

COMMANDS MANUAL

KUBE II
KUBE II ETH
KUBE II L
KUBE III L
KUBE X

CUSTOM[®]

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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.



GUIDELINES FOR THE DISPOSAL OF THE PRODUCT

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

- Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the wellbeing of humans.
- In accordance with European Directive WEEE 2012/19/EU, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.



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

INTRODUCTION



CUSTOM/POS EMULATION



ALIGNMENT





INTRODUCTION

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1 CONSULTING COMMANDS MANUAL

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

Link to index

Command value	0x0D	<CR>	
Command function	Print and carriage return		
Devices that use the command	Valid for	AAAA	
		BBBB	
		CCCC	
Information valid for devices AAAA, BBBB, CCC	[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 only for devices AAAA, BBBB		AAAA BBBB	
		<ul style="list-style-type: none">• This command sets the printing position to the beginning of the line.	
Information valid only for device CCCC		CCCC	
		<ul style="list-style-type: none">• This command is immediately executed even when the data buffer is full.• This status is transmitted whenever data sequence is received.	
	[Default]		
	[Reference]	0x0A	
	[Example]		



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:

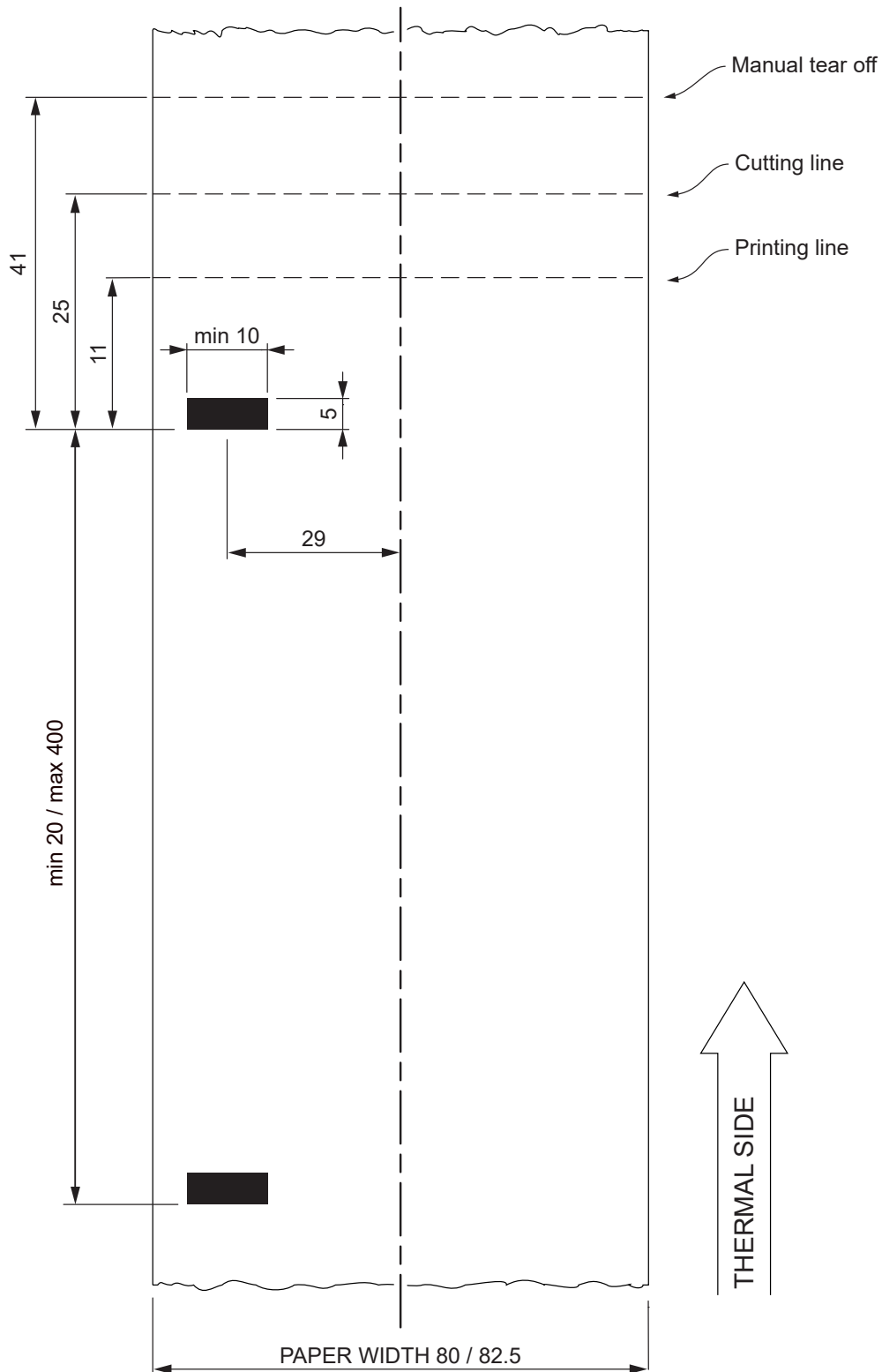
0x	indicates the representation of the command hexadecimal value (for example 0x40 means HEX 40).
n, m, t, x, y	are optional parameters that can have different values.

2 PAPER SPECIFICATIONS

Paper with black mark for alignment

The following image shows the placement of the black mark on the non-thermal side of paper.

All the dimensions shown in following figures are in millimetres.







CUSTOM/POS EMULATION

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1 COMMANDS LISTED IN ALPHANUMERIC ORDER

0x08	<BS>	55
0x09	<HT>	56
0x0A	<LF>	25
0x0D	<CR>	26
0x10 0x04	<DLE EOT>	75
0x10 0x05	<DLE ENQ>	125
0x10 0x14	<DLE DC4>	127
0x18	<CAN>	31
0x1B 0x20	<ESC SP>	32
0x1B 0x21	<ESC !>	33
0x1B 0x24	<ESC \$>	57
0x1B 0x25	<ESC %>	35
0x1B 0x26	<ESC &>	36
0x1B 0x2A	<ESC *>	65
0x1B 0x2D	<ESC ->	38
0x1B 0x32	<ESC 2>	29
0x1B 0x33	<ESC 3>	30
0x1B 0x34	<ESC 4>	39
0x1B 0x3D	<ESC =>	128
0x1B 0x3F	<ESC ?>	40
0x1B 0x40	<ESC @>	129
0x1B 0x44	<ESC D>	58
0x1B 0x45	<ESC E>	41
0x1B 0x47	<ESC G>	42
0x1B 0x4A	<ESC J>	27
0x1B 0x4D	<ESC M>	43



0x1B 0x52	<ESC R>	44
0x1B 0x56	<ESC V>	45
0x1B 0x5C	<ESC \>	60
0x1B 0x61	<ESC a>	61
0x1B 0x63 0x33	<ESC c 3>	130
0x1B 0x63 0x35	<ESC c 5>	131
0x1B 0x63 0x37	<ESC c 7>	132
0x1B 0x64	<ESC d>	28
0x1B 0x69	<ESC i>	121
0x1B 0x6D	<ESC m>	122
0x1B 0x70	<ESC p>	133
0x1B 0x74	<ESC t>	46
0x1B 0x76	<ESC v>	81
0x1B 0x7B	<ESC {>	49
0x1B 0xC1		50
0x1B 0xFA		134
0x1B 0xFB		135
0x1B 0xFC		136
0x1B 0xFD		137
0x1B 0xFE		138
0x1B 0xFF		139
0x1C 0x25	<FS %>	51
0x1C 0x70	<FS p>	67
0x1C 0x71	<FS q>	69
0x1C 0xC0 0x07		140
0x1C 0xC0 0xFF		141
0x1C 0xEB		142
0x1D 0x21	<GS !>	52



0x1D 0x28 0x6B	<GS (>	89
0x1D 0x28 0x6B [fn 065]	<GS (k>	91
0x1D 0x28 0x6B [fn 065]	<GS (k>	99
0x1D 0x28 0x6B [fn 066]	<GS (k>	100
0x1D 0x28 0x6B [fn 066]	<GS (k>	92
0x1D 0x28 0x6B [fn 067]	<GS (k>	101
0x1D 0x28 0x6B [fn 067]	<GS (k>	93
0x1D 0x28 0x6B [fn 068]	<GS (k>	94
0x1D 0x28 0x6B [fn 069]	<GS (k>	105
0x1D 0x28 0x6B [fn 069]	<GS (k>	95
0x1D 0x28 0x6B [fn 080]	<GS (k>	106
0x1D 0x28 0x6B [fn 080]	<GS (k>	97
0x1D 0x28 0x6B [fn 081]	<GS (k>	107
0x1D 0x28 0x6B [fn 081]	<GS (k>	98
0x1D 0x2A	<GS *>	70
0x1D 0x2F	<GS />	72
0x1D 0x3A	<GS :>	119
0x1D 0x42	<GS B>	53
0x1D 0x48	<GS H>	108
0x1D 0x49	<GS I>	144
0x1D 0x4C	<GS L>	62
0x1D 0x50	<GS P>	146
0x1D 0x56	<GS V>	123
0x1D 0x57	<GS W>	63
0x1D 0x5E	<GS ^>	120
0x1D 0x66	<GS f>	110
0x1D 0x68	<GS h>	111
0x1D 0x6B	<GS k>	112



0x1D 0x72	.....<GS r>	82
0x1D 0x76 0x30	.....<GS v 0>	73
0x1D 0x77	.....<GS w>.....	116
0x1D 0x7C	.....	147
0x1D 0xE0	.....	84
0x1D 0xE2	.....	85
0x1D 0xE3	.....	86
0x1D 0xE5	.....	87
0x1D 0xF6	.....	149
0x1D 0xF8	.....	150



2 COMMANDS LISTED BY FUNCTION

PRINT COMMANDS

0x0A	<LF>	25
Print and line feed		
0x0D	<CR>	26
Print and carriage return		
0x1B 0x4A	<ESC J>	27
Print and feed paper		
0x1B 0x64	<ESC d>	28
Print and feed paper n lines		

LINE SPACING COMMANDS

0x1B 0x32	<ESC 2>	29
Select 1/6-inch line spacing		
0x1B 0x33	<ESC 3>	30
Set line spacing using minimum units		

CHARACTER COMMANDS

0x18	<CAN>	31
Cancel current line transmitted		
0x1B 0x20	<ESC SP>	32
Set right-side character spacing		
0x1B 0x21	<ESC !>	33
Set print mode		
0x1B 0x25	<ESC %>	35
Select/cancel user-defined character set		
0x1B 0x26	<ESC &>	36
Defines user-defined characters		
0x1B 0x2D	<ESC ->	38
Turn underline mode on/off		
0x1B 0x34	<ESC 4>	39
Set / reset italic mode		
0x1B 0x3F	<ESC ?>	40
Cancel user-defined characters		



0x1B 0x45	<ESC E>	41
Select emphasized mode		
0x1B 0x47	<ESC G>	42
Select double-strike mode		
0x1B 0x4D	<ESC M>	43
Select character font		
0x1B 0x52	<ESC R>	44
Select international character set		
0x1B 0x56	<ESC V>	45
Select print mode 90° turned		
0x1B 0x74	<ESC t>	46
Select character code table		
0x1B 0x7B	<ESC {>	49
Set/cancel upside-down character printing		
0x1B 0xC1		50
Set/cancel cpi mode		
0x1C 0x25	<FS %>	51
Select the font type		
0x1D 0x21	<GS !>	52
Select character size		
0x1D 0x42	<GS B>	53
Turn white/black reverse printing mode on/off		

PRINT POSITION COMMANDS

0x08	<BS>	55
Back space		
0x09	<HT>	56
Horizontal tab		
0x1B 0x24	<ESC \$>	57
Set absolute print position		
0x1B 0x44	<ESC D>	58
Set horizontal tab position		
0x1B 0x5C	<ESC \>	60
Set relative print position		
0x1B 0x61	<ESC a>	61
Select justification		
0x1D 0x4C	<GS L>	62
Set left margin		
0x1D 0x57	<GS W>	63
Set printing area width		



BIT-IMAGE COMMANDS

0x1B 0x2A	<ESC *>	65
Select bit print mode		
0x1C 0x70	<FS p>	67
Print logo		
0x1C 0x71	<FS q>	69
Logo storage		
0x1D 0x2A	<GS *>	70
Define received bit imag		
0x1D 0x2F	<GS />	72
Print received bit image		
0x1D 0x76 0x30	<GS v 0>	73
Print raster bit image		

STATUS COMMANDS

0x10 0x04	<DLE EOT>	75
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0x1B 0x76	<ESC v>	81
Transmit device status		
0x1D 0x72	<GS r>	82
Transmit status		
0x1D 0xE0		84
Enable or disable automatic FULL STATUS BACK		
0x1D 0xE2		85
Reading number of cuts performed by the autocutter		
0x1D 0xE3		86
Reading of length of printed paper		
0x1D 0xE5		87
Reading number of power up		

COMMANDS FOR BARCODE PRINTING

0x1D 0x28 0x6B	<GS (>	89
Print two-dimensional barcode		
0x1D 0x28 0x6B [fn 065]	<GS (k>	91
Specify the number of columns of PDF417 barcode		
0x1D 0x28 0x6B [fn 066]	<GS (k>	92
Specify the number of rows of PDF417 barcode		



0x1D 0x28 0x6B [fn 067]	<GS (k>	93
Specify the width of a module of PDF417 barcode		
0x1D 0x28 0x6B [fn 068]	<GS (k>	94
Specify the height of a module of PDF417 barcode		
0x1D 0x28 0x6B [fn 069]	<GS (k>	95
Specify the error correction level of PDF417 barcode		
0x1D 0x28 0x6B [fn 080]	<GS (k>	97
Store the data in the barcode save area for printing in PDF417 format		
0x1D 0x28 0x6B [fn 081]	<GS (k>	98
Encodes the data in the barcode save area and prints it in PDF417 format		
0x1D 0x28 0x6B [fn 065]	<GS (k>	99
Specify encoding scheme of QRcode barcode		
0x1D 0x28 0x6B [fn 066]	<GS (k>	100
Specify dot size of the module of the QRcode barcode		
0x1D 0x28 0x6B [fn 067]	<GS (k>	101
Specify dot size of the module of the QRcode barcode		
0x1D 0x28 0x6B [fn 069]	<GS (k>	105
Specify the error correction level of the QRcode barcode		
0x1D 0x28 0x6B [fn 080]	<GS (k>	106
Store the QRcode barcode data in the barcode save area		
0x1D 0x28 0x6B [fn 081]	<GS (k>	107
Prints the QRcode barcode data		
0x1D 0x48	<GS H>	108
Select printing position of Human Readable Interpretation (HRI) characters		
0x1D 0x66	<GS f>	110
Select font for HRI characters		
0x1D 0x68	<GS h>	111
Set barcode height		
0x1D 0x6B	<GS k>	112
Print barcode		
0x1D 0x77	<GS w>	116
Set bar code width		

MACRO FUNCTIONS

0x1D 0x3A	<GS :>	119
Set start/end of macro definition		
0x1D 0x5E	<GS ^>	120
Execute macro		



MECHANISM CONTROL

0x1B 0x69	.....<ESC i>	121
Total cut		
0x1B 0x6D	.....<ESC m>	122
Partial cut		
0x1D 0x56	.....<GS V>.....	123
Select cut mode		

