

COMMANDS MANUAL

---

# KM216HIII

# KPM216HIII

*CUSTOM*<sup>®</sup>

CUSTOM S.p.A.  
Via Berettine 2/B  
43010 Fontevivo (PARMA) - Italy  
Tel. : +39 0521-680111  
Fax : +39 0521-610701  
http: www.custom.biz

Customer Service Department:  
www.custom4u.it

© 2023 CUSTOM S.p.A. – Italy.

All rights reserved. Total or partial reproduction of this manual in whatever form, whether by printed or electronic means, is forbidden. While guaranteeing that the information contained in it has been carefully checked, CUSTOM S.p.A. and other entities utilized in the realization of this manual bear no responsibility for how the manual is used. Information regarding any errors found in it or suggestions on how it could be improved are appreciated. Since products are subject to continuous check and improvement, CUSTOM S.p.A. reserves the right to make changes in information contained in this manual without prior notification.

The pre-installed multimedia contents are protected from Copyright CUSTOM S.p.A. Other company and product names mentioned herein may be trademarks of their respective companies. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. CUSTOM S.p.A. assumes no responsibility with regard to the performance or use of these products.

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

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

#### GENERAL INSTRUCTIONS

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

#### GENERAL SAFETY INFORMATION

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

- Read and retain the instructions which follow.
- Follow all indications and instructions given on the device.
- Make sure that the surface on which the device rests is stable. If it is not, the device could fall, seriously damaging it.
- Make sure that the device rests on a hard (non-padded) surface and that there is sufficient ventilation.
- Do not fix indissolubly the device or its accessories such as power supplies unless specifically provided in this manual.
- When positioning the device, make sure cables do not get damaged.
- [Only OEM equipment] The equipment must be installed in a kiosk or system that provides mechanical, electrical and fire protection.
- The mains power supply must comply with the rules in force in the Country where you intend to install the equipment.
- Make sure that there is an easily-accessible outlet with a capacity of no less than 10A closely to where the device is to be installed.
- Make sure the power cable provided with the appliance, or that you intend to use is suitable with the wall socket available in the system.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Before any type of work is done on the machine, disconnect the power supply.
- Use the type of electrical power supply indicated on the device label.
- These devices are intended to be powered by a separately certified power module having an SELV, non-energy hazardous output. (IEC60950-1 second edition).
- [Only POS equipment] The energy to the equipment must be provided by power supply approved by CUSTOM S.p.A.
- Take care the operating temperature range of equipment and its ancillary components.
- Do not block the ventilation openings.
- Do not insert objects inside the device as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not carry out repairs on the device yourself, except for the normal maintenance operations given in the user manual.
- The equipment must be accessible on these components only to trained, authorized personnel.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- Do not touch the head heating line with bare hands or metal objects. Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.
- Use consumables approved by CUSTOM S.p.A.



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

The device is in conformity with the essential Electromagnetic Compatibility and Electric Safety requirements laid down in Directives 2014/30/EU and 2014/35/EU inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55032 (*Electromagnetic compatibility of multimedia equipment - Emission Requirements*)
- EN 55024/EN 55035 (*Electromagnetic compatibility of multimedia equipment - Immunity requirements*)
- EN IEC/EN 62368-1 (*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

1	CONSULTING COMMANDS MANUAL .....	6
2	IDENTIFICATION OF THE MODELS .....	8
3	PAPER SPECIFICATION .....	9



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

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

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



## 2 IDENTIFICATION OF THE MODELS

NOMENCLATURE	DESCRIPTION
KM216HIII c200	KM216HIII with drop ticket and 200 dpi printhead
KM216HIII e200	KM216HIII with ejector and 200 dpi printhead
KPM216HIII h200	KPM216HIII with horizontal paper mouth and 200 dpi printhead
KPM216HIII h300	KPM216HIII with horizontal paper mouth and 300 dpi printhead
KPM216HIII v200	KPM216HIII with vertical paper mouth and 200 dpi printhead



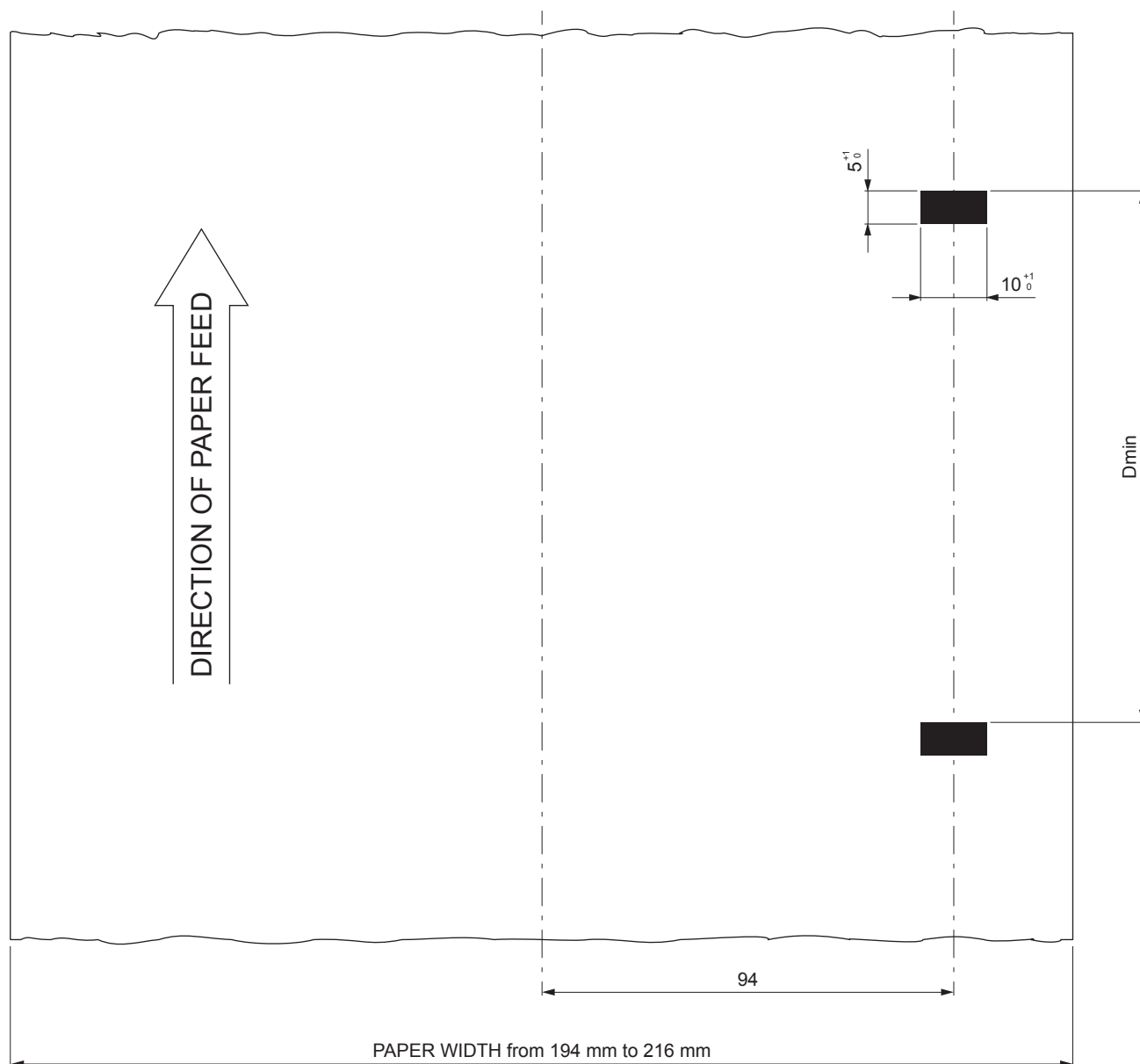
### 3 PAPER SPECIFICATION

The following image (dimensions in millimeters) shows an example of black mark placement on the non-thermal side of paper, where:

Dmin = minimum inter-notch distance =

- 150 mm for KPM216HIII h200, KPM216HIII h300, KPM216HIII v200 with “Short ticket” setup parameter disabled
- 105 mm for KPM216HIII h200, KPM216HIII h300, KPM216HIII v200 with “Short ticket” setup parameter enabled
- 75 mm for KM216HIII c200, KM216HIII e200

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







# CUSTOM/POS EMULATION

1	COMMANDS LISTED IN ALPHANUMERIC ORDER .....	12
2	COMMANDS LISTED BY FUNCTION .....	16



# 1 COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	114
0x09	<HT>	115
0x0A	<LF>	86
0x0D	<CR>	87
0x10 0x04	<DLE EOT>	91
0x18	<CAN>	53
0x1B 0x20	<ESC SP>	54
0x1B 0x21	<ESC !>	55
0x1B 0x24	<ESC \$>	116
0x1B 0x25	<ESC %>	58
0x1B 0x26	<ESC &>	59
0x1B 0x28 0x76	<ESC ( v>	117
0x1B 0x2A	<ESC *>	107
0x1B 0x2D	<ESC ->	60
0x1B 0x30	<ESC 0>	81
0x1B 0x30	<ESC 0>	82
0x1B 0x32	<ESC 2>	83
0x1B 0x32	<ESC 2>	84
0x1B 0x33	<ESC 3>	85
0x1B 0x34	<ESC 4>	61
0x1B 0x3D	<ESC =>	143
0x1B 0x3F	<ESC ?>	62
0x1B 0x40	<ESC @>	144
0x1B 0x44	<ESC D>	118
0x1B 0x45	<ESC E>	63
0x1B 0x47	<ESC G>	64



0x1B 0x4A	<ESC J>	88
0x1B 0x4D	<ESC M>	65
0x1B 0x52	<ESC R>	66
0x1B 0x56	<ESC V>	67
0x1B 0x5C	<ESC \>	120
0x1B 0x61	<ESC a>	121
0x1B 0x63 0x35	<ESC c 5>	145
0x1B 0x64	<ESC d>	89
0x1B 0x69	<ESC i>	126
0x1B 0x74	<ESC t>	68
0x1B 0x76	<ESC v>	97
0x1B 0x7B	<ESC {>	70
0x1B 0xC1		71
0x1C 0x25	<FS %>	73
0x1C 0x44	<FS D>	146
0x1C 0x64	<FS d>	77
0x1C 0x65	<FS e>	78
0x1C 0x66	<FS f>	79
0x1C 0x6C	<FS l>	147
0x1C 0x90		136
0x1C 0x91		137
0x1C 0x92		138
0x1C 0x93		139
0x1C 0x94		141
0x1C 0xC0		148
0x1C 0xC1		127



0x1C 0xEA	98
0x1D 0x21	<GS !> 74
0x1D 0x28 0x6B	<GS ( k> 23
0x1D 0x28 0x6B [Fn 065]	<GS ( k> 25
0x1D 0x28 0x6B [Fn 066]	<GS ( k> 26
0x1D 0x28 0x6B [Fn 067]	<GS ( k> 27
0x1D 0x28 0x6B [Fn 068]	<GS ( k> 28
0x1D 0x28 0x6B [Fn 069]	<GS ( k> 29
0x1D 0x28 0x6B [Fn 080]	<GS ( k> 31
0x1D 0x28 0x6B [Fn 081]	<GS ( k> 32
0x1D 0x28 0x6B [Fn 165]	<GS ( k> 33
0x1D 0x28 0x6B [Fn 166]	<GS ( k> 34
0x1D 0x28 0x6B [Fn 167]	<GS ( k> 38
0x1D 0x28 0x6B [Fn 169]	<GS ( k> 39
0x1D 0x28 0x6B [Fn 180]	<GS ( k> 40
0x1D 0x28 0x6B [Fn 181]	<GS ( k> 41
0x1D 0x28 0x6B [Fn 182]	<GS ( k> 42
0x1D 0x2A	<GS *> 109
0x1D 0x2F	<GS /> 111
0x1D 0x3A	<GS :> 124
0x1D 0x42	<GS B> 76
0x1D 0x48	<GS H> 44
0x1D 0x49	<GS I> 149
0x1D 0x4C	<GS L> 122
0x1D 0x50	<GS P> 151
0x1D 0x56	<GS V> 128
0x1D 0x57	<GS W> 123
0x1D 0x5E	<GS ^> 125



0x1D 0x61	.....<GS a>.....	99
0x1D 0x65	.....<GS e>.....	129
0x1D 0x66	.....<GS f>.....	46
0x1D 0x68	.....<GS h>.....	47
0x1D 0x6B	.....<GS k>.....	48
0x1D 0x76 0x30	.....<GS v 0>.....	112
0x1D 0x77	.....<GS w>.....	51
0x1D 0x7C	.....	90
0x1D 0xE0	.....	101
0x1D 0xE1	.....	102
0x1D 0xE2	.....	103
0x1D 0xE3	.....	104
0x1D 0xE4	.....	105
0x1D 0xE5	.....	106
0x1D 0xE6	.....	152
0x1D 0xE7	.....	132
0x1D 0xE8	.....	153
0x1D 0xF0	.....	154
0x1D 0xF6	.....	134
0x1D 0xF8	.....	135



## 2 COMMANDS LISTED BY FUNCTION

### COMMANDS FOR BARCODE PRINTING

0x1D 0x28 0x6B . . . . .<GS ( k> . . . . .	23
Print two-dimensional barcode	
0x1D 0x28 0x6B [Fn 065] . . . . .<GS ( k> . . . . .	25
Specify the number of columns of PDF417 barcode	
0x1D 0x28 0x6B [Fn 066] . . . . .<GS ( k> . . . . .	26
Specify the number of rows of PDF417 barcode	
0x1D 0x28 0x6B [Fn 067] . . . . .<GS ( k> . . . . .	27
Specify the width of a module of PDF417 barcode	
0x1D 0x28 0x6B [Fn 068] . . . . .<GS ( k> . . . . .	28
Specify the height of the module of PDF417 barcode	
0x1D 0x28 0x6B [Fn 069] . . . . .<GS ( k> . . . . .	29
Specify the error correction level of PDF417 barcode	
0x1D 0x28 0x6B [Fn 080] . . . . .<GS ( k> . . . . .	31
Store the data in the barcode save area for printing in PDF417 format	
0x1D 0x28 0x6B [Fn 081] . . . . .<GS ( k> . . . . .	32
Encodes the data in the barcode save area and prints it in PDF417 format	
0x1D 0x28 0x6B [Fn 165] . . . . .<GS ( k> . . . . .	33
Specify encoding scheme of QRcode barcode	
0x1D 0x28 0x6B [Fn 166] . . . . .<GS ( k> . . . . .	34
Specify QRcode version	
0x1D 0x28 0x6B [Fn 167] . . . . .<GS ( k> . . . . .	38
Specify dot size of the module of the QRcode barcode	
0x1D 0x28 0x6B [Fn 169] . . . . .<GS ( k> . . . . .	39
Specify the error correction level of the QRcode barcode	
0x1D 0x28 0x6B [Fn 180] . . . . .<GS ( k> . . . . .	40
Store the data in the barcode save area for printing in QRcode format	
0x1D 0x28 0x6B [Fn 181] . . . . .<GS ( k> . . . . .	41
Prints the data stored in the barcode save area in QRcode format	
0x1D 0x28 0x6B [Fn 182] . . . . .<GS ( k> . . . . .	42
Transmits the QRcode barcode size in the barcode save area	
0x1D 0x48 . . . . .<GS H> . . . . .	44
Select print position of HRI characters in 1D barcodes	
0x1D 0x66 . . . . .<GS f> . . . . .	46
Select font for HRI characters	





0x1D 0x68 .....	<GS h> .....	47
Set 1D barcode height		
0x1D 0x6B .....	<GS k> .....	48
Print 1D barcode		
0x1D 0x77 .....	<GS w> .....	51
Set 1D barcode width		

## CHARACTER COMMANDS

---

0x18 .....	<CAN> .....	53
Cancel current line transmitted		
0x1B 0x20 .....	<ESC SP> .....	54
Set right-side character spacing		
0x1B 0x21 .....	<ESC !> .....	55
Select print modes		
0x1B 0x25 .....	<ESC %> .....	58
Enable or disable user-defined characters		
0x1B 0x26 .....	<ESC &> .....	59
Defines user-defined characters		
0x1B 0x2D .....	<ESC -> .....	60
Turn underline mode on or off		
0x1B 0x34 .....	<ESC 4> .....	61
Turn italic mode on or off		
0x1B 0x3F .....	<ESC ?> .....	62
Cancel user-defined characters		
0x1B 0x45 .....	<ESC E> .....	63
Turn bold mode on or off		
0x1B 0x47 .....	<ESC G> .....	64
Turn double-strike mode on or off		
0x1B 0x4D .....	<ESC M> .....	65
Select character font		
0x1B 0x52 .....	<ESC R> .....	66
Select an international character set		
0x1B 0x56 .....	<ESC V> .....	67
Set 90° rotated print mode		
0x1B 0x74 .....	<ESC t> .....	68
Select character code table		
0x1B 0x7B .....	<ESC {> .....	70
Turn upside-down printing mode on or off		



0x1B 0xC1	.....	71
Select character pitch		
0x1C 0x25	.....<FS %>.....	73
Select the font type		
0x1D 0x21	.....<GS !> .....	74
Select character size		
0x1D 0x42	.....<GS B>.....	76
Turn black and white reverse printing mode on or off		

## COMMANDS FOR TT FONTS MANAGEMENT

---

0x1C 0x64	.....<FS d> .....	77
Set font dimension		
0x1C 0x65	.....<FS e> .....	78
Enable or disable encoding for True Type fonts		
0x1C 0x66	.....<FS f>.....	79
True Type fonts management		

## LINE SPACING COMMANDS

---

0x1B 0x30	.....<ESC 0>.....	81
Select 1/8-inch line spacing		
0x1B 0x30	.....<ESC 0>.....	82
Select 1/12-inch line spacing		
0x1B 0x32	.....<ESC 2>.....	83
Select 1/6-inch line spacing		
0x1B 0x32	.....<ESC 2>.....	84
Select 1/9-inch line spacing		
0x1B 0x33	.....<ESC 3>.....	85
Set line spacing		

## PRINT COMMANDS

---

0x0A	.....<LF> .....	86
Print and line feed		
0x0D	.....<CR> .....	87
Print and carriage return		
0x1B 0x4A	.....<ESC J>.....	88
Print and paper feed		



0x1B 0x64 .....	<ESC d> .....	89
Print and feed paper n lines		
0x1D 0x7C .....		90
Set printing density		

## STATUS COMMANDS

---

0x10 0x04 .....	<DLE EOT> .....	91
Real-time status transmission		
0x1B 0x76 .....	<ESC v> .....	97
Transmit paper sensor status		
0x1C 0xEA .....		98
Transmit the device serial number		
0x1D 0x61 .....	<GS a> .....	99
Enable or disable Automatic Status Back (ASB)		
0x1D 0xE0 .....		101
Enable or disable automatic FULL STATUS BACK		
0x1D 0xE1 .....		102
Reading of length paper available before virtual paper-end		
0x1D 0xE2 .....		103
Reading number of cuts performed by the autocutter		
0x1D 0xE3 .....		104
Reading of length of printed paper		
0x1D 0xE4 .....		105
Reading number of retracting		
0x1D 0xE5 .....		106
Reading number of power up		

