TM-L60II/L60IIP

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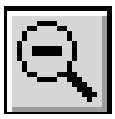

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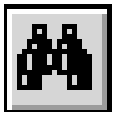

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EPSON®

ESC/POS™
Information Manual

Guide to
TM-L60II/L60IIP

SEIKO EPSON CORPORATION

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The programming examples in this manual are provided for the sole purpose of illustrating the functions of the products. Seiko Epson Corporation makes no warranty, either expressed or implied, as to their reliability and appropriateness for other uses.

ESC/POS™ Information Manual
Guide to TM–L60II/L60IIP
9604-00

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Introduction

ESC/POS™

The market for store automation equipment is changing rapidly with the widespread introduction of POS (point of sale) terminals. These terminals are now appearing even in small retail stores and specialty shops. They occupy a secure position in the range of applications available for personal computers.

As more personal computers come to be used as POS terminals, the demand for matching standardized peripheral devices is expected to rise. At present, however, many of the competing POS terminal printer displays on the market employ mutually incompatible command sets. This imposes limits on the expandability and range of applications possible with PC-based systems. There is a need for a new command set designed to provide the expandability and universal applicability demanded by the market.

To meet this need, Seiko Epson Corporation proposes the adoption of a newly developed command set to standardize POS terminal peripheral devices: ESC/POS (Epson Standard Code for Point of Sale).

The aim when developing ESC/POS was to create a set of control codes that could be used to operate any output device connected to a POS terminal. These new codes are intended to replace the mutually incompatible command sets previously in use.

TM/DM series models already support ESC/POS, and they have been evaluated highly in the marketplace.

Seiko Epson Corporation plans to produce new models in the TM/DM series offering ESC/POS support and to continue to work for the standardization of the entire POS environment to promote the dissemination of ESC/POS.

About This Manual

- **Chapter 1** contains a table of supported commands, descriptions of all the commands arranged by function with program examples and print samples, and character code tables.
- **Chapter 2** contains an example showing several commands used in a program for issuing a coupon containing bar codes.
- **Chapter 3** contains a table of the commands listed by function type and a table showing which commands are supported by various EPSON printers.

Features

The TM-L60II (RS-232 serial interface) and TM-L60IIP (parallel interface) are line thermal printers that can print on roll paper and thermal labels. The printers have the following features:

- ❏ Light weight and ultra-compact size.
- ❏ High speed printing: 12 lines per second.
- ❏ Low-noise thermal printing.
- ❏ High reliability due to few moving parts.
- ❏ Easy maintenance for tasks such as head cleaning.
- ❏ Easy paper insertion with semi-auto loading for both roll paper and labels.
- ❏ Label ejection commands prevent extraneous label feeding.
- ❏ Serial numbers can be printed on labels.
- ❏ Command protocol based on the ESC/POS standard.
- ❏ Various layouts possible using page mode.
- ❏ Font selection (12 × 24 or 9 × 24) possible using a command.
- ❏ Character extension (up to 64 times the standard size) and character smoothing.
- ❏ Four different print densities selectable via DIP switch settings.
- ❏ Four-way routing of the interface, drawer control, and power cables: on either side, underneath, or from the back of the case.
- ❏ Controls on the front of the printer for easy operation, without requiring access to the sides and back.
- ❏ Water-resistant operation panel.
- ❏ Bar code printing possible both in the vertical direction (fence bar code) and horizontal direction (ladder bar code in page mode) using a command.
- ❏ Repeated operation and copy printing possible using macro definitions.
- ❏ Control capability for two drawers via the built-in interface.
- ❏ Bidirectional parallel interface based on the IEEE 1284 Nibble/Byte Modes standard.
- ❏ Thermal paper or thermal label can be selected via DIP switch settings.

The TM-L60II can also be used as the following:

- ❑ A one-station printer for ECR and POS.
- ❑ A ticket-issuing device.
- ❑ An output device for weighing and other types of measurement.
- ❑ A small scale label-marker for stores.

Option

- ❑ EPSON power supply unit, PS-150.

Specifications

- ❑ Printing specifications

Printing method:	Thermal line printing
Printing speed:	Approximately 12 lines/second (1/6-inch feed)
Dot density:	180 dpi × 180 dpi
Printing width:	Thermal paper: 54.19 mm (2.13″), 384 dot positions Thermal label : 51.93 mm (2.04″), 368 dot positions

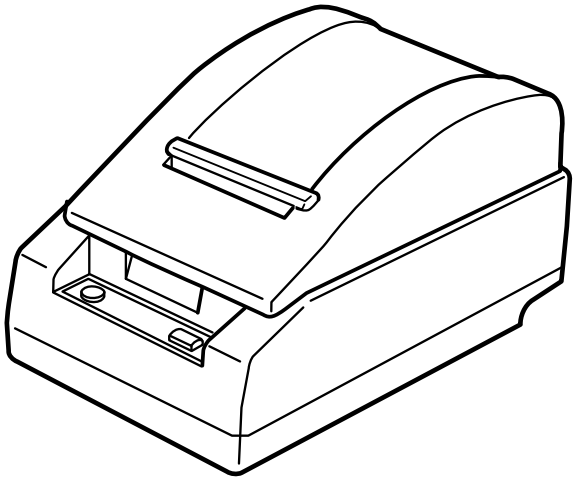
- ❑ Character specifications

Character fonts:	12 × 24/9 × 24
Characters per line:	Thermal paper : 32/42 Thermal label : 30/40
Character size:	1.41(W) × 3.39(H) mm /.99(W) × 3.39(H) mm
Character sets:	ASCII: 95 characters International: 32 characters Extended graphics: 128 characters × 6 pages

- ❑ Paper size: Thermal paper : 59.0-60.5(W) mm × 83.0 mm diameter
Thermal label : 59.5-61.0(W) mm × 83.0 mm diameter

- ❑ Interface: RS-232 (serial interface)
or
IEEE 1284 (parallel interface)

- ❑ Receive buffer: 4K or 45 bytes (selectable by DIP switch)



Chapter 1
Command Descriptions

Following this table are all the commands organized by function and described with program examples and print samples.

Supported Commands

Command	Name	Function type	Page number
HT	Horizontal tab	Print position	1-31
LF	Print and line feed	Print	1-5
FF	① Print and return to standard mode (in page mode)	Print	1-8
	② Print and feed label to print starting position (on label)	Print	1-9
CR	Print and carriage return	Print	1-6
CAN	Cancel print data in page mode	Character	1-24
DLE EOT	Real-time status transmission	Status	1-44
ESC FF	Print data in page mode	Print	1-8
ESC SP	Set right-side character spacing	Character	1-12
ESC !	Select print mode(s)	Character	1-17
ESC $	Set absolute print position	Print position	1-29
ESC %	Select/cancel user-defined character set	Character	1-13
ESC &	Define user-defined characters	Character	1-13
ESC *	Select bit-image mode	Bit image	1-37
ESC –	Turn underline mode on/off	Character	1-18
ESC 2	Select default line spacing	Line spacing	1-10
ESC 3	Set line spacing	Line spacing	1-10
ESC =	Select peripheral device	Miscellaneous function	1-60
ESC ?	Cancel user-defined characters	Character	1-13
ESC @	Initialize printer	Miscellaneous function	1-57
ESC D	Set horizontal tab positions	Print position	1-31
ESC E	Turn emphasized mode on/off	Character	1-18
ESC G	Turn double-strike mode on/off	Character	1-19
ESC J	Print and feed paper	Print	1-6
ESC L	Select page mode	Miscellaneous function	1-61
ESC R	Select an international character set	Character	1-15
ESC S	Select standard mode	Miscellaneous function	1-61
ESC T	Select print direction in page mode	Print position	1-34

Command	Name	Function type	Page number
ESC V	Turn 90° clockwise rotation mode on/off	Character	1-21
ESC W	Set printing area in page mode	Print position	1-33
**ESC **	Set relative print position	Print position	1-29
ESC a	Select justification	Print position	1-30
ESC c 3	Select paper sensor(s) to output paper-end signals	Paper sensor	1-27
ESC c 4	Select paper sensor(s) to stop printing	Paper sensor	1-26
ESC c 5	Enable/disable panel buttons	Panel button	1-25
ESC d	Print and feed ***n*** lines	Print	1-7
ESC p	Generate pulse	Miscellaneous function	1-60
ESC t	Select character code table	Character	1-16
ESC u	Transmit peripheral device status	Status	1-47
ESC v	Transmit paper sensor status	Status	1-48
ESC {	Turn upside-down printing mode on/off	Character	1-20
GS FF	Print and eject label	Print	1-9
GS !	Set character size	Character	1-22
GS $	Set absolute vertical print position in page mode	Print position	1-36
GS *	Define downloaded bit image	Bit image	1-39
GS /	Print downloaded bit image	Bit image	1-39
GS :	Start/end macro definition	Macro function	1-55
GS <	Initialize printer mechanism	Miscellaneous function	1-62
GS A	Adjust label print starting position	Miscellaneous function	1-62
GS B	Turn white/black reverse printing mode on/off	Character	1-23
GS C 0	Select counter print mode	Miscellaneous function	1-63
GS C 1	Select count mode (A)	Miscellaneous function	1-64
GS C 2	Set counter	Miscellaneous function	1-64
GS C ;	Select count mode (B)	Miscellaneous function	1-66
GS H	Select printing position of HRI characters	Bar code	1-53
GS I	Transmit printer ID	Miscellaneous function	1-59
GS L	Set left margin	Print position	1-32
GS P	Set horizontal and vertical motion units	Miscellaneous function	1-58
GS W	Set printing area width	Print position	1-32
**GS **	Set relative vertical print position in page mode	Print position	1-36
GS ^	Execute macro	Macro function	1-55
GS a	Enable/disable Automatic Status Back (ASB)	Status	1-41
GS b	Turn smoothing mode on/off	Character	1-23

Command	Name	Function type	Page number
GS c	Print counter	Miscellaneous function	1-63
GS f	Set font for HRI characters	Bar code	1-53
GS h	Select bar code height	Bar code	1-49
GS k	Print bar code	Bar code	1-51
GS r	Transmit status	Status	1-43
GS w	Set bar code width	Bar code	1-50

Using Bit Value Tables

For each command that has a complex method of determining the variable ***n***, there is a table showing how to calculate the variable in three numbering systems: binary, hexadecimal, and decimal.

