

COMMANDS MANUAL

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# K3

*CUSTOM*  M<sup>®</sup>

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**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

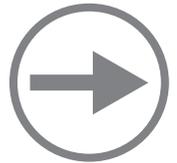
The crossed-out rubbish bin logo means that used electrical and electronic products shall NOT be mixed with unsorted municipal waste. For more detailed information about recycling of this product, refer to the instructions of your country for the disposal of these products.

- 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.
- For the waste sorting of the packaging materials, please check the local waste disposal laws.

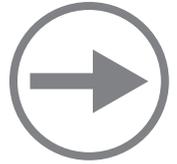


The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

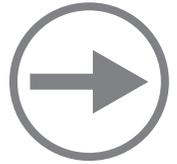
INTRODUCTION



CUSTOM/POS EMULATION



ALIGNMENT



PAGE MODE







# INTRODUCTION

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2	IDENTIFICATION OF THE MODELS .....	8
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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.

Information valid for devices AAAA, BBBB, CCC

**AAAA**  
**BBBB**

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

Information valid only for devices AAAA, BBBB

**CCCC**

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

Information valid only for device CCCC

[Default]

[Reference]      0x0A

[Example]



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

[Format]	ASCII and hexadecimal 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.



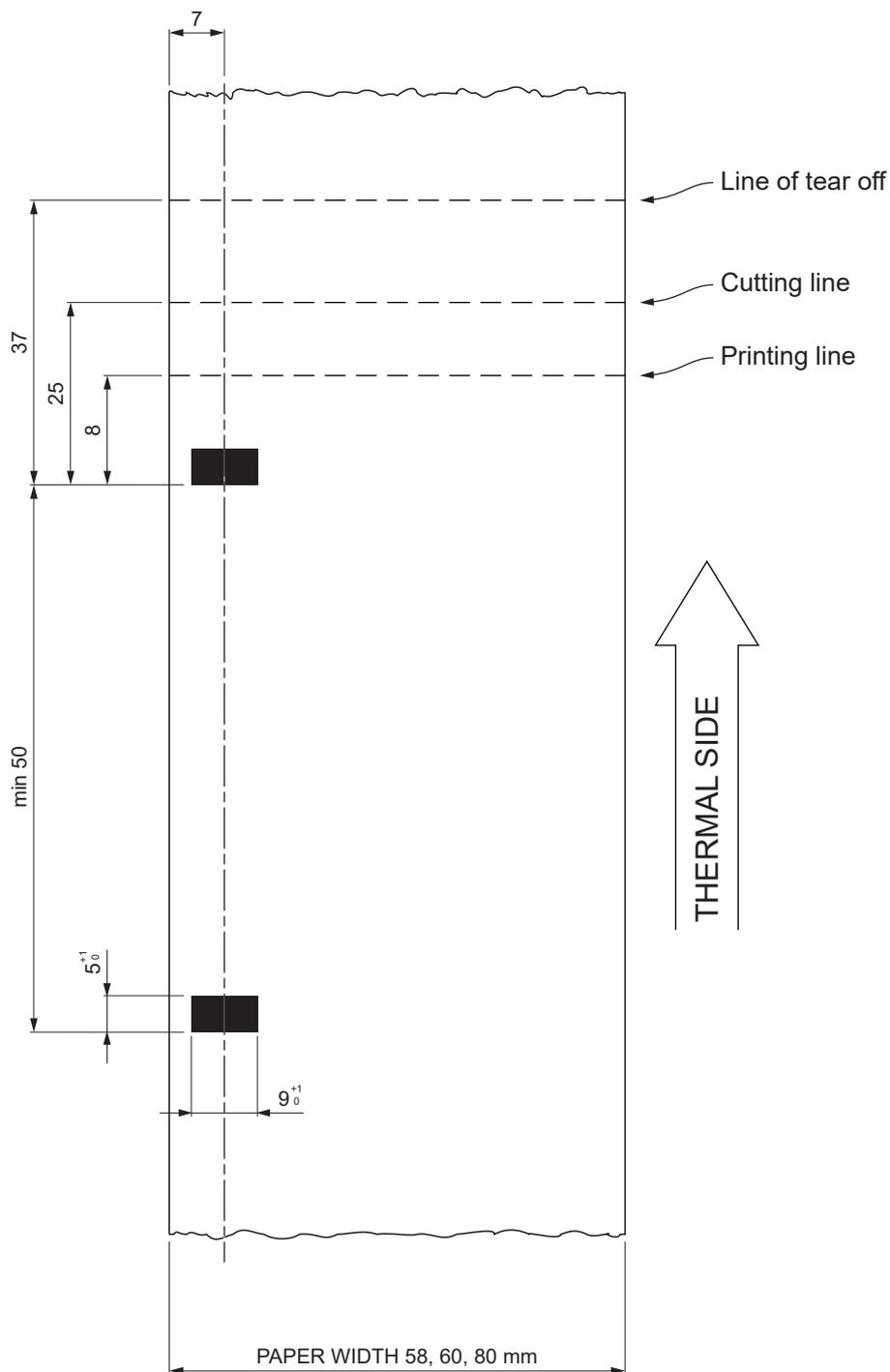
## 2 IDENTIFICATION OF THE MODELS

NOMENCLATURE	DESCRIPTION
K3 STD	K3 base configuration
K3 DSP	K3 with display
K3 HS	High speed K3
K3 HS LF	High speed K3 linerless

# 3 PAPER SPECIFICATIONS

## Paper with black mark on the thermal side

The following image shows the placement of the black mark on the thermal side of the paper. All the dimensions shown in following figures are in millimetres. For more information about the use of paper with black mark see user manual.



**NOTE:**

Paper width 58 mm and 60 mm are available only with adapter paper guide provided as accessory (see the user manual).





# CUSTOM/POS EMULATION

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# 1 COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	57
0x09	<HT>	58
0x0A	<LF>	167
0x0A	<LF>	27
0x0B	<HOM>	168
0x0C	<FF>	169
0x0D	<CR>	170
0x0D	<CR>	28
0x10 0x04	<DLE EOT>	79
0x10 0x05	<DLE ENQ>	139
0x10 0x14 0x01	<DLE DC4>	141
0x18	<CAN>	171
0x1B 0x20	<ESC SP>	35
0x1B 0x21	<ESC !>	36
0x1B 0x24	<ESC \$>	59
0x1B 0x25	<ESC %>	172
0x1B 0x25	<ESC %>	38
0x1B 0x26	<ESC &>	173
0x1B 0x26	<ESC &>	39
0x1B 0x28 0x76	<ESC (>	60
0x1B 0x2A	<ESC *>	67
0x1B 0x2D	<ESC ->	40
0x1B 0x30	<ESC 0>	32
0x1B 0x32	<ESC 2>	33
0x1B 0x33	<ESC 3>	34
0x1B 0x34	<ESC 4>	41



0x1B 0x3D	<ESC =>	142
0x1B 0x3F	<ESC ?>	42
0x1B 0x40	<ESC @>	143
0x1B 0x40	<ESC @>	175
0x1B 0x44	<ESC D>	61
0x1B 0x45	<ESC E>	43
0x1B 0x47	<ESC G>	44
0x1B 0x4A	<ESC J>	29
0x1B 0x4D	<ESC M>	45
0x1B 0x52	<ESC R>	176
0x1B 0x52	<ESC R>	46
0x1B 0x56	<ESC V>	47
0x1B 0x5C	<ESC \>	63
0x1B 0x61	<ESC a>	64
0x1B 0x63 0x35	<ESC c>	144
0x1B 0x64	<ESC d>	30
0x1B 0x69	<ESC i>	133
0x1B 0x6D	<ESC m>	134
0x1B 0x6F	<ESC o>	145
0x1B 0x70	<ESC p>	146
0x1B 0x74	<ESC t>	48
0x1B 0x76	<ESC v>	85
0x1B 0x7B	<ESC {>	50
0x1B 0xA0		177
0x1B 0xB2 0x44		192
0x1B 0xB2 0x50		193
0x1B 0xB2 0x51		194
0x1B 0xC1		51



0x1B 0xFA	147
0x1B 0xFD	148
0x1B 0xFF	136
0x1C 0x26	<FS &> 52
0x1C 0x2E	<FS .> 53
0x1C 0x44	<FS D> 149
0x1C 0x4D	<FS M> 150
0x1C 0x59	<FS Y> 178
0x1C 0x65	<FS e> 160
0x1C 0x66	<FS f> 161
0x1C 0x70	<FS p> 69
0x1C 0x71	<FS q> 71
0x1C 0x79	<FS y> 179
0x1C 0x7A	<FS z> 180
0x1C 0x7B	<FS {> 181
0x1C 0x93	137
0x1C 0xB0	151
0x1C 0xC0 0x07	152
0x1C 0xC0 0xFF	153
0x1C 0xEA	86
0x1D 0x21	<GS !> 54
0x1D 0x28 0x6B	<GS ( k> 94
0x1D 0x28 0x6B [fn 065]	<GS ( k> 104
0x1D 0x28 0x6B [fn 065]	<GS ( k> 116
0x1D 0x28 0x6B [fn 065]	<GS ( k> 96
0x1D 0x28 0x6B [fn 066]	<GS ( k> 105
0x1D 0x28 0x6B [fn 066]	<GS ( k> 97
0x1D 0x28 0x6B [fn 067]	<GS ( k> 106



0x1D 0x28 0x6B [fn 067]	<GS ( k>	117
0x1D 0x28 0x6B [fn 067]	<GS ( k>	98
0x1D 0x28 0x6B [fn 068]	<GS ( k>	118
0x1D 0x28 0x6B [fn 068]	<GS ( k>	99
0x1D 0x28 0x6B [fn 069]	<GS ( k>	100
0x1D 0x28 0x6B [fn 069]	<GS ( k>	107
0x1D 0x28 0x6B [fn 069]	<GS ( k>	119
0x1D 0x28 0x6B [fn 080]	<GS ( k>	102
0x1D 0x28 0x6B [fn 080]	<GS ( k>	108
0x1D 0x28 0x6B [fn 080]	<GS ( k>	120
0x1D 0x28 0x6B [fn 081]	<GS ( k>	103
0x1D 0x28 0x6B [fn 081]	<GS ( k>	109
0x1D 0x28 0x6B [fn 081]	<GS ( k>	121
0x1D 0x28 0x6B [fn 365]	<GS ( k>	110
0x1D 0x28 0x6B [fn 366]	<GS ( k>	111
0x1D 0x28 0x6B [fn 367]	<GS ( k>	112
0x1D 0x28 0x6B [fn 368]	<GS ( k>	113
0x1D 0x28 0x6B [fn 380]	<GS ( k>	114
0x1D 0x28 0x6B [fn 381]	<GS ( k>	115
0x1D 0x2A	<GS *>	74
0x1D 0x2F	<GS />	76
0x1D 0x3A	<GS :>	131
0x1D 0x42	<GS B>	56
0x1D 0x48	<GS H>	122
0x1D 0x49	<GS I>	154
0x1D 0x4C	<GS L>	65
0x1D 0x50	<GS P>	156
0x1D 0x56	<GS V>	135



0x1D 0x57	<GS W>	66
0x1D 0x5E	<GS ^>	132
0x1D 0x66	<GS f>	124
0x1D 0x68	<GS h>	125
0x1D 0x6B	<GS k>	126
0x1D 0x72	<GS r>	87
0x1D 0x76 0x30	<GS v 0>	77
0x1D 0x77	<GS w>	130
0x1D 0x7C		31
0x1D 0xD0		157
0x1D 0xE0		89
0x1D 0xE1		90
0x1D 0xE2		91
0x1D 0xE3		92
0x1D 0xE5		93
0x1D 0xE6		158
0x1D 0xE7		163
0x1D 0xF0		159
0x1D 0xF6		165
0x1D 0xF8		166
0x1F 0x01	<US MD1>	182
0x1F 0x02	<US MD2>	183
0x1F 0x03	<US MD3>	185
0x1F 0x0A	<US LF>	187
0x1F 0x0D	<US CR>	188
0x1F 0x24	<US \$>	189
0x1F 0x42	<US B>	190
0x1F 0x45	<US E>	191



# 2 COMMANDS LISTED BY FUNCTION

## PRINT COMMANDS

---

0x0A	<LF>	27
Print and line feed		
0x0D	<CR>	28
Print and carriage return		
0x1B 0x4A	<ESC J>	29
Print and feed paper		
0x1B 0x64	<ESC d>	30
Print and feed paper n lines		
0x1D 0x7C		31
Set printing density		

## LINE SPACING COMMANDS

---

0x1B 0x30	<ESC 0>	32
Select 1/8-inch line spacing		
0x1B 0x32	<ESC 2>	33
Select 1/6-inch line spacing		
0x1B 0x33	<ESC 3>	34
Set line spacing		

## CHARACTER COMMANDS

---

0x1B 0x20	<ESC SP>	35
Set right-side character spacing		
0x1B 0x21	<ESC !>	36
Set print mode		
0x1B 0x25	<ESC %>	38
Enable or disable user-defined character set		
0x1B 0x26	<ESC &>	39
Defines user-defined characters		
0x1B 0x2D	<ESC ->	40
Turn underline mode on or off		
0x1B 0x34	<ESC 4>	41
Turn italic mode on or off		



0x1B 0x3F	<ESC ?>	42
Cancel user-defined characters		
0x1B 0x45	<ESC E>	43
Turn bold mode on or off		
0x1B 0x47	<ESC G>	44
Turn double-strike mode on or off		
0x1B 0x4D	<ESC M>	45
Select character font		
0x1B 0x52	<ESC R>	46
Select international character set		
0x1B 0x56	<ESC V>	47
Select print mode 90° turned		
0x1B 0x74	<ESC t>	48
Select character code table		
0x1B 0x7B	<ESC {>	50
Set/cancel upside-down character printing		
0x1B 0xC1		51
0x1C 0x26	<FS &>	52
Enable chinese fonts		
0x1C 0x2E	<FS .>	53
Disable Chinese fonts		
0x1D 0x21	<GS !>	54
Select character size		
0x1D 0x42	<GS B>	56
Turn black and white reverse printing mode on or off		

## PRINT POSITION COMMANDS

---

0x08	<BS>	57
Back space		
0x09	<HT>	58
Horizontal tab		
0x1B 0x24	<ESC \$>	59
Set absolute print position		
0x1B 0x28 0x76	<ESC (>	60
Set relative vertical print position		
0x1B 0x44	<ESC D>	61
Set horizontal tab position		



0x1B 0x5C .....	<ESC \> .....	63
Set relative print position		
0x1B 0x61 .....	<ESC a> .....	64
Select justification		
0x1D 0x4C .....	<GS L> .....	65
Set left margin		
0x1D 0x57 .....	<GS W> .....	66
Set printing area width		

## BIT IMAGE COMMANDS

---

0x1B 0x2A .....	<ESC *> .....	67
Select image print mode		
0x1C 0x70 .....	<FS p> .....	69
Print NV bit image		
0x1C 0x71 .....	<FS q> .....	71
Define NV bit image		
0x1D 0x2A .....	<GS *> .....	74
Define downloaded bit image		
0x1D 0x2F .....	<GS /> .....	76
Print downloaded bit image		
0x1D 0x76 0x30 .....	<GS v 0> .....	77
Print raster image		

## STATUS COMMANDS

---

0x10 0x04 .....	<DLE EOT> .....	79
Real-time status transmission		
0x1B 0x76 .....	<ESC v> .....	85
Transmit device status		
0x1C 0xEA .....		86
Transmit the device serial number		
0x1D 0x72 .....	<GS r> .....	87
Transmit status		
0x1D 0xE0 .....		89
Enable or disable automatic FULL STATUS back		
0x1D 0xE1 .....		90
Reading of length paper (cm) available before virtual paper-end		
0x1D 0xE2 .....		91
Reading number of cuts performed from the device		



0x1D 0xE3 .....	92
Reading of length of printed paper	
0x1D 0xE5 .....	93
Reading number of power up	

## BARCODE COMMANDS

---

0x1D 0x28 0x6B .....	<GS ( k> .....	94
Print two-dimensional barcode		
0x1D 0x28 0x6B [fn 065] .....	<GS ( k> .....	96
Specify the number of columns of PDF417 barcode		
0x1D 0x28 0x6B [fn 066] .....	<GS ( k> .....	97
Specify the number of rows of PDF417 barcode		
0x1D 0x28 0x6B [fn 067] .....	<GS ( k> .....	98
Specify the width of a module of PDF417 barcode		
0x1D 0x28 0x6B [fn 068] .....	<GS ( k> .....	99
Specify the height of PDF417 barcode		
0x1D 0x28 0x6B [fn 069] .....	<GS ( k> .....	100
Specify the error correction level of PDF417 barcode		
0x1D 0x28 0x6B [fn 080] .....	<GS ( k> .....	102
Store the PDF417 barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 081] .....	<GS ( k> .....	103
Encodes and prints the PDF417 barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 065] .....	<GS ( k> .....	104
Specify encoding scheme of QRcode barcode		
0x1D 0x28 0x6B [fn 066] .....	<GS ( k> .....	105
Specify dot size of the module of the QRcode barcode		
0x1D 0x28 0x6B [fn 067] .....	<GS ( k> .....	106
Specify QRcode barcode size		
0x1D 0x28 0x6B [fn 069] .....	<GS ( k> .....	107
Specify the error correction level of the QRcode barcode		
0x1D 0x28 0x6B [fn 080] .....	<GS ( k> .....	108
Store the QRcode barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 081] .....	<GS ( k> .....	109
Prints the QRcode barcode data		
0x1D 0x28 0x6B [fn 365] .....	<GS ( k> .....	110
Specify the encoding scheme of DATAMATRIX barcode		
0x1D 0x28 0x6B [fn 366] .....	<GS ( k> .....	111
Set rotation of DATAMATRIX barcode		



0x1D 0x28 0x6B [fn 367] .....	<GS ( k> .....	112
Set dot size of the module of DATAMATRIX barcode		
0x1D 0x28 0x6B [fn 368] .....	<GS ( k> .....	113
Set size of DATAMATRIX barcode		
0x1D 0x28 0x6B [fn 380] .....	<GS ( k> .....	114
Store the DATAMATRIX barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 381] .....	<GS ( k> .....	115
Encodes and prints the DATAMATRIX barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 065] .....	<GS ( k> .....	116
Specify encoding scheme of AZTEC barcode		
0x1D 0x28 0x6B [fn 067] .....	<GS ( k> .....	117
Specify dot size of the module of the AZTEC barcode		
0x1D 0x28 0x6B [fn 068] .....	<GS ( k> .....	118
Specify AZTEC barcode size		
0x1D 0x28 0x6B [fn 069] .....	<GS ( k> .....	119
Specify the error correction level of the AZTEC barcode		
0x1D 0x28 0x6B [fn 080] .....	<GS ( k> .....	120
Store the AZTEC barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 081] .....	<GS ( k> .....	121
Prints the AZTEC barcode data		
0x1D 0x48 .....	<GS H> .....	122
Select printing position of HRI characters		
0x1D 0x66 .....	<GS f> .....	124
Select font for HRI characters		
0x1D 0x68 .....	<GS h> .....	125
Set the height of the 1D barcode		
0x1D 0x6B .....	<GS k> .....	126
Print barcode		
0x1D 0x77 .....	<GS w> .....	130
Set the width of the 1D barcode		

## MACRO FUNCTIONS

---

0x1D 0x3A .....	<GS :> .....	131
Start or end of macro definition		
0x1D 0x5E .....	<GS ^> .....	132
Execute macro		



## COMMANDS FOR MECHANISM CONTROL

---

<b>0x1B 0x69</b> .....	<b>&lt;ESC i&gt;</b> .....	<b>133</b>
Total cut		
<b>0x1B 0x6D</b> .....	<b>&lt;ESC m&gt;</b> .....	<b>134</b>
Partial cut		
<b>0x1D 0x56</b> .....	<b>&lt;GS V&gt;</b> .....	<b>135</b>
Select cut mode		

## LOGOS MANAGEMENT COMMANDS

---

<b>0x1B 0xFF</b> .....		<b>136</b>
Receive the graphic page from the communication port		
<b>0x1C 0x93</b> .....		<b>137</b>
Print logo		

## MISCELLANEOUS COMMANDS

---

<b>0x10 0x05</b> .....	<b>&lt;DLE ENQ&gt;</b> .....	<b>139</b>
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<b>0x10 0x14 0x01</b> .....	<b>&lt;DLE DC4&gt;</b> .....	<b>141</b>
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Initialize the device		
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---

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---

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# PRINT COMMANDS

## 0x0A

<LF>

### Print and line feed

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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 [0x1B 0x30](#) or [0x1B 0x32](#)

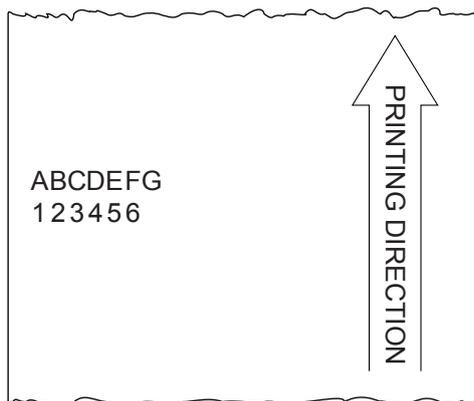
[Notes]

- Sets the print position to the beginning of the line.
- 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] [0x1B 0x30](#), [0x1B 0x32](#), [0x1B 0x33](#), [0x0D](#)

[Example]



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

# 0x0D

<CR>

## Print and carriage return

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	0D
	ASCII	CR

[Range]

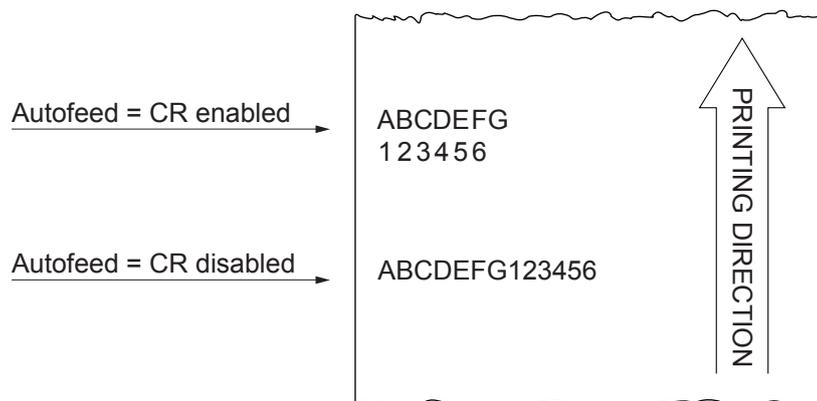
[Description] This command handles the end of a line text.

