COMMAND REFERENCE

TK300II
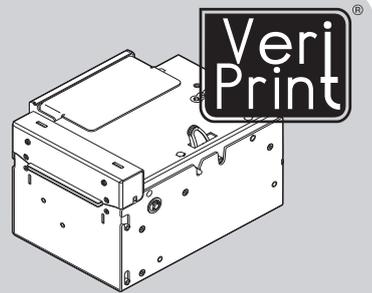
KPM300
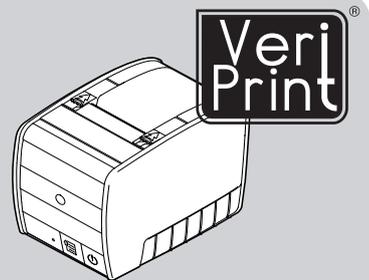
KUBE II
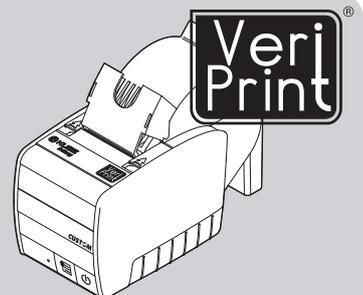
KUBE-L

Edit by:

1 INTRODUCTION

1.1 Command description

Each command reported in this manual is described as shown in the following picture. In the first heading line (grey colour) is reported the hexadecimal command value. In the second heading line are listed the printers on which it is possible to use the command (for example printer AAAA).
The next fields give all the information useful to use the command.

[Name]   Command title
[Format]   ASCII, hexadecimal and decimal command value.
[Range]   Limits of the values the command and its variables can take
[Description]   Description of command function
[Notes]   Additional information about command use and settings .
[Default]   Default value of the command and its variables.
[Reference]   Pertaining commands related to described command.
[Example]
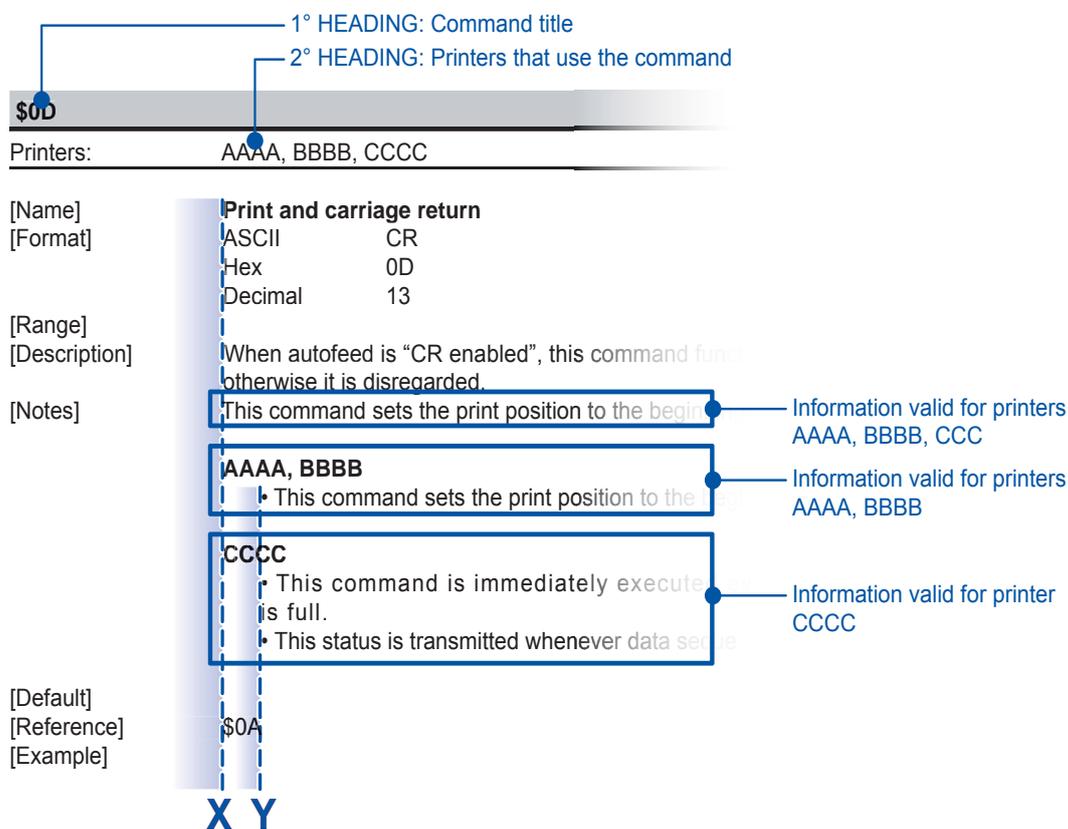
The information reported in the picture are aligned with line X or line Y:

LINE X   Description valid for all the printers listed in the second heading line.
LINE Y   Description valid for a specific printer (written in bold).

LEGEND

$	indicates the representation of the command hexadecimal value (for example $40 means HEX 40).
{ }	indicates an ASCII character not performable.
n, m, t, x, y	are optional parameters that can have different values.

1.2 Print direction

The printer has two printing direction which can be selected by means of the control characters: normal e reverse.

1234567890
abcdefghilmnopqrs
ABCDEFGHILMNOPQRS

PAPER OUTFEED DIRECTION

Normal Mode   *Reverse Mode*

CUST⌒M
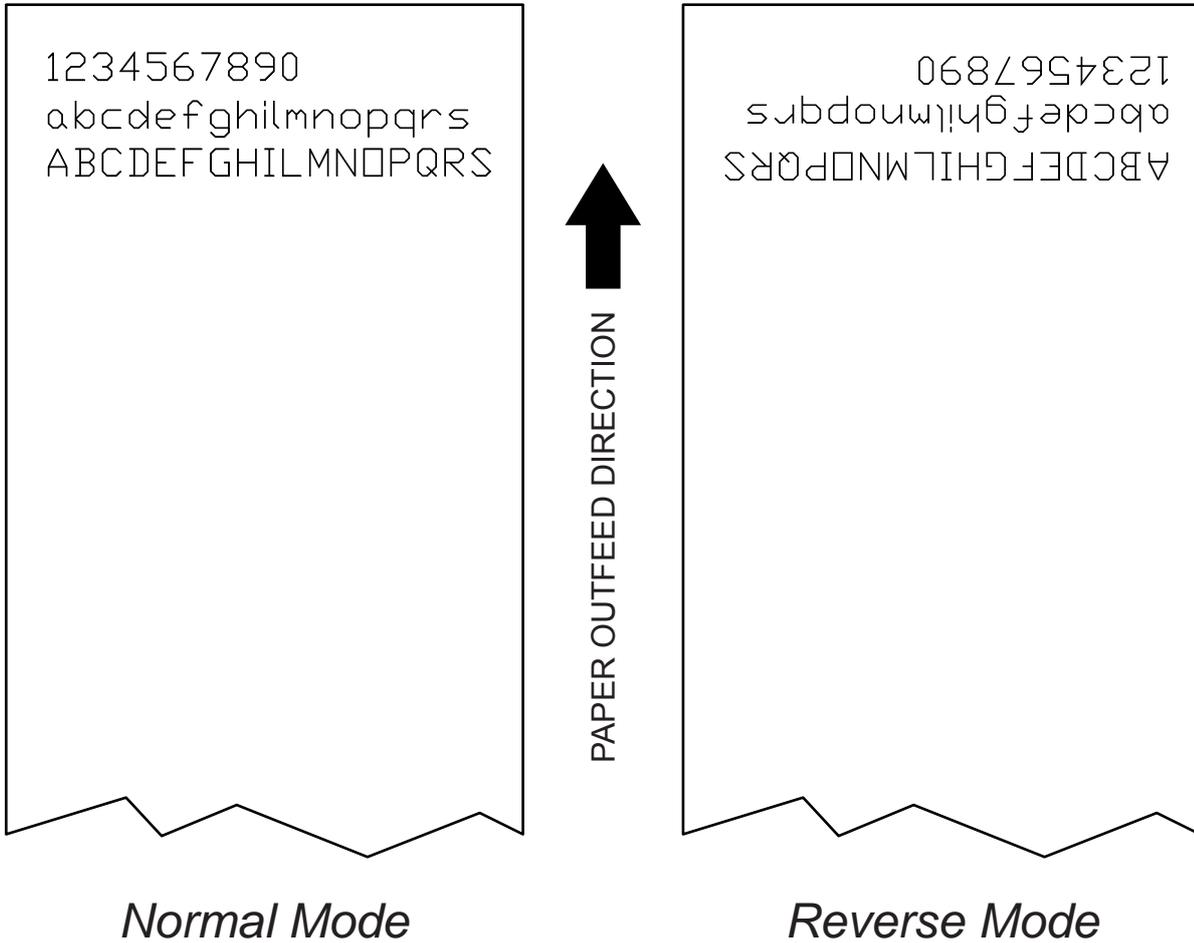
2 ESC/POS™ EMULATION

The following table lists all the commands for function management in ESC/POS Emulation of the printer. The commands can be transmitted to the printer at any moment, but they will only be carried out when the commands ahead of them have been executed. The commands are carried out when the circular buffer is free to do so.

COMMAND DESCRIPTION TABLE

Tab.1

Com. HEX	Com. ASCII	Description
PRINT COMMANDS		
$0A	LF	Print and line feed
$0D	CR	Print and carriage return
$1B $4A	ESC J	Print and feed paper
$1B $64	ESC d	Print and feed paper n lines
$1C $82	FS { }	Print date
$1C $83	FS { }	Print time
LINE SPACING COMMANDS		
$1B $30	ESC 0	Select 1/8-inch line spacing
$1B $32	ESC 2	Select 1/6-inch line spacing
$1B $33	ESC 3	Set line spacing using minimum units
CHARACTER COMMANDS		
$18	CAN	Cancel current line trasmitted
$1B $20	ESC SP	Set character right-side spacing
$1B $21	ESC !	Set print mode
$1B $25	ESC %	Select/cancel user-defined character set
$1B $26	ESC &	Define user-defined characters
$1B $2D	ESC -	Turn underline mode on/off
$1B $3F	ESC ?	Cancel user-defined characters
$1B $45	ESC E	Select emphasized mode
$1B $47	ESC G	Select double-strike mode
$1B $4D	ESC M	Select character font
$1B $52	ESC R	Select international character set
$1B $56	ESC V	Select print mode 90° turned
$1B $74	ESC t	Select character code table
$1B $7B	ESC {	Set/cancal upside-down character printing
$1B $C1	ESC { }	Set/cancel cpi mode
$1D $21	GS !	Select character size
$1D $42	GS B	Turn white/black reverse printing mode on/off
PRINT POSITION COMMANDS		
$08	BS	Back space
$09	HT	Horizontal tab
$1B $24	ESC $	Set absolute position
$1B $28 $76	ESC (v	Set relative vertical print position

$1B $44	ESC D	Set horizontal tab position
$1B $5C	ESC \	Set relative print position
$1B $61	ESC a	Select justification
$1D $4C	GS L	Set left margin
$1D $57	GS W	Set printing area width

BIT-IMAGE COMMANDS		
$1B $2A	ESC *	Select image print mode
$1D $2A	GS *	Define downloaded bit image
$1D $2F	GS /	Print downloaded bit image
$1D $76 $30	GS v 0	Print raster image

VERIPRINT ® COMMANDS		
$1C $8A	FS { }	Delete the disk contents
$1C $8B	FS { }	Print images saved in SD/MMC card
$1F $46	US F	Enable/disable scanner
$1F $4D $57	US M W	Request for paper width stored
$1F $4D $77	US M w	Request for paper width detection

STATUS COMMANDS		
$10 $04	DLE EOT	Real-time status transmission
$1B $76	ESC v	Transmit printer status
$1D $72	GS r	Transmit status
$1D $E0	GS { }	Enable / disable automatic FULL STATUS back
$1D $E1	GS { }	Reading of length paper (cm) available before virtual paper end
$1D $E2	GS { }	Reading number of cuts performed from the printer
$1D $E3	GS { }	Reading of length (cm) of printed paper
$1D $E5	GS { }	Reading number of power up

BARCODE COMMANDS		
$1C $B0	FS { }	Sets barcode reader status
$1C $B1	FS { }	Get barcode reader status
$1C $B2	FS { }	Barcode reader trigger
$1D $28 $6B	GS (k	Print two-dimensional barcode
$1D $48	GS H	Select printing position of HRI characters
$1D $66	GS f	Select font for HRI characters
$1D $68	GS h	Select barcode height
$1D $6B	GS k	Print barcode
$1D $77	GS w	Select horizontal size (enlargement) of barcode

MACRO FUNCTION COMMANDS		
$1D $3A	GS :	Set start/end of macro definition
$1D $5E	GS ^	Execute macro

MECHANISM CONTROL COMMANDS		
$1B $69	ESC i	Total cut
$1B $6D	ESC m	Partial cut

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$1C $C1	FS { }	Paper recovery after cut
$1D $56	GS V	Select cut mode

MISCELLANEOUS COMMANDS		
$1B $63 $35	ESC c 5	Enable/Disable keys panel
$1B $3D	ESC =	Select device
$1B $40	ESC @	Initialize printer
$1B $70	ESC p	Generate pulse
$1C $3C	FS <	Change printer emulation to SVELTA
$1C $6C	FS l	Reload paper
$1C $80	FS { }	Read date/time of the real time clock
$1C $81	FS { }	Set date/time of the real time clock
$1C $84	FS { }	Set user-defined date/time formats
$1C $90	FS { }	Get number of stored logo
$1C $91	FS { }	Get pictures header list
$1C $92	FS { }	Get pictures header info
$1C $93	FS { }	Print logo
$1C $94	FS { }	Save the image received from serial port into the flash
$1C $C0	FS { }	Hardware reset
$1D $49	GS I	Transmit printer ID
$1D $50	GS P	Set horizontal and vertical motion units
$1D $E6	GS { }	Virtual paper end limit

TICKET MANAGEMENT COMMANDS		
$1D $7C	GS { }	Set printing density
$1D $E7	GS { }	Set notch distance
$1D $F0	GS { }	Set printing speed
$1D $F6	GS { }	Ticket align at print
$1D $F8	GS { }	Ticket align at cut

ESC/POS™ Emulation

Given below are more detailed descriptions of each command.

$08	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Back space**
[Format]	ASCII BS
	Hex 08
	Decimal 8
[Range]	
[Description]	Moves print position to previous character.
[Notes]	Can be used to put two characters at the same position.
[Default]	
[Reference]	
[Example]	

$09	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Horizontal tab**
[Format]	ASCII HT
	Hex 09
	Decimal 9
[Range]	
[Description]	Moves the print position to the next horizontal tab position.
[Notes]	• Ignored unless the next horizontal tab position has been set.
	• If the command is received when the printing position is at the right margin, the printer executes print buffer full printing and horizontal tab processing from the beginning of the next line.
	• Horizontal tab position are set using $1B $44
[Default]	
[Reference]	$1B $44
[Example]	

$0A	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print and line feed**
[Format]	ASCII LF
	Hex 0A
	Decimal 10
[Range]	
[Description]	Prints the data in the buffer and feeds one line based on the current line spacing.
[Notes]	• Sets the print position to the beginning of the line.
	• If the buffer is empty, the printing feeds of (character height + spacing gap) dot.
[Default]	
[Reference]	$1B $32, $1B $33, $0D
[Example]	

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$0D	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print and carriage return**
[Format]	ASCII CR
	Hex 0D
	Decimal 13
[Range]	
[Description]	When autofeed is "CR enabled", this command functions in the same way as $0A, otherwise it is disregarded.
[Notes]	• Sets the print position to the beginning of the line.
[Default]	See "Autofeed in setup" parameter.
[Reference]	$0A
[Example]	

$10 $04	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Real-time status transmission**
[Format]	ASCII DLE EOT n
	Hex 10 04 n
	Decimal 16 4 n
[Range]	1 ≤ n ≤ 4; n=17; n=20; n=21
[Description]	Transmits the selected printer status specified by *n* in real time according to the following parameters:

n = 1   transmit printer status
n = 2   transmit off-line status
n = 3   transmit error status
n = 4   transmit paper roll sensor status
n = 17   transmit print status
n = 20   transmit FULL STATUS
n = 21   transmit printer ID
n = 22   transmit EXTENDED FULL STATUS

[Notes]	• Immediately executed even when the data buffer is full.
	• This status is transmitted whenever data sequence $10 $04 n is received.
[Default]	
[Reference]	See tables below.
[Example]	n=1: Printer status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	-	-	-	RESERVED
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	Off	00	0	LF key released
	On	80	128	LF key pressed

n=2: Off-line status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	Cover closed
	On	04	4	Cover opened
3	Off	00	0	Paper isn't feeded by FEED. key
	On	08	8	Paper is feeded by FEED. key
4	On	10	16	Not used. Fixed to On
5	Off	00	0	Paper present
	On	20	32	Printing stop due to paper end
6	Off	00	0	No error
	On	40	64	Error
7	Off	00	0	Not used. Fixed to Off

n=3: Error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	-	-	-	RESERVED
3	Off	00	0	Cutter ok
	On	08	8	Cutter error
4	On	10	16	Not used. Fixed to On
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error
6	Off	00	0	No auto-recoverable error
	On	40	64	Auto-recoverable error
7	Off	00	0	Not used. Fixed to Off

n=4: Paper roll sensor status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2,3	Off	00	0	Paper present..
	On	0C	12	Near paper end.
4	On	10	16	Not used. Fixed to On
5, 6	Off	00	0	Paper present
	On	60	96	Paper not present
7	Off	00	0	Not used. Fixed to Off

n=17: Print status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Not used. Fixed to Off
1	On	02	2	Not used. Fixed to On
2	Off	00	0	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 absent
6	-	-	-	RESERVED
7	Off	00	0	Not used. Fixed to Off

CUST⌀M

n=20: FULL status (6 bytes)

1° Byte = $10 (DLE)

2° Byte = $0F

3° Byte = Paper status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end (*).
	On	40	64	Virtual paper end (*).
7	Off	00	0	Notch found
	On	80	128	Notch not found

(*) Virtual paper end is set when the paper length available, readed by $1D $E1, is 0.

4° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

5° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

6° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
0	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
1	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
2	On	04	4	RAM error
3	Off	00	0	EEPROM ok
3	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

n=21: transmit printer ID   1° byte = $75 (refer to command $1D $49)

n=22: EXTENDED FULL STATUS (10 bytes)

1° Byte = $10 (DLE)

2° Byte = $FF

3° Byte = Paper status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
0	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
2	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
5	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end (*).
6	On	40	64	Virtual paper end (*).
7	Off	00	0	Notch found
7	On	80	128	Notch not found

(*) Virtual paper end is set when the paper length available, readed by $1D $E1, is 0.

4° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
0	On	01	1	Printing head up error
1	Off	00	0	Cover closed
1	On	02	2	Cover opened
2	Off	00	0	No spooling
2	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
3	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
5	On	20	32	LF key pressed
6	Off	00	0	FF key released
6	On	40	64	FF key pressed
7	-	-	-	RESERVED

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5° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

6° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

7° byte = Info1

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	One or more tickets printed after turn ON
	On	01	1	No tickets printed after turn ON
1	Off	00	0	One or more tickets printed after AUTOLOAD
	On	02	2	No tickets printed after AUTOLOAD
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

8° byte = Info2

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	SD/MMC card not present
	On	01	1	SD/MMC card present
1	Off	00	0	Used space in SD/MMC card < 80%
	On	02	2	Used space in SD/MMC card ≥ 80%
2	Off	00	0	SD/MMC card not full
	On	08	8	SD/MMC card full
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

9° byte = Info3

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

10° byte = Info4

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

$18

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Cancel current line transmitted**
[Format]	ASCII CAN
	Hex 18
	Decimal 24
[Description]	Deletes current line transmitted.
[Notes]	• Sets the print position to the beginning of the line.
	• However, this command does not clear the receive buffer.
[Default]	
[Reference]	
[Example]	

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$1B $20

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set right-side character spacing**
[Format]	ASCII ESC SP n
	Hex 1B 20 n
	Decimal 27 32 n
[Range]	$0 \le n \le 255$
[Description]	Sets the character spacing for the right side of the character to [n x horizontal or vertical motion units].
[Notes]	• The right character spacing for double-width mode is twice the normal value. When the characters are enlarged, the right side character spacing is m (2 or 4) times the normal value.
	• The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion units does not affect the current right side spacing.
	• The $1D $50 command 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 is used.
	• The maximum right side spacing is 32mm.
[Default]	n = 0
[Reference]	$1D $50
[Example]	

$1B $21

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select print modes**
[Format]	ASCII ESC ! n
	Hex 1B 21 n
	Decimal 27 33 n
[Range]	$0 \le n \le 255$
[Description]	Selects print modes using *n* (see table below):

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

[Notes]	• The printer can underline all characters, but cannot underline the spaces set by $09, $1B $24, $1B $5C and 90°/270° rotated characters.
	• This command resets the left and right margin at default value (see $1D $4C, $1D $57).
	• $1B $45 can also be used to turn the emphasized mode on/off. However, the last-received setting command is the effective one.
	• $1B $2D can also be used to turn the underlining mode on/off. However, the last-received setting command is the effective one.
	• $1D $21 can also be used to select character height/width. However, the last-received setting command is the effective one.
[Default]	n = 0
[Reference]	$1B $2D, $1B $45, $1D $21
[Example]	

$1B $24

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set absolute print position**			
[Format]	ASCII	ESC	$	nL	nH
	Hex	1B	24	nL	nH
	Decimal	27	36	nL	nH
[Range]	$0 \leq nL \leq 255$			
	$0 \leq nH \leq 255$			
[Description]	Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed.			
	The distance from the beginning of the line to the print position is [(nL + nH × 256) × (vertical or horizontal motion unit)] inches.			
[Notes]	• Settings outside the specified printable area are ignored.			
	• The horizontal and vertical motion unit are specified by $1D $50.			
	• $1D $50 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]	$1B $5C, $1D $50			
[Example]				

$1B $25

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select/cancel user-defined characters**		
[Format]	ASCII	ESC	%	n
	Hex	1B	25	n
	Decimal	27	37	n
[Range]	$0 \leq n \leq 255$		
[Description]	Selects or cancels the user-defined character set.		
	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]	• Only the LSB of n is applicable.		
	• When the user-defined character set is cancelled, the internal character set is automatically selected.		
[Default]	n=0		
[Reference]	$1B $26, $1B $3F		
[Example]			

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$1B $26	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Defines user-defined characters**
[Format]	ASCII ESC & y c1 c2
	Hex 1B 26 y c1 c2
	Decimal 27 37 y c1 c2

[Range]
$y = 3$
$32 \le c1 \le c2 \le 126$
$0 \le x \le 16$ (Font (18 × 24))
$0 \le x \le 13$ (Font (14 × 24))
$0 \le x \le 10$ (Font 10 × 24)
$0 \le d1 \dots d (y \times xk) \le 255$
$k = c2 - c1 + 1$

[Description]   Defines user-defined characters.
• Y specifies the number of bytes in the vertical direction.
• C1 specifies the beginning character code for the definition, and C2 specifies the final code.
• X specifies the number of dots in the horizontal direction.