When you look at the table, first find the value of each component of the variable. Then add the values of the components together to determine the value of the variable ***n***.

For example, here is how you would use the table below, which sets the print mode, to combine double height, double width, and underline. In the table, you see that bit 4 on (or hex 10 or decimal 16) turns on double height, bit 5 on (or hex 20 or decimal 32) turns on double width, and bit 7 on (or hex 80 or decimal 128) turns on underline mode.

To combine all three, turn on bits 4, 5, and 7, which is 10110000 in binary. Or you can add the hex values 10, 20, and 80 for the hex sum of B0, or you can add the decimal values 16, 32, and 128 for the decimal value of 176.

Therefore, you send the following to turn on double height, double width, and underline, depending on the numbering system used:

ASCII	ESC	!	*n*
Hex	1B	21	B0
Decimal	28	33	176

Bit	Off/On	Hex	Decimal	Function
1	Off	00	0	Character font-A selected.
	On	01	1	Character font-B selected.
2	—	—	—	Undefined.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized 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	—	—	—	Undefined.
7	Off	00	0	Underline mode not selected.
	On	80	128	Underline mode selected.

Note that the program examples throughout this chapter use decimal numbers, but binary, decimal, and hexadecimal numbers all have the same printing results.

Print Commands

The TM-L60II/L60IIP printers support the following commands for printing characters and advancing paper:

Command	Name
LF	Print and line feed
CR	Print and carriage return
ESC J	Print and feed paper
ESC d	Print and feed ***n*** lines
ESC FF	Print data in page mode
FF	① Print and return to standard mode (in page mode)
	② Print and feed label to print starting position (on label)
GS FF	Print and eject label

LF

[Name] Print and line feed

[Format]

ASCII	LF
Hex	0A
Decimal	10

LF prints the data in the print buffer and feeds one line. The amount of paper fed per line is based on the value set using the line spacing command. The default setting is 1/6 inch.

Program Example

```
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&HA);
```

Print Sample

```
AAAAA
BBBBB
```

CR

[Name] Print and carriage return

[Format]

ASCII	CR
Hex	0D
Decimal	13

When auto line feed is enabled, the **CR** command functions in the same way as the **LF** command. When auto line feed is disabled, **CR** is ignored. The DIP switch setting enables or disables auto line feed. When using the serial interface, **CR** is ignored.

Program Example

```
PRINT #1, "AAAAA"; CHR$(&HD);
PRINT #1, "     BBBBB"; CHR$(&HA);
```

Print Sample

```
AAAAA       ←Auto line feed enabled
     BBBBB

AAAAA      BBBBB ←Auto line feed disabled
```

ESC J *n*

[Name] Print and feed paper

[Format]

ASCII	ESC	J	*n*
Hex	1B	4A	*n*
Decimal	27	74	*n*

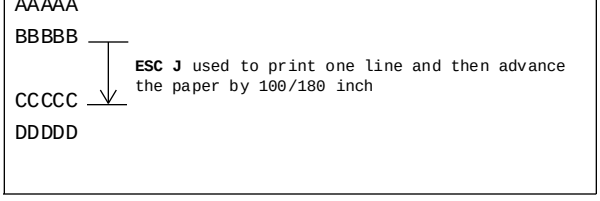
[Range] $0 \le n \le 255$

ESC J ***n*** prints the data in the print buffer and feeds the paper [***n*** × (vertical or horizontal motion unit)] inches. This command is used to temporarily feed a specific length without changing the line spacing set by other commands. The maximum paper feed amount is 40 inches. When standard mode is selected, the vertical motion unit set by **GS P** is used. When page mode is selected, the vertical or horizontal motion unit set by **GS P** is used for the print direction set by **ESC T**.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&H1B);"J";CHR$(100);
PRINT #1, "CCCCC"; CHR$(&HA);
PRINT #1, "DDDDD"; CHR$(&HA);
```

Print Sample



ESC d *n*

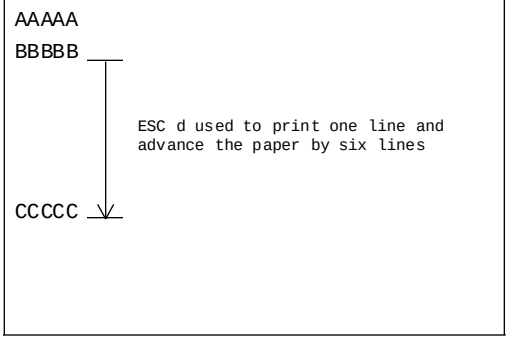
[Name]	Print and feed *n* lines			
[Format]	ASCII	ESC	d	*n*
	Hex	1B	64	*n*
	Decimal	27	100	*n*
[Range]	$0 \le n \le 255$			

ESC d *n* prints the data in the print buffer and feeds ***n*** lines. The amount of paper fed per line is based on the value set using the line spacing command. The maximum paper feed amount is 40 inches. The default setting of the paper feed amount is 1/6 inch.

Program Example

```
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&H1B);"d";CHR$(6);
PRINT #1, "CCCCC"; CHR$(&HA);
```

Print Sample



ESC FF

[Name]	Print data in page mode		
[Format]	ASCII	ESC	FF
	Hex	1B	0C
	Decimal	27	12

FF

[Name]	① Print and return to standard mode (in page mode)	
[Format]	ASCII	FF
	Hex	0C
	Decimal	12

ESC FF prints all buffered data in the printable area collectively, in page mode. This command is enabled only in page mode. After printing, the printer does not clear the buffered data or values set by other commands. When the printer returns to standard mode, **FF** or **ESC S** should be executed.

FF prints the data in the print buffer collectively and returns to standard mode. The buffer data is deleted after being printed. This command returns the values set by the **ESC W** command to the default values. The value set by **ESC T** command is maintained. This command is enabled only in page mode.

Program Example

```
PRINT #1, CHR$(&H1B);"L"; ← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);
CHR$(0);CHR$(120);CHR$(0);CHR$(240);CHR$(0);
PRINT #1, CHR$(&H1B);"T";CHR$(0);
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&HA);
PRINT #1, CHR$(&H1B);CHR$(&HC);
PRINT #1, "CCCCC"; CHR$(&HC);
```

Print Sample

```
AAAAA
BBBBB


AAAAA
BBBBB
CCCCC
```

FF

[Name]	② Print and feed label to print starting position (on label)	
[Format]	ASCII	FF
	Hex	0C
	Decimal	12

GS FF

[Name]	Print and eject label		
[Format]	ASCII	GS	FF
	Hex	1D	0C
	Decimal	29	12

FF prints the data and feeds the next label to the print starting position when thermal label is selected in standard mode.

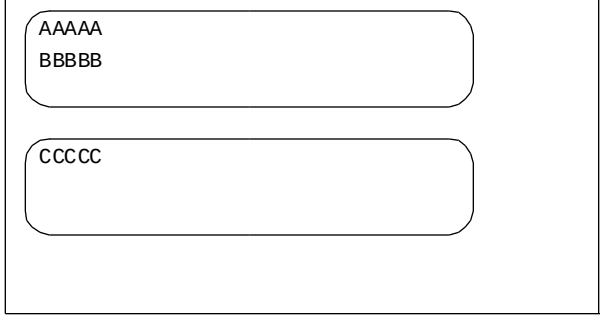
GS FF prints the data in the print buffer and ejects the label. This command is effective only when thermal label is selected with the paper selection DIP switch. When the printer label is advanced so that the label can be peeled off, the PAPER LED blinks as it waits for the PAPER FEED switch to be pressed. When the PAPER FEED switch is pressed, the next label is fed to the print start position. After advancing the label, the line moves to the print start position.

This command is only effective when thermal label is selected with the paper selection DIP switch, and is enabled only in standard mode.

Program Example