MISCELLANEOUS COMMANDS

0x10 0x05	.....<DLE ENQ>	125
Real-time request to device		
0x10 0x14	.....<DLE DC4>	127
Generate pulse at real-time		
0x1B 0x3D	.....<ESC =>.....	128
Select peripherals device		
0x1B 0x40	.....<ESC @>.....	129
Initialize device		
0x1B 0x63 0x33	.....<ESC c 3>	130
Enable/Disable paper end sensor		
0x1B 0x63 0x35	.....<ESC c 5>	131
Enable/Disable LF key		
0x1B 0x63 0x37	.....<ESC c 7>	132
Enable/Disable the ON/OFF key		
0x1B 0x70	.....<ESC p>.....	133
Generate pulse		
0x1B 0xFA	.....	134
Print graphic (608x862 dots)		
0x1B 0xFB	.....	135
Transmit graphic page to communication port		
0x1B 0xFC	.....	136
Transfer flash bank into RAM		
0x1B 0xFD	.....	137
Receive graphic page from communication port		
0x1B 0xFE	.....	138
Transfer RAM into flash bank		
0x1B 0xFF	.....	139
Receive the graphic page from the communication port		
0x1C 0xC0 0x07	.....	140
Emits an acoustic signalling		



0x1C 0xC0 0xFF	141
Emits an acoustic signalling in base of device status	
0x1C 0xEB	142
Received, save and play melody	
0x1D 0x49	144
Transmit device ID	
0x1D 0x50	146
Set horizontal and vertical motion units	
0x1D 0x7C	147
Set printing density	

ALIGNMENT COMMANDS

0x1D 0xF6	149
Align at print	
0x1D 0xF8	150
Align the ticket	

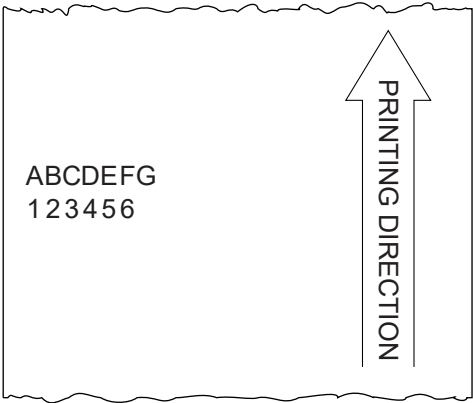
PRINT COMMANDS

0x0A

<LF>

Print and line feed

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X	
[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 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]		
[Reference]	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	KUBE II	
	KUBE II ETH	
	KUBE II L	
	KUBE III L	
	KUBE X	

[Format]	Hex	0D
	ASCII	CR

[Range]

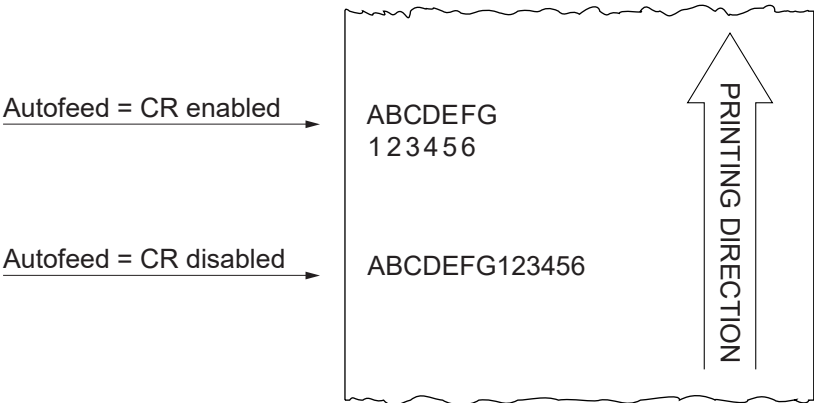
[Description] This command handles the end of a line text.

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

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

[Reference] 0x0A

[Example]



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



0x1B 0x4A

<ESC J>

Print and feed paper

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[Format]	Hex	1B	4A	n
	ASCII	ESC	J	n
[Range]	$0x00 \leq n \leq 0xFF$			
[Description]	Prints the data in the print buffer and feeds the paper [n × (vertical or horizontal motion unit)] inches.			
[Notes]	<ul style="list-style-type: none">• After printing has been completed, this command sets the print starting position to the beginning of the line.• The paper feed amount set by this command does not affect the values set by 0x1B 0x32 or 0x1B 0x33.• The horizontal and vertical motion units are specified by 0x1D 0x50.• 0x1D 0x50 can change the vertical (and horizontal) motion unit. However, the value cannot be less than the minimum vertical movement amount.• In standard mode, the vertical motion unit is used.• The maximum paper feed amount is 520 mm.			
[Default]				
[Reference]	0x1D 0x50			
[Example]				



0x1B 0x64

<ESC d>

Print and feed paper n lines

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



LINE SPACING COMMANDS

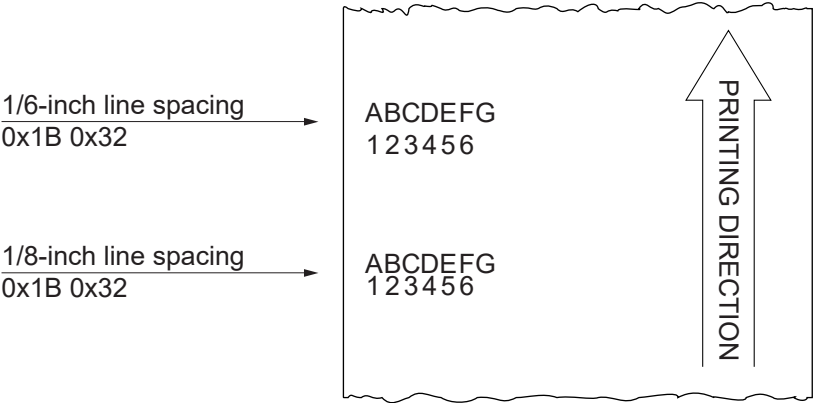
0x1B 0x32

<ESC 2>

Select 1/6-inch line spacing

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		
[Format]	Hex	1B	32
	ASCII	ESC	2
[Range]			
[Description]			
Selects 1/6-inch line spacing.			
[Notes]			
[Default]			
[Reference]			
0x1B 0x32, 0x1B 0x33			

[Example]





0x1B 0x33

<ESC 3>

Set line spacing using minimum units

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[Format]	Hex	1B	33	n
	ASCII	ESC	3	n
[Range]	0x00 ≤ n ≤ 0xFF			
[Description]	Sets line spacing to [n × (vertical or horizontal motion unit)] inches.			
[Notes]	<ul style="list-style-type: none">• The horizontal and vertical motion unit are specified by 0x1D 0x50. Changing the horizontal or vertical motion unit does not affect the current line spacing.• The 0x1D 0x50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum vertical movement amount.• In standard mode, the vertical motion unit is used.• The maximum spacing is 32.5 mm.			
[Default]	n = 64 (1/6 inch)			
[Reference]	0x1B 0x32, 0x1D 0x50			
[Example]				



CHARACTER COMMANDS

0x18

<CAN>

Cancel current line transmitted

Valid for	KUBE II	
	KUBE II ETH	
	KUBE II L	
	KUBE III L	
	KUBE X	
[Format]	Hex	18
	ASCII	CAN
[Range]		
[Description]		
Deletes current line transmitted.		
[Notes]		
<ul style="list-style-type: none">• Sets the print position to the beginning of the line.• However, this command does not clear the receive buffer.		
[Reference]		
[Example]		



0x1B 0x20

<ESC SP>

Set right-side character spacing

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

[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 x horizontal or vertical motion units].

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

[Default] n = 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 !>

Set print mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

BIT	OFF/ON	HEX	FUNCTION	11/15 cpi	15/20 cpi
0	Off	0x00	Character font A selected.	18 x 24	14 x 24
	On	0x01	Character font B selected.	14 x 24	10 x 24
1	-	-	Undefined		
2	-	-	Undefined		
3	Off	0x00	Expanded mode not selected		
	On	0x08	Expanded 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	Underline mode not selected		
	On	0x80	Underline mode selected		

[Notes]	<ul style="list-style-type: none"> • The device can underline all characters, but cannot underline the spaces set by 0x09, 0x1B 0x24, 0x1B 0x5C and 90°/270° rotated characters. • This command resets the left and right margin at default value (see 0x1D 0x4C, 0x1D 0x57). • 0x1B 0x45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one. • 0x1B 0x2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one. • 0x1D 0x21 can also be used to select character height/width. However, the last-received setting command is the effective one.
---------	---


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



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

[Example]

Character font A selected 0x1B 0x21 0x00	→	ABCDEFGG 123456
Character font B selected 0x1B 0x21 0x01	→	ABCDEFGG 123456
Bold mode selected 0x1B 0x21 0x08	→	ABCDEFGG 123456
Double-height mode selected 0x1B 0x21 0x10	→	ABCDEFGG 123456
Double-width mode selected 0x1B 0x21 0x20	→	ABCDEFGG 1 2 3 4 5 6
Italic mode selected 0x1B 0x21 0x40	→	<i>ABCDEFGG</i> <i>123456</i>
Underline mode selected 0x1B 0x21 0x80	→	<u>ABCDEFGG</u> <u>123456</u>





0x1B 0x25

<ESC %>

Select/cancel user-defined character set

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[Format]	Hex	1B	25	n
	ASCII	ESC	%	n
[Range]	$0x00 \leq n \leq 0xFF$			
[Description]	Selects or cancels the user-defined character set. <ul style="list-style-type: none">• When the Least Significant Bit (LSB) of n is 0, the user-defined character set is cancelled.• When the LSB of n is 1, the user-defined character set is selected.			
[Notes]	<ul style="list-style-type: none">• Only the LSB of n is applicable.• When the user-defined character set is cancelled, the internal character set is automatically selected.			
[Default]	n = 0x00			
[Reference]	0x1B 0x26 , 0x1B 0x3F			
[Example]				



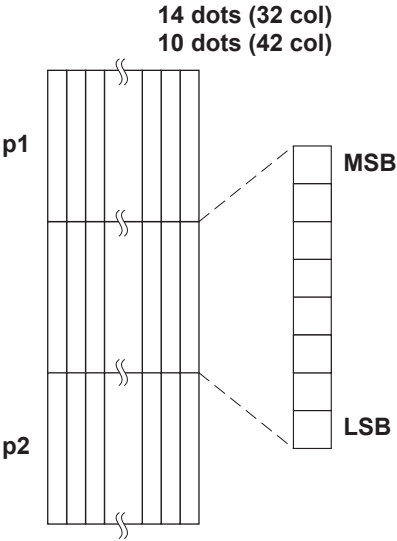
0x1B 0x26

<ESC &>

Defines user-defined characters

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X					
[Format]	Hex	1B	26	y	c1	c2
	ASCII	ESC	&	y	c1	c2
[Range]	y = 0x03 $0x20 \leq c1 \leq c2 \leq 0x7E$ $0x00 \leq x \leq 0x12$ (font 18 x 24) $0x00 \leq x \leq 0x0E$ (font 14 x 24) $0x00 \leq x \leq 0x0A$ (font 10 x 24) $0x00 \leq d0 \dots dk \leq 0xFF$ $k = c2 - c1 + 1$					
[Description]	Defines user programmable characters. y specifies the number of bytes in the vertical direction. c1 specifies the start character code and c2 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"> It is possible to define multiple characters for consecutive character codes. If only one character is desired, use $c1 = c2$. If $c2 < c1$, the command is not executed. d is the dot data for the characters. The dot pattern is in the horizontal direction starting from the left. Any remaining dots on the right remain blank. The data to define a user-defined character is $(x \times y)$ bytes. To print a dot, set the corresponding bit to 1; to not have it print, set to 0. This command can define different user-defined character patterns for each font. To select the font, use 0x1B 0x21, 0x1B 0xC1. The user-defined character definitions are cleared when: 0x1B 0x40 or 0x1D 0x2A or 0x1B 0x3F are executed or the device is reset or the power shut off. 					
[Default]	Internal character set.					
[Reference]	0x1B 0xC1, 0x1B 0x25, 0x1B 0x3F					

[Example]





0x1B 0x2D

<ESC ->

Turn underline mode on/off

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

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

[Description] Turns underline mode on or off, based on the following values of n:

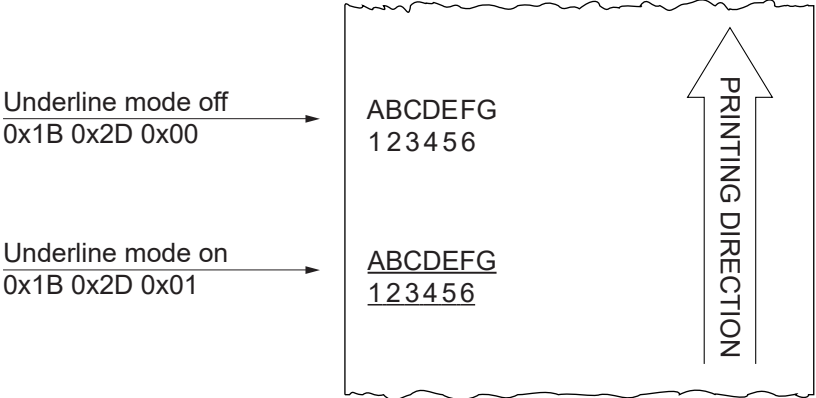
n	FUNCTION
0x00, 0x30	Turns off underline mode
0x01, 0x31	Turns on underline mode (1-dot thick)
0x02, 0x32	Turns on underline mode (2-dot thick)

- [Notes]
- The device can underline all characters, but cannot underline the space and right-side character spacing (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. Note, however, that the last received command is the effective one.

[Default] n = 0x00

[Reference] 0x1B 0x21

[Example]





0x1B 0x34

<ESC 4>

Set / reset italic mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[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 following values of n:

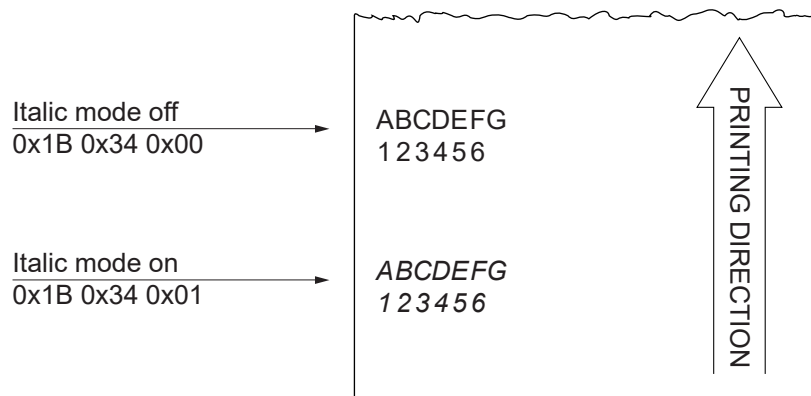
n	FUNCTION
0x00, 0x30	Turns off italic mode
0x01, 0x31	Turns on italic mode

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

[Default] n = 0x00

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

[Example]





0x1B 0x3F

<ESC ?>

Cancel user-defined characters

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[Format]	Hex	1B	3F	n
	ASCII	ESC	?	n
[Range]	$32 \leq n \leq 126$			
[Description]	Cancels user-defined characters.			
[Notes]	<ul style="list-style-type: none">• This command cancels the pattern defined for the character code specified by n.• This command deletes the pattern defined for the specified character code in the font selected by 0x1B 0x21.• If the user-defined character has not been defined for the specified character code, the device ignores this command.			
[Default]				
[Reference]	0x1B 0x21, 0x1B 0x25, 0x1B 0x26			
[Example]				

0x1B 0x45

<ESC E>

Select emphasized mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[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 emphasized mode. However, the last received command is the effective one.