[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 feed paper

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Prints the data in the print buffer and feeds the paper [n × vertical motion unit].

[Notes]

- After printing has been completed, this command sets the print starting position to the beginning of the line.
- The paper feed amount set by this command does not affect the values set by [0x1B 0x32](#) or [0x1B 0x33](#).
- The horizontal and vertical motion units are specified by [0x1D 0x50](#).
- [0x1D 0x50](#) can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.
- In standard mode, the vertical motion unit is used.
- The maximum paper feed amount is 520 mm.

[Default]

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

[Example]



## 0x1B 0x64

<ESC d>

### Print and feed paper n lines

---

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

---

[Format]	Hex            1B    64    n ASCII           ESC   d    n
[Range]	0x00 ≤ n ≤ 0xFF
[Description]	Prints the data in the print buffer and feeds the paper n rows.
[Notes]	<ul style="list-style-type: none"><li>• The number of rows paper fed is equivalent to [n x char height + line spacing].</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 <a href="#">0x1B 0x32</a> or <a href="#">0x1B 0x33</a>.</li><li>• The maximum paper feed amount is 254 rows. Even if a paper feed amount of more than 254 rows is set, the device feeds the paper only 254 rows.</li></ul>
[Default]	
[Reference]	<a href="#">0x1B 0x32</a> , <a href="#">0x1B 0x33</a>
[Example]	



## 0x1D 0x7C

### Set printing density

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]	0x00 ≤ n ≤ 0x08
	0x30 ≤ n ≤ 0x38

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

n	PRINTING DENSITY
0x00, 0x30	- 50%
0x01, 0x31	- 37.5%
0x02, 0x32	- 25%
0x03, 0x33	- 12.5%
0x04, 0x34	0%
0x05, 0x35	+ 12.5%
0x06, 0x36	+ 25%
0x07, 0x37	+ 37.5%
0x08, 0x38	+ 50%

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

[Default] n = 0x04

[Reference] [0x1D 0x7C](#)

[Example]

# LINE SPACING COMMANDS

## 0x1B 0x30

<ESC 0>

Select 1/8-inch line spacing

---

Valid for           K3 STD  
                      K3 DSP  
                      K3 HS  
                      K3 HS LF

---

[Format]           Hex           1B    30  
                      ASCII       ESC  0

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

[Notes]

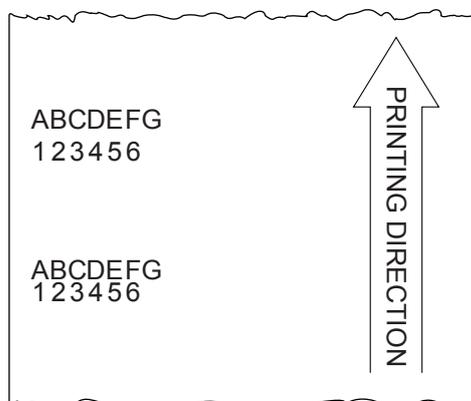
[Default]

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

[Example]

1/6-inch line spacing  
0x1B 0x32

1/8-inch line spacing  
0x1B 0x32



## 0x1B 0x32

<ESC 2>

### Select 1/6-inch line spacing

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	32
ASCII	ESC	2

[Range]

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

[Notes]

[Default]

[Reference] [0x1B 0x30](#), [0x1B 0x33](#)

[Example]

1/6-inch line spacing  
0x1B 0x32

1/8-inch line spacing  
0x1B 0x32





## 0x1B 0x33

<ESC 3>

### Set line spacing

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	33	n
	ASCII	ESC	3	n

[Range] 0x00 ≤ n ≤ 0xFF

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

[Notes]

- The horizontal and vertical motion unit are specified by [0x1D 0x50](#). Changing the horizontal or vertical motion unit does not affect the current line spacing.
- The [0x1D 0x50](#) command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.
- In standard mode, the vertical motion unit is used.
- The maximum spacing is 32.5 mm.

[Default] n = 0x40 (1/6 inch)

[Reference] [0x1B 0x30](#), [0x1B 0x32](#), [0x1D 0x50](#)

[Example]

# CHARACTER COMMANDS

## 0x1B 0x20

<ESC SP>

### Set right-side character spacing

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	20	n
	ASCII	ESC	SP	n

[Range] 0x00 ≤ n ≤ 0xFF

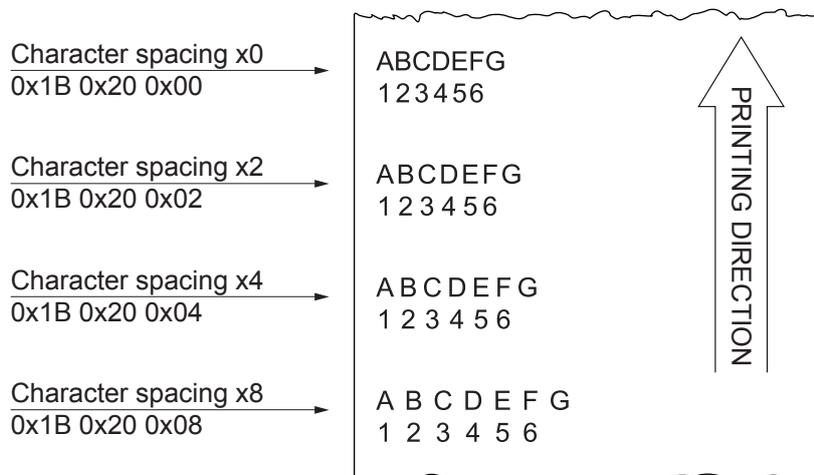
[Description] Sets the character spacing for the right side of the character to [n × horizontal or vertical motion units].

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

[Default] n = 0x00

[Reference] 0x1D 0x50

[Example]





## 0x1B 0x21

<ESC !>

### Set print mode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	21	n
ASCII	ESC	!	n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Selects print modes using n (see table below):

BIT	OFF/ON	HEX	FUNCTION	11/15 cpi	15/20 cpi
0	Off	00	Character font A selected.	18 x 24	13 x 24
	On	01	Character font B selected.	13 x 24	10 x 24
1	-	-	Undefined.		
2	-	-	Undefined.		
3	Off	00	Expanded mode not selected.		
	On	08	Expanded mode selected.		
4	Off	00	Double-height mode not selected.		
	On	10	Double-height mode selected.		
5	Off	00	Double-width mode not selected.		
	On	20	Double-width mode selected.		
6	Off	00	Italic mode not selected.		
	On	40	Italic mode selected.		
7	Off	00	Underline mode not selected.		
	On	80	Underline mode selected.		

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

Character font A selected  
0x1B 0x21 0x00

ABCDEFGH  
123456

Character font B selected  
0x1B 0x21 0x01

ABCDEFGH  
123456

Bold mode selected  
0x1B 0x21 0x08

**ABCDEFGH**  
**123456**

Double-height mode selected  
0x1B 0x21 0x10

ABCDEFGH  
123456

Double-width mode selected  
0x1B 0x21 0x20

**ABCDEFGH**  
**1 2 3 4 5 6**

Italic mode selected  
0x1B 0x21 0x40

*ABCDEFGH*  
*123456*

Underline mode selected  
0x1B 0x21 0x80

ABCDEFGH  
123456





## 0x1B 0x25

<ESC %>

### Enable or disable user-defined character set

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	25	n
	ASCII	ESC	%	n

[Range] 0x00 ≤ n ≤ 0xFF

[Description] Enable or disable 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 unabled.

[Notes]

- Only the Least Significant Bit (LSB) of n is applicable.
- When the user-defined character set is disabled, the internal character set is automatically selected.

[Default] n = 0x00

[Reference] [0x1B 0x26](#), [0x1B 0x3F](#)

[Example]



## 0x1B 0x26

<ESC &>

Defines user-defined characters

Valid for	K3 STD K3 DSP K3 HS K3 HS LF						
[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]	y = 0x03 0x20 ≤ c1 ≤ cn ≤ 0x7E 0x00 ≤ x ≤ 0x12 (font 18 x 24) 0x00 ≤ x ≤ 0x0D (font 13 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 0x1B 0x21.</li> <li>• The user-defined character definitions are cleared when one of commands 0x1B 0x40, 0x1B 0x3F. are executed is 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]	0x1B 0x25, 0x1B 0x3F						
[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  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

[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 following values of n:

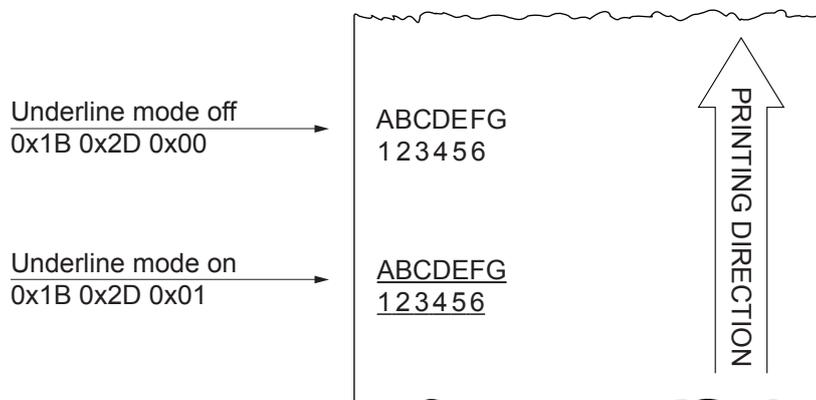
n	FUNCTION
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1 dot thick)
0x02, 0x32	Turns on underline mode (2 dot thick)

- [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 command is the effective one.

[Default]         n = 0x00

[Reference]       [0x1B 0x21](#)

[Example]



# 0x1B 0x34

<ESC 4>

## Turn italic mode on or off

Valid for  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

[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 following values of n:

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 command is the effective one.

[Default]        n = 0x00

[Reference]     [0x1B 0x21](#)

[Example]





## 0x1B 0x3F

<ESC ?>

### Cancel user-defined characters

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	3F	n
ASCII	ESC	?	n

[Range] 0x20 ≤ n ≤ 0x7E

[Description] Cancels user-defined characters.

[Notes]

- This command cancels the pattern defined for the character code specified by n.
- This command deletes the pattern defined for the specified character code in the font selected by [0x1B 0x21](#).
- If the user-defined character has not been defined for the specified character code, the device ignores this command.

[Default]

[Reference] [0x1B 0x25](#), [0x1B 0x26](#)

[Example]

## 0x1B 0x45

<ESC E>

Turn bold mode on or off

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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 emphasized 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  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

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

[Range]            0x00 ≤ n ≤ 0xFF

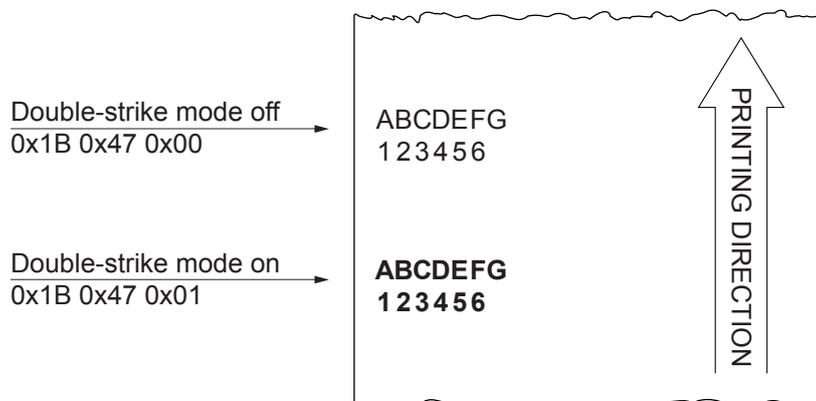
[Description]      Turns double-strike mode on or off, based on the n value:  
 - when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.  
 - when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

[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 0x45](#)

[Example]





## 0x1B 0x4D

<ESC M>

### Select character font

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	4D	n
ASCII	ESC	M	n

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

[Description] Selects characters font.

CHAR/INCH.	n	FUNCTION
A=11 cpi B=15 cpi	0x00, 0x30 0x01, 0x31	Font 11 cpi (18 x 24) Font 15 cpi (13 x 24)
A=15 cpi B=20 cpi	0x00, 0x30 0x01, 0x31	Font 15 cpi (13 x 24) Font 20 cpi (10 x 24)

[Notes]

[Default]

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

[Example]



## 0x1B 0x52

<ESC R>

### Select international character set

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[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:

	HEX	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
n	CHARACTERS SET												
0x00	U.S.A.	#	\$	@	[	\	]	^	`	{		}	~
0x01	France	#	\$	à	°	ç	§	^	`	é	ù	è	“
0x02	Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	b
0x03	United Kingdom	£	\$	@	[	\	]	^	`	{		}	~
0x04	Denmark I	#	\$	@	Æ	Æ	Å	^	`	æ	f	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	Æ	Å	Ü	é	æ	f	å	ü
0x0A	Denmark II	#	\$	É	Æ	Æ	Å	Ü	é	æ	f	å	ü

[Notes]

[Default] n = 0x00

[Reference]

[Example]



## 0x1B 0x56

<ESC V>

Select print mode 90° turned

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	56	n
ASCII	ESC	V	n

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

[Description] Turns 90° rotation mode on/off. n is used 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. Anyway, 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.
- This command is not available in Page mode.
- If this command is entered in Page mode, the device saves the setting anyway.

[Default] n = 0x00

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

[Example]



# 0x1B 0x74

<ESC t>

## Select character code table

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]	0x01 ≤ n ≤ 0x35
	n = 0xFF

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

n	PAGE
0x00	PC437 - U.S.A., Standard Europe
0x01	Katakana
0x02	PC850 - Multilingual
0x03	PC860 - Portuguese
0x04	PC863 - Canadian/French
0x05	PC865 - Nordic
0x0B	PC851 - Greek <span style="float: right;">on request</span>
0x0C	PC853 - Turkish <span style="float: right;">on request</span>
0x0D	PC857 - Turkish
0x0E	PC737 - Greek
0x0F	ISO8859-7 - Greek <span style="float: right;">on request</span>
0x10	WPC1252
0x11	PC866 - Cyrillic 2
0x12	PC852 - Latin 2
0x13	PC858 for Euro symbol in position 213
0x14	KU42 - Thai
0x15	TIS11 - Thai <span style="float: right;">on request</span>
0x1A	TIS18 - Thai <span style="float: right;">on request</span>
0x1E	TCVN_3 - Vietnamese <span style="float: right;">on request</span>
0x1F	TCVN_3 - Vietnamese <span style="float: right;">on request</span>



n	PAGE
0x20	PC720 - Arabic on request
0x21	WPC775 - Baltic Rim on request
0x22	PC855 - Cyrillic
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 - Farci
0x2A	PC1118 - Lithuanian on request
0x2B	PC1119 - Lithuanian on request
0x2C	PC1125 - Ukrainian
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 - Kazakhstan
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.

[Default] n = 0x00

[Reference]

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

# 0x1B 0x7B

<ESC {>

## Set/cancel upside-down character printing

Valid for  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

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

[Range]            0x00 ≤ n ≤ 0xFF

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

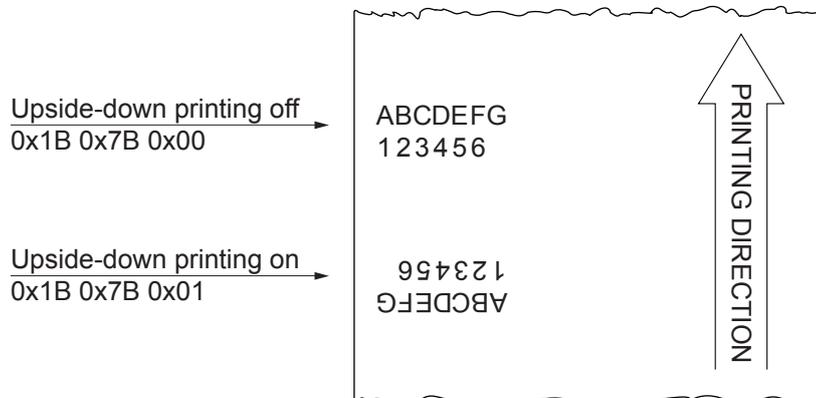
[Notes]

- 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	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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:

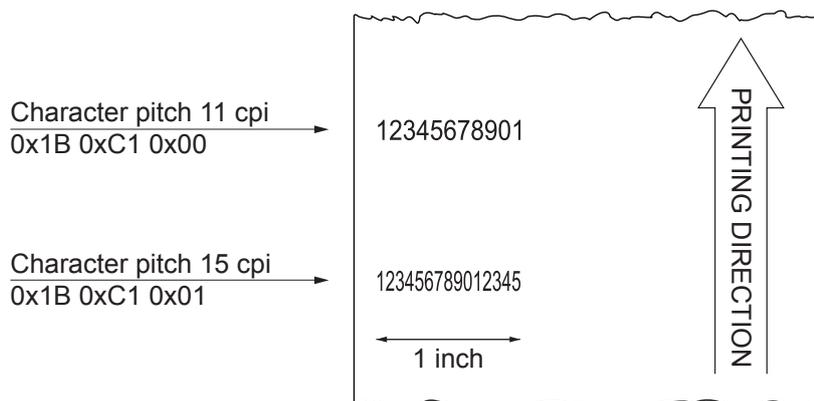
n	PITCH	
0x00, 0x30	Font A = 11 cpi	Font B = 15 cpi
0x01, 0x31	Font A = 15 cpi	Font B = 20 cpi

[Notes]

[Default] n = 0x00

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

[Example]





## 0x1C 0x26

<FS &>

### Enable chinese fonts

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	26
	ASCII	FS	&

[Range]

[Description] Enable the chinese fonts.