```
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&H1D);CHR$(&HC);
PRINT #1, "CCCCC"; CHR$(&HA);
```

Print Sample



Line Spacing Commands

The TM-L60II/L60IIP printers support the following commands for setting line spacing. These commands only set the line spacing; they do not actually advance the paper. The line spacing set using these commands affects the results of the **LF** and **ESC d** commands. The paper is advanced using the paper feed button (PAPER FEED).

Command	Name
ESC 2	Select default line spacing
ESC 3	Set line spacing

ESC 2

[Name] Select default line spacing

[Format]			
	ASCII	ESC	2
	Hex	1B	32
	Decimal	27	50

ESC 3 *n*

[Name] Set line spacing

[Format]				
	ASCII	ESC	3	*n*
	Hex	1B	33	*n*
	Decimal	27	51	*n*

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

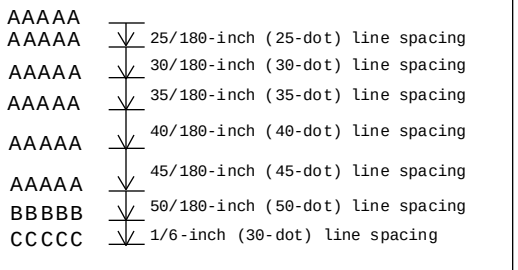
ESC 2 sets the line spacing to 1/6 inch. This is equivalent to 30 dots.

ESC 3 ***n*** sets the line spacing to [***n*** × (vertical or horizontal motion unit)] inches. The default setting of the paper feed amount is 1/6 inch (*n*=60). The maximum line spacing amount is 40 inches. When standard mode is selected, the vertical motion unit set by **GS P** is used. When page mode is selected, the vertical or horizontal motion unit set by **GS P** is used for the print direction set by **ESC T**.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
FOR n=25 TO 50 STEP 5
    PRINT #1, CHR$(&H1B);"3";CHR$(n); ← Set line spacing
   PRINT #1, "AAAAA"; CHR$(&HA);
NEXT n
PRINT #1, CHR$(&H1B);"2"; ← Set default line spacing
PRINT #1, "BBBBB"; CHR$(&HA);
PRINT #1, "CCCCC"; CHR$(&HA);
```

Print Sample



Character Commands

The TM-L60II/L60IIP supports the following commands for setting character font and size.

Command	Name
ESC SP	Set right-side character spacing
ESC %	Select/cancel user-defined character set
ESC &	Define user-defined characters
ESC ?	Cancel user-defined characters
ESC R	Select an international character set
ESC t	Select character code table
ESC !	Select print mode(s)
ESC –	Turn underline mode on/off
ESC E	Turn emphasized mode on/off
ESC G	Turn double-strike mode on/off
ESC {	Turn upside-down printing mode on/off
ESC V	Turn 90° clockwise rotation mode on/off
GS !	Set character size
GS B	Turn white/black reverse printing mode on/off
GS b	Turn smoothing mode on/off
CAN	Cancel print data in page mode

ESC SP *n*

[Name] Set right-side character spacing

[Format]				
	ASCII	ESC	SP	*n*
	Hex	1B	20	*n*
	Decimal	27	32	*n*

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

ESC SP *n* sets the right-side character spacing in [***n*** × (vertical or horizontal motion unit)] inches. It is used to change the spacing between characters. The default setting is ***n***=0. When standard mode is selected, the horizontal motion unit set by **GS P** is used. When page mode is selected, the vertical or horizontal motion unit set by **GS P** is used for the print direction set by **ESC T**.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, CHR$(&H1B);" ";CHR$(0);← Character spacing set to 0
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1B);" ";CHR$(6);← Character spacing set to 6
PRINT #1, "BBBBB"; CHR$(&HA);
PRINT #1, CHR$(&H1B);" ";CHR$(12);← Character spacing set to 12
PRINT #1, "CCCCC"; CHR$(&HA);
```

Print Sample

```
AAAAA ← 0-inch right-side character spacing
BBBBB ← 6/180-inch right-side character spacing
CCCCC ← 12/180-inch right-side character spacing
```

ESC % *n*

[Name]	Select/cancel user-defined character set			
[Format]	ASCII	ESC	%	*n*
	Hex	1B	25	*n*
	Decimal	27	37	*n*
[Range]	$0 \le n \le 255$	(Only the least significant bit of *n* is enabled.)		

ESC & *y c1 c2 [x1 d1 ... d(y × x1)] ... [xk d1 ... d(y × xk)]*

[Name]	Define user-defined characters			
[Format]	ASCII	ESC	&	*y c1 c2 [x1 d1 ... d(y × x1)] ... [xk d1 ... d(y × xk)]*
	Hex	1B	26	*y c1 c2 [x1 d1 ... d(y × x1)] ... [xk d1 ... d(y × xk)]*
	Decimal	27	38	*y c1 c2 [x1 d1 ... d(y × x1)] ... [xk d1 ... d(y × xk)]*
[Range]	$y = 3$			
	$32 \le c1 \le c2 \le 126$			
	$0 \le x \le 12$ (12 × 24 font)			
	$0 \le x \le 9$ (9 × 24 font)			
	$0 \le d1...d(y \times x) \le 255$			
	$k = c2 - c1 + 1$			

ESC ? *n*

[Name]	Cancel user-defined characters			
[Format]	ASCII	ESC	?	*n*
	Hex	1B	3F	*n*
	Decimal	27	63	*n*
[Range]	$32 \le n \le 126$			

ESC % *n* selects or cancels the user-defined character set. When the LSB (least significant bit) of ***n*** is 1, the user-defined character set is selected. When it is 0, the internal character set is selected; this is the default setting.

ESC & *y c1 c2 [x1 d1 ... d(y × x1)] ... [xk d1 ... d(y × xk)]* defines user-defined characters from character code ***c1*** to ***c2***. ***y*** and ***x*** are the configuration of a user-defined character. ***y*** specifies the number of bytes in the vertical direction. ***x*** specifies the number of dots in the horizontal direction. Character code range from ASCII code 20H (32) to 7EH (126) can be defined by ***c1*** and ***c2***. Data (***d***) specifies a bit printed to 1 and not printed to 0. At the default, user-defined characters are not defined and the internal character set is printed. Once the user-defined characters have been defined, they are available until **ESC @**, **ESC ?**, or **GS ***** is executed; the user-defined characters are redefined; the power is turned off; or the printer is reset. The downloaded bit image is canceled.

ESC ? *n* cancels the user-defined characters defined for the character code ***n***. After the user-defined characters are canceled, the internal character set is printed.

Program Example

```
y=3
PRINT #1, CHR$(&H1B);"&";CHR$(y);"AC";
x=9: PRINT #1, CHR$(x);
FOR i=1 TO y*x
  READ d: PRINT #1, CHR$(d);
NEXT i
x=11: PRINT #1, CHR$(x);
FOR i=1 TO y*x
  READ d: PRINT #1, CHR$(d);
NEXT i
x=12: PRINT #1, CHR$(x);
FOR i=1 TO y*x
  READ d: PRINT #1, CHR$(d);
NEXT i
PRINT #1, CHR$(&H1B);"%";CHR$(0); ← Select the internal character set
PRINT #1, "A B C D E"; CHR$(&HA);
PRINT #1, CHR$(&H1B);"%";CHR$(1); ←Select the user-defined character set
PRINT #1, "A B C D E"; CHR$(&HA):
PRINT #1, CHR$(&H1B);"?";"A"; ← Cancel the user-defined character set
PRINT #1, "A B C D E"; CHR$(&HA);

DATA &H00,&H20,&H00,&H00,&H20,&H00,&H00,&H70
DATA &H00,&H00,&HF8,&H00,&H07,&HFF,&H00,&H00
DATA &HF8,&H00,&H00,&H70,&H00,&H00,&H20,&H00
DATA &H00,&H20,&H00
DATA &H00,&H20,&H00,&H00,$HF8,&H00,&H03,&H8E
DATA &H00,&H0E,&H03,&H80,&H38,&H00,&HE0,&HE0
DATA &H00,&H38,&H38,&H00,&HE0,&H0E,&H03,&H80
DATA &H03,&H8E,&H00,&H00,&HF8,&H00,&H00,&H20
DATA &H00
DATA &H00,&H30,&H00,&H00,&HF0,&H00,&H03,&HF0
DATA &H00,&H0F,&H3F,&HF8,&H3C,&H3F,&HF8,&HF0
DATA &H00,&H18,&HF0,&H00,&H18,&H3C,&H3F,&HF8
DATA &H0F,&H3F,&HF8,&H03,&HF0,&H00,&H00,&HF0
DATA &H00,&H00,&H30,&H00
```

Defines the user-defined characters as "A", "B", and "C"

Print Sample