[Notes]
• The allowable character code range is from ASCII $20 (32) to $7E (126) (95 characters).
• It is possible to define multiple characters for consecutive character codes. If only one character is desired, use c1 = c2.
• If c2 < c1, the command is not executed.
• d is the dot data for the characters. The dot pattern is in the horizontal direction starting from the left. Any remaining dots on the right remain blank.
• The data to define a user-defined character is (x x y) bytes.
• To print a dot, set the corresponding bit to 1; to not have it print, set to 0.
• This command can define different user-defined character patterns for each font. To select the font, use $1B $21.
• The user-defined character definitions are cleared when: $1B $40 or $1D $2A or $1B $3F are executed or the printer is reset or the power shut off.

[Default]   Internal character set.
[Reference] $1B $25, $1B $3F
[Example]

14 dots (32 col)
10 dots (42 col)

p1

MSB

p2

LSB

$1B $28 $76

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

|	
[Name]	**Set relative vertical print position**
[Format]	ASCII ESC (v nL nH
	Hex 1B 28 76 nL nH
	Decimal 27 10 118 nL nH
[Range]	$0 \leq nL \leq 255$
	$0 \leq nH \leq 255$
[Description]	Sets the print vertical position based on the current position by using the horizontal or vertical motion unit. This command sets the distance from the current position to [(nL + $nH \times 256$) × (horizontal or vertical motion unit)].
[Notes]	• When the starting position is specified by N motion unit to the bottom: $nL + nH \times 256 = N$
	• When the starting position is specified by N motion unit to the top (negative direction), use the complement of 65536: $nL + nH \times 256 = 65536 - N$
	• The horizontal and vertical motion unit are specified by $1D $50.
	• The $1D $50 command can change the horizontal (and vertical) motion unit. However, the value cannot be less than the minimum horizontal movement amount.
	• In standard mode, the vertical motion unit is used.
[Default]	
[Reference]	$1D $50
[Example]	

$1B $2A

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Select bit image mode**
[Format]	ASCII ESC * m nL nH d1...dk
	Hex 1B 2A m nL nH d1...dk
	Decimal 27 42 m nL nH d1...dk
[Range]	m = 0, 1, 32, 33
	$0 \leq nL \leq 255$
	$0 \leq nH \leq 3$
	$0 \leq d \leq 255$
[Description]	Selects a bit image mode using m for the number of dots specified by nL and nH, as follows:

m	MODE	VERTICAL DIRECTION		HORIZONTAL DIRECTION (*1)	
		N° dots	DPI	DPI	N° of data (k)
0	8 dot single density	8	67	100	nL + nH × 256
1	8 dot double density	8	67	200	nL + nH × 256
32	24 dot single density	24	200	100	(nL + nH × 256) × 3
33	24 dot double density	24	200	200	(nL + nH × 256) × 3

[Notes]	• The nL and nH commands indicate the number of dots of the bit image in the horizontal direction. The number of dots is calculated using: nL + nH x 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.

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• If the width of the printing area set by $1D $4C and $1D $57 is less than the width required by the data set using $1B $2A, the excess data are ignored.
• To print the bit image use $1B $4A or $1B $64.
• After printing a bit image, the printer returns to normal data processing mode.
• This command is not affected by the emphasized, double-strike, underline (etc.) print modes, except for the upside-down mode.
• The relationship between the image data and the dots to be printed is as follows:
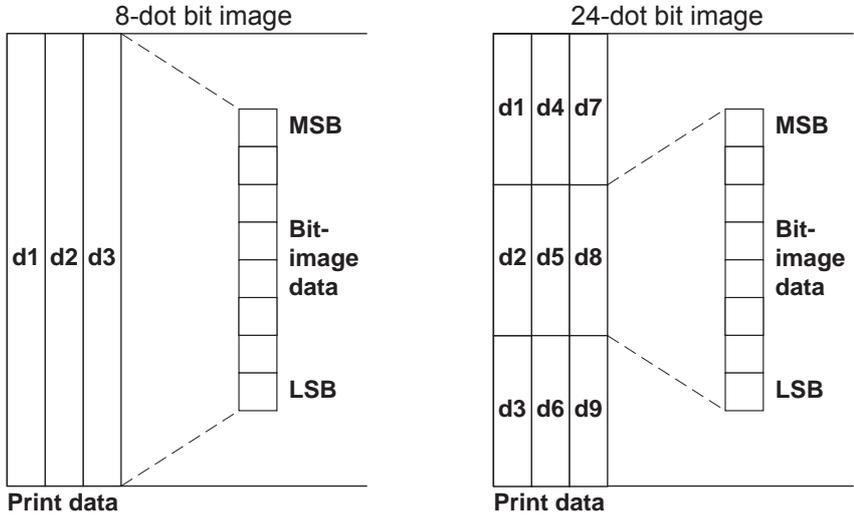
[Default]
[Reference]
[Example]

$1B $2D	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Turn underline mode on/off**			
[Format]	ASCII	ESC	-	n
	Hex	1B	2D	n
	Decimal	27	45	n
[Range]	0 ≤ n ≤ 2			
	48 ≤ n ≤ 50			

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

n = 0, 48	Turns off underline mode
n = 1, 49	Turns on underline mode (1-dot thick)
n = 2, 50	Turns on underline mode (2-dot thick)

[Notes] • The printer can underline all characters, but cannot underline the space and right-side character spacing.
• The printer cannot underline 90°/270° rotated characters and white/black inverted characters.
• When underline mode is turned off by setting the value of n to 0 or 48, the data which follows is not underlined.
• Underline mode can also be turned on or off by using $1B $21. Note, however, that the last received command is the effective one.

[Default] n=0
[Reference] $1B $21
[Example]

ESC/POS™ Emulation

$1B $30

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select 1/8-inch line spacing**		
[Format]	ASCII	ESC	0
	Hex	1B	30
	Decimal	27	48

[Range]
[Description]   Selects 1/8-inch line spacing
[Notes]
[Default]
[Reference] $1B $33
[Example]

$1B $32

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select 1/6-inch line spacing**		
[Format]	ASCII	ESC	2
	Hex	1B	32
	Decimal	27	50

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

[Notes]
[Default]
[Reference] $1B $33
[Example]

$1B $33

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set line spacing**		
[Format]	ASCII	ESC	3	n
	Hex	1B	33	n
	Decimal	27	51	n

[Range] $0 \le n \le 255$
[Description]   Sets line spacing to [n × (vertical or horizontal motion unit)] inches.
[Notes]   • The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current line spacing.
• The $1D $50 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 32.5mm.
[Default]   n = 64 (1/6 inch)
[Reference] $1B $32, $1D $50
[Example]

CUSTOM

$1B $3D

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select peripheral device**		
[Format]	ASCII	ESC	=	n
	Hex	1B	3D	n
	Decimal	27	61	n

[Range]   1 ≤ n ≤ 3, n = 5

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

n = 1, n = 3	Printer Enabled
n = 2	Printer Disabled
n = 5 or n = '5'	Select Pass-Through toward RFID module

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

• When the Pass-trough function is enabled, all transmitted data are sent on the 2nd serial.

• When the Pass-trough function is enabled toward RFID module, send the following command to enable communication toward the printer:

$1B $3D $31 $F1 $5A $E0

[Default]   n = 1

[Reference]

[Example]

$1B $3F

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Cancel user-defined characters**		
[Format]	ASCII	ESC	?	n
	Hex	1B	3F	n
	Decimal	27	63	n

[Range]   32 ≤ n ≤ 126

[Description]   Cancels user-defined characters.

[Notes]   • This command cancels the pattern defined for the character code specified by n. After the user-defined character is cancelled, the corresponding pattern for the internal character is printed.

• This command deletes the pattern defined for the specified character code in the font selected by $1B $21.

• If the user-defined character has not been defined for the specified character code, the printer ignores this command.

[Default]

[Reference] $1B $26, $1B $25

[Example]

$1B $40

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Initialize printer**		
[Format]	ASCII	ESC	@
	Hex	1B	40
	Decimal	27	64

[Range]

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

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

• The macro definitions are not cleared.

[Default]

[Reference]

[Example]

$1B $44

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set horizontal tab positions**				
[Format]	ASCII	ESC	D	n1...nk	NUL
	Hex	1B	44	n1...nk	$00
	Decimal	27	68	n1...nk	0
[Range]	1 ≤ n ≤ 255				
	0 ≤ k ≤ 32				
[Description]	Sets horizontal tab positions				

• *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]
• The horizontal tab position is stored as a value of [character width x *n*] measured from the beginning of the line. The character width includes the right-side character spacing and double-width characters are set with twice the width of normal characters.

• This command cancels previous tab settings.

• When setting n = 8, the print position is moved to column 9.

• 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.

• $1B $44 00 cancels all horizontal tab positions.

• The previously specified horizontal tab position does not change, even if the character width is modified.

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

[Reference] $09

[Example]

$1B $45

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Turn emphasized mode on/off**		
[Format]	ASCII	ESC	E	n
	Hex	1B	45	n
	Decimal	27	69	n
[Range]	0 ≤ n ≤ 255			
[Description]	Turns emphasized mode on/off.			

• When the LSB of *n* is 0, the emphasized mode is off.

• When the LSB of *n* is 1, the emphasized mode is on.

[Notes]
• Only the LSB of n is effective.

• $1B $21 also turns on and off the emphasized mode. However, the last received command is the effective one.

[Default] n = 0

[Reference] $1B $21

[Example]

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$1B $47

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Turn double-strike mode on/off**
[Format]	ASCII ESC G n
	Hex 1B 47 n
	Decimal 27 71 n
[Range]	0 ≤ n ≤ 255
[Description]	Turns double-strike mode on or off.
	• When the LSB of *n* is 0, the double-strike mode is off.
	• When the LSB of *n* is 1, the double-strike mode is on.
[Notes]	• Only the LSB of n is effective.
	• Printer output is the same in double-strike and emphasized mode.
[Default]	n = 0
[Reference]	$1B $45
[Example]	

$1B 4A

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print and paper feed**
[Format]	ASCII ESC J n
	Hex 1B 4A n
	Decimal 27 74 n
[Range]	0 ≤ n ≤ 255
[Description]	Prints the data in the print buffer and feeds the paper [n × (vertical or horizontal motion unit)] inches.
[Notes]	• After printing has been completed, this command sets the print starting position to the beginning of the line.
	• The paper feed amount set by this command does not affect the values set by $1B $32 or $1B $33.
	• The horizontal and vertical motion units are specified by $1D $50.
	• $1D $50 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]	$1D $50
[Example]	

$1B $4D

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select character font**
[Format]	ASCII ESC M n
	Hex 1B 4D n
	Decimal 27 77 n
[Range]	n = 0, 1, 48, 49
[Description]	Selects characters font depending of cpi value set (Char/Inch) as follows :

CHAR/INCH.	n	FUNCTION
A=11 cpi	0, 48	Font 11 cpi (18 × 24)
B=15 cpi	1, 49	Font 15 cpi (14 × 24)
A=15 cpi	0, 48	Font 15 cpi (14 × 24)
B=20 cpi	1, 49	Font 20 cpi (10 × 24)

[Notes]
[Default]
[Reference] $1B $C1
[Example]

$1B $52

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Select an international character set**
[Format]   ASCII   ESC   R   n
                  Hex   1B   52   n
                  Decimal   27   82   n
[Range]   0 ≤ n ≤ 10
[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												
0	U.S.A.	#	$	@	[	\	]	^	`	{	|	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	"
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	b
3	United Kingdom	£	$	@	[	\	]	^	`	{	|	}	~
4	Denmark I	#	$	@	Æ	Æ	Å	^	`	æ	f	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	i	Ñ	¿	^	`	"	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	|	}	~
9	Norway	#	¤	É	Æ	Æ	Å	Ü	é	æ	f	å	ü
10	Denmark II	#	$	É	Æ	Æ	Å	Ü	é	æ	f	å	ü

[Default]   n = 0
[Reference]
[Example]

$1B $56

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Set 90° rotated print mode**
[Format]   ASCII   ESC   V   n
                  Hex   1B   56   n
                  Decimal   27   86   n
[Range]   0 ≤ n ≤ 1, 48 ≤ n ≤ 49

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

n	FUNCTION
0, 48	Turns off 90° rotation mode
1, 49	Turns on 90° rotation mode

[Notes]	• When underlined mode is turned on, the printer does not underline 90° rotated characters. All the same it's possible select the underline mode.
	• Double-width and double-height commands in 90° rotation mode enlarge characters in the opposite directions from double-height and double-width commands in normal mode.
	• This command is not available in Page mode.
	• If this command is entered in Page mode, the printer all the same save the setting.
Default]	n = 0
[Reference]	$1B $21, $1B $2D
[Example]	

$1B $5C

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Set relative print position**
[Format]	ASCII ESC \ nL nH
	Hex 1B 5C nL nH
	Decimal 27 92 nL nH
[Range]	$0 \leq nL \leq 255$
	$0 \leq nH \leq 255$
[Description]	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]	• It's possible to print further on the right margin set for every font. In this case the printing continues up to the maximum border of the printer mechanism and then begins a new row.
	• Any setting that exceeds the printable area is ignored.
	• 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 $1D $50.
	• $1D $50 can change the horizontal (and vertical) motion units. However, the value cannot be less than the minimum horizontal movement amount.
	• In standard mode, the horizontal motion unit is used.
	• Setting the right value, it's possible to print characters over the right edge.
[Default]	
[Reference]	$1B $24, $1D $50
[Example]	

$1B $61

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Select justification**		
[Format]	ASCII	ESC	a	n
	Hex	1B	61	n
	Decimal	27	97	n
[Range]	0 ≤ n ≤ 2			
	48 ≤ n ≤ 50			

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

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

[Notes]
- This command is only enabled when inserted at the beginning of a line.
- Lines are justified within the specified printing area.
- Spaces set by $09, $1B $24 and $1B $5C will be justified according to the previously-entered mode.

[Default]   n = 0
[Reference]
[Example]

Flush left

```
ABC
ABCD
ABCDE
```

Centered

```
    ABC
   ABCD
  ABCDE
```

Flush right

```
  ABC
 ABCD
ABCDE
```

$1B $63 $35

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Enable/Disable keys panel**			
[Format]	ASCII	ESC	c	5	n
	Hex	1B	63	35	n
	Decimal	27	99	53	n

[Range]   0 ≤ n ≤ 255
[Description]   Enables / disables the keys panel.
- When the LSB of n is 0, the keys panel is enabled.
- When the LSB of n is 1, the keys panel is disabled.

[Notes]
- Only the LSB of n is effective.
- When the keys panel is disabled, the keys may only be used after the printer has been reset.

[Default]   n = 0
[Reference]
[Example]

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$1B $64

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print and feed paper n rows**		
[Format]	ASCII	ESC d	n
	Hex	1B 64	n
	Decimal	27 100	n

[Range] 0 ≤ n ≤ 255

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

[Notes]
• n rows paper feed is equivalent to (n × 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 $1B $32 or $1B $33.
• The maximum paper feed amount is 254 rows. Even if a paper feed amount of more than 254 rows is set, the printer feeds the paper only 254 rows.

[Default]

[Reference] $1B $32, $1B $33

[Example]

$1B $69

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Total cut**	
[Format]	ASCII	ESC i
	Hex	1B 69
	Decimal	27 105

[Range]

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

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

[Default]

[Reference]

[Example]

$1B $6D

Printers:	KUBE II VeriPrint, KUBE-L VeriPrint

[Name]	**Partial cut**	
[Format]	ASCII	ESC m
	Hex	1B 6D
	Decimal	27 109

[Range

[Description] This command enables cutter operation.

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

[Default]

[Reference]

[Example]

$1B $70

Printers:	KUBE II VeriPrint, KUBE-L VeriPrint

[Name]	**Generate pulse**				
[Format]	ASCII	ESC	p	m	t1	t2
	Hex	1B	70	m	t1	t2
	Decimal	27	112	m	t1	t2
[Range]	m = 0, 1, 48, 49				
	0 ≤ t1 ≤ 255				
	0 ≤ t2 ≤ 255				
[Description]	Outputs the pulse specified by t1 and t2 to connector pin m as follows:				

m	CONNECTOR PIN
0, 48	Drawer kick-out connector pin 2

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

$1B $74

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select character code table**			
[Format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n
[Range]	n = 0, 2, 3, 4, 5, 16, 17, 18 19, 255			
[Description]	Select a page n from the chatacter code table as follows:			

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

[Notes]	
[Default]	n = 0
[Reference]	
[Example]	For printing Euro symbol (€), the command sequence is: $1B, $74, $13, $D5

$1B $76

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Transmit paper sensor status**
[Format]	ASCII ESC v
	Hex 1B 76
	Decimal 27 118
[Range]	
[Description]	When this command is received, transmit the current status of the paper sensor.
[Notes]	This command is executed immediately, even when the data buffer is full (Busy). The status to be transmitted is shown in the table below:

BIT	OFF/ON	HEX	Decimal	FUNCTION
0,1	Off	00	0	Near paper-end sensor: paper present
	On	03	3	Near paper-end sensor: paper not present
2,3	Off	00	0	Paper-end sensor: paper present
	On	(0C)	(12)	Paper-end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[Default]	
[Reference]	
[Example]	

$1B $7B

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Turn upside-down printing mode on/off**
[Format]	ASCII ESC { n
	Hex 1B 7B n
	Decimal 27 123 n
[Range]	$0 \leq n \leq 255$
[Description]	Turns upside-down printing mode on or off.
	• When the LSB of n is 0, the upside-down printing mode is off.
	• When the LSB of n is 1, the upside-down printing mode is on.
[Notes]	• Only the LSB of n is effective.
	• This command is valid only if entered at the beginning of a line.
	• In upside-down printing mode, the printer rotates the line to be printed 180° and then prints it.
[Default]	n = 0
[Reference]	
[Example]	Upside-down printing Off Upside-down printing On
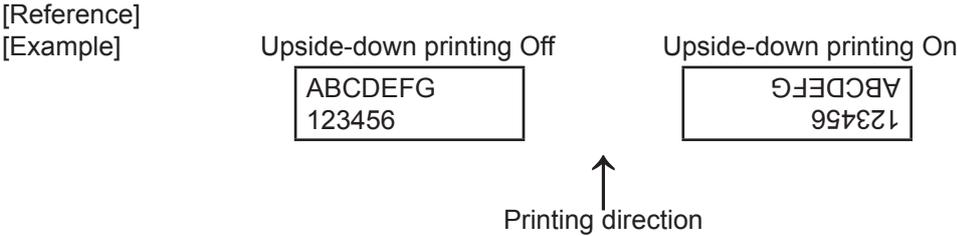
Printing direction

$1B $C1

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Set/cancel cpi mode**

[Format]

	ASCII	ESC	{ }	n
	Hex	1B	C1	n
	Decimal	27	193	n

[Range] $0 \leq n \leq 1, 48 \leq n \leq 49$

[Description] Sets cpi mode based on the following values of n:

n	FUNCTION
0, 48	Font A = 11 cpi Font B = 15 cpi
1, 49	Font A = 15 cpi Font B = 20 cpi

[Default] n = 0

[Reference] $1B $21

[Example]

$1C $3C

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Change printer emulation to SVELTA**

[Format]

	ASCII	FS	<	S	V	E	L	>
	Hex	1C	3C	53	56	45	4C	3E
	Decimal	28	60	83	86	69	76	62

[Range]

[Description] Change the printer emulation to SVELTA emulation.

[Notes]

[Default]

[Reference]

[Example]

$1C $6C

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Reload paper**

[Format]

	ASCII	FS	l
	Hex	1C	6C
	Decimal	28	108

[Range]

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

[Notes] During the execution of the command, the printer indicates the paper end

[Default]

[Reference]

[Example]

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$1C $80

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Read date/time of the real time clock**

[Format]

ASCII	FS	{}	m
Hex	1C	80	m
Decimal	28	128	m

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

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

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

where:

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

[Notes] • Before send the date/time, if the m parameter is valid the printer transmits the ACK ($06) followed by the number of bytes to sent, otherwise return NACK ($015).

[Default]

[Reference]

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

Host

HEX	$1C	$80	$01
ASCII	FS	{}	m

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

HEX	$06	$0C	$31	$35	$30	$39	$30	$36	$31	$30	$35	$36	$32	$30
ASCII	ACK	FF	1	5	0	9	0	6	1	0	5	6	2	0

$1C $81

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Read date/time of the real time clock**

[Format]

ASCII	FS	{ }	m	n	d0...dn
Hex	1C	81	m	n	d0...dn
Decimal	28	129	m	n	d0...dn

[Range] $0 \leq m \leq 3$
$0 \leq d0, dn \leq 255$

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

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

where:
DD = represents the day of the date
MM = represents the month of the date
YY = represents the year of the date
hh = represents the hour of the time
mm = represents the monutes of the time
ss = represents the seconds of the time
d = represents the day of the week
• n specifies the number of characters to send.
• d0...dn are the ASCII characters relative to the date and time to set.

[Notes] • If the transmission has been received correctly and the command is valid, the printer returns the ACK ($06), otherwise return NACK ($015).
• the day of the week is calculated automatically from the printer and then it's possible that the returned value is different from the one transmitted.