## BIT-IMAGE COMMANDS

---

0x1B 0x2A .....	<ESC *> .....	107
Select bit image mode		
0x1D 0x2A .....	<GS *> .....	109
Define received bit image		
0x1D 0x2F .....	<GS /> .....	111
Print received bit image		
0x1D 0x76 0x30 .....	<GS v 0> .....	112
Print raster bit image		



## PRINT POSITION COMMANDS

---

0x08 .....	<BS> .....	114
Back space		
0x09 .....	<HT> .....	115
Horizontal tab		
0x1B 0x24 .....	<ESC \$> .....	116
Set absolute print position		
0x1B 0x28 0x76 .....	<ESC ( v> .....	117
Set relative vertical print position		
0x1B 0x44 .....	<ESC D> .....	118
Set horizontal tab positions		
0x1B 0x5C .....	<ESC \> .....	120
Set relative print position		
0x1B 0x61 .....	<ESC a> .....	121
Select justification		
0x1D 0x4C .....	<GS L> .....	122
Set left margin		
0x1D 0x57 .....	<GS W> .....	123
Set printing area width		

## MACRO FUNCTIONS COMMANDS

---

0x1D 0x3A .....	<GS :> .....	124
Start or end of macro definition		
0x1D 0x5E .....	<GS ^> .....	125
Execute macro		

## COMMANDS FOR MECHANISM CONTROL

---

0x1B 0x69 .....	<ESC i> .....	126
Total cut		
0x1C 0xC1 .....		127
Paper recovery after cut		
0x1D 0x56 .....	<GS V> .....	128
Select cut mode		
0x1D 0x65 .....	<GS e> .....	129
Ejector commands		



## ALIGNMENT COMMANDS

---

0x1D 0xE7 .....	132
Set notch distance	
0x1D 0xF6 .....	134
Align the ticket with the print head	
0x1D 0xF8 .....	135
Align the ticket with the autocutter	

## LOGOS MANAGEMENT COMMANDS

---

0x1C 0x90 .....	136
Get number of stored logo	
0x1C 0x91 .....	137
Get picture header list	
0x1C 0x92 .....	138
Get picture header info	
0x1C 0x93 .....	139
Print logo	
0x1C 0x94 .....	141
Save the image received from serial port into the flash memory	

## MISCELLANEOUS COMMANDS

---

0x1B 0x3D .....	<ESC => .....	143
Select peripheral device		
0x1B 0x40 .....	<ESC @> .....	144
Initialize device		
0x1B 0x63 0x35 .....	<ESC c 5> .....	145
Enable or disable keys panel		
0x1C 0x44 .....	<FS D> .....	146
Printing head test		
0x1C 0x6C .....	<FS I> .....	147
Reload paper		
0x1C 0xC0 .....		148
Hardware reset		
0x1D 0x49 .....	<GS I> .....	149
Transmit device ID		



0x1D 0x50 .....	<GS P>.....	151
Set horizontal and vertical motion units		
0x1D 0xE6 .....		152
Virtual paper-end limit		
0x1D 0xE8 .....		153
Set minimum ticket length		
0x1D 0xF0 .....		154
Set print mode		



# COMMANDS FOR BARCODE PRINTING

## 0x1D 0x28 0x6B

<GS ( k>

Print two-dimensional barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200							
[Format]	Hex	1D	28	6B	pL	pH	cn	fn
	ASCII	GS	(	k	pL	pH	cn	fn
[Range]	cn = 0x30, 0x31, 0x33, 0x34 fn = 0x41, 0x42, 0x43, 0x44, 0x45, 0x50, 0x51, 0x52							
[Description]	Processes the data concerning two-dimensional barcode, with: <ul style="list-style-type: none"> <li>• cn = barcode type</li> <li>• fn = function</li> </ul>							
	cn	fn	FUNCTION					
	0x30	0x41	Function 065	PDF417: Specify the number of columns				
	0x30	0x42	Function 066	PDF417: Specify the number of rows				
	0x30	0x43	Function 067	PDF417: Specify the width of module				
	0x30	0x44	Function 068	PDF417: Specify the module height				
	0x30	0x45	Function 069	PDF417: Specify the error correction level				
	0x30	0x50	Function 080	PDF417: Store the received data in the barcode save area				
	0x30	0x51	Function 081	PDF417: Print the barcode data in the barcode save area				
	0x31	0x41	Function 165	QRcode: Specify encoding scheme				
	0x31	0x42	Function 166	QRcode: Specify the selected version				
	0x31	0x43	Function 167	QRcode: Specify size of barcode				
	0x31	0x45	Function 169	QRcode: Specify the error correction level				
	0x31	0x50	Function 180	QRcode: Store the received data in the barcode save area				
	0x31	0x51	Function 181	QRcode: Print the barcode data				
	0x31	0x52	Function 182	QRcode: Transmit the barcode size in the barcode save area				



- [Notes]
- [Default]
- [Reference]
- [Example]



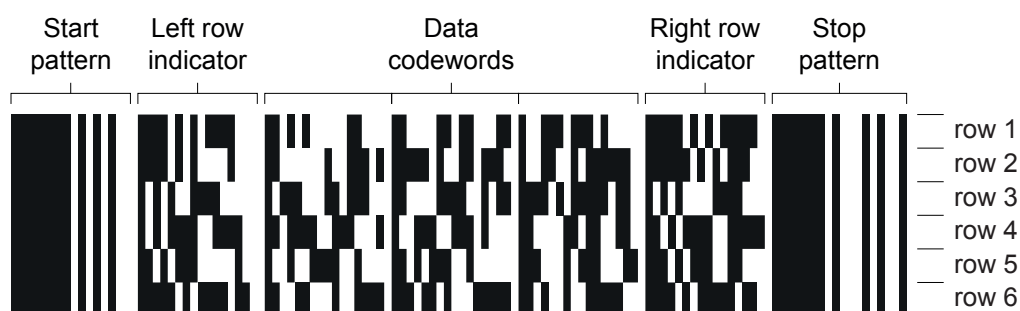


## 0x1D 0x28 0x6B [Fn 065]

<GS ( k>

Specify the number of columns of PDF417 barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
[Format]	Hex	1D	28	6B	pL	pH	30	41	n
	ASCII	GS	(	k	pL	pH	0	A	n
[Range]	<p>(pL + pH × 256) = 3      (pL = 0x03, pH = 0x00)</p> <p>0x00 ≤ n ≤ 0x1E</p>								
[Description]	<p>Specifies the number of columns of PDF417 barcode.</p> <ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• n = 0x00 specifies auto processing. When auto processing is specified, the maximum number of columns in the data area is 30 columns.</li> <li>• When n is not 0x00, specifies the number of columns of the data area as n code word.</li> </ul>								
[Notes]	<ul style="list-style-type: none"> <li>• The following data is not included in the number of columns: <ul style="list-style-type: none"> <li>- start pattern and stop pattern</li> <li>- indicator code word of left and right</li> </ul> </li> <li>• Settings are effective until 0x1B 0x40 is executed or the device is reset or turned off.</li> </ul>								
[Default]	n = 0x00								
[Reference]	0x1D 0x28 0x6B								
[Example]	<p>To define 3 columns, the command sequence is:</p> <p>0x1D 0x28 0x6B 0x03 0x00 0x30 0x41 0x03</p>								



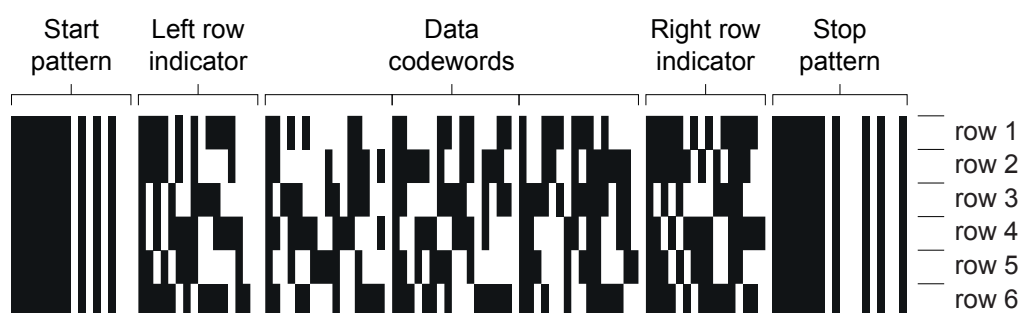


## 0x1D 0x28 0x6B [Fn 066]

<GS ( k>

Specify the number of rows of PDF417 barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
[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 0x1B 0x40 is executed or the device is reset or turned off.									
[Default]	n = 0x00									
[Reference]	0x1D 0x28 0x6B									
[Example]	To define 6 rows, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x42 0x06									



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

<GS ( k>

Specify the width of a module of PDF417 barcode

Valid for

- KM216HIII c200
- KM216HIII e200
- KPM216HIII h200
- KPM216HIII h300
- KPM216HIII v200

[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

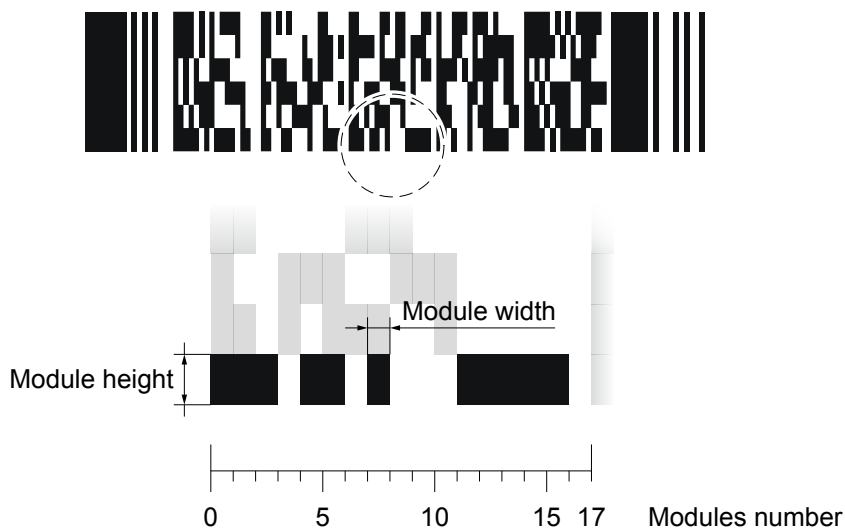
[Description] Specifies the width of a module of PDF417 barcode.  
 • pL and pH specify the number of successive bytes to be sent.

[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 set width = 4, the command sequence is:  
 0x1D 0x28 0x6B 0x03 0x00 0x30 0x43 0x04



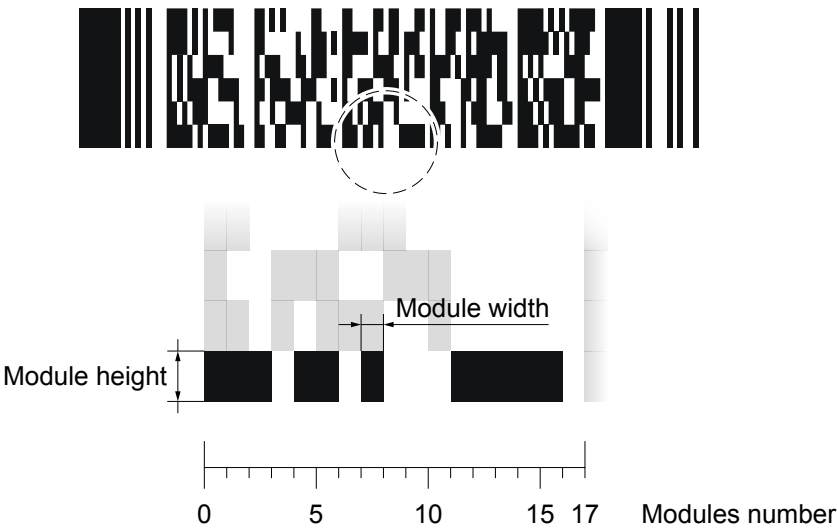


0x1D 0x28 0x6B [Fn 068]

<GS ( k>

Specify the height of the module of PDF417 barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
[Format]	Hex	1D	28	6B	pL	pH	30	44	n	
	ASCII	GS	(	k	pL	pH	0	D	n	
[Range]	(pL + pH × 256) = 3      (pL = 0x03, pH = 0x00) 0x02 ≤ n ≤ 0x08									
[Description]	Specifies the height of the module of the PDF417 barcode. • pL and pH specify the number of successive bytes to be sent.									
[Notes]	Settings are effective until 0x1B 0x40 is executed or the device is reset or turned off.									
[Default]	n = 0x03									
[Reference]	0x1D 0x28 0x6B									
[Example]	To set height = 4, the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x44 0x04									





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

<GS ( k>

Specify the error correction level of PDF417 barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
-----------	---	--	--	--	--	--	--	--	--	--

[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]	<p>Specifies the error correction level of PDF417 barcode. This error correction allows the barcode to endure some damage without causing loss of data. The error correction level depends on the amount of data that needs to be encoded, the size and the amount of symbol damage that could occur.</p> <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  $[\text{number of data code word} \times n \times 0.1 = (A)]$ . The number of the error correction code word is changeable in proportion to the number of the code words on the data area.

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

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

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

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

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



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

<GS ( k>

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

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
[Format]	Hex	1D	28	6B	pL	pH	30	50	30	d1...dk
	ASCII	GS	(	k	pL	pH	0	P	0	d1...dk
[Range]	0x00 ≤ d ≤ 0xFF k = (pL + pH × 256) - 3 <ul style="list-style-type: none"> <li>• PDF417 barcode only with ASCII characters:  <math>4 \leq (pL + pH \times 256) \leq 1112</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x04)</li> <li>• PDF417 barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 1854</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x07)</li> <li>• PDF417 barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 2729</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x0A)</li> </ul>									
[Description]	Stores the data (d1...dk) in the barcode save area for printing in PDF417 format. <ul style="list-style-type: none"> <li>• pL and pH specify the number of successive bytes to be sent.</li> <li>• k bytes of d1...dk are processed as barcode data.</li> </ul>									
[Notes]	<ul style="list-style-type: none"> <li>• Data stored in the barcode save area by this function are processed by <a href="#">Function 081</a> and then reserved.</li> <li>• Specify only the data code word of the barcode with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the device.</li> <li>• Settings are effective until <a href="#">0x1B 0x40</a> is executed or the device is reset or turned off.</li> </ul>									
[Default]										
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]										



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

<GS ( k>

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

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
[Format]	Hex	1D	28	6B	pL	pH	30	51	30
	ASCII	GS	(	k	pL	pH	0	Q	0
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00)								
[Description]	Encodes the data in the barcode save area and prints it in PDF417 format. • pL and pH specify the number of successive bytes to be sent.								
[Notes]	<ul style="list-style-type: none"> <li>• In standard mode, use this function when device is at the beginning of a line or there is no data in the print buffer.</li> <li>• A barcode that size exceeds the printing area cannot be printed.</li> <li>• If there is any error described below in the data of the barcode save area, it cannot be printed. <ul style="list-style-type: none"> <li>- There is no data (<a href="#">Function 080</a> is not processed).</li> <li>- If [(number of columns × number of rows) &lt; number of code word] when auto processing is specified for number of columns and number of rows.</li> <li>- Number of code word exceeds 928 in the data area.</li> </ul> </li> <li>• When auto processing (<a href="#">Function 065</a>) is specified, the number of columns is calculated by the current printing area, module width (<a href="#">Function 067</a>) and the code word in the data area. Maximum number of the columns is 30.</li> </ul>								
[Default]									
[Reference]	<a href="#">0x1D 0x28 0x6B</a>								
[Example]	To print the PDF417 barcode data the command sequence is: 0x1D 0x28 0x6B 0x03 0x00 0x30 0x51 0x30								





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

<GS ( k>

### Specify encoding scheme of QRcode barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
-----------	---	--	--	--	--	--	--	--	--	--

[Format]	Hex	1D	28	6B	pL	pH	31	41	n1	n2
	ASCII	GS	(	k	pL	pH	1	A	n1	n2

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

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

n1	ENCODING SCHEME
0x32	QRcode model 2
0x33	MicroQR

[Notes]	<ul style="list-style-type: none"><li>• QRcode encodes all extended ASCII characters data up to a maximum length of 7089 numeric digits, 4296 alphabetic characters or 2953 bytes of data.</li><li>• pL and pH specify the number of successive bytes to be sent.</li><li>• MicroQR is a miniature version of the QRcode barcode for short message. MicroQR encodes all numbers from 0 to 9 up to a maximum length of 35 characters.</li></ul>									
---------	--	--	--	--	--	--	--	--	--	--

[Default]	n = 0x00									
-----------	----------	--	--	--	--	--	--	--	--	--

[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
-------------	--------------------------------	--	--	--	--	--	--	--	--	--

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



QRcode Model 2



MicroQR



## 0x1D 0x28 0x6B [Fn 166]

<GS ( k>

Specify QRcode version

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
-----------	---	--	--	--	--	--	--	--	--

[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) 0x01 ≤ n ≤ 0x28								
---------	--	--	--	--	--	--	--	--	--

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

[Notes]	<ul style="list-style-type: none"> <li>• If selected version has not enough capacity to store the saved amount of data, next smallest version capable of that capacity will be printed.</li> <li>• For QRcode version capacity according to ECC (Error Correction Capability) and data type refer to following table:</li> </ul>								
---------	--	--	--	--	--	--	--	--	--

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



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



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



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

[Default]

[Reference]

0x1D 0x28 0x6B

[Example]

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



0x1D 0x28 0x6B [Fn 167]

<GS ( k>

Specify dot size of the module of the QRcode barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
-----------	---	--	--	--	--	--	--	--	--

[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) 0x02 ≤ n ≤ 0x18								
---------	---	--	--	--	--	--	--	--	--

[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 = 0x06								
-----------	----------	--	--	--	--	--	--	--	--

[Reference]	0x1D 0x28 0x6B								
-------------	----------------	--	--	--	--	--	--	--	--

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

## 0x1D 0x28 0x6B [Fn 169]

<GS ( k>

Specify the error correction level of the QRcode barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
-----------	---	--	--	--	--	--	--	--	--

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

[Range]	<p><math>(pL + pH \times 256) = 3</math>      <math>(pL = 0x03, pH = 0x00)</math></p> <p><math>0x00 \leq n \leq 0x04</math></p>								
---------	---	--	--	--	--	--	--	--	--

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

n	ECC level	
0x00	AUTO	
0x01	ECC L = approx 20% of symbol	Recovery Capability = approx 7%
0x02	ECC M = approx 37% of symbol	Recovery Capability = approx 15%
0x03	ECC Q = approx 55% of symbol	Recovery Capability = approx 25%
0x04	ECC H = approx 65% of symbol	Recovery Capability = approx 30%

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

[Default] n = 0x00

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

[Example]





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

<GS ( k>

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

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200									
[Format]	Hex	1D	28	6B	pL	pH	31	50	31	d1...dk
	ASCII	GS	(	k	pL	pH	1	P	1	d1...dk
[Range]	0x00 ≤ d ≤ 0xFF k = (pL + pH × 256) - 3 <ul style="list-style-type: none"> <li>QRcode barcode only with binary characters (8 bit):  <math>4 \leq (pL + pH \times 256) \leq 2957</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x0B)</li> <li>QRcode barcode only with alphanumeric characters:  <math>4 \leq (pL + pH \times 256) \leq 4300</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x10)</li> <li>QRcode barcode only with numeric characters:  <math>4 \leq (pL + pH \times 256) \leq 7093</math> (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x1B)</li> </ul>									
[Description]	Store the data (d1...dk) in the barcode save area for printing in QRcode format.									
[Notes]	<ul style="list-style-type: none"> <li>Data stored in the barcode save area by this function are processed by <a href="#">Function 181</a> and then reserved.</li> <li>pL and pH specify the number of successive bytes to be sent.</li> <li>k bytes of d1...dk are processed as barcode data.</li> <li>Specify only the data code word of the barcode with this function.</li> </ul>									
[Default]										
[Reference]	<a href="#">0x1D 0x28 0x6B</a>									
[Example]										





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

<GS ( k>

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

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
[Format]	Hex	1D	28	6B	pL	pH	31	51	31
	ASCII	GS	(	k	pL	pH	1	Q	1
[Range]	(pL + pH × 256) = 3 (pL = 0x03, pH = 0x00)								
[Description]	Prints the data stored in the barcode save area in QRcode format.								
[Notes]	pL and pH specify the number of successive bytes to be sent.								
[Default]									
[Reference]	0x1D 0x28 0x6B								
[Example]									



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

<GS ( k>

Transmits the QRcode barcode size in the barcode save area

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
-----------	---	--	--	--	--	--	--	--	--

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

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

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

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

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

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

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

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

HEX	CONDITION
30	Printing is possible
31	Printing is impossible



- If “Other information” is “Printing is impossible”(0x31), use one of the solutions shown below:

CAUSE	SOLUTION
There are data in the print buffer in the standard mode.	Put the device in the “there is no data in the print buffer” status by executing print commands <a href="#">0x0A</a> , <a href="#">0x0D</a> , <a href="#">0x1B 0x4A</a> .
Symbol is bigger than the current print area.	Expand the print area by <a href="#">0x1D 0x57</a> , <a href="#">0x1B 0x57</a> (see the commands manual PAGE MODE cod.0577200M000073), <a href="#">0x1B 0x24</a> . Reduce the module size by using <a href="#">Function 167</a> . Lower the error correction level by using <a href="#">Function 169</a> .
The data in the symbol storage area is too large.	Send correct data by using <a href="#">Function 180</a> . Select other model by using <a href="#">Function 165</a> . Lower the error correction level by using <a href="#">Function 169</a> .
There is no data in the symbol storage area.	Send data to the symbol storage area by using <a href="#">Function 180</a> .