```
A  B  C  D  E ← Characters from internal character set
◆  ◊  ↑  D  E ← Characters from user-defined character set
A  ◊  ↑  D  E ← Characters from user-defined character set (1 character canceled)
```

ESC R *n*

[Name] Select an international character set

[Format]				
	ASCII	ESC	R	*n*
	Hex	1B	52	*n*
	Decimal	27	82	*n*

[Range] $0 \le n \le 10$

ESC R *n* selects an international character set ***n*** as follows. The default value is U.S.A. (***n***=0).

n	**Country**
0	U.S.A.
1	France
2	Germany
3	U.K.
4	Denmark I
5	Sweden
6	Italy
7	Spain
8	Japan
9	Norway
10	Denmark II

Program Example

```
FOR n=0 TO 10
 PRINT #1, CHR$(&H1B);"R";CHR$(n);
 PRINT #1, "# $ @ (\) ^ ` {¦} ~ ";CHR$(&HA);
NEXT n
```

Print Sample

```
#  $  @  [  \  ]  ^  `  {  ¦  }  ~   ← n=0 (Default setting)
#  $  à  °  ç  §  ^  `  é  ù  è  ¨   ← n=1
#  $  §  Ä  Ö  Ü  ^  `  ä  ö  ü  ß   ← n=2
£  $  @  [  \  ]  ^  `  {  ¦  }  ~   ← n=3
#  $  @  Æ  Ø  Å  ^  `  æ  ø  å  ~   ← n=4
#  ¤  É  Ä  Ö  Å  Ü  é  ä  ö  å  ü   ← n=5
#  $  @  °  \  é  ^  ù  à  ò  è  ì   ← n=6
Pt $  @  ¡  Ñ  ¿  ^  `  ¨  ñ  }  ~   ← n=7
#  $  @  [  ¥  ]  ^  `  {  ¦  }  ~   ← n=8
#  ¤  É  Æ  Ø  Å  Ü  é  æ  ø  å  ü   ← n=9
#  $  É  Æ  Ø  Å  Ü  é  æ  ø  å  ü   ← n=10
```

[Name]	Select character code table			
[Format]	ASCII	ESC	t	*n*
	Hex	1B	74	*n*
	Decimal	27	116	*n*
[Range]	$0 \le n \le 5,\ n = 255$			

ESC t *n* selects a page ***n*** from the character code table as follows. The alphanumeric characters [20H (decimal 32) to 7FH (decimal 127)] are the same for each page. The graphic characters [80H (decimal 128) to FFH (decimal 255)] are different for each page. The default setting is page 0.

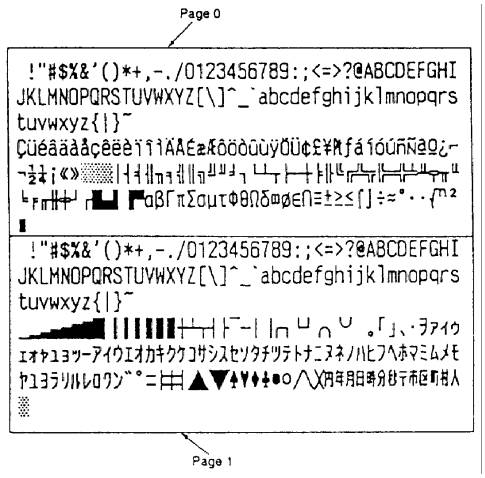
n	**Character code table**
0	Page 0 [PC437 (U.S.A., Standard Europe)]
1	Page 1 [Katakana]
2	Page 2 [PC850 (Multilingual)]
3	Page 3 [PC860 (Portuguese)]
4	Page 4 [PC863 (Canadian-French)]
5	Page 5 [PC865 (Nordic)]
255	Page 255 [Space page]

Program Example

```
PRINT #1, CHR$(&H1B);"t";CHR$(0);← Select page 0
GOSUB printing
PRINT #1, CHR$(&H1B);"t";CHR$(1);← Select page 1
GOSUB printing
END

printing:
  FOR i=&H20 TO &H7F
    PRINT #1, CHR$(i);
  NEXT i
  PRINT #1, CHR$(&HA);
  FOR i=&H80 TO &HFF
    PRINT #1, CHR$(i);
  NEXT i
  PRINT #1, CHR$(&HA);
  RETURN
```

Print Sample



ESC ! *n*

[Name] Select print mode(s)

[Format]

ASCII	ESC	!	*n*
Hex	1B	21	*n*
Decimal	27	33	*n*

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

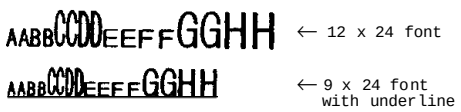
ESC ! *n* selects print modes using ***n*** as follows. The default setting is ***n***=0.

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Character font 12 x 24 selected.
	On	01	1	Character font 9 x 24 selected.
1, 2	—	—	—	Undefined.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized 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	–	–	–	Undefined.
7	Off	00	0	Underline mode not selected.
	On	80	128	Underline mode selected.

Program Example

```
PRINT #1, CHR$(&H1B);"!";CHR$(0);  "AA";
PRINT #1, CHR$(&H1B);"!";CHR$(8);  "BB";
PRINT #1, CHR$(&H1B);"!";CHR$(16); "CC";
PRINT #1, CHR$(&H1B);"!";CHR$(24); "DD";
PRINT #1, CHR$(&H1B);"!";CHR$(32); "EE";
PRINT #1, CHR$(&H1B);"!";CHR$(40); "FF";
PRINT #1, CHR$(&H1B);"!";CHR$(48); "GG";
PRINT #1, CHR$(&H1B);"!";CHR$(56); "HH";CHR$(&HA);
PRINT #1, CHR$(&H1B);"!";CHR$(129); "AA";
PRINT #1, CHR$(&H1B);"!";CHR$(137); "BB";
PRINT #1, CHR$(&H1B);"!";CHR$(145); "CC";
PRINT #1, CHR$(&H1B);"!";CHR$(153); "DD";
PRINT #1, CHR$(&H1B);"!";CHR$(161); "EE";
PRINT #1, CHR$(&H1B);"!";CHR$(169); "FF";
PRINT #1, CHR$(&H1B);"!";CHR$(177); "GG";
PRINT #1, CHR$(&H1B);"!";CHR$(185); "HH";CHR$(&HA);
```

Print Sample




```
AA:  Normal
BB:  Emphasized
CC:  Double-height
DD:  Emphasized + Double-height
EE:  Double-width
FF:  Emphasized + Double-width
GG:  Double-height + Double-width
HH:  Emphasized + Double-height + Double-width
```

ESC – *n*

[Name] Turn underline mode on/off

[Format]	ASCII	ESC	–	*n*
	Hex	1B	2D	*n*
	Decimal	27	45	*n*

[Range] $0 \le n \le 2,\ 48 \le n \le 50$

ESC – *n* turns underline mode on or off. When ***n***=1 or 49, underline mode (one-dot width) is turned on; when ***n***=2 or 50, underline mode (two-dot width) is turned on; and when ***n***=0 or 48, underline mode is turned off. The underline mode is on, 90° clockwise rotated characters and white/black inverted characters cannot be underlined. The default setting is ***n***=0.

Program Example

```
PRINT #1, CHR$(&H1B);"-";CHR$(1); ← Select
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1B);"-";CHR$(0); ← Cancel
PRINT #1, "BBBBB"; CHR$(&HA);
```

Print Sample

AAAAA ← Underline (one-dot width) turned on
BBBBB ← Underline turned off

ESC E *n*

[Name] Turn emphasized mode on/off

[Format]	ASCII	ESC	E	*n*
	Hex	1B	45	*n*
	Decimal	27	69	*n*

[Range] $0 \le n \le 255$ (Only the least significant bit of *n* is enabled.)

ESC E *n* turns emphasized mode on or off. When the LSB (least significant bit) of ***n*** is 1, emphasized mode is turned on; when it is 0, emphasized mode is turned off. The default setting is ***n***=0. Emphasized and double-strike printing appear the same.

Program Example

```
PRINT #1, CHR$(&H1B);"E";CHR$(1);← Select
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1B);"E";CHR$(0);← Cancel
PRINT #1, "BBBBB"; CHR$(&HA);
```

Print Sample

AAAAA ← Emphasized
BBBBB ← Normal

ESC G *n*

[Name]	Turn double-strike mode on/off			
[Format]	ASCII	ESC	G	*n*
	Hex	1B	47	*n*
	Decimal	27	71	*n*
[Range]	$0 \le n \le 255$	(Only the least significant bit of *n* is enabled.)		

ESC G *n* turns double-strike mode on or off. When the LSB (least significant bit) of ***n*** is 1, double-strike mode is turned on; when it is 0, double-strike mode is turned off. The default setting is ***n***=0. Double-strike and emphasized printing appear the same.

Program Example