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

Host

Hex	$1C	$81	$02	$0C	$30	$36	$30	$39	$32	$39	$31	$33	$35	$31	$30	$30
ASCII	FS	{ }	STX	FF	0	6	0	9	2	9	1	3	5	1	0	0

The printer's answer ACK ($06) if the transmission is OK otherwise NACK ($15).

$1C $82

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Print date**

[Format]

ASCII	FS	{ }
Hex	1C	82
Decimal	28	130

[Range]
[Description] Prints date in the format specified by the command $1C $84 with the parameter n='D'.
[Notes]
[Default] "dd/mm/yy"
[Reference] $1C $83, $1C $84
[Example]

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$1C $83

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print time**		
[Format]	ASCII	FS	{ }
	Hex	1C	83
	Decimal	28	131
[Range]			
[Description]	Prints date in the format specified by the command $1C $84 with the parameter n='T'.		
[Notes]			
[Default]	"hh:mm:ss"		
[Reference]	$1C $82, $1C $84		
[Example]			

$1C $84

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set user-defined date/time formats**				
[Format]	ASCII	FS	{ }	n	d1...dk	NUL
	Hex	1C	84	n	d1...dk	$00
	Decimal	28	132	n	d1...dk	0
[Range]	n = 'D', n = 'T'				
	0 ≤ d0, dK ≤ 255				
[Description]	Sets the format string for date and time used to printing ($1C $83, $1C $84).				

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

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

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

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

For example to print the current time with the string format 'yy/mm/dd hh:mm:ss' follow these steps :
1. Send the following command to define the user-defined Time string format:

HEX	$1C	$84	$54	$79	$79	$2F	$6D	$6D	$2F	$64	$64	$20
ASCII	FS	{}	T	y	y	/	m	m	/	d	d	h

$68	$68	$3A	$6E	6E	$3A	$73	$73	$00			
h	:	n	n	:	s	s	NUL				

The printer's answer ACK ($06) if the transmission is OK otherwise NACK($15).
2. Send the following command to print the time :

HEX	$1C	$83	$0A
ASCII	FS	{}	LF

Note : The character $0A feeds one line based on the current line spacing.
If the date and time is 22 October 2006 at 17:35:27 (PM) the output string printed will be: 06/10/22 17:35:27

$1C $8A

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Delete the disk contents**
[Format] ASCII   FS   {}   n
          Hex   1C   8A   n
          Decimal   28   128   n
[Range]   '2' ≤ n ≤ '4', 2 ≤ n ≤ 4, 'C' ≤ x ≤ 'E'
[Description] Delete the contents of a disk identified with n:
          n = '2', 2, C   identify the FLASH DRV disk
          n = '3', 3, D   identify the SD/MMC CARD disk
          n = '4', 4, E   identify the LAST SCAN disk

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[Notes]   If the sent command is valid and the contents has been correctly deleted, the printer transmits the ACK ($06), otherwise return NACK ($015).

[Default]
[Reference]
[Example]

$1C $8B

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Print images saved in SD/MMC card**

[Format]

ASCII	FS	{ }	n
Hex	1C	8B	n
Decimal	28	139	n

[Range]   n = $3, $83

[Description]   Print images saved in SD/MMC card as follow:
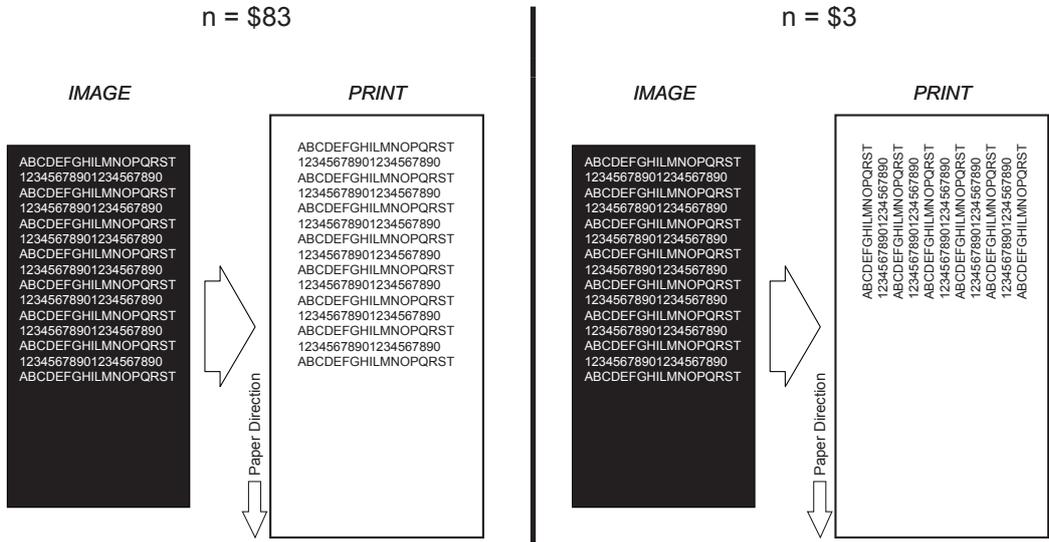
[Notes]   • The image is cropped if exceed the paper width.
• Command valid only for B/W BMP images.

[Default]
[Reference]
[Example]

$1C $90

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Get number of stored logo**

[Format]

ASCII	FS	{ }
Hex	1C	90
Decimal	28	144

[Range]

[Description]   This command sends to the printer the request of number of stored logo; the printer returns a bytes sequence as follows :   <PNn>
where n (in ASCII format) indicates the number of stored images.

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[Notes]
[Default]
[Reference]
[Example]   If in the flash memory are stored 10 logos send this command :

HEX	$1C	$90
ASCII	FS	{ }

The printer's answer will be :

HEX	$3C	$50	$4E	$31	$30	$3E
ASCII	<	P	N	1	0	>

$1C $91

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Get pictures header list**
[Format]   ASCII   FS   { }
                   Hex   1C   91
                   Decimal   28   145
[Range]
[Description]   This command requests to the printer the list of stored logo. The printer returns a bytes
                   sequence as follows :   <PL *CrLf [N-ID CrLf]*>
                   where:
                   CrLf   indicates the two characters $0D (Carriage return) and $0A (Line Feed);
                   N   is the number of stored logo;
                   [ID]   indicates the file-name that identify the logo, a sequence of 16 bytes that was
                              defined when the logo is stored. This field is optional because it's returned only
                              if the logo has been found.
[Notes]
[Default]
[Reference] $1C $92, $1C $94
[Example]

$1C $92

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Get pictures header info**
[Format]   ASCII   FS   { }   nH   nL
                   Hex   1C   92   nH   nL
                   Decimal   28   146   nH   nL
[Range] $0 \le nH, nL \le 255$
[Description]   Gets the logo header info stored specified by n.
                   • n is the number of stored logo;
                   • The printer returns a byte sequence as follows :
                   <PI*e[ID]*>
                                 where:
                   e   indicates the search result
                              e = 0 picture not found
                              e = 1 picture found
                   [ID]   indicates the file-name that identify the logo, a sequence of 16 bytes that was
                              defined when the logo is stored. This field is optional because it's returned only
                              if the logo has been found.
[Notes]
[Default]
[Reference]
[Example]

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$1C $93	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Print logo**

[Format]

	ASCII	FS	{ }	nH	nL	opt	sp	posH	posL
	Hex	1C	93	nH	nL	opt	sp	posH	posL
	Decimal	28	147	nH	nL	opt	sp	posH	posL

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

[Description] Prints logo defined by n.

• n is the number of image to print;

• opt is the option byte that specifies justification and rotation as shown in the following table:

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

• sp specifies the thickness of the image border.

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

[Notes]
[Default]
[Reference]

[Example]

Example 1: To print logo no.10 centered and rotated transmits :

$1C $93 $00 $0A $81 $01 $00 $00

where

$1C $93	//print logo command
$00 $0A	//Logo no. 10
$81	//printing rotated and centered
$01	//1 pixel of image border
$00 $00	//Positioning not used

Example 2: To print logo no.10 not rotated and with a user-defined printing position transmits:

$1C $93 $00 $0A $03 $01 $00 $50

where

$1C $93	//print logo command
$00 $0A	//Logo no. 10
$03	//printing with a user define positioning and not rotated
$01	//1 pixel of image border
$00 $50	//Printing 10mm from the left border

$1C $94

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Save the image received from serial port into the flash**
[Format]	ASCII FS {} nH nL xDimH xDimL yDimH yDimL TbdH TbdL Id0..Idn d0..dn >
	Hex 1C 94 nH nL xDimH xDimL yDimH yDimL TbdH TbdL Id0..Idn d0..dn 3E
	Decimal 28 148 nH nL xDimH xDimL yDimH yDimL TbdH TbdL Id0..Idn d0..dn 62

[Range] $0 \le nH, nL \le 255$,
$0 \le xDimH, xDimL \le 255$,
$0 \le yDimH, yDimL \le 255$
$0 \le d0, dn \le 255$

[Description]   Saves the image received from serial port into the printer flash; if the number used to store logo is not already present inside the printer, the new logo is appended to stored logos. Otherwise the new logo is updated.
• *nH* and *nL* indicates the number of logo (2 bytes expressed in hexadecimal notation).
• *xDimH* and *xDimL* indicate the logo horizontal dimension in pixel (2 bytes expressed in hexadecimal notation); the value must be multiple of 16.
• *yDimH* and *yDimL* indicates the logo vertical dimension in pixel (2 bytes expressed in hexadecimal notation).
• *TbdH* and *TbdL* 2 bytes fixed to $00 (RESERVED)
• *Id0..Idn* indicates the file-name of the logo, a sequence of 16 bytes to identify univocally the logo.
• *d0 ...dn* are the image data. The size of image is defined as follows :
     xSize = xDim /16; number of WORD (16 bit) in a horizontal image line
     Total Size = (xSize * yDim) *2;
• *'>' is* the character terminator (in ASCII) of this command.
The printer returns a sequence of bytes as follows :
<PC0>   if the saving include an incorrect syntax or the memory in flash available for logos is finished (128Kbyte);
<PC1n> if the syntax command is correct and there's memory enough in flash for saving logos; n returns the status of the flash programming :
$88 -> sector not erased
$77 -> error during programming
$AA -> Programming done.

[Notes]   • If file-name length is shorter than 16 byte, add a terminator (0) and make padding to 16 characters.
• If file-name extension is absent, it is automatically added to the name.

[Default]
[Reference]
[Example]   The following example shows the bytes sequence received from serial port to store a logo into the printer flash :

Offset	Hexadecimal	ASCII
00000000:	1C 94 00-08 01 C0 02-49 00 00 4C-6F 67 6F 32 36	°°°′+ˆlLogo-26
00000010:	2E 42 4D 50 00 00 00-00 00 00 00-00 00 00 00 00	.BMP
00000020:	00 00 00-00 00 00 00-00 00 00 00-00 00 00 00 00	
....		*Image data*
....		
....		
00008000:	00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00008010:	00 00 3E	>

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

HEX	$3C	$50	$43	$31	$AA	$3E
ASCII	<	P	C	1	{}	>

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$1C $B0	

Printers:	KPM300 VeriPrint	*(only for models with BARCODE reader),*
	TK300II VeriPrint	*(only for models with BARCODE reader)*

[Name]	**Sets the barcode reader status.**			
[Format]	ASCII	FS	{ }	n
	Hex	1C	B0	n
	Decimal	28	176	n

[Range] $30 ≤ n ≤ $36

[Description]   This command sets the operating status of the barcode reader; n identifies the status of the barcode setting as follows :

$30   *TRIGGER ON/OFF*:
Every trigger the barcode reader toggle the previous status.

$31   *GOOD READ OFF*:
Every trigger the barcode reader is turn ON and switch off after a timeout (standard) or after a correct reading.

$32   *CONTINUOUS TRIGGER OFF*:
Every trigger the barcode reader toggle the previous status.

$33   *CONTINUOUS / AUTO POWER ON*:
The barcode reader remains power on.

$34   *FLASH*:

models with MR008 barcode reader
Every trigger the barcode reader switches between a power off condition and continuous flashing. During the reading phase the flashing condition is changed in a continuous lighting, and then return to flashing condition after a timeout or after a reading operation.

models with CX002 barcode reader
Every trigger the barcode keeps scanning. The scanner flashes the light source when no code is decoded after the timeout duration elapsed. This mode can save the power resource and extend the operation life of the light source. The scanner can be waked up when there is a successful reading or with a trigger.

$35   *TESTING*:
If the barcode reader recognize a correct barcode the reading operation is not single, like the trigger on/off state, but is made permanent until the barcode is removed.

$36   *FLASH/AUTO POWER ON*:
The barcode reader remains in a continuous flashing condition, when occurs a reading the barcode reader is turned ON. This condition still stays for a standard timeout, then the barcode reader returns in a flashing condition.

[Notes]   • The execution of this command clears the output buffer of barcode reader; if a scansion is executed without data acquisition by the host, all data read are deleted.
The printer returns a byte:

ACK ($06)	The command is executed successfully.
NACK($15)	The command is not executed successfully.
$FF	The n parameter send is not valid
$FE	The barcode reader is not working or it not installed on the printer.

[Default]
[Reference]
[Example]

$1C $B1

Printers:	KPM300 VeriPrint	*(only for models with BARCODE reader),*
	TK300II VeriPrint	*(only for models with BARCODE reader)*

[Name]   **Get barcode reader status.**

[Format]
ASCII	FS	{ }	n
Hex	1C	B1	n
Decimal	28	177	n

[Range] $30 ≤ n ≤ $34

[Description] Reads the barcode reader parameters in base of n value :

n = $30   *STATUS*:
Reads the barcode reader status. It returns :
• NACK ($15) character if the command is not successful
• $FE character if the barcode reader is not working or it not installed on the printer.
• ACK ($06) character, followed by a status byte; the status to be transmitted is shown in the table below:

BIT	VALUE	FUNCTION
0, 1, 2	$00	TRIGGER ON/OFF
	$01	GOOD READ OFF
	$02	CONTINUOUS TRIGGER OFF
	$03	CONTINUOUS / AUTO POWER ON
	$04	FLASH
	$05	TESTING
	$06	FLASH / AUTO POWER ON
	$07	RESERVED
3	0	PE Off
	1	PE On
4	0	TG Off
	1	TG On
5	0	Decode OK
	1	Decode error
6, 7	-	RESERVED

The execution of this command clears the ouput buffer of barcode reader; if a scansion is executed without data acquisition by the host, all data read are deleted.

n = $31   *BYTES ON RECEPTION BUFFER:*
Indicates the number of bytes sent from barcode reader. It returns :
• NACK ($15) character if the command is not successful or the buffer is empty
• $FE character if the barcode reader is not working or it not installed on the printer.
• ACK ($06) character, followed by one byte that Indicates the number of bytes send from barcode reader.

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n = $32   *BYTES READING ON OUTPUT FROM BARCODE READER*

Indicates the number of bytes sent from barcode reader. It returns :

• NACK ($15) character if the command is not successful or the buffer is empty

• $FE character if the barcode reader is not working or it not installed on the printer.

• ACK ($06) character, followed by a bytes sequence B1, B2, ...Bn where n are the bytes on output from barcode reader.

n = $33   *DELETE BYTES ON OUTPUT*

This command deletes all bytes on the output buffer from the barcode reader. It returns

• NACK ($15) character if the command is not successful.

• $FE character if the barcode reader is not working or it not installed on the printer.

• ACK ($06) character if the command is successful.

n = $34   *READING OF ONE BYTE ON OUTPUT FROM BARCODE READER*

This command reads one byte on output from barcode reader. It returns :

• NACK ($15) character if there are no bytes on output from barcode reader.

• $FE character if the barcode reader is not working or it not installed on the printer.

• ACK ($06) character, followed by one byte that is the first byte present on the output FIFO from barcode reader.

[Notes]	• with n = $30 after the barcode reader executes this command, emits a beep as acoustic signalling.
[Default]	
[Reference]	$FS $B0
[Example]	

$1C $B2			
Printers:	KPM300 VeriPrint	*(only for models with BARCODE reader),*	
	TK300II VeriPrint	*(only for models with BARCODE reader)*	

[Name]	**Barcode reader Trigger.**		
[Format]	ASCII	FS	{ }
	Hex	1C	B2
	Decimal	28	178
[Range]			
[Description]	This command execution forces a trigger of barcode reader. It returns:		
	• NACK ($15) character if the command is successful.		
	• $FE character if the barcode reader is not working or it not installed on the printer.		
	• ACK ($06) character, if the command is successful.		
[Notes]	• A trigger event may be effect on barcode reader setting, depending on the barcode reader status.		
	• The execution of this command clears the ouput buffer of barcode reader; if a scansion is executed without data acquisition by the host, all data read are deleted.		
[Default]			
[Reference]	$FS $B0		
[Example]			

ESC/POS™ Emulation

$1C $C0

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Hardware reset**						
[Format]	❶	ASCII	FS	{ }	$18	$10	$14 $1A
		Hex	1C	C0	18	10	14 1A
		Decimal	28	192	16	20	26
	❷	ASCII	FS	{ }	$18	$10	$14 $1B
		Hex	1C	C0	18	10	14 1B
		Decimal	28	192	16	20	27

[Range]

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

[Notes]   • This command is executed immediately, even when the data buffer is full (Busy).
    • ❶   The command execution stop the communication with HOST;
    • ❷   The command execution keep the communication with HOST active;

[Default]
[Reference]
[Example]

$1C $C1

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Paper recovery after cut**			
[Format]	ASCII	FS	{ }	n
	Hex	1C	C1	n
	Decimal	28	193	n

[Range] $0 \leq n \leq 24$

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

24mm

n = 15

Paper Direction
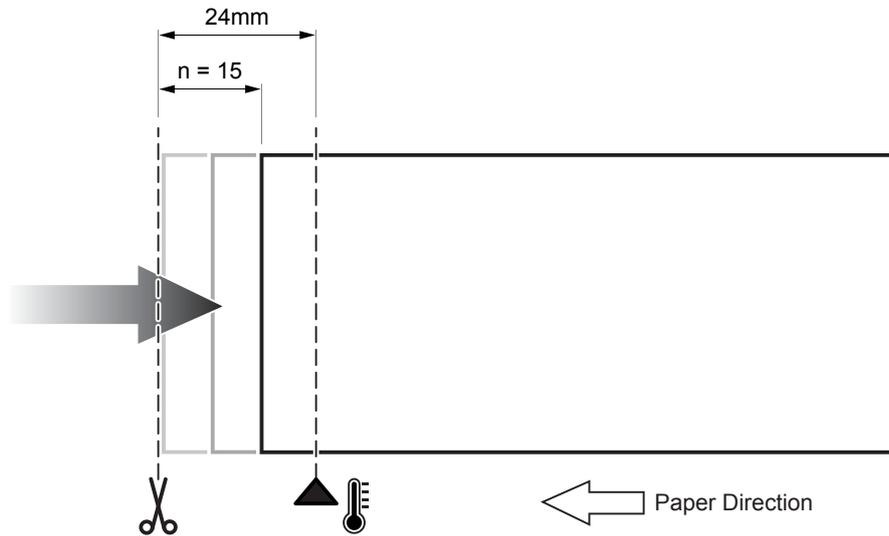
[Notes]   • Set n = 24 to complete recover the paper.
    • WARNING: setting n = 24 is not recommended for paper roll with low weight.

[Default]   n = 15 mm

[Reference]
[Example]

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$1D $21

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Select character size**

[Format]

ASCII	GS	!	n
Hex	1D	21	n
Decimal	29	33	n

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

[Description] Selects character height and width, as follows:
• Bits 0 to 3: to select character height (see table 2).
• Bits 4 to 7: to select character width (see table 1).

Table 1 Select character width

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

Table 2 Select character height

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

[Notes] • This command is effective for all characters (except HRI characters).
• If *n* falls outside the defined range, this command is ignored.
• Characters enlarged to different heights on the same line are aligned at the baseline or topline.
• $1B $21 can also be used to select character size. However, the setting of the last received command is the effective one.

[Default] n = 0
[Reference] $1B $21
[Example]

$1D $28 $6B

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Print two-dimensional barcode**

[Format]

ASCII	GS	(	k	pL	pH	cn	fn
Hex	1D	28	6B	pL	pH	cn	fn
Decimal	29	40	107	pL	pH	cn	fn

[Range]

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

cn	fn	FUNCTION	
48	65	Function 065	PDF 417: Specify the number of columns
48	66	Function 066	PDF 417: Specify the number of rows
48	67	Function 067	PDF 417: Specify the width of module
48	68	Function 068	PDF 417: Specify the module height
48	69	Function 069	PDF 417: Specify the error correction level
48	80	Function 080	PDF 417: Store the received data in the symbol save area
48	81	Function 081	PDF 417: Print the symbol data in the symbol save area
51	65	Function 365	DATAMATRIX: Set encoding scheme
51	66	Function 366	DATAMATRIX: Set rotate
51	67	Function 367	DATAMATRIX: Set dot size
51	68	Function 368	DATAMATRIX: Set symbol size
51	80	Function 380	DATAMATRIX: Store the received data in the symbol save area
51	81	Function 381	DATAMATRIX: Print the symbol data in the symbol save area
52	65	Function 065	AZTEC: Specify encoding scheme
52	67	Function 067	AZTEC: Specify dot size
52	68	Function 068	AZTEC: Specify symbol size
52	69	Function 069	AZTEC: Specify the error correction level
52	80	Function 080	AZTEC: Store the received data in the symbol save area
52	81	Function 081	AZTEC: Print the symbol

[Notes]
[Reference]
[Example]

$1D $28 $6B [function 065]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Specify the number of columns of PDF417 symbol**

[Format]

ASCII	GS	(	k	pL	pH	cn	fn	n
Hex	1D	28	6B	pL	pH	cn	fn	n
Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3   (pL = 3, pH = 0)
cn = 48   fn = 65
$0 \leq n \leq 30$

[Description] Specifies the number of columns of PDF417 barcode.
- *n* = 0 specifies auto processing
- When n is not 0, specifies the number of columns of the data area as n code word.
- When auto processing (n = 0) is specified, the maximum number of columns in the data area is 30 columns.