[Notes] This command can be used only for the simplified chinese (GB2312), traditional chinese (BIG5) or extended chinese (GB18030-2000) models.

This command enable chinese fonts in RAM. It does not affect the parameter set-up.

[Default]

[Reference] [0x1C 0x2E](#)

See the command manual for the chinese fonts management.

[Example]



## 0x1C 0x2E

<FS .>

### Disable Chinese fonts

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1C	2E
ASCII	FS	.

[Range]

[Description]      Disable the chinese fonts.

[Notes]

- This command can be used only for the simplified chinese (GB2312), traditional chinese (BIG5) or extended chinese (GB18030-2000) models.
- This command disable chinese fonts in RAM. It does not affect the parameter set-up.
- Disabling the use of chinese fonts will restore the codepage used previously.

[Default]

[Reference]      [0x1C 0x26](#)  
See the command manual for the chinese fonts management.

[Example]



## 0x1D 0x21

<GS !>

### Select character size

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[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 topline.
- **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  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

[Format]      Hex            1D    42    n  
                  ASCII          GS    B    n

[Range]            0x00 ≤ n ≤ 0xFF

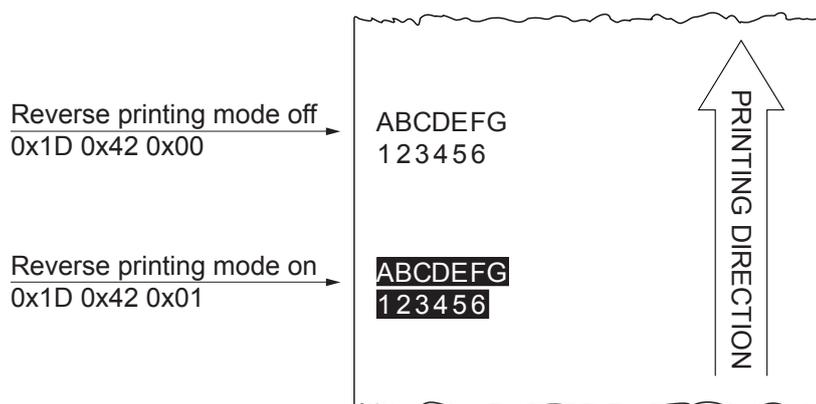
[Description]      Turns black and white reverse printing mode on or off, based on the value of n:  
 - when the Least Significant Bit (LSB) of n is 0, white/black reverse printing is turned off.  
 - when the Least Significant Bit (LSB) of n is 1, white/black reverse printing is turned on.

- [Notes]
- Only the Least Significant Bit (LSB) of n is effective.
  - This command is available for both built-in and user-defined characters.
  - This command does not affect bit image, downloaded bit image, barcode, HRI characters and spacing skipped by 0x09, 0x1B 0x24 and 0x1B 0x5C.
  - This command does not affect white space between lines.
  - White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it will be disabled (but not cancelled) when white/black reverse mode is selected.

[Default]            n = 0x00

[Reference]

[Example]





# PRINT POSITION COMMANDS

## 0x08

<BS>

### Back space

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	08
	ASCII	BS

#### [Range]

[Description] Moves print position to previous character.

[Notes] Can be used to put two characters at the same position.

#### [Default]

#### [Reference]

#### [Example]

# 0x09

<HT>

## Horizontal tab

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[Format]

Hex	09
ASCII	HT

[Range]

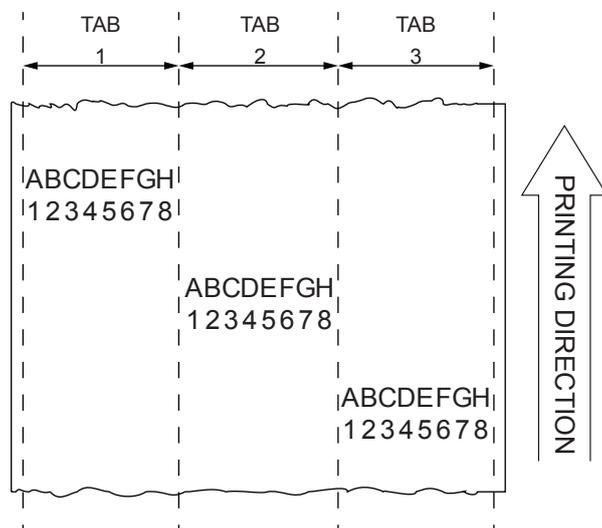
[Description] Moves the print position to the next horizontal tab position.

- [Notes]
- Horizontal tab positions are set by using command [0x1B 0x44](#).
  - Ignored unless the next horizontal tab position has been set by using command [0x1B 0x44](#).
  - 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 0x24

<ESC \$>

### Set absolute print position

Valid for	K3 STD K3 DSP K3 HS K3 HS LF				
[Format]	Hex	1B	24	nL	nH
	ASCII	ESC	\$	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF				
[Description]	Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed. The distance from the beginning of the line to the print position is [(nL + nH × 256) × (vertical or horizontal motion unit)] inches.				
[Notes]	<ul style="list-style-type: none"> <li>• Settings outside the specified printable area are ignored.</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 unit. However, the value cannot be less than the minimum horizontal movement amount.</li> <li>• In standard mode, the horizontal motion unit (x) is used.</li> <li>• If the setting is outside the printing area width, it sets the absolute print position, but the left or right margin is set at default value.</li> </ul>				
[Default]					
[Reference]	<a href="#">0x1B 0x5C</a> , <a href="#">0x1D 0x50</a>				
[Example]					



## 0x1B 0x28 0x76

<ESC (>

### Set relative vertical print position

Valid for	K3 STD K3 DSP K3 HS K3 HS LF					
[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>

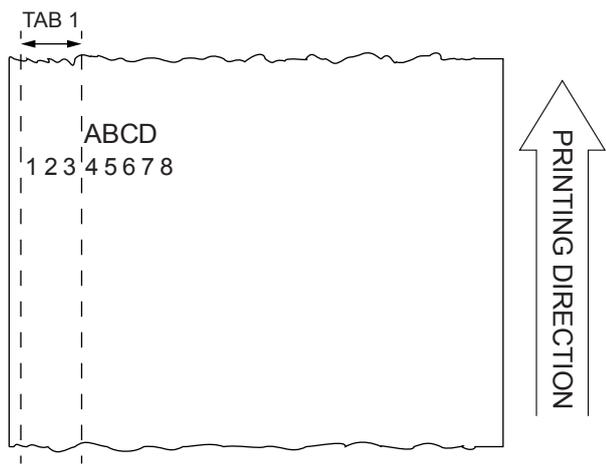
### Set horizontal tab position

Valid for	K3 STD K3 DSP K3 HS K3 HS LF				
[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 x n] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.</li> <li>• This command cancels previous tab settings.</li> <li>• When setting n = 0x08, the print position is moved to column 9 sending <a href="#">0x09</a>.</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 00 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	K3 STD K3 DSP K3 HS K3 HS LF
[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>• 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> <li>• When the starting position is specified by N motion units to the right: <math>nL + nH \times 256 = N</math></li> <li>• When the starting position is specified by n motion units to the left (negative direction), use the complement of 65536: <math>nL + nH \times 256 = 65536 - N</math></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>• Setting the right value, it's possible to print characters over the right edge.</li> </ul>
[Default]	
[Reference]	<a href="#">0x1B 0x24</a> , <a href="#">0x1D 0x50</a>
[Example]	

# 0x1B 0x61

<ESC a>

## Select justification

Valid for  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

[Format]      Hex            1B    61    n  
                  ASCII          ESC    a      n

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

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

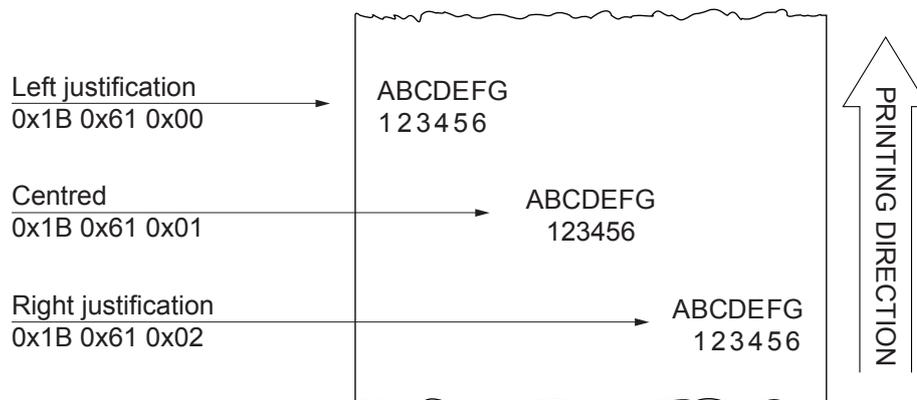
n	JUSTIFICATION
0x00, 0x30	Left justification
0x01, 0x31	Centered
0x02, 0x32	Right justification

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

[Default]        n = 0x00

[Reference]

[Example]



## 0x1D 0x4C

<GS L>

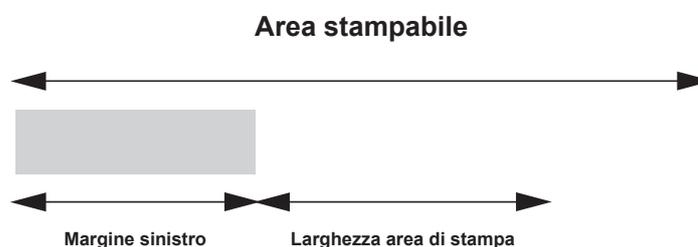
### Set left margin

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

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

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

[Description] Sets the left margin to  $[(nL + nH \times 256) \times \text{horizontal motion unit}]$  inches.



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

[Default]

[Reference] [0x1D 0x50](#), [0x1D 0x57](#)

[Example]

## 0x1D 0x57

<GS W>

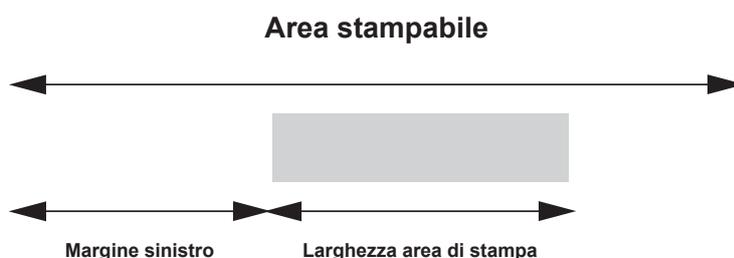
### Set printing area width

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

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

[Range]	$0x00 \leq nL \leq 0xFF$
	$0x00 \leq nH \leq 0xFF$
	$0x0000 \leq (nL + nH \times 256) \leq 0340$

[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.</li> <li>• 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]	
-----------	--



# BIT IMAGE COMMANDS

## 0x1B 0x2A

<ESC \*>

Select image print mode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

[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:

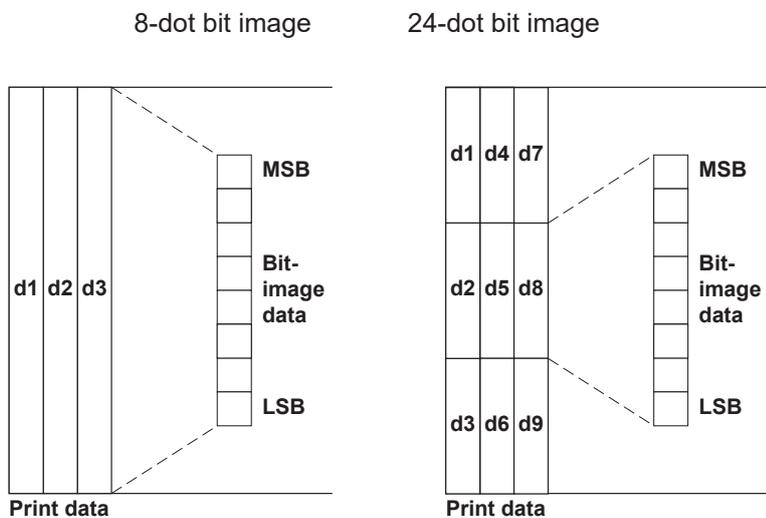
m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION (*1)	
		N. dots	DPI	DPI	N. data (k)
0x00	8 dot single density	8	67	100	nL + nH x 256
0x01	8 dot double density	8	67	200	nL + nH x 256
0x20	24 dot single density	24	200	100	(nL + nH x 256) x 3
0x21	24 dot double density	24	200	200	(nL + nH x 256) x 3

- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH × 256.
  - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
  - d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.
  - If the value of m is outside the specified range, nL and data following it are processed as normal data.
  - If the width of the printing area set by [0x1D 0x4C](#) and [0x1D 0x57](#) is less than the width required by the data set using [0x1B 0x2A](#), the excess data are ignored.
  - To print the bit image use [0x0A](#), [0x0D](#), [0x1B 0x4A](#) or [0x1B 0x64](#).



- After printing a bit image, the device returns to normal data processing mode.
- This command is not affected by the emphasized, double-strike, underline (etc.) print modes, except for the upside-down mode.

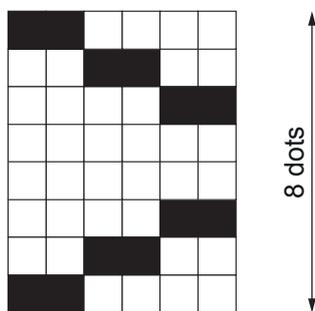
The relationship between the image data and the dots to be printed is as follows:



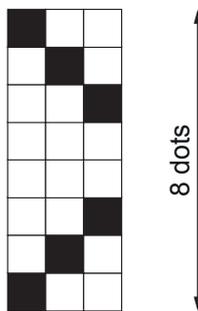
[Default]

[Reference]

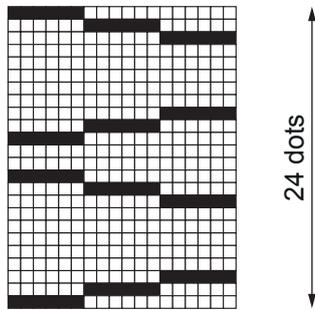
[Example]



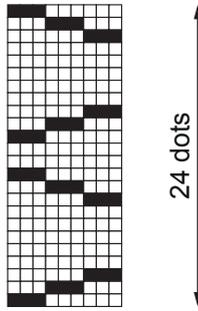
8 dots single density



8 dots double density



24 dots single density



24 dots double density

## 0x1C 0x70

<FS p>

### Print NV bit image

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]	0x01 ≤ n ≤ 0xFF
	0x00 ≤ m ≤ 0x03
	0x30 ≤ m ≤ 0x33

[Description] Print a NV bit image n using the mode specified by m:

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

n is the number of the NV bit image (defined using the [0x1C 0x71](#) command).

- [Notes]
- NV bit image means a bit image which is defined in a non-volatile memory by [0x1C 0x71](#) and printed by [0x1C 0x70](#).
  - This command is not effective when the specified NV bit image has not been defined.
  - In standard mode, this command is effective only when there is no data in the print buffer.
  - This command is not affected by print modes (emphasized, underline, character size, white/black reverse printing, etc.), except upside-down printing mode.
  - If the printing area width set by [0x1D 0x4C](#) and [0x1D 0x57](#) for the NV bit image is less than one vertical line, the following processing is executed only on the line in question. However, in NV bit image mode, one vertical line means 1 dot (one half dot for slip paper) in normal mode (m = 0x00, 0x30) and in double-height mode (m = 0x01, 0x32), and it means 2 dots (two half dots for slip paper) in double-width mode ( m = 0x01, 0x31) and in quadruple mode ( m = 0x03, 0x33).
  - The printing area width is extended to the right in NV bit image mode up to one line vertically. In this case, printing does not exceed the printable area.
  - If the printing area width cannot be extended by one line vertically, the left margin is reduced to accommodate one line vertically.
  - If the downloaded bit image to be printed exceeds one line, the excess data is not printed.



- This command feeds dots (for the height  $n$  of the NV bit image) in normal and double-width modes, and (for the height  $n \times 2$  of the VN bit image) in double-height and quadruple modes, regardless of the line spacing specified by `0x1B 0x32` or `0x1B 0x33`.
- After printing the bit image, this command sets the print position to the beginning of the line and processes the data that follows as normal data.
- In page mode, this command is effective only if  $m = 0X00$ .

[Default]

[Reference]      `0x1C 0x71`

[Example]



## 0x1C 0x71

<FS q>

### Define NV bit image

Valid for	K3 STD		
	K3 DSP		
	K3 HS		
	K3 HS LF		
[Format]	Hex	1C 71	n [xL xH yL yH d1...dk] 1...[xL xH yL yH d1...dk] n
	ASCII	FS q	n [xL xH yL yH d1...dk] 1...[xL xH yL yH d1...dk] n
[Range]	$0x01 \leq n \leq 0xFF$ $0x00 \leq xL \leq 0xFF$ $0x00 \leq xH \leq 0x03$ (when $1 \leq (xL + xH \times 256) \leq 1023$ ) $0x00 \leq yL \leq 0x01$ (when $1 \leq (yL + yH \times 256) \leq 288$ ) $0x00 \leq d \leq 0xFF$ $k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$ Total defined data area = 3M bytes		
[Description]	Define the NV bit image specified by n. <ul style="list-style-type: none"> <li>• n specifies the number of the defined NV bit image.</li> <li>• xL, xH specifies <math>(xL + xH \times 256) \times 8</math> dots in the horizontal direction for the NV bit image you are defining.</li> <li>• yL, yH specifies <math>(yL + yH \times 256) \times 8</math> dots in the vertical direction for the NV bit image you are defining.</li> </ul>		
[Notes]	<ul style="list-style-type: none"> <li>• Frequent write command execution may cause damage the NV memory. Therefore, it is recommended to write the NV memory 10 times or less a day.</li> <li>• The device executes a hardware reset after the procedure to place the image into the non-volatile memory. Therefore, user-defined characters, downloaded bit images, and macros should be defined only after completing this command. The device clears the receive and print buffers and resets the mode to the mode that was in effect at power on.</li> <li>• During processing this command, the device is in BUSY when writing the data to the user NV memory and stops receiving data. Therefore it is prohibited to transmit the data including the real-time commands during the execution of this command.</li> <li>• This command cancels all NV bit images that have already been defined by this command. The device can not redefine only one of several data definitions previously defined. In this case, all data needs to be sent again.</li> <li>• From the beginning of the processing of this command till the finish of hardware reset, mechanical operations (including initializing the position of the device head when the cover is open, paper feeding by using the PAPER FEED button, etc.) cannot be executed.</li> <li>• NV bit image means a bit image which is defined in a non-volatile memory by 0x1C 0x71 and printed by 0x1C 0x70.</li> </ul>		



- In standard mode, this command is effective only when processed at the beginning of the line.
- In page mode, this command is not effective.
- This command is effective when 7 bytes <FS~yH> is processed as a normal value.
- When the amount of data exceeds the capacity left in the range defined by xL, xH, yL, yH, the device processes xL, xH, yL, yH out of the defined range.
- In the first group of NV bit images, when any of the parameters xL, xH, yL, yH is out of the definition range, this command is disabled.
- In groups of NV bit images other than the first one, when the device processes xL, xH, yL, yH out of the defined range, it stops processing this command and starts writing into the non-volatile images. At this time, NV bit images that haven't been defined are disabled (undefined), but any NV bit images before that are enabled.
- d indicates the definition data. In data (d) a 1 bit specifies a dot to be printed and a 0 bit specifies a dot not to be printed.
- This command defines n as the number of a NV bit image. Numbers rise in order from NV bit image 01H. Therefore, the first data group [xL xH yL yH d1...dk] is NV bit image 01H, and the last data group [xL xH yL yH d1...dk] is NV bit image n. The total agrees with the number of NV bit images specified by command [0x1C 0x70](#).
- A definition data of a NV bit image consists of [xL xH yL yH d1...dk]. Therefore, when only one NV bit image is defined, n=1.
- The device processes a data group [xL xH yL yH d1...dk] once.
- The device uses ((data: ( xL + xH × 256) × ( yL + yH × 256) × 8] + [header :4]) bytes of non-volatile memory.
- The definition area in this device is a maximum of 3M bytes. This command can define several NV bit images, but cannot define a bit image data whose total capacity [bit image data + header] exceeds 3M bytes.
- The device is busy immediately before writing into non-volatile memory.
- When this command is received during macro definition, the device ends macro definition, and begins executing this command.
- Once a NV bit image is defined, it is not erased by executing [0x1B 0x40](#), reset, and power off.
- This command executes only definition of a NV bit image and does not execute printing. Printing of the NV bit image is executed by the [0x1C 0x70](#) command.