```
PRINT #1, CHR$(&H1B);"G";CHR$(1); ← Select
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1B);"G";CHR$(0); ← Cancel
PRINT #1, "BBBBB"; CHR$(&HA);
```

Print Sample

AAAAA ← Double-strike
BBBBB ← Normal

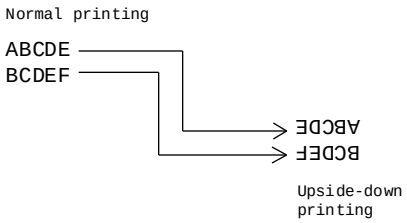
[Name]	Turn upside-down printing mode on/off			
[Format]	ASCII	ESC	{	*n*
	Hex	1B	7B	*n*
	Decimal	27	123	*n*
[Range]	$0 \le n \le 255$	(Only the least significant bit of *n* is enabled.)		

ESC { *n* turns upside-down printing mode on or off. When the LSB (least significant bit) of ***n*** is 1, upside-down printing mode is turned on; when it is 0, upside-down printing mode is turned off. The default setting is ***n***=0. When upside-down mode is turned on, the printer prints 180°-rotated characters from right to left. The line printing order is not reversed; therefore be careful of the order of the data transmitted. In standard mode, this command is enabled only when input at the beginning of a line. In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

Program Example

```
PRINT #1, CHR$(&H1B);"{";CHR$(0); ← Cancel
GOSUB printing
PRINT #1, CHR$(&H1B);"{";CHR$(1); ← Select
GOSUB printing
END
printing:
  PRINT #1, "ABCDE"; CHR$(&HA);
  PRINT #1, "BCDEF"; CHR$(&HA);
  RETURN
```

Print Sample



ESC V *n*

[Name] Turn 90° clockwise rotation mode on/off

[Format]				
	ASCII	ESC	V	*n*
	Hex	1B	56	*n*
	Decimal	27	86	*n*

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

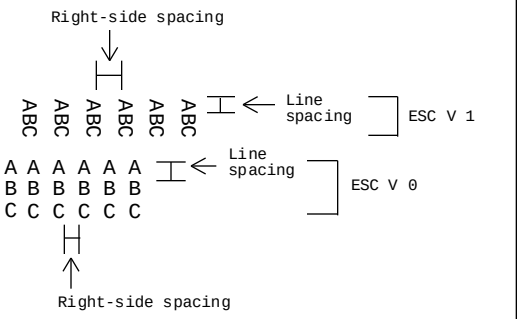
ESC V *n* turns the 90° clockwise rotation mode on or off. When ***n***=1 or 49, 90° clockwise rotation mode is turned on; when ***n***=0 or 48, this mode is turned off. This command is enabled only in standard mode. If this command is entered in page mode, an internal flag is activated and the command is enabled when the printer returns to standard mode.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, CHR$(&H1B);" ";CHR$(20);← Set right-side spacing
PRINT #1, CHR$(&H1B);"3";CHR$(15);← Set line spacing
PRINT #1, CHR$(&H1B);"V";CHR$(1);← Turn on
GOSUB printing
PRINT #1, CHR$(&H1B);"2";← Set line spacing
PRINT #1, CHR$(&H1B);"V";CHR$(0);← Turn off
GOSUB printing
END


printing:
  PRINT #1, "AAAAA"; CHR$(&HA);
  PRINT #1, "BBBBB"; CHR$(&HA);
  PRINT #1, "CCCCC"; CHR$(&HA);
  RETURN
```

Print Sample



[Name] Select character size

[Format]				
	ASCII	GS	!	*n*
	Hex	1D	21	*n*
	Decimal	29	33	*n*

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

GS ! *n* selects the character height using bits 0 to 3, and selects the character width using bits 4 to 7.

Character width selection is as follows:

Hex	Decimal	Width
00	0	1 (normal)
10	16	2 (double-width)
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

Character height selection is as follows:

Hex	Decimal	Width
00	0	1 (normal)
01	1	2 (double-width)
02	2	3
03	3	4
04	4	5
05	5	6
06	6	7
07	7	8

Program Example

```
PRINT #1, CHR$(&H1D);"!";CHR$(68);
PRINT #1, "BBBBB"; CHR$(&HA);
PRINT #1, CHR$(&H1D);"!";CHR$(0)
PRINT #1, "AAAAA"; CHR$(&HA);
```

Print Sample

BBBBB ← Select five-times normal font height and five-times normal font width

AAAAA ← Normal

GS B *n*

[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 (Only the least significant bit of *n* is enabled.)

GS B *n* turns the white/black reverse printing mode on or off. When the LSB (least significant bit) of ***n*** is 1, white/black reverse printing mode is turned on. When it is 0, white/black reverse printing mode is turned off. The default setting is ***n***=0. In white/black reverse printing mode, characters are printed in white on a black background.

Program Example

```
PRINT #1, CHR$(&H1D);"B";CHR$(1);
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1D);"B";CHR$(0);
PRINT #1, "BBBBB";CHR$(&HA);
```

Print Sample

AAAAA ← Reverse

BBBBB ← Normal

GS b *n*

[Name] Turn smoothing mode on/off

[Format]	ASCII	GS	b	*n*
	Hex	1D	62	*n*
	Decimal	29	98	*n*

[Range] 0≤ *n* ≤ 255 (Only the least significant bit of *n* is enabled.)

GS b *n* turns the smoothing mode on or off. When the LSB (least significant bit) of ***n*** is 1, smoothing mode is turned on. When it is 1, smoothing mode is turned off. The default setting is ***n***=0. Smoothing is available for quadruple-size or larger characters.

Program Example

```
PRINT #1, CHR$(&H1D);"!";CHR$(68); ←Select font size
PRINT #1, CHR$(&H1D);"b";CHR$(1); ← Turn on
PRINT #1, "AAAAA"; CHR$(&HA);
```

Print Sample

AAAAA

CAN

[Name] Cancel print data in page mode

[Format]

	ASCII	CAN
	Hex	18
	Decimal	24

CAN deletes all the print data in the current printable area when the printer is in page mode. If data that existed in the previously specified printable area also exists in the currently specified printable area, it will also be deleted.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, CHR$(&H1B);"L"; ← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);
CHR$(0);CHR$(240);CHR$(0);CHR$(44);CHR$(1);
PRINT #1, CHR$(&H1B);"T";CHR$(0); ← Select print direction
FOR i=1 to 200 : PRINT #1, "A"; : NEXT i
PRINT #1,CHR$(&H1B);"W";CHR$(60);CHR$(0);CHR$(90);
CHR$(0);CHR$(60);CHR$(0);CHR$(120);CHR$(0);
PRINT #1, CHR$(&H18);← Cancel print data
PRINT #1, CHR$(&HC);← Batch print and return standard mode
```

Print Sample

```
AAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA
AAAAA     AAAAAAAAAA
AAAAA     AAAAAAAAAA
AAAAA     AAAAAAAAAA
AAAAA     AAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA
```

Panel Button Command

The TM-L60II/L60IIP printers support the following command for enabling and disabling the panel button (PAPER FEED):

Command	Name
ESC c 5	Enable/disable panel buttons

ESC c 5 *n*

[Name]	Enable/disable panel buttons				
[Format]	ASCII	ESC	c	5	*n*
	Hex	1B	63	35	*n*
	Decimal	27	99	53	*n*
[Range]	$0 \le n \le 255$	(Only the least significant bit of *n* is enabled.)			

ESC c 5 ***n*** enables or disables the PAPER FEED button. When the LSB (least significant bit) of ***n*** is 1, this button is disabled; when it is 0, this button is enabled. To prevent problems caused by accidentally pressing the PAPER FEED button, use this command to disable the button. When the printer cover is open, the button is enabled regardless of the setting of this command. When using the **GS FF** command or when the printer is in macro execution standby, the PAPER FEED button is enabled regardless of the setting of this command.

Program Example

```
PRINT #1, CHR$(&H1B);"c5";CHR$(1); ← Disable panel buttons
```

Paper Sensor Commands

The TM-L60II/L60IIP printers support the following commands for controlling the paper sensor(s) that stop printing and output paper-end signals:

Command	Name
ESC c 4	Select paper sensor(s) to stop printing
ESC c 3	Select paper sensor(s) to output paper-end signals

ESC c 4 *n*

[Name] Select paper sensor(s) to stop printing

[Format]					
	ASCII	ESC	c	4	*n*
	Hex	1B	63	34	*n*
	Decimal	27	99	52	*n*

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

ESC c 4 *n* selects the paper sensor that stops printing when the paper runs out. The default setting is when all paper sensors are disabled (***n***=0). Bits 0 and 1 indicate the same sensor. If one of the bits is enabled, the paper roll near-end sensor is selected to stop printing. The paper roll sensor is always enabled, and when a paper-end is detected, the printer stops printing.

When the paper roll near-end sensor is enabled, and if the sensor detects a near-end condition during printing, the printer stops printing and goes off-line automatically after the current printing. Replacing a new paper roll starts the printing again.

When the paper roll near-end sensor is disabled, and if a paper near-end condition is detected during printing, the PAPER OUT LED comes on, but the printer does not stop printing and does not go off-line.

The paper sensor(s) used to stop printing are selected by using ***n*** as follows:

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll near-end sensor disabled.
	On	01	1	Paper roll near-end sensor enabled.
1	Off	00	0	Paper roll near-end sensor disabled.
	On	02	2	Paper roll near-end sensor enabled.
2-7	-	-	-	Undefined.

Program Example