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[Notes]	• The following data is not included in the number of columns:
	- start pattern and stop pattern
	- indicator code word of left and right
	• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.
[Default]	n = 0
[Reference]	$1D $28 $6B
[Example]	

$1D $28 $6B [function 065]

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Specify encoding scheme of AZTEC symbol**
[Format]	ASCII GS (k pL pH cn fn n
	Hex 1D 28 6B pL pH cn fn n
	Decimal 29 40 107 pL pH cn fn n
[Range]	$(pL+pH \times 256) = 3$ (pL = 3, pH = 0)
	cn = 52 fn = 65
	$0 \leq n \leq 1$
[Description]	Specifies encoding type of AZTEC barcode.

n	ENCODING SCHEME
0	FULL AZTEC
1	AZTEC RUNE

[Notes]	• Full Aztec: Encode all extended ASCII characters data up to a maximum lenght of approximately 3823 numeric or 3067 alphabetic characters or 1914 bytes of data.
	• Aztec Rune (Compact Aztec Code, sometimes called Small Aztec Code): Encode all numbers from 0 to 9 up to a maximum lenght of 3 numbers.
[Default]	n = 0
[Reference]	
[Example]	

$1D $28 $6B [function 066]

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]	**Specify the number of rows of PDF417 symbol**
[Format]	ASCII GS (k pL pH cn fn n
	Hex 1D 28 6B pL pH cn fn n
	Decimal 29 40 107 pL pH cn fn n
[Range]	$(pL+pH \times 256) = 3$ (pL = 3, pH = 0)
	cn = 48
	fn = 66
	$n = 0, 3 \leq n \leq 90$
[Description]	Specifies the number of rows of PDF417 barcode.
	• *n* = 0 specifies auto processing
	• When n is not 0, specifies the number of rows of the data area as n rows.
	• When auto processing (n = 0) is specified, the maximum number of rows is 90.
[Notes]	• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.
[Default]	n = 0
[Reference]	$1D $28 $6B
[Example]	

$1D $28 $6B [function 067]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify the width of a module of PDF417 symbol**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0)							
	cn = 48							
	fn = 67							
	$2 \leq n \leq 8$							
[Description]	Specifies the width of a module of PDF417 symbol.							
[Notes]	• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.							
[Default]	n = 3							
[Reference]	$1D $28 $6B							
[Example]								

$1D $28 $6B [function 067]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify dot size of AZTEC symbol**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0)							
	cn = 52							
	fn = 67							
	$2 \leq n \leq 24$							
[Description]	Specifies numbers of dot for each pixel of AZTEC symbol.							
[Notes]								
[Default]	n = 0							
[Reference]								
[Example]								

$1D $28 $6B [function 068]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify the height of PDF417 symbol**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0)							
	cn = 48							
	fn = 68							
	$2 \leq n \leq 8$							
[Description]	Specifies the height of PDF417 symbol.							
[Notes]	• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.							
[Default]	n = 3							
[Reference]	$1D $28 $6B							
[Example]								

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$1D $28 $6B [function 068]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Specify AZTEC symbol size**

[Format]

ASCII	GS	(	k	pL	pH	cn	fn	n
Hex	1D	28	6B	pL	pH	cn	fn	n
Decimal	29	40	107	pL	pH	cn	fn	n

[Range] (pL+pH × 256) = 3   (pL = 3, pH = 0)
cn = 52
fn = 68
$0 \le n \le 36$

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

n	FORMAT	n	FORMAT	n	FORMAT
0	AUTO	13	C53X53	26	C109X109
1	C15X15 Compact	14	C57X57	27	C113X113
2	C19X19 Compact	15	C61X61	28	C117X117
3	C23X23 Compact	16	C67X67	29	C121X121
4	C27X27 Compact	17	C71X71	30	C125X125
5	C19X19	18	C75X75	31	C131X131
6	C23X23	19	C79X79	32	C135X135
7	C27X27	20	C83X83	33	C139X139
8	C31X31	21	C87X87	34	C143X143
9	C37X37	22	C91X91	35	C147X147
10	C41X41	23	C95X95	36	C151X151
11	C45X45	24	C101X101		
12	C49X49	25	C105X105		

[Notes]
[Default] n = 0
[Reference]
[Example]

$1D $28 $6B [function 069]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Specify the error correction level (PDF417)**

[Format]

ASCII	GS	(	k	pL	pH	cn	fn	m	n
Hex	1D	28	6B	pL	pH	cn	fn	m	n
Decimal	29	40	107	pL	pH	cn	fn	m	n

[Range] (pL+pH × 256) = 4   (pL = 4, pH = 0)
cn = 48
fn = 69
m = 48 $48 \le n \le 56$
m = 49 $1 \le n \le 40$

[Description] Specifies the error correction level of PDF417.
• The error correction level is specified by "level" when m = 48.
• The error correction level is specified by "ratio" when m = 49 [n × 10%].

[Notes] • Error correction level is specified by either "level" or "ratio".
• Error correction level specified by "level" (m = 48) 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
48	Error correction level 0	2
49	Error correction level 1	4
50	Error correction level 2	8
51	Error correction level 3	16
52	Error correction level 4	32
53	Error correction level 5	64
54	Error correction level 6	128
55	Error correction level 7	256
56	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 × n × 0.1 = (A)]. The number of the error correction code word is changeable in proportion to the number of the code words on the data area.

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

• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.

[Default]   m = 49, n = 1 [ratio: 10%]
[Reference] $1D $28 $6B
[Example]

$1D $28 $6B [function 069]

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Specify the error correction level (AZTEC)**
[Format]   ASCII   GS   (k   pL   pH   cn   fn   n
               Hex   1D   28   6B   pL   pH   cn   fn   n
               Decimal   29   40   107   pL   pH   cn   fn   n
[Range]   (pL+pH × 256) = 4   (pL = 4, pH = 0)
               cn = 52
               fn = 69
               $0 \leq n \leq 4$
[Description]   Specifies the ECC level (Error Correction Capacity) of AZTEC symbol.

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n	ECC level
0	AUTO
1	> 10 % + 3 codewords
2	> 23 % + 3 codewords
3	> 36 % + 3 codewords
4	> 50 % + 3 codewords

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

[Notes]
[Default]   n = 0
[Reference]
[Example]

$1D $28 $6B [function 080]

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Store the PDF417 symbol data in the symbol save area**
[Format]

ASCII	GS	(	k	pL	pH	cn fn	m	d1...dk
Hex	1D	28	6B	pL	pH	cn fn	m	d1...dk
Decimal	29	40	107	pL	pH	cn fn	m	d1...dk

[Range] $4 \leq (pL+pH \times 256) \leq 65535$ $(0 \leq pL \leq 255, 0 \leq pH \leq 255)$
                  cn = 48
                  fn = 80
                  m = 48
                  $0 \leq d \leq 255$
                  $k = (pL + pH \times 256) - 3$
[Description]   Store the PDF417 symbol data (d1...dk) in the symbol save area.
[Notes]   • Data stored in the symbol save area by this function are processed by Function 081. The data in the symbol save area are reserved after processing Function 081.
                  • k bytes of d1...dk are processed as symbol data.
                  • Specify only the data code word of the symbol with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the printer.
                  • Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.
[Default]
[Reference] $1D $28 $6B
[Example]

$1D $28 $6B [function 080]

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Store the AZTEC symbol data in the symbol save area**
[Format]

ASCII	GS	(	k	pL	pH	cn fn	m	d1...dk
Hex	1D	28	6B	pL	pH	cn fn	m	d1...dk
Decimal	29	40	107	pL	pH	cn fn	m	d1...dk

[Range] $4 \leq (pL+pH \times 256) \leq 65535$ $(0 \leq pL \leq 255, 0 \leq pH \leq 255)$
                  cn = 52
                  fn = 80
                  m = 52
                  $0 \leq d \leq 255$
                  $k = (pL + pH \times 256) - 3$

[Description]	Store the PDF417 symbol data (d1...dk) in the symbol save area.
[Notes]	• Data stored in the symbol save area by this function are processed by Function 081. The data in the symbol save area are reserved after processing Function 081.
	• k bytes of d1...dk are processed as symbol data.
	• Specify only the data code word of the symbol with this function.
[Default]	
[Reference]	
[Example]	

$1D $28 $6B [function 081]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Encodes and prints the PDF417 symbol data in the symbol save area**
[Format]	ASCII GS (k pL pH cn fn m
	Hex 1D 28 6B pL pH cn fn m
	Decimal 29 40 107 pL pH cn fn m
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0)
	cn = 48
	fn = 81
	m = 48
[Description]	Encodes and prints the PDF417 symbol data in the symbol save area.
[Notes]	• In standard mode, use this function when printer is "at the beginning of a line" or "there is no data in the print buffer".
	• A symbol that size exceeds the printing area cannot be printed.
	• If there is any error described below in the data of the symbol save area, it cannot be printer.
	- 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]	$1D $28 $6B
[Example]	

$1D $28 $6B [function 081]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Prints the AZTEC symbol data**
[Format]	ASCII GS (k pL pH cn fn m
	Hex 1D 28 6B pL pH cn fn m
	Decimal 29 40 107 pL pH cn fn m
[Range]	(pL+pH × 256) = 3 (pL = 3, pH = 0)
	cn = 52
	fn = 81
	m = 48
[Description]	Prints the AZTEC symbol in the current position.
[Notes]	
[Default]	
[Reference]	
[Example]	

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$1D $28 $6B [function 365]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify the encoding scheme of DATAMATRIX symbol**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range]   cn = 51
fn = 65
$0 \leq n \leq 6$

[Description]   Set the encoding scheme specified by n as follows:

n	ENCODING SCHEME
0	Ascii
1	C40
2	Text
3	X12
4	Edifact
5	Base256
6	AutoBest

[Notes]
[Default]
[Reference] $1D $28 $6B
[Example]

$1D $28 $6B [function 366]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set rotation**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n

[Range]   cn = 51
fn = 66
n = 0, 1

[Description]   Set rotate by n as follows:

n	ROTATION
0	No rotation
1	Rotation

[Notes]
[Default]
[Reference] $1D $28 $6B
[Example]

$1D $28 $6B [function 367]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set dot size**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	cn = 51							
	fn = 67							
	2 ≤ n ≤ 24							
[Description]	Set dot size.							
	n = dot dimension							
[Notes]								
[Default]	n = 6							
[Reference]	$1D $28 $6B							
[Example]								

$1D $28 $6B [function 368]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set symbol size**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	n
	Hex	1D	28	6B	pL	pH	cn	fn	n
	Decimal	29	40	107	pL	pH	cn	fn	n
[Range]	cn = 51							
	fn = 68							
	1 ≤ n ≤ 29							
[Description]	Set the symbol size specified by n as follows:							

n	SYMBOL SIZE		n	SYMBOL SIZE
1	10 x 10		16	64 x 64
2	12 x 12		17	72 x 72
3	14 x 14		18	80 x 80
4	16 x 16		19	88 x 88
5	18 x 18		20	96 x 96
6	20 x 20		21	104 x 104
7	22 x 22		22	120 x 120
8	24 x 24		23	132 x 132
8	26 x 26		24	144 x 144
10	32 x 32		25	8 x 18
11	36 x 36		26	8 x 32
12	40 x 40		27	12 x 26
13	44 x 44		28	12 x 36
14	48 x 48		29	16 x 36
15	52 x 52			

[Notes]	
[Default]	DmtxSymbolSquareAuto
[Reference]	$1D $28 $6B
[Example]	

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$1D $28 $6B [function 380]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Store the DATAMATRIX symbol data in the symbol save area**								
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m	d1...dk
	Hex	1D	28	6B	pL	pH	cn	fn	m	d1...dk
	Decimal	29	40	107	pL	pH	cn	fn	m	d1...dk

[Range] $4 ≤ (pL+pH × 256) ≤ 65535$ $(0 ≤ pL ≤ 255, 0 ≤ pH ≤ 255)$
cn = 51
fn = 80
m = 51
$0 ≤ d ≤ 255$
$k = (pL + pH × 256) - 3$

[Description] Store the DATAMATRIX symbol data (d1...dk) in the symbol save area.

[Notes] • Data stored in the symbol save area by this function are processed by Function 081. The data in the symbol save area reserved after processing Function 381.
• k bytes of d1...dk are processed as symbol data.
• Specify only the data code word of the symbol with this function. Be sure not to include the control data in the data d1...dk because they are added automatically by the printer.
• Settings are effective until ESC @ is executed, the printer is reset or the power is turned off.

[Default]
[Reference] $1D $28 $6B
[Example]

$1D $28 $6B [function 381]

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Encodes and prints the DATAMATRIX symbol data in the symbol save area**							
[Format]	ASCII	GS	(	k	pL	pH	cn	fn	m
	Hex	1D	28	6B	pL	pH	cn	fn	m
	Decimal	29	40	107	pL	pH	cn	fn	m

[Range] $(pL+pH × 256) = 3$ $(pL = 3, pH = 0)$
cn = 51
fn = 81
m = 51

[Description] Encodes and prints the DATAMATRIX symbol data in the symbol save area.

[Notes] • In standard mode, use this function when printer is "at the beginning of a line" or "there is no data in the print buffer".
• A symbol that size exceeds the printing area cannot be printed.
• If there is any error described below in the data of the symbol save area, it cannot be printer.
  • There is no data (Function 380 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.

[Default]
[Reference] $1D $28 $6B
[Example]

$1D $2A

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Define dowloaded bit image**				
[Format]	ASCII	GS	*	x	y	d1...d(x × y × 8)
	Hex	1D	2A	x	y	d1...d(x × y × 8)
	Decimal	29	42	x	y	d1...d(x × y × 8)

[Range] $1 \le x \le 255$
$1 \le y \le 48$
$x \times y \le 1536$
$0 \le d \le 255$

[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) $1B $40 is executed.
2) $1B $26 is executed.
Printer is reset or the power is turned off.
• The following figure shows the relationship between the downloaded bit image and the printed data.
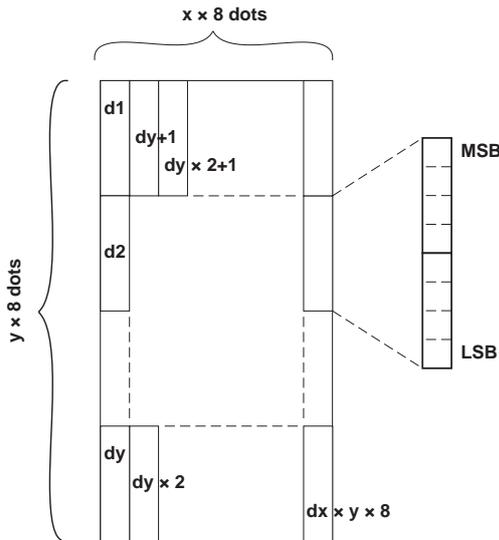
[Reference] $1D $5C
[Example]

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$1D $2F	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print dowloaded bit image**		
[Format]	ASCII	GS	/	m
	Hex	1D	2F	m
	Decimal	29	47	m

[Range]

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

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

[Notes] • This command is ignored if a downloaded bit image has not been defined.
• In standard mode, this command is effective only when there is no data in the print buffer.
• This command has no effect in the print modes (emphasized, underline, character size, or white/black reverse printing), except for upside-down printing mode.
• If the downloaded bit-image to be printed exceeds the printable area, the excess data is not printed
• If the printing area width set by $1D $4C and $1D $57 is less than one line in vertical, the following processing is performed only on the line in question:
1) The printing area width is extended to the right up to one line in vertical. In this case, printing does not exceed the printable area.
2) If the printing area width cannot be extended by one line in vertical, the left margin is reduced to accommodate one line in vertical.

[Reference] $1D $2A

[Example]

$1D $3A	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Start/end macro definition**		
[Format]	ASCII	GS	:
	Hex	1D	3A
	Decimal	29	58

[Description] Starts or ends macro definition.

[Notes] • Macro definition starts when this command is received during normal operation.
• When $1D $5E is received during macro definition, the printer 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 $1B $40 command. Therefore, $1B $40 may be included in the content of macro definitions.
• If the printer receives $1D $3A a second time after previously receiving $1D $3A, the printer remains in macro undefined status.
• The contents of the macro can be defined up to 1024 bytes. If the macro definition exceeds 1024 bytes, excess data is not stored.

[Default]

[Reference] $1D $5E

[Example]

$1D $42

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Turn white/black reverse printing mode on/off**
[Format]	ASCII GS B n
	Hex 1D 42 n
	Decimal 29 66 n
[Range]	0 ≤ n ≤ 255
[Description]	Turns white/black reverse printing mode on or off.
	• When the LSB of *n* is 0, white/black reverse printing is turned off.
	• When the LSB of *n* is 1, white/black reverse printing is turned on.
[Notes]	• Only the LSB di *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, bar code, HRI characters and spacing skipped by $09, $1B $24 and $1B $5C.
	• This command does not affect white space between lines.
	• White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it will be disabled (but not cancelled) when white/black reverse mode is selected.
[Default]	n = 0
[Reference]	
[Example]	

$1D $48

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select printing position of Human Readable Interpretation (HRI) characters**
[Format]	ASCII GS H n
	Hex 1D 48 n
	Decimal 29 72 n
[Range]	0 ≤ n ≤ 3, 48 ≤ n ≤ 51
[Description]	Selects the printing position of HRI characters when printing bar codes. *n* selects the printing positions as follows:

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

[Notes]	HRI characters are printed using the font specified by $1D $66.
[Default]	n = 0
[Reference]	$1D $66, $1D $6B
[Example]	

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$1D $49	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Transmit printer ID**

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

[Range]   1 ≤ n ≤ 3, 49 ≤ n ≤ 51

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

n	PRINTER ID	SPECIFICATION
1, 49	Printer model ID	$9D (KPM300 VeriPrint) $9D (TK300II VeriPrint) $94 (KUBE II VeriPrint) $94 (KUBE-L VeriPrint)
2, 50	Type ID	See table below
3, 51	ROM version ID	Depends on ROM version (4 characters)

n = 2, 50 Type ID

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

[Notes]   • The printer only transmits 1 byte (printer ID) without confirmation that the host is ready to receive data.
• 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]

$1D $4C

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set left margin**				
[Format]	ASCII	GS	L	nL	nH
	Hex	1D	4C	nL	nH
	Decimal	29	76	nL	nH

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

[Description]   Sets the left margin.

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

Printable area

Left margin   Printing area width
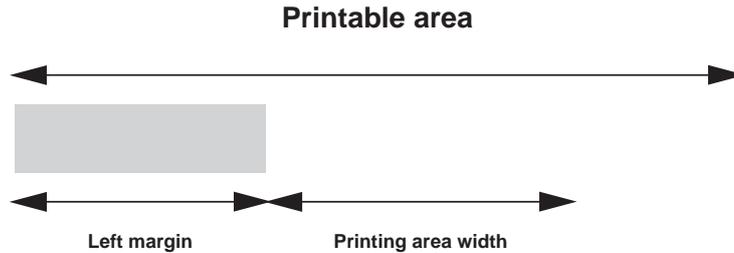
[Notes]
• This command is enabled only if set at the beginning of the line.
• If the setting exceeds the printable area, the maximum value of the printable area is used.
• If the left margin + printing area width is greater than the printable area, the printing area width is set at maximum value.
• The horizontal and vertical motion unit are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
• The $1D $50 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] $1D $50, $1D $57

[Example]

$1D $50

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set horizontal and vertical motion units**				
[Format]	ASCII	GS	P	x	y
	Hex	1D	50	x	y
	Decimal	29	80	x	y

[Range] $0 \leq x, y \leq 255$

[Description]   Sets the horizontal and vertical motion units to $1/x$ inch and $1/y$ inch respectively.
When x is set to 0, the default setting value is used.
When y is set to 0, the default setting value is used.

[Notes]
• 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):
❶   Commands using x : $1B $20, $1B $24, $1B $5C, $1D $4C, $1D $57.
❷   Commands using y : $1B $33, $1B $4A.
• 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] $1B $20, $1B $24, $1B $5C, $1B $33, $1B $4A, $1D $4C, $1D $57

[Example]

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❶ $1D $56, ❷ $1D $56

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Select cut mode**

[Format]

❶	ASCII	GS	V	m	
	Hex	1D	56	m	
	Decimal	29	86	m	
❷	ASCII	GS	V	m	n
	Hex	1D	56	m	n
	Decimal	29	86	m	n

[Range]

❶   m = 0, 48

❷   m = 65, $0 \leq n \leq 255$

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

m	FUNCTION
0, 48	Total cut.
65, 66	Form feed (cut position + [n × vertical motion unit]) and total cut

[Notes]
- This command is only enabled if set at the beginning of the line.
- The horizontal and vertical motion units are specified by $1D $50.

[Default]

[Reference] $1B $69, $1B $6D

[Example]

$1D $57

| Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Set printing area width**

[Format]

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

[Range]

$0 \leq nL, nH \leq 255$

$0 \leq nL + nH \times 256) \leq 832$

[Description]   Sets the printing area width to the area specified by *nL* and *nH*.
- The left margin is set to [(nL + nH × 256) × (horizontal motion unit)] inches.