[Default]

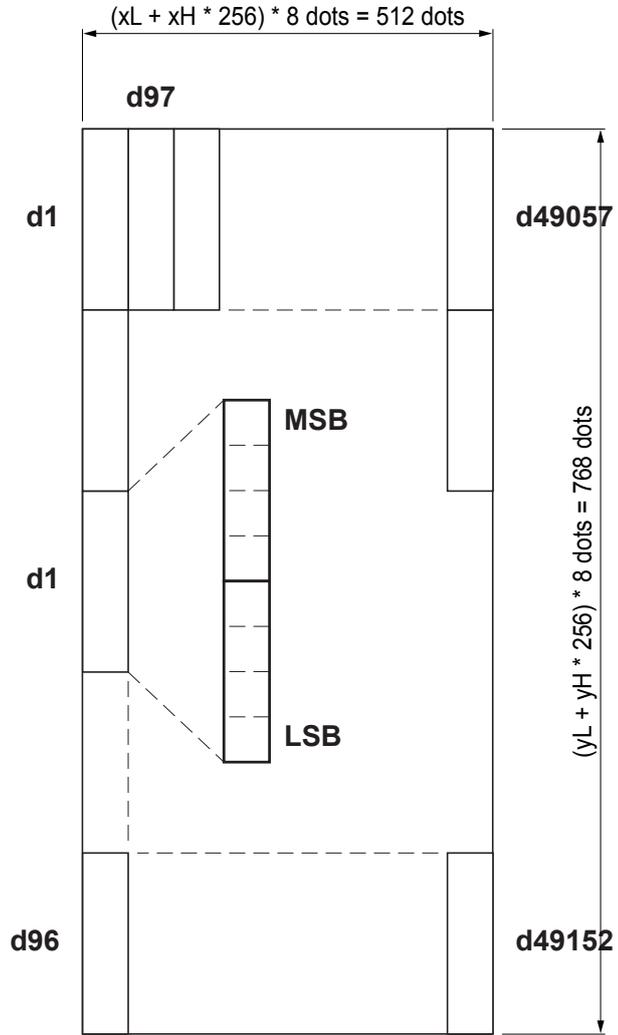
[Reference]      [0x1C 0x70](#)



[Example]

To make a image or logo of width = 512 dots and height = 768 dots the command sequence to send is:  
0x1C 0x71 0x01 0x40 0x00 0x60 0x00 followed by 49152 bytes which define the image as the following drawing:

When  $xL = 64$ ,  $xH = 0$   
 $yL = 96$ ,  $yH = 0$





## 0x1D 0x2A

<GS \*>

### Define downloaded bit image

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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 downloaded bit image using the number of dots specified by x and y. x specifies the number of dots in the horizontal direction. y specifies the number of dots in the vertical direction.

- [Notes]
- The number of dots in the horizontal direction is x × 8, in the vertical direction it is y × 8.
  - If x × y is out of the specified range, this command is disabled.
  - d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.
  - The downloaded bit image definition is cleared when:
    - 0x1B 0x40 is executed.
    - 0x1B 0x26 is executed.
  - The device is reset or the power is turned off.

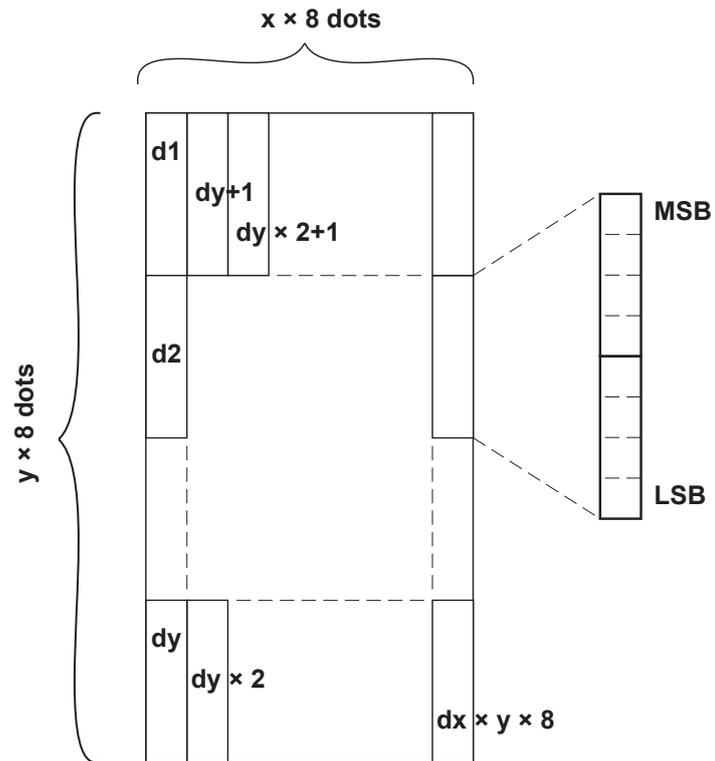
[Default]

[Reference]



[Example]

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





## 0x1D 0x2F

<GS />

### Print downloaded bit image

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[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 downloaded bit image has not been defined.
- In standard mode, this command is effective only when there is no data in the print buffer.
- This command has no effect in the print modes (emphasized, underline, character size, or white/black reverse printing), except for upside-down printing mode.
- If the downloaded bit-image to be printed exceeds the printable area, the excess data is not printed.
- If the printing area width set by [0x1D 0x4C](#) and [0x1D 0x57](#) is less than the bit image horizontal size, the following processing is performed:
  - 1) The printing area width is extended toward the right side up to hold the bit image. In this case, printing does not exceed the printable area.
  - 2) If the printing area width cannot be extended toward the right side, because there's no more printing area, the left margin is reduced to accommodate the bit image.

[Default]

[Reference] [0x1D 0x2A](#)

[Example]



# 0x1D 0x76 0x30

<GS v 0>

## Print raster image

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

[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 bits ( $xL + xH \times 256$ ) in the horizontal direction for the bit image.
- yL, yH selects the number of data bits ( $yL + yH \times 256$ ) 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, emphasized, 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 report between the image data and the printing result:

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

[Default]

[Reference]

[Example]



# STATUS COMMANDS

## 0x10 0x04

<DLE EOT>

### Real-time status transmission

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	10	04	n
	ASCII	DLE	EOT	n

[Range]	$0x01 \leq n \leq 0x04$
	n = 0x17
	n = 0x14
	n = 0x21

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

---

n = 0x01	transmits device status
n = 0x02	transmits off-line status
n = 0x03	transmits error status
n = 0x04	transmits paper roll sensor status
n = 0x17	transmits print status
n = 0x14	transmits FULL STATUS
n = 0x21	transmits ID device

---



#### 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	Drawer kick-out signal level Low (pin 3).
	On	04	Drawer kick-out signal level High (pin 3).
3	Off	00	On-line.
	On	08	Off-line.
4	On	10	Not used. Fixed to On
5	-	-	RESERVED
6	-	-	RESERVED
7	Off	00	LF key released
	On	80	LF key pressed

#### 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	Cover closed
	On	04	Cover opened
3	Off	00	Paper isn't feeded by FEED. key
	On	08	Paper is feeded 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	-	-	RESERVED
3	Off	00	Cutter ok
	On	08	Cutter error
4	On	10	Not used. Fixed to On
5	Off	00	No unrecoverable error.
	On	20	Unrecoverable error
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
2,3	Off	00	Paper present..
	On	0C	Near paper end.
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



### Print status (n = 0x17)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to Off
1	On	02	Not used. Fixed to On
2	Off	00	Paper drag motor off
	On	04	Paper drag motor on
3	-	-	RESERVED
4	On	10	Not used. Fixed to On
5	Off	00	Paper present
	On	20	Paper absent
6	-	-	RESERVED
7	Off	00	Not used. Fixed to Off

### FULL STATUS (n = 0x14, 6 bytes)

1° Byte = 0x10 (DLE)

2° Byte = 0x0F

3° Byte = Paper status

BIT	OFF/ON	HEX	FUNCTION
0	OFF	00	Paper present
	ON	01	Paper not present
1	-	-	RESERVED
2	OFF	00	Paper present
	ON	04	Near paper end
3	-	-	RESERVED
4	-	-	RESERVED
5	-	-	RESERVED
6	Off	00	Paper virtually present *
	On	40	Virtual paper end *
7	-	-	RESERVED

(\*) Paper virtually present is set when the paper length available, read by [0x1D 0xE1](#), is 0.



4° byte = User status

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Cover closed
	On	03	Cover opened
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	Off	00	FF key released
	On	40	FF key pressed
7	-	-	RESERVED

5° byte = Recoverable error status

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	-	-	RESERVED
7	Off	00	Black mark aligned
	On	80	Black mark not aligned



6° byte = Unrecoverable error status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Cutter ok
	On	01	Cutter error
1	Off	00	Cutter cover ok
	On	02	Cutter cover open
2	Off	00	RAM ok
	On	04	RAM error
3	Off	00	EEPROM ok
	On	08	EEPROM error
4	-	-	RESERVED
5	-	-	RESERVED
6	-	-	RESERVED
7	-	-	RESERVED

n = 0x21: transmit device ID

1° Byte = (refer to command [0x1D 0x49](#))

[Notes]

- Immediately executed even when the data buffer is full.
- This status is transmitted whenever data sequence [0x10 0x04](#) is received.

[Default]

[Reference]

[Example]

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



## 0x1B 0x76

<ESC v>

### Transmit device status

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[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
0,1	Off	00	Near paper-end sensor: paper present.
	On	03	Near paper-end sensor: paper not present.
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	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	EA	n
	ASCII	FS	0xEA	n

[Range] n = 0x52, 0x72

[Description] Transmits the device serial number.

- [Notes]
- The serial number is a string of 16 alphanumeric characters.
  - If the printer serial number is not defined, the device returns a string of 16 characters with a value of 0x00.

[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 0x72

<GS r>

### Transmit status

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	72	n
ASCII	GS	r	n

[Range]

0x01 ≤ n ≤ 0x02  
0x31 ≤ n ≤ 0x32

[Description]

Transmits the status specified by n as follows:

n	FUNCTION
0x01, 0x31	Transmits paper sensor status

Paper sensor status (n = 0x01, 0x31)

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Not used. Fixed to Off.
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.



Drawer connector status (n = 0x02, 0x32)

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Connector pin 3 at low level.
	On	01	Connector pin 3 at high level.
1	-	-	Undefined.
2	-	-	Undefined.
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 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	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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:  
 1° Byte = 0x10  
 2° Byte = n  
 Next byte (depends how many bits are active in in)

[Default]

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

[Example]



## 0x1D 0xE1

### Reading of length paper (cm) available before virtual paper-end

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	E1
	ASCII	GS	0xE1

[Range]

[Description]

Reading of length of paper available before virtual paper-end (expressed in centimetres).  
The command return a string pointing out how much paper is available.

[Notes]

- The length of residual paper reported is just as an indication because tolerances and other factors are not taken into consideration (paper thickness, roll core diameter, roll core thickness).
- The virtual paper-end limit is set by the command [0x1D 0xE6](#).
- To set virtual paper-end limit, measure the length of the paper from near paper end to the end of the roll, using several of them.

[Default]

[Reference]

[0x1D 0xE6](#)

[Example]

If there are 5.1 m before paper end, the answer will be:  
'510cm'



## 0x1D 0xE2

### Reading number of cuts performed from the device

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	E2
	ASCII	GS	0xE2

[Range]

[Description] Reading the number of cuts performed from the autocutter.

[Notes] The command return a string that points out how many cuts are performed by the autocutter.

[Default]

[Reference]

[Example] If the autocutter has performed 785 cuts, the answer will be:  
'785cuts'



## 0x1D 0xE3

### Reading of length of printed paper

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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'



# BARCODE COMMANDS

## 0x1D 0x28 0x6B

<GS ( k>

Print two-dimensional barcode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

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

[Range]	cn = 0x30, 0x31, 0x33, 0x34 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	Function 065	PDF 417: Specify the number of columns
0x30	0x42	Function 066	PDF 417: Specify the number of rows
0x30	0x43	Function 067	PDF 417: Specify the width of module
0x30	0x44	Function 068	PDF 417: Specify the module height
0x30	0x45	Function 069	PDF 417: Specify the error correction level
0x30	0x50	Function 080	PDF 417: Store the received data in the barcode save area
0x30	0x51	Function 081	PDF 417: Print the barcode data in the barcode save area
0x31	0x41	Function 065	QRcode: Specify encoding scheme
0x31	0x42	Function 066	QRcode: Specify dot size of the module
0x31	0x43	Function 067	QRcode: Specify size of barcode
0x31	0x45	Function 069	QRcode: Specify the error correction level
0x31	0x50	Function 080	QRcode: Store the received data in the barcode save area
0x31	0x51	Function 081	QRcode: Print the barcode data
0x33	0x41	Function 365	DATAMATRIX: Set encoding scheme
0x33	0x42	Function 366	DATAMATRIX: Set rotate
0x33	0x43	Function 367	DATAMATRIX: Set dot size of the module



0x33	0x44	<a href="#">Function 368</a>	DATAMATRIX: Set size of barcode
0x33	0x50	<a href="#">Function 380</a>	DATAMATRIX: Store the received data in the barcode save area
0x33	0x51	<a href="#">Function 381</a>	DATAMATRIX: Print the barcode data in the barcode save area
0x34	0x41	<a href="#">Function 065</a>	AZTEC: Specify encoding scheme
0x34	0x42	<a href="#">Function 067</a>	AZTEC: Specify dot size of the module
0x34	0x43	<a href="#">Function 068</a>	AZTEC: Specify size of barcode
0x34	0x44	<a href="#">Function 069</a>	AZTEC: Specify the error correction level
0x34	0x50	<a href="#">Function 080</a>	AZTEC: Store the received data in the barcode save area
0x34	0x51	<a href="#">Function 081</a>	AZTEC: Print the barcode

[Notes]

[Default]

[Reference]

[Example]



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

<GS ( k>

Specify the number of columns of PDF417 barcode

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[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.

- pL and pH specify the number of successive bytes to be sent.
- n = 0x00 specifies auto processing. When auto processing is specified, the maximum number of columns in the data area is 30 columns.
- When n is not 0x00, specifies the number of columns of the data area as n code word.

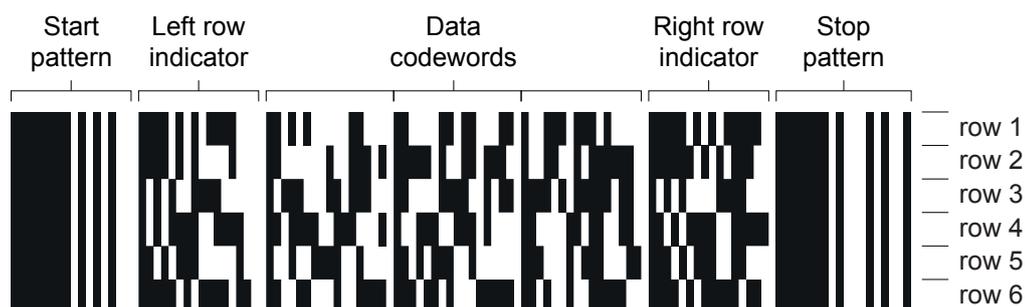
[Notes]

- The following data is not included in the number of columns:
  - start pattern and stop pattern
  - indicator code word of left and right
- Settings are effective until [0x1B 0x40](#) is executed or the device is reset or turned off.

[Default] n = 0x00

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

[Example] To define 3 columns the command sequence is the following:  
0x1D 0x28 0x6B 0x03 0x00 0x30 0x41 0x03

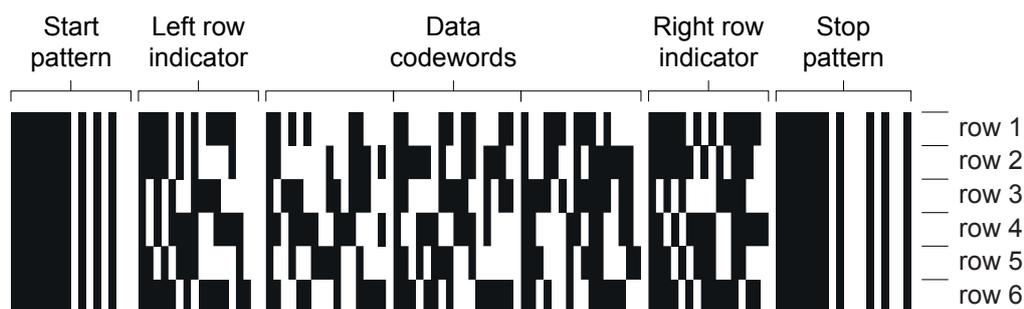


## 0x1D 0x28 0x6B [fn 066]

<GS ( k>

Specify the number of rows of PDF417 barcode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[Format]	Hex	1D	28	6B	pL	pH	30	42	n
	ASCII	GS	(	k	pL	pH	0	B	n
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00) n = 0x00 0x03 ≤ n ≤ 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 3 rows the command sequence is the following: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x42 0x03								



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

<GS ( k>

Specify the width of a module of PDF417 barcode

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[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

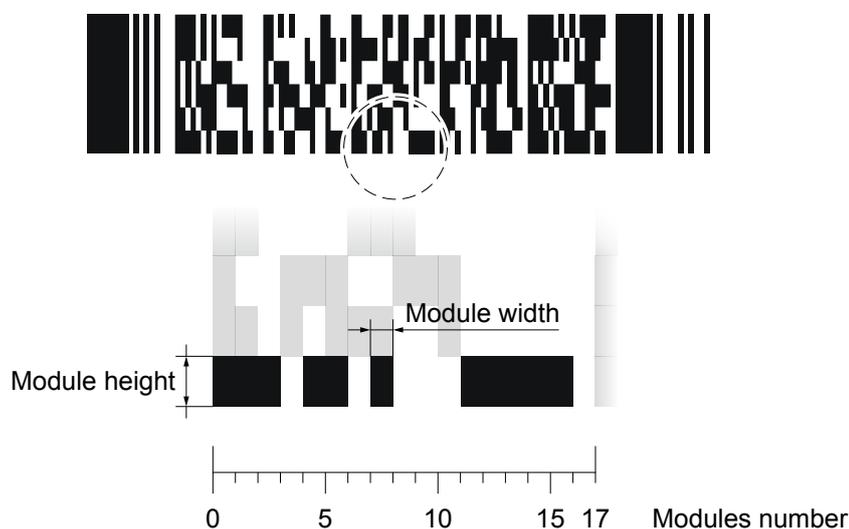
[Description] Specifies the width of a module of PDF417 barcode.  
 pL and pH specify the number of successive bytes to be sent.

[Notes] Settings are effective until [0x1B 0x40](#) is executed or the device is reset or turned off.