[Default]

[Reference]

[0x1D 0x28 0x6B](#)

[Example]

A possible device response can be:

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

where:

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



## 0x1D 0x48

<GS H>

Select print position of HRI characters in 1D barcodes

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

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

[Notes]	HRI characters are printed using the font specified by <a href="#">0x1D 0x66</a> .
---------	--

[Default]	n = 0x00
-----------	----------

[Reference]	<a href="#">0x1D 0x66</a> , <a href="#">0x1D 0x6B</a>
-------------	---

[Example]

Not printed



Above the barcode

ABCDEFGH123456



Below the barcode



ABCDEFGH123456

Both above and below the barcode

ABCDEFGH123456



ABCDEFGH123456



0x1D 0x66

<GS f>

Select font for HRI characters

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

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

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

[Default] n = 0x00

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

[Example]

Font A

ABCDEFGH123456  


Font B

ABCDEFGH123456  




## 0x1D 0x68

<GS h>

### Set 1D barcode height

Valid for	KM216HIII c200			
	KM216HIII e200			
	KPM216HIII h200			
	KPM216HIII h300			
	KPM216HIII v200			
[Format]	Hex	1D	68	n
	ASCII	GS	h	n
[Range]	$0x01 \leq n \leq 0xFF$			
[Description]	Sets the height of the 1D barcode. n specifies the number of vertical dots.			
[Notes]				
[Default]	n = 0xA2 (20.25 mm)			
[Reference]	<a href="#">0x1D 0x6B</a>			
[Example]	To print a barcode with height of 15 mm, the command sequence is: 0x1D 0x68 0x78			
	Where: 15 mm = 15 × 8 dots = 120 dots which converted in hexadecimal value = 0x78			



## 0x1D 0x6B

<GS k>

### Print 1D barcode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
-----------	---	--	--	--	--	--

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

[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	$0x0B \leq n \leq 0x0C$	$0x30 \leq d \leq 0x39$
0x42	UPC-E	$0x0B \leq n \leq 0x0C$	$0x30 \leq d \leq 0x39$
0x43	EAN13 (JAN)	$0x0C \leq n \leq 0x0D$	$0x30 \leq d \leq 0x39$
0x44	EAN8 (JAN)	$0x07 \leq n \leq 0x08$	$0x30 \leq d \leq 0x39$
0x45	CODE39	$0x01 \leq n \leq 0xFF$	$0x30 \leq d \leq 0x39$ , $0x41 \leq d \leq 0x5A$ , $0x20, 0x24, 0x25, 0x2B$ , $0x2D, 0x2E, 0x2F$
0x46	ITF	$0x01 \leq n \leq 0xFF$	$0x30 \leq d \leq 0x39$
0x47	CODABAR	$0x01 \leq n \leq 0xFF$	$0x30 \leq d \leq 0x39$ , $0x41 \leq d \leq 0x44$ , $0x24, 0x2B, 0x2D$ , $0x2E, 0x2F, 0x3A$
0x48	CODE93	$0x01 \leq n \leq 0xFF$	$0x01 \leq d \leq 0x7F$
0x49	CODE128	$0x02 \leq n \leq 0xFF$	$0x01 \leq d \leq 0x7F$
0x5A	CODE32	$0x08 \leq n \leq 0x09$	$0x30 \leq d \leq 0x39$

### [Notes]

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

## Format 1

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

## Format 2

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

When CODE93 is used:

- The device prints an HRI character (o) as a start character at the beginning of the HRI character string.



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

When CODE128 is used, please note the following regarding data transmission:

- The top part of the barcode data string must be a code set selection character (CODE A, CODE B or CODE C) which selects the first code set.
- Special characters are defined by combining two characters "{" and one character. ASCII character "{" is defined by transmitting "{" twice, consecutively.

SPECIFIC CHARACTER	DATA TRANSMISSION	
	ASCII	HEX
SHIFT	{S	7B, 53
CODE A	{A	7B, 41
CODE B	{B	7B, 42
CODE C	{C	7B, 43
FNC1	{1	7B, 31
FNC2	{2	7B, 32
FNC3	{3	7B, 33
FNC4	{4	7B, 34
'{'	{{	7B, 7B

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

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

[Default]

[Reference] [0x1D 0x48](#), [0x1D 0x66](#), [0x1D 0x68](#), [0x1D 0x77](#)

[Example]

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

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



## 0x1D 0x77

<GS w>

### Set 1D barcode width

Valid for

- KM216HIII c200
- KM216HIII e200
- KPM216HIII h200
- KPM216HIII h300
- KPM216HIII v200

[Format]

Hex	1D	77	n
ASCII	GS	w	n

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

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

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

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

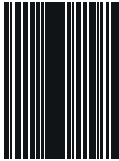
[Notes]



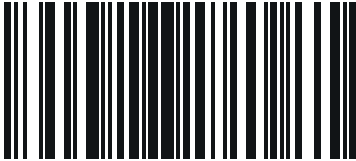
[Default]                    n = 0x03

[Reference]                0x1D 0x6B

[Example]



n = 0x01



n = 0x03



# CHARACTER COMMANDS

## 0x18

<CAN>

Cancel current line transmitted

Valid for	KM216HIII c200	
	KM216HIII e200	
	KPM216HIII h200	
	KPM216HIII h300	
	KPM216HIII v200	
[Format]	Hex	18
	ASCII	CAN
[Range]		
[Description]		
Deletes current line transmitted.		
[Notes]		
<ul style="list-style-type: none"><li>• Sets the print position to the beginning of the line.</li><li>• This command does not clear the receive buffer.</li></ul>		
[Default]		
[Reference]		
[Example]		



0x1B 0x20

<ESC SP>

Set right-side character spacing

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

[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 4) 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 spacing is 32 mm.
  - In standard mode, the horizontal motion unit is used.

[Default] n = 0x00

[Reference] 0x1D 0x50

[Example]

Character spacing x0  
0x1B 0x20 0x00

Character spacing x2  
0x1B 0x20 0x02

Character spacing x4  
0x1B 0x20 0x04

Character spacing x8  
0x1B 0x20 0x08

ABCDEFG  
1 2 3 4 5 6

ABCDEFG  
1 2 3 4 5 6

A B C D E F G  
1 2 3 4 5 6

A B C D E F G  
1 2 3 4 5 6

↑  
PRINTING DIRECTION



## 0x1B 0x21

<ESC !>

### Select print modes

Valid for

- KM216HIII c200
- KM216HIII e200
- KPM216HIII h200
- KPM216HIII h300
- KPM216HIII v200

[Format]

Hex	1B	21	n
ASCII	ESC	!	n

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

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

#### KM216HIII c200, KM216HIII e200, KPM216HIII h200, KPM216HIII v200

BIT	OFF/ON	n	FUNCTION	11/15 dpi	15/20 dpi	20/15 dpi
0	Off	0x00	Character font A selected	18 x 24	14 x 24	10 x 24
	On	0x01	Character font B selected	14 x 24	10 x 24	8 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			



## KPM216HIII h300

BIT	OFF/ON	n	FUNCTION	16/23 cpi	23/30 cpi	23/30 cpi
0	Off	0x00	Character font A selected	18 x 24	14 x 24	10 x 24
	On	0x01	Character font B selected	14 x 24	10 x 24	8 x 24
1	-	-	Undefined			
2	-	-	Undefined			
3	Off	0x00	Bold mode not selected			
	On	0x08	Blod mode selected			
4	Off	0x00	Double-height mode not selected			
	On	0x10	Double-height mode selected			
5	Off	0x00	Double-width mode not selected			
	On	0x20	Double-width mode selected			
6	Off	0x00	Italic mode not selected			
	On	0x40	Italic mode selected			
7	Off	0x00	Underlined mode not selected			
	On	0x80	Underlined mode selected			

### [Notes]

- The device can underline all characters, but cannot underline the spaces set by 0x09, 0x1B 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 bold mode on or off. However, the last-received setting command is the effective one.
- 0x1B 0x2D can also be used to turn the underlining mode on or off. However, the last-received setting command is the effective one.
- 0x1D 0x21 can also be used to select character height or width. However, the last-received setting command is the effective one.
- 0x1B 0x34 can also be used to turn the italic mode on or off. However, the last-received setting command is the effective one.
- Commands that change the height and width of characters are effective on the x and y axes. In case of 90°/270° rotated characters, command 0x1B 0x21 0x10 selects double-width mode and command 0x1B 0x21 0x20 selects double-height mode.

### [Default]

n = 0x00

### [Reference]

0x1B 0x2D, 0x1B 0x45, 0x1D 0x21, 0x1B 0x34





[Example]

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 characters

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1B	25	n
	ASCII	ESC	%	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Enables or disables the user-defined character set. When the Least Significant Bit (LSB) of n is 0, the user-defined character set is disabled. When the Least Significant Bit (LSB) of n is 1, the user-defined character set is enabled.			
[Notes]	<ul style="list-style-type: none"><li>• Only the Least Significant Bit (LSB) of n is applicable.</li><li>• When the user-defined character set is disabled, the internal character set is automatically selected.</li></ul>			
[Default]	n = 0x00			
[Reference]	0x1B 0x26, 0x1B 0x3F			
[Example]				



## 0x1B 0x26

<ESC &>

### Defines user-defined characters

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200						
[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 $0x20 \leq c1 \leq cn \leq 0x7E$ $0x00 \leq x \leq 0x12$ (font 18 x 24) $0x00 \leq x \leq 0x0E$ (font 14 x 24) $0x00 \leq x \leq 0x0A$ (font 10 x 24) $0x00 \leq d0...dk \leq 0xFF$ $k = cn - c1 + 1$						
[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 <math>c1 = cn</math>.</li> <li>if <math>cn &lt; c1</math>, 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 <math>(x \times y)</math> bytes.</li> <li>To print a dot, set the corresponding bit to 1; to not have it print, set to 0.</li> <li>This command can define different user-defined character patterns for each font. To select the font, use <a href="#">0x1B 0x21</a>.</li> <li>The user programmable character definitions are cleared when commands <a href="#">0x1B 0x40</a>, <a href="#">0x1D 0x2A</a> or <a href="#">0x1B 0x3F</a> are executed or the device is reset or turned off.</li> <li>x1 [d0 ... dk] will be repeated for each character to be replaced.</li> </ul>						
[Default]	Internal character set						
[Reference]	<a href="#">0x1B 0x25</a> , <a href="#">0x1B 0x3F</a>						
[Example]	<p>To replace only the "A" character of the 11 cpi font table (font 18x24), the command sequence is:  0x1B 0x26 0x03 0x41 0x41 0x10 [48 bytes of the new character definition].</p> <p>To replace "A" and "B" characters of the 11 cpi font table (font 18x24), the command sequence is:  0x1B 0x26 0x03 0x41 0x42 0x10 [48 bytes of the new character definition] 0x10 [48 bytes of the new character definition].</p>						



0x1B 0x2D

<ESC ->

Turn underline mode on or off

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

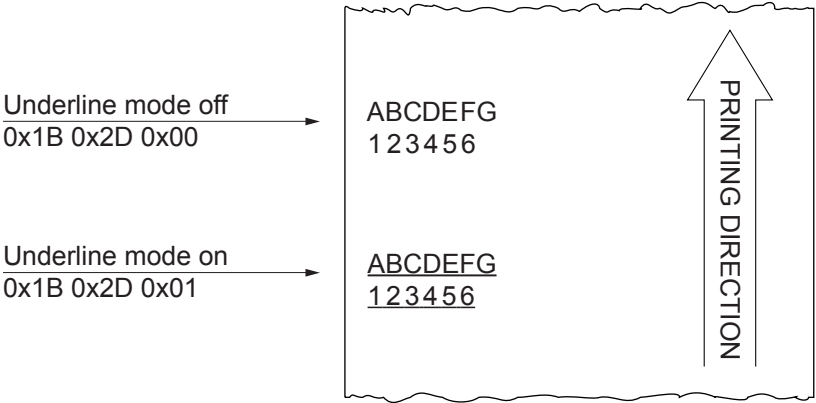
n	FUNCTION
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1 dot thick)
0x02, 0x32	Turns on underline mode (2 dot thick)

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

[Default] n = 0x00

[Reference] 0x1B 0x21

[Example]





## 0x1B 0x34

<ESC 4>

### Turn italic mode on or off

Valid for

- KM216HIII c200
- KM216HIII e200
- KPM216HIII h200
- KPM216HIII h300
- KPM216HIII v200

[Format]

Hex	1B	34	n
ASCII	ESC	4	n

[Range]

$0x00 \leq n \leq 0x01$   
 $0x30 \leq n \leq 0x31$

[Description]

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

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

[Notes]

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

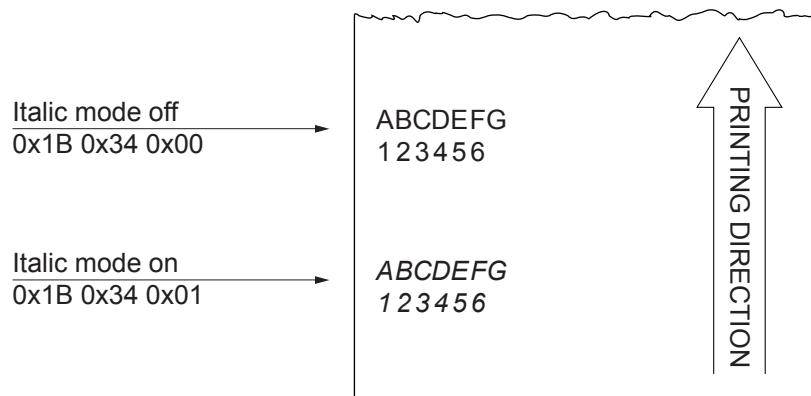
[Default]

n = 0x00

[Reference]

[0x1B 0x21](#)

[Example]





0x1B 0x3F

<ESC ?>

Cancel user-defined characters

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1B	3F	n
	ASCII	ESC	?	n
[Range]	0x20 ≤ n ≤ 0x7E			
[Description]	Cancels user-defined characters.			
[Notes]	<ul style="list-style-type: none"><li>• This command cancels the pattern defined for the character code specified by n.</li><li>• This command deletes the pattern defined for the specified character code in the font selected by 0x1B 0x21.</li><li>• If the user-defined character has not been defined for the specified character code, the device ignores this command.</li></ul>			
[Default]				
[Reference]	0x1B 0x26, 0x1B 0x25			
[Example]				

## 0x1B 0x45

<ESC E>

Turn bold mode on or off

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

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

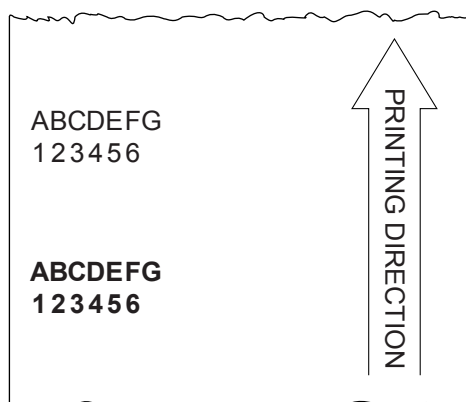
[Default] n = 0x00

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

[Example]

Bold mode off  
0x1B 0x45 0x00

Bold mode on  
0x1B 0x45 0x01





0x1B 0x47

<ESC G>

Turn double-strike mode on or off

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range] 0x00 ≤ n ≤ 0xFF

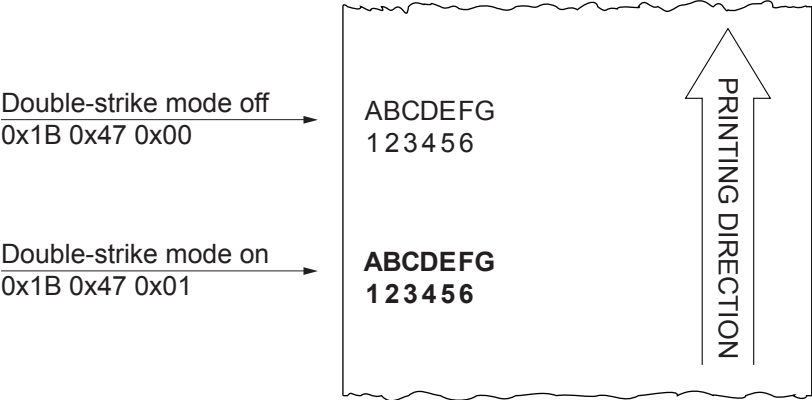
[Description] Turns double-strike mode on or off, based on the n value:  
- when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.  
- when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

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

[Default] n = 0x00

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

[Example]







## 0x1B 0x4D

<ESC M>

### Select character font

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

#### **KM216HIII c200, KM216HIII e200, KPM216HIII h200, KPM216HIII v200**

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

#### **KPM216HIII h300**

CHAR/INCH	n	FUNCTION
A = 16 cpi	0x00, 0x30	Font 16 cpi (18x24)
B = 23 cpi	0x01, 0x31	Font 23 cpi (14x24)
A = 23 cpi	0x00, 0x30	Font 23 cpi (14x24)
B = 30 cpi	0x01, 0x31	Font 30 cpi (10x24)
A = 30 cpi	0x00, 0x30	Font 30 cpi (10x24)
B = 23 cpi	0x01, 0x31	Font 23 cpi (14x24)

[Notes]

[Default]

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

[Example]



## 0x1B 0x52

<ESC R>

Select an international character set

Valid for

KM216HIII c200

KM216HIII e200

KPM216HIII h200

KPM216HIII h300

KPM216HIII v200

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

[Notes]

[Default] n = 0x00

[Reference]

[Example]



## 0x1B 0x56

<ESC V>

### Set 90° rotated print mode

Valid for  
KM216HIII c200  
KM216HIII e200  
KPM216HIII h200  
KPM216HIII h300  
KPM216HIII v200

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

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

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

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

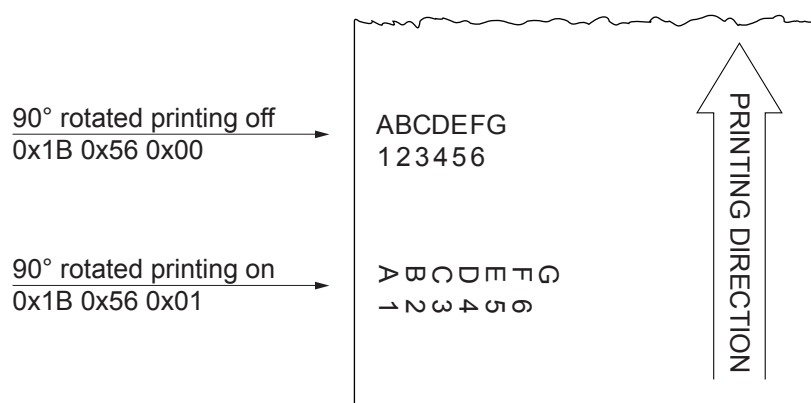
[Notes]

- When underlined mode is turned on, the device does not underline 90° rotated characters. All the same it's possible select the underline mode.
- Double-width and double-height commands in 90° rotation mode enlarge characters in the opposite directions from double-height and double-width commands in normal mode.
- This command is not available in Page mode.
- If this command is entered in Page mode, the device all the same save the setting.