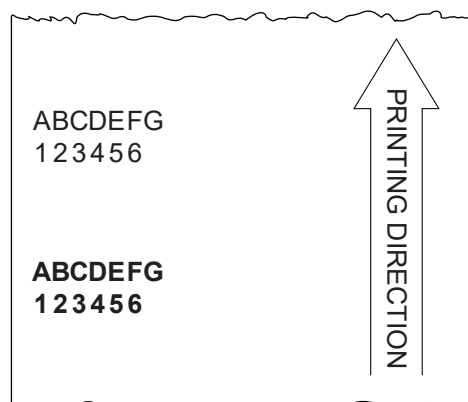
[Default] n = 0x00

[Reference] 0x1B 0x21

[Example]

Bold mode off
0x1B 0x45 0x00

Bold mode on
0x1B 0x45 0x01





0x1B 0x47

<ESC G>

Select double-strike mode

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

[Range] 0x00 ≤ n ≤ 0xFF

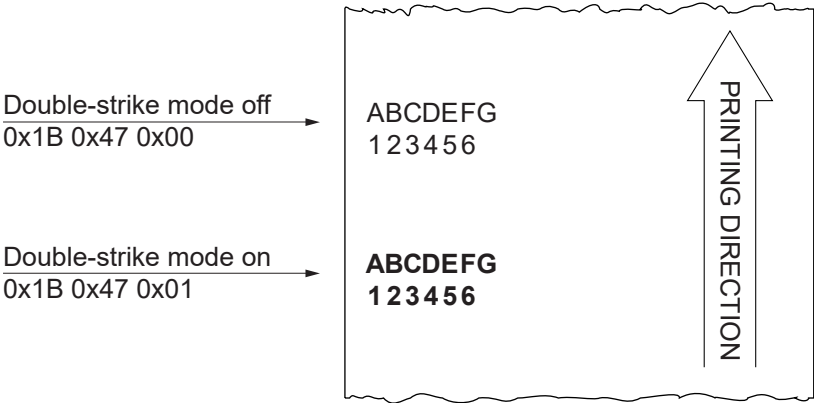
[Description] Turns double-strike mode on or off, based on the n value:
- when the Least Significant Bit (LSB) of n is 0, the double-strike mode is off.
- when the Least Significant Bit (LSB) of n is 1, the double-strike mode is on.

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

[Default] n = 0x00

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

[Example]





0x1B 0x4D

<ESC M>

Select character font

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

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

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

CHAR/INCH	n	FUNCTION
A = 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)

[Notes]

[Default]

[Reference] 0x1B 0xC1

[Example]



0x1B 0x52

<ESC R>

Select international character set

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	$0x00 \leq n \leq 0x0A$
---------	-------------------------

[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>

Select print mode 90° turned

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

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

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

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

[Notes]

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

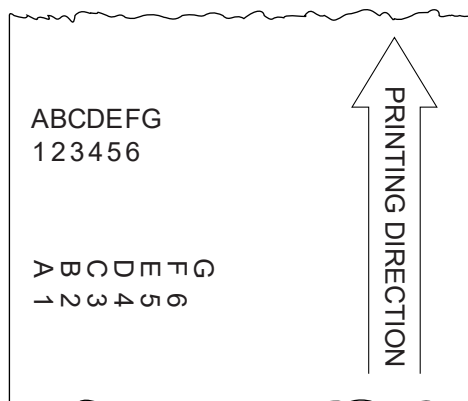
Default] n = 0x00

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

[Example]

90° rotated printing off
0x1B 0x56 0x00

90° rotated printing on
0x1B 0x56 0x01





0x1B 0x74

<ESC t>

Select character code table

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	KUBE II ETH n = 0x00, 0x02, 0x03, 0x04, 0x05, 0x13, 0xFF			
---------	--	--	--	--

KUBE II, KUBE II L, KUBE III L, KUBE X
 $0x01 \leq n \leq 0x35$, $n = 0xFF$

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

KUBE II ETH

n	PAGE
0x00	0 (PC437 - U.S.A., Standard Europe)
0x02	2 (PC850 - Multilingual)
0x03	3 (PC860 - Portuguese)
0x04	4 (PC863 - Canadian/French)
0x05	5 (PC865 - Nordic)
0x13	6 (PC858 for Euro symbol in 213 position)
0xFF	Space page

KUBE II, KUBE II L, KUBE III L, KUBE X

n	PAGE
0x00	PC437 - U.S.A., Standard Europe
0x01	Katakana
0x02	PC850 - Multilingual
0x03	PC860 - Portuguese
0x04	PC863 - Canadian/French
0x05	PC865 - Nordic
0x0B	PC851 - Greek on request
0x0C	PC853 - Turkish on request
0x0D	PC857 - Turkish
0x0E	PC737 - Greek
0x0F	ISO8859-7 - Greek on request



0x10	WPC1252	on request
0x11	PC866 - Cyrillic 2	
0x12	PC852 - Latin 2	
0x13	PC858 for Euro symbol at position 213	
0x14	KU42 - Thai	
0x15	TIS11 - Thai	
0x16	TIS13 - Thai	
0x17	TIS14 - Thai	
0x18	TIS16 - Thai	
0x19	TIS17 - Thai	
0x1A	TIS18 - Thai	
0x1E	TCVN_3 - Vientamese	on request
0x1F	TCVN_3 - Vientamese	on request
0x20	PC720 - Arabic	on request
0x21	WPC775 - Baltic Rim	on request
0x22	PC855 - Cyrillic	
0x23	PC861 - Icelandic	on request
0x24	PC862 - Hebrew	
0x25	PC864 - Arabic	
0x26	PC869 - Greek	on request
0x27	ISO8859-2 - Latin 2	on request
0x28	ISO8859-15 - Latin 9	on request
0x29	PC1098 - Farci	on request
0x2A	PC1118 - Lithuanian	on request
0x2B	PC1119 - Lithuanian	on request
0x2C	PC1125 - Ukranian	on request
0x2D	WPC1250 - Latin 2	on request
0x2E	WPC1251 - Cyrillic	on request
0x2F	WPC1253 - Greek	
0x30	WPC1254 - Turkish	on request
0x31	WPC1255 - Hebrew	on request
0x32	WPC1256 - Arabic	on request
0x33	WPC1257 - Baltic Rim	on request
0x34	WPC1258 - Vientamese	on request
0x35	KZ1048 - Kazakhstan	on request
0xFF	Space page	



[Notes]	KUBE II, KUBE II L, KUBE III L, KUBE X The tables are selectable only if the code pages are present on the machine. By selecting a code page not present on the machine, the code page remains the one currently in use.
[Default]	n = 0x00
[Reference]	See character code table.
[Example]	For printing Euro symbol (€), the command sequence is: 0x1B, 0x74, 0x13, 0xD5

0x1B 0x7B

<ESC {>

Set/cancel upside-down character printing

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

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

[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.

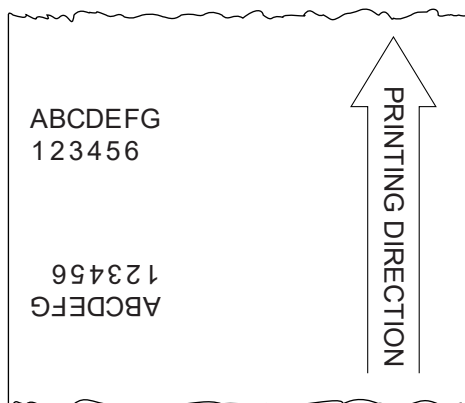
[Default] n = 0x00

[Reference]

[Example]

Upside-down printing off
0x1B 0x7B 0x00

Upside-down printing on
0x1B 0x7B 0x01





0x1B 0xC1

Set/cancel cpi mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

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

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

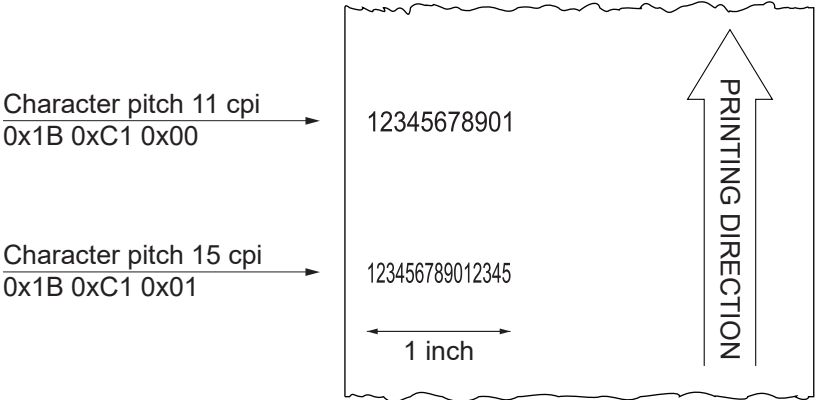
n	PITCH	
0x00, 0x30	Font A = 11 cpi	Font B = 15 cpi
0x01, 0x31	Font A = 15 cpi	Font B = 20 cpi

[Notes]

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

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

[Example]





0x1C 0x25

<FS %>

Select the font type

Valid for	KUBE II			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

[Range] 0x00 ≤ n ≤ 0x02

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

n	FONT TYPE
0x00	International
0x01	Chinese GB18030
0x02	Korean CP949

[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]

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

[Example]



0x1D 0x21

<GS !>

Select character size

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

Table 1 Select character width

HEX	WIDTH
0x00	1 (normal)
0x10	2 (width = 2x)
0x20	3 (width = 3x)
0x30	4 (width = 4x)
0x40	5 (width = 5x)
0x50	6 (width = 6x)
0x60	7 (width = 7x)
0x70	8 (width = 8x)

Table 2 Select character height

0x00	HEIGHT
0x01	1 (normal)
0x02	2 (height = 2x)
0x03	3 (height = 3x)
0x04	4 (height = 4x)
0x05	5 (height = 5x)
0x06	6 (height = 6x)
0x07	7 (height = 7x)
07	8 (height = 8x)

[Notes]	<ul style="list-style-type: none"> • This command is effective for all characters (except HRI characters). • If n falls outside the defined range, this command is ignored. • Characters enlarged to different heights on the same line are aligned at the baseline or top line. • 0x1B 0x21 can also be used to select character size. However, the setting of the last received command is the effective one. • This command is effective on the x and y axes. In case of 90°/270° rotated characters, bit from 0 to 3 select character width and bit from 4 to 7 select character height.
---------	---

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

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

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



0x1D 0x42

<GS B>

Turn white/black reverse printing mode on/off

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[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]	<ul style="list-style-type: none">• 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]				

Reverse printing mode off
0x1D 0x42 0x00

Reverse printing mode on
0x1D 0x42 0x01







PRINT POSITION COMMANDS

0x08

<BS>

Back space

Valid for	KUBE II	
	KUBE II ETH	
	KUBE II L	
	KUBE III L	
	KUBE X	
[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	KUBE II	
	KUBE II ETH	
	KUBE II L	
	KUBE III L	
	KUBE X	

[Format]	Hex	09
	ASCII	HT

[Range]

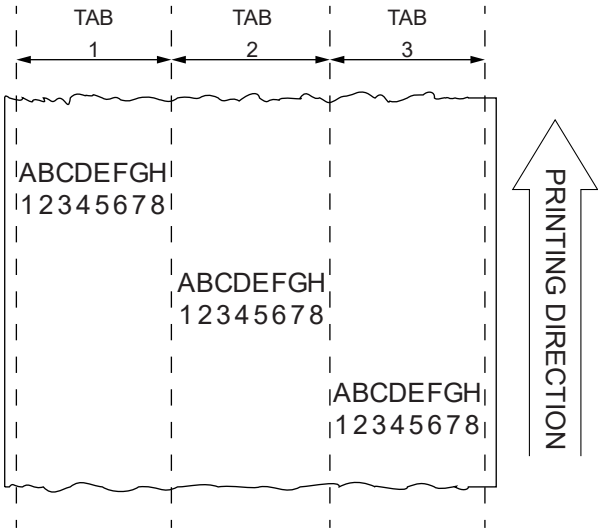
[Description] Moves the print position to the next horizontal tab position.

- [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	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[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">• Settings outside the specified printable area are ignored.• The horizontal and vertical motion unit are specified by 0x1D 0x50.• 0x1D 0x50 can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.• In standard mode, the horizontal motion unit (x) is used.• If the setting is outside the printing area width, it sets the absolute print position, but the left or right margin is set at default value.				
[Default]					
[Reference]	0x1B 0x5C, 0x1D 0x50				
[Example]					



0x1B 0x44

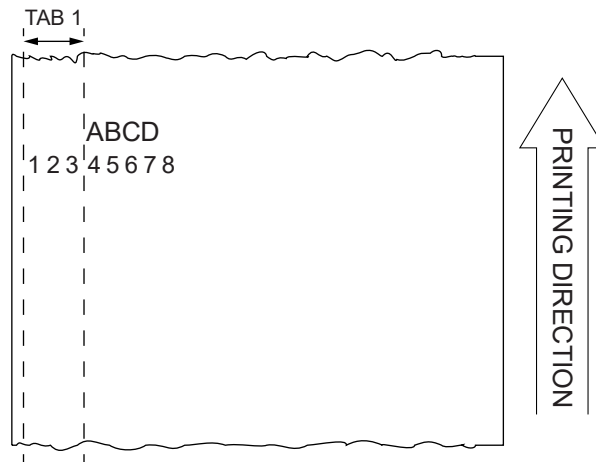
<ESC D>

Set horizontal tab position

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[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">• n specifies the column number for setting a horizontal tab position calculated from the beginning of the line.• k indicates the total number of horizontal tab positions to be set.				
[Notes]	<ul style="list-style-type: none">• The horizontal tab position is stored as a value of [character width x n] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.• This command cancels previous tab settings.• Up to 32 tab positions (k = 32) can be set. Data exceeding 32 tab positions is processed as normal data.• Send [n] k in ascending order and place a 0 NUL code at the end. When [n] k is less than or equal to the preceding value [n] k-1, the setting is complete and the data which follows is processed as normal data.• 0x1B 0x44 00 cancels all horizontal tab positions.• The previously specified horizontal tab position does not change, even if the character width is modified.				
[Default]	Default tab positions are set at intervals of 8 characters (columns 9, 17, 25, ...) when the right-side character spacing is 0.				
[Reference]	0x09				

[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	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[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">• When the starting position is specified by n motion units to the right : nL + nH × 256 = N When the starting position is specified by n motion units to the left (negative direction) use the complement of 65536 : nL + nH × 256 = 65536 – N• If setting exceeds the printing area width, the left or right margin is set to the default value.• The horizontal and vertical motion unit are specified by 0x1D 0x50.• 0x1D 0x50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.• In standard mode, the horizontal motion unit is used.• 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.				
[Default]					
[Reference]	0x1B 0x24, 0x1D 0x50				
[Example]					