[Default] n = 0x03

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

[Example] To define width 4 the command sequence is the following:  
 0x1D 0x28 0x6B 0x03 0x00 0x30 0x43 0x04

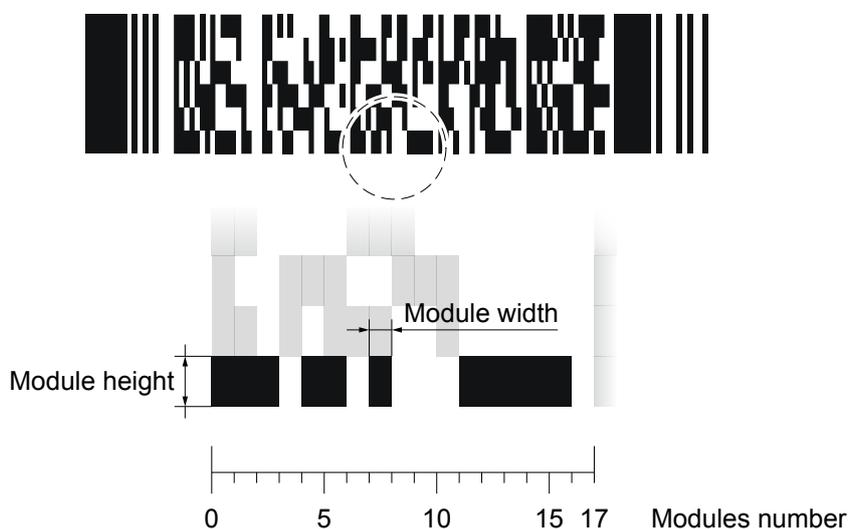


## 0x1D 0x28 0x6B [fn 068]

<GS ( k>

Specify the height of PDF417 barcode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[Format]	Hex	1D	28	6B	pL	pH	30	44	n
	ASCII	GS	(	k	pL	pH	0	D	n
[Range]	$(pL + pH \times 256) = 3$ (pL = 0x03, pH = 0x00) $0x02 \leq n \leq 0x08$								
[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 <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 define height 4 the command sequence is the following: 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	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[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.
	<ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• The error correction level is specified by “level” when m = 0x30.</li> <li>• The error correction level is specified by “ratio” when m = 0x31 [n × 10%].</li> </ul>

[Notes]	<ul style="list-style-type: none"> <li>• Error correction level is specified by either “level” or “ratio”.</li> <li>• 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.</li> </ul>
---------	---

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 define error correction = 0.2, the command sequence is the following:  
0x1D 0x28 0x6B 0x03 0x00 0x30 0x45 0x30 0x02



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

<GS ( k>

Store the PDF417 barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF									
[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]	<p>Stores the data (d1...dk) in the barcode save area for printing in PDF417 format.</p> <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>. The data in the barcode save area are reserved after processing <a href="#">Function 081</a>.</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 and prints the PDF417 barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[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 the device is “at the beginning of a line” or “there is no data in the print buffer”.</li> <li>• pL and pH specify the number of successive bytes to be sent</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 065]

<GS ( k>

Specify encoding scheme of QRcode barcode

Valid for  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

[Format]            Hex            1D    28    6B    pL    pH    31    41    n  
                       ASCII            GS    (    k    pL    pH    1    A    n

[Range]            (pL+pH × 256) = 3            (pL = 0x03, pH = 0x00)  
 0x00 ≤ n ≤ 0x01

[Description]        Specifies encoding type of QRcode barcode.  
 pL and pH specify the number of successive bytes to be sent.

n	ENCODING SCHEME
0x00	QRcode
0x01	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.
- 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]            n = 0x00

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

[Example]



QRcode



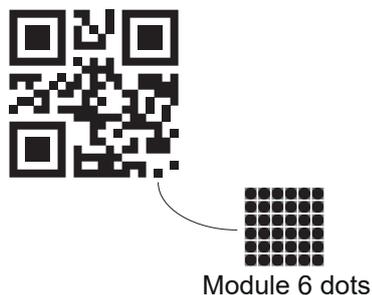
MicroQR

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

<GS ( k>

Specify dot size of the module of the QRcode barcode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[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) 0x02 ≤ n ≤ 0x12								
[Description]	Specifies numbers of dot for each pixel of QRcode barcode.								
[Notes]	pL and pH specify the number of successive bytes to be sent								
[Default]	n = 0x00								
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]									





# 0x1D 0x28 0x6B [fn 067]

<GS ( k>

Specify QRcode barcode size

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	28	6B	pL	pH	31	43	n
ASCII	GS	(	k	pL	pH	1	C	n

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

[Description] Specifies QRcode barcode eversion, as follows:

n	VERSION	n	VERSION	n	VERSION
0x00	AUTO	0x0E	V14	0x1C	V28
0x01	V1	0x0F	V15	0x1D	V29
0x02	V2	0x10	V16	0x1E	V30
0x03	V3	0x11	V17	0x1F	V31
0x04	V4	0x12	V18	0x20	V32
0x05	V5	0x13	V19	0x21	V33
0x06	V6	0x14	V20	0x22	V34
0x07	V7	0x15	V21	0x23	V35
0x08	V8	0x16	V22	0x24	V36
0x09	V9	0x17	V23	0x25	V37
0x0A	V10	0x18	V24	0x26	V38
0x0B	V11	0x19	V25	0x27	V39
0x0C	V12	0x1A	V26	0x28	V40
0x0D	V13	0x1B	V27		

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

[Default] n = 0x00

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

[Example]

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

<GS ( k>

Specify the error correction level of the QRcode barcode

Valid for  
K3 STD  
K3 DSP  
K3 HS  
K3 HS LF

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

[Range]  $(pL+pH \times 256) = 3$  ( $pL = 0x04, pH = 0x00$ )  
 $0x00 \leq n \leq 0x04$

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

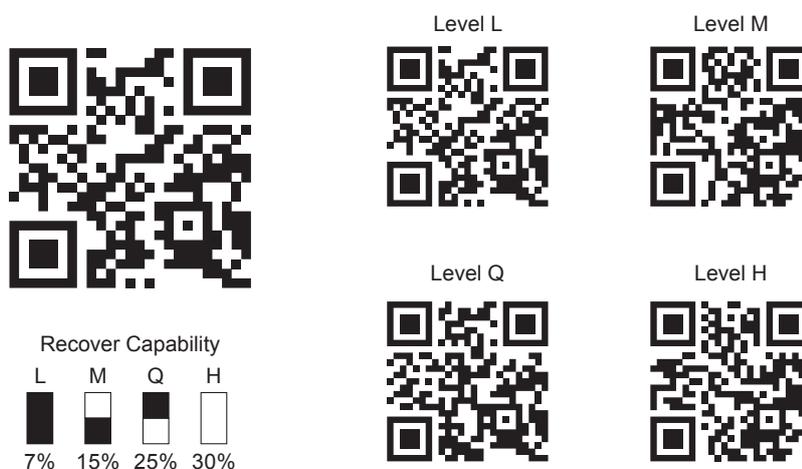
n	ECC level	
0x00	AUTO	
0x01	ECC = approx 20% of barcode	Recovery Capacity = approx 7%
0x02	ECC = approx 37% of barcode	Recovery Capacity = approx 15%
0x03	ECC = approx 50% of barcode	Recovery Capacity = approx 25%
0x04	ECC = approx 65% of barcode	Recovery Capacity = approx 30%

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

[Default] n = 0x00

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

[Example]





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

<GS ( k>

Store the QRcode barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF									
[Format]	Hex	1D	28	6B	pL	pH	31	50	31	d1...dk
	ASCII	GS	(	k	pL	pH	1	P	1	d1...dk
[Range]	$0x00 \leq d \leq 0xFF$ $k = (pL + pH \times 256) - 3$ <ul style="list-style-type: none"> <li>QRcode barcode only with binary characters (8 bit):  <math>4 \leq (pL + pH \times 256) \leq 2957</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x0B</math>)</li> <li>QRcode barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 4300</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x10</math>)</li> <li>QRcode barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 7093</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x1B</math>)</li> </ul>									
[Description]	Store the QRcode barcode data (d1...dk) in the barcode save area.									
[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>. The data in the barcode save area are reserved after processing <a href="#">Function 081</a>.</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 081]

<GS ( k>

Prints the QRcode barcode data

---

Valid for	K3 STD								
	K3 DSP								
	K3 HS								
	K3 HS LF								

---

[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 QRcode barcode in the current position.

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

[Default]

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

[Example]



## 0x1D 0x28 0x6B [fn 365]

<GS ( k>

Specify the encoding scheme of DATAMATRIX barcode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	28	6B	pL	pH	33	41	n
ASCII	GS	(	k	pL	pH	3	A	n

[Range]

$(pL+pH \times 256) = 3$        $(pL = 0x03, pH = 0x00)$   
 $0x00 \leq n \leq 0x06$

[Description]

Set the encoding scheme specified by n as follows:

n	ENCODING
0x00	Ascii
0x01	C40
0x02	Text
0x03	X12
0x04	Edifact
0x05	Base256
0x06	AutoBest

[Notes]

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

[Default]

[Reference]

[0x1D 0x28 0x6B](#)

[Example]

To set encoding = Ascii, the command sequence is:  
0x1D 0x28 0x6B 0x03 0x00 0x33 0x41 0x00



## 0x1D 0x28 0x6B [fn 366]

<GS ( k>

### Set rotation of DATAMATRIX barcode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	28	6B	pL	pH	33	42	n
ASCII	GS	(	k	pL	pH	3	B	n

[Range] (pL+pH × 256) = 3 (pL = 0x03, pH = 0x00)  
n = 0x00, 0x01

[Description] Set rotate by n as follows:

n	ROTATION
0x00	Nessuna rotazione
0x01	Rotazione

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

[Default]

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

[Example]



## 0x1D 0x28 0x6B [fn 367]

<GS ( k>

Set dot size of the module of DATAMATRIX barcode

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[Format]	Hex	1D	28	6B	pL	pH	33	43	n
	ASCII	GS	(	k	pL	pH	3	C	n
[Range]	(pL+pH × 256) = 3 (pL = 0x03, pH = 0x00) 0x02 ≤ n ≤ 0x18								
[Description]	Set dot size of the module of the DATAMATRIX barcode. n = dot dimension								
[Notes]	pL and pH specify the number of successive bytes to be sent.								
[Default]	n = 0x06								
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]	To set dot size = 6 the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x33 0x43 0x06								



## 0x1D 0x28 0x6B [fn 368]

<GS ( k>

### Set size of DATAMATRIX barcode

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	28	6B	pL	pH	33	44	n
	ASCII	GS	(	k	pL	pH	3	D	n

[Range]	(pL + pH × 256) = 3	(pL = 0x03, pH = 0x00)
	0x01 ≤ n ≤ 0x1D	

[Description] Set the size of DATAMATRIX barcode specified by n as follows:

n	BARCODE SIZE	n	BARCODE SIZE
0x01	10 x 10	0x10	64 x 64
0x02	12 x 12	0x11	72 x 72
0x03	14 x 14	0x12	80 x 80
0x04	16 x 16	0x13	88 x 88
0x05	18 x 18	0x14	96 x 96
0x06	20 x 20	0x15	104 x 104
0x07	22 x 22	0x16	120 x 120
0x08	24 x 24	0x17	132 x 132
0x09	26 x 26	0x18	144 x 144
0x0A	32 x 32	0x19	8 x 18
0x0B	36 x 36	0x1A	8 x 32
0x0C	40 x 40	0x1B	12 x 26
0x0D	44 x 44	0x1C	12 x 36
0x0E	48 x 48	0x1D	16 x 36
0x0F	52 x 52		

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

[Default] DmtxSymbolSquareAuto

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

[Example]



## 0x1D 0x28 0x6B [fn 380]

<GS ( k>

Store the DATAMATRIX barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF									
[Format]	Hex	1D	28	6B	pL	pH	33	50	33	d1...dk
	ASCII	GS	(	k	pL	pH	3	P	3	d1...dk
[Range]	$0x00 \leq d \leq 0xFF$ $k = (pL + pH \times 256) - 3$ <ul style="list-style-type: none"> <li>DATAMATRIX barcode only with ASCII characters (8 bit) :  <math>4 \leq (pL + pH \times 256) \leq 1560</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x06</math>)</li> <li>DATAMATRIX barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 2339</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x09</math>)</li> <li>DATAMATRIX barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 3120</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x0C</math>)</li> </ul>									
[Description]	Store the DATAMATRIX barcode data (d1...dk) in the barcode save area.									
[Notes]	<ul style="list-style-type: none"> <li>Data stored in the barcode save area by this function are processed by <a href="#">Function 381</a>. The data in the barcode save area reserved after processing <a href="#">Function 381</a>.</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. Be sure not to include the control data in the data d1...dk because they are added automatically by the device.</li> </ul>									
[Default]										
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]										



## 0x1D 0x28 0x6B [fn 381]

<GS ( k>

Encodes and prints the DATAMATRIX barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF								
[Format]	Hex	1D	28	6B	pL	pH	33	51	33
	ASCII	GS	(	k	pL	pH	3	Q	3
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00)								
[Description]	Encodes and prints the DATAMATRIX barcode data in the barcode save area.								
[Notes]	<ul style="list-style-type: none"> <li>• In standard mode, use this function when the device is “at the beginning of a line” or “there is no data in the print buffer”.</li> <li>• pL and pH specify the number of successive bytes to be sent</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.</li> <li>• There is no data (Function 380 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>								
[Default]									
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]	To print the DATAMATRIX barcode data the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x33 0x51 0x33								



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

<GS ( k>

Specify encoding scheme of AZTEC barcode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	28	6B	pL	pH	34	41	n
ASCII	GS	(	k	pL	pH	4	A	n

[Range] (pL+pH × 256) = 3 (pL = 0x03, pH = 0x00)  
0x00 ≤ n ≤ 0x01

[Description] Specifies encoding type of AZTEC barcode.

n	ENCODING SCHEME
0x00	FULL AZTEC
0x01	AZTEC RUNE

[Notes]

- Full Aztec: Encode all extended ASCII characters data up to a maximum length of approximately 3823 numeric or 3067 alphabetic characters or 1914 bytes of data.
- pL and pH specify the number of successive bytes to be sent
- Aztec Rune (Compact Aztec Code, sometimes called Small Aztec Code): Encode all numbers from 0 to 255 up to a maximum length of 3 numbers.

[Default] n = 0x00

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

[Example]



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

<GS ( k>

Specify dot size of the module of the AZTEC barcode

---

Valid for	K3 STD									
	K3 DSP									
	K3 HS									
	K3 HS LF									

---

[Format]	Hex	1D	28	6B	pL	pH	34	43	n	
	ASCII	GS	(	k	pL	pH	4	C	n	

[Range] (pL+pH × 256) = 3 (pL = 0x03, pH = 0x00)  
0x02 ≤ n ≤ 0x18

[Description] Specifies numbers of dot for each pixel of AZTEC barcode.

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

[Default] n = 0x00

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

[Example]



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

<GS ( k>

Specify AZTEC barcode size

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

[Format]	Hex	1D	28	6B	pL	pH	34	44	n
	ASCII	GS	(	k	pL	pH	4	D	n

[Range]	(pL+pH × 256) = 3	(pL = 0x03, pH = 0x00)
	0x00 ≤ n ≤ 0x24	

[Description] Specifies AZTEC barcode format (rows and columns), as follows:

n	FORMAT	n	FORMAT	n	FORMAT
0x00	AUTO	0x0D	C53x53	0x1A	C109x109
0x01	C15x15 Compact	0x0E	C57x57	0x1B	C113x113
0x02	C19x19 Compact	0x0F	C61x61	0x1C	C117x117
0x03	C23x23 Compact	0x10	C67x67	0x1D	C121x121
0x04	C27x27 Compact	0x11	C71x71	0x1E	C125x125
0x05	C19x19	0x12	C75x75	0x1F	C131x131
0x06	C23x23	0x13	C79x79	0x20	C135x135
0x07	C27x27	0x14	C83x83	0x21	C139x139
0x08	C31x31	0x15	C87x87	0x22	C143x143
0x09	C37x37	0x16	C91x91	0x23	C147x147
0x0A	C41x41	0x17	C95x95	0x24	C151x151
0x0B	C45x45	0x18	C101x101		
0x0C	C49x49	0x19	C105x105		

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

[Default] n = 0x00

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

[Example]



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

<GS ( k>

Specify the error correction level of the AZTEC barcode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1D	28	6B	pL	pH	34	45	n
ASCII	GS	(	k	pL	pH	4	E	n

[Range] (pL+pH × 256) = 4 (pL = 0x04, pH = 0x00)  
0x00 ≤ n ≤ 0x04

[Description] Specifies the ECC level (Error Correction Capacity) of AZTEC barcode.

N	ECC LEVEL
0x00	AUTO
0x01	> 10 % + 3 codewords
0x02	> 23 % + 3 codewords
0x03	> 36 % + 3 codewords
0x04	> 50 % + 3 codewords

It is not possible to select both barcode size and error correction capacity for the same barcode. If both options are selected then the error correction capacity selection will be ignored.

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

[Default] n = 0x00

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

[Example]



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

<GS ( k>

Store the AZTEC barcode data in the barcode save area

Valid for	K3 STD K3 DSP K3 HS K3 HS LF									
[Format]	Hex	1D	28	6B	pL	pH	34	50	34	d1...dk
	ASCII	GS	(	k	pL	pH	4	P	4	d1...dk
[Range]	$0x00 \leq d \leq 0xFF$ $k = (pL + pH \times 256) - 3$ <ul style="list-style-type: none"> <li>AZTEC barcode only with ASCII characters:  <math>4 \leq (pL + pH \times 256) \leq 1918</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x07</math>)</li> <li>AZTEC barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 3071</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x0B</math>)</li> <li>AZTEC barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 3836</math> (<math>0x00 \leq pL \leq 0xFF</math>, <math>0x00 \leq pH \leq 0x0E</math>)</li> </ul>									
[Description]	Store the AZTEC barcode data (d1...dk) in the barcode save area.									
[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>. The data in the barcode save area are reserved after processing <a href="#">Function 081</a>.</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 081]

<GS ( k>

Prints the AZTEC barcode data

---

Valid for	K3 STD								
	K3 DSP								
	K3 HS								
	K3 HS LF								

---

[Format]	Hex	1D	28	6B	pL	pH	34	51	30
	ASCII	GS	(	k	pL	pH	4	Q	0

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

[Description] Prints the AZTEC barcode in the current position.

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

[Default]

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

[Example]



## 0x1D 0x48

<GS H>

### Select printing position of HRI characters

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]	$0x00 \leq n \leq 0x03$
	$0x30 \leq n \leq 0x33$

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

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



Below the barcode



Both above and below the barcode





# 0x1D 0x66

<GS f>

## Select font for HRI characters

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[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 barcode 1D, 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 the height of the 1D barcode

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]            0x01 ≤ n ≤ 0xFF

[Description]     Sets the height of the barcode 1D.  
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 barcode

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[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:  $0x00 \leq m \leq 0x08$   
 $m = 0x14$

Format 2:  $0x41 \leq m \leq 0x49$   
 $m = 0x5A$

[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	$0x0B \leq k \leq 0x0C$	$0x30 \leq d \leq 0x39$
0x01	UPC-E	$0x0B \leq k \leq 0x0C$	$0x30 \leq d \leq 0x39$
0x02	EAN13 (JAN)	$0x0C \leq k \leq 0x0D$	$0x30 \leq d \leq 0x39$
0x03	EAN8 (JAN)	$0x07 \leq k \leq 0x08$	$0x30 \leq d \leq 0x39$
0x04	CODE39	$0x01 \leq k$	$0x30 \leq d \leq 0x39$ , $0x41 \leq d \leq 0x5A$ , 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x05	ITF	$0x01 \leq k$ (even number)	$0x30 \leq d \leq 0x39$
0x06	CODABAR	$0x01 \leq k$	$0x30 \leq d \leq 0x39$ , $0x41 \leq d \leq 0x44$ , 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x07	CODE93	$0x01 \leq k \leq 0xFF$	$0x01 \leq d \leq 0x7F$
0x08	CODE128	$0x02 \leq k \leq 0xFF$	$0x01 \leq d \leq 0x7F$
0x14	CODE32	$0x08 \leq k \leq 0x09$	$0x30 \leq d \leq 0x39$



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
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 (emphasized, double-strike, underline or character size), except for upside-down and justification mode.