```
PRINT #1, CHR$(&H1B);"c4";CHR$(1); ← Paper roll near-end sensor enabled
```

ESC c 3 *n*

[Name] Select paper sensor(s) to output paper-end signals

[Format]					
	ASCII	ESC	c	3	*n*
	Hex	1B	63	33	*n*
	Decimal	27	99	51	*n*

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

ESC c 3 *n* selects the paper sensor that outputs a paper-end signal to the parallel interface when a paper-end is detected. The default setting is when all sensors are enabled (***n***= 15).

It is possible to select multiple sensors to output signals. Then, if any of the sensors detects a paper end, the paper end signal is output. This command is available only with a parallel interface and is ignored with a serial interface.

The paper sensor(s) used to output paper-end signals are selected by using ***n*** as follows:

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll near-end sensor disabled.
	On	01	1	Paper roll near-end sensor enabled.
1	Off	00	0	Paper roll near-end sensor disabled.
	On	02	2	Paper roll near-end sensor enabled.
2	Off	00	0	Paper roll end sensor disabled.
	On	02	4	Paper roll end sensor enabled.
3	Off	00	0	Paper roll end sensor disabled.
	On	08	8	Paper roll end sensor enabled.
4-7	-	-	-	Undefined.

Program Example

```
PRINT #1, CHR$(&H1B);"c3";CHR$(15); ← All sensors enabled
```

Print Position Commands

The TM-L60II/L60IIP printers support the following commands for setting the print position:

Command	Name
ESC $	Set absolute print position
**ESC **	Set relative print position
ESC a	Select justification
HT	Horizontal tab
ESC D	Set horizontal tab positions
GS L	Set left margin
GS W	Set printing area width
ESC W	Set printing area in page mode
ESC T	Set print direction in page mode
GS $	Set absolute vertical print position in page mode
**GS **	Set relative vertical print position in page mode

ESC $ *nL nH*

[Name]	Set absolute print position				
[Format]	ASCII	ESC	$	*nL*	*nH*
	Hex	1B	24	*nL*	*nH*
	Decimal	27	36	*nL*	*nH*
[Range]	$0 \le nL \le 255$				
	$0 \le nH \le 255$				

ESC \ *nL nH*

[Name]	Set relative print position				
[Format}	ASCII	ESC	\	*nL*	*nH*
	Hex	1B	5C	*nL*	*nH*
	Decimal	27	92	*nL*	*nH*
[Range]	$0 \le nL \le 255$				
	$0 \le nH \le 255$				

ESC $ *nL nH* sets the print starting position to [(***nL*** + ***nH*** × 256) × (horizontal or vertical motion unit)] inches from the beginning of the line.

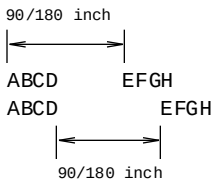
ESC \ *nL nH* moves the print starting position to [(***nL*** + ***nH*** × 256) × (horizontal or vertical motion unit)] inches from the current position. Use the complement of N for setting N pitch movement to the left: –N pitch = 65536 – N, where N=(***nL*** + ***nH*** × 256).

When standard mode is selected, the horizontal motion unit set by **GS P** is used. When page mode is selected, the horizontal or vertical motion unit set by **GS P** is used for the print direction set by **ESC T**.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, "ABCD";
PRINT #1, CHR$(&H1B);"$";CHR$(90);CHR$(0);
PRINT #1, "EFGH"; CHR$(&HA);
PRINT #1, "ABCD";
PRINT #1, CHR$(&H1B);"\";CHR$(90);CHR$(0);
PRINT #1, "EFGH"; CHR$(&HA);
```

Print Sample



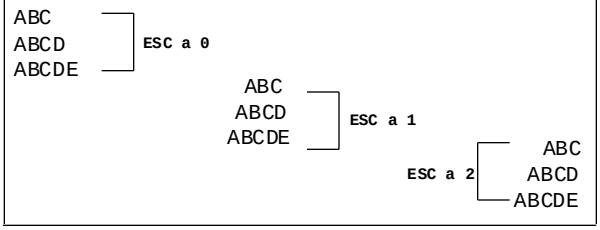
[Name]	Select justification			
[Format]	ASCII	ESC	a	*n*
	Hex	1B	61	*n*
	Decimal	27	97	*n*
[Range]	$0 \le n \le 2$			
	$48 \le n \le 50$			

ESC a *n* aligns all the data in one line to a specified position. Left justification is selected when ***n***=0 or 48, centering is selected when ***n***=1 or 49, and right justification is selected when ***n***=2 or 50. The default setting is left justification (***n***=0). This command is enabled only at the beginning of a line in standard mode. If this command is entered in page mode, an internal flag is activated and the command is enabled when the printer returns to standard mode.

Program Example

```
FOR n=0 TO 2
  PRINT #1, CHR$(&H1B);"a";CHR$(n);
  PRINT #1, "ABC"; CHR$(&HA);
  PRINT #1, "ABCD"; CHR$(&HA);
  PRINT #1, "ABCDE"; CHR$(&HA);
NEXT n
```

Print Sample



HT

[Name] Horizontal tab

[Format]

ASCII	HT
Hex	09
Decimal	10

ESC D *n1...nk NUL*

[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] $1 \le n \le 255$

$0 \le k \le 32$

HT moves the print position to the next horizontal tab position. This command is used to align the character columns. The command is ignored unless the next horizontal tab position has been set.

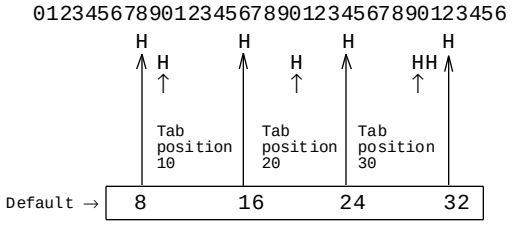
ESC D *n1...nk NUL* sets the horizontal tab positions. ***n*** specifies the column number (counted from the left margin or the beginning of the line) for setting a horizontal tab position. This command deletes any previously set horizontal tab positions. Up to 32 tab positions can be set. The default tab positions are at intervals of 8 characters (columns 9, 17, 25, etc.) for the 12 × 24 font.

Program Example

```
PRINT #1, "01234567890123456789012345678901234567890123456";
PRINT #1, CHR$(&HA);
GOSUB ht
PRINT #1, CHR$(&H1B);"D";CHR$(10);CHR$(20);
PRINT #1, CHR$(30);CHR$(0);
GOSUB ht
END

ht:
  FOR i=1 TO 4
    PRINT #1, CHR$(&H9); "H";
  NEXT i
  PRINT #1, CHR$(&HA);
  RETURN
```

Print Sample



GS L n_L n_H

[Name]	Set left margin				
[Format]	ASCII	GS	L	n_L	n_H
	Hex	1D	4C	n_L	n_H
	Decimal	29	76	n_L	n_H
[Range]	$0 \le n_L \le 255$				
	$0 \le n_H \le 255$				

GS W n_L n_H

[Name]	Set printing area width				
[Format]	ASCII	GS	W	n_L	n_H
	Hex	1D	57	n_L	n_H
	Decimal	29	87	n_L	n_H
[Range]	$0 \le n_L \le 255$				
	$0 \le n_H \le 255$				

GS L n_L n_H sets the left margin to $[(n_L + n_H \times 256) \times$ (horizontal motion unit)] inches from the beginning of a line. The default setting is n_L=0, n_H=0. This command is enabled only at the beginning of a line in standard mode. If this command is entered in page mode, an internal flag is activated and the command is enabled when the printer returns to standard mode.

GS W n_L n_H sets the printing area width to $[(n_L + n_H \times 256) \times$ (horizontal motion unit)] inches from the left margin. The default setting is n_L=0, n_H=2. This command is enabled only at the beginning of a line in standard mode. If this command is entered in page mode, an internal flag is activated and the command is enabled when the printer returns to standard mode.

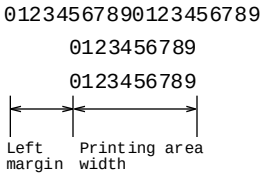
If the above commands set the printing area width to less than the width of one character, the printing area width is extended to accommodate one character for the line.