0x1B 0x61

<ESC a>

Select justification

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

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

[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

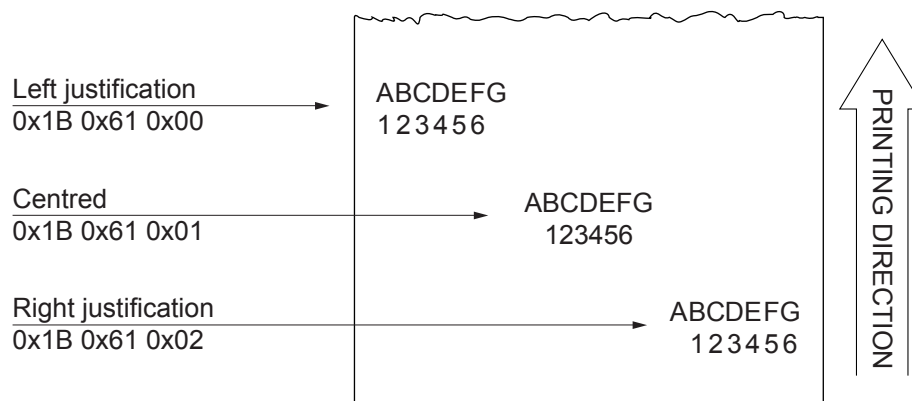
[Notes]

- 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>

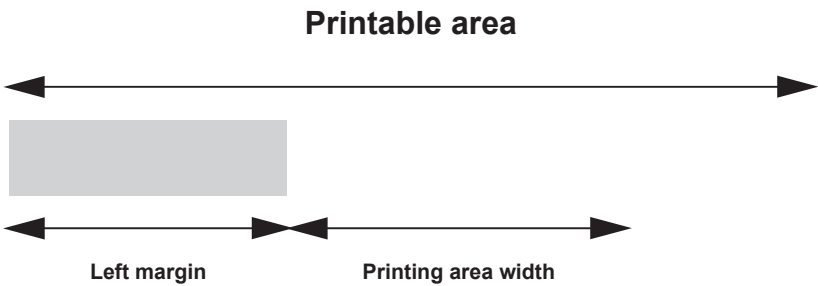
Set left margin

Valid for	KUBE II				
	KUBE II ETH				
	KUBE II L				
	KUBE III L				
	KUBE X				

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

[Range] 0x00 ≤ nL, nH ≤ 0xFF

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



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

[Default]

[Reference] 0x1D 0x50 0x1D 0x57

[Example]



0x1D 0x57

<GS W>

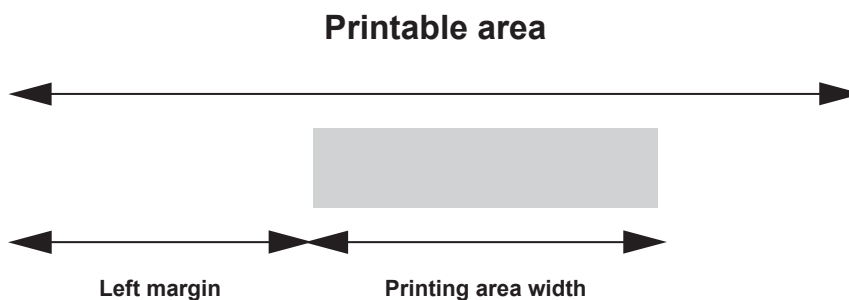
Set printing area width

Valid for	KUBE II				
	KUBE II ETH				
	KUBE II L				
	KUBE III L				
	KUBE X				

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

[Range] $0x00 \leq nL, nH \leq 0xFF$
 $0x00 \leq nL + (nH \times 256) \leq 576$

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



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

[Default]

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

[Example]





BIT-IMAGE COMMANDS

0x1B 0x2A

<ESC *>

Select bit print mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X						
-----------	---	--	--	--	--	--	--

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

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

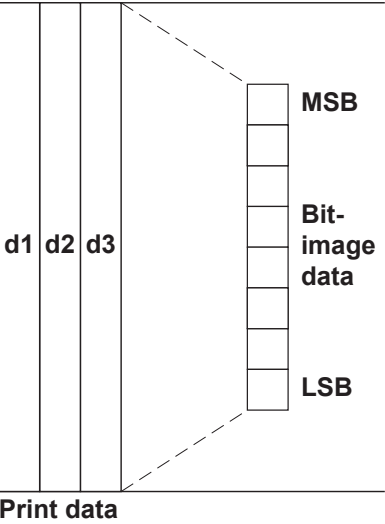
[Description] Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

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

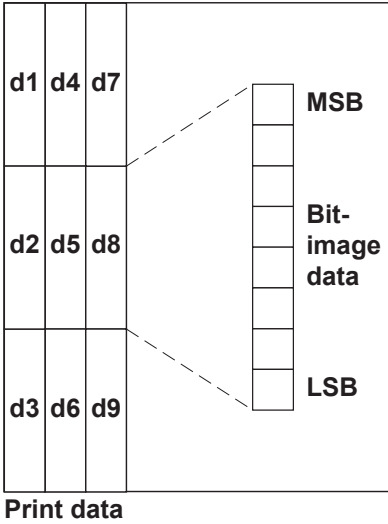
- [Notes]
- The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: $nL + nH \times 256$.
 - If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
 - d indicates the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

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

8-dot bit image



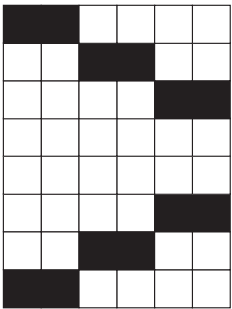
24-dot bit image



[Default]

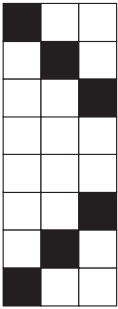
[Reference]

[Example]



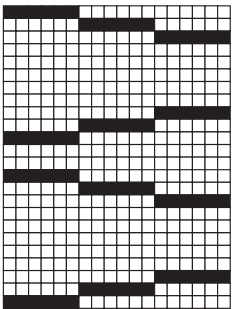
8 dots

8 dots single density



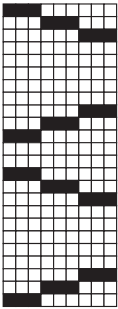
8 dots

8 dots double density



24 dots

24 dots single density



24 dots

24 dots double density



0x1C 0x70

<FS p>

Print logo

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
-----------	---	--	--	--	--

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

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

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

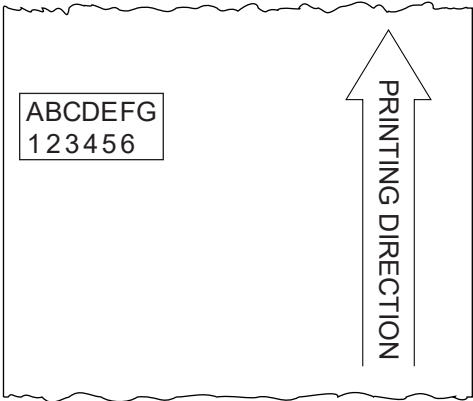
n	PRINT MODE
0x00	Normal
0x01	Double width
0x02	Double height
0x03	Double width and double height

[Notes]

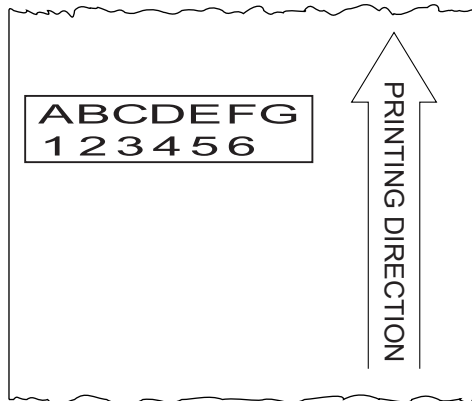
[Default]

[Reference]

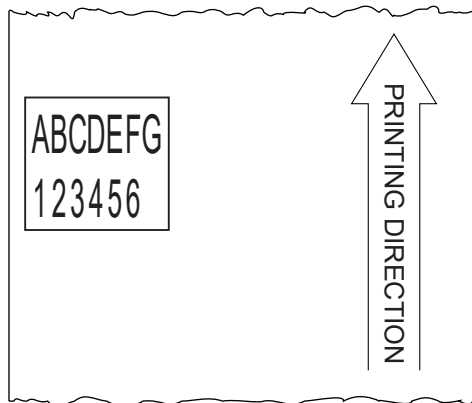
[Example]	n = 0x00
-----------	----------



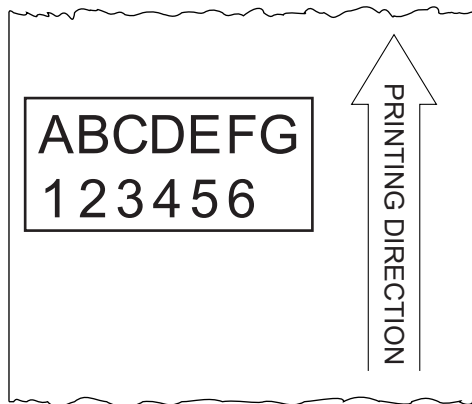
n = 0x01: Double width



n = 0x02: Double height



n = 0x03: Double width and double height





0x1C 0x71

<FS q>

Logo storage

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[Format]	Hex	1C	71	n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
	ASCII	FS	q	n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n

[Range]	m = 0x00, 0x01 $0x00 \leq d \leq 0xFF$
---------	---

[Description]	Stores a logo in the flash bank specified by m as follows:
---------------	--

m	FUNCTION
0x00	Save logo in the flash bank 1
0x01	Save logo in the flash bank 2

[Notes]	<ul style="list-style-type: none">• The stored logo is a “.bmp” image in Windows bitmap format; a monochrome image (1 bit/pixel) must be used.• The maximum size allowed for the “.bmp” image is 32 kB.• d indicates the byte of the “.bmp” image.• If the value of m is outside the specified range, the data following it are processed as normal data.
---------	--

[Default]

[Reference]

[Example]



0x1D 0x2A

<GS *>

Define received bit imag

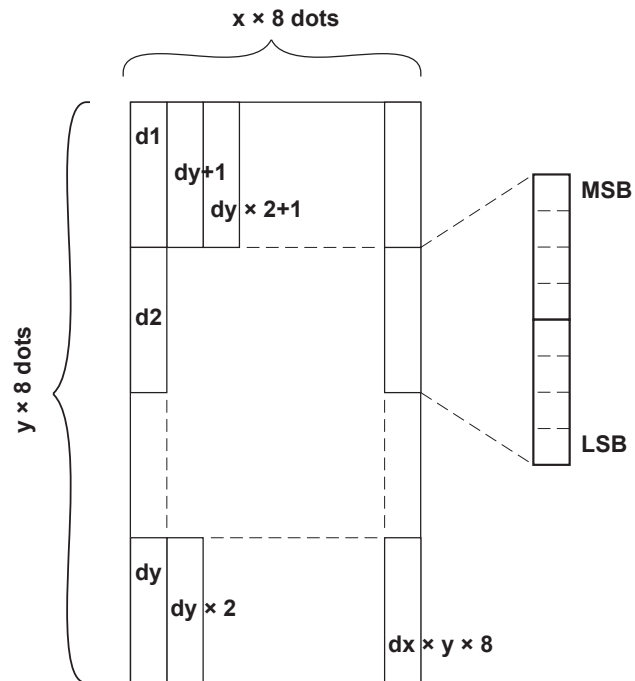
Valid for	KUBE II					
	KUBE II ETH					
	KUBE II L					
	KUBE III L					
	KUBE X					
[Format]	Hex	1D	2A	x	y	d1...d(x × y × 8)
	ASCII	GS	*	x	y	d1...d(x × y × 8)
[Range]	$0x01 \leq x \leq 0xFF$					
	$0x01 \leq y \leq 0x30$					
	$x \times y \leq 1536$					
	$0x00 \leq d \leq 0xFF$					
[Description]	Defines a downloaded bit image using the number of dots specified by x and y.					
	• x specifies the number of dots in the horizontal direction.					
	• y specifies the number of dots in the vertical direction.					
[Notes]	• The number of dots in the horizontal direction is x × 8, in the vertical direction it is y × 8.					
	• If x × y is out of the specified range, this command is disabled.					
	• The d indicates bit-image data. Data (d) specifies a bit printed to 1 and not printed to 0.					
	• The downloaded bit image definition is cleared when:					
	1) 0x1B 0x40 is executed.					
	2) 0x1B 0x26 is executed.					
	3) Printer is reset or the power is turned off.					

[Default]

[Reference]

[Example]

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





0x1D 0x2F

<GS />

Print received bit image

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]

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

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

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

[Default]

[Reference] 0x1D 0x2A

[Example]



0x1D 0x76 0x30

<GS v 0>

Print raster bit image

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X									
-----------	---	--	--	--	--	--	--	--	--	--

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

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

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

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

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

[Notes]	<ul style="list-style-type: none"> • In standard mode for receipt paper, this command is effective only when there is no data in the print buffer. • The data (d) identify as 1 a printed bit and as 0 a non printed bit. • If a raster bit image is longer than one line, the surplus data aren't printed. • This command has no effect in all print modes (character size, emphasized, upside-down, underline, white/black reverse printing, etc.) for raster bit image, except the reverse mode (90° anticlockwise rotation). • This command feeds the paper as much as is necessary to print the raster bit image, though the spacing set by 0x1B 0x32 or 0x1B 0x33. • Don't use this command during a macro execution because it can't be included in a macro. • After the printing, the printing position moves to the beginning of the line. 									
---------	--	--	--	--	--	--	--	--	--	--



- The following table shows the report between the image data and the printing result:

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

[Default]

[Reference]

[Example]



STATUS COMMANDS

0x10 0x04

<DLE EOT>

Real-time status transmission

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
[Format]	Hex	10	04	n
	ASCII	DLE	EOT	n
[Range]	0x01 ≤ n ≤ 0x04 n = 0x11, 0x14, 0x15			
[Description]	Transmits the selected status when this command is received. The status to be transmitted is indicated in the following table:			
	n = 0x01	transmits device status		
	n = 0x02	transmits off-line status		
	n = 0x03	transmits error status		
	n = 0x04	transmits paper roll sensor status		
	n = 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	Off	00	Drawer kick-out signal level Low (pin 3)
	On	04	Drawer kick-out signal level High (pin 3)
3	Off	00	On-line
	On	08	Off-line
4	On	10	Not used. Fixed to On
5	-	-	RESERVED
6	Off	00	LF key released
	On	40	LF key pressed
7	-	-	RESERVED

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 open
3	Off	00	Paper isn't feeded by FEED. key
	On	08	Paper is feeded by FEED. key
4	On	10	Not used. Fixed to On
5	Off	00	Paper present
	On	20	Printing stop due to paper end
6	Off	00	No error
	On	40	Error
7	Off	00	Not used. Fixed to Off



Error status (n = 0x03)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to Off
1	On	02	Not used. Fixed to On
2	-	-	RESERVED
3	Off	00	Cutter ok
	On	08	Cutter error
4	On	10	Not used. Fixed to On
5	Off	00	No unrecoverable error
	On	20	Unrecoverable error
6	Off	00	No auto-recoverable error
	On	40	Auto-recoverable error
7	Off	00	Not used. Fixed to Off

Paper roll sensor status (n = 0x04)

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Not used. Fixed to Off
1	On	02	Not used. Fixed to On
2,3	Off	00	Paper present
	On	0C	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	DECIMAL	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Paper drag motor off
	On	04	4	Paper drag motor on
3	-	-	-	RESERVED
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Paper not present
6	-	-	-	RESERVED
7	Off	00	0	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	-	-	RESERVED
6	-	-	RESERVED
7	-	-	RESERVED



4th byte = User status

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Cover closed
	On	01	Cover open
2	Off	00	No spooling
	On	04	Spooling
3	Off	00	Drag paper motor off.
	On	08	Drag paper motor on
4	-	-	RESERVED
5	Off	00	LF key released
	On	20	LF key pressed
6	Off	00	ON/OFF key released
	On	40	ON/OFF 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	Off	00	Receiving character ok
	On	10	Timeout error receiving character
5	Off	00	Acknowledge command
	On	20	Not acknowledge command error
6	-	-	RESERVED
7	Off	00	Black mark aligned
	On	80	Black mark not aligned



6th byte = Unrecoverable error status

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	Cutter ok
	On	01	Cutter error
1	Off	00	External flash ok (*)
	On	02	External flash error (*)
2	Off	00	RAM ok
	On	00	RAM error
3	Off	00	EEPROM ok
	On	08	EEPROM error
4	Off	00	Device in standby ready to receive data
	On	10	Receiving data in progress
5	-	-	RESERVED
6	-	-	RESERVED
7	-	-	RESERVED

(*) Only for KUBE II, KUBE II L, KUBE III L, KUBE X

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]

[Default]

[Reference] See tables below.

