Programmer's Application Manual

Additional commands in Epson emulation

Vertical positioning from the top (absolute)

Data Structure
ASCII ESC [<n> ! p
hex. 1B 5B <n> 21 70
dec. 27 91 <n> 33 112

Function
This command feeds a paper to the specified vertical position from the upper edge of a paper.

<n> = Positioning in vertical direction by n/180 inch (<n> = 1 to 9999)

The permissible upper limit of the parameter value of <n> is specified by the Form Length defined in the setup menu.

Characters stored in the printer will be printed by this command.

Switching between document and journal printing

Data Structure
ASCII ESC [<n> ! q
hex. 1B 5B <n> 21 98
dec. 27 91 <n> 33 113

Function
This command is accepted and ignored.

Relative vertical positioning backwards

Data Structure
ASCII ESC [<n> # p
hex. 1B 5B <n> 23 70
dec. 27 91 <n> 35 112

Function
This command feeds a paper backwards from the current position to a specified vertical position.

<n> = Backwards positioning in a vertical direction of n/180 inch (<n> = 0 to 9999)

Characters stored in the printer will be printed by this command.

Vertical positioning from the bottom (absolute)

Data Structure

ASCII	ESC [<n> " p
hex.	1B 5B <n> 22 70
dec.	27 91 <n> 34 112

Function

This command feeds a document to a specified vertical position in relation to the lower (bottom) edge of a paper.

<n> = Positioning in vertical direction by n/180 inch (n=1 to 9999)

The permitted upper limit of the parameter value of <n> is specified by the page length defined in the setup menu.

Characters stored in the printer will be printed by this command.

Selecting fonts/character sets

Data Structure

ASCII	ESC [<n> # q
hex.	1B 5B <n> 23 71
dec.	27 91 <n> 35 113

Function

Using this command by means of a type font or character set number n, special character sets (fonts) can be selected which do not belong to the standard character sets of the Epson protocol.

<n> = type font or character set or font number (0 to 9999)

Font	*Font number*
OCR-A	900 (DIN code page)
OCR-B	901
Roman	600
Sans-Serif	601
Draft	602

600, 601 and 602 are selected by this command, the meaning of ESC R <n> will change to the values listed below. But, after selecting Character Table by ESC (t, the meaning of ESC R <n> will return to the original.

<n>	*Country-specific character sets*
0, 6	ISO 8859-2 East Europa
1, 7	ISO 8859-5 Cyrillic
2, 8	ISO 8859-7 Greece
3, 9	ISO 8859-8 Hebrew
4, 10	ISO 8859-9 Turkey (CodePage 920)
5, 11	ISO 8859-15 Euro (CodePage 923)
12–255	(no change)

Ejecting document/loading position of next document

Data Structure

ASCII	ESC [<n> $ p
hex.	1B 5B <n> 24 70
dec.	27 91 <n> 36 112

Function

This command ejects a loaded document; a parameter <n> specifies the position of the next loaded document.

<n> = 0: Paper is ejected
<n> = 1: Paper is loaded

Characters stored in the printer will be printed by this command.

Parameter setting for MSR-H

Data Structure

ASCII	ESC [n1...n5 ! r
hex.	1B 5B n1...n5 21 72
dec.	27 91 n1...n5 33 114

Function

This command sets the following parameters for MSR-H (valid only if MSR-H is installed):

n1 = number of write repetitions (0 to 2)
n2 = number of read repetitions (0 to 2)
n3 = identifier of the write/read format (number of the recording format)
n4 = vertical distance from the form edge (0 to 9999 in the measuring unit 1/180 inch, thus n4/180 inch)
n5 = leading edge for the vertical distance (0 = top, 1 = bottom).