Printable area

           Left margin   **Printing area width**
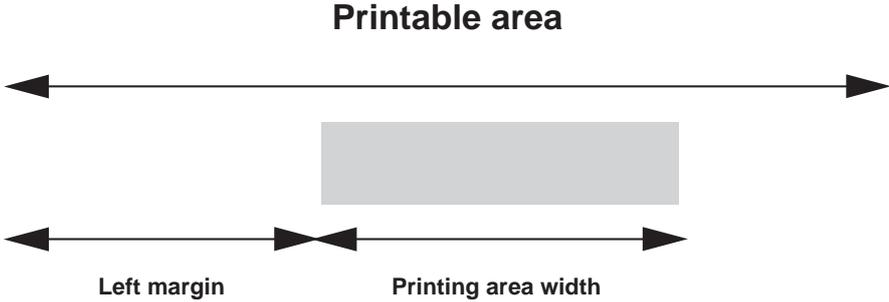
[Notes]
- This command is only enabled if set at the beginning of the line.
- If the right margin is greater than the printable area, the printing area width is set at maximum value.
- If the printing area width = 0, it is set at the maximum value.
- The horizontal and vertical motion units are specified by $1D $50. Changing the horizontal or vertical motion unit does not affect the current left margin.
- The $1D $50 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] $1D $4C, $1D $50
[Example]

$1D $5E

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Execute macro**

[Format]

ASCII	GS	^	r	t	m
Hex	1D	5E	r	t	m
Decimal	29	94	r	t	m

[Range] $0 \le r, t \le 255$
                 $0 \le m \le 1$

[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 × 100 msec. for each macro execution.
                 • m specifies macro executing mode:
                 When the LSB of *m* = 0, the macro is executed r times continuously at the interval speci-
                 fied by *t*.
                 When the LSB of *m* = 1, after waiting for the period specified by *t*, the LED indicator blinks
                 and the printer waits for the FEED button to be pressed. After the button is pressed, the
                 printer executes the macro once. The printer repeats the operation *r* times.

[Notes]   • This command has an interval of (t × 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 0, nothing is executed.
                 • When the macro is executed by pressing the FEED button (*m*=1), the paper cannot be
                 fed using the FEED button.

[Default]
[Reference] $1D $3A
[Example]

$1D $66

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Select font for HRI characters**

[Format]

ASCII	GS	f	n
Hex	1D	66	n
Decimal	29	102	n

[Range]   n = 0, 1, 48, 49
[Description]   Selects a font for the HRI characters used when printing a bar code. *n* selects a font from
                 the following table:

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

[Notes]   HRI characters are printed at the position specified by $1D $48.
[Default]   n = 0
[Reference] $1D $48, $1D $6B
[Example]

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$1D $68

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set bar code height**
[Format]	ASCII GS h n
	Hex 1D 68 n
	Decimal 29 104 n
[Range]	1 ≤ n ≤ 255
[Description]	Sets the height of the bar code. n specifies the number of vertical dots.
[Notes]	
[Default]	n = 162 (20.25 mm)
[Reference]	$1D $6B
[Example]	

❶ $1D $6B, ❷ $1D $6B

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print bar code**	
[Format]	❶	ASCII GS k m NUL
		Hex 1D 6B m 00
		Decimal 29 107 m 0
	❷	ASCII GS k m n
		Hex 1D 6B m n
		Decimal 29 107 m n
[Range]	❶	0 ≤ m ≤ 20
,	❷	65 ≤ m ≤ 90
[Description]	Selects a bar code system and prints the bar code. *m* selects a bar code system as follows:	

	m	BARCODE SYSTEM	No. OF CHARACTERS	REMARKS
❶	0	UPC-A	11≤ k ≤12	48≤ d ≤ 57
	1	UPC-E	11≤ k ≤12	48≤ d ≤ 57
	2	EAN13 (JAN)	12≤ k ≤13	48≤ d ≤ 57
	3	EAN8 (JAN)	7≤ k ≤8	48≤ d ≤ 57
	4	CODE39	1≤ k	48 ≤ d ≤ 57,65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	5	ITF	1≤ k (even number)	48 ≤ d ≤ 57
	6	CODABAR	1≤ k	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	7	CODE93	1≤ k ≤255	1≤ d ≤ 127
	8	CODE128	2≤ k ≤255	1≤ d ≤ 127
	20	CODE32	8≤ k ≤9	48≤ d ≤ 57

	m	BARCODE SYSTEM	No. OF CHARACTERS	REMARKS
❷	65	UPC-A	11≤ n ≤12	48≤ d ≤ 57
	66	UPC-E	11≤ n ≤12	48≤ d ≤ 57
	67	EAN13 (JAN)	12≤ n ≤13	48≤ d ≤ 57
	68	EAN8 (JAN)	7≤ n ≤8	48≤ d ≤ 57
	69	CODE39	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	70	ITF	1≤ n ≤255	48≤ d ≤ 57
	71	CODABAR	1≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d1 ≤ 68, 36, 43, 45, 46, 47, 58
	72	CODE93	1≤ n ≤255	0≤ d ≤ 127
	73	CODE128	2≤ n ≤255	0≤ d ≤ 127
	90	CODE32	8≤ n ≤9	48≤ d ≤ 57

[Notes]   • If d is outside of the specified range, the printer prints the following message: "BAR CODE GENERATOR IS NOT OK!" and processes the data which follows as normal data.
• If the horizontal size exceeds the printing area, the printer only feeds the paper.
• This command feeds as much paper as is required to print the bar code, regardless of the line spacing specified by $1B $32 or $1B $33.
• After printing the bar code, 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.

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

[Notes per ❷]   • If *n* is outside of the specified range, the printer stops command processing and processes the following data as normal data.

When CODE93 is used:
• The printer prints an HRI character (o) as a start character at the beginning of the HRI character string.
• The printer prints an HRI character (o) as a stop character at the end of the HRI character string.
• The printer prints an HRI character (n) as a control character ($00 to $1F and $7F).

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

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

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

TRANSMITTED DATA											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] $1D $48, $1D $66, $1D $68, $1D $77
[Example]   ❶   Example of print the Bar Code 39
                          1D 6B 04 54 45 53 54 00
               ❷   Example of print the Bar Code 39
                          1D 6B 45 04 54 45 53 54

$1D $72

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Transmit status**
[Format]   ASCII   GS   r   n
                Hex   1D   72   n
                Decimal   29   114   n
[Range]   n = 1, 49
[Description]   Transmits the status specified by *n* as follows:

n	FUNCTION
1, 49	Transmits paper sensor status (as for $1B $76).

Paper sensor status (n = 1, 49):

BIT	OFF/ON	HEX	Decimal	FUNCTION
0, 1	Off	00	0	Near paper end sensor: paper present
	On	03	3	Near paper end sensor: paper not present
2,3	Off	00	0	Paper end sensor: paper present
	On	(0C)	(12)	Paper end sensor: paper not present
4	Off	00	0	Not used. Fixed to Off
5	-	-	-	Undefined
6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to Off

[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] $10 $04, $1B $76
[Example]

$1D $76 $30	

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print raster bit image**				
[Format]	ASCII	GS	v	0	m	xL xH yL yH d1...dk
	Hex	1D	76	30	m	xL xH yL yH d1...dk
	Decimal	29	118	48	m	xL xH yL yH d1...dk

[Range] $0 \le m \le 3$, $48 \le m \le 51$
$0 \le xL \le 255$
$0 \le xH \le 255$ ($1 \le xL + xH \times 256 \le 65535$)
$0 \le yL \le 255$
$0 \le yH \le 8$ ($1 \le yL + yH \times 256 \le 2047$)
$0 \le d \le 255$
$k = (xL + xH \times 256) + (yL + yH \times 256)$
(except for $k = 0$)

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

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

• xL, xH selects the number of data bits (xL+xH x 256) in the horizontal direction for the bit image.
• yL, yH selects the number of data bits (yL+yH x 256) in the vertical direction for the bit image.
k indicates no. of the image data. k is an explanation parameter; it is not necessary to be transmitted.
• d indicates the image data.

[Notes]   • In standard mode for receipt paper, this command is effective only when there is no data in the print buffer.
• The data (d) identify as 1 a printer 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,double-strike, upside-down, underline, white/black reverse printing, etc.) for raster bit image.
• This command feed the paper as much as necessary to print the bit image without using spacing set by $1B $32 or $1B $33.
• Do not use this command during a macro executing because this command should not be included in a macro.
• After the printing the printing starting position moves to the beginning of the line.
• The following table shows the relationship between the downloaded bit image and the printed data:

d1	d2	...	dx
dX+1	dX+2	...	dX × 2
:	:	...	:
...	dk-2	dk-1	dk

[Reference]
[Example]

$1D $77

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set bar code width**		
[Format]	ASCII	GS	w	n
	Hex	1D	77	n
	Decimal	29	119	n
[Range]	$1 \leq n \leq 6$
[Description]	Sets the horizontal size of the bar code. *n* specifies the bar code width as follows:

n	MODULE WIDTH (mm)
1	0.125
2	0.25
3	0.375
4	0.5
5	0.625
6	0.75

[Notes]
[Default]   n = 3
[Reference] $1D $6B
[Example]

$1D $7C

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set printing density**		
[Format]	ASCII	GS	{ }	n
	Hex	1D	7C	n
	Decimal	29	124	n
[Range]	$0 \leq n \leq 8$, $48 \leq n \leq 56$
[Description]	Sets printing density. *n* specifies printing density as follows:

n	PRINTING DENSITY
0, 48	- 50%
1, 49	- 37.5%
2, 50	- 25%
3, 51	- 12.5%
4, 52	0%
5, 53	+ 12.5%
6, 54	+ 25%
7, 55	+ 37.5%
8, 56	+ 50%

[Notes]   • Printing density reverts to the default value when the printer is reset or turned off.
[Default]   n = 4
[Reference]
[Example]

$1D $E0

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Enable / disable automatic FULL STATUS back**

[Format]
ASCII	GS	{ }	n
Hex	1D	E0	n
Decimal	29	224	n

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

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

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Disable paper status
	On	01	1	Enable paper status
1	Off	00	0	Disable user status
	On	02	2	Enable user status
2	Off	00	0	Disable Recoverable Error Status
	On	04	4	Enable Recoverable Error Status
3	Off	00	0	Disable Unrecoverable Error Status
	On	08	8	Enable Unrecoverable Error Status
4	Off	00	0	Disable Info1 status
	On	10	16	Enable Info1 status
5	Off	00	0	Disable Info2 status
	On	20	32	Enable Info2 status
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Notes]   • Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:
1° Byte = 0x10 (DLE)
2° Byte = n
Next byte (depends how many bits are active in in)

[Default]

[Reference] $10 $04

[Example]

$1D $E1

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Reading of length paper (cm) available before virtual paper-end**

[Format]
ASCII	GS	{ }
Hex	1D	E1
Decimal	29	225

[Range]

[Description]   Reading of length (cm) paper available before virtual paper-end.
The command return a string pointing out how much paper is available, for example if there are 5.1 m before the paper end, it will be: '510cm'

[Notes]   • The lenght of residual paper reported is just as an indication because tolerances and other factors are not taken into consideration (paper thickness, roll core diameter, roll core thickness). The virtual paper-end limit is set by the command $1D $E6.

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• To set virtual paper-end limit, measure the length of the paper from near paper end to the end of the roll, using several of them.

[Default]
[Reference] $1D $E6
[Example]

$1D $E2

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Reading number of cuts performed from the printer**

[Format]
ASCII	GS	{ }
Hex	1D	E2
Decimal	29	226

[Range]
[Description]   Reading the number of cuts performed from the printer.
[Notes]   The command return a string that points out how many cuts are performed by the printer, for example if there are performed 2376 cuts, it will be: '2376 cuts'
[Default]
[Reference]
[Example]

$1D $E3

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Reading of length (cm) of printed paper**

[Format]
ASCII	GS	{ }
Hex	1D	E3
Decimal	29	227

[Range]
[Description]   Reading of length (cm) of printed paper.
[Notes]   The command return a string pointing out how much paper is printed, for example if the printer has print about 2515,5 m, it will be: '251550cm'
[Default]
[Reference]
[Example]

$1D $E5

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Reading number of power up**

[Format]
ASCII	GS	{ }
Hex	1D	E5
Decimal	29	229

[Range]
[Description]   Reading number of power up of the printer.
[Notes]   The command return a string pointing out the number of turning on of the printer, for example if the printer is turned on 512 times, it will be: '512on'
[Default]
[Reference]
[Example]

$1D $E6

[Name]	**Virtual paper-end limit**				
[Format]	ASCII	GS	{ }	nH	nL
	Hex	1D	E6	nH	nL
	Decimal	29	230	nH	nL
[Range]	$0 \leq nH \leq 255$				
	$0 \leq nL \leq 255$				
[Description]	This command sets the limit after which is pointed out the virtual paper-end.				
[Notes]	• The calculation limit of the near paper-end is in centimetres.				
	• This value is expressed as $[(nH \times 256)+nL]$				
[Default]	nH = 0×00				
	nL = 0×F0				
[Reference]					
[Example]	To see the virtual paper-end is pointed out after 15 metres from the first detection of near paper end, it's necessary convert 15 metres in 1500 centimetres and then, calculate nH and nL value in the following mode:				

nH = 1500 / 256 = 5
nL = 1500 - (nH x 256) = 1500 - (5 x 256) = 220

and then send the following command:

HEX:	$1D	$E6	$05	$DC
DECIMAL:	29	230	5	220

$1D $E7

[Name]	**Set notch distance**				
[Format]	ASCII	GS	{ }	nL	nH
	Hex	1D	E7	nL	nH
	Decimal	29	231	nL	nH
[Range]	$0 \leq nH \leq 255$				
	$0 \leq nL \leq 255$				
[Description]	Sets notch distance in tenth mm from the beginning of the document (see appendix B).				
[Notes]	• This value is expressed as $[(nH \times 256)+nL]$				
	• The maximum value is 99,9 mm.				
[Default]	nH = 0×00				
	nL = 0×00				
[Reference]					
[Example]					

$1D $F0

[Name]	**Set printing speed**				
[Format]	ASCII	GS	{ }	n	
	Hex	1D	F0	n	
	Decimal	29	240	n	
[Range]	$0 \leq n \leq 2$				
[Description]	Sets printing speed. *n* specifies the printing speed as follows:				

n	PRINTING SPEED
0	Alta qualità
1	Normale
2	Alta velocità

[Notes]   • Printing speed reverts to the default value when the printer is reset or turned off.
[Default]   n = 1
[Reference]
[Example]

$1D $F6

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

Name]   **Align the print head with the notch**
[Format]   ASCII   GS   { }
                 Hex   1D   F6
                 Decimal   29   246
[Range]
[Description]   Set the print head notch alignment (as $1D $E7 command setting).
[Notes]
[Default]
[Reference] $1D $E7, $1D $F8
[Example]

$1D $F8

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Align the autocutter with the notch**
[Format]   ASCII   GS   { }
                 Hex   1D   F8
                 Decimal   29   248
[Range]
[Description]   Set the autocutter notch alignment (as $1D $E7 command setting).
[Notes]
[Default]
[Reference] $1D $E7, $1D $F6
[Example]

$1F $46

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Enable/disable scanner**
[Format]   ASCII   US   'F'   n
                 Hex   1F   46   n
                 Decimal   31   70   n
[Range]
[Description]   Enable/disable scanner depending from n:
                 n = 0: Scanner disable
                 n ≠ 0: Scanner enable
[Notes]   If scanner is disable, it doesn't get ticket image during printing
[Default]   n = 0
[Reference]
[Example]

$1F $4D $57

| Printers: | KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint |

[Name]   **Request for paper width stored**

[Format]

	ASCII	US	M	W
	Hex	1F	4D	57
	Decimal	31	77	87

[Range]

[Description]   Return the *LMAR* and *RMAR* values detected and stored after the last AUTOLOAD or the last command $1C $4D $77. The answer is a string as follow:

'W83.98,*LMAR*,*RMAR*mm'

where:
83.98 =   scanner width (fixed)
LMAR =   space between left margin of the paper and left margin of the scanner
RMAR =   space between right margin of the paper and right margin of the scanner

Therefore:
Paper width = 83.98 - (*LMAR*+*RMAR*)

[Notes]   Parameters in mm.
[Default]
[Reference] $1F $4D $77
[Example]

CUSTOM
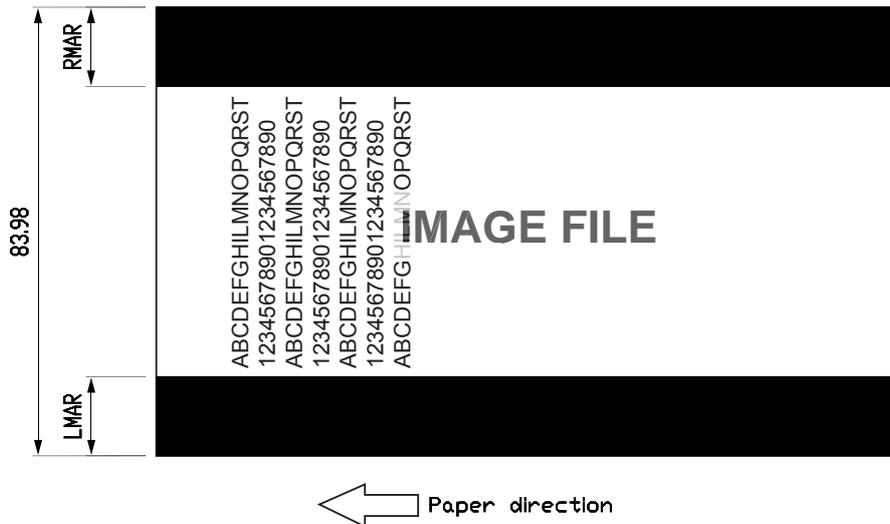
$1F $4D $77

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Request for paper width detection**

[Format]

	ASCII	US	M	w
	Hex	1F	4D	77
	Decimal	31	77	119

[Range]

[Description] Return the *LMAR* and *RMAR* values detected instantaneously. The answer is a string as follow:

'w83.98,*LMAR*,*RMAR*mm'

where:
83.98 = scanner width (fixed)
LMAR = space between left margin of the paper and left margin of the scanner
RMAR = space between right margin of the paper and right margin of the scanner

Therefore:
Paper width = 83.98 - (*LMAR*+*RMAR*)

[Notes] • Parameters in mm.
• If there isn't paper in the printer, the command answer with the *LMAR* and *RMAR* values detected and stored after the last AUTOLOAD or the last command $1F $4D $57.

[Default]

[Reference] $1F $4D $57

[Example]
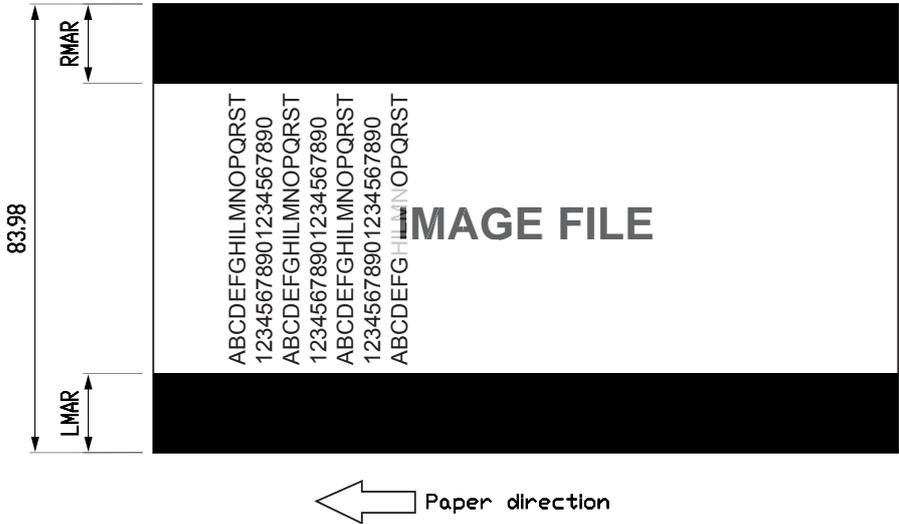
Blank page

3 SVELTA EMULATION

The following table lists all the commands for function management. The commands must be transmitted to the printer as command string enclosed between '<' character and '>' character.

COMMAND DESCRIPTION TABLE

Tab.2

Com. ASCII	Description
PRINT COMMANDS	
<DATE>	Print data
<p>	Printing command (cut and buffer cleaning) in reverse
<P>	Printing command (cut and buffer cleaning) in normal
<PP n, x, y, sp>	Print image in graphic page
<PR n, x, y, sp>	Print rotated image
<q>	Printing command (only buffer cleaning) in reverse
<Q>	Printing command (only buffer cleaning) in normal
<TDF m Data>	Set user-defined date/time formats
<TIME>	Print time
CHARACTERS COMMAND	
<BS height, width>	Define area of the BOX mode
<F n>	Select the font
<HW height, width>	Set height and width of the current font
<NR>	Restore the text horizontal
<RL>	Rotate test 90° counter-clockwise
<RR>	Rotate test 90° clockwise
<RU>	Rotate test 180°
PRINT POSITION COMMANDS	
<LHTlength, width, notch, dimnotch>	Set the ticket dimension to print
<MM n>	Feed the paper of n step
<RC row, column>	Position the cursor
<T>	Get the ticket dimension to print
BIT-IMAGE COMMANDS	
<CB>	Clear data in the print buffer
<BF x1, y1, x2, y2>	Command to create filled BOX
<BV x1, y1, x2, y2>	Command to create empty BOX
<BX x1, y1, x2, y2, s, t>	Command to create parametric BOX
VERIPRINT ® COMMANDS	
<BU x1, y1, x2, Y2>	Re-read/verify printed barcode
<DDEL n>	Delete the disk contents
<DPRT 3, n>	Print images saved in SD/MMC card
<ES n>	Enable / disable image sensor
<PAPw>	Request for paper width detection

|	
<PAPW>	Request for paper width stored
<TB x1,y1,x2,y2>	Create a TEST BOX (ghost) on scanned image (B/W)
<TP x1,y1,x2,y2>	Detect the n. of black dots in an image area scanned (B/W)
STATUS COMMAND	
<AFSB x>	Enable / Disable auto FULL STATUS back
<AFSB yx>	Enable / Disable auto FULL STATUS back
<S n>	Status request
<SB x>	Enable / Disable FULL STATUS back
<SB yx>	Enable / Disable FULL STATUS back
BARCODE COMMANDS	
<b x>	Set the timeout for barcode turn off
<B2D k, C, x>	Set the width of two-dimensional barcode (PDF417)
<B2D k, D, x>	Set the height of two-dimensional barcode (PDF417)
<B2D k, E, m, x>	Set the error correction level (PDF417)
<B2D k, P, x, d1...dn>	Store the two-dimens. barcode in the symbol save area (PDF417)
<B2D l, A, x>	Set the height of DATAMATRIX symbol
<B2D l, B, x>	Set dot size (DATAMATRIX)
<B2D l, C, x>	Set symbol size (DATAMATRIX)
<B2D l, D, x>	Set rotation (DATAMATRIX)
<B2D l, P, x, d1...dn>	Store the two-dim. barcode data in the symbol save area (DATAMATRIX)
<B2D m, A, n>	Specify encoding scheme (AZTEC)
<B2D m, B, n>	Specify dot size (AZTEC)
<B2D m, C, n>	Specify symbol size (AZTEC)
<B2D m, D, n>	Specify error correction level (AZTEC)
<B2D m, P, x, d0...dk>	Store the received data in the symbol save area (AZTEC)
<NFL s>	Print horizontal ITF barcode
<NFP s>	Print a vertical ITF barcode
<NL s>	Print an horizontal code 39 barcode
<NP s>	Print a vertical code 39 barcode
<X n, M>	Define the barcode lines dimension
MISCELLANEOUS COMMANDS	
<bXnn>	Set the scan timeout of the barcode reader
<B>	Return the scan timeout value of the barcode reader
<BC n>	Read a barcode
<BEEP 1, tt>	Emits a beep
<C1ST>	BITS reset of the first ticket (INFO1)
<COM1>	Terminate the communication toward RFID
<COM2>	Select the communication toward RFID
<DT m>	Read date/time through serial port
<EPOS>	Change printer emulation to ESC/ POS
<KEYS x>	Enable/Disable keys panel

CUSTOM

<LOAD>	Reload paper
<SDT m Data>	Set date/time through serial port
<SVEL>	Change printer emulation to SVELTA
TICKET MANAGEMENT COMMANDS	
<BA n>	Change the ticket print intensity
<SP n>	Change speed
LOGOS MANAGEMENT COMMANDS	
<PC HexNumLogo HexXDim HexY-Dim HexTBD Id HexData>	Save the image in flash
<PE n>	Delete image
<PI n>	Get picture header info
<PL>	Get picture header list
<PN>	Get number of stored logo

SVELTA Emulation

Given below are more detailed descriptions of each command.