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



0x1B 0x76

<ESC v>

Transmit device status

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X		
-----------	---	--	--

[Format]	Hex	1B	76
	ASCII	ESC	v

[Range]

[Description] It transmits the current status of the paper sensor upon receipt of this command.

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

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Low paper sensor: paper present
	On	03	Low paper 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

[Default]

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

[Example]



0x1D 0x72

<GS r>

Transmit status

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	0x01 ≤ n ≤ 0x02
	0x31 ≤ n ≤ 0x32

[Description]	Transmits the status specified by n as follows:
---------------	---

n	FUNCTION
0x01, 0x31	Transmits paper sensor status
0x02, 0x32	Transmits drawer connector status

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

BIT	OFF/ON	HEX	FUNCTION
0,1	Off	00	Low paper sensor (paper present)
	On	03	Low paper sensor (paper not present)
2,3	Off	00	Paper-end sensor (paper present)
	On	(0C)	Paper-end sensor (paper not present)
4	-	-	RESERVED
5	-	-	Undefined
6	-	-	Undefined
7	-	-	RESERVED

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

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	The drawer is present (Connector pin 3 at low level)
	On	01	The drawer is not present (Connector pin 3 at high level)
1	-	-	Undefined
2	-	-	Undefined
3	-	-	Undefined
4	Off	00	Not used. Fixed to Off
5	-	-	Undefined
6	-	-	Undefined
7	Off	00	Not used. Fixed to Off



[Notes]	This command is executed when the data is processed in the data buffer. Therefore, there may be a time lag between receiving the command and transmitting the status, depending on data buffer status.
[Default]	
[Reference]	0x10 0x04
[Example]	



0x1D 0xE0

Enable or disable automatic FULL STATUS BACK

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[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]	<p>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:</p> <p>1st Byte = 0x10 (DLE)</p> <p>2nd Byte = n</p> <p>Next byte (depends how many bits are active in n)</p>
---------	--

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

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

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



0x1D 0xE2

Reading number of cuts performed by the autocutter

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X		
[Format]	Hex ASCII	1D GS	E2 0xE2
[Range]			
[Description]	Reading the number of cuts performed from the device.		
[Notes]	The command returns a string indicating how many cuts are performed by the autocutter.		
[Default]			
[Reference]			
[Example]	Se il numero di tagli eseguiti dalla taglierina è 785, la risposta sarà: '785cuts'		



0x1D 0xE3

Reading of length of printed paper

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		
[Format]	Hex	1D	E3
	ASCII	GS	0xE3
[Range]			
[Description]			
Reading of length (cm) of printed paper.			
[Notes]			
The command returns a string indicating how much paper is printed.			
[Default]			
[Reference]			
[Example]			
If the device has printed about 388.9 m, the answer will be: '38890cm'			



0x1D 0xE5

Reading number of power up

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		

[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'





COMMANDS FOR BARCODE PRINTING

0x1D 0x28 0x6B

<GS (>

Print two-dimensional barcode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X							
-----------	---	--	--	--	--	--	--	--

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

[Range]

[Description] Processes the data concerning two-dimensional barcode.

- Barcode type is specified by cn
- Function is specified by fn

KUBE II ETH

cn	fn	FUNCTION	
0x30	0x41	Function 065	PDF 417: Specify the number of columns
0x30	0x42	Function 066	PDF 417: Specify the number of rows
0x30	0x43	Function 067	PDF 417: Specify the width of module
0x30	0x44	Function 068	PDF 417: Specify the module height
0x30	0x45	Function 069	PDF 417: Specify the error correction level
0x30	0x50	Function 080	PDF 417: Store the received data in the barcode save area
0x30	0x51	Function 081	PDF 417: Print the barcode data in the barcode save area

KUBE II, KUBE II L, KUBE III L, KUBE X

cn	fn	FUNCTION	
0x31	0x41	Function 065	QRcode: Specify encoding scheme
0x31	0x42	Function 066	QRcode: Specify dot size of the module
0x31	0x43	Function 067	QRcode: Specify size of barcode
0x31	0x45	Function 069	QRcode: Specify the error correction level
0x31	0x50	Function 080	QRcode: Store the received data in the barcode save area
0x31	0x51	Function 081	QRcode: Print the barcode data



[Notes]

[Default]

[Reference]

[Example]

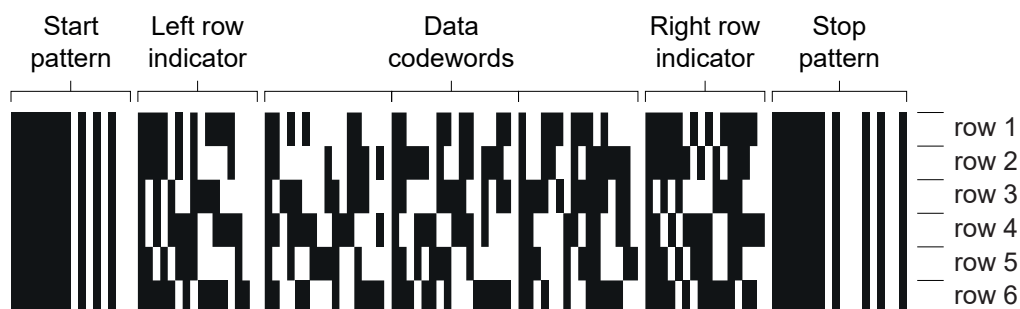


0x1D 0x28 0x6B [fn 065]

<GS (k>

Specify the number of columns of PDF417 barcode

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



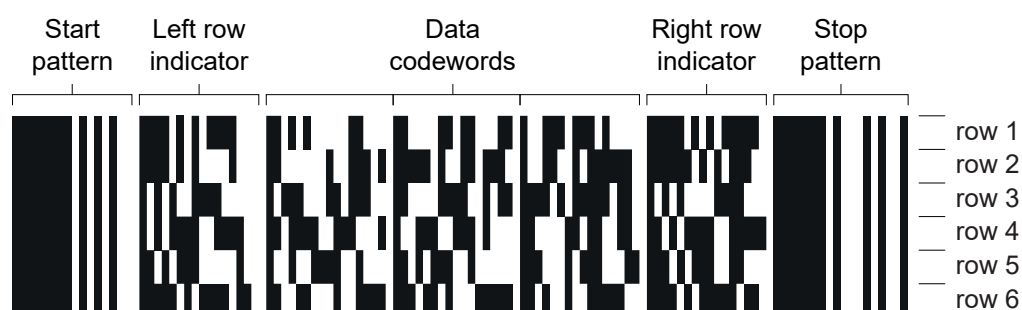


0x1D 0x28 0x6B [fn 066]

<GS (k>

Specify the number of rows of PDF417 barcode

Valid for	KUBE II ETH								
[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">• pL and pH specify the number of successive bytes to be sent.• n = 0x00 specifies auto processing. When auto processing is specified, the maximum number of rows is 20.• When n is not 0x00, specifies the number of rows of the data area as n rows.								
[Notes]	•Settings are effective until 0x1B 0x40 is executed, the device is reset or the power is 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								

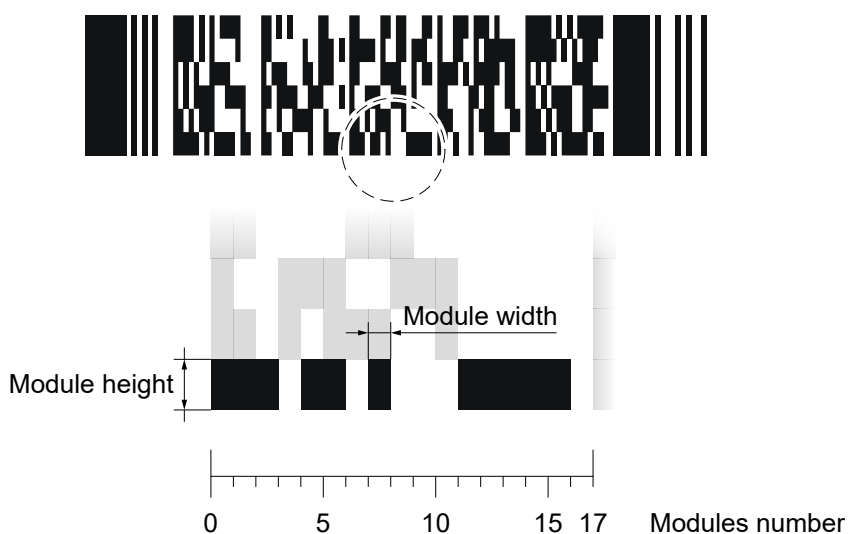


0x1D 0x28 0x6B [fn 067]

<GS (k>

Specify the width of a module of PDF417 barcode

Valid for	KUBE II ETH								
[Format]	Hex	1D	28	6B	pL	pH	30	43	n
	ASCII	GS	(	k	pL	pH	0	C	n
[Range]	$(pL + pH \times 256) = 3$ $(pL = 0x03, pH = 0x00)$ $0x02 \leq n \leq 0x08$								
[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								



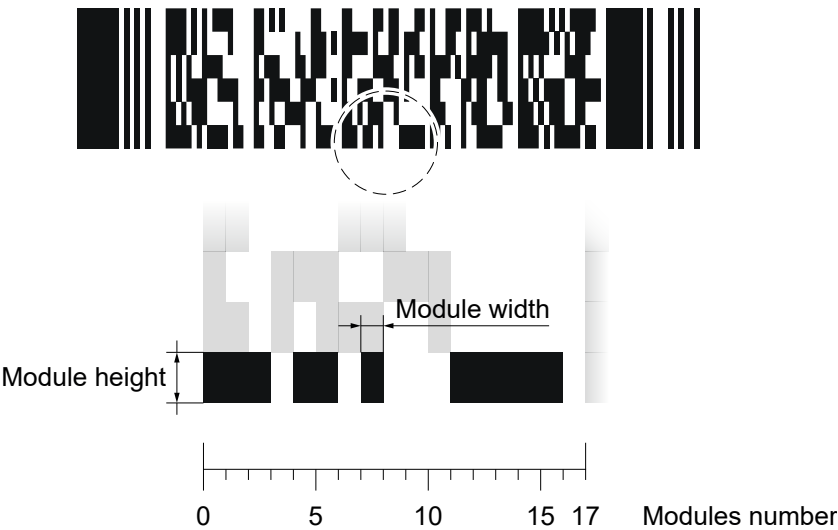


0x1D 0x28 0x6B [fn 068]

<GS (k>

Specify the height of a module of PDF417 barcode

Valid for	KUBE II ETH								
[Format]	Hex	1D	28	6B	pL	pH	30	44	n
	ASCII	GS	(	k	pL	pH	0	D	n
[Range]	$(pL + pH \times 256) = 3$ $(pL = 0x03, pH = 0x00)$ $0x02 \leq n \leq 0x08$								
[Description]	Specifies the height of the module of the PDF417 barcode. • pL and pH specify the number of successive bytes to be sent.								
[Notes]	Settings are effective until 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	KUBE II ETH									
[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">• pL and pH specify the number of successive bytes to be sent.• The error correction level is specified by “level” when m = 0x30.• The error correction level is specified by “ratio” when m = 0x31 [n × 10%].									
[Notes]	<ul style="list-style-type: none">• Error correction level is specified by either “level” or “ratio”.• Error correction level specified by “level” (m = 0x30) is as follows. The number of the error correction code word is fixed regardless of the number of code words on the data area.									

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



- Error correction level specified by “ratio” ($m = 49$) is as follows. The error correction level is defined by the calculated value [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, the device is reset or the power is turned off.

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

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

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



0x1D 0x28 0x6B [fn 080]

<GS (k>

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

Valid for	KUBE II ETH									
[Format]	Hex	1D	28	6B	pL	pH	30	50	30	d1...dk
	ASCII	GS	(	k	pL	pH	0	P	0	d1...dk
[Range]	<p>$0x00 \leq d \leq 0xFF$ $k = (pL + pH \times 256) - 3$</p> <ul style="list-style-type: none"> PDF417 barcode only with ASCII characters: $4 \leq (pL + pH \times 256) \leq 1112$ ($0x00 \leq pL \leq 0xFF$, $0x00 \leq pH \leq 0x04$) PDF417 barcode only with alphanumeric characters: $4 \leq (pL + pH \times 256) \leq 1854$ ($0x00 \leq pL \leq 0xFF$, $0x00 \leq pH \leq 0x07$) PDF417 barcode only with numeric characters: $4 \leq (pL + pH \times 256) \leq 2729$ ($0x00 \leq pL \leq 0xFF$, $0x00 \leq pH \leq 0x0A$) 									
[Description]	<p>Stores the data (d1...dk) in the barcode save area for printing in PDF417 format.</p> <ul style="list-style-type: none"> pL and pH specify the number of successive bytes to be sent. k bytes of d1...dk are processed as barcode data. 									
[Notes]	<ul style="list-style-type: none"> Data stored in the barcode save area by this function are processed by Function 081 and then reserved. 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. Settings are effective until 0x1B 0x40 is executed or the device is reset or turned off. 									
[Default]										
[Reference]	0x1D 0x28 0x6B									
[Example]										



0x1D 0x28 0x6B [fn 081]

<GS (k>

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

Valid for	KUBE II ETH								
[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]	<p>Encodes the data in the barcode save area and prints it in PDF417 format.</p> <ul style="list-style-type: none">• pL and pH specify the number of successive bytes to be sent.								
[Notes]	<ul style="list-style-type: none">• In standard mode, use this function when device is at the beginning of a line or there is no data in the print buffer.• A barcode that size exceeds the printing area cannot be printed.• 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">- There is no data (Function 080 is not processed).- If [(number of columns × number of rows) < number of code word] when auto processing is specified for number of columns and number of rows.- Number of code word exceeds 928 in the data area.• When auto processing (Function 065) is specified, the number of columns is calculated by the current printing area, module width (Function 067) and the code word in the data area. Maximum number of the columns is 30.								
[Default]									
[Reference]	0x1D 0x28 0x6B								
[Example]	<p>To print the PDF417 barcode data the command sequence is the following:</p> <p>0x1D 0x28 0x6B 0x03 0x00 0x30 0x51 0x30</p>								

0x1D 0x28 0x6B [fn 065]

<GS (k>

Specify encoding scheme of QRcode barcode

Valid for	KUBE II
	KUBE II L
	KUBE III L
	KUBE X

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

[Range]	$(pL + pH \times 256) = 3$	$(pL = 0x03, pH = 0x00)$
	$0x00 \leq n \leq 0x01$	

[Description] Specifies encoding type of QRcode barcode.

n	ENCODING
0x00	QRcode
0x01	MicroQR

[Notes]

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

[Default] n = 0x00

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

[Example]



QRcode Model 2



MicroQR



0x1D 0x28 0x6B [fn 066]

<GS (k>

Specify dot size of the module of the QRcode barcode

Valid for	KUBE II KUBE II L KUBE III L KUBE X								
-----------	--	--	--	--	--	--	--	--	--

[Format]	Hex	1D	28	6B	pL	pH	31	42	n
	ASCII	GS	(	k	pL	pH	1	B	n

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

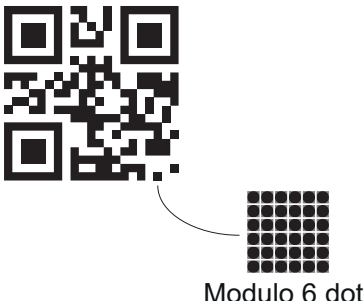
[Description] Specifies numbers of dot for each pixel of QRcode barcode.