Reading a MSR-H track

Data Structure

ASCII	ESC [" r
hex.	1B 5B 22 72
dec.	27 91 34 114

Function

The MSR track is read using this command. The desired options are pre-set, if necessary, via the command 'Parameter setting for MSR-H' (CSI ... ! r: number of reading attempts, recording mode, position of the magnetic stripe, etc.)
(valid only if MSR-H is installed):

n1 = number of required reading attempts
n2 = reading threshold (always = 2)
n3 = horizontal reading block number
n4 = reading error (0 = without error; > 0 = error)
STX (02h) = start of the read data area
Read data = in the range of 30h-3Fh (ASCII)
ETX (03h) = end of the read data area

Writing a MSR-H track

Data Structure

ASCII	ESC [# r STX data ETX
hex.	1B 5B 23 72 02 data 03
dec.	27 91 35 114 2 data 3

Function

This command writes data to the magnetic stripe (valid only if MSR-H is installed, following the parameter setting for MSR H):

STX (02h) = start of the read data area
Read data = in the range of 30h–3Fh (ASCII)
ETX (03h) = end of the read data area

The printer will return the below response as Acknowledge to the PC:

ESC [n1 ; n2 # r
n1 = number of required writing attempts
n2 = error in the read after write check (0 = no error, 1 = error)

Deleting a MSR-H track

Data Structure ASCII ESC [% r
hex. 1B 5B 25 72
dec. 27 91 37 114

Function The vertical position on the magnetic stripe fixed at the transfer of the MSR parameters (CSI ... ! r) is overwritten with 'ZERO' characters, the MSR track is deleted (valid only if MSR-H is installed).

Setting control points/initializing control cycle

Data Structure ASCII ESC [<n> ! t
hex. 1B 5B <n> 21 74
dec. 27 91 <n> 33 116

Function This command triggers the initiation of an acknowledgement signal to the computer interface if all the jobs transferred up to this command have been processed. The printer will return the same value of <n> with the same command sequence as this command to PC as a response.

<n> = value freely definable by the application in the range 0 to 9999.

Requesting document width

Data Structure ASCII ESC [" t
hex. 1B 5B 22 74
dec. 27 91 34 116

Function Via this command, the printer control transmits information to the program about the width of the document currently being processed.

The printer will return the paper width by ESC [<n> " t . (n: 0 to 9999 unit = 1/180")

Characters stored in the printer will be printed by this command.

Detecting document edge

Data Structure ASCII ESC [# t
hex. 1B 5B 23 74
dec. 27 91 35 116

Function This command is accepted and ignored.

Activating passbook processing

Data Structure ASCII ESC [<n> $ t
hex. 1B 5B <n> 24 74
dec. 27 91 <n> 36 116

Function This command is accepted and ignored.

Specifying horizontal leading edge

Data Structure ASCII ESC [<n> % t
hex. 1B 5B <n> 25 74
dec. 27 91 <n> 37 116

Function This command selects the reference edge by n.

<n> = 0: Left Edge
<n> = 1: Right Edge

Switching-over mode for handling end of paper

Data Structure ASCII ESC [<n> (t
hex. 1B 5B <n> 28 74
dec. 27 91 <n> 40 116

Function This command selects the method of handling a Paper Length Error by parameter n. Either the error has to be cleared via the control panel manually or the error will be cleared automatically by the printer.

<n> = 0: Manual (= Default value)
<n> = 1: Automatic

Setting control point II

Data Structure

ASCII	ESC [<n>) t
hex.	1B 5B <n> 29 74
dec.	27 91 <n> 41 116

Function

This command triggers the release of an acknowledgement signal to the processor interface if the last mechanical procedure was started in the printing unit and no error has occurred at this point in time. The printer will return the same value of <n> with the same command sequence as this command to PC as a response.

<n> = value freely definable by the application in the range 0 to 9999.

Controlling User LEDs

Data Structure

ASCII	ESC [<n> * t
hex.	1B 5B <n> 2A 74
dec.	27 91 <n> 42 116

Function

This command controls USER1 and 2 LED as shown below.

Dual station control	*USER1 LED*	*USER2 LED*
<n> = 0: deactivated; default value		
<n> = 1: activated	off	off
<n> = 2: activated	on	off
<n> = 3: activated	off	on
<n> = 4: activated	on	on

The indication of USER1/2 LED by switching Auto Select I/F is prior to controlling by this command.

Selecting impact force

Data Structure

ASCII	ESC [<n> , t
hex.	1B 5B <n> 2C 74
dec.	27 91 <n> 44 116

Function

This command selects the impact force of the print head. If the printout of copies is too weak, the impact force can be increased.

Normally this function should be switched off, as the noise level and the print head attrition will increase.