<AFSB x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Enable / Disable auto FULL STATUS back**
[Format]	ASCII <AFSB x>
[Range]	'0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description]	• Enable/disable auto FULL STATUS back.
	• x specify the request for FULL STATUS. where x identify the bitmask with the following table:

4° byte = Unrecoverable error status
3 °byte = Recoverable error status
2° byte = User status
1° byte = Full status

x		BIT3	BIT2	BIT1	BIT0
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

[Notes]	• Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:

<SB x, *CHR1 ..... CHRn*>

where:

SB	=	fixed characters
x	=	is the bitmask to identify the request.
CHR1..CHRn	=	response bytes referred to the following tables:

1° byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

3° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

4° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Default]
[Reference]
[Example]   To request the Full status (1° byte) and the User status (2°byte) proceed as follow:

see bitmask:
*BIT*3 = 0   *BIT*2 = 0   *BIT*1 = 1   *BIT*0 =1   quindi   0011 = 3

Send the command: <AFSB3>
Possible answer: <SB3,0504>

where:
1°byte

0 = 0000	bit7 = 0 (notch found)	bit6 = 0 (not virtual paper end)	bit5 = 0 (ticket not present)	bit4 =0 (RESERVED)
5 = 0101	bit3 = 0 (RESERVED)	bit2 = 1 (near paper end)	bit1 = 0 (RESERVED)	bit0 =1 (Paper not present)

2°byte

0 = 0000	bit7 = 0 (RESERVED)	bit6 = 0 (FF key released)	bit5 = 0 (LF key released)	bit4 =0 (RESERVED)
4 = 0010	bit3 = 0 (drag motor off)	bit2 = 0 (spooling)	bit1 = 1 (cover closed)	bit0 =0 (print head down)

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<AFSB yx>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Enable / Disable auto FULL STATUS back**
[Format]	ASCII <AFSB yx>
[Range]	'0' ≤ y ≤ '9', 'A' ≤ y ≤ 'F'
	'0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description]	• Enable/disable auto FULL STATUS back.
	• x and y specify the request for FULL STATUS. where x and y identify the bitmask with the following tables:

8° byte = Info 4
7° byte = Info 3
6° byte = Info 2
5° byte = Info 1

y		BIT7	BIT6	BIT5	BIT4
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

4° byte = Unrecoverable error status
3° byte = Recoverable error status
2° byte = User status
1° byte = Full status

x		BIT3	BIT2	BIT1	BIT0
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

SVELTA Emulation

[Notes]

• Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:

<SB yx, *CHR1 ..... CHRn*>

where:

SB	=	fixed characters
x	=	is the bitmask to identify the request.
y	=	is the bitmask to identify the request.
CHR1..CHRn	=	response bytes referred to the following tables:

1° byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

CUST⊘M

3° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

4° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

5° byte = Info1

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	One or more tickets printed after turn ON
	On	01	1	No tickets printed after turn ON
1	Off	00	0	One or more tickets printed after AUTOLOAD
	On	02	2	No tickets printed after AUTOLOAD
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

6° byte = Info2

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	SD/MMC card not present
	On	01	1	SD/MMC card present
1	Off	00	0	Used space in SD/MMC card < 80%
	On	02	2	Used space in SD/MMC card ≥ 80%
2	Off	00	0	SD/MMC card not full
	On	08	8	SD/MMC card full
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

7° byte = Info3

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

8° byte = Info4

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

[Default]
[Reference]
[Example]   To request the Full status (1° byte), the User status (2° byte) and the Info2 (6° byte) proceed as follow:

see bitmask:

BIT7 = 0	*BIT6* = 0	*BIT5* = 1	*BIT4* =0	quindi	0010 = 2
*BIT*3 = 0	*BIT*2 = 0	*BIT*1 = 1	*BIT*0 =1	quindi	0011 = 3

Send the command: <AFSB23>
Possible answer: <SB3,050401>

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where:
1°byte

0 = 0000	bit7 = 0 (notch found)	bit6 = 0 (not virtual paper end)	bit5 = 0 (ticket not present)	bit4 =0 (RESERVED)
5 = 0101	bit3 = 0 (RESERVED)	bit2 = 1 (near paper end)	bit1 = 0 (RESERVED)	bit0 =1 (Paper not present)

2°byte

0 = 0000	bit7 = 0 (RESERVED)	bit6 = 0 (FF key released)	bit5 = 0 (LF key released)	bit4 =0 (RESERVED)
4 = 0100	bit3 = 0 (drag motor off)	bit2 = 1 (spooling)	bit1 = 0 (cover closed)	bit0 =0 (print head down)

6°byte

0 = 0000	bit7 = 0 (RESERVED)	bit6 = 0 (RESERVED)	bit5 = 0 (RESERVED)	bit4 =0 (RESERVED)
1 = 0001	bit3 = 0 (RESERVED)	bit2 = 0 (card not full)	bit1 = 0 (used space < 80%)	bit0 =1 (card present)

<b x>

Printers:	KPM300 VeriPrint, TK300II VeriPrint

[Name]	**Set the timeout for barcode turn off**
[Format]	ASCII <b x>
[Range]	
[Description]	Set the timeout (tenth second) for barcode turn off.
[Notes]	
[Default]	
[Reference]	
[Example]	<b 5> timeout set to 0,5 seconds.

<bXnn>

Printers:	KPM300 VeriPrint *(only for models with BARCODE reader),*
	TK300II VeriPrint *(only for models with BARCODE reader)*

[Name]	**Sets the scan timeout of the barcode reader**
[Format]	ASCII <bXnn>
[Range]	
[Description]	Sets the scan timeout of the barcode reader, using nn parameter value, expressed in tenth of second (10-1 second). If the X parameter value is equal to ASCII character 'e' ($65) the nn value (the scan timeout) is stored in EEProm. Otherwise its value is loaded into RAM so that it's possible to make different tests before save the correct value in EEProm.
[Notes]	
[Default]	X = 3
[Reference]	
[Example]	

<B>

Printers:	KPM300 VeriPrint *(only for models with BARCODE reader),*
	TK300II VeriPrint *(only for models with BARCODE reader)*

[Name]	**Return the scan timeout value of the barocde reader**
[Format]	ASCII <B>
[Range]	
[Description]	Returns the scan timeout value of the barcode reader.
[Notes]	
[Default]	
[Reference]	
[Example]	

<B2D k, C, x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set the width of a module of two-dimensional barcode**
[Format]	ASCII <B2D k, C, x>
[Range]	$2 \leq x \leq 8$
[Description]	Set the width of a module of PDF417 symbol.
[Notes]	
[Default]	x = 3
[Reference]	
[Example]	

<B2D k, D, x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set the height of two-dimensional barcode**
[Format]	ASCII <B2D k, D, x>
[Range]	$2 \leq x \leq 8$
[Description]	Set the height of PDF417 symbol.
[Notes]	
[Default]	x = 3
[Reference]	
[Example]	

<B2D k, E, m, x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set the error correction level**
[Format]	ASCII <B2D k, E, m, x>
[Range]	m = 0, 1
	m = 0 $0 \leq x \leq 8$
	m = 1 $1 \leq x \leq 40$
[Description]	Set the error correction level of PDF417.
	• The error correction level is specified by "level" when m = 0.
	• The error correction level is specified by "ratio" when m = 1 [x × 10%].

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

x	FUNCTION	N. OF ERROR CORRECTION CODE WORD
0	Error correction level 0	2
1	Error correction level 1	4
2	Error correction level 2	8
3	Error correction level 3	16
4	Error correction level 4	32
5	Error correction level 5	64
6	Error correction level 6	128
7	Error correction level 7	256
8	Error correction level 8	512

- Error correction level specified by "ratio" (m = 1) is as follows. The error correction level is defined by the calculated value [number of data code word × x × 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 or more	Error correction level 8	512

- The error correction code word calculated by modulus 929.

[Default]   m = 1, x = 1 [ratio: 10%]
[Reference]
[Example]

<B2D k, P, x, d1...dn>

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Store the two-dimensional barcode data in the symbol save area**
[Format]   ASCII   <B2D k, P, x, d1...dn>
[Range]
[Description] Store the PDF417 symbol data (d1...dn) in the symbol save area.
- x = number of characters (= dn)
- d1...dn = barcode data

[Notes]
- n bytes of d1...dn are processed as symbol data.
- Specify only the data code word of the symbol with this function. Be sure not to include the control data in the data d1...dn because they are added automatically by the printer.

[Default]
[Reference]
[Example]

<B2D I, A, x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Specify the encoding scheme of DATAMATRIX symbol**
[Format]   ASCII   <B2D I, A, x>
[Range]   0 ≤ x ≤ 6
[Description]   Set the encoding scheme specified by x as follows:

x	ENCODING SCHEME
0	Ascii
1	C40
2	Text
3	X12
4	Edifact
5	Base256
6	AutoBest

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

<B2D I, B, x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Set dot size (DATAMATRIX)**
[Format]   ASCII   <B2D I, B, x>
[Range]   2 ≤ x ≤ 24
[Description]   Set dot size.
                x = dot dimension.
[Notes]
[Default]   x = 6
[Reference]
[Example]

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<B2D I, C, x>

Printers: KPM300 VeriPrint,   KUBE II VeriPrint,   KUBE-L VeriPrint,   TK300II VeriPrint

[Name]   **Set symbol size (DATAMATRIX)**
[Format]   ASCII   <B2D I, C, x>
[Range] $1 \le x \le 29$
[Description]   Set the symbol size specified by x as follows:

x	SYMBOL SIZE	x	SYMBOL SIZE	x	SYMBOL SIZE
1	10 x 10	11	36 x 36	21	104 x 104
2	12 x 12	12	40 x 40	22	120 x 120
3	14 x 14	13	44 x 44	23	132 x 132
4	16 x 16	14	48 x 48	24	144 x 144
5	18 x 18	15	52 x 52	25	8 x 18
6	20 x 20	16	64 x 64	26	8 x 32
7	22 x 22	17	72 x 72	27	12 x 26
9	24 x 24	18	80 x 80	28	12 x 36
8	26 x 26	19	88 x 88	29	16 x 36
10	32 x 32	20	96 x 96		

[Notes]
[Default]   DmtxSymbolSquareAuto
[Reference]
[Example]

<B2D I, D, x>

Printers: KPM300 VeriPrint,   KUBE II VeriPrint,   KUBE-L VeriPrint,   TK300II VeriPrint

[Name]   **Set rotation (DATAMATRIX)**
[Format]   ASCII   <B2D I, D, x>
[Range]   x = 0, 1
[Description]   Set rotation by x as follows:

n	ROTATION
0	No rotation
1	Rotation

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

<B2D I, P, x, d1...dn>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Store the two-dimensional barcode data in the symbol save area (DATAMATRIX)**
[Format]	ASCII <B2D I, P, x, d1...dn>
[Range]	
[Description]	Store the DATAMATRIX symbol data (d1...dn) in the symbol save area.
	• x = number of characters (= dn)
	• d1...dn = barcode data
[Notes]	• n bytes of d1...dn are processed as symbol data.
	• Specify only the data code word of the symbol with this function. Be sure not to include the control data in the data d1...dn because they are added automatically by the printer.
[Default]	
[Reference]	
[Example]	

<B2D m, A, n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify encoding scheme of AZTEC symbol**
[Format]	ASCII <B2D m, A, n>
[Range]	$0 \le n \le 1$
[Description]	Specifies encoding type of AZTEC barcode.

n	ENCODING SCHEME
0	FULL AZTEC
1	AZTEC RUNE

[Notes]	• Full Aztec: Encode all extended ASCII characters data up to a maximum lenght of approximately 3823 numeric or 3067 alphabetic characters or 1914 bytes of data.
	• Aztec Rune (Compact Aztec Code, sometimes called Small Aztec Code): Encode all numbers from 0 to 9 up to a maximum lenght of 3 numbers.
[Default]	n = 0
[Reference]	
[Example]	

<B2D m, B, n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Specify dot size of AZTEC symbol**
[Format]	ASCII <B2D, m, B, n>
[Range]	$2 \le n \le 24$
[Description]	Specifies numbers of dot for each pixel of AZTEC symbol.
[Notes]	
[Default]	n = 0
[Reference]	
[Example]	

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<B2D m, C, n>

Printers: KPM300 VeriPrint,   KUBE II VeriPrint,   KUBE-L VeriPrint,   TK300II VeriPrint

[Name]   **Specify AZTEC symbol size**
[Format]   ASCII   <B2D m, C, n>
[Range]   0 ≤ n ≤ 36
[Description]   Specifies AZTEC barcode format (rows and columns), as follows:

n	FORMAT	n	FORMAT	n	FORMAT
0	AUTO	13	C53X53	26	C109X109
1	C15X15 Compact	14	C57X57	27	C113X113
2	C19X19 Compact	15	C61X61	28	C117X117
3	C23X23 Compact	16	C67X67	29	C121X121
4	C27X27 Compact	17	C71X71	30	C125X125
5	C19X19	18	C75X75	31	C131X131
6	C23X23	19	C79X79	32	C135X135
7	C27X27	20	C83X83	33	C139X139
8	C31X31	21	C87X87	34	C143X143
9	C37X37	22	C91X91	35	C147X147
10	C41X41	23	C95X95	36	C151X151
11	C45X45	24	C101X101		
12	C49X49	25	C105X105		

[Notes]
[Default]   n = 0
[Reference]
[Example]

<B2D m, D, n>

Printers: KPM300 VeriPrint,   KUBE II VeriPrint,   KUBE-L VeriPrint,   TK300II VeriPrint

[Name]   **Specify the error correction level (AZTEC)**
[Format]   ASCII   <B2D m, D, n>
[Range]   0 ≤ n ≤ 4
[Description]   Specifies the ECC level (Error Correction Capacity) of AZTEC symbol.

n	ECC level
0	AUTO
1	> 10 % + 3 codewords
2	> 23 % + 3 codewords
3	> 36 % + 3 codewords
4	> 50 % + 3 codewords

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

[Notes]
[Default]   n = 0
[Reference]
[Example]

<B2D m, P, n, d0...dk>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Store and prints the AZTEC symbol data in the symbol save area**
[Format]	ASCII <B2D m, P, n, d0...dk> <P>
[Range]	n = n bytes of data
[Description]	Store the PDF417 symbol data (d1...dk) in the symbol save area.
	• k bytes of d1...dk are processed as symbol data.
	• Specify only the data code word of the symbol with this function.
[Notes]	
[Default]	
[Reference]	
[Example]	

<BA> n

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Change the ticket print intensity**
[Format]	ASCII <BA n>
[Range]	
[Description]	Changes the ticket print intensity where n indicates the print mode. The possible values of n are as follows :

n	PRINT MODE
0	Black/white printing at 100% of maximum intensity
8	Black/white printing at 50% of maximum intensity
16	Black/white printing at 25% of maximum intensity
24	Black/white printing at 12% of maximum intensity
32	Black/white printing at 7% of maximum intensity
40	Black/white printing at 5% of maximum intensity

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

<BC n>

Printers:	KPM300 VeriPrint *(only for models with BARCODE reader)*,
	TK300II VeriPrint *(only for models with BARCODE reader)*

[Name]	**Read a BarCode**
[Format]	ASCII <BC n>
[Range]	n = 0, 1, A, C, T, S

[Description]	• <u>With n = 0 the scan command is sent and the returned string is:</u>

<BC0 ↵ x barcode ↵ >

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where
- ↵ corresponds to CR character ($0D).
- x indicate the reading result ; the x value can be :
    '!' : the barcode is read
    '#': the barcode is not correctly read
- barcode is the barcode's characters read

• With n = 1 the returned string is :
<BC1 ↵ x barcode ↵ >
where barcode is the last barcode read through the printing commands '<p>', '<P>', '<q>', '<Q>'.

• With n = A returns the last barcodes read up to ten as maximum;the returned string is:

<BCA ↵
x barcode1 ↵
x barcode2 ↵
...
x barcode n ↵
>

where
- ↵ corresponds to CR character ($0D).
- x indicate the reading result ; the x value can be :↵
    '!' : the barcode is read
    '#': the barcode is not correctly read
- barcode is the barcode's characters read

• With n = C the returned string is:

<BCC ↵ x barcode ↵ >

where
- ↵ corresponds to CR character ($0D).
- x indicate the reading result; the x value can be :
    '!' : the barcode is read
    '#': the barcode is not correctly read
- barcode is the barcode's characters read

• With n = S returns the barcode reader status; the returned string is:

<BCS x>

where
- x indicate the barcode reader status; the x value can be:
    '!' : the barcode reader is on
    '#': the barcode reader is off

• With n = T enable/disable barcode reader to reading

[Notes]   • The barcode read through the printing commands '<p>', '<P>', '<q>', '<Q>'.
[Default]
[Reference]
[Example]

<BEEP 1, tt>

| Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Emits a beeb**
[Format]	ASCII <BEEP1, tt>
[Range]	
[Description]	When this command is received, the printer emits a beeb as acoustic signalling. tt is the beep time in milliseconds.
[Notes]	
[Default]	
[Reference]	
[Example]	

<BF x1 y1, x2, y2>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Command to create filled Box**
[Format]	ASCII <BF x1,y1,x2,y2>
[Range]	
[Description]	Create a filled box on the basis of x1, y1, x2, y2 coordinates where : x1 -> minimum horizontal coordinate y1 -> minimum vertical coordinate x2 -> maximum horizontal coordinate y2 -> maximum vertical coordinate
[Notes]	• If the coordinates are reversed, the printer automatically turns the points to create in any case the box. • If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point. • If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
[Default]	
[Reference]	
[Example]	Ticket example that use a filled box <CB><BA8> <BF800,50,1000,250> <q>
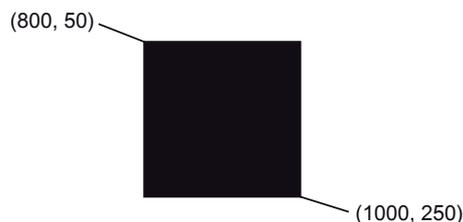
(800, 50)

(1000, 250)

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\<BS height, width>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Define area for the box mode**
[Format]	ASCII \<BS height, width>
[Range]	
[Description]	Defines the area where position a character. If the box dimensions are bigger than the font, then the empty spaces are filled with white spaces, whereas if the box dimensions are smaller than the font, then the font is cutted.
[Notes]	• To disable the Box Size set height and width parameters to 0 (\<BS0,0>).
[Default]	
[Reference]	
[Example]	

\<BU x1, y1, x2, y2>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Re-read/verify printed barcode**
[Format]	ASCII \<BU x1, y1, x2, Y2>
[Range]	

[Description]

• Detect a barcode inside an area defined with x1, y1, x2, y2 coordinates (in pixel), where:

x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate

The command answer as follow:

\<BU ↵ x barcode ↵ >

where
- ↵ corresponds to CR character ($0D).
- x indicate the reading result ; the x value can be :
    '!' : the barcode is read
    '#': the barcode is not correctly read
- barcode is the barcode's characters read

[Notes]

• Barcode = CODE39 type accepted.
• For the barcode orientation refer to the image.
• If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by \<LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
• The number of dots detected is dependent on the resolution set in *scanner.cfg* file.

[Default]	
[Reference]	\<TB x1, y1, x2, y2>

[Example]   Command sent: <BU80,50,120,200>

Paper direction

<BV x1, y1, x2, y2>

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Command to create empty Box**
[Format]   ASCII   <BF x1,y1,x2,y2>
[Range]
[Description]   Create an empty box on the basis of x1, y1, x2, y2 coordinates where :
                  x1 -> minimum horizontal coordinate
                  y1 -> minimum vertical coordinate
                  x2 -> maximum horizontal coordinate
                  y2 -> maximum vertical coordinate
[Notes]   • The box border is fixed to 1mm (8 dots)
                  • If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
                  • If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
                  • If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
[Default]
[Reference]
[Example]   Ticket example that use an empty box
                  <CB><BA8>
                  <BV600,50,800,250>
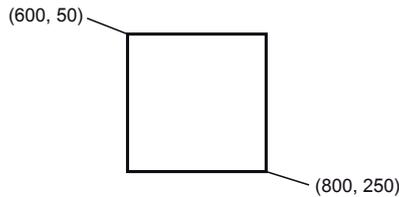
(600, 50)

(800, 250)

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<BX x1, y1, x2, y2, s, t>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Command to create parametric Box**
[Format]	ASCII <BX x1,y1,x2,y2, s, t >
[Range]	
[Description]	Create a box defined by the following parameters where :

x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate
s -> border thickness in dot   (8 dot = 1mm)s ≤ 255
t -> Fill mode   0 ≤ t ≤ 9

t	FILL MODE
0	Deletes area
1	Fills area
2..8	Fills area with specific pattern
9	The area leaves unchanged (only for rectangle border)

[Notes]
• If t > 9 the fill mode is set to 9
• If the coordinates are reversed, the printer automatically turns the points to create in any case the box.
• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
• If the defined thickness is greater than the half of box width, then the thickness is set to the half of box width to print (filled box).