Format 1:

- This command ends with a NUL code.
- When the barcode system used is UPC-A or UPC-E, the 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:

- 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											PRINTING 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 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 the width of the 1D barcode

Valid for  
 K3 STD  
 K3 DSP  
 K3 HS  
 K3 HS LF

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

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

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

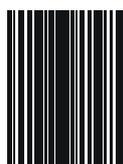
n	MODULE WIDTH ( mm )
0x01	0.125
0x02	0.25
0x03	0.375
0x04	0.5
0x05	0.625
0x06	0.75

[Notes]

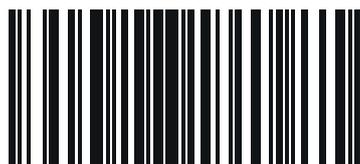
[Default]            n = 0x03

[Reference]         [0x1D 0x68](#)

[Example]



n = 0x01



n = 0x03



# MACRO FUNCTIONS

## 0x1D 0x3A

<GS :>

### Start or end of macro definition

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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 2048 bytes. If the macro definition exceeds 2048 bytes, excess data is not stored.

[Default]

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

[Example]



## 0x1D 0x5E

<GS ^>

### Execute macro

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
[Format]	Hex            1D    5E    r    t    m ASCII          GS    ^    r    t    m
[Range]	0x00 ≤ r ≤ 0xFF 0x00 ≤ t ≤ 0xFF 0x0 ≤ m ≤ 0x1
[Description]	Executes a macro. <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: When the Least Significant Bit (LSB) of m = 0, the macro is executed r times continuously at the interval specified by t. 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>
[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 0, 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]	



# COMMANDS FOR MECHANISM CONTROL

## 0x1B 0x69

<ESC i>

### Total cut

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	69
	ASCII	ESC	i

### [Range]

[Description] This command enables autocutter operation and executes a total cut.

[Notes] The device waits to complete all paper movement commands before it executes a total cut.

### [Default]

### [Reference]

### [Example]



## 0x1B 0x6D

<ESC m>

### Partial cut

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	6D
	ASCII	ESC	m

[Range]

[Description] This command enables autocutter operation and executes a partial cut.

[Notes] The device waits to complete all paper movement commands before it executes a partial cut.

[Default]

[Reference]

[Example]



# 0x1D 0x56

<GS V>

## Select cut mode

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format 1]	Hex	1D	56	m	
	ASCII		GS	V	m

[Format 2]	Hex	1D	56	m	n
	ASCII		GS	V	m n

[Range]	Format 1:	m = 0x00, 0x01, 0x30, 0x31
	Format 2:	m = 0x41, 0x42 0x00 ≤ n ≤ 0xFF

[Description] Selects cut mode and executes the cut command. m selects cut mode as follows:

m	FUNCTION
0x00, 0x30	Total cut.
0x01, 0x31	Partial cut.
0x41	Form feed [cut position + ( n × vertical motion unit)] and total cut
0x42	Form feed [cut position + ( n × vertical motion unit)] and partial cut.

- [Notes]
- This command is only enabled if set at the beginning of the line.
  - If you execute the command, disable the parameter "Total Cut", the cut will be partial. If you want to effect a total cut you have to enable the parameter on the Set Up.

[Default]

[Reference] [0x1B 0x69](#), [0x1B 0x6D](#)

[Example]



# LOGOS MANAGEMENT COMMANDS

## 0x1B 0xFF

Receive the graphic page from the communication port

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	FF	n	nL	nH
ASCII	ESC	0xFF	n	nL	nH

[Range]

n = 0x01, 0x02  
 0x00 ≤ nL, nH ≤ 0xFF

[Description]

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

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

[Notes]

- The images are saved in FlashDisk as Pict1.bmp (bank 1) and Pict2.bmp (bank 2).
- For serial communication, set parameter “RS232 handshaking” to “Hardware” (see the user manual of the device).
- The number of received data bytes is [nL + (nH × 256)] × 2.
- Every word is received first as MSByte and then as LSByte.
- If [nL + (nH × 256)] is more than 65520, the following data are processed as normal data.
- In the horizontal dotline there are 36 words.
- The flash bank for graphic print dimensions are: 576 horizontal dots (72 bytes/line) × 910 vertical dots (65520 bytes).

[Default]

[Reference]

[Example]



## 0x1C 0x93

### Print logo

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	93	nH	nL	opt	sp	posH	posW
	ASCII	FS	0x93	nH	nL	opt	sp	posH	posW

[Range] 0x00 ≤ nH, nL ≤ 0xFF

[Description] Prints logo defined by n.

- n is the number of image to print;
- opt is the option byte that specifies justification and rotation as shown in the following table:

BIT	DESCRIPTION	BIN	FUNCTION
0,1	Justification	00	Left
		01	Center
		10	Right
		11	User Define (on the basis of position specified by posH and posW)
2, 3	N.U.	00	Not used.
4, 6	N.U.	00	Not used.
7	Rotated print	0	Print normal.
		1	Print rotate.

- sp specifies the thickness of the image border.
- posH, posL specifies the logo's horizontal position (from the left border); used only with user-defined justification.

[Notes]

[Default]

[Reference]



[Example]

Example 1:

To print logo number 10 centered and rotated transmits :

0x1C 0x93 0x00 0x0A 0x81 0x01 0x00 0x00

where

0xC 0x93 //print logo command

0x00 0x0A //Logo no. 10

0x81 //printing rotated and centered

0x01 //1 pixel of image border

0x00 0x00 //Positioning not used

Example 2:

To print logo number 10 not rotated and with a user-defined printing position transmits:

0x1C 0x93 0x00 0x0A 0x03 0x01 0x00 0x50

where

0x1C 0x93 //print logo command

0x00 0x0A //Logo no. 10

0x03 //printing with a user define positioning and not rotated

0x01 //1 pixel of image border

0x00 0x50 //Printing 10mm from the left border



# MISCELLANEOUS COMMANDS

## 0x10 0x05

<DLE ENQ>

Real-time request to device

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	10	05	n
ASCII	DLE	ENQ	n

[Range]  $0x01 \leq n \leq 0x02$

[Description] Responds to a request from the host computer, n specifies the request as follows:

n	Request
0x01	Recover from an error and restart printing from the line where the error occurred
0x02	Recover from an error after clearing the receive and print buffers

- [Notes]
- This command is effective only when an auto-cutter error occurs.
  - The device starts processing data upon receiving this command.
  - This command is executed even when the device is off-line, the receive buffer is full, or there is an error status.
  - This command can not be executed when the device is busy.
  - The status is also transmitted whenever the data sequence of 0x10 0x05 n ( $0x01 \leq n \leq 0x02$ ) is received.

Example:

0x1B 0x2A m nL nH dk, d1 = 0x10, d2 = 0x05, d3 = 0x01

- This command should not be contained within another command that consists of two or more bytes.



Example:

If you attempt to transmit `0x1B 0x33 n` to the device, but DTR (DSR for the host computer) goes to MARK before `n` is transmitted, and `0x10 0x05 2` interrupts before `n` is received, the code `0x10 0x10 0x05 0x02` is processed as the code for `0x1B 0x33 0x10`.

- `0x10 0x05 0x02` enables the device to recover from an error after clearing the data in the receive buffer and the print buffer. The device retains the settings (by `0x1B 0x21`, `0x1B 0x33`, etc.) that were in effect when the error occurred. The device can be initialized completely by using this command and `0x1B 0x40`. This command is enabled only for errors that have the possibility of recovery, except for print head temperature error.

- When the device is disabled with `0x1B 0x3D` (Select peripheral device), the error recovery functions (`0x10 0x05 0x01` and `0x10 0x05 0x02`) are enabled, and the other functions are disabled.

[Reference] `0x10 0x04`

[Example]



## 0x10 0x14 0x01

<DLE DC4>

### Generate pulse at real-time

Valid for	K3 STD K3 DSP K3 HS K3 HS LF					
[Format]	Hex	10	14	01	n	t
	ASCII	DLE	DC4	0x01	n	t
[Range]	n = 0x00, 0x01, 0x30, 0x31 0x01 ≤ t ≤ 0x08					
[Description]	Outputs the pulse specified by the connector pin 2 as follows. The pulse ON time is [t x 100 ms] and the OFF time is [t x 100 ms]. n = 0x00, 0x30 refers to the drawer 0 n = 0x01, 0x31 refers to the drawer 1					
[Notes]	<ul style="list-style-type: none"> <li>• When the device is in an error status when this command is processed, this command is ignored.</li> <li>• When the pulse is output to the connector pin specified while <a href="#">0x1B 0x70</a> or <a href="#">0x10 0x04</a> is executed while this command is processed, this command is ignored.</li> <li>• The device executes this command upon receiving it.</li> <li>• This command is executed even when the device is off-line, the receive buffer is full, or there is an error status.</li> <li>• This command cannot be executed when the device is busy.</li> <li>• If print data includes the same character strings as this command, the device performs the same operation specified by this command. The user must consider this.</li> <li>• This command should not be used within the data sequence of another command that consists of 2 or more bytes.</li> <li>• This command is effective even when the device is disabled with <a href="#">0x1B 0x3D</a> (Select peripheral device).</li> </ul>					
[Reference]	<a href="#">0x1B 0x70</a>					
[Example]						



## 0x1B 0x3D

<ESC =>

### Select peripherals device

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range] **K3 STD, K3 HS, K3 HS LF**  
 $0x01 \leq n \leq 0x03$

**K3 DSP**  
 $0x01 \leq n \leq 0x04$

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

#### **K3 STD, K3 HS, K3 HS LF**

n	FUNCTION
0x01, 0x03	Device enabled
0x02	Enable external display

#### **K3 DSP**

n	FUNCTION
0x01, 0x03	Enable device
0x02	Enable external display
0x04	Enable integrated display

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

[Default] n = 0x01

[Reference]

[Example]



## 0x1B 0x40

<ESC @>

### Initialize the device

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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>

Enable or disable the front panel keys

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	63	35	n
	ASCII	ESC	c	5	n

[Range] n = 0x00, 0x01

[Description] Enables or disables the keys of the front panel:

n	FUNCTION
0x00	Enables front panel keys
0x01	Disables front panel keys

[Notes]

[Default] n = 0x00

[Reference]

[Example]



## 0x1B 0x6F

<ESC o>

Open the device cover

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	6F
	ASCII	ESC	o

[Range]

[Description] Open the device cover.

[Notes]

[Default]

[Reference]

[Example]



## 0x1B 0x70

<ESC p>

Generate pulse on the drawer connector

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	70	m	t1	t2
	ASCII	ESC	p	m	t1	t2

[Range] m = 0x00, 0x01, 0x03, 0x031  
 0x00 ≤ t1 ≤ 0xFF  
 0x00 ≤ t2 ≤ 0xFF

[Description] Outputs the pulse specified by t1 and t2 to connector pin m as follows:

m	CONNECTOR PIN
0x00, 0x30	Drawer kick-out connector pin 2 (cash drawer 1)
0x01, 0x31	Drawer kick-out connector pin 5 (cash drawer 2)

[Notes] • The pulse ON time is [t1 × 2 ms] and the OFF time is [t2 × 2 ms].  
 • If t2 < t1, the OFF time is [t1 × 2 ms].

[Default]

[Reference]

[Example]



## 0x1B 0xFA

### Print graphic (576x910 dots)

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

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

[Range]	$0x00 \leq n \leq 0x02$
	$0x00 \leq xH, xL, yH, yL \leq 0xFF$

[Description] Prints graphic logo from flash or current graphic page located in ram. n selects the graphic source 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 910.  
 $xL + xH \times 256$  specifies the starting dotline ( $1 \div 910$ ).  
 $yL + yH \times 256$  specifies the number of lines to print.  
 • If  $(xL + (xH \times 256)) > 910$  the device does not execute the command.  
 • If  $(xL + (xH \times 256) + yL + (yH \times 256)) > 910$  the device prints only  $862 - xL + (xH \times 256) + 1$  dotline.

[Default]

[Reference]

[Example]



## 0x1B 0xFD

### Receive graphic page from communication port

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[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]

- The number of data bytes received is [nL + (nH × 256)] × 2.
- Each word is first received as MSByte and then as LSByte.
- If [nL + (nH × 256)] is greater than 32768, the data which follows is processed as normal data.
- The flash bank dimensions for the graphic print are 576 horizontal dots (72 bytes/dot line) × 910 verticals dots (65520 bytes).

[Default]

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

[Example]



## 0x1C 0x44

<FS D>

### Print head test

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	44
	ASCII	FS	D

[Range]

[Description] The device returns two bytes that represent the number of print head dots not working.

[Notes] If the "Print Head Test" parameter of the setup is set on "Disabled", the device performs the print head test before sending the answer, otherwise it returns the data of the test run at power up of the device (see the user manual of the device).

[Default]

[Reference]

[Example]



# 0x1C 0x4D

<FS M>

## Set mass storage

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[Format]

Hex	1C	4D	m
ASCII	FS	M	m

[Range] n = 0x00, 0x01

[Description] Enable or disable the mass storage function in RAM according to m value:

m	FUNCTION
0x00	Disable mass storage
0x01	Enable mass storage

[Notes]

[Default] n = 0x00

[Reference]

[Example]



## 0x1C 0xB0

### Send commands to the display

---

Valid for	K3 DSP				
[Format]	Hex	1C	B0	n	b1...bn
	ASCII	FS	0xB0	n	b1...bn
[Range]	$0x00 \leq n \leq 0xFF$				
[Description]	This command works as a pass through to the display for the n successive bytes to be sent. b1...bn commands bytes sent to the display.				
[Notes]					
[Default]					
[Reference]	See the commands manual of the display				
[Example]	0x1C 0xB0 0x06 0x0B 0x48 0x45 0x4C 0x4C 0x4F send 6 bytes to display HOME position + "HELLO" text				



## 0x1C 0xC0 0x07

Emits an acoustic signalling

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	C0	07
	ASCII	FS	0xC0	0x07

[Range]

[Description] When this command is received the device emits a beep as acoustic signalling.

[Note]

[Default]

[Reference]

[Example]



## 0x1C 0xC0 0xFF

Emits an acoustic signalling in base of device status

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1C	C0	FF	n
ASCII	FS	0xC0	0xFF	n

[Range]

[Description] Transmits an acoustic signalling in base of the device status as indicated by n value:

BIT	OFF/ON	HEX	FUNCTION
0	On	01	If paper end is detected a 'beep' signal is emitted
1	On	02	If low paper is detected a 'beep' signal is emitted
2	On	04	If cover open is detected a 'beep' signal is emitted
3	-	-	Not defined.
4	-	-	Not defined.
5	-	-	Not defined.
6	-	-	Not defined.
7	-	-	Not defined.

[Note] The acoustic signalling is emitted when the event defined by n value is generated.

[Default]

[Reference]

[Example]



# 0x1D 0x49

<GS I>

## Transmit device ID

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[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	Depends on ROM version (4 character)
0xFF	Device model ID (2 bytes)	0x02 0x0A

n = 0x02, 0x32 Type ID

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	2-byte character codes not supported
1	Off	00	Autocutter not supplied Autocutter supplied
2	Off	00	Thermal paper w/o label Thermal paper with label
3	-	00	Undefined.
4	Off	00	Not used. Fixed to Off.
5	-	00	Undefined.
6	-	00	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	K3 STD K3 DSP K3 HS K3 HS LF				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	0x00 ≤ nL, nH ≤ 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 0x24</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> <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 0x24</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 0xD0

### Set horizontal and vertical motion units

---

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

---

[Format]	Hex            1D    D0    xH    xL    yH    yL ASCII           GS    0xD0 xH    xL    yH    yL
[Range]	$0x0000 \leq (xH \times 256) + xL \leq 0x07F8$ $0x0000 \leq (yH \times 256) + yL \leq 0x0FF0$
[Description]	Sets the horizontal and vertical motion units to $1/((xH \times 256) + xL)$ inch and $1/((yH \times 256) + yL)$ 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="#">0x1D 0x4C</a>, <a href="#">0x1D 0x57</a> Commands using y : <a href="#">0x1B 0x4A</a>, <a href="#">0x1B 0x33</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 0x4A</a> , <a href="#">0x1D 0x4C</a> , <a href="#">0x1D 0x57</a> , <a href="#">0x1D 0xD0</a>
[Example]	



## 0x1D 0xE6

### Virtual paper-end limit

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	E6	nH	nL
	ASCII	GS	0xE6	nH	nL

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

[Description] This command sets the limit, expressed in cm as  $[(nH \times 256) + nL]$ , after which is pointed out the virtual paper-end.

[Notes]

[Default] nH = 0x00  
nL = 0xF0

[Reference]

[Example] To see the virtual paper-end is pointed out after 15 metres from the first detection of near paper end, it's necessary convert 15 metres in 1500 centimetres and then, calculate nH and nL value in the following mode:

$$nH = 1500 / 256 = 5$$
$$nL = 1500 - (nH \times 256) = 1500 - (5 \times 256) = 220$$

and then send the following command:  
0x1D 0xE6 0x05 0xDC



## 0x1D 0xF0

### Set print mode

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[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]

Printing speed reverts to the default value when the device is reset or turned off.

[Default]

n = 0x01

[Reference]

[Esempio]



# COMMANDS FOR TRUE TYPE FONT

## 0x1C 0x65

<FS e>

### Enable/Disable encoding

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1C	65	n
	ASCII	FS	e	n

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

[Description] Enable or disable the text encoding based on the value of n as follows:

n	ENCODING
0x00, 0x30	Disabled
0x01, 0x31	Enable UTF-8
0x02, 0x32	Enable UTF-16

- [Notes]
- This command is valid only for TrueType fonts of monospace type.
  - If the text encoding is disabled, manage the characters coding by [0x1B 0x52](#) and [0x1B 0x74](#) commands.
  - If the text encoding is enabled, the character's addressing respects the UNICODE standard (see [www.unicode.org](http://www.unicode.org)).

[Default] n = 0x00

[Reference] [0x1B 0x52](#), [0x1B 0x74](#), [0x1C 0x66](#)

[Example]



# 0x1C 0x66

<FS f>

## True Type font management

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

[Format]

Hex	1C	66	m	n	d[0]...d[n]
ASCII	FS	f	m	n	d[0]...d[n]

[Range]

0x00 ≤ m ≤ 0xFF  
 0x00 ≤ n ≤ 0x40

[Description] Manage the TrueType fonts based on the value of m as follows:

m (BIT)	FUNCTION
0	Check glyph width
1	TTF enable hinting
2	Not used
3	Not used
4	Re-enable TrueType font
5	Disable TrueType font
6	De-init TrueType font
7	Clear all

n = name length of the font to use  
 d[0]...d[n] = font name to use

[Notes]

- If “Check glyph width” is selected, for every character, the device checks if the glyph width is different from default width. In this case, the font will be not installed. The check may require some time (it depends on the characters number of the font).
- For “Hinting” means the font adaptation to the grid. When hinting enabled, the characters are more legible but some characters may be too high (for example, the accented capital letters). This bit is active only when you install a new font.
- “Re-enable” function re-enables a TrueType font previously disabled.
- “Disable” function disables a TrueType font.
- “De-init” function uninstalls a font and clears the memory used by the font. Use this function only when you intend to use the font more, otherwise use the “Disable” function to speed up operations.



- “Clear all” function uninstalls all the installed fonts.
- If command is successful the device transmits the ACK (0x06), otherwise return NACK (0x015).
- After “Disable”, “Re-enable” and “Clear-all” functions, do not pass the filename of the TrueType font.