Default] n = 0x00

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

[Example]





## 0x1B 0x74

<ESC t>

### Select character code table

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range] 0x01 ≤ n ≤ 0x35, n = 0xFF

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

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



n	PAGE
0x23	PC861 - Icelandic on request
0x24	PC862 - Hebrew
0x25	PC864 - Arabic
0x26	PC869 - Greek on request
0x27	ISO8859-2 - Latin 2 on request
0x28	ISO8859-15 - Latin 9 on request
0x29	PC1098 - Farsi on request
0x2A	PC1118 - Lithuanian on request
0x2B	PC1119 - Lithuanian on request
0x2C	PC1125 - Ukrainian on request
0x2D	WPC1250 - Latin 2 on request
0x2E	WPC1251 - Cyrillic on request
0x2F	WPC1253 - Greek on request
0x30	WPC1254 - Turkish on request
0x31	WPC1255 - Hebrew
0x32	WPC1256 - Arabic
0x33	WPC1257 - Baltic Rim
0x34	WPC1258 - Vietnamese
0x35	KZ1048 - Kazakh on request
0xFF	Space page

[Notes]

- PC866 and PC852 tables are valid only for TrueType fonts.
- The tables are selectable only if the code pages are present on the machine. By selecting a code page not present on the machine, the code page remains the one currently in use.
- Make sure to select the font type "International" with the command **0x1C 0x25** or with the "Font type" parameter during the setup procedure (refer to the user manual of the device).

[Default] n = 0x00

[Reference] **0x1C 0x25**

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



0x1B 0x7B

<ESC {>

Turn upside-down printing mode on or off

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range] 0x00 ≤ n ≤ 0xFF

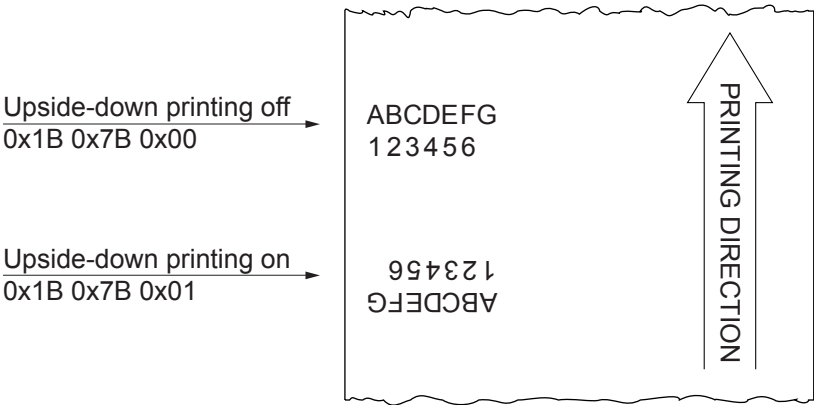
[Description] Turns upside-down printing mode on or off, based on the value of n:  
- when the Least Significant Bit (LSB) of n is 0, the upside-down printing mode is off.  
- when the Least Significant Bit (LSB) of n is 1, the upside-down printing mode is on.

- [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	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

[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:
---------------	--

#### KM216HIII c200, KM216HIII e200, KPM216HIII h200, KPM216HIII v200

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

#### KPM216HIII h300

n	PITCH	
0x00, 0x30	Font A = 16 cpi	Font B = 23 cpi
0x01, 0x31	Font A = 23 cpi	Font B = 30 cpi
0x02, 0x32	Font A = 30 cpi	Font B = 23 cpi

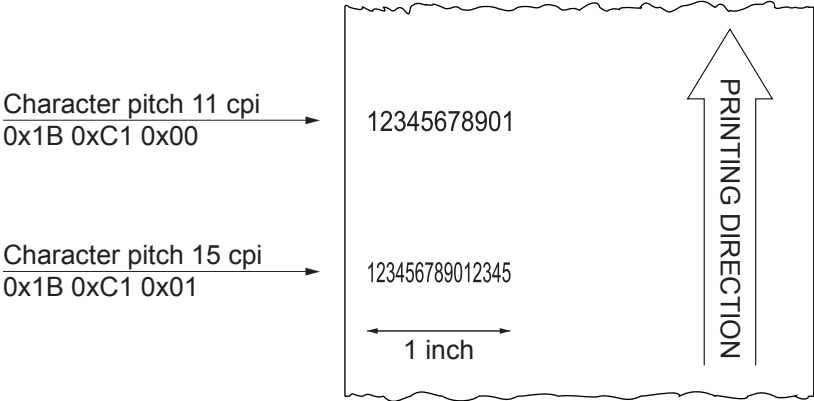
[Notes]



[Default]                    n = 0x00

[Reference]                0x1B 0x21

[Example]







## 0x1C 0x25

<FS %>

### Select the font type

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range] n = 0x00, 0x01

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

n	FONT TYPE
0x00	International
0x01	Chinese GB18030

[Notes]

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

[Default] n = 0x00

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

[Example]



## 0x1D 0x21

<GS !>

### Select character size

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

[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: <ul style="list-style-type: none"><li>• Bits 0 to 3: to select character height (see table 2).</li><li>• Bits 4 to 7: to select character width (see table 1).</li></ul>
---------------	--

Table 1 Select character width

HEX	WIDTH
00	1 (normal)
10	2 (width = 2x)
20	3 (width = 3x)
30	4 (width = 4x)
40	5 (width = 5x)
50	6 (width = 6x)
60	7 (width = 7x)
70	8 (width = 8x)

Table 2 Select character height

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

[Notes]	<ul style="list-style-type: none"><li>• This command is effective for all characters (except HRI characters).</li><li>• If n falls outside the defined range, this command is ignored.</li><li>• Characters enlarged to different heights on the same line are aligned at the baseline or top line.</li><li>• 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one.</li><li>• 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.</li></ul>
---------	---



[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	KM216HIII c200			
	KM216HIII e200			
	KPM216HIII h200			
	KPM216HIII h300			
	KPM216HIII v200			

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

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

[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.

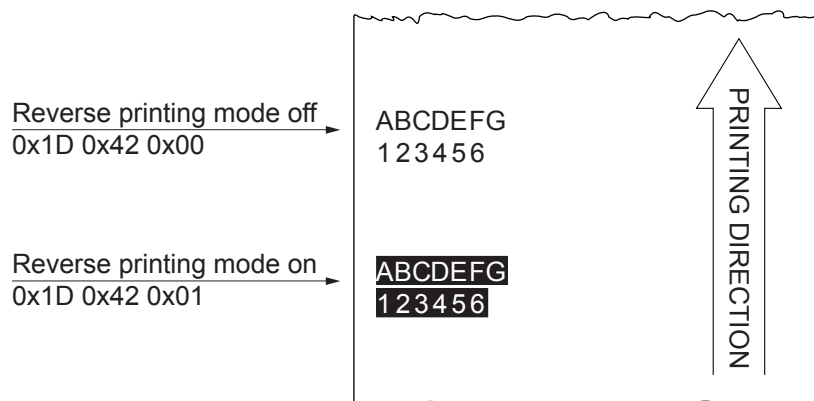
[Notes]

- 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 black and white reverse mode is selected.

[Default] n = 0x00

[Reference]

[Example]





# COMMANDS FOR TT FONTS MANAGEMENT

## 0x1C 0x64

<FS d>

### Set font dimension

Valid for	KM216HIII c200			
	KM216HIII e200			
	KPM216HIII h200			
	KPM216HIII h300			
	KPM216HIII v200			
[Format]	Hex	1C	64	s
	ASCII	FS	d	s
[Range]	$0x00 \leq s \leq 0xFF$			
[Description]	Sets font dimension. The parameter s specifies the size of TrueType fonts expressed in dots.			
[Notes]	• This command is active only with TrueType fonts.			
	• This command is active only in Page Mode.			
[Default]	s = 0x0A			
[Reference]	<a href="#">0x1C 0x66</a>			
[Example]	See the example in <a href="#">PAGE MODE</a> section.			



## 0x1C 0x65

<FS e>

### Enable or disable encoding for True Type fonts

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

[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]	<ul style="list-style-type: none"><li>• This command is valid only for TrueType fonts of monospace type.</li><li>• If the text encoding is disabled, manage the characters coding by <a href="#">0x1B 0x52</a> and <a href="#">0x1B 0x74</a> commands.</li><li>• If the text encoding is enabled, the character's addressing respects the UNICODE standard (see <a href="http://www.unicode.org">www.unicode.org</a>).</li></ul>
---------	--

[Default]	n = 0x00
-----------	----------

[Reference]	<a href="#">0x1B 0x52</a> , <a href="#">0x1B 0x74</a> , <a href="#">0x1C 0x66</a>
-------------	---

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



## 0x1C 0x66

<FS f>

### True Type fonts management

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
-----------	---	--	--	--	--	--

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

[Range]	$0 \leq m \leq 0xFF$ $0 \leq n \leq 0x40$
---------	--

[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, 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 uninstall a font and clear 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 uninstall all the installed fonts.
  - If command is successful the device transmits the ACK (0x06), otherwise return NACK (0x15).
  - 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





# LINE SPACING COMMANDS

## 0x1B 0x30

<ESC 0>

Select 1/8-inch line spacing

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII v200		

[Format]	Hex	1B	30
	ASCII	ESC	0

[Range]

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

[Notes]

[Default]

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

[Example]

1/6-inch line spacing  
0x1B 0x32 →

ABCDEFGH  
123456

1/8-inch line spacing  
0x1B 0x32 →

ABCDEFGH  
123456





0x1B 0x30

<ESC 0>

Select 1/12-inch line spacing

Valid for	KPM216HIII h300		
-----------	-----------------	--	--

[Format]	Hex	1B	30
	ASCII	ESC	0

[Range]

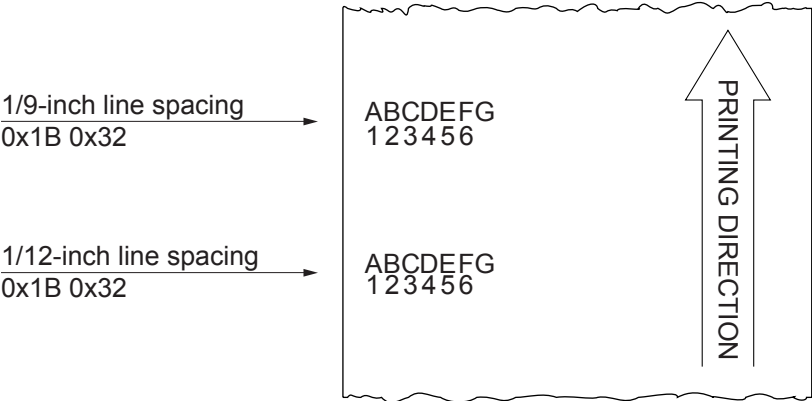
[Description]      Selects 1/12-inch line spacing.

[Notes]

[Default]

[Reference]      0x1B 0x32, 0x1B 0x33

[Example]





## 0x1B 0x32

<ESC 2>

### Select 1/6-inch line spacing

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII v200		

[Format]	Hex	1B	32
	ASCII	ESC	2

[Range]

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

[Notes]

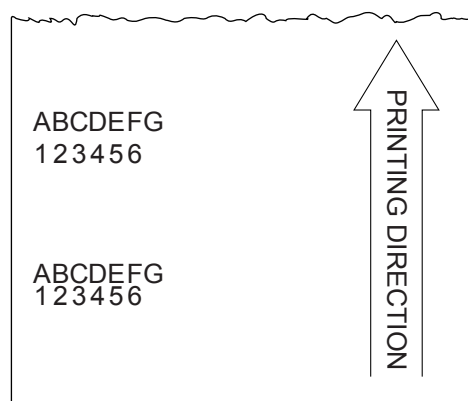
[Default]

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

[Example]

1/6-inch line spacing  
0x1B 0x32

1/8-inch line spacing  
0x1B 0x32





0x1B 0x32

<ESC 2>

Select 1/9-inch line spacing

Valid for	KPM216HIII h300		
-----------	-----------------	--	--

[Format]	Hex	1B	32
	ASCII	ESC	2

[Range]

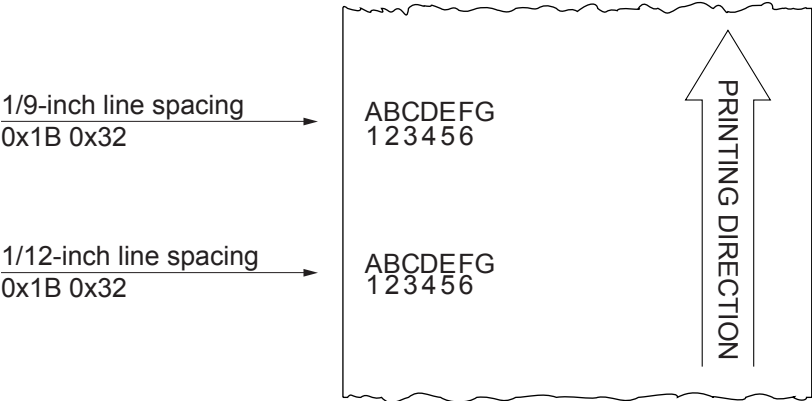
[Description]      Selects 1/9-inch line spacing.

[Notes]

[Default]

[Reference]      0x1B 0x30, 0x1B 0x33

[Example]





## 0x1B 0x33

<ESC 3>

### Set line spacing

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1B	33	n
	ASCII	ESC	3	n
[Range]	$0x00 \leq n \leq 0xFF$			
[Description]	Sets line spacing to $[n \times (\text{vertical or horizontal motion unit})]$ .			
[Notes]	<ul style="list-style-type: none"><li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>. Changing the horizontal or vertical motion unit does not affect the current line spacing.</li><li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li><li>• The maximum spacing is 32.5 mm.</li></ul>			
[Default]	<b>KM216HIII c200, KM216HIII e200, KPM216HIII h200, KPM216HIII v200</b>			
	n = 0x40 (1/6 inch)			
	<b>KPM216HIII h300</b>			
	n = 0x42 (1/9 inch)			
[Reference]	<a href="#">0x1B 0x30</a> , <a href="#">0x1B 0x32</a> , <a href="#">0x1D 0x50</a>			
[Example]				



# PRINT COMMANDS

## 0x0A

<LF>

### Print and line feed

Valid for	KM216HIII c200	
	KM216HIII e200	
	KPM216HIII h200	
	KPM216HIII h300	
	KPM216HIII v200	

[Format]	Hex	0A
	ASCII	LF

[Range]

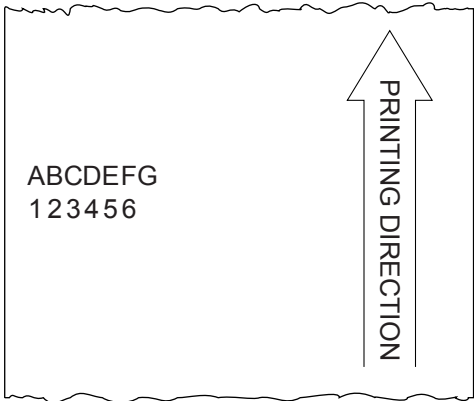
[Description] This command sets the print position to the beginning of the line printing the data in the buffer and feeding one line based on the line spacing set with the command 0x1B 0x30 or 0x1B 0x32.

[Notes] 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	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200	
-----------	---	--

[Format]	Hex	0D
	ASCII	CR

[Range]

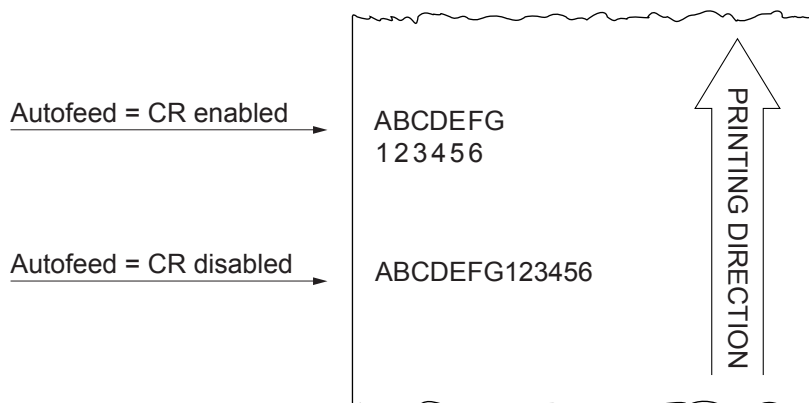
[Description] This command handles the end of a line text.