[Default]
[Reference]
[Example]

Command sequence to generate a demo ticket with differents kinds of box
<CB><BA8><BS0,0>
<NR>
<BX200,100,300,200,16,0><RC120,220><F3><HW1,1>0
<BX300,100,400,200,16,1><RC120,320><F3><HW1,1>1
<BX400,100,500,200,16,2><RC120,420><F3><HW1,1>2
<BX500,100,600,200,16,3><RC120,520><F3><HW1,1>3
<BX600,100,700,200,16,4><RC120,620><F3><HW1,1>4
<BX200,200,300,300,16,5><RC220,220><F3><HW1,1>5
<BX300,200,400,300,16,6><RC220,320><F3><HW1,1>6
<BX400,200,500,300,16,7><RC220,420><F3><HW1,1>7
<BX500,200,600,300,16,8><RC220,520><F3><HW1,1>8
<BX600,200,700,300,16,9><RC220,620><F3><HW1,1>9
<q>
Example of what will be printed on ticket
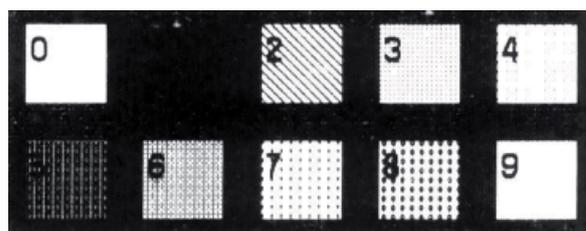
\<C1ST\>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**BITS reset of the first ticket (INFO1)**
[Format]	ASCII \<C1ST\>
[Range]	
[Description]	Perform a reset (BIT0 and BIT1) of INFO1 byte (FULLSTATUS)
[Notes]	
[Default]	
[Reference]	\<AFSB yx\>
[Example]	

\<CB\>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Clear data in the print buffer**
[Format]	ASCII \<CB\>
[Range]	
[Description]	Clear data in the print buffer, move the cursor to column 0, row 0, resets the text rotation, set the deault font as current and disables the Box Size function during the character writing.
[Notes]	
[Default]	
[Reference]	
[Example]	

\<COM1\>

Printers:	KPM300 VeriPrint *(only for models with RFID board,*
	TK300II VeriPrint *(only for models with RFID board)*

[Name]	**Terminate the communication toward RFID module**
[Format]	ASCII \<COM1\>
[Range]	
[Description]	Terminates the communication toward RFID module.
[Notes]	
[Default]	
[Reference]	
[Example]	

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<COM2>

Printers:	KPM300 VeriPrint	*(only for models with RFID board),*
	TK300II VeriPrint	*(only for models with RFID board)*

[Name]	**Select the communication toward RFID module**
[Format]	ASCII <COM2>
[Range]	
[Description]	Set the communication toward RFID module.
[Notes]	
[Default]	
[Reference]	
[Example]	

<DATE>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print date**
[Format]	ASCII <DATE>
[Range]	
[Description]	Prints date in the format specified by the command '<TDF>'.
[Notes]	
[Default]	"dd/mm/yy"
[Reference]	<TIME>
[Example]	

<DDEL n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Delete the disk contents**
[Format]	ASCII <DDELn>
[Range]	'2' ≤ n ≤ '4'
[Description]	Delete the contents of a disk identified with n:
	n = '2' identify the FLASH DRV disk
	n = '3' identify the SD/MMC CARD disk
	n = '4' identify the LAST SCAN disk
[Notes]	If the sent command is valid and the contents has been correctly deleted, the printer transmits the ACK ($06), otherwise return NACK ($015).
[Default]	
[Reference]	
[Example]	

<DPRT 3, n>

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Print images saved in SD/MMC card**
[Format]   ASCII   <DPRT 3, n>
[Range]   n = 0, 1
[Description]   Print images saved in SD/MMC card as follow:
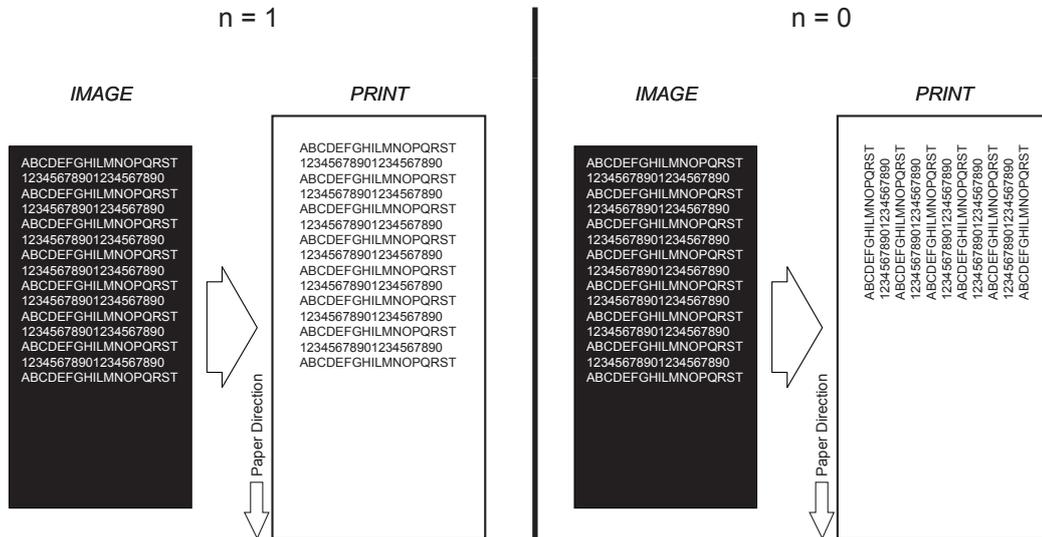
[Notes]   • The image is cropped if exceed the paper width.
                • Command valid only for B/W BMP images.

[Default]
[Reference]
[Example]

<DT m>

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Read date/time through serial port**
[Format]   ASCII   <DT m>
[Range]
[Description]   Read date/time of the real time clock and send it through serial port, in the format specified by m values as follows :

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

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

The printer's answer will be :

<DT ↵ x data↵ >

where

- ↵ corresponds to CR character ($0D).
- x indicate the reading result ; the x value can be :
    - '!' : the command is executed successfully
    - '#': the command is not executed successfully
- data are the ASCII characters that represent the date/time.

[Notes]
[Default]
[Reference]
[Example]   To read date/time in the "DDMMYYhhmmss" format, transmit: <DT 1>

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

<DT ↵ ! 151006105620 ↵ > if the transmission is successfully, otherwise

<DT ↵ # ↵ > if the transmission is not successful

<EPOS>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Change printer emulation to ESC/ POS**
[Format]   ASCII   <EPOS>
[Range]
[Description]   Set the ESC/ POS emulation.
[Notes]
[Default]
[Reference]
[Example]

<ES n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Enable / disable image sensor**
[Format]   ASCII   <ES n>
[Range]   n = '0', '1'
[Description]   Enable / disable the image sensor functioning with n, where:

n = '0'   Disable image sensor
n = '1'   Enable image sensor

[Notes]
[Default]   n = '1'
[Reference]
[Example]

<F n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Select the font**
[Format]	ASCII <F n>
[Range]	
[Description]	Selects the current font where n indicates the font to use.
[Notes]	
[Default]	
[Reference]	
[Example]	

<HW height, width>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set height and width of the current font**
[Format]	ASCII <HW height, widht>
[Range]	
[Description]	Modifies the height and width of the current font where height and width are the multiplier coefficients of heigth and width of how enlarge the font.Both values can be:

1:	Font dimension ×1
2:	Font dimension ×2
3:	Font dimension ×3
4:	Font dimension ×4
5:	Font dimension ×5
6:	Font dimension ×6
7:	Font dimension ×7
8:	Font dimension ×8

[Notes]	The command is ignored if height or width has different value from that reported above.
[Default]	
[Reference]	
[Example]	

<KEYS x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Enable/Disable keys panel**
[Format]	ASCII <KEYS x>
[Range]	x = 0, 1
[Description]	Enables / disables the keys panel. • When x = 0, the keys panel is enabled. • When x = 1, the keys panel is disabled.
[Notes]	• When the keys panel is disabled, the keys may only be used after the printer has been reset.
[Default]	n = 0
[Reference]	
[Example]	

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<LHT length, height, notch, dimnotch>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name] **Set ticket dimension to print**
[Format]   ASCII   <LHT *length, height, notch, dimnotch*>
[Range]
[Description] Sets the ticket dimension to print in the following mode:
lenght is the ticket length (in dot);
height is the ticket height (in dot);
notch is the distance (in dot) between the ticket upper edge and strobe backside preprinted black mark;
dimnotch is the notch dimension (in dot).

[Notes]   • If using the point (.) character as decimal separator instead of commas then the passed value are stored in EEProm.
• 1mm = 8 dot.

[Default]
[Reference]
[Example]

<LOAD>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Reload paper**
[Format]   ASCII   <LOAD>
[Range]
[Description] When this command is received, the printer performs a paper reloading.
[Notes]   During the execution of the command, the printer indicates the paper end
[Default]
[Reference]
[Example]

<MM n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Feed the paper of n step**
[Format]   ASCII   <MM n>
[Range]
[Description] When this command is received, the paper feed of n STEP.
[Notes]   1 STEP = 0,125 mm (1/8 mm)
[Default]
[Reference]
[Example]

<NFL s>Data

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print horizontal ITF barbode**
[Format]	ASCII <NFL s>Data
[Range]	
[Description]	Print an ITF barcode type in horizontal. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]	
[Default]	
[Reference]	
[Example]	

<NFP s>Data

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print vertical ITF barcode**
[Format]	ASCII <NFP s>Data
[Range]	
[Description]	Print an ITF barcode type in vertical. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]	
[Default]	
[Reference]	
[Example]	

<NL s>Data

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print an horizontal CODE 39 barcode**
[Format]	ASCII <NL s>Data
[Range]	
[Description]	Print a CODE 39 barcode type in horizontal. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]	
[Default]	
[Reference]	
[Example]	

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\<NP s>Data

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print a vertical CODE 39 barcode**
[Format]	ASCII \<NP s>Data
[Range]	
[Description]	Print a CODE 39 barcode type in vertical. The s parameter indicates the barcode height in millimetres. The Data parameter contains the data to convert, with start and stop characters of barcode.
[Notes]	
[Default]	
[Reference]	
[Example]	

\<NR>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Restore the text in horizontal**
[Format]	ASCII \<NR>
[Range]	
[Description]	Restore the text in horizontal, without rotation.
[Notes]	
[Default]	
[Reference]	
[Example]	

\<p>

Printers:	KPM300 VeriPrint, TK300II VeriPrint

[Name]	**Printing command (cut and buffer cleaning) in reverse**
[Format]	ASCII \<p>
[Range]	
[Description]	This command executes the following operations :

- align the ticket to notch;
- barcode reader turn ON (only for models with BARCODE reader);
- prints ticket;
- clear the data in the print buffer;
- align the ticket to cut;
- executes a ticket cut.

[Notes]	• Print ticket in reverse

• After printing, the data of the barcode read and the reading result, are stored in a circular buffer.
• To read the barcode acquired during printing, use the '\<BC1>' or '\<BCA>' commands.

[Default]	
[Reference]	\<CB>
[Example]	

<P>

Printers:	KPM300 VeriPrint, TK300II VeriPrint,

[Name]	**Printing command (cut and buffer cleaning) in normal**
[Format]	ASCII <P>
[Range]	
[Description]	This command executes the following operations :
	- align the ticket to notch;
	- barcode reader turn ON (only for models with BARCODE reader);
	- prints ticket;
	- clear the data in the print buffer;
	- align the ticket to cut;
	- executes a ticket cut.
[Notes]	• Print ticket in normal
	• After printing, the data of the barcode read and the reading result, are stored in a circular buffer.
	• To read the barcode acquired during printing, use the '<BC1>' or '<BCA>' commands.
[Default]	
[Reference]	<CB>
[Example]	

<PAPw>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Request for paper width detection**
[Format]	ASCII <PAPw>
[Range]	
[Description]	Return the *LMAR* and *RMAR* values detected instantaneously. The answer is a string as follow:
	'<PAPw83.98,*LMAR*,*RMAR*>'
	where:
	83.98 = scanner width (fixed)
	LMAR = space between left margin of the paper and left margin of the scanner
	RMAR = space between right margin of the paper and right margin of the scanner
	Therefore:
	Paper width = 83.98 - (*LMAR*+*RMAR*)
[Notes]	• Parameters in mm.
	• If there isn't paper in the printer, the command answer with the *LMAR* and *RMAR* values detected and stored after the last AUTOLOAD or the last command <PAPW>.
[Default]	
[Reference]	<PAPW>
[Example]	
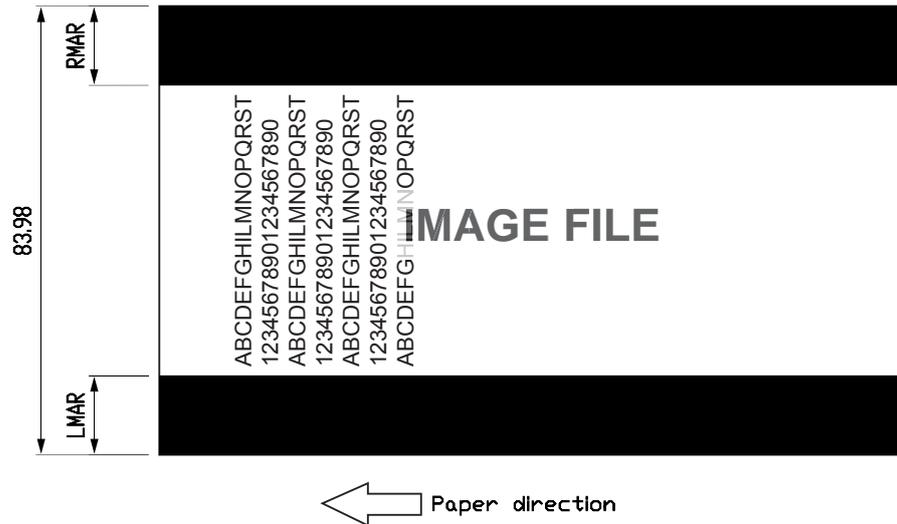
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Paper direction

<PAPW>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Request for paper width stored**
[Format]	ASCII <PAPW>
[Range]	
[Description]	Return the *LMAR* and *RMAR* values detected and stored after the last AUTOLOAD or the last command <PAPW>. The answer is a string as follow:
	'<PAPW83.98,*LMAR*,*RMAR*>'
	where:
	83.98 = scanner width (fixed)
	LMAR = space between left margin of the paper and left margin of the scanner
	RMAR = space between right margin of the paper and right margin of the scanner
	Therefore:
	Paper width = 83.98 - (*LMAR*+*RMAR*)
[Notes]	Parameters in mm.
[Default]	
[Reference]	<PAPw>
[Example]	

Paper direction

\<PCHexNumLogo HexXDim HexYDim HexTBD Id Hexdata\>
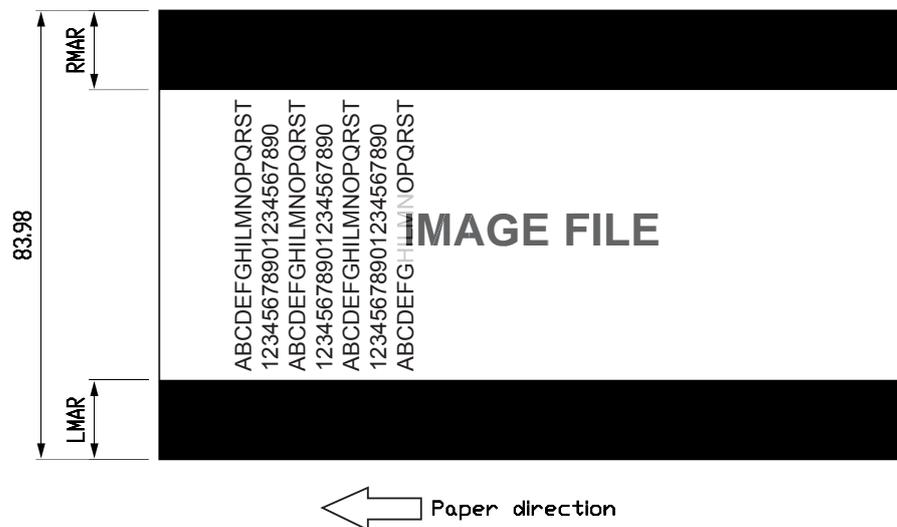
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Save the image received from serial port into flash**
[Format]	ASCII \<PCHexNumLogo HexXDim HexYDim HexTBD Id Hexdata\>
[Range]	
[Description]	Save the image received from serial port into printer flash; if the number used to store logo is not already present inside the printer, the new logo is appended to stored logos, otherwise the image is overwritten and moved in the last position of flash.

- *HexNumLogo*   indicates the number of logo, 2 bytes expressed in hexadecimal notation;
- *HexXDim*   indicates the logo horizontal dimension in pixe, 2 bytes expressed in hexadecimal notation; the value must be multiple of 16;
- *HexYDim*   indicates the logo vertical dimension in pixel, 2 bytes expressed in hexadecimal notation;
- *HexTBD*   2 bytes fixed to $00 (RESERVED);
- *Id*   indicates the file-name of the logo, a sequence of 16 bytes that identify univocally the logo;
- *Hexdata*   are the image data.

The printer returns a sequence of bytes as follows :

\<PC0\>   if the saving include an incorrect syntax or the available memory in flash for logos is finished (128Kbyte);

\<PC1n\>   if the syntax command is correct and there's enough memory in flash for saving logos; n returns the status of the flash programming :

$88 ->   Sector not erased
$77 ->   Error during programming
$AA ->   Programming done.

[Notes]	• If file-name length is shorter than 16 byte, add a terminator (0) and make padding to 16 characters.
	• If file-name extension is absent, it is automatically added to the name.
[Default]	
[Reference]	

[Example]	The following example shows the bytes sequence received from serial port to store a logo into the printer flash :

```
Offset          Hexadecimal                                          ASCII
00000000: 1C 94 00-08 01 C0 02-49 00 00 4C-6F 67 6F 32 36          °°°´+ˆlLogo-26
00000010: 2E 42 4D50 00 00 00-00 00 00 00-00 00 00 00 00          .BMP
00000020: 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00 00
....
....                                                               Image data
....
00008000: 00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00
00008010: 00 00 3E
>
```

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

HEX	$3C	$50	$43	$31	$AA	$3E
ASCII	<	P	C	1	{}	>

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<PE n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Delete image**
[Format]	ASCII <PE n>
[Range]	
[Description]	Deletes image defined by n.
	The printer returns a sequence of bytes as follows :
	<PE0> Image n not found;
	<PE1n> Image found; n returns to the flash programming status
	$88 -> Sector not erased
	$77 -> Error during erasing operation
	$AA -> Erasing done.
[Notes]	
[Default]	
[Reference]	
[Example]	

<PIn>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Get pictures header info**
[Format]	ASCII <PIn>
[Range]	
[Description]	Gets the logo header info stored specified by n (express in ASCII). The printer returns a bytes sequence as follows :
	<PI*e[ID]*> where
	• *e* indicates the search result
	e = 0 picture not found
	e = 1 picture found
	• *[ID]* indicates the file-name that identify the logo, a sequence of 16 bytes that was defined when the logo is stored. This field is optional because it's returned only if the logo has been found.
[Notes]	
[Default]	
[Reference]	
[Example]	

<PL>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Get pictures header list**
[Format]	ASCII <PL>
[Range]	
[Description]	This command requests to the printer the list of stored logo. The printer returns a bytes sequence as follows :
	<PL *CrLf [N-ID CrLf]*> where
	• *CrLf* indicates the two characters $0D (Carriage return) and $0A (Line Feed);
	• *N* is the number of stored logo;
	• *[ID]* indicates the file-name that identify the logo, a sequence of 16 bytes that was defined when the logo is stored. This field is optional because it's returned only if the logo has been found.
[Notes]	• The fields enclosed in square bracket are repeated for all number of stored images.
[Default]	
[Reference]	
[Example]	

<PN>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Get number of stored logo**
[Format]	ASCII <PN>
[Range]	
[Description]	This command sends to the printer the request of number of stored logo; the printer returns a bytes sequence as follows : <PN*n*> where *n* (in ASCII format) indicates the number of stored images.
[Notes]	
[Default]	
[Reference]	
[Example]	If in the flash memory are stored 10 logos send this command

HEX	$1C	$90
ASCII	FS	{}

The printer's answer will be :

HEX	$3C	$50	$4E	$31	$30	$3E
ASCII	<	P	N	1	0	>

<PP n, x, y, sp>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print image in graphic page**
[Format]	ASCII <PP n, x, y, sp>
[Range]	
[Description]	Prints image in graphic page where • *n* is the number of image to print; • *x* indicates the horizontal position inside the graphic page • *y* indicates the vertical position inside the graphic page • *sp* indicates the thickness value of the image border (express in dot).
[Notes]	• if *n* is a negative number the image is printed as a background image, without deleting the area below.
[Default]	
[Reference]	
[Example]	Several printing commands in graphic page; in the first printing command the image no. 2 is printed with border, instead the other images are printed without border:

<CB><n><BA8><HW1,1><BS0,0>
<PP2,10,10,8>   *(image printed with border)*
<PP1,10,200,0>   *(image printed without border)*
<PP3,210,200,0>   *(image printed without border)*
<PP4,620,200,0>   *(image printed without border)*
<q>

<PR n, x, y, sp>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Print rotated image**
[Format]	ASCII <PR n, x, y, sp>
[Range]	
[Description]	Prints rotated image in graphic page where

- *n*   is the number of image to print;
- *x*   indicates the horizontal position inside the graphic page
- *y*   indicates the vertical position inside the graphic page
- *sp*   indicates the thickness value of the image border (express in dot).