[Default]

[Reference]

[Example]

Select the TrueType font with dimensions check, without hinting:

0x1C 0x66 0x02 0x0C “veramono.ttf”

Return to use the embedded fonts:

0x1C 0x66 0x20 0x00

Select the font previously disabled:

0x1C 0x66 0x10 0x00

Uninstall a TrueType font:

0x1C 0x66 0x40 0x0C



# ALIGNMENT COMMANDS

## 0x1D 0xE7

### Set black mark distance

---

Valid for	K3 STD K3 DSP K3 HS K3 HS LF
-----------	---------------------------------------

---

[Format]	Hex            1D    E7    nH    nL ASCII           GS    0xE7   nH    nL
[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].
[Notes]	<ul style="list-style-type: none"><li>• It's possible to put in the black mark distance maximum limit during the setup phase. The black mark distance value range goes from 0 to 99,9 mm.</li><li>• 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.</li><li>• The distance defined by this command is the same that can be set with the value of the "Black Mark Distance" during the setup of the device (see the user manual for further explanation).</li></ul>
[Default]	nH = 0x00 nL = 0x00
[Reference]	



[Example]

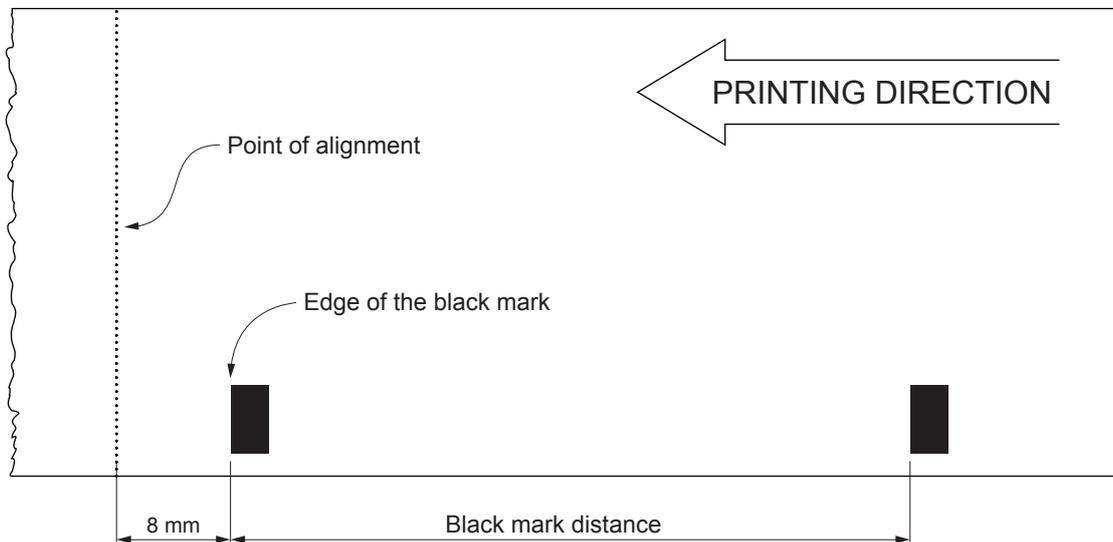
To set a distance of the alignment point from the black mark equal to 8 mm = 80 tenths of a millimeter, send the command:

```
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





## 0x1D 0xF6

Align at ticket with the print head

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	F6
	ASCII	GS	0xF6

[Range]

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

[Notes]

- Use the command [0x1D 0xE7](#) to set the distance between the edge of black mark and the alignment point (0 to 99.9 mm).
- Use this alignment command even to print more tickets without cutting.

[Default]

[Reference] [0x1D 0xE7](#), [0x1D 0xF8](#)

[Example]



## 0x1D 0xF8

Align the ticket with the autocutter

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1D	F8
	ASCII	GS	0xF8

[Range]

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

- [Notes]
- Use the command [0x1D 0xE7](#) to set the distance between the edge of the ticket and the alignment point (0 to 99.9 mm).
  - To work properly, you must send this command just before the cut command.

[Default]

[Reference] [0x1D 0xE7](#), [0x1D 0xF6](#)

[Example]



# DISPLAY MANAGEMENT COMMANDS

## 0x0A

<LF>

Move the cursor down

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	0A
	ASCII	LF

[Range]

[Description] Move the cursor down one line.

[Notes] When the cursor reached the lower line, this command operates differently depending on the display mode.

- Overwrite mode: The cursor is moved to the same column on the upper line.
- Vertical scroll mode: The characters display on the lower line are scrolled to the upper line, and the lower line is cleared. The cursor will remain at the same position.
- Horizontal scroll mode: The cursor will remain stationary.

[Default]

[Reference] [0x1F 0x01](#), [0x1F 0x02](#), [0x1F 0x03](#)

[Example]



## 0x0B

<HOM>

Move the cursor to the home position

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	0B
	ASCII	HOM

[Range]

[Description] The cursor will move to the left-end position of the upper line.

[Notes] The start position indicates the first column of the upper line.

[Default]

[Reference]

[Example]



## 0x0C

<FF>

### Clear display screen

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	0C
	ASCII	FF

[Range]

[Description] All the display characters will be cleared.

[Notes] After execution this command the cursor moves to the home position.

[Default]

[Reference]

[Example]



## 0x0D

<CR>

Move cursor to the home position

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	0D
	ASCII	HOM

[Range]

[Description] Moves the cursor to the begin of current line.

[Notes]

[Default]

[Reference]

[Example]



## 0x18

<CAN>

### Clear current line

---

Valid for	K3 DSP	
[Format]	Hex ASCII	18 CAN
[Range]		
[Description]	The current line is cleared.	
[Notes]	After execution this command the cursor moves to the left-end position of the current line.	
[Default]		
[Reference]		
[Example]		



## 0x1B 0x25

<ESC %>

### Select / Cancel user-defined characters

---

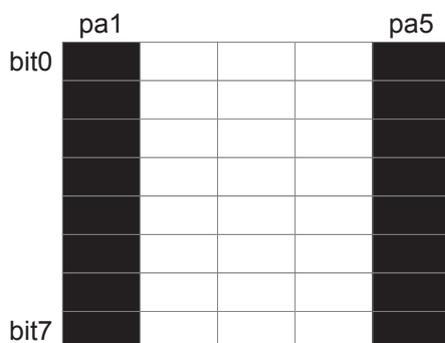
Valid for	K3 DSP			
[Format]	Hex	1B	25	n
	ASCII	ESC	%	n
[Range]	0x00 ≤ n ≤ 0x01			
[Description]	Selects or cancels the user-defined character set.			
[Notes]	<ul style="list-style-type: none"><li>• When n = 0x01, the user-defined character set is selected. When the user-defined character set is not defined using the <a href="#">0x1B 0x26</a> command, the internal character set is displayed.</li><li>• When n = 0x00, the user-defined character set is cancelled (the internal character set is selected). In this case, this command has no effect on the user-defined characters that have already been defined using the <a href="#">0x1B 0x26</a> command.</li><li>• This command has no effect on the characters already displayed.</li></ul>			
[Default]	n = 0x00			
[Reference]	<a href="#">0x1B 0x26</a>			
[Example]				

# 0x1B 0x26

<ESC &>

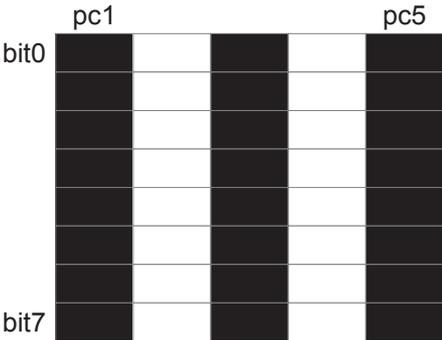
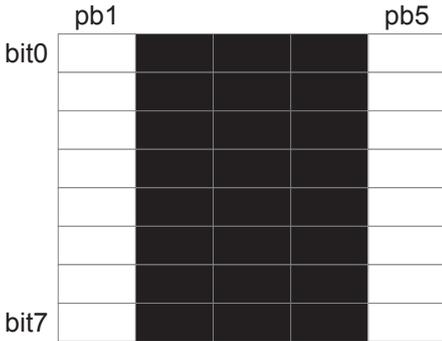
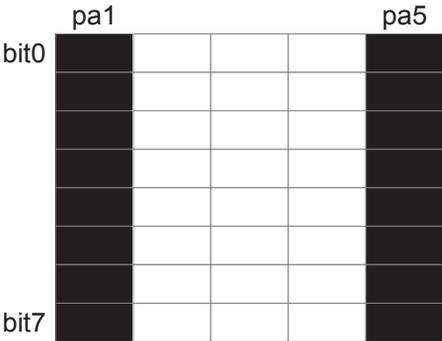
Defines user-defined characters

Valid for	K3 DSP													
[Format]	Hex	1B	26	s	m	n	a	pa1...pbk	b	pb1...pbk	c	pc1...pck	d	pd1...pdk
	ASCII	ESC	&	s	m	n	a	pa1...pbk	b	pb1...pbk	c	pc1...pck	d	pd1...pdk
[Range]	<p>s = 0x01</p> <p>0x20 ≤ m ≤ n ≤ 7E</p> <p>0x00 ≤ a, b, c, d ≤ 0x05</p> <p>0x00 ≤ pa1....pak ≤ 0xFF</p> <p>0x00 ≤ pb1....pbk ≤ 0xFF</p> <p>0x00 ≤ pc1....pck ≤ 0xFF</p> <p>0x00 ≤ pd1....pdk ≤ 0xFF</p>													
[Description]	<p>Defines user-defined characters.</p> <ul style="list-style-type: none"> <li>• s specifies the number of bytes in the vertical direction.</li> <li>• m specifies the beginning character code for the definition, and n specifies the final code. When a single character is defined m = n.</li> <li>• The allowable character code range is from ASCII 0x20 (32) to 0x7E (126).</li> <li>• a, b, c, d specify the number of bytes (max 5) expected in relation to the first, the second, the third and the fourth character. These will be arranged vertically within the matrix: from left to right and from top to bottom.</li> <li>• When a, b, c, d &lt; 5, any remaining dots on the right side of the user-defined characters are padded with spaces.</li> <li>• pa1....pak, pb1...pbk, pc1...pck and pd1...pdk are the dot data to be defined for the characters.</li> </ul>													
[Notes]	<ul style="list-style-type: none"> <li>• Once the user-defined characters are defined, they remain effective until they are redefined, <a href="#">0x1B 0x40</a> is executed, or the power is turned off.</li> <li>• When only the user-defined characters are defined and the user-defined character set is not selected using the <a href="#">0x1B 0x25</a> command, the user-defined characters are not displayed.</li> </ul>													
[Default]														
[Reference]	<a href="#">0x1B 0x25</a>													
[Example]	1 character:    1B 26 01 21 21 05 FF 00 00 00 FF													





3 characters: 1B 26 01 21 23 05 FF 00 00 00 FF 05 00 FF FF FF 00 05 FF 00 FF 00 FF





## 0x1B 0x40

<ESC @>

### Inizialize display

---

Valid for	K3 DSP		
-----------	--------	--	--

---

[Format]	Hex	1B	40
	ASCII	ESC	@

[Range]

[Description] Resets the various display settings to their initial values.

- [Notes]
- The software settings are reset to their power-on values.
  - The data in the buffer is not cleared.
  - After initialize display, the display screen is cleared and move the cursor to home position.

[Default]

[Reference]

[Example]



## 0x1B 0x52

<ESC R>

Select an international character set

Valid for K3 DSP

[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	CHARACTER SET
0x00	U.S.A.
0x01	France
0x02	Germany
0x03	United Kingdom
0x04	Denmark I
0x05	Sweden
0x06	Italy
0x07	Spain I
0x08	Japan
0x09	Norway
0x0A	Denmark II

[Notes]

[Default] n = 0x00

[Reference]

[Example]



## 0x1B 0xA0

### Clear display screen

---

Valid for            K3 DSP

---

[Format]            Hex            1B    A0    n  
                      ASCII            ESC    0xA0   n

[Range]            n = 0x00, 0x01

[Description]      All the display characters will be cleared according to n value as follows:

n	FUNCTION
0x00	Turn off all the pixel of the display
0x01	Turn on all the pixel of the display

[Notes]            After execution this command the cursor moves to the home position.

[Default]          n = 0x00

[Reference]

[Example]



## 0x1C 0x59

<FS Y>

### Sets contrast and save data in Flash

---

Valid for	K3 DSP			
[Format]	Hex	1C	59	n
	ASCII	FS	Y	n
[Range]	$0x00 \leq n \leq 0x64$			
[Description]	Sets display contrast (adjustable from 0% to 100%) according to n value (variable from 0x00 to 0x64).			
[Note]	The set value is saved into device Flash.			
[Default]	60%			
[Reference]				
[Example]				



## 0x1C 0x79

<FS y>

Returns contrast value

---

Valid for	K3 DSP		
[Format]	Hex	1C	79
	ASCII	FS	y
[Range]			
[Description]	Returns the set value for display contrast.		
[Note]			
[Default]			
[Reference]	<a href="#">0x1C 0x59</a> , <a href="#">0x1C 0x7A</a>		
[Example]			



## 0x1C 0x7A

<FS z>

### Sets contrast without saving data in Flash

---

Valid for	K3 DSP			
[Format]	Hex	1C	7A	n
	ASCII	FS	z	n
[[Range]	0x00 ≤ n ≤ 0x64			
[Description]	Sets display contrast (adjustable from 0% to 100%) according to n value (variable from 0x00 to 0x64).			