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

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

[Reference] [0x0A](#)

[Example]



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



## 0x1B 0x4A

<ESC J>

### Print and paper feed

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1B	4A	n
	ASCII	ESC	J	n
[Range]	$0x00 \leq n \leq 0xFF$			
[Description]	Prints the data saved in the print buffer and feeds the paper [n × vertical or horizontal motion unit].			
[Notes]	<ul style="list-style-type: none"><li>• After printing has been completed, this command sets the print starting position to the beginning of the line.</li><li>• The paper feed amount set by this command does not affect the values set by 0x1B 0x32 or 0x1B 0x33.</li><li>• The horizontal and vertical motion units are specified by 0x1D 0x50.</li><li>• 0x1D 0x50 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li></ul>			
[Default]				
[Reference]	0x1D 0x50			
[Example]				





## 0x1B 0x64

<ESC d>

### Print and feed paper n lines

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1B	64	n
	ASCII	ESC	d	n
[Range]	$0x00 \leq n \leq 0xFF$			
[Description]	Prints the data saved in the print buffer and feeds the paper n lines.			
[Notes]	<ul style="list-style-type: none"><li>• n rows paper feed is equivalent to (n × char height + line spacing set).</li><li>• Sets the print starting position at the beginning of the line.</li><li>• This command does not affect the line spacing set by <a href="#">0x1B 0x32</a> or <a href="#">0x1B 0x33</a>.</li><li>• The maximum paper feed amount is 254 lines. Even if a paper feed amount of more than 254 lines is set, the device feeds the paper only 254 lines.</li></ul>			
[Default]				
[Reference]	<a href="#">0x1B 0x32</a> , <a href="#">0x1B 0x33</a>			
[Example]				



# 0x1D 0x7C

## Set printing density

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range]	0x02 ≤ n ≤ 0x06 0x32 ≤ n ≤ 0x36
---------	------------------------------------

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

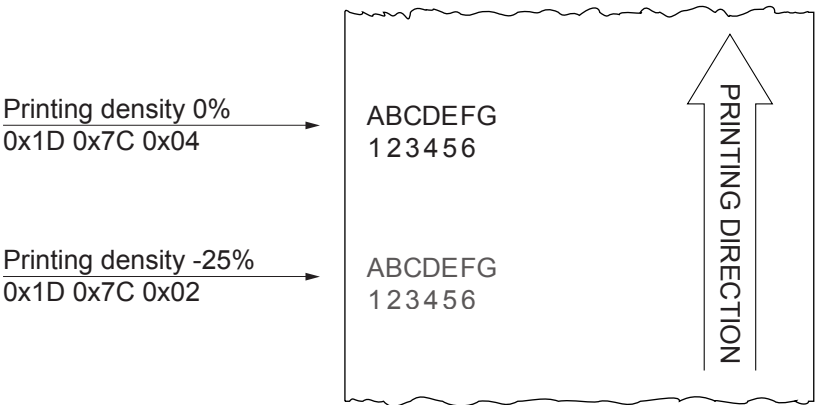
n	PRINTING DENSITY
0x02, 0x32	- 25%
0x03, 0x33	- 12.5%
0x04, 0x34	0%
0x05, 0x35	+ 12.5%
0x06, 0x36	+ 25%

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

[Default] n = 0x04

[Reference]

[Example]





# STATUS COMMANDS

## 0x10 0x04

<DLE EOT>

### Real-time status transmission

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

[Format]	Hex	10	04	n
	ASCII	DLE	EOT	n

[Range]	$0x01 \leq n \leq 0x04$ $n = 0x11, 0x14, 0x15$
---------	---

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

n = 0x01	transmits device status
n = 0x02	transmits off-line status
n = 0x03	transmits error status
n = 0x04	transmits paper roll sensor status
n = 0x11	transmits print status
n = 0x14	transmits full status
n = 0x15	transmits device ID



#### Device status (n = 0x01)

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



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

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to off
1	On	02	Not used. Fixed to on
2	-	-	RESERVED
3	Off	00	Autocutter ok
	On	08	Autocutter 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	Low paper
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 = 0x11)

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	Printing stopped out for paper end
6	-	-	RESERVED
7	Off	00	Not used. Fixed to off

Full status (n = 0x14, 6 bytes)

1st byte = 0x10 (DLE)

2nd byte = 0x0F

3rd byte = Paper status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Paper present
	On	01	Paper not present
1	-	-	RESERVED
2	Off	00	Paper present
	On	04	Low paper
3	-	-	RESERVED
4	-	-	RESERVED
5	Off	00	Ticket not present in output
	On	20	Ticket present in output
6	Off	00	Paper virtually present *
	On	40	Virtual paper end *
7	Off	00	Notch is placed over the sensor
	On	80	Notch is not placed over the sensor

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



4th byte = User status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	No error, printing head down
	On	01	Printing head up error
1	Off	00	Cover closed
	On	02	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

5th byte = Recoverable status error

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



6th byte = Unrecoverable error status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Autocutter ok
	On	01	Autocutter error
1	Off	00	Autocutter cover ok
	On	02	Autocutter 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

Transmit device ID (n = 0x15)

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

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

[Default]

[Reference]

[Example] Request for device status transmission:  
0x10 0x04 0x01

Device response:  
0x80            LF key pressed





## 0x1B 0x76

<ESC v>

### Transmit paper sensor status

Valid for

- KM216HIII c200
- KM216HIII e200
- KPM216HIII h200
- KPM216HIII h300
- KPM216HIII v200

[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	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1C	EA	n
	ASCII	FS	0xEA	n
[Range]	n = 0x52, 0x72			
[Description]	Transmits the device serial number.			
[Notes]	<ul style="list-style-type: none"><li>• The serial number is a string of 16 alphanumeric characters.</li><li>• If the printer serial number is not defined, the device returns a string of 16 characters with a value of 0x00.</li></ul>			
[Default]				
[Reference]				
[Example]	To read the device serial number the command sequence is: 0x1C 0xEA 0x52			
	The device returns a string of 16 alphanumeric characters just like the following: 'ABC0123456789012'			



## 0x1D 0x61

<GS a>

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

Valid for

KM216HIII c200

KM216HIII e200

KPM216HIII h200

KPM216HIII h300

KPM216HIII v200

[Format]

Hex	1D	61	n
ASCII	GS	a	n

[Range]

$0x00 \leq n \leq 0xFF$

[Description]

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

BIT	OFF/ON	n	FUNCTION
0	-	-	Undefined
1	Off	00	Disable cover open + FEED button status
	On	02	Enable cover open + FEED button user status
2	Off	00	Disable autocutter, recoverable error, unrecoverable and online status
	On	04	Enable autocutter, recoverable error, unrecoverable and online status
3	Off	00	Disable low paper + paper end status
	On	08	Enable low paper + paper end status
4, 5	-	-	Undefined
6	Off	00	Disable FEED button status
	On	40	Enable FEED button status
7	-	-	Undefined

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



[Default]

[Reference]      0x10 0x04

[Exampe]



## 0x1D 0xE0

### Enable or disable automatic FULL STATUS BACK

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

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

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

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

[Reference]	0x10 0x04
-------------	-----------

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



## 0x1D 0xE1

### Reading of length paper available before virtual paper-end

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		
[Format]	Hex	1D	E1
	ASCII	GS	0xE1
[Range]			
[Description]			
Reading of length paper available before virtual paper-end (expressed in centimetres). The command return a string pointing out how much paper is available.			
[Notes]			
<ul style="list-style-type: none"><li>• 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).</li><li>• The virtual paper-end limit is set by the command <a href="#">0x1D 0xE6</a>.</li><li>• To set virtual paper-end limit, measure the length of the paper from low paper to the end of the roll, using several of them.</li></ul>			
[Default]			
[Reference]			
<a href="#">0x1D 0xE6</a>			
[Example]			
If there are 5.1 m before paper end, the answer will be: '510cm'			



## 0x1D 0xE2

### Reading number of cuts performed by the autocutter

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200		
[Format]	Hex ASCII	1D GS	E2 0xE2
[Range]			
[Description]	Reading the number of cuts performed by the autocutter.		
[Notes]	The command returns a string indicating 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	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[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 0xE4

### Reading number of retracting

Valid for	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		
[Format]	Hex	1D	E4
	ASCII	GS	0xE4
[Range]			
[Description]			
Reading number of paper retracting made by the device.			
[Notes]			
The command returns a string indicating the number of paper retracting made by the device.			
[Default]			
[Reference]			
[Example]			
If the device has retracted the paper 512 times, the answer will be: '512ret'			



## 0x1D 0xE5

### Reading number of power up

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[Format]	Hex	1D	E5
	ASCII	GS	0xE5

[Range]

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

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

[Default]

[Reference]

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



# BIT-IMAGE COMMANDS

## 0x1B 0x2A

<ESC \*>

Select bit image mode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200						
-----------	---	--	--	--	--	--	--

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

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

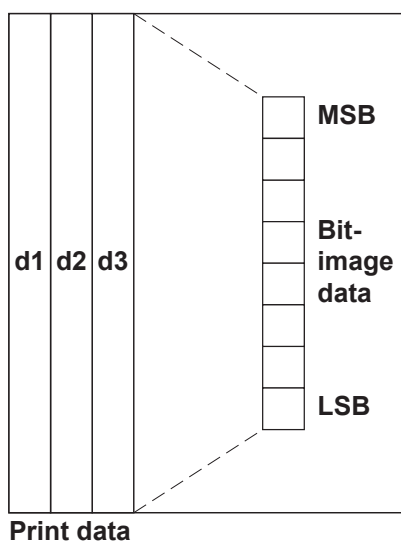
[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

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

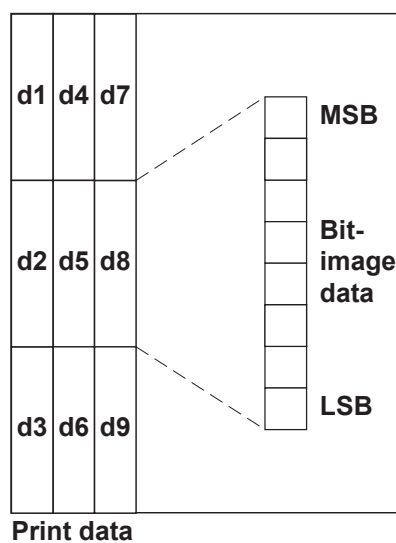
[Notes]	<ul style="list-style-type: none"><li>• The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH × 256.</li><li>• If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.</li><li>• d indicates the bit image data. Set a corresponding bit to 1 to print a dot, or to 0 to not print the dot.</li><li>• If the value of m is outside the specified range, nL and data following it are processed as normal data.</li><li>• 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.</li><li>• To print the bit image use 0x0A, 0x0D, 0x1B 0x4A or 0x1B 0x64.</li><li>• After printing a bit image, the device returns to normal data processing mode.</li><li>• This command is not affected by the bold, double-strike, underline (etc.) print modes, except for the upside-down mode.</li></ul>
---------	--

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

8-dot bit image



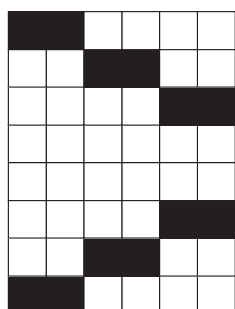
24-dot bit image



[Default]

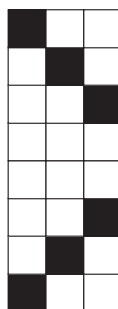
[Reference]

[Example]



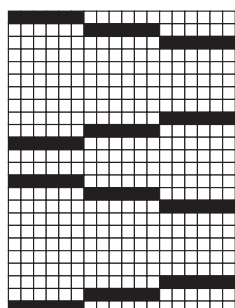
8 dots

8 dots single density



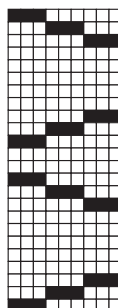
8 dots

8 dots double density



24 dots

24 dots single density



24 dots

24 dots double density



## 0x1D 0x2A

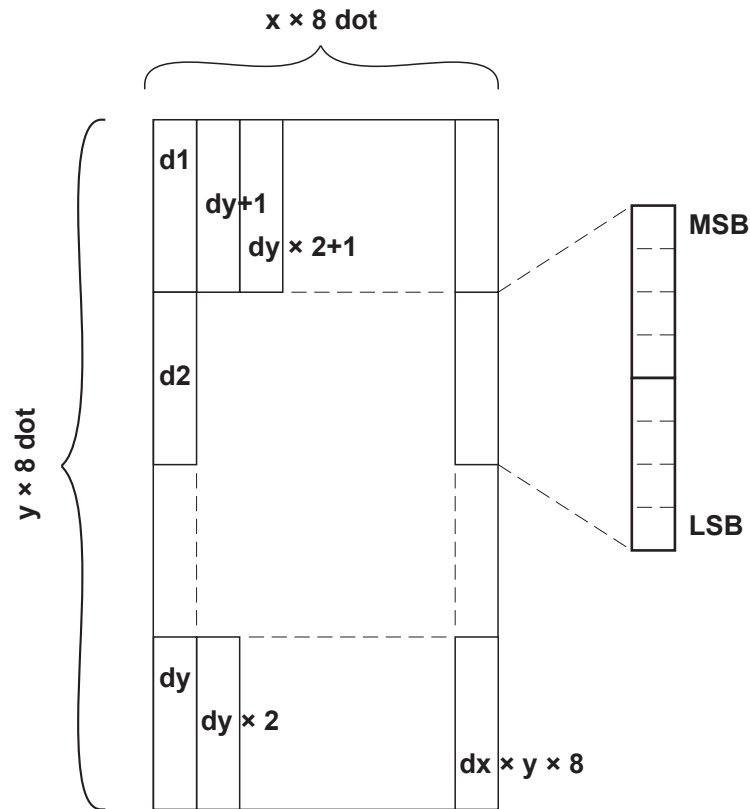
<GS \*>

### Define received bit image

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
[Format]	Hex	1D	2A	x	y	d1...d(x × y × 8)
	ASCII	GS	*	x	y	d1...d(x × y × 8)
[Range]	0x01 ≤ x ≤ 0xFF 0x01 ≤ y ≤ 0x30 x × y ≤ 1536 0x00 ≤ d ≤ 0xFF					
[Description]	Defines a received bit image using the number of dots specified by x and y. <ul style="list-style-type: none"> <li>• x specifies the number of bytes in the horizontal direction.</li> <li>• y specifies the number of bytes in the vertical direction.</li> </ul>					
[Notes]	<ul style="list-style-type: none"> <li>• The number of bytes in horizontal and vertical directions (x and y) are the horizontal and vertical size of the starting image divided by 8.</li> <li>• If x × y is out of the specified range, this command is disabled.</li> <li>• The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.</li> <li>• The received bit image definition is cleared when: <ul style="list-style-type: none"> <li>- 0x1B 0x40 is executed.</li> <li>- 0x1B 0x26 is executed.</li> <li>- Device is reset or the power is turned off.</li> </ul> </li> <li>• The image is saved in the graphic memory of the device.</li> </ul>					
[Default]						
[Reference]	0x1D 0x5C (see the commands manuale PAGE MODE cod.0577200M000073)					

[Example]

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





## 0x1D 0x2F

<GS />

### Print received bit image

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range]	$0x00 \leq m \leq 0x03$ $0x30 \leq m \leq 0x33$
---------	--

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

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

- [Notes]
- This command is ignored if a received bit image has not been defined.
  - In standard mode, this command is effective only when there is no data in the print buffer.
  - This command has no effect in the print modes bold, underline, character size, or white/black reverse printing), except for upside-down printing mode (180° rotation).
  - If the received bit-image to be printed exceeds the printable area, the excess data is not printed.
  - If the printing area width set by [0x1D 0x4C](#) and [0x1D 0x57](#) is less than one line in vertical, the following processing is performed only on the line in question:
    - 1) The printing area width is extended to the right up to one line in vertical. In this case, printing does not exceed the printable area.
    - 2) If the printing area width cannot be extended by one line in vertical, the left margin is reduced to accommodate one line in vertical.

[Default]

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

[Example]



## 0x1D 0x76 0x30

<GS v 0>

### Print raster bit image

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
-----------	---	--	--	--	--	--

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

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

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

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

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

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





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

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

[Default]

[Reference]

[Example]



# PRINT POSITION COMMANDS

## 0x08

<BS>

### Back space

Valid for	KM216HIII c200	
	KM216HIII e200	
	KPM216HIII h200	
	KPM216HIII h300	
	KPM216HIII v200	

[Format]	Hex	08
	ASCII	BS

#### [Range]

[Description] Moves print position to previous character.

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

#### [Default]

#### [Reference]

#### [Example]

## 0x09

<HT>

### Horizontal tab

Valid for	KM216HIII c200	
	KM216HIII e200	
	KPM216HIII h200	
	KPM216HIII h300	
	KPM216HIII v200	

[Format]	Hex	09
	ASCII	HT

[Range]

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

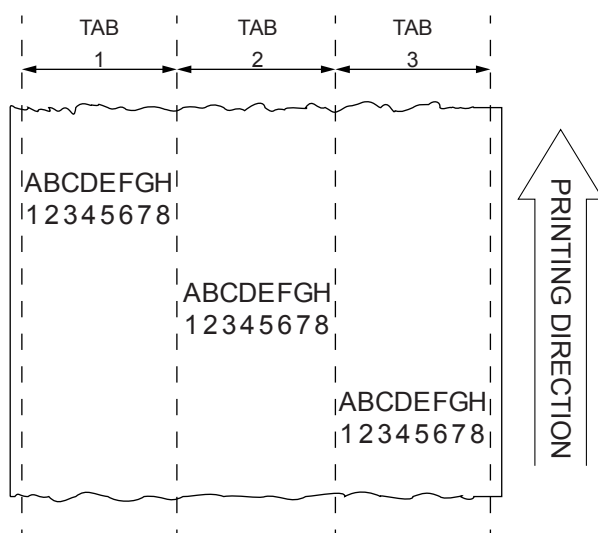
[Notes]

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

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

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

[Example]





## 0x1B 0x24

<ESC \$>

### Set absolute print position

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[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)].				
[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 0x1D 0x50.</li><li>• 0x1D 0x50 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]	0x1B 0x5C, 0x1D 0x50				
[Example]					



## 0x1B 0x28 0x76

<ESC ( v>

### Set relative vertical print position

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
[Format]	Hex	1B	28	76	nL	nH
	ASCII	ESC	(	v	nL	nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF					
[Description]	Sets the print vertical position based on the current position by using the horizontal or vertical motion unit. This command sets the distance from the current position to [(nL + nH × 256) × horizontal or vertical motion unit].					
[Notes]	<ul style="list-style-type: none"><li>• When the starting position is specified by N motion unit to the bottom: <math>nL + nH \times 256 = N</math>.</li><li>• When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: <math>nL + nH \times 256 = 65536 - N</math>.</li><li>• The horizontal and vertical motion unit are specified by <a href="#">0x1D 0x50</a>.</li><li>• The <a href="#">0x1D 0x50</a> command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.</li><li>• In standard mode, the vertical motion unit is used.</li></ul>					
[Default]						
[Reference]	<a href="#">0x1D 0x50</a>					
[Example]						



