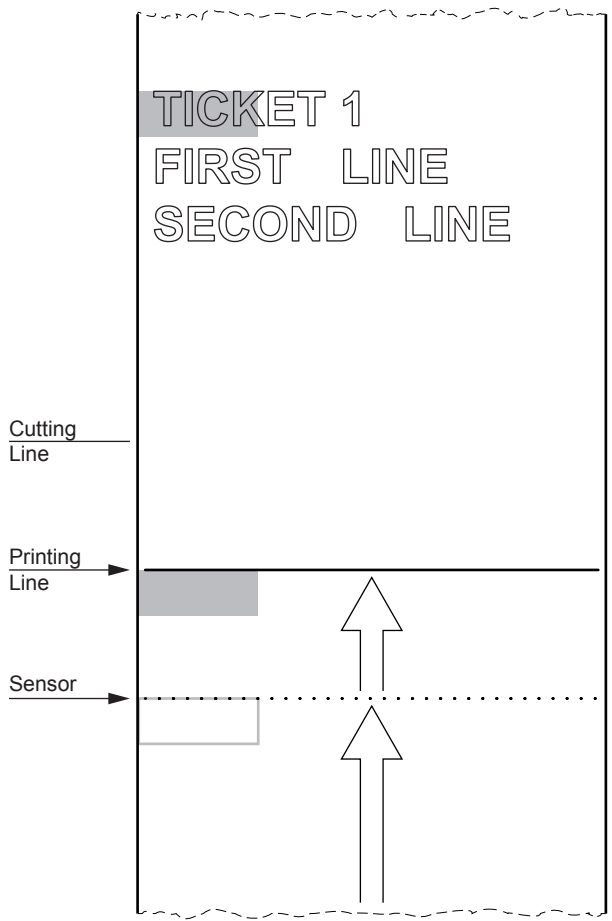
Command for text printing:

'TICKET 1', 0x0A, 'FIRST LINE', 0x0A, 'SECOND LINE', 0x0A



Alignment command 0x1D 0xF6.

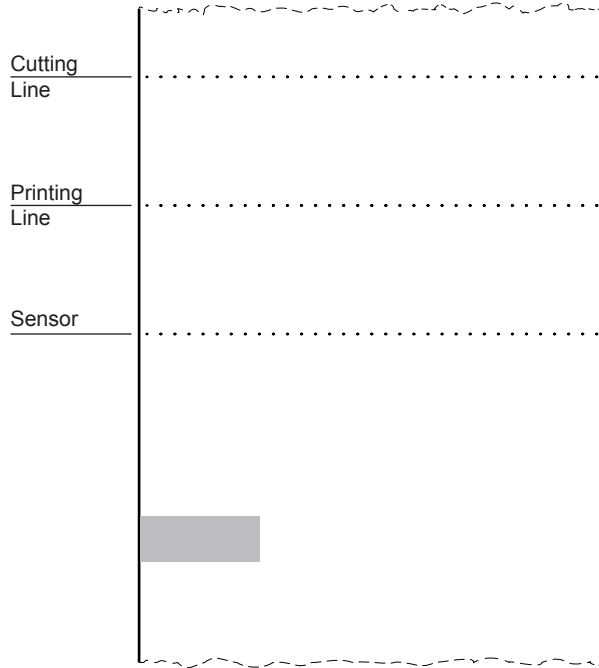
Paper is fed. The next black mark is recognized by the sensor and aligned under the printing line.



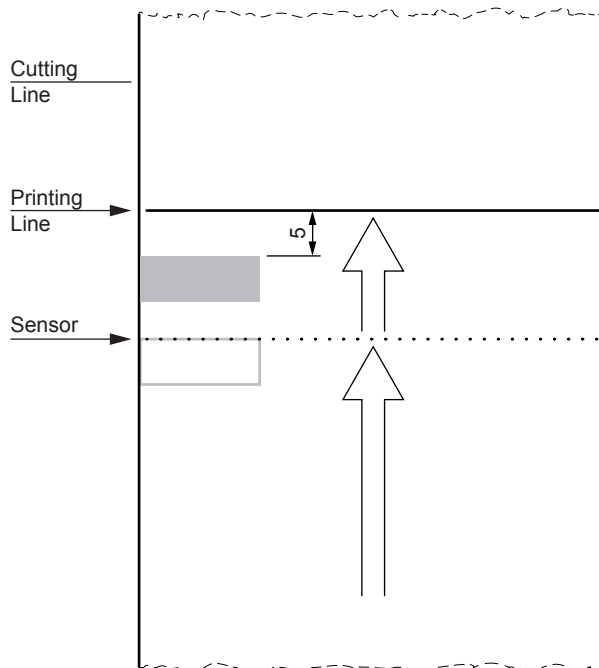
[Example 3]