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

[Default] n = 0x00

[Reference] 0x1D 0x28 0x6B

[Example]





0x1D 0x28 0x6B [fn 067]

<GS (k>

Specify dot size of the module of the QRcode barcode

Valid for	KUBE II KUBE II L KUBE III L KUBE X								
-----------	--	--	--	--	--	--	--	--	--

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

[Range]	$(pL + pH \times 256) = 3$ $(pL = 0x03, pH = 0x00)$ $0x00 \leq n \leq 0x28$								
---------	--	--	--	--	--	--	--	--	--

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

[Notes]	<ul style="list-style-type: none"> • If selected version has not enough capacity to store the saved amount of data, next smallest version capable of that capacity will be printed. • For QRcode version capacity according to ECC (Error Correction Capability) and data type refer to following table. • With $n = 0x00$ the selection of the version occurs automatically according to the one that allows the printing of the requested data. 								
---------	---	--	--	--	--	--	--	--	--

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



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



n	VERSION	MODULES	ECC LEVEL	NUMERIC	ALPHANUMERIC	BINARY
0x13	19	93 x 93	L	1902	1152	791
			M	1499	908	623
			Q	1062	643	441
			H	812	492	337
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



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

[Default] n = 0x00

[Reference] 0x1D 0x28 0x6B

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



0x1D 0x28 0x6B [fn 069]

<GS (k>

Specify the error correction level of the QRcode barcode

Valid for	KUBE II KUBE II L KUBE III L KUBE X								
-----------	--	--	--	--	--	--	--	--	--

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

[Range]	$(pL + pH \times 256) = 3$ $(pL = 4, pH = 0)$ $0x00 \leq n \leq 0x04$								
---------	--	--	--	--	--	--	--	--	--

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

n		ECC level	
0x30		AUTO	
0x31	ECC = approx 20% of barcode	Recovery Capacity = approx 7%	
0x32	ECC = approx 37% of barcode	Recovery Capacity = approx 15%	
0x33	ECC = approx 50% of barcode	Recovery Capacity = approx 25%	
0x34	ECC = approx 65% of barcode	Recovery Capacity = approx 30%	

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

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

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

[Example]





0x1D 0x28 0x6B [fn 080]

<GS (k>

Store the QRcode barcode data in the barcode save area

Valid for	KUBE II KUBE II L KUBE III L KUBE X									
[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 • QRcode barcode only with binary characters (8 bit): 4 ≤ (pL + pH × 256) ≤ 2957 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x0B) • QRcode barcode only with alphanumeric characters: 4 ≤ (pL + pH × 256) ≤ 4300 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x10) • QRcode barcode only with numeric characters: 4 ≤ (pL + pH × 256) ≤ 7093 (0x00 ≤ pL ≤ 0xFF, 0x00 ≤ pH ≤ 0x1B)									
[Description]	Stores the QRcode barcode data (d1...dk) in the barcode save area.									
[Notes]	• Data stored in the barcode save area by this function are processed by Function 081 and then reserved. • pL and pH specify the number of successive bytes to be sent. • k bytes of d1...dk are processed as barcode data. • Specify only the data code word of the barcode with this function.									
[Default]										
[Reference]	0x1D 0x28 0x6B									
[Example]										



0x1D 0x28 0x6B [fn 081]

<GS (k>

Prints the QRcode barcode data

Valid for	KUBE II								
	KUBE II L								
	KUBE III L								
	KUBE X								
[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 0x48

<GS H>

Select printing position of Human Readable Interpretation (HRI) characters

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

[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 the below the barcode

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

[Default] n = 0x00

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

[Example]

Non stampato



Sopra il barcode



Sotto il barcode



Sia sopra che sotto il barcode





0x1D 0x66

<GS f>

Select font for HRI characters

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[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

ABCEFG123456


Font B

ABCEFG123456




0x1D 0x68

<GS h>

Set barcode height

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			
[Format]	Hex	1D	68	n
	ASCII	GS	h	n
[Range]	0x01 n ≤ 0xFF			
[Description]	Sets the height of the 1D barcode. n specifies the number of vertical dots.			
[Notes]				
[Default]	n = 0xA2 (20.25 mm)			
[Reference]	0x1D 0x6B			
[Example]	To print a barcode with height of 15 mm, the command sequence is: 0x1D 0x68 0x78			
	Where: 15 mm = 15 × 8 dots = 120 dots which converted in hexadecimal value = 0x78			



0x1D 0x6B

<GS k>

Print barcode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X					
-----------	---	--	--	--	--	--

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

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

[Range]	Format 1:	$0x00 \leq m \leq 0x08$ m = 20
	Format 2:	$65 \leq m \leq 73$ m = 90

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

Format 1:

m	BARCODE SYSTEM	No. 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	$0x01 \leq k$	$0x30 \leq d \leq 0x39$, $0x41 \leq d1 \leq 0x44$, 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	No. OF CHARACTERS	REMARKS
0x41	UPC-A	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x42	UPC-E	0x0B ≤ n ≤ 0x0C	0x30 ≤ d ≤ 0x39
0x43	EAN13 (JAN)	0x0C ≤ n ≤ 0x0D	0x30 ≤ d ≤ 0x39
0x44	EAN8 (JAN)	0x07 ≤ n ≤ 0x08	0x30 ≤ d ≤ 0x39
0x45	CODE39	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x5A, 0x20, 0x24, 0x25, 0x2B, 0x2D, 0x2E, 0x2F
0x46	ITF	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39
0x47	CODABAR	0x01 ≤ n ≤ 0xFF	0x30 ≤ d ≤ 0x39, 0x41 ≤ d ≤ 0x44, 0x24, 0x2B, 0x2D, 0x2E, 0x2F, 0x3A
0x48	CODE93	0x01 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x49	CODE128	0x02 ≤ n ≤ 0xFF	0x01 ≤ d ≤ 0x7F
0x5A	CODE32	0x08 ≤ n ≤ 0x09	0x30 ≤ d ≤ 0x39

[Notes]

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

Format 1:

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



Format 2:

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

When CODE93 is used the device:

- prints an HRI character (o) as a start character at the beginning of the HRI character string
- 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											PRINTING DATA					
d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11						
0	0-9	0-9	0	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	0
0	0-9	0-9	1	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	1
0	0-9	0-9	2	0	0	0	0	0-9	0-9	0-9	d2	d3	d9	d10	d11	2
0	0-9	0-9	3-9	0	0	0	0	0	0-9	0-9	d2	d3	d4	d10	d11	3
0	0-9	0-9	0-9	1-9	0	0	0	0	0	0-9	d2	d3	d4	d5	d11	4
0	0-9	0-9	0-9	0-9	1-9	0	0	0	0	5-9	d2	d3	d4	d5	d6	d11



[Default]

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

[Example]

Format 1: Example of print the barcode 39:
0x1D 0x6B 0x04 0x54 0x45 0x53 0x54 0x00

Format 2: Example of print the barcode 39:
0x1D 0x6B 0x45 0x04 0x54 0x45 0x53 0x54



0x1D 0x77

<GS w>

Set bar code width

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	$0x01 \leq n \leq 0x06$ $0x81 \leq n \leq 0x86$
---------	--

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

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

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

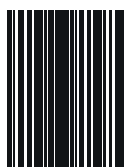
	n	WIDE BAR / NARROW BAR RATIO
If n<0x80	0x01, 0x02, 0x03, 0x04, 0x05, 0x06	3:1
	0x81	3:1
	0x82	2,5:1
If n>0x80	0x83	2,33:1
	0x84	2,25:1
	0x85	3:1
	0x86	3:1

[Notes]

[Default] n = 0x03

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

[Example]



n = 0x01



n = 0x03





MACRO FUNCTIONS

0x1D 0x3A

<GS :>

Set start/end of macro definition

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X		
[Format]	Hex	1D	3A
	ASCII	GS	:
[Range]			
[Description]	Starts or ends macro definition.		
[Notes]	<ul style="list-style-type: none">• Macro definition starts when this command is received during normal operation.• When 0x1D 0x5E is received during macro definition, the device ends macro definition and clears all definitions.• Macros are not defined when power is turned on to the machine.• Macro content is not cancelled by the 0x1B 0x40 command. Therefore, 0x1B 0x40 may be included in the content of macro definitions.• If the device receives 0x1D 0x3A a second time after previously receiving 0x1D 0x3A, the device remains in macro undefined status.• The contents of the macro can be defined up to 2048 bytes. If the macro definition exceeds 2048 bytes, excess data is not stored.		
[Default]			
[Reference]	0x1D 0x5E		
[Example]			



0x1D 0x5E

<GS ^>

Execute macro

Valid for	KUBE II					
	KUBE II ETH					
	KUBE II L					
	KUBE III L					
	KUBE X					

[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]	Executes a macro.
	• r specifies the number of times to execute the macro.
	• t specifies the waiting time for executing the macro.
	The waiting time is $t \times 100$ msec. for each macro execution.
	• m specifies macro executing mode:
When the LSB of $m = 0x00$, the macro is executed r times continuously at the interval specified by t.	
When the LSB of $m = 0x01$, 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.	

[Notes]	• This command has an interval of ($t \times 100$ msec.) after a macro is executed by t.
	• If this command is received while a macro is being defined, the macro definition is aborted and the definition is cleared.
	• If the macro is not defined or if r is 0x00, nothing is executed.
	• When the macro is executed by pressing the FEED button ($m = 0x01$), the paper cannot be fed using the FEED button.

[Default]

[Reference]	0x1D 0x3A
-------------	-----------

[Example]



MECHANISM CONTROL

0x1B 0x69

<ESC i>

Total cut

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		

[Format]	Hex	1B	69
	ASCII	ESC	i

[Range]

[Description] This command enables cutter operation. If there is no cutter, a disabling flag is set and any subsequent cut commands will be ignored.

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

[Default]

[Reference]

[Example]



0x1B 0x6D

<ESC m>

Partial cut

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		

[Format]	Hex	1B	6D
	ASCII	ESC	m

[Range]

[Description] This command enables cutter operation.

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

[Default]

[Reference]

[Example]



0x1D 0x56

<GS V>

Select cut mode

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

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

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

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

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

- [Notes]
- This command is only enabled if set at the beginning of the line.
 - The horizontal and vertical motion units are specified by [0x1D 0x50](#).
 - If you execute the command, disable the parameter “Total Cut”, the cut will be partial. If you want to effect a total cut you have to enable the parameter on the Set Up.

[Default]

[Reference] [0x1B 0x69](#), [0x1B 0x6D](#), [0x1D 0x50](#)

[Example]





MISCELLANEOUS COMMANDS

0x10 0x05

<DLE ENQ>

Real-time request to device

Valid for	KUBE II
	KUBE II ETH
	KUBE II L
	KUBE III L
	KUBE X

[Format]	Hex	10	05	n
	ASCII	DLE	ENQ	n

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

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

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

- [Notes]
- This command is effective only when an auto-cutter error occurs.
 - The device starts processing data upon receiving this command.
 - This command is executed even when the device is off-line, the receive buffer is full, or there is an error status.
 - This command can not be executed when the device is busy.
 - The status is also transmitted whenever the data sequence of 0x10 0x05 n ($1 \leq n \leq 2$) is received.

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



[Example 1]

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

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

[Example 2]

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

- 0x10 0x05 0x02 enables the device to recover from an error after clearing the data in the receive buffer and the print buffer. The device retains the settings (by 0x1B 0x21, 0x1B 0x33, etc.) that were in effect when the error occurred. The device can be initialized completely by using this command and 0x1B 0x40. This command is enabled only for errors that have the possibility of recovery, except for print head temperature error.
- When the device is disabled with 0x1B 0x3D (Select peripheral device), the error recovery functions (0x10 0x05 0x01 and 0x10 0x05 0x02) are enabled, and the other functions are disabled.
- This command is executed immediately even when the reception buffer is full. This status is transmitted each time the data sequence 0x10 0x04 n is received ($0x01 \leq n \leq 0x11$).

it changes logic level before n is transmitted



0x10 0x14

<DLE DC4>

Generate pulse at real-time

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X					
[Format]	Hex	10	14	n	m	t
	ASCII	DLE	DC4	n	m	t
[Range]	n = 0x00, 0x01 m = indifferent 0x01 ≤ t ≤ 0x08					
[Description]	Outputs the pulse specified by the connector pin 2 as follows. The pulse ON time is [t x 100 ms] and the OFF time is [t x 100 ms]. n = 0x00 refers to the drawer 0 n = 0x01 refers to the drawer 1					
[Notes]	<ul style="list-style-type: none"> • When the device is in an error status when this command is processed, this command is ignored. • When the pulse is output to the connector pin specified while 0x1B 0x70 or 0x10 0x14 is executed while this command is processed, this command is ignored. • The device executes this command upon receiving it. • This command is executed even when the device is off-line, the receive buffer is full, or there is an error status. • This command cannot be executed when the device is busy. • If print data includes the same character strings as this command, the device performs the same operation specified by this command. The user must consider this. • This command should not be used within the data sequence of another command that consists of 2 or more bytes. • This command is effective even when the device is disabled with 0x1B 0x3D (Select peripheral device). 					
[Reference]	0x1B 0x70					
[Example]						



0x1B 0x3D

<ESC =>

Select peripherals device

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

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

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

n	FUNCTION
0x01, 0x03	Printer Enable
0x02	Printer Disabled

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

[Default]	n = 0x01
-----------	----------

[Reference]

[Example]



0x1B 0x40

<ESC @>

Initialize device

Valid for	KUBE II		
	KUBE II ETH		
	KUBE II L		
	KUBE III L		
	KUBE X		

[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 0x33

<ESC c 3>

Enable/Disable paper end sensor

Valid for	KUBE II				
	KUBE II ETH				
	KUBE II L				
	KUBE III L				
	KUBE X				

[Format]	Hex	1B	63	33	n
	ASCII	ESC	c	3	n

[Range] n = 0x00, 0x01

[Description]	Enables/disables the paper end sensor:				
	n	FUNCTION			
	0x00	Disables paper end sensor			
	0x01	Enables paper end sensor			

[Notes]

[Default] n = 0x01

[Reference]

[Example]



0x1B 0x63 0x35

<ESC c 5>

Enable/Disable LF key

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
-----------	---	--	--	--	--

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

[Range] n = 0x00, 0x01

[Description] Enables/disables the LF key based on the following values of n:

n	FUNCTION
0x00	Enables LF key
0x01	Disables LF key

[Notes]

- If LF key is disabled, it is also disabled the black mark search function performed by ON/OFF key if the alignment is enabled (see the User Manual of each device).
- The setting is cleared when the device is turned off because the value is not saved in the EEPROM.