The horizontal motion units use the horizontal value set by the **GS P** command. The default setting of the horizontal motion unit is 1/180 inches.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, "01234567890123456789"; CHR$(&HA);
PRINT #1, CHR$(&H1D);"L";CHR$(60);CHR$(0);
PRINT #1, CHR$(&H1D);"W";CHR$(120);CHR$(0);
PRINT #1, "01234567890123456789"; CHR$(&HA);
```

Print Sample



ESC W x_L x_H y_L y_H dx_L dx_H dy_L dy_H

[Name] Set printing area in page mode

[Format]				
	ASCII	ESC	W	x_L x_H y_L y_H dx_L dx_H dy_L dy_H
	Hex	1B	57	x_L x_H y_L y_H dx_L dx_H dy_L dy_H
	Decimal	27	87	x_L x_H y_L y_H dx_L dx_H dy_L dy_H

[Range] $0 \le x_L, x_H, y_L, y_H, dx_L, dx_H, dy_L, dy_H \le 255$

(except for $dx_L = dx_H = 0$ or $dy_L = dy_H = 0$)

ESC W x_L x_H y_L y_H dx_L dx_H dy_L dy_H sets the size and position of the printing area in page mode as follows:

Horizontal starting position = $[(x_L + x_H \times 256) \times$ (horizontal motion unit)] inches
Vertical starting position = $[(y_L + y_H \times 256) \times$ (vertical motion unit)] inches
Printing area width = $[(dx_L + dx_H \times 256) \times$ (horizontal motion unit)] inches
Printing area height = $[(dy_L + dy_H \times 256) \times$ (vertical motion unit)] inches

The default settings are as follows:

$x_L = x_H = y_L = y_H = 0$
$dx_L = 0$, $dx_H = 2$, $dy_L = 126$, $dy_H = 6$

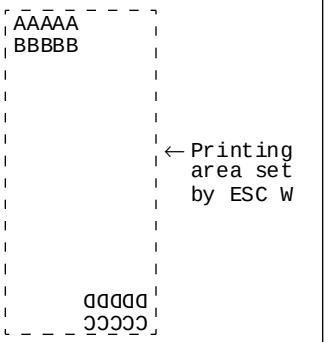
This command is enabled only in page mode. If this command is entered in standard mode, an internal flag is activated and the command is enabled when the printer selects page mode.

The horizontal and vertical motion units use the horizontal and vertical values set by the **GS P** command. The default settings of the horizontal and vertical motion units are 1/180 and 1/360 inches, respectively.

Program Example

```
PRINT #1, CHR$(&H1B);"L";← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);CHR$(0);CHR$(180);
CHR$(0);CHR$(132);CHR$(3);
PRINT #1, CHR$(&H1B);"T";CHR$(0);← Select print direction
PRINT #1, "AAAAA"; CHR$(&HA);← Store characters for printing
PRINT #1, "BBBBB"; CHR$(&HA);← Store characters for printing
PRINT #1, CHR$(&H1B);"T";CHR$(2);← Select print direction
PRINT #1, "CCCCC"; CHR$(&HA);← Store characters for printing
PRINT #1, "DDDDD"; CHR$(&HC);← Batch print and return to standard mode
```

Print Sample

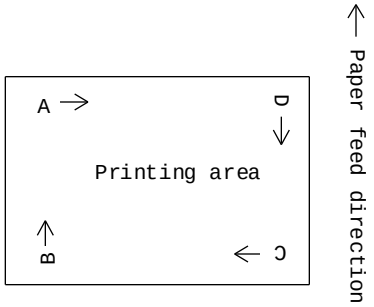


ESC T *n*

[Name]	Set print direction in page mode			
[Format]	ASCII	ESC	T	*n*
	Hex	1B	54	*n*
	Decimal	27	84	*n*
[Range]	$0 \le n \le 3$			
	$48 \le n \le 51$			

ESC T *n* sets the print direction and starting position in page mode specified by ***n*** as shown below. The default setting is ***n***=0. This command is enabled only in page mode. If this command is entered in standard mode, an internal flag is activated and the command is enabled when the printer returns to page mode.

n	**Print Direction**	**Starting Position**
0, 48	Left to right	Upper left (A in the figure)
1, 49	Bottom to top	Lower left (B in the figure)
2, 50	Right to left	Lower right (C in the figure)
3, 51	Top to bottom	Upper right (D in the figure)



The parameters for the horizontal or vertical motion units (***x*** or ***y***) differ depending on the starting position of the printing area as follows:

If the starting position is the upper left or lower right of the printing area (***n***=0, 2, 48, or 50):

- ❏ These commands use horizontal motion units: **ESC SP, ESC $, ESC **
- ❏ These commands use vertical motion units: **ESC 3, ESC J, GS $, GS **

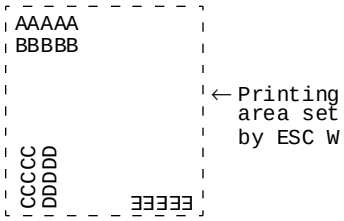
If the starting position is the upper right or lower left of the printing area (***n***=1, 3, 49, or 51):

- ❏ These commands use horizontal motion units: **ESC 3, ESC J, GS $, GS **
- ❏ These commands use vertical motion units: **ESC SP, ESC $, ESC **

Program Example

```
PRINT #1, CHR$(&H1B);"L";← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);CHR$(0);
CHR$(240);CHR$(0);CHR$(224);CHR$(1);
PRINT #1, CHR$(&H1B);"T";CHR$(0);← Select print direction
PRINT #1, "AAAAA"; CHR$(&HA);← Store characters for printing
PRINT #1, "BBBBB"; CHR$(&HA);← Store characters for printing
PRINT #1, CHR$(&H1B);"T";CHR$(1);← Select print direction
PRINT #1, "CCCCC"; CHR$(&HA);← Store characters for printing
PRINT #1, "DDDDD"; CHR$(&HA);← Store characters for printing
PRINT #1, CHR$(&H1B);"T";CHR$(2);← Select print direction
PRINT #1, "EEEEE"; CHR$(&HC);← Batch print and return to standard mode
```

Print Sample



GS $ *nL nH*

[Name]	Set absolute vertical print position in page mode				
[Format]	ASCII	GS	$	*nL*	*nH*
	Hex	1D	24	*nL*	*nH*
	Decimal	29	36	*nL*	*nH*
[Range]	$0 \le nL \le 255$				
	$0 \le nH \le 255$				

GS \ *nL nH*

[Name]	Set relative vertical print position in page mode				
[Format]	ASCII	GS	\	*nL*	*nH*
	Hex	1D	5C	*nL*	*nH*
	Decimal	29	92	*nL*	*nH*
[Range]	$0 \le nL \le 255$				
	$0 \le nH \le 255$				

GS $ *nL nH* sets the absolute vertical print starting position for buffer character data in page mode to $[(nL + nH \times 256) \times$ (vertical or horizontal motion unit)] inches. This command is effective only in page mode.

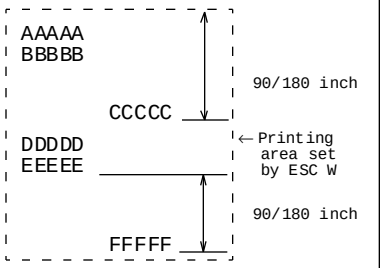
GS \ *nL nH* moves the vertical print starting position in page mode to $[(nL + nH \times 256) \times$ (vertical or horizontal motion unit)] inches from the current position. This command is ignored in standard mode. Use the complement of N for setting pitch movement upward: – N pitch = 65536 – N, where $N=(nL + nH \times 256)$.

The horizontal and vertical motion units set by **GS P** are used for the print direction set by **ESC T**.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, CHR$(&H1B);"L";← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);CHR$(0);
CHR$(180);CHR$(0);CHR$(132);CHR$(3);
PRINT #1, CHR$(&H1B);"T";CHR$(0);← Select print direction
PRINT #1, "AAAAA"; CHR$(&HA);← Store characters for printing
PRINT #1, "BBBBB";
PRINT #1, CHR$(&H1D);"$";CHR$(90);CHR$(0);
PRINT #1, "CCCCC"; CHR$(&HA);← Store characters for printing
PRINT #1, "DDDDD"; CHR$(&HA);← Store characters for printing
PRINT #1, "EEEEE";
PRINT #1, CHR$(&H1D);"\";CHR$(90);CHR$(0);
PRINT #1, "FFFFF"; CHR$(&HC);← Batch print and return to standard mode
```

Print Sample



Bit-Image Commands

The TM-L60II/L60IIP printers support the following bit-image commands:

Command	Name
ESC ✻	Select bit-image mode
GS ✻	Define downloaded bit image
GS /	Print downloaded bit image

ESC ✻ *m nL nH d1...dk*

[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] $m = 0, 1, 32, 33$

$0 \le n_L \le 255$

$0 \le n_H \le 3$

$0 \le d \le 255$

ESC ✻ *m nL nH d1...dk* selects a bit-image mode using ***m*** for the number of dots specified by ($n_L + n_H \times 256$). ***d*** indicates the bit image data. Set a bit to 1 to print a dot. This command is used to print a predefined picture or logo.