[Note]	The set value is not saved into device Flash.			
[Default]	60%			
[Reference]				
[Example]				



## 0x1C 0x7B

<FS {>

Change the contrast from 0% to 100% and displays the results

---

Valid for	K3 DSP		
[Format]	Hex	1C	7B
	ASCII	FS	{
[Range]			
[Description]	This command executes a routine to modify the contrast value from 0% to 100% and displays the result on display itself.		
[Note]			
[Default]			
[Reference]	<a href="#">0x1C 0x59</a>		
[Example]			

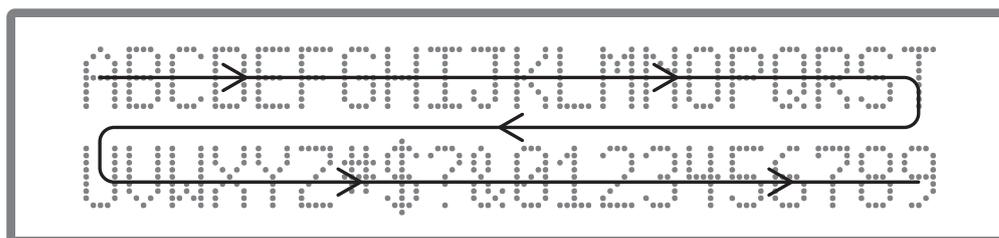


## 0x1F 0x02

<US MD2>

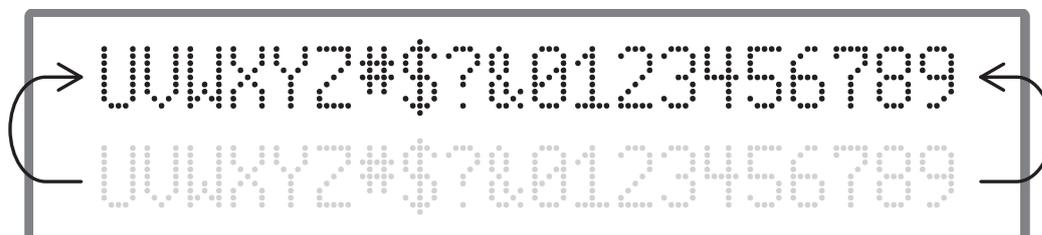
### Select vertical scroll mode

Valid for	K3 DSP		
[Format]	Hex	1F	02
	ASCII	US	MD2
[Range]			
[Description]	Change the display mode to the vertical scroll mode (see the example).		
[Notes]	<ul style="list-style-type: none"> <li>• This mode is selected when the power is turned on.</li> <li>• Selecting overwrite mode cancels horizontal or vertical scroll mode.</li> </ul>		
[Default]			
[Reference]	<a href="#">0x1F 0x01</a> , <a href="#">0x1F 0x03</a>		
[Example]	<p>Step 1:</p> <p>The characters are written in sequence on the upper line, from left to right. When the cursor reaches the end of the upper line (last column on the right), the cursor moves to the beginning of the lower line (first column on the left).</p>		



Step 2:

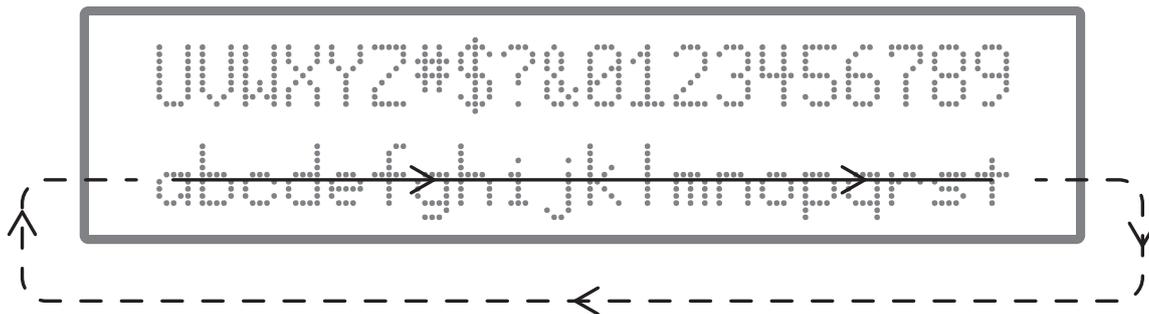
When the cursor reaches the end of the lower line (last column on the right), all the characters written on the lower line are moved to the upper line.





Step 3:

The new characters are written in sequence on the lower line from the left to right.



The writing characters continue repeating steps 2 and 3 alternately.

## 0x1F 0x03

<US MD3>

### Select horizontal scroll mode

---

Valid for	K3 DSP		
-----------	--------	--	--

---

[Format]	Hex	1F	03
	ASCII	US	MD3

[Range]

[Description] Change the display mode to the horizontal scroll mode (see the example).

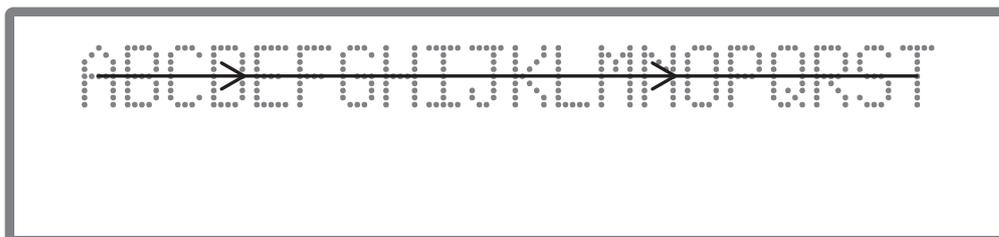
[Notes]

- Selecting horizontal scroll mode cancels overwrite or vertical scroll mode.
- With this mode, the lower line is not used (see the example).

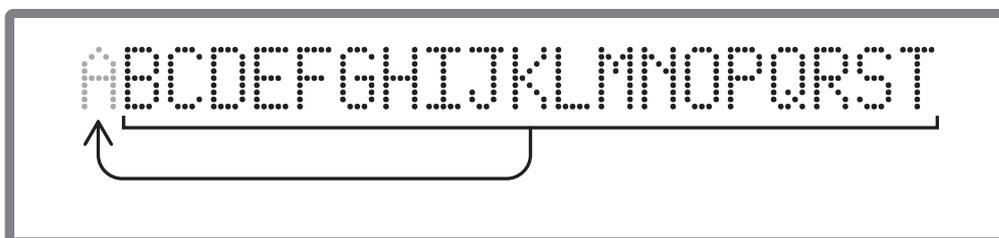
[Default]

[Reference] [0x1F 0x01](#), [0x1F 0x02](#)

[Example] Step 1:  
The characters are written in sequence on the upper line, from left to right.



Step 2:  
When the cursor reaches the end of the upper line (last column on the right), the cursor remains in this position and the upper line is shifted one position to the left, deleting the first character written in the first column on the left.





Step 3:

The new character is written in sequence at the end to the upper line (the last column on the right).



The writing characters continue repeating steps 2 and 3 alternately.



## 0x1F 0x0A

<US LF>

### Move the cursor up

---

Valid for	K3 DSP		
[Format]	Hex	1F	0A
	ASCII	US	LF
[Range]			
[Description]	Move the cursor up one line.		
[Notes]	<p>When the cursor is on the upper line, this command operates differently depending on the display mode:</p> <ul style="list-style-type: none"><li>- Overwrite mode: The cursor is moved to the same column on the lower line.</li><li>- Vertical scroll mode: The characters display on the upper line are scrolled to the lower line, and the upper line is cleared. The cursor will remain at the same position.</li><li>- Horizontal scroll mode: The cursor is not moved.</li></ul>		
[Default]			
[Reference]	<a href="#">0x1F 0x01</a> , <a href="#">0x1F 0x02</a> , <a href="#">0x1F 0x03</a>		
[Example]			



## 0x1F 0x0D

<US CR>

Move the cursor to right-most position

---

Valid for	K3 DSP		
-----------	--------	--	--

---

[Format]	Hex	1F	0D
	ASCII	US	CR

[Range]

[Description] The cursor will be moved to the right-end position of the current line.

[Notes]

[Default]

[Reference]

[Example]



## 0x1F 0x24

<US \$>

Move the cursor to a specified position

---

Valid for	K3 DSP				
[Format]	Hex	1F	24	m	n
	ASCII	US	\$	m	n
[Range]	0x01 ≤ m ≤ 0x14 n = 0x01, 0x02				
[Description]	Moves the cursor to the “m” line on the “n” column.				
[Notes]	If the movement value of the cursor is out of the range specified by m or n, this command is ignored and the cursor will remain at the same position.				
[Default]					
[Reference]					
[Example]					



## 0x1F 0x42

<US B>

Move the cursor to the bottom position

---

Valid for	K3 DSP		
-----------	--------	--	--

---

[Format]	Hex	1F	42
	ASCII	US	B

[Range]

[Description] Moves the cursor to the bottom position.

[Notes] The bottom position indicates the 20th column of the lower line.

[Default]

[Reference]

[Example]



## 0x1F 0x45

<US E>

### Set display screen blink interval

---

Valid for	K3 DSP			
[Format]	Hex	1F	45	n
	ASCII	US	E	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Sets or cancels the blink interval of the display screen. <ul style="list-style-type: none"><li>• n specifies the blink interval. [( n 50 msec.) ON / ( n 50 msec.) OFF] is repeated.</li><li>• When n = 0x00, the display is kept on (cancels blinking).</li><li>• When n = 0xFF, the display is turned off but the contents of the display are maintained.</li></ul>			
[Notes]	This command does not affect the brightness of the vacuum fluorescent display.			
[Default]	n = 0x00			
[Reference]				
[Example]				



# COMMUNICATION COMMANDS

## 0x1B 0xB2 0x44

Enable communication with the integrated display

---

Valid for	K3 DSP			
[Format]	Hex	1B	B2	44
	ASCII	ESC	0xB0	D
[Range]				
[Description]	Send this command to enable communication with the integrated display and disable communication with the printer.			
[Notes]				
[Default]				
[Reference]	<a href="#">0x1B 0xB2 0x50</a> , <a href="#">0x1B 0xB2 0x51</a>			
[Example]				



## 0x1B 0xB2 0x50

Enable communication with the printer

---

Valid for

- K3 STD
- K3 DSP
- K3 HS
- K3 HS LF

---

[Format]

Hex	1B	B2	50
ASCII	ESC	0xB0	P

[Range]

[Description] Send this command to enable communication with the printer and disable communication with the external display or the integrated display (only for K3 DSP).

[Notes]

[Default]

[Reference] [0x1B 0xB2 0x44](#), [0x1B 0xB2 0x51](#)

[Example]



## 0x1B 0xB2 0x51

Enable communication with the external display

---

Valid for	K3 STD
	K3 DSP
	K3 HS
	K3 HS LF

---

[Format]	Hex	1B	B2	51
	ASCII	ESC	0xB0	Q

[Range]

[Description] Send this command to enable communication with the external display and disable communication with the printer.

[Notes]

[Default]

[Reference] [0x1B 0xB2 0x44](#), [0x1B 0xB2 0x50](#)

[Example]



# ALIGNMENT

1	ALIGNMENT COMMANDS .....	196
---	--------------------------	-----



# 1 ALIGNMENT COMMANDS

The devices listed in this manual are equipped with sensors that allows the use of black mark for alignment to handle:

- rolls of tickets with pre-printed and fixed length fields;
- FanFold modules of tickets 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 black mark (value of parameter “Black mark distance”).
- `0x1D 0xF6` and `0x1D 0xF8`: perform the ticket alignment, which is advanced to align the first point of alignment available under the sensor.

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 0xF8`
5. Cut command

The settings take effect from next ticket to the one already in the device.

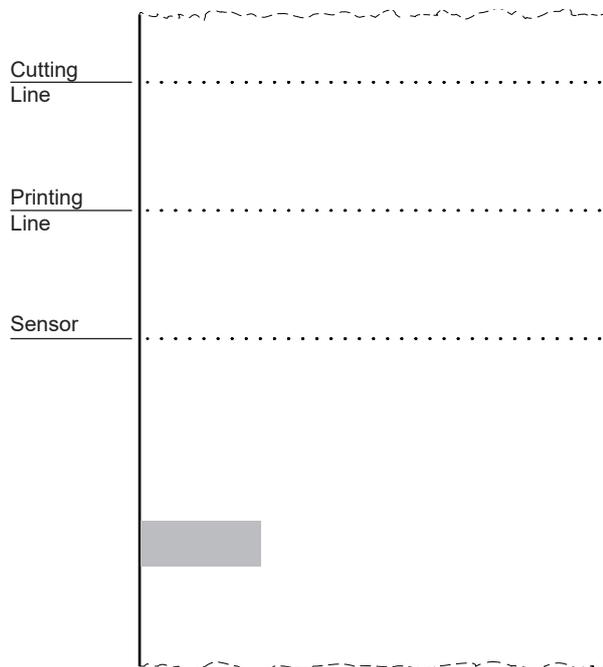
In the following examples, are described some sequences of commands to manage the alignment.

[Example 1]

Commands sequence to print tickets with “alignment point” set to the edge of the black mark (“Black mark distance” = 0 mm set in the setup procedure)

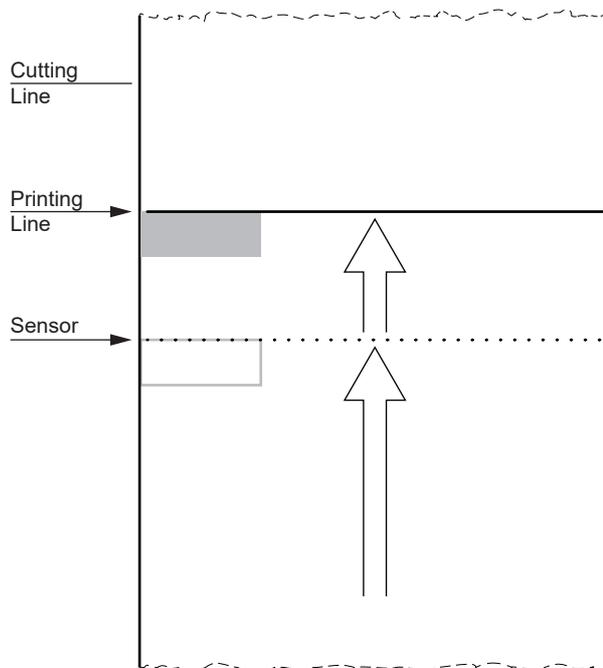
Start

Paper with black mark not aligned.



Alignment command `0x1D 0xF6`

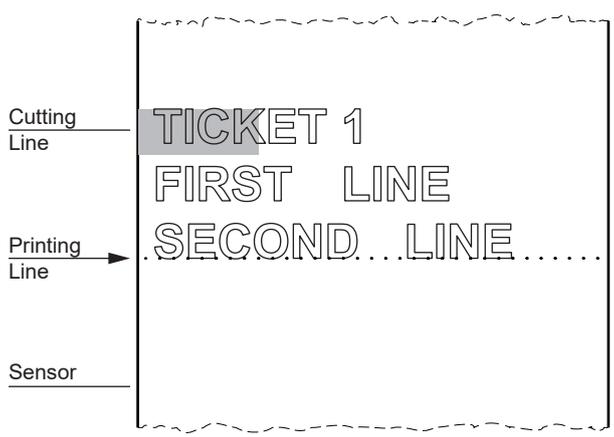
Paper is fed. The black mark is recognized by the sensor and aligned under the printing line.





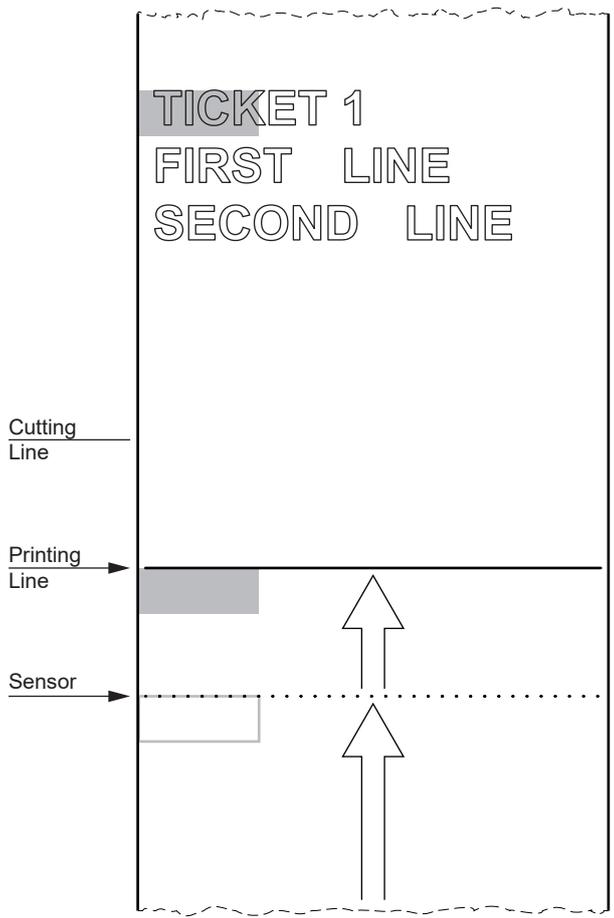
Command for text printing:

'TICKET 1', 0x0A, 'FIRST LINE', 0x0A, 'SECOND LINE', 0x0A



Alignment command 0x1D 0xF8.

Paper is fed. The next black mark is recognized by the sensor and aligned under the printing line.

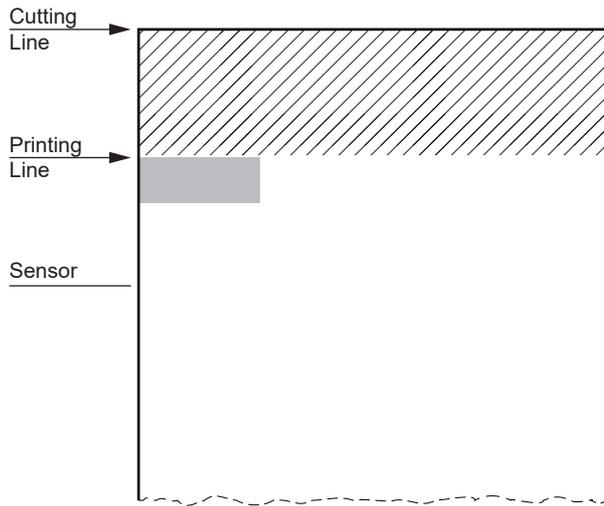
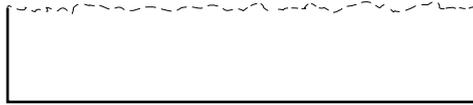




Cut command `0x1B 0x69`.

The paper is cut.

The portion of the paper between the cutting line and the printing line is not recovered.

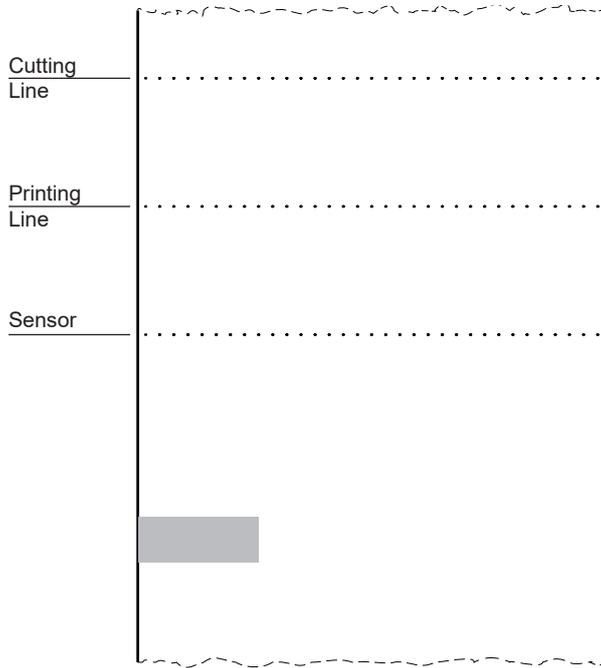


[Example 2]

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).

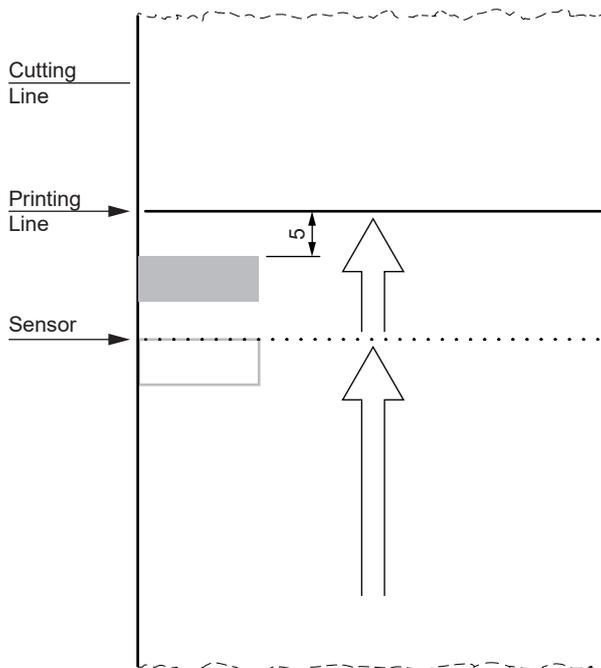
Start

Paper with black mark not aligned.



Alignment command `0x1D 0xF6`.

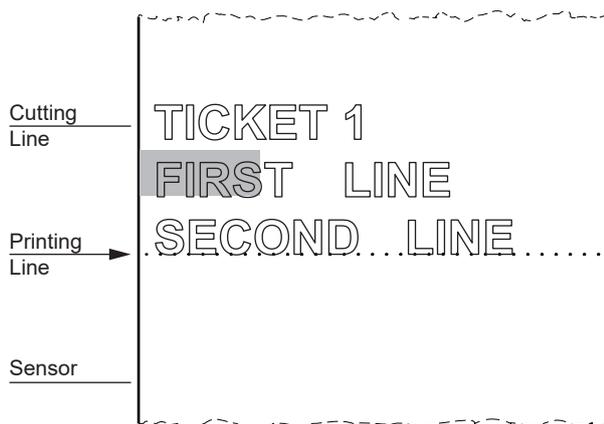
Paper is fed. The black mark is recognized by the sensor and aligned at a distance of 5 mm (“Black mark distance”) from the printing line.





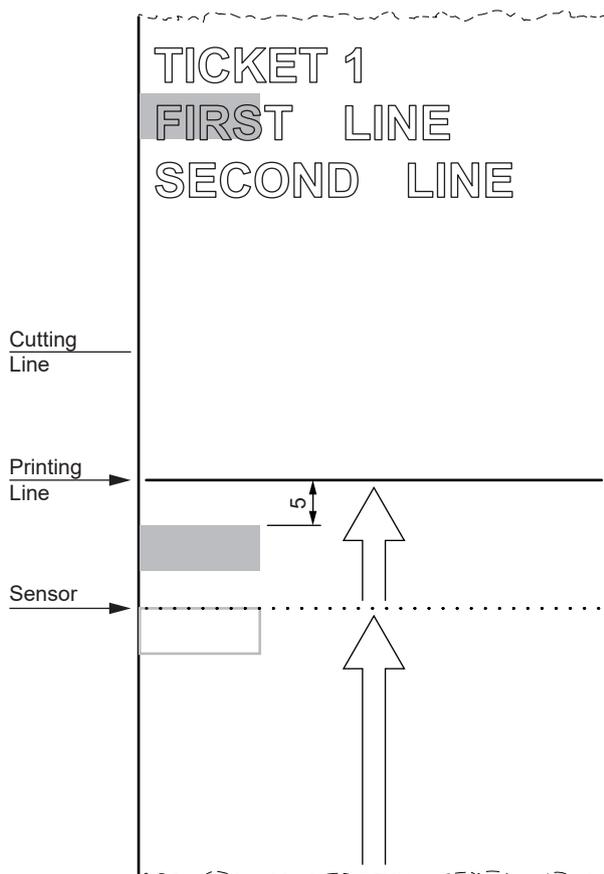
Command for text printing:

'TICKET 1', 0x0A, 'FIRST LINE', 0x0A, 'SECOND LINE', 0x0A



Alignment command 0x1D 0xF8.

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.

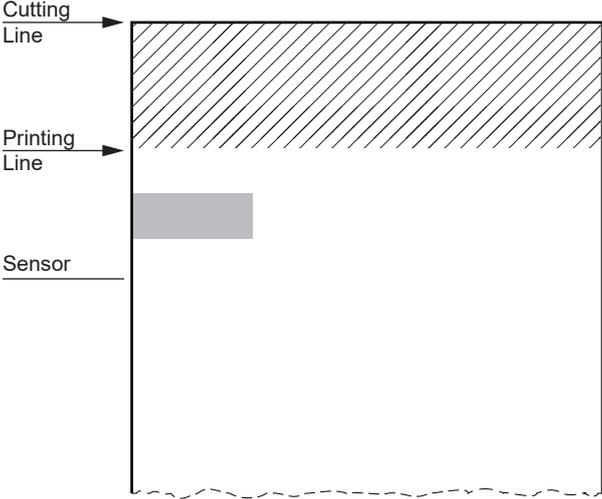




Cut command `0x1B 0x69`.

The paper is cut.

The portion of the paper between the cutting line and the printing line is not recovered.



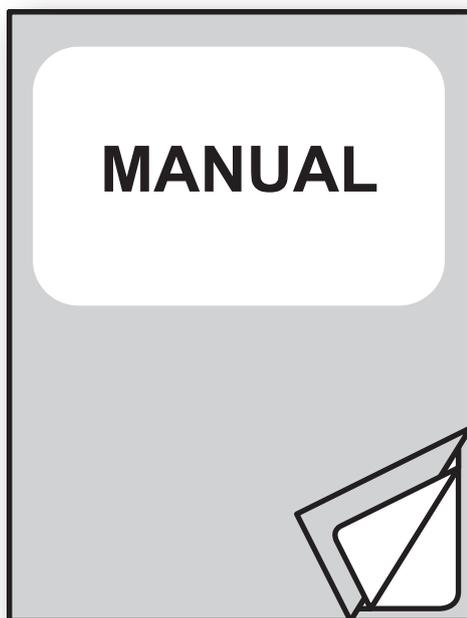


# PAGE MODE

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# 1 PAGE MODE COMMANDS



For details on the PAGE MODE commands of the device refer to the manual with code **0577200M000073**







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