[Default] n = 0x00

[Reference] [0x1B 0x63 0x37](#)

[Example]



0x1B 0x63 0x37

<ESC c 7>

Enable/Disable the ON/OFF key

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X										
[Format]	Hex	1B	63	37	n						
	ASCII	ESC	c	7	n						
[Range]	n = 0x00, 0x01										
[Description]	Enables/disables the ON/OFF key based on the following values of n:										
	<table><tr><th>n</th><th>FUNCTION</th></tr><tr><td>0x00</td><td>Enables ON/OFF key</td></tr><tr><td>0x01</td><td>Disables ON/OFF key</td></tr></table>					n	FUNCTION	0x00	Enables ON/OFF key	0x01	Disables ON/OFF key
n	FUNCTION										
0x00	Enables ON/OFF key										
0x01	Disables ON/OFF key										
[Notes]	<ul style="list-style-type: none">• If ON/OFF key is disabled, it is not possible to turn off the device using the frontal key. Resend this command with n = 0x00 to enable ON/OFF key.• If the alignment is enabled when the ON/OFF key is pressed it's executed the black mark search function even if the ON/OFF key is disabled. The black mark search is not executed if the black mark is already aligned under the sensor.• To disable the black mark search function must disable the LF key using the command 0x1B 0x63 0x35.• The setting is cleared when the device is turned off because the value is not saved in the EEPROM.										
[Default]	n = 0x00										
[Reference]	0x1B 0x63 0x35										
[Example]											



0x1B 0x70

<ESC p>

Generate pulse

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X					
-----------	---	--	--	--	--	--

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

[Range]	m = 0x00, 0x01, 0x30, 0x31 0x00 ≤ t1 ≤ 0xFF 0x00 ≤ t2 ≤ 0xFF
---------	--

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

m	CONNECTOR PIN
0x00, 0x30 0x01, 0x31	Drawer kick-out connector pin 2.

[Notes]	<ul style="list-style-type: none">• The pulse ON time is [t1 × 2 ms] and the OFF time is [t2 × 2 ms].• If t2 < t1, the OFF time is [t1 × 2 ms].
---------	---

[Default]

[Reference]

[Example]



0x1B 0xFA

Print graphic (608x862 dots)

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X							
-----------	---	--	--	--	--	--	--	--

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

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

[Description]	Prints graphic logo from flash or current graphic page located in ram. n selects the graphic source as follows:
---------------	---

KUBE II, KUBE II L, KUBE III L, KUBE X

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

KUBE II ETH

n	FUNCTION
0x00	Print graphic page from ram (used at the moment)
0x01	Print logo 1 from flash

[Notes]	Printable maximum vertical dimension is 862: xL + xH × 256 specifies the starting dotline (1 ÷ 862). yL + yH × 256 specifies the number of lines to print. <ul style="list-style-type: none">• If $[xL + (xH \times 256)] > 862$ the device does not execute the command.• If $[xL + (xH \times 256) + yL + (yH \times 256)] > 910$ the device prints only $862 - xL + (xH \times 256) + 1$ dotline.
---------	--

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

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

[Example]	To print from ram bank dotline 100 to dotline 299, send: 0x1B 0xFA 0x00 0x00 0x64 0x00 0xC7
-----------	--



0x1B 0xFB

Transmit graphic page to communication port

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[Format]	Hex	1B	FB	nL	nH
	ASCII	ESC	0xFB	nL	nH
[Range]	$0x00 \leq nL, nH \leq 0xFF$				
[Description]	Transmits $[nL + (nH \times 256)]$ word of graphic page used at the moment to the communication port.				
[Notes]					
[Default]					
[Reference]	0x1B 0xFC , 0x1B 0xFD , 0x1B 0xFE				
[Example]					



0x1B 0xFC

Transfer flash bank into RAM

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[Format]	Hex	1B	FC	n
	ASCII	ESC	0xFC	n

[Range]	n = 0x01, 0x02
---------	----------------

[Description]	Transfers flash bank into RAM used at the moment (65536 bytes). n selects the flash bank as follows:
---------------	--

KUBE II, KUBE II L, KUBE III L, KUBE X	
n	FUNCTION
0x01	Transfers flash bank logo 1 into RAM
0x02	Transfers flash bank logo 2 into RAM

KUBE II ETH	
n	FUNCTION
0x01	Transfers flash bank logo 1 into RAM

[Notes]

[Default]

[Reference]	0x1B 0xFA, 0x1B 0xFD, 0x1B 0xFE
-------------	---------------------------------

[Example]



0x1B 0xFD

Receive graphic page from communication port

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[Format]	Hex	1B	FD	nL	nH
	ASCII	ESC	0xFD	nL	nH
[Range]	$0x00 \leq nL, nH, \leq 0xFF$				
[Description]	Receives $[nL + (nH \times 256)]$ words from the port and puts them into the ram bank.				
[Notes]	<ul style="list-style-type: none">• The number of data bytes received is $[nL + (nH \times 256)] \times 2$.• Each word is first received as MSByte and then as LSByte.• If $[nL + (nH \times 256)]$ is greater than 32768, the data which follows is processed as normal data.• In the horizontal dotline there are 38 words.• The flash bank dimensions for the graphic print are 608 horizontal dots (72 bytes/dot line) \times 862 verticals dots (65512 bytes).				
[Default]					
[Reference]	0x1B 0xFA , 0x1B 0xFC , 0x1B 0xFE				
[Example]					



0x1B 0xFE

Transfer RAM into flash bank

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

[Format]	Hex	1B	FE	n
	ASCII	ESC	0xFE	n

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

[Description]	Transfers the RAM used at the moment into the flash bank (65536 bytes). n selects the bank as follows:
---------------	--

KUBE II, KUBE II L, KUBE III L, KUBE X	
n	FUNCTION
0x01	Transfers RAM used at the moment into flash bank logo 1
0x02	Transfers RAM used at the moment into flash bank logo 2

KUBE II ETH	
n	FUNCTION
0x01	Transfers RAM used at the moment into flash bank logo 1

[Notes]

[Default]

[Reference]	0x1B 0xFA, 0x1B 0xFC, 0x1B 0xFD
-------------	---------------------------------

[Example]



0x1B 0xFF

Receive the graphic page from the communication port

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X					
-----------	---	--	--	--	--	--

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

[Range]	$0x01 \leq n \leq 0x02$ $0x00 \leq nL, nH \leq 0xFF$
---------	---

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

KUBE II, KUBE II L, KUBE III L, KUBE X

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

KUBE II ETH

n	FUNCTION
0x01	Save logo in the flash bank 1

[Notes]	<ul style="list-style-type: none"> • Set the communication protocol on "Hardware" for this command. • The number of received data bytes is $[nL + (nH * 256)] * 2$. • Every word is received first as MSByte and then as LSByte. • If $[nL + (nH * 256)]$ is more than 32756, the following data are processed as normal data. • In the horizontal dotline there are 38 words. • The flash bank for graphic print dimensions are: 608 horizontal dots (76 bytes/line) x 862 vertical dots (65512 bytes).
---------	--

[Default]

[Reference]

[Example]



0x1C 0xC0 0x07

Emits an acoustic signalling

Valid for	KUBE II			
	KUBE II ETH			
	KUBE II L			
	KUBE III L			
	KUBE X			

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

[Range]

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

[Note]

[Default]

[Reference]

[Example]



0x1C 0xC0 0xFF

Emits an acoustic signalling in base of device status

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
-----------	---	--	--	--	--

[Format]	Hex	1C	C0	FF	n
	ASCII	FS	0xC0	0xFF	n

[Range]

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

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

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

[Default]

[Reference]

[Example]



0x1C 0xEB

Received, save and play melody

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X						
-----------	---	--	--	--	--	--	--

[Format 1]	Hex	1C	EB	m	nh	nl	b1....bn
	ASCII	FS	0xEB	m	nh	nl	b1....bn

[Format 2]	Hex	1C	EB	m	s	nh	nl	osh osl
	ASCII	FS	0xEB	m	s	nh	nl	osh osl

[Range]

[Description]

Format 1:

- This command is used for receiving and saving a melody.
- m selected one of the following modes:

m	DESCRIPTION
"r", "R"	Receive the notes and put them in the RAM (volatile memory)
"w", "W"	Receive the notes and put them in the EEPROM (no-volatile memory)

- "nh" and "nl" are the exact number of note to receive and must be inserted an even number.
- $bn = nh \times 256 + nl$

Format 2:

- This command needs to execute a melody.
- m identifies, the following modes:

m	DESCRIPTION
"p", "P"	Play, execute one of 2 melodies (saved in RAM or EEPROM)

- s select one of the following mode:

s	DESCRIPTION
"r", "R"	Play the notes in the RAM
"e", "E"	Play the notes in the EEPROM

- "nh" and "nl" are the number of notes to play and must be an even number.
- "osh" and "osl" are offset and indicate to which note must begin playing.



[Note]

- The melody can have one's best an extension of 512 bytes.
- Every note is composed from 2 bytes (1b for the note and 1b for the lenght that will be expressed in multiples of 5 ms).
- Follows the table with the respective notes to put into the byte of reference for the note (es. the byte 86 correspond of the note SI_4) and the frequency of the note.

NOTE	BYTE OF REFERENCE	NOTE FREQUENCY	NOTE	BYTE OF REFERENCE	NOTE FREQUENCY
None	00	pause	DO_6	40	4186.0 Hz
LA_4	96	1760.0 Hz	DO_D_6	37	4434.9 Hz
LA_D_4	90	1864.6 Hz	RE_6	35	4698.6 Hz
SI_4	86	1975.5 Hz	RE_D_6	33	4978.0 Hz
DO_5	81	2093.0 Hz	MI_6	31	5274.0 Hz
DO_D_5	76	2217.5 Hz	FA_6	29	5587.6 Hz
RE_5	73	2349.3 Hz	FA_D_6	27	5919.9 Hz
RE_D_5	68	2489.0 Hz	SOL_6	25	6271.9 Hz
MI_5	64	2637.0 Hz	SOL_D_6	24	6644.9 Hz
FA_5	60	2793.8 Hz	LA_6	23	7040.0 Hz
FA_D_5	56	2959.9 Hz	LA_D_6	20	7902.1 Hz
SOL_5	53	3135.9 Hz	SI_6	19	8372.0 Hz
SOL_D_5	50	3322.4 Hz	DO_7	18	8869.8 Hz
LA_5	47	3520.0 Hz	DO_D_7	17	9397.2 Hz
LA_D_5	44	3729.3 Hz	RE_7	16	9956.0 Hz
SI_5	42	3951.0 Hz	RE_D_7	15	10548.0 Hz

[Default]

[Reference]

[Example]

Follows an example of how is composed the buffer for the melody:

b1	b2	b3	b4	b5	b6	.....	b511	b512
n1	l1On	n2	l2	n3	l3	.....	n256	l256

Where:

- b is the number of the busy byte (b512 is the maximum byte to put into). It's not necessary that the melody must be composed from all 512 bytes.
- n is the byte that correspond to the note.
- l is the length of the note.
- Example of the save of one note in the Ram 1C EB 52 0 1 50 FF
- Example of the play of one note in the Ram 1C EB 50 72 0 1 0 0



0x1D 0x49

<GS />

Transmit device ID

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	$0x01 \leq n \leq 0x03$ $0x31 \leq n \leq 0x33$ $n = 0x05, n = 0x37$
---------	--

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

n	PRINTER ID	SPECIFICATION
0x01, 0x31	Printer model ID	0x5F (KUBE S,U) 0x5F (XKUBE S, U) 0x5F (XKUBE L S, U) 0x65 (KUBE ETH) 0x65 (XKUBE ETH) 0x65 (XKUBE L ETH)
0x02, 0x32	Type ID	See table below
0x03, 0x33	ROM version ID	Depends on ROM version (4 character)
0x05, 0x37 (*)	Printer model ID	0xBC (KUBE II, KUBE II L, KUBE III L, KUBE X) 0xA6 (KUBE II ETH)

(*)The answer with n = 0x05 is send only for the models listed in the right column.

n = 0x02, 0x32 Type ID

BIT	OFF/ON	HEX	FUNCTION
0	Off	00	2-byte character codes not supported
1	Off	00	Autocutter not supplied Autocutter supplied
2	Off	00	Thermal paper w/o label Thermal paper with label
3	-	-	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	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X				
[Format]	Hex	1D	50	x	y
	ASCII	GS	P	x	y
[Range]	$0x00 \leq x, y \leq 0xFF$				
[Description]	Sets the horizontal and vertical motion units to 1/x inch and 1/y inch respectively. When x is set to 0x00, the default setting value is used. When y is set to 0x00, the default setting value is used.				
[Notes]	<ul style="list-style-type: none">• The horizontal direction is perpendicular to the paper feed direction.• In standard mode, the following commands use x or y, regardless of character rotation (upside-down or 90° clockwise rotation): Commands using x: 0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1D 0x4C, 0x1D 0x57. Commands using y: 0x1B 0x33, 0x1B 0x4A. <ul style="list-style-type: none">• This command does not affect the previously specified values.• The calculated result from combining this command with others is truncated to the minimum value of the mechanical pitch or an exact multiple of that value.				
[Default]	x = 204 y = 408				
[Reference]	0x1B 0x20, 0x1B 0x24, 0x1B 0x5C, 0x1B 0x33, 0x1B 0x4A, 0x1D 0x4C, 0x1D 0x57				
[Example]					



0x1D 0x7C

Set printing density

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X			
-----------	---	--	--	--

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

[Range]	$0x00 \leq n \leq 0x08$ $0x30 \leq n \leq 0x38$
---------	--

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

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

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

[Default]	n = 0x04
-----------	----------

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

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





ALIGNMENT COMMANDS

0x1D 0xF6

Align at print

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X		
[Format]	Hex	1D	F6
	ASCII	GS	0xF6
[Range]			
[Description]	This command aligns the edge of the black mark at the point of alignment (see chapter Alignment for further explanation).		
[Notes]	<ul style="list-style-type: none">• Use “Black Mark Distance” parameter during the Setup procedure (see the User Manual of the device) to set an offset between the black mark and the point of alignment (from 0 to 99.9 mm).• Use this alignment command even to print more tickets without cutting.		
[Default]			
[Reference]	0x1D 0xF8		
[Example 1]	EXAMPLE OF CONSECUTIVE PRINTS WITHOUT CUTTING 0x1D 0xF6 Positioning ticket <print ticket> 0x1D 0xF6 Positioning ticket <print ticket>		
[Example 2]	EXAMPLE OF PRINTS WITH ALIGNMENT AND CUT 0x1D 0xF6 Positioning ticket <print ticket> 0x1D 0xF8 Align ticket 0x1B 0x69 Cut		



0x1D 0xF8

Align the ticket

Valid for	KUBE II KUBE II ETH KUBE II L KUBE III L KUBE X		
[Format]	Hex	1D	F8
	ASCII	GS	0xF8
[Range]			
[Description]	This command aligns the edge of the black mark at the point of alignment (see chapter Alignment for further explanation).		
[Notes]	<ul style="list-style-type: none">• Use “Black Mark Distance” parameter during the Setup procedure (see the User Manual of the device) to set an offset between the black mark and the point of alignment.• To work properly, you must send this command just before the cut command.		
[Default]			
[Reference]	0x1D 0xF6		
[Example]	0x1D 0xF6	Positioning ticket	
	<print ticket>		
	0x1D 0xF8	Align ticket	
	0x1B 0x69	Cut and presentation	



ALIGNMENT

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1 ALIGNMENT COMMANDS

The devices are equipped with a sensor that allows the use of alignment black mark to handle rolls 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 0xF6` and `0x1D 0xF8`: perform the ticket alignment, which is advanced to align the first point of alignment available under the sensor.