## 0x1B 0x44

<ESC D>

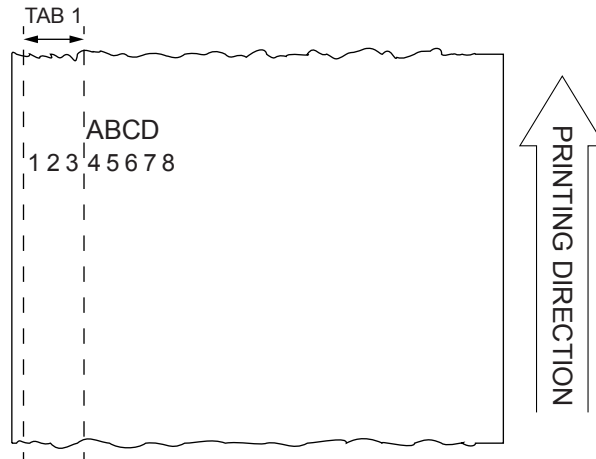
### Set horizontal tab positions

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex	1B	44	n1...nk	00
	ASCII	ESC	D	n1...nk	NUL
[Range]	0x01 ≤ n ≤ 0xFF 0x00 ≤ k ≤ 0x20				
[Description]	Sets horizontal tab positions <ul style="list-style-type: none"><li>• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.</li><li>• k indicates the total number of horizontal tab positions to be set.</li></ul>				
[Notes]	<ul style="list-style-type: none"><li>• The horizontal tab position is stored as a value of [character width × n] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.</li><li>• This command cancels previous tab settings.</li><li>• Up to 32 tab positions (k = 0x20) can be set. Data exceeding 32 tab positions is processed as normal data.</li><li>• Send [n] k in ascending order and place a 0 NUL code at the end. When [n] k is less than or equal to the preceding value [n] k-1, the setting is complete and the data which follows is processed as normal data.</li><li>• 0x1B 0x44 0x00 cancels all horizontal tab positions.</li><li>• The previously specified horizontal tab position does not change, even if the character width is modified.</li></ul>				
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) when the right-side character spacing is 0.				
[Reference]	<a href="#">0x09</a>				

[Example]

To set a tabulation to column 4 send the command:

0x1B 0x44 0x03 0x00



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

0x09 'ABCD'

where:

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



## 0x1B 0x5C

<ESC I>

### Set relative print position

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex ASCII	1B ESC	5C \ 	nL nL	nH nH
[Range]	0x00 ≤ nL ≤ 0xFF 0x00 ≤ nH ≤ 0xFF				
[Description]	Sets the print starting position based on the current position by using the horizontal or vertical motion unit. Sets the distance from the current position to [(nL + nH × 256) × horizontal or vertical motion unit].				
[Notes]	<ul style="list-style-type: none"><li>• When the starting position is specified by N motion units to the right: nL + nH × 256 = N.</li><li>• When the starting position is specified by n motion units to the left (negative direction), use the complement of 65536: nL + nH × 256 = 65536 – N.</li><li>• If setting exceeds the printing area width, the left or right margin is set to the default value.</li><li>• The horizontal and vertical motion unit are specified by 0x1D 0x50.</li><li>• 0x1D 0x50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.</li><li>• In standard mode, the horizontal motion unit is used.</li><li>• It's possible to print further on the right margin set for every font. In this case the printing continues up to the maximum border of the device mechanism and then begins a new row.</li></ul>				
[Default]					
[Reference]	0x1B 0x24, 0x1D 0x50				
[Example]					





## 0x1B 0x61

<ESC a>

### Select justification

Valid for	KM216HIII c200
	KM216HIII e200
	KPM216HIII h200
	KPM216HIII h300
	KPM216HIII v200

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

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

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

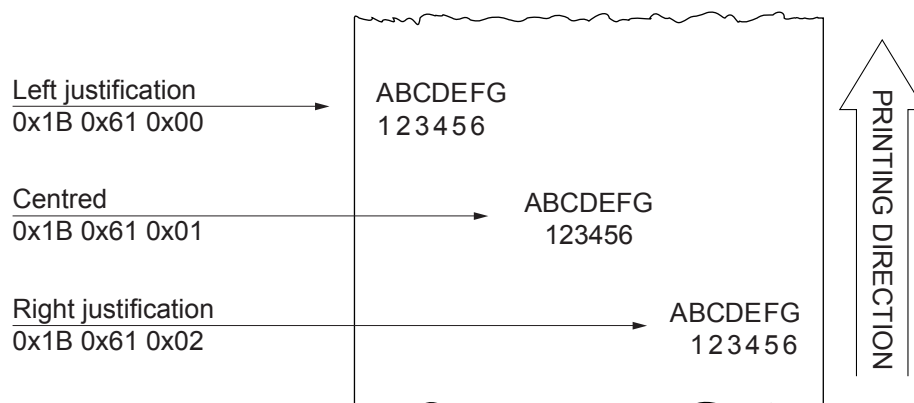
[Notes]

- Lines are justified within the specified printing area.
- Spaces set by 0x09, 0x1B 0x24 and 0x1B 0x5C will be justified according to the previously-entered mode.

[Default] n = 0x00

[Reference]

[Example]





# 0x1D 0x4C

<GS L>

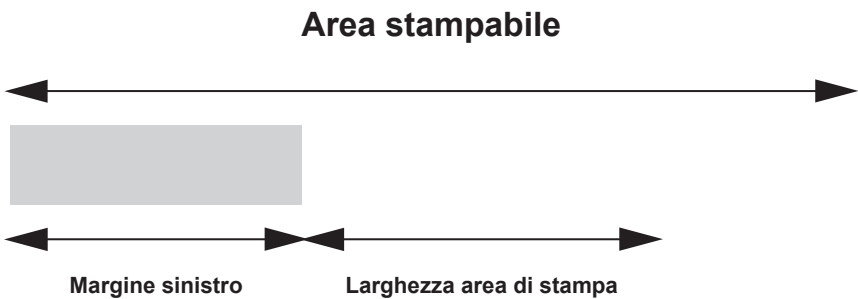
## Set left margin

Valid for	KM216HIII c200				
	KM216HIII e200				
	KPM216HIII h200				
	KPM216HIII h300				
	KPM216HIII v200				

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

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

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



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

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

[Reference]	<a href="#">0x1D 0x50</a> , <a href="#">0x1D 0x57</a>
-------------	---

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





# MACRO FUNCTIONS COMMANDS

## 0x1D 0x3A

<GS :>

Start or end of macro definition

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200		
[Format]	Hex ASCII	1D GS	3A :
[Range]			
[Description]	Starts or ends macro definition.		
[Notes]	<ul style="list-style-type: none"><li>• Macro definition starts when this command is received during normal operation.</li><li>• When 0x1D 0x5E is received during macro definition, the device ends macro definition and clears all definitions.</li><li>• Macros are not defined when power is turned on to the machine.</li><li>• Macro content is not cancelled by the 0x1B 0x40 command. Therefore, 0x1B 0x40 may be included in the content of macro definitions.</li><li>• If the device receives 0x1D 0x3A a second time after previously receiving 0x1D 0x3A, the device remains in macro undefined status.</li><li>• The contents of the macro can be defined up to 1024 bytes. If the macro definition exceeds 1024 bytes, excess data is not stored.</li></ul>		
[Default]			
[Reference]	0x1D 0x5E		
[Example]			



## 0x1D 0x5E

<GS ^>

### Execute macro

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200					
[Format]	Hex	1D	5E	r	t	m
	ASCII	GS	^	r	t	m
[Range]	$0x00 \leq r, t \leq 0xFF$ $0x00 \leq m \leq 0x01$					
[Description]	<p>Executes a macro.</p> <ul style="list-style-type: none"> <li>• r specifies the number of times to execute the macro.</li> <li>• t specifies the waiting time for executing the macro.</li> </ul> <p>The waiting time is <math>t \times 100</math> ms for each macro execution.</p> <ul style="list-style-type: none"> <li>• m specifies macro executing mode:</li> </ul> <p>When the Least Significant Bit (LSB) of <math>m = 0</math>, the macro is executed r times continuously at the interval specified by t.</p> <p>When the Least Significant Bit (LSB) of <math>m = 1</math>, 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.</p>					
[Notes]	<ul style="list-style-type: none"> <li>• This command has an interval of <math>(t \times 100)</math> ms after a macro is executed by t.</li> <li>• If this command is received while a macro is being defined, the macro definition is aborted and the definition is cleared.</li> <li>• If the macro is not defined or if r is 0x00, nothing is executed.</li> <li>• When the macro is executed by pressing the FEED button (<math>m = 0x01</math>), 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	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[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]

# 0x1C 0xC1

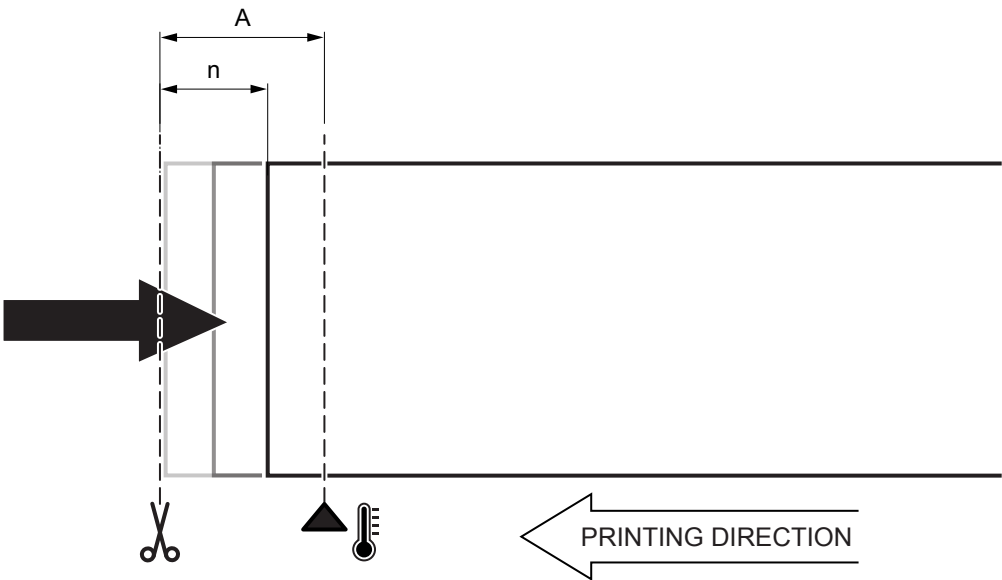
## Paper recovery after cut

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range]	$0x00 \leq n \leq 0x1D$
---------	-------------------------

[Description]	Set the paper moving (in millimetres) toward the print head after the paper cut.
---------------	--



[Notes]	A = distance between cutter/printing head (30 mm). n = value for the paper recovery after a cut. Set n = 0x1D to complete recover the paper.
---------	--

[Default]	n = 0x1D = 29 (mm)
-----------	--------------------

[Reference]	
-------------	--

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



## 0x1D 0x56

<GS V>

### Select cut mode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range] m = 0x00, 0x30, 0x41, 0x42

[Description] Selects cut mode and executes the cut command based on the value of m as follows:

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

- [Notes]
- This command is only enabled if set at the beginning of the line.
  - The horizontal and vertical motion units are specified by [0x1D 0x50](#).

[Default]

[Reference] [0x1B 0x69](#), [0x1D 0x50](#)

[Example]





## 0x1D 0x65

<GS e>

### Ejector commands

Valid for	KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex	1D	65	n	m
	ASCII	GS	e	n	m
[Range]	<b>KM216HIII e200</b> n = 0x05				
	<b>KPM216HIII h200, KPM216HIII v200, KPM216HIII h300</b>  0x01 ≤ n ≤ 0x03 n = 0x05, 0x06, 0x08, 0x12, 0x14, 0x20 0x00 ≤ t ≤ 0xFF				
[Description]	This command handles tickets ejector:				
	<b>KM216HIII e200</b>  n = 0x05 Eject ticket				
	<b>KPM216HIII h200, KPM216HIII v200, KPM216HIII h300</b>  n = 0x01 None n = 0x02 Ticket retracted (only if Paper retracting is enabled) n = 0x03 Ticket produced with m steps (1 step = 7.3 mm) n = 0x05 Eject ticket				



n = 0x06 Transmits the status byte of the ejector

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Paper present
	On	01	Near paper end
1	Off	00	RESERVED
2	Off	00	Paper end sensor (paper not present)
	On	04	Paper end sensor (paper present)
3	Off	00	Ticket not present on the output
	On	08	Ticket present on the output
4	Off	00	Device's stepper motor off
	On	10	Device's stepper motor on
5	Off	00	Emitter motor off
	On	20	Emitter motor on
6	Off	00	Not error
	On	40	Error
7	Off	00	Free paper route
	On	80	Paper jam

n = 0x08 sets the length of thicket dispense with m steps (1 step =7.3 mm).

n = 0x12 Disable the dispenser continuous mode, sets the normal functioning: when printing the ticket remains in the outlet paper mouth, until a cut command or eject command will be sent.

n = 0x14 Enable the dispenser continuous mode: when printing the ticket doesn't remain in the outlet paper mouth, but continuously presented it.

n = 0x20 Produce a ticket with m steps (1 step = 7.3 mm) and a timeout t expressed in seconds (t = 1 correspond to 1 second).

#### [Notes]

- m must be sent with n = 0x03, n = 0x08 and n = 0x20;
- with n = 0x03, 0x08, 0x20 the device executes a check of the ticket produced length: if the m input has a too high value automatically the ticket produced is ejected with the maximum length allowed.
- with n = 0x03, 0x20 if the ticket is not yet cut, before to perform the command, the device made a total cut.
- with n = 0x20 it's necessary set a timeout that indicate how long th ticket remain presented; if send a now print before the timeout it's execute a ticket retract or ticket eject in according to device setup setting, when timeout occurs the device executes a ticket retract or ticket eject in according to devicesetup settings.



[Reference]

[Example]

The correct commands sequence to print a ticket is:

1. Clear dispenser:      Eject (0x1D 0x65 0x05) or Retract (0x1D 0x65 0x02)
2. Prints ticket
3. Cuts paper:            Total cut (0x1B 0x69)
4. Dispenser:            Presents ticket with 87 mm (0x1D 0x65 0x03 0x0C)



# ALIGNMENT COMMANDS

## 0x1D 0xE7

### Set notch distance

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex	1D	E7	nL	nH
	ASCII	GS	0xE7	nL	nH
[Range]	0x00 ≤ nH ≤ 0xFF 0x00 ≤ nL ≤ 0xFF				
[Description]	Sets notch distance in tenth of millimeter of the alignment point from the edge of the black mark. This value is expressed as [(nH × 256) + nL] where: - if nH ≤ 0x7F, the value will be positive. - if nH > 0x7F, the value will be negative.				
[Notes]	<ul style="list-style-type: none"><li>• The maximum value is 25 mm.</li><li>• The minimum value is -25 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 “Notch Distance” during the setup of the device or by modifying the same parameter of the “Setup.ini” file (see user manual for further explanation).</li></ul>				
[Default]	nH = 0x00 nL = 0x00				
[Reference]					



[Example]

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

0x1D 0xE7 0x00 0x50

where:

0x00 defines the sign +

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

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

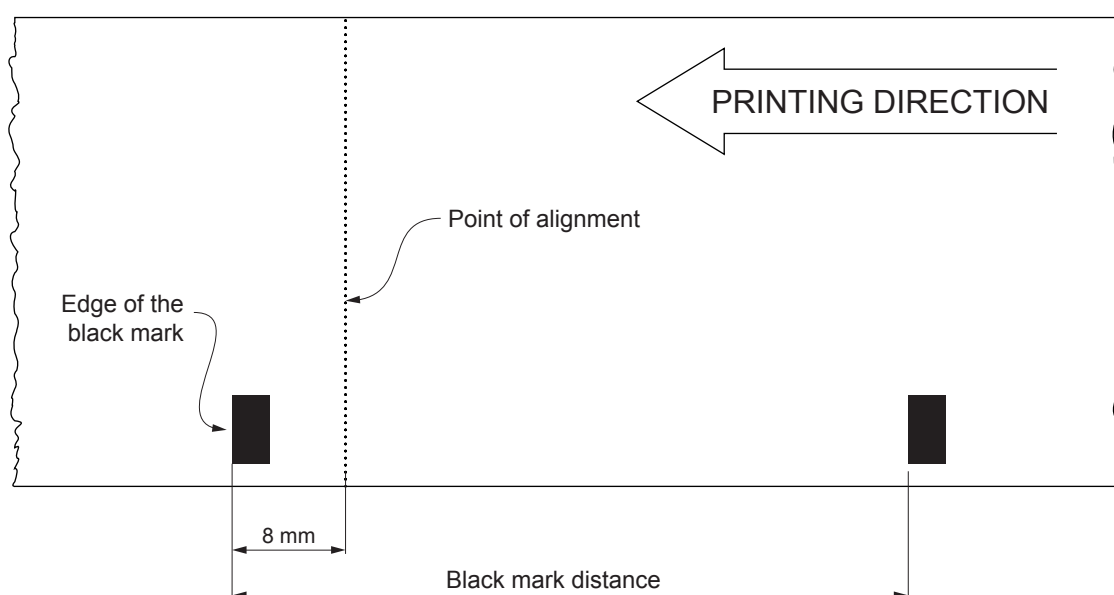
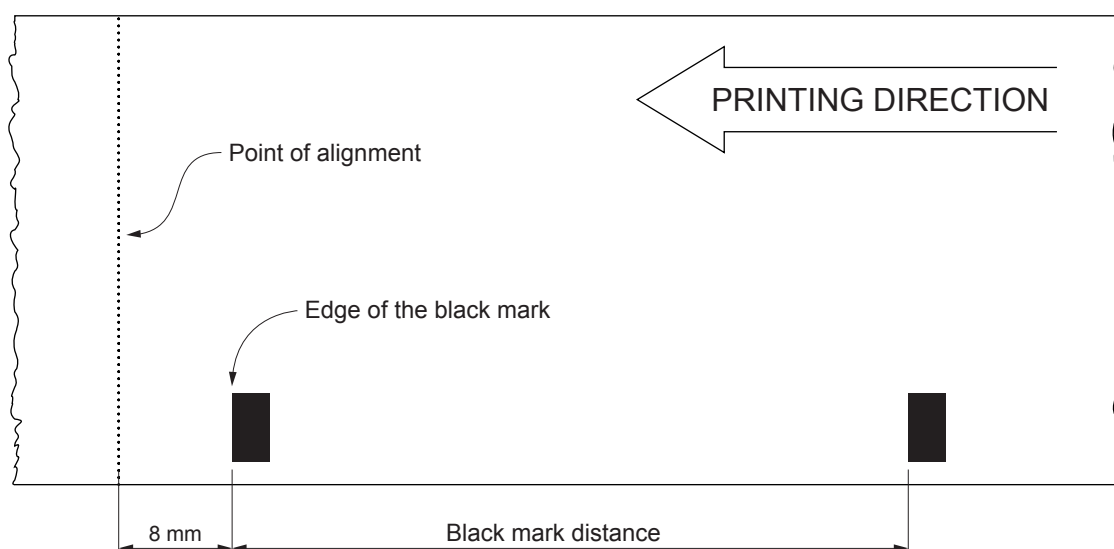
0x1D 0xE7 0x80 0x50

where:

0x80 defines the sign -

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

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





## 0x1D 0xF6

Align the ticket with the print head

---

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200		
-----------	---	--	--

---

[Format]	Hex	1D	F6
	ASCII	GS	0xF6

[Range]

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

[Notes]

- Use [0x1D 0xE7](#) command to set the distance between the edge of notch and the alignment point.
- To work properly, the “Notch distance” parameter must be enabled during the setup procedure (refer to the user manual of each device).
- 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	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		
[Format]	Hex	1D	F8
	ASCII	GS	0xF8
[Range]			
[Description]	This command align the edge of the notch to the alignment point (see <a href="#">ALIGNMENT</a> section for further explanation).		
[Notes]	<ul style="list-style-type: none"><li>• Use <a href="#">0x1D 0xE7</a> command to set distance between the edge of the ticket and the alignment point.</li><li>• To work properly, the “Notch distance” parameter must be enabled during the setup procedure (refer to the user manual of each device).</li><li>• Use this alignment command even to print more tickets without cutting.</li></ul>		
[Default]			
[Reference]	<a href="#">0x1D 0xE7</a> , <a href="#">0x1D 0xF6</a>		
[Example]			



# LOGOS MANAGEMENT COMMANDS

## 0x1C 0x90

Get number of stored logo

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[Format]	Hex	1C	90
	ASCII	FS	0x90

[Range]

[Description] This command sends to the device the request of number of stored logo; the device returns a bytes sequence as follows:

<PNn>

where

n (in ASCII format) indicates the number of stored images.