[Notes]	• if *n* is a negative number the image is printed as a background image, without deleting the area below.
[Default]	
[Reference]	
[Example]	Several printing commands in graphic page; in the first printing command the image no. 2 is printed with border, instead the other images are printed without border:

<CB><n><BA8><HW1,1><BS0,0>
<PR2,10,10,8>   *(image printed with border)*
<PR1,10,200,0>   *(image printed without border)*
<PR3,210,200,0>   *(image printed without border)*
<PR4,620,200,0>   *(image printed without border)*
<q>

<q>

Printers:	KPM300 VeriPrint, TK300II VeriPrint

[Name]	**Printing command (only buffer cleaning) in reverse**
[Format]	ASCII <q>
[Range]	
[Description]	This command executes the following operations :

- align the ticket to notch;
- barcode reader turn ON (only for models with BARCODE reader);
- prints ticket;
- clear the data in the print buffer;

[Notes]	• Print ticket in reverse

• After printing, the data of the barcode read and the reading result, are stored in a circular buffer.
• To read the barcode acquired during printing, use the '<BC1>' or '<BCA>' commands.

[Default]	
[Reference]	<CB>
[Example]	

\<Q>

Printers:	KPM300 VeriPrint, TK300II VeriPrint

[Name]	**Printing command (only buffer cleaning) in normal**
[Format]	ASCII \<Q>
[Range]	
[Description]	This command executes the following operations :
	- align the ticket to notch;
	- barcode reader turn ON (only for models with BARCODE reader);
	- prints ticket;
	- clear the data in the print buffer;
[Notes]	• Print ticket in normal
	• After printing, the data of the barcode read and the reading result, are stored in a circular buffer.
	• To read the barcode acquired during printing, use the '\<BC1>' or '\<BCA>' commands.
[Default]	
[Reference]	\<CB>
[Example]	

\<RC row, column>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Position the cursor**
[Format]	ASCII \<RC row, column>
[Range]	
[Description]	Moves the cursor at the position specified by row and column parameters.
[Notes]	• The row and column values must be a number with four digit at most, otherwise the command will be ignored.
[Default]	
[Reference]	
[Example]	To move the cursor at row (dot) 10, column (dot) 30 the command sequence is :
	\<RC 10,30>

\<RL>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Rotate text 90° counter-clockwise**
[Format]	ASCII \<RL>
[Range]	
[Description]	Rotate text 90° counter-clockwise, (to the left).
[Notes]	
[Default]	
[Reference]	
[Example]	

\<RR>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Rotate text 90° clockwise**
[Format]	ASCII \<RR>
[Range]	
[Description]	Rotate text 90° clockwise, (to the right).
[Notes]	
[Default]	
[Reference]	
[Example]	

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<RU>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Rotate text 180°**
[Format]   ASCII   <RU>
[Range]
[Description]   Rotate text 180°.
[Notes]
[Default]
[Reference]
[Example]

<SB x>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Enable / Disable FULL STATUS back**
[Format]   ASCII   <SB x>
[Range]   '0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description]   • Enable/disable FULL STATUS back.
               • x specify the request for FULL STATUS. where x identify the bitmask with the following table:

```
                                                    4° byte = Unrecoverable error status
                                                    3 °byte = Recoverable error status
                                                    2° byte = User status
                                                    1° byte = Full status
```

x		BIT3	BIT2	BIT1	BIT0
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1
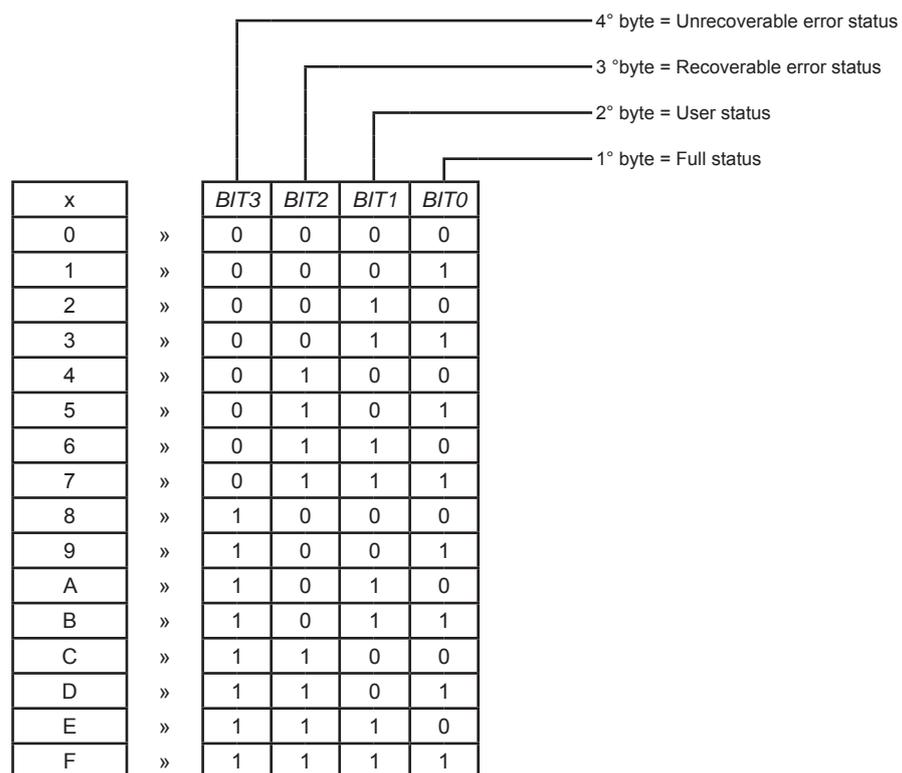
[Notes]   • Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in from the printer will be so composed as follows:
               <SB x, *CHR1 ..... CHRn*>

               where:
               SB   =   fixed characters
               x   =   is the bitmask to identify the request.
               CHR1..CHRn   =   response bytes referred to the following tables:

1° byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

3° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

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4° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

[Default]
[Reference]
[Example]   To request the Full status (1° byte) and the User status (2°byte) proceed as follow:

see bitmask:
$BIT3 = 0$ $BIT2 = 0$ $BIT1 = 1$ $BIT0 = 1$ quindi   0011 = 3

Send the command: <AFSB3>
Possible answer: <SB3,0504>

where:
1°byte

0 = 0000	bit7 = 0	bit6 = 0	bit5 = 0	bit4 =0
	(notch found)	(not virtual paper end)	(ticket not present)	(RESERVED)
5 = 0101	bit3 = 0	bit2 = 1	bit1 = 0	bit0 =1
	(RESERVED)	(near paper end)	(RESERVED)	(Paper not present)

2°byte

0 = 0000	bit7 = 0	bit6 = 0	bit5 = 0	bit4 =0
	(RESERVED)	(FF key released)	(LF key released)	(RESERVED)
4 = 0010	bit3 = 0	bit2 = 0	bit1 = 1	bit0 =0
	(drag motor off)	(spooling)	(cover closed)	(print head down)

<AFSB yx>

Printers: KPM300 VeriPrint,   KUBE II VeriPrint,   KUBE-L VeriPrint,   TK300II VeriPrint

[Name]   **Enable / Disable auto FULL STATUS back**
[Format]   ASCII   <AFSB yx>
[Range]   '0' ≤ y ≤ '9', 'A' ≤ y ≤ 'F'
                 '0' ≤ x ≤ '9', 'A' ≤ x ≤ 'F'
[Description]   • Enable/disable auto FULL STATUS back.
                 • x and y specify the request for FULL STATUS. where x and y identify the bitmask with the following tables:

8° byte = Info 4
7° byte = Info 3
6° byte = Info 2
5° byte = Info 1

y		BIT7	BIT6	BIT5	BIT4
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

4° byte = Unrecoverable error status
3° byte = Recoverable error status
2° byte = User status
1° byte = Full status

x		BIT3	BIT2	BIT1	BIT0
0	»	0	0	0	0
1	»	0	0	0	1
2	»	0	0	1	0
3	»	0	0	1	1
4	»	0	1	0	0
5	»	0	1	0	1
6	»	0	1	1	0
7	»	0	1	1	1
8	»	1	0	0	0
9	»	1	0	0	1
A	»	1	0	1	0
B	»	1	0	1	1
C	»	1	1	0	0
D	»	1	1	0	1
E	»	1	1	1	0
F	»	1	1	1	1

[Notes]

• Once enable at least one byte of the FULL STATUS, for each change of at least one of the bits which compose the required status, the status sent in automatic from the printer will be so composed as follows:

<SB yx, *CHR1 ..... CHRn*>

where:

SB	=	fixed characters
x	=	is the bitmask to identify the request.
y	=	is the bitmask to identify the request.
CHR1..CHRn	=	response bytes referred to the following tables:

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1° byte = Full status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Paper present
	On	01	1	Paper not present
1	-	-	-	RESERVED
2	Off	00	0	Paper present
	On	04	4	Near paper end
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	Off	00	0	Ticket not present in output
	On	20	32	Ticket present in output
6	Off	00	0	Not virtual paper end
	On	40	64	Virtual paper end
7	Off	00	0	Notch found
	On	80	128	Notch not found

2° byte = User status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Printing head down
	On	01	1	Printing head up error
1	Off	00	0	Cover closed
	On	02	2	Cover opened
2	Off	00	0	No spooling
	On	04	4	Spooling
3	Off	00	0	Drag paper motor off
	On	08	8	Drag paper motor on
4	-	-	-	RESERVED
5	Off	00	0	LF key released
	On	20	32	LF key pressed
6	Off	00	0	FF key released
	On	40	64	FF key pressed
7	-	-	-	RESERVED

3° byte = Recoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Head temperature ok.
	On	01	1	Head temperature error
1	Off	00	0	No COM error
	On	02	2	RS232 COM error
2	-	-	-	RESERVED
3	Off	00	0	Power supply voltage ok
	On	08	8	Power supply voltage error
4	-	-	-	RESERVED
5	Off	00	0	Acknowledge command
	On	20	32	Not acknowledge command error
6	Off	00	0	Free paper path
	On	40	64	Paper jam
7	Off	00	0	Notch search ok
	On	80	128	Error in notch search

4° byte = Unrecoverable error status

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	Cutter ok
	On	01	1	Cutter error
1	Off	00	0	Cutter cover ok
	On	02	2	Cutter cover open
2	Off	00	0	RAM ok
	On	04	4	RAM error
3	Off	00	0	EEPROM ok
	On	08	8	EEPROM error
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

5° byte = Info1

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	One or more tickets printed after turn ON
	On	01	1	No tickets printed after turn ON
1	Off	00	0	One or more tickets printed after AUTOLOAD
	On	02	2	No tickets printed after AUTOLOAD
2	-	-	-	RESERVED
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

6° byte = Info2

BIT	OFF/ON	HEX	Decimal	FUNCTION
0	Off	00	0	SD/MMC card not present
	On	01	1	SD/MMC card present
1	Off	00	0	Used space in SD/MMC card < 80%
	On	02	2	Used space in SD/MMC card ≥ 80%
2	Off	00	0	SD/MMC card not full
	On	08	8	SD/MMC card full
3	-	-	-	RESERVED
4	-	-	-	RESERVED
5	-	-	-	RESERVED
6	-	-	-	RESERVED
7	-	-	-	RESERVED

7° byte = Info3

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

8° byte = Info4

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

[Default]
[Reference]
[Example]   To request the Full status (1° byte), the User status (2° byte) and the Info2 (6° byte) proceed as follow:
see bitmask:

$BIT7$ = 0	$BIT6$ = 0	$BIT5$ = 1	$BIT4$ =0	quindi	0010 = 2
$BIT3$ = 0	$BIT2$ = 0	$BIT1$ = 1	$BIT0$ =1	quindi	0011 = 3

Send the command: <AFSB23>
Possible answer: <SB3,050401>
where:
1°byte

0 = 0000	bit7 = 0	bit6 = 0	bit5 = 0	bit4 =0
	(notch found)	(not virtual paper end)	(ticket not present)	(RESERVED)
5 = 0101	bit3 = 0	bit2 = 1	bit1 = 0	bit0 =1
	(RESERVED)	(near paper end)	(RESERVED)	(Paper not present)

2°byte

0 = 0000	bit7 = 0	bit6 = 0	bit5 = 0	bit4 =0
	(RESERVED)	(FF key released)	(LF key released)	(RESERVED)
4 = 0100	bit3 = 0	bit2 = 1	bit1 = 0	bit0 =0
	(drag motor off)	(spooling)	(cover closed)	(print head down)

6°byte

0 = 0000	bit7 = 0	bit6 = 0	bit5 = 0	bit4 =0
	(RESERVED)	(RESERVED)	(RESERVED)	(RESERVED)
1 = 0001	bit3 = 0	bit2 = 0	bit1 = 0	bit0 =1
	(RESERVED)	(card not full)	(used space < 80%)	(card present)

<SDT m data>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Set date/time of the real time clock through serial port**
[Format]   ASCII   <SDT m data>
[Range]
[Description] Set date/time of the real time clock through serial port, in the format specified by m values as follows :

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

where:
DD   = represents the day of the date
MM   = represents the month of the date
YY   = represents year of the date
hh   = represents the hour of the time
mm   = represents the minutes of the time
ss   = represents the seconds of the time
d   = indicates the day of the week
data   are the ASCII characters relative to the date and time to set.
If the transmission has been received correctly and the command is valid, the printer returns the following string: <SDT ↵ x ↵ >

where
- ↵ corresponds to CR character ($0D).
- x indicate the reading result ; the x value can be :
    '!' : the command is executed successfully
    '#': the command is not executed successfully

[Notes]   • the day of the week is calculated automatically from the printer and then it's possible that the returned value is different from the one transmitted.

[Default]
[Reference]

[Example]   For example to set the date and time to "29 September 2006 at 13:51:00 (PM)" in the "YYMMDDhhmmss" format transmit:
<SDT 2 061029135100>
The printer's answer will be :
<SDT ↵ ! ↵ >   if the transmission is successfully, otherwise
<SDT ↵ # ↵ >   if the transmission is not successfully

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<Sn>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Status request**
[Format]   ASCII   <Sn>
[Range]
[Description] The host can ask to the printer many differents status infos; the n parameter indicates which type of request :
If n = 1 the printer return a byte that represent the status:

$10:	Paper end
$11:	No error
$18:	Cover open
$19:	Wrong command
$20:	Notch error
$21:	Heading over temperature error
$22:	Power supply voltage error
$23:	Cutter error

• If n=3 the printer return ACK ($06) if printing is properly finished, otherwise return NACK ($15). If the request will be transmitted during printing phase, it waits the end of the process and then is sent the answer.

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

<SP n>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Change speed**
[Format]   ASCII   <SP n>
[Range]
[Description] Sets printing speed using n as follows :

n	PRINTING SPEED
0	High quality
1	Normal
2	High speed

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

SVELTA Emulation

<SVEL>	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Change printer emulation to SVELTA**
[Format]	ASCII <SVEL>
[Range]	
[Description]	Set the SVELTA emulation.
[Notes]	
[Default]	
[Reference]	
[Example]	

<T>	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Get the ticket dimension to print**
[Format]	ASCII <T>
[Range]	
[Description]	Get the ticket dimensions to print, in the Ticket Size format.
[Notes]	
[Default]	
[Reference]	
[Example]	

<TB x1, y1, x2, y2>	
Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Create a TEST BOX (ghost) on scanned image (B/W)**
[Format]	ASCII <TB x1,y1,x2,y2>
[Range]	
[Description]	• Create a TEST BOX (ghost) according to x1, y1, x2, y2 coordintaes (in pixel), where: x1 -> minimum horizontal coordinate y1 -> minimum vertical coordinate x2 -> maximum horizontal coordinate y2 -> maximum vertical coordinate • This command is helpful to find the right coordinates of an image area to use for the analysis.
[Notes]	• If the coordinates are reversed, the printer automatically turns the points to create in any case the box. • If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point. • If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
[Default]	
[Reference]	<TP x1,y1,x2,y2>
[Example]	Example of ticket with a TEST BOX. <TB80,50,120,200>
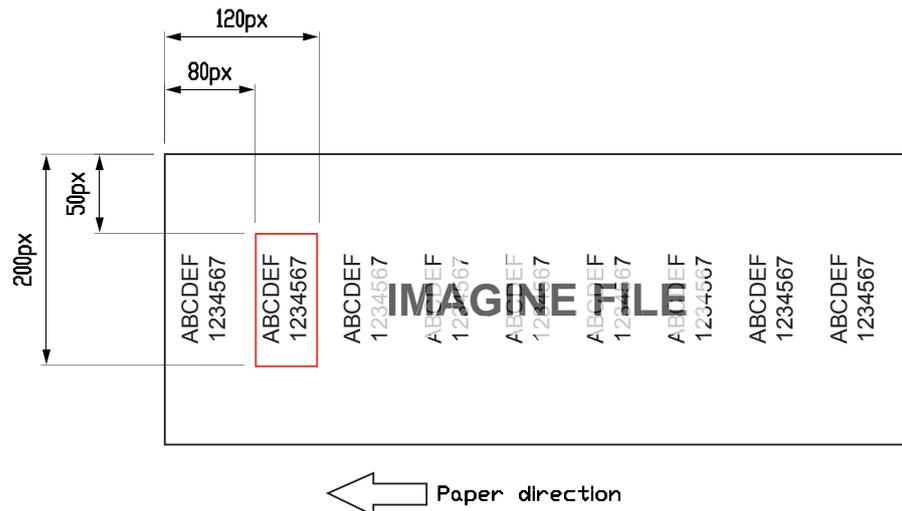
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\<TDF m data\>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Set user-defined date/time formats**
[Format]	ASCII \<TDF m data\>
[Range]	
[Description]	Sets the format string for date and time used to printing;

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

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

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

[Notes]
[Default]
[Reference]
[Example]   For example to print the current time with the string format 'yy/mm/dd hh:mm:ss' follow these steps :
1. Send the following command to define the user-defined Time string format:
<TDF T yy/mm/dd hh:mm:ss>
2. Send the following command to print the time :
<TIME>
If the date and time is 22 October 2006 at 17:35:27 (PM) the output string printed will be:
06/10/22 17:35:27

<TIME>

Printers: KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]   **Print Time**
[Format]   ASCII   <TIME>
[Range]
[Description]   Prints time with the format specified by the command '<TDF>'.
[Notes]
[Default]   "hh:nn:ss"
[Reference]   <DATE>
[Example]

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<TP x1, y1, x2, y2>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Detect the n. of black dots in an image area scanned (B/W)**
[Format]	ASCII <TP x1,y1,x2,y2>
[Range]	
[Description]	• Detect the number of black dots inside an area defined with x1, y1, x2, y2 coordinates (in pixel), where:

x1 -> minimum horizontal coordinate
y1 -> minimum vertical coordinate
x2 -> maximum horizontal coordinate
y2 -> maximum vertical coordinate

The command answer as follow:

'<TP n1,n2>'

where:
n1 =   number of black dots detected
n2 =   total number of dots detected

[Notes]	• If the coordinates are reversed, the printer automatically turns the points to create in any case the box.

• If the x2 is greater than the maximum horizontal width of graphic page, the box is drawn using the maximum width as last point.
• If the y2 is greater than the maximum length of graphic page defined by <LHT...> command, the box is drawn using the maximum length (defined by this command) as last point.
• The number of dots detected is dependent on the resolution set in *scanner.cfg* file.

[Default]		
[Reference]	<TB x1,y1,x2,y2>	
[Example]	Command sent:	<TB80,50,120,200>
	Response:	<TB8576,36000>
		black dots detected = 8576
		total dots detected = 36000
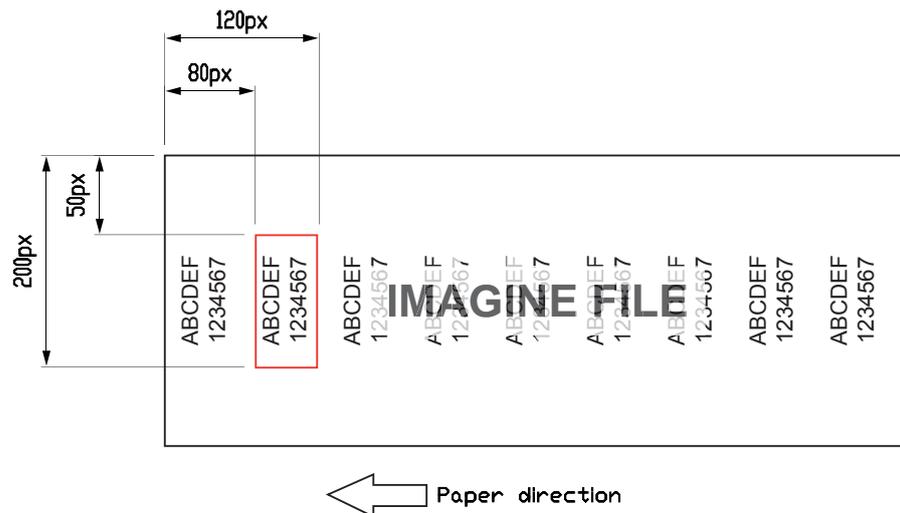
<X n, m>

Printers:	KPM300 VeriPrint, KUBE II VeriPrint, KUBE-L VeriPrint, TK300II VeriPrint

[Name]	**Define the barcode lines dimension**
[Format]	ASCII <X n, M>
[Range]	
[Description]	n defines the thins lines dimension (in dot) of barcode. The M parameter defines the barcode printing speed if it must be printed rotated.
[Notes]	If the M parameter = 'H' as ASCII value, the barcodes will be printed in high speed. Otherwise if if the M parameter = 'L' as ASCII value the barcodes will be printed at reduced speed (only if n is less than 4).
[Default]	
[Reference]	
[Example]	

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