Print a ticket with alignment requires the following sequence of commands:

1. General settings of the ticket: character formatting, print density, margins etc..
2. Alignment command: `0x1D 0xF6`.
3. Ticket printout: printing text, logos or any graphic.
4. Alignment command: `0x1D 0xF8`.
5. Cut command.

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

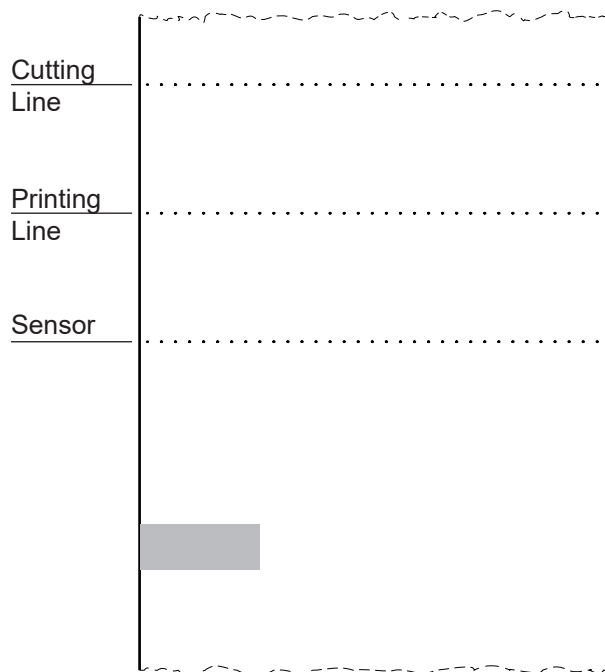
In the following examples, are described some sequences of commands to manage the alignment.

[Example 1]

Commands sequence to print tickets with “alignment point” over the edge of the black mark (Notch Distance = 0 mm set from SETUP).

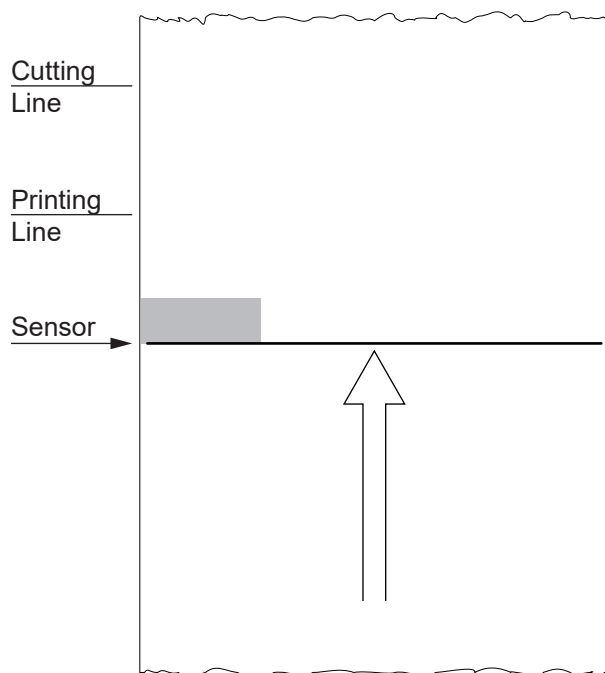
Start.

Paper with black mark not aligned.



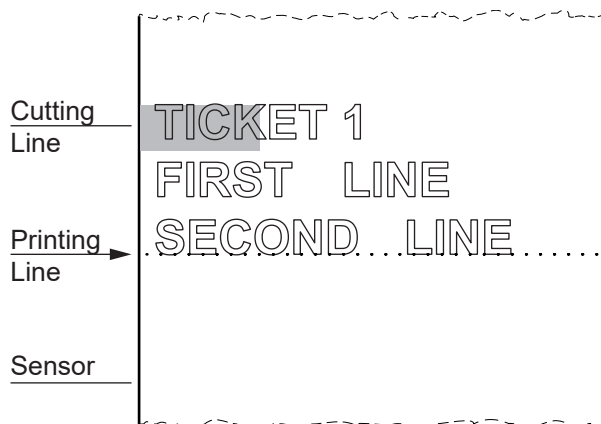
Alignment command `0x1D 0xF6`.

Paper is fed. The black mark is recognized by the sensor and aligned at a distance of 10 mm (Black Mark distance) from the sensor.



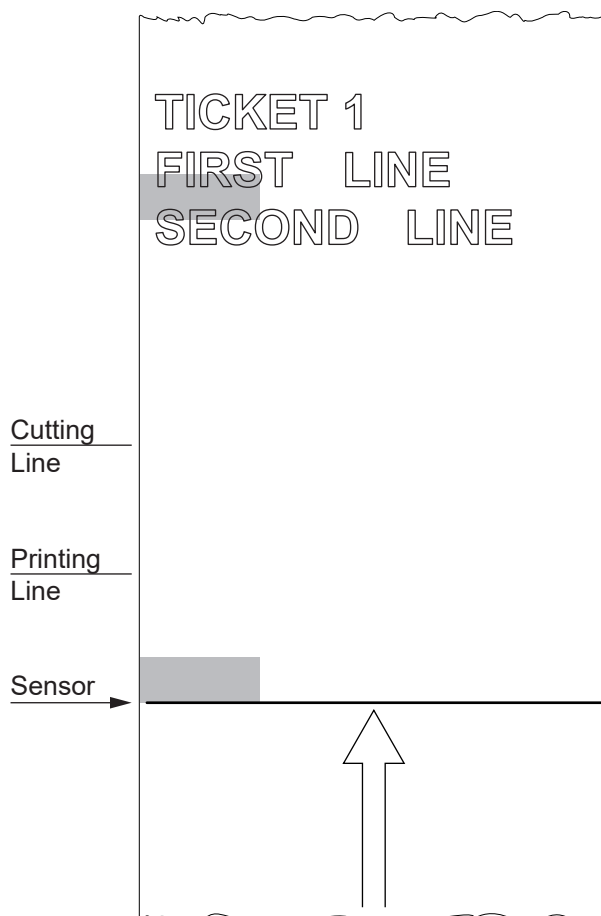
Command for text printing:

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



Alignment command 0x1D 0xF8.

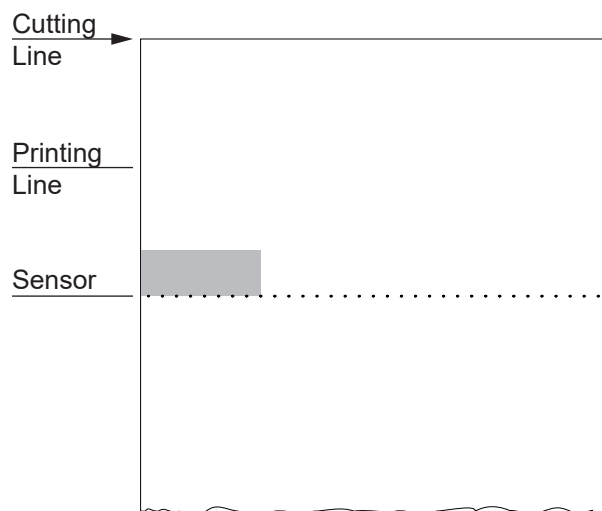
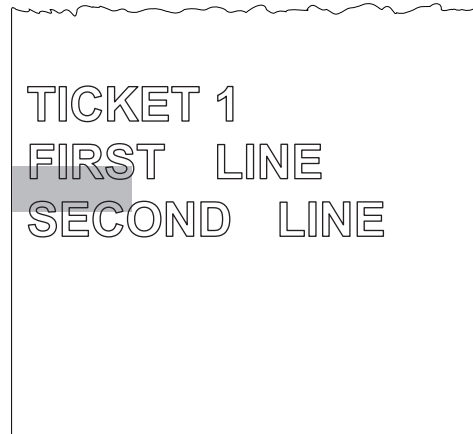
Paper is fed. The next black mark is recognized by the sensor and aligned at a distance of 10 mm (Black Mark distance) from the sensor.



Cut command `0x1B 0x69`.

The paper is cut.

The paper is already aligned and ready for printing.

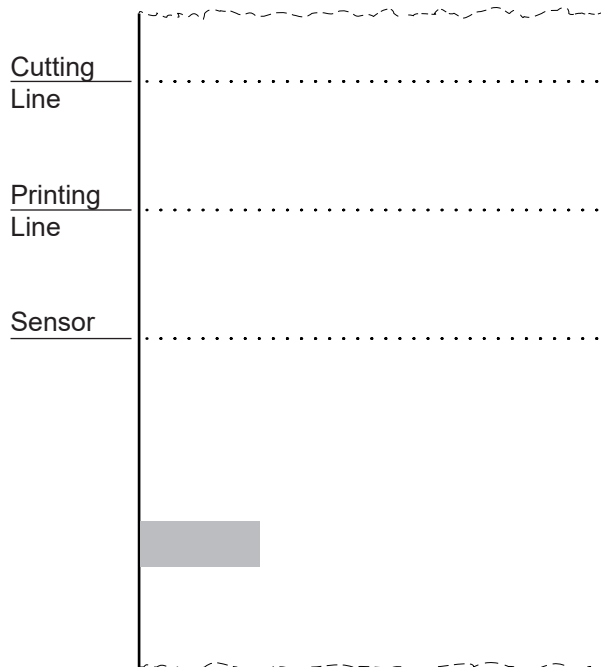


[Example 2]

Commands sequence to print tickets with “alignment point” moved 10 mm compared to the edge of the black mark (Black Mark Distance = 10 mm set from SETUP)

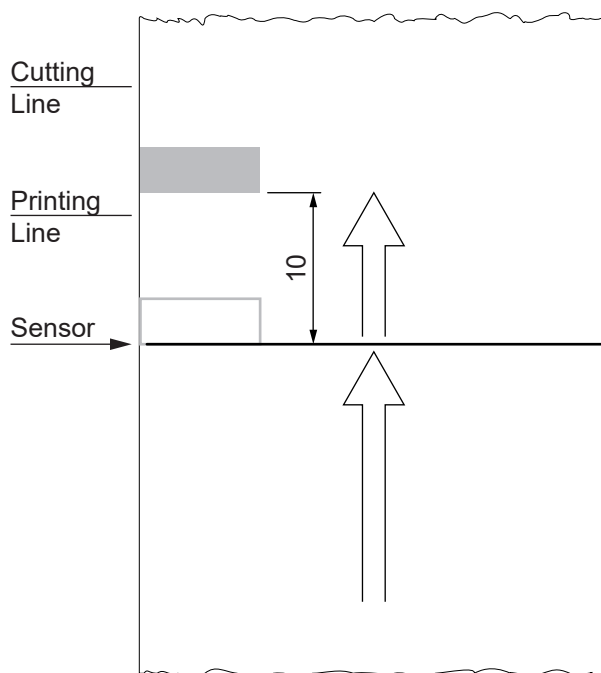
Start.

Paper with black mark not aligned.



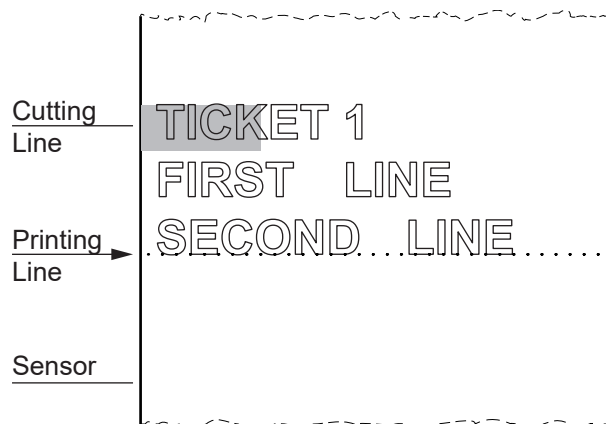
Alignment command `0x1D 0xF6`.

Paper is fed. The black mark is recognized by the sensor and aligned at a distance of 10 mm (Black Mark distance) from the sensor.



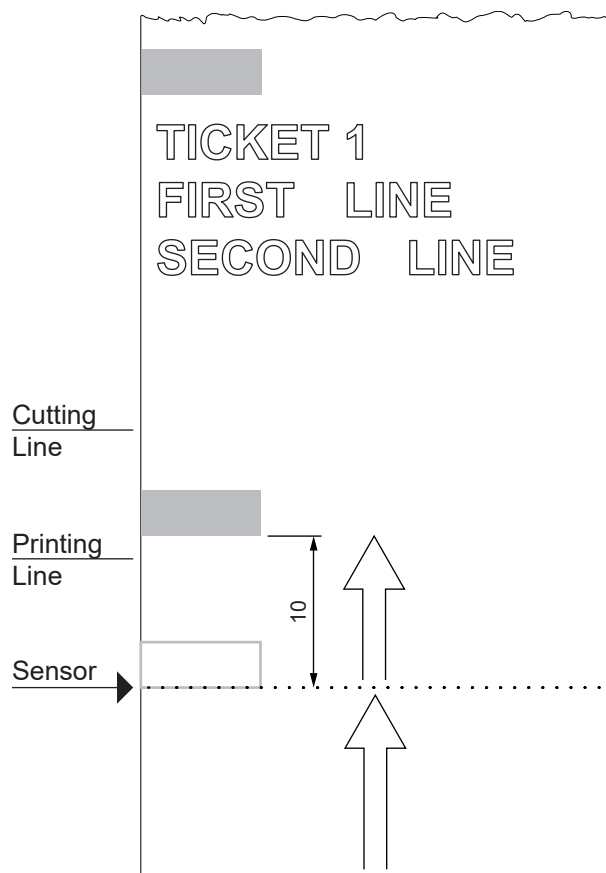
Command for text printing:

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



Alignment command 0x1D 0xF8.

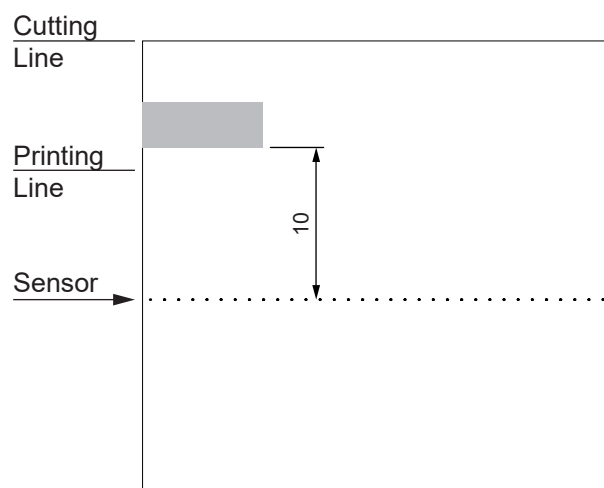
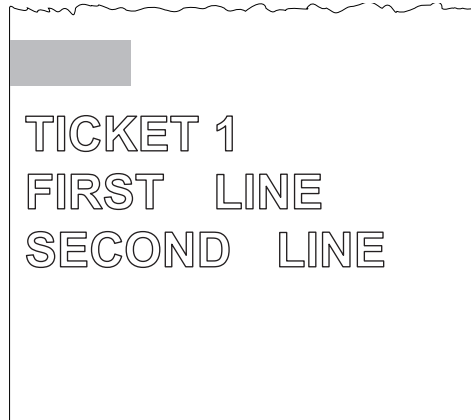
Paper is fed. The next black mark is recognized by the sensor and aligned at a distance of 10 mm (Black Mark distance) from the sensor.



Cut command `0x1B 0x69`.

The paper is cut.

The paper is already aligned and ready for printing.





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