[Notes]

[Default]

[Reference]

[Example] Send the command sequence:  
0x1C 0x90

If in the flash memory are stored 10 logos, the device will answer:

in Hex: 0x3C 0x50 0x4E 0x31 0x30 0x3E

in ASCII: <PN10>





## 0x1C 0x91

### Get picture header list

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[Format]	Hex	1C	91
	ASCII	FS	0x91

#### [Range]

[Description] This command requests to the device the list of stored logo. The device returns a bytes sequence as follows : <PL CrLf [N-ID CrLf]>

where:

CrLf indicates the two characters 0x0D (carriage return) and 0x0A (line feed).

N is the number of stored logo.

[ID] indicates the file-name that identify the logo, a sequence of 16 bytes that was defined when the logo is stored. This field is optional because it's returned only if the logo has been found.

#### [Notes]

#### [Default]

[Reference] [0x1C 0x92](#), [0x1C 0x94](#)

#### [Example]



# 0x1C 0x92

## Get picture header info

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
-----------	---	--	--	--	--

[Format]	Hex	1C	92	nH	nL
	ASCII	FS	0x92	nH	nL

[Range] 0x00 ≤ nH, nL ≤ 0xFF

[Description] Gets the logo header info stored specified by n (expressed in ASCII).

- n is the number of stored logo.
- The device returns a byte sequence as follows:

<Ple[ID]>

where:

e indicates the search result:  
e = 0 picture not found.  
e = 1 picture found.

[ID] indicates the file-name that identify the logo, a sequence of 16 bytes that was defined when the logo is stored. This field is optional because it's returned only if the logo has been found.

[Notes]

[Default]

[Reference]

[Example]



## 0x1C 0x93

### Print logo

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200								
-----------	---	--	--	--	--	--	--	--	--

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

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

[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 (based on position specified by posH and posW)	
2, 3	-	00	Not used	
4, 6	-	00	Not used	
7	Rotated print	0	Print normal	
		1	Print rotate	

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

[Notes]

[Default]

[Reference]



[Example]

To print logo no.10 centered and rotated transmits:

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

where

0x1C 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

To print logo no.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



## 0x1C 0x94

Save the image received from serial port into the flash memory

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200													
[Format]	Hex	1C	94	nH	nL	xDimH	xDimL	yDimH	yDimL	TbdH	TbdL	Id0..Idn	d0..dn	3E
	ASCII	FS	0x94	nH	nL	xDimH	xDimL	yDimH	yDimL	TbdH	TbdL	Id0..Idn	d0..dn	>
[Range]	0x00 ≤ nH, nL ≤ 0xFF 0x00 ≤ xDimH, xDimL ≤ 0xFF 0x00 ≤ yDimH, yDimL ≤ 0xFF 0x00 ≤ d0, dn ≤ 0xFF													
[Description]	<p>Saves the image received from serial port into the device flash. If the number used to store logo is not already present inside the device, the new logo is appended to stored logos. Otherwise the new logo is updated.</p> <ul style="list-style-type: none"><li>• nH and nL indicates the number of logo (2 bytes expressed in hexadecimal notation).</li><li>• xDimH and xDimL indicate the logo horizontal dimension in pixel (2 bytes expressed in hexadecimal notation); the value must be multiple of 16.</li><li>• yDimH and yDimL indicates the logo vertical dimension in pixel (2 bytes expressed in hexadecimal notation).</li><li>• TbdH and TbdL 2 bytes fixed to 0x00 (RESERVED).</li><li>• Id0..Idn indicates the file-name of the logo, a sequence of 16 bytes to identify univocally the logo.</li><li>• d0 ...dn are the image data. The size of image is defined as follows: xSize = xDim /16; number of WORD (16 bit) in a horizontal image line Total Size = (xSize × yDim) × 2</li><li>• ‘&gt;’ is the character terminator (in ASCII) of this command.</li></ul> <p>The device returns a sequence of bytes as follows:</p> <p>&lt;PC0&gt; if the saving include an incorrect syntax or the memory in flash available for logos is finished (128 Kbyte)</p> <p>&lt;PC1n&gt; if the syntax command is correct and there’s memory enough in flash for saving logos; n returns the status of the flash programming:</p> <p>0x88 sector not erased 0x77 error during programming 0xAA programming done</p>													
[Notes]	<ul style="list-style-type: none"><li>• If file-name length is shorter than 16 byte, add a terminator (0) and make padding to 16 characters.</li><li>• If file-name extension is absent, it is automatically added to the name.</li></ul>													
[Default]														
[Reference]														



[Example]

The following example shows the bytes sequence received from serial port to store a logo into the device flash:

Offset	Hexadecimal	ASCII
00000000:	1C 94 00-08 01 C0 02-49 00 00 4C-6F 67 6F 32 36° ° ° ' + ^ I L o g o - 2 6	
00000010:	2E 42 4D-50 00 00 00-00 00 00 00-00 00 00 00 00 .BMP	
00000020:	00 00 00-00 00 00 00-00 00 00 00-00 00 00 00 00	
....		Image data
....		
....		
00008000:	00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00008010:	00 00 3E	>

If the programming is successful, the device's answer will be :

in Hex: 0x3C 0x50 0x43 0x31 0xAA 0x3E

in ASCII: <PC10xAA>



# MISCELLANEOUS COMMANDS

## 0x1B 0x3D

<ESC =>

Select peripheral device

Valid for	KM216HIII c200			
	KM216HIII e200			
	KPM216HIII h200			
	KPM216HIII h300			
	KPM216HIII v200			

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

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

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

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

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

[Default] n = 0x01

[Reference]

[Example]



0x1B 0x40

<ESC @>

Initialize device

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[Format]	Hex	1B	40
	ASCII	ESC	@

[Range]

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

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

[Default]

[Reference]

[Example]





## 0x1B 0x63 0x35

<ESC c 5>

### Enable or disable keys panel

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex	1B	63	35	n
	ASCII	ESC	c	5	n
[Range]	$0x00 \leq n \leq 0xFF$				
[Description]	Enables or disables the keys panel, based on the value of n - when the Least Significant Bit (LSB) of n is 0, the keys panel is enabled. - when the Least Significant Bit (LSB) of n is 1, the keys panel is disabled.				
[Notes]	<ul style="list-style-type: none"><li>• Only the Least Significant Bit (LSB) of n is effective.</li><li>• When the keys panel is disabled, the keys may only be used after the device has been reset.</li></ul>				
[Default]	n = 0x00				
[Reference]					
[Example]					



0x1C 0x44

<FS D>

Printing head test

Valid for	KM216HIII c200		
	KM216HIII e200		
	KPM216HIII h200		
	KPM216HIII h300		
	KPM216HIII v200		

[Format]	Hex	1C	44
	ASCII	FS	D

[Range]	
[Description]	The device returns two bytes that represent the number of printing head dots not working.
[Notes]	If the “Printhead Test PowerOn” parameter of the device setup is set on “Disabled”, the device performs the printing head test before sending the answer, otherwise it returns the data of the test run at power up of the device.
[Default]	
[Reference]	
[Example]	



## 0x1C 0x6C

<FS I>

### Reload paper

---

Valid for	KM216HIII c200
	KM216HIII e200
	KPM216HIII h200
	KPM216HIII h300
	KPM216HIII v200

---

[Format]	Hex	1C	6C
	ASCII	FS	I

#### [Range]

[Description] When this command is received, the device performs a paper reloading.

- [Notes]
- During the execution of the command, the device indicates the paper end.
  - This command is valid only if the alignment is enabled.

#### [Default]

#### [Reference]

#### [Example]



# 0x1C 0xC0

## Hardware reset

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200						
-----------	---	--	--	--	--	--	--

[Format 1]	Hex	1C	C0	18	10	14	1A
	ASCII	FS	0xC0	CAN	DLE	DC4	SUB

[Format 2]	Hex	1C	C0	18	10	14	1B
	ASCII	FS	0xC0	CAN	DLE	DC4	ESC

[Range]

[Description] When this command is received, the device perform an hardware reset (like a device power-up).

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

Format 1:  
The command execution stop the communication with host.

Format 2:  
The command execution keep the communication with host active.

[Default]

[Reference]

[Example]



## 0x1D 0x49

<GS />

### Transmit device ID

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

[Range]	$0x01 \leq n \leq 0x03$ $0x31 \leq n \leq 0x33$
---------	--

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

n	DEVICE ID	SPECIFICATION
0x01, 0x31	Device model ID (1 byte)	0xAA (KM216HIII c200, KM216HIII e200) 0x9A (KPM216HIII h200, KPM216HIII v200) 0xA2 (KPM216HIII h300)
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID (4 bytes)	Depends on ROM version (4 character)

n = 0x02, 0x32 Type ID

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



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



## 0x1D 0x50

<GS P>

### Set horizontal and vertical motion units

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	0x00 ≤ x, y ≤ 0xFF				
[Description]	Sets the horizontal and vertical motion units to 1/x inch and 1/y inch respectively. When x is set to 0, the default setting value is used. When y is set to 0, the default setting value is used.				
[Notes]	<ul style="list-style-type: none"> <li>The horizontal direction is perpendicular to the paper feed direction.</li> <li>In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation):</li> </ul> <p>Commands using x: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1D 0x4C, 0x1D 0x57.</p> <p>Commands using y: 0x1B 0x33, 0x1B 0x4A.</p> <ul style="list-style-type: none"> <li>This command does not affect the previously specified values.</li> <li>The calculated result from combining this command with others is truncated to the minimum value of the mechanical pitch or an exact multiple of that value.</li> </ul>				
[Default]	<b>KM216HIII c200, KM216HIII e200, KPM216HIII h200, KPM216HIII v200</b>  x = 0xCC, y = 0x198  <b>KPM216HIII h300</b>  x = 0x12C, y = 0x258				
[Reference]	0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1B 0x33, 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57				
[Example]					



## 0x1D 0xE6

### Virtual paper-end limit

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200				
-----------	---	--	--	--	--

[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 low paper, 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 0xE8

### Set minimum ticket length

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
[Format]	Hex	1D	E8	n
	ASCII	GS	0xE8	n
[Range]	<b>KM216HIII c200, KM216HIII e200</b> $0x48 \leq n \leq 0xFF$			
	<b>KPM216HIII h200, KPM216HIII v200, KPM216HIII h300</b> $0x91 \leq n \leq 0xFF$			
[Description]	This command sets the minimum ticket length to the n value.			
[Notes]	<b>KM216HIII c200, KM216HIII e200</b> Set values between 75 mm and 255 mm. Values lower than those specified are ignored.			
	<b>KPM216HIII h200, KPM216HIII v200, KPM216HIII h300</b> Set values between 145 mm and 255 mm. Values lower than those specified are ignored.			
[Default]	<b>KM216HIII c200, KM216HIII e200</b> $n = 0x48 = 145 \text{ mm}$			
	<b>KPM216HIII h200, KPM216HIII v200, KPM216HIII h300</b> $n = 0x91 = 145 \text{ mm}$			
[Reference]				
[Example]	To set the minimum ticket length at 160 mm, the command sequence will be: 0x1D 0xE8 0xA0			



# 0x1D 0xF0

## Set print mode

Valid for	KM216HIII c200 KM216HIII e200 KPM216HIII h200 KPM216HIII h300 KPM216HIII v200			
-----------	---	--	--	--

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

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

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

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

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

[Default]	n = 0x02
-----------	----------

[Reference]	
-------------	--

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



# ALIGNMENT

1	ALIGNMENT COMMANDS .....	156
---	--------------------------	-----



# 1 ALIGNMENT COMMANDS

Devices listed in this manual are equipped with sensors that allow the use of alignment notch in order to handle:

- Rolls of with pre-printed and fixed length fields.
- 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 notch (value of “Notch Distance” parameter).
- **0x1D 0xF6** and **0x1D 0xF8**: perform the alignment of ticket, which is advanced to cut the ticket at the first alignment point available.
- **0x1C 0xC1**: performs the desired recovery of the paper after the cutting operation.

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: **0x1B 0x69**.
6. Command for paper recovery **0x1C 0xC1** (optional).

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

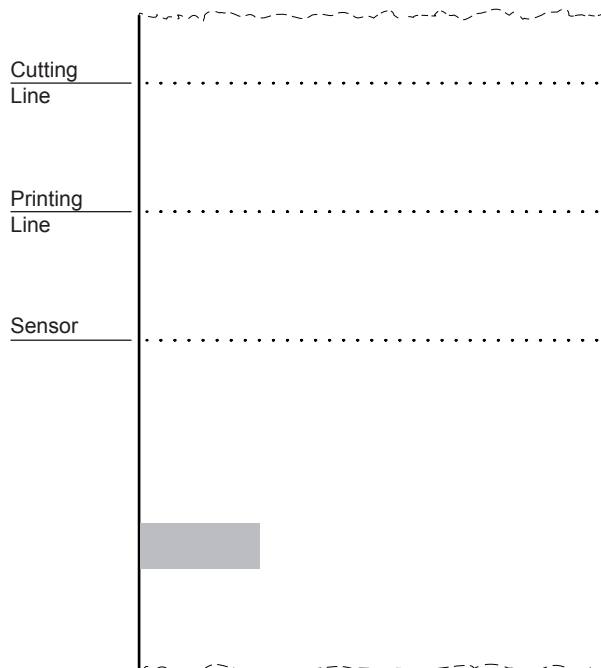
In the following examples, are described some sequences of commands to manage the alignment.

# [Example 1]

Commands sequence to print tickets with “alignment point” set to the edge of the notch (“Notch Distance” parameter = 0 mm set in the setup procedure) and with full paper recovery ([0x1C 0xC1 0x1D](#)).

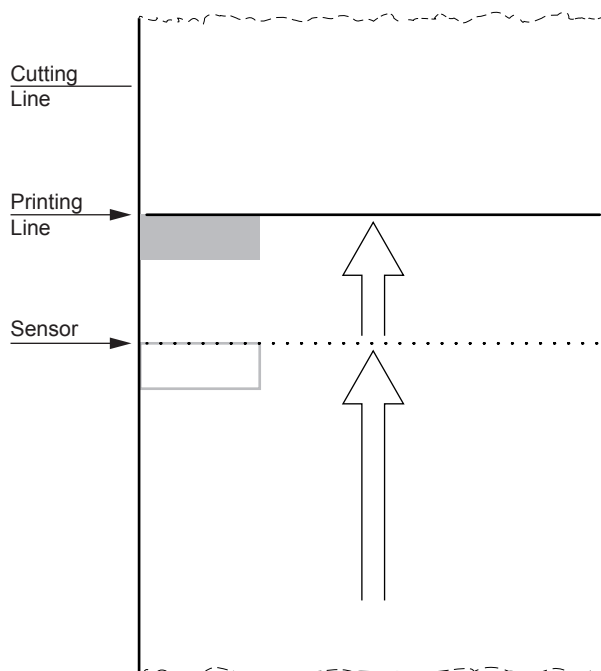
Start

Paper with black mark not aligned.



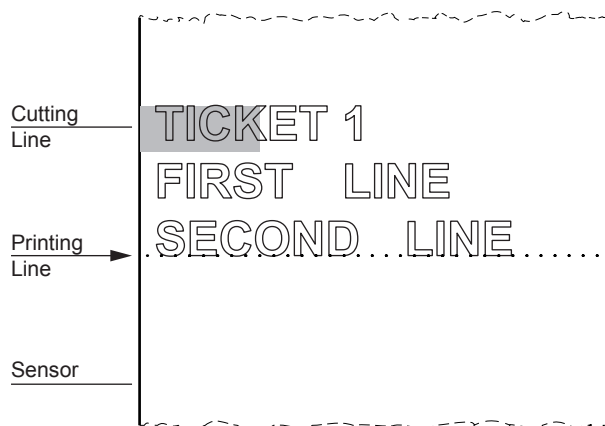
Alignment command [0x1D 0xF6](#).

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



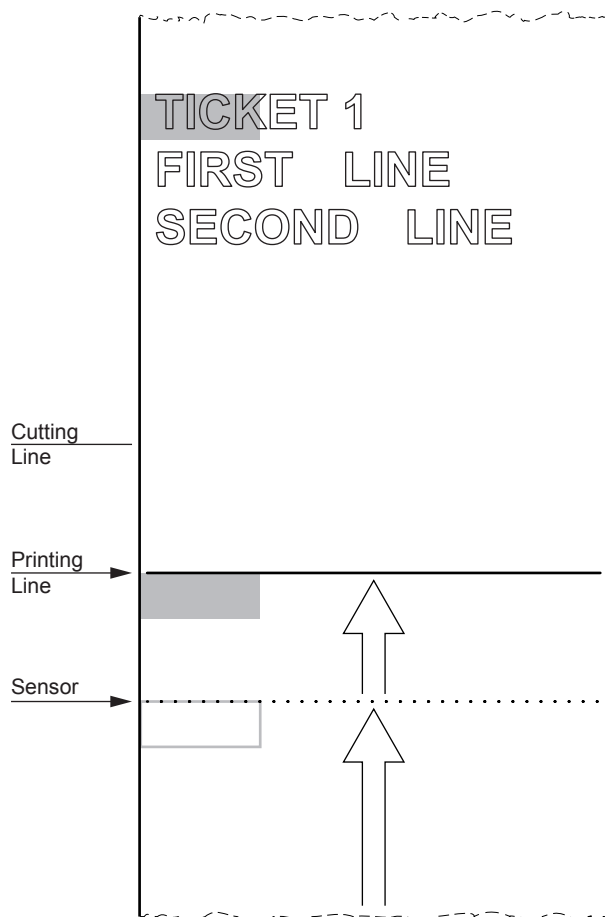
Command for text printing:

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



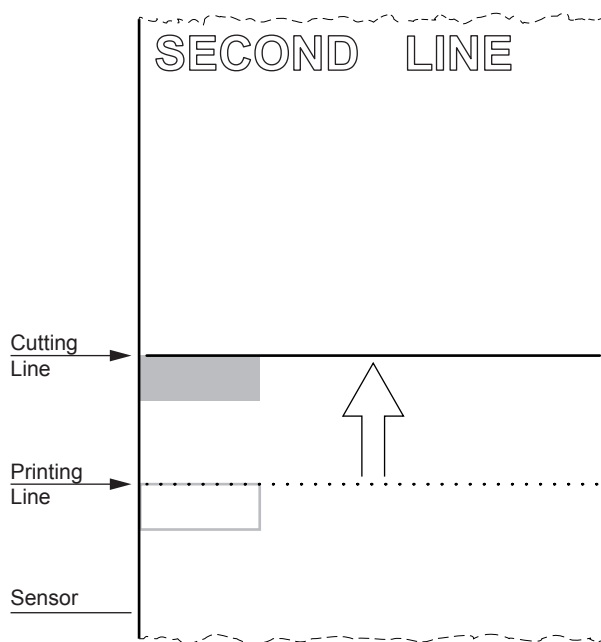
Alignment command 0x1D 0xF8.