Commands sequence to print tickets with “alignment point” moved 5 mm compared to the edge of the black mark (“Black Mark Distance” = 5 mm set from setup).

Start  
Paper with black mark not aligned.



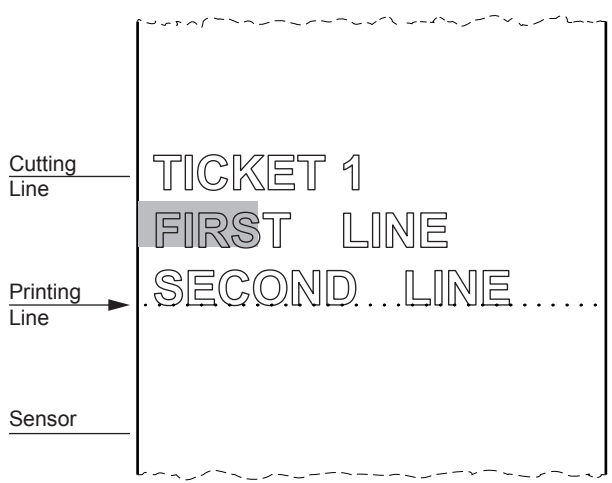
Alignment command `0x1D 0xF6`.  
Paper is fed. The black mark is recognized by the sensor and aligned at a distance of 5 mm (“Black Mark Distance”) from the printing line.





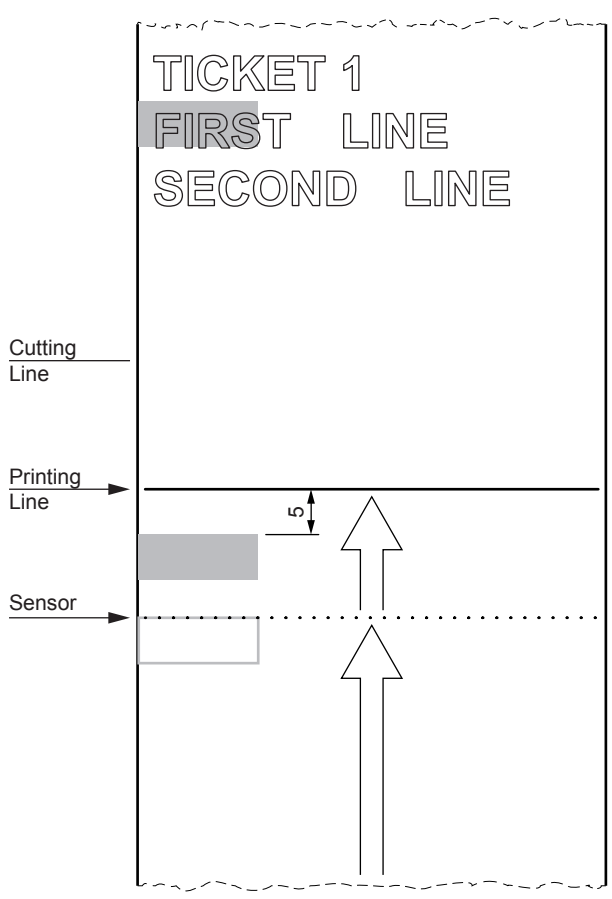
Command for text printing:

'TICKET 1', 0x0A, 'FIRST LINE', 0x0A, 'SECOND LINE', 0x0A



Alignment command 0x1D 0xF6.

Paper is fed. The next black mark is recognized by the sensor and aligned at a distance of 5 mm ("Black Mark Distance") from the printing line.









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