<n> = 0: Single (for single ply paper)
<n> = 1: Copy (for 2–3 ply paper)
<n> = 2: Copy Plus (for 4–6 ply paper)

Global printer status

Data Structure

ASCII	ESC [<n> ! z
hex.	1B 5B <n> 21 7A
dec.	27 91 <n> 33 122

Function

Response of the current printer state as shown below.

<n> = 0: ONLINE
<n> = 1: STOP
<n> = 2: ERROR

This response in the coding CSI <n> ! z is produced spontaneously after initializing the printer and after each status change (ONLINE, STOP, ERROR).

Requesting special printer messages

Data Structure

ASCII	ESC [" z
hex.	1B 5B 22 7A
dec.	27 91 34 122

Function

This command requests special printer messages (see below).

The printer will return the state with ESC [<n> ; <m> " z.

Special printer messages

Data Structure

ASCII	ESC [<n> <m> " z
hex.	1B 5B <n> <m> 22 7A
dec.	27 91 <n> <m> 34 122

Function

Printer response after requesting special printer messages.

<n> = Global Code
<m> = Special Code

Special printer messages are produced in the following cases and transferred to the system:

- when changing the appropriate statuses
- when using the keys USER 2 or USER 1 via the operator (only if the function “Dual station control” was activated using the command CSI <n> * t)

Further, the current status can be requested using the command CSI * z.

The following n/m combinations for the encryption of a special printer message are possible:

PAPER <n> = 1 / <m> = 4
The paper sensor on the document printing point is covered with paper again.

NO PAPER <n> = 2 / <m> = 4
The paper sensor on the document printing point is no longer covered with paper.

USER 1 key <n> = 20 / <m> 1
The USER key on the operating panel was pressed if User2 was selected.
This printer message can only occur if the function "Dual station control" was activated using the command CSI <n> * t.

USER 2 key <n> = 20 / <m> = 2
The USER key on the operating panel was pressed if User1 was selected.
This printer message can only occur of the function "Dual station control" was activated using the command CSI <n> * t.

Requesting printing unit parameters

Data Structure

ASCII	ESC [<n> # z
hex.	1B 5B <n> 23 7A
dec.	27 91 <n> 35 122

Function

This command requests for informations about printer option unit etc (see below).

<n> = 0 Response without parameter n8 (printer type)
<n> = 1 Response with parameter n8 (printer type)

The printer will return the information with ESC [n1 ... n9 # z.

Printing unit parameters

Data Structure

ASCII	ESC [n1...n9 # z
hex.	1B 5B n1...n9 23 7A
dec.	27 91 n1...n9 35 122

Function

Printer response after requesting printing unit parameters.

Parameters:

n1 = Printing station number (0: document station)
n2 = 4: document
n3 = maximum width of form in 1/10 inch
n4 = number of feed channels (1)
n5 = number of eject channels
n6 = 0: OCR reader option not available; 1: MICR reader option
n7 = MSR option (0: option not available 1: option available)
n8 = printer type
n9 = memory extension (0: no memory extension available)

Barcode printing

Data Structure

ASCII	ESC [<m> ; <h> ; <z> ; <n> * r STX (data) ETX
hex.	1B 5B <m> 3B <h> 3B <z> 3B <n> 2A 72 02 (data) 03
dec.	27 91 <m> 59 <h> 59 <z> 59 <n> 42 114 2 (data) 3

Function

Prints barcode according to the characteristics defined by the following parameters.

The ";" separates the parameters. The final code ("*" "r") closes the parameter part. The barcode data is enclosed with STX (start of text) and ETX (end of text).

Barcode type

<m> = 5	CODE39 lower case bar code data 'a' 'z' is automatic set to upper case 'A' 'Z'
<m> = 7	2/5 INTERLEAVED a odd number of bar code data is automatic filled with a leading zero

Bar code height

<h> = 00	DEFAULT (at least 5mm or 15% of Barcode Length [**])
<h> = 01–10	Height as number h of passes

Barcode zoom coefficient

<z> = 01–09	Ignore value
<z> = 10–34	Acceptable value (10 = basic width; 15 = 1.5 * basic width, 20 = double width, etc.)

Human readable line

<n> = 0	Disabled
<n> = 1	Enabled