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



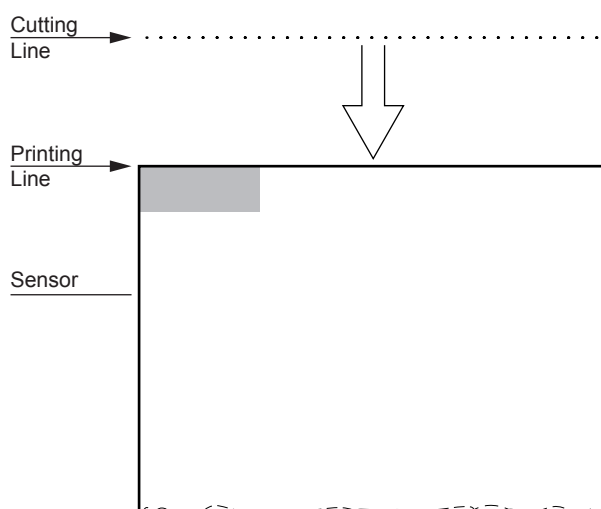
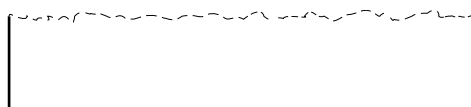
Cut command **0x1B 0x69**.

Paper is fed until the black mark is not aligned under the cutting line.



The paper is cut.

The paper is automatically retracted under the printing line.

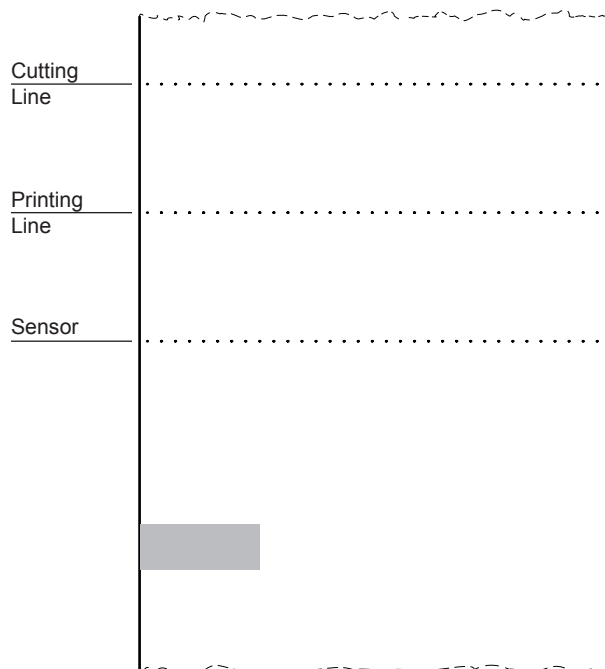


[Example 2]

Commands sequence to print tickets with “alignment point” set to the edge of the notch (“Notch Distance” parameter = 0 mm set in the setup procedure) and no paper recovery (0x1C 0xC1 0x00).

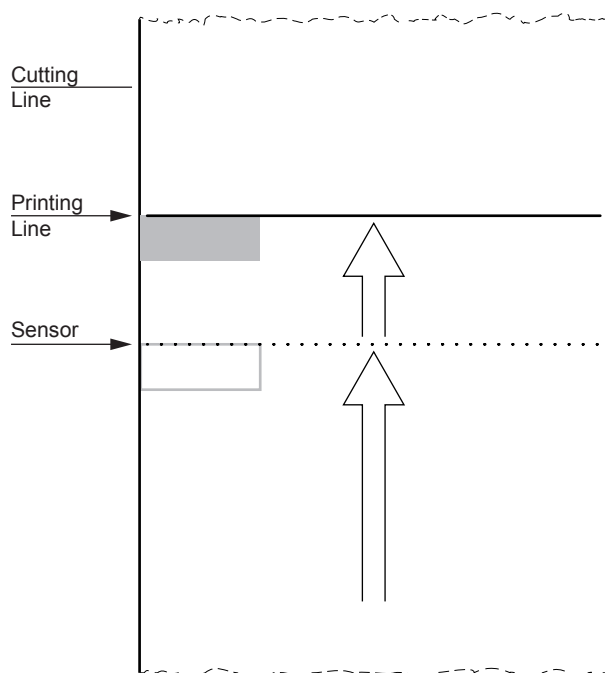
Start

Paper with black mark not aligned.



Alignment command 0x1D 0xF6.

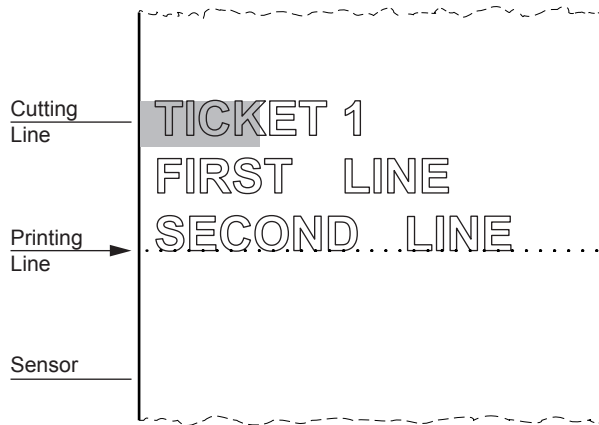
Paper is fed. The black mark is recognized by the sensor and aligned under the printing line.





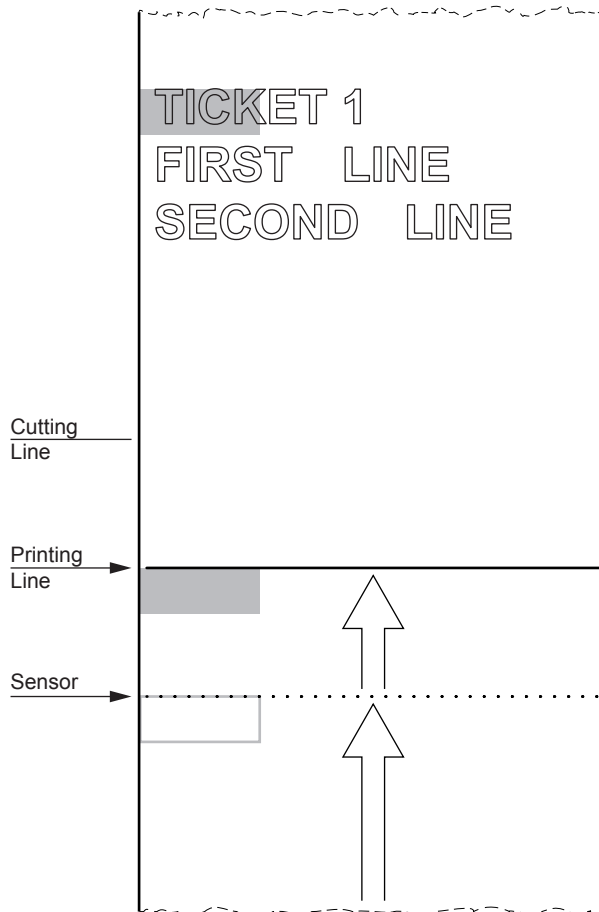
Command for text printing:

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



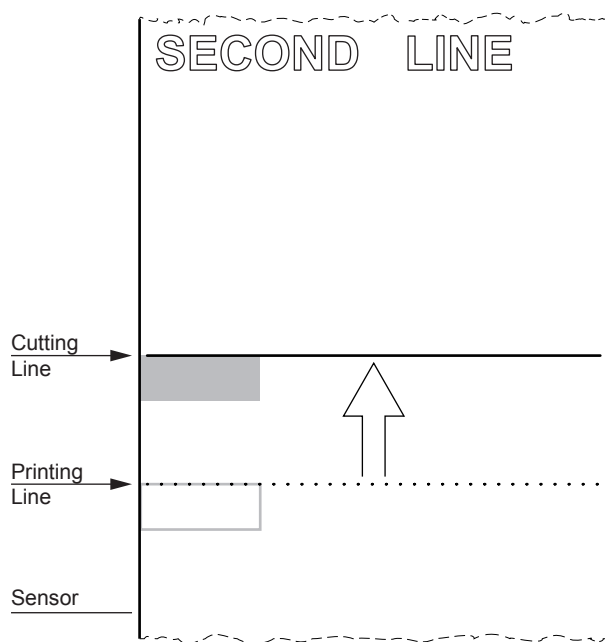
Alignment command 0x1D 0xF8.

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



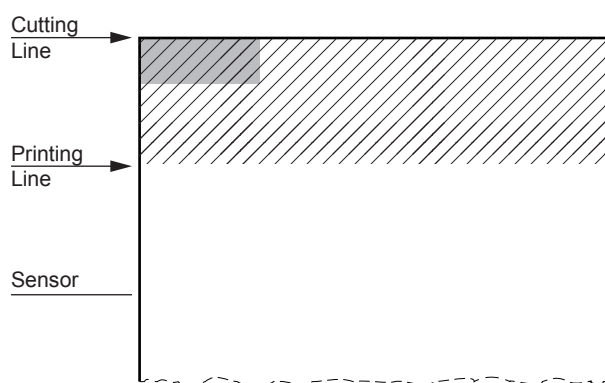
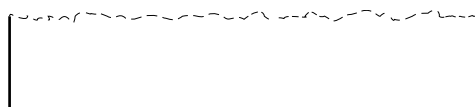
Cut command `0x1B 0x69`.

Paper is fed until the black mark is not aligned under the cutting line.



The paper is cut.

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

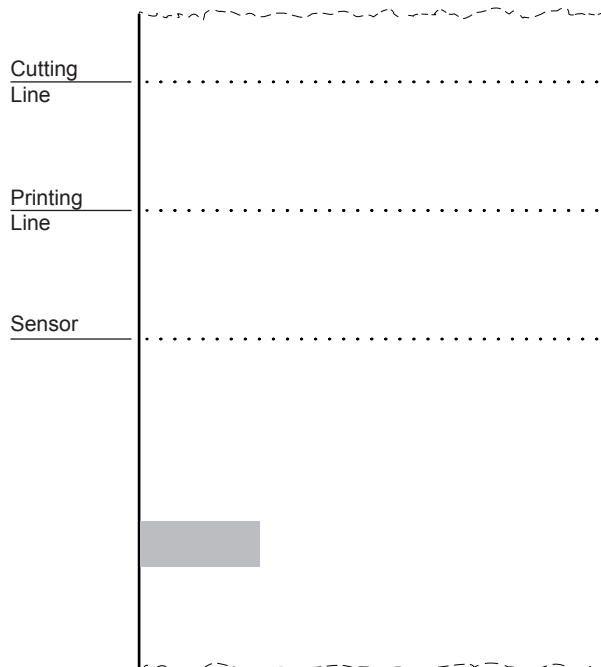


### [Example 3]

Commands sequence to print tickets with “alignment point” moved 5 mm compared to the edge of the black mark (“Notch Distance” = 5 mm set from setup) and with full paper recovery (0x1C 0xC1 0x1D).

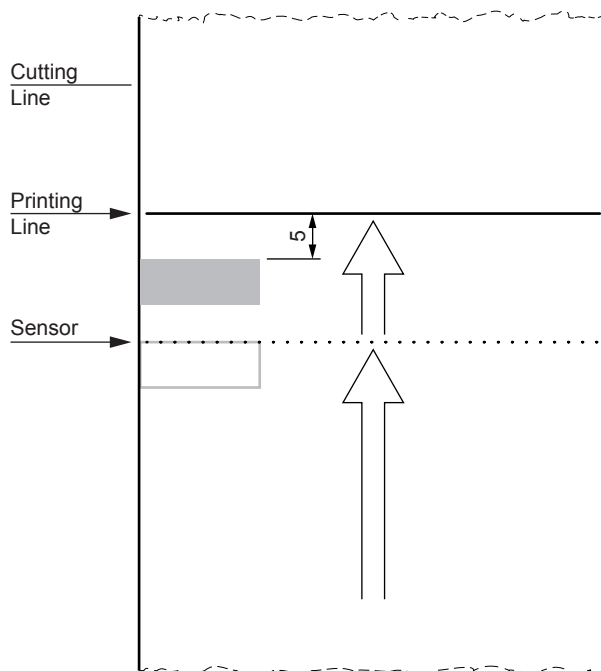
Start

Paper with black mark not aligned.



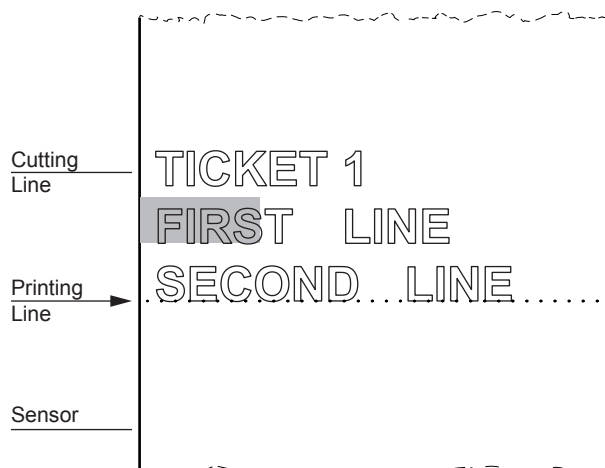
Alignment command 0x1D 0xF6.

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



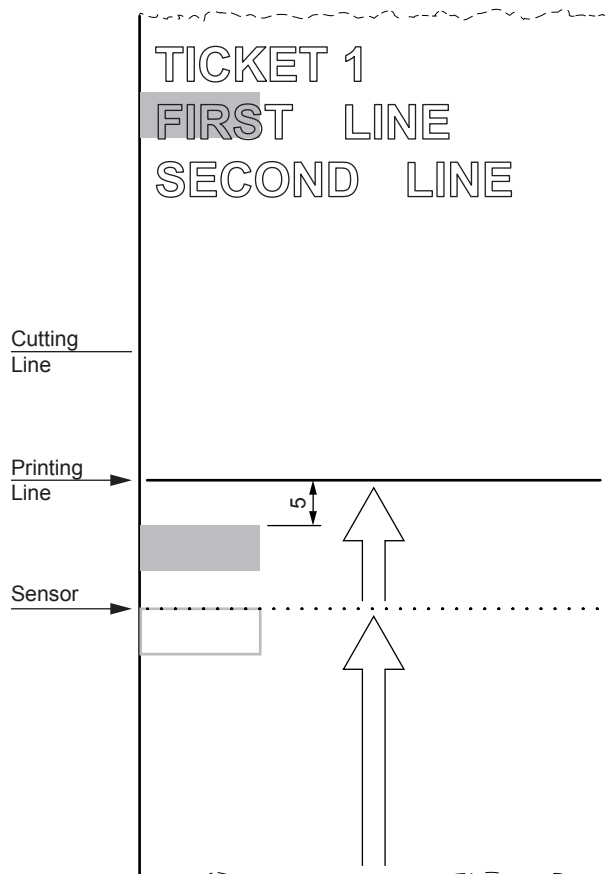
Command for text printing:

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



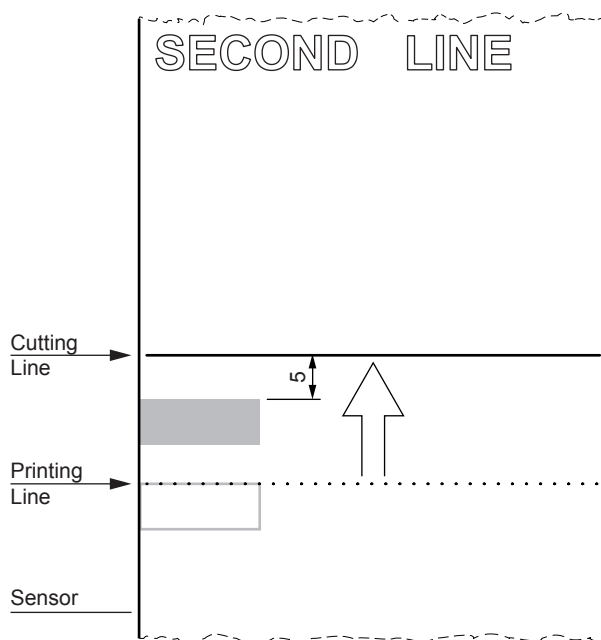
Alignment command 0x1D 0xF8.

Paper is fed. The next black mark is recognized by the sensor and aligned at a distance of 5 mm ("Notch Distance") from the printing line.



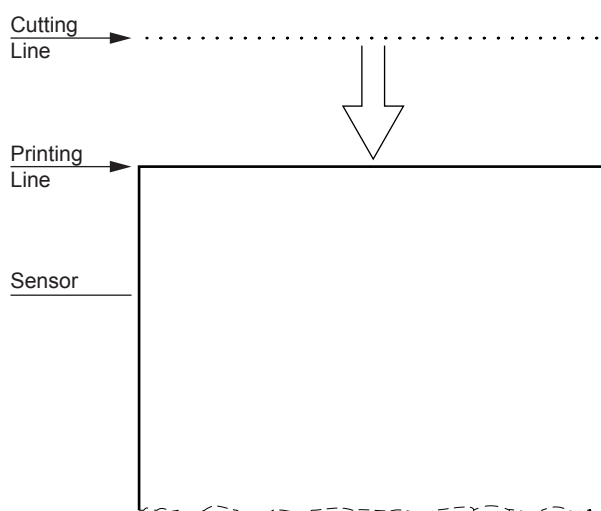
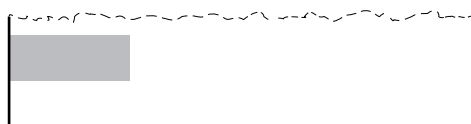
Cut command **0x1B 0x69**.

Paper is fed until the black mark is not aligned at a distance of 5 mm ("Notch Distance") from the cutting line.



The paper is cut.

The paper is automatically retracted under the printing.



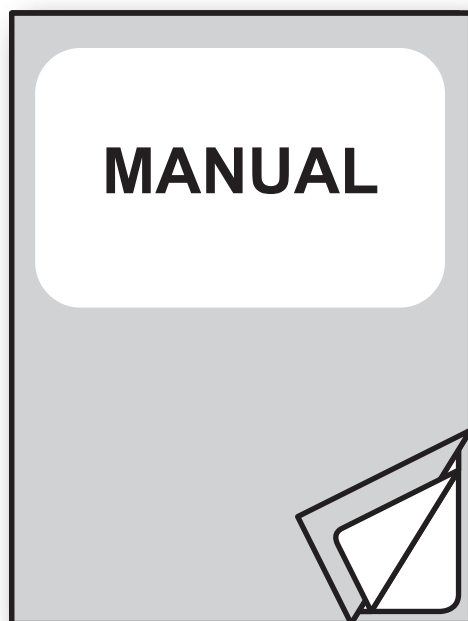




# PAGE MODE

1	PAGE MODE COMMANDS .....	168
---	--------------------------	-----

# 1 PAGE MODE COMMANDS



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











**CUSTOM S.p.A.**

World Headquarters

**Via Berettine, 2/B - 43010 Fontevivo, Parma ITALY**

**Tel. +39 0521 680111 - Fax +39 0521 610701**

**info@custom.biz - www.custom.biz**

*All rights reserved*

[www.custom.biz](http://www.custom.biz)