The modes selectable by ***m*** are as follows:

m	Mode	Vertical Direction		Horizontal Direction	
		Dot Density	Number of Dots	Dot Density	Amount of Data (*k*)
0	8-dot single density	60 DPI	8	90 DPI	$n_L + n_H \times 256$
1	8-dot double density	60 DPI	8	180 DPI	$n_L + n_H \times 256$
32	24-dot single density	180 DPI	24	90 DPI	$(n_L + n_H \times 256) \times 3$
33	24-dot double density	180 DPI	24	180 DPI	$(n_L + n_H \times 256) \times 3$

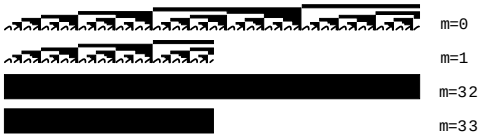
Program Example

```
m=0:  GOSUB bitimage8
m=1:  GOSUB bitimage8
m=32: GOSUB bitimage24
m=33: GOSUB bitimage24
END

bitimage8:
  PRINT #1,
CHR$(&H1B);"*";CHR$(m);CHR$(180);CHR$(0);
  FOR i=1 TO 180
    PRINT #1, CHR$(i);
  NEXT i
  PRINT #1, CHR$(&HA);
  RETURN

bitimage24:
  PRINT #1,
CHR$(&H1B);"*";CHR$(m);CHR$(180);CHR$(0);
  FOR i=1 TO 180
    PRINT #1, CHR$(i);CHR$(i);CHR$(i);
  NEXT i
  PRINT #1, CHR$(&HA);
  RETURN
```

Print sample



GS ∗ *x y d1...d(x × y × 8)*

[Name]	Define downloaded 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]	$1 \le x \le 255$					
	$1 \le y \le 48$					
	$x \times y \le 1536$					
	$0 \le d \le 255$					

GS / *m*

[Name]	Print downloaded bit image			
[Format]	ASCII	GS	/	*m*
	Hex	1D	2F	*m*
	Decimal	29	47	*m*
[Range]	$0 \le m \le 3$			
	$48 \le m \le 51$			

GS ∗ *x y d1...d(x × y × 8)* defines a downloaded bit image using $x \times 8$ dots in the horizontal direction and $y \times 8$ dots in the vertical direction. Once a downloaded bit image has been defined, it is available until another definition is made, **ESC @** or **ESC &** is executed, the printer is reset, or the power is turned off. When this command is executed, the user-defined characters are cleared. The default setting is no downloaded bit image defined.

GS / *m* prints a downloaded bit image using the mode specified by ***m***, as follows. In standard mode, this command is effective only when there is no data in the print buffer. This command is ignored if a downloaded bit image has not been defined.

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	180 DPI	180 DPI
1, 49	Double-width	180 DPI	90 DPI
2, 50	Double-height	90 DPI	180 DPI
3, 51	Quadruple	90 DPI	90 DPI

Program Example

```
x=16: y=5
PRINT #1, CHR$(&H1D);"*";CHR$(x);CHR$(y);
FOR i=1 TO x*y*8
  READ a$: d=VAL("&H"+a$)
  PRINT #1, CHR$(d);
NEXT i

FOR m=0 TO 3
  PRINT #1, CHR$(&H1D);"/";CHR$(m)
  PRINT #1, CHR$(&HA);
NEXT m
END

DATA FF,FF,FF,FF,FF,FF,FF,FF,FF,C0,00,00,00,03,C0
DATA 00,00,00,03,CF,FF,FF,FF,F3,CF,FF,FF,FF,F3,CF,FF
DATA FF,FF,F3,CF,FF,FF,FF,F3,CF,FF,FF,FF,F3,CF,C0,FC
DATA 03,F3,CF,C0,FC,03,F3,CF,C0,FC,03,F3,CF,C0,FC,03
DATA F3,CF,C0,FC,03,F3,CF,C0,FC,03,F3,CF,C0,FC,03,F3
DATA CF,C0,FC,03,F3,CF,C0,FC,03,F3,CF,C0,00,03,F3,C0
DATA 00,00,00,03,C0,FF,00,03,F3,C3,FF,C0,03,F3,C7,FF
DATA E0,03,F3,C7,FF,F0,03,F3,CF,FF,F8,03,F3,CF,FF,FC
DATA 03,F3,CF,E3,FE,03,F3,CF,C1,FF,03,F3,CF,C0,FF,83
DATA F3,CF,C0,7F,C7,F3,CF,C0,3F,FF,F3,CF,C0,1F,FF,F3
DATA CF,C0,0F,FF,E3,CF,C0,07,FF,E3,CF,C0,03,FF,C3,C0
DATA 00,00,FF,03,C0,00,00,00,03,C0,3F,FF,FC,03,C0,FF
DATA FF,FF,03,C3,FF,FF,FF,C3,C7,FF,FF,FF,E3,C7,FF,FF
DATA FF,E3,CF,FF,FF,FF,F3,CF,F0,00,0F,F3,CF,C0,00,03
DATA F3,CF,C0,00,03,F3,CF,C0,00,03,F3,CF,C0,00,03,F3
DATA CF,C0,00,03,F3,CF,C0,00,03,F3,CF,C0,00,03,F3,CF
DATA C0,00,03,F3,CF,C0,00,03,F3,C0,00,00,00,03,C0,00
DATA 00,00,73,C0,00,00,03,C3,C0,00,00,1E,03,C0,00,00
DATA 70,03,C0,00,03,C0,03,C0,00,1E,00,03,C0,00,78,00
DATA 03,C0,03,C0,00,03,C0,0E,00,00,03,C0,78,00,00,03
DATA C3,C0,00,00,03,CE,00,00,00,03,C0,00,00,00,03,CF
DATA FF,FF,FF,F3,CF,FF,FF,FF,F3,CF,FF,FF,FF,F3,CF,FF
DATA FF,FF,F3,CF,FF,FF,FF,F3,CF,FF,FF,FF,F3,CF,C0,0F
```

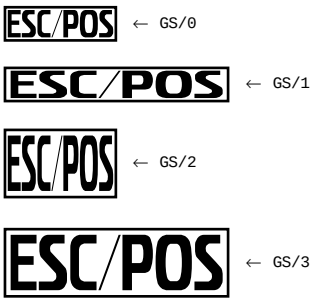
Define downloaded bit image

← Print downloaded bit image

Program Example (continued)

```
DATA C0,03,CF,C0,0F,C0,03,CF,C0,0F,C0,03,CF,C0,0F,C0
DATA 03,CF,C0,0F,C0,03,CF,E0,1F,C0,03,CF,FF,FF,C0,03
DATA CF,FF,FF,CO,03,C7,FF,FF,80,03,C7,FF,FF,80,03,C1
DATA FF,FE,00,03,C0,3F,F0,00,03,C0,00,00,00,03,C0,0F
DATA FF,F0,03,C0,FF,FF,FF,03,C3,FF,FF,FF,C3,C7,FF,FF
DATA FF,E3,C7,FF,FF,FF,E3,CF,FF,FF,FF,F3,CF,F0,00,0F
DATA F3,CF,C0,00,03,F3,CF,C0,00,03,F3,CF,C0,00,03,F3
DATA CF,C0,00,03,F3,CF,C0,00,03,F3,CF,C0,00,03,F3,CF
DATA C0,00,03,F3,CF,F0,00,0F,F3,CF,FF,FF,FF,F3,C7,FF
DATA FF,FF,E3,C7,FF,FF,FF,E3,C3,FF,FF,FF,C3,C0,FF,FF
DATA FF,03,C0,0F,FF,F0,03,C0,00,00,00,03,C0,FF,00,03
DATA F3,C3,FF,C0,03,F3,C7,FF,E0,03,F3,C7,FF,F0,03,F3
DATA CF,FF,F8,03,F3,CF,FF,FC,03,F3,CF,E3,FE,03,F3,CF
DATA C1,FF,03,F3,CF,C0,FF,83,F3,CF,C0,7F,C7,F3,CF,C0
DATA 3F,FF,F3,CF,C0,1F,FF,F3,CF,C0,0F,FF,E3,CF,C0,07
DATA FF,E3,CF,C0,03,FF,C3,C0,00,00,FF,C3,C0,00,00,00
DATA 03,C0,00,00,00,03,FF,FF,FF,FF,FF,FF,FF,FF,FF,FF
```

Print Sample



Status Commands

The TM-L60II/L60IP printers support the following status transmission commands. These commands can be used to determine the status of the printer, paper sensors, and peripheral devices connected to the printer.

Command	Name
GS a	Enable/disable Automatic Status Back (ASB)
GS r	Transmit status
DLE EOT	Real-time status transmission
ESC u	Transmit peripheral device status
ESC v	Transmit paper sensor status

GS a *n*

[Name] Enable/disable Automatic Status Back (ASB)

[Format]				
	ASCII	GS	a	*n*
	Hex	1D	61	*n*
	Decimal	29	97	*n*

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

GS a *n* selects a status for ASB transmission. ASB is enabled if any status item is selected. The printer automatically transmits a 4-byte status message whenever the status changes. Multiple status items can be selected. When ***n***=0, ASB is disabled. The default (***n***=0 or ***n***=2) depends on the DIP switch settings. If ASB is enabled when the printer is disabled by the **ESC =** command, the printer transmits a 4-byte status message whenever the status changes. The status items are selected using ***n*** as follows:

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Drawer kick-out connector pin 3 status disabled.
	On	01	1	Drawer kick-out connector pin 3 status enabled.
1	Off	00	0	On-line/off-line status disabled.
	On	02	2	On-line/off-line status enabled.
2	Off	00	0	Error status disabled.
	On	04	4	Error status enabled.
3	Off	00	0	Paper roll sensor status disabled.
	On	08	8	Paper roll sensor status enabled.
4-7	—	—	—	Undefined.

Program Example

```
PRINT #1, CHR$(&H1D);"a";CHR$(4); ← Enable "Error" status
```

First byte (printer information)

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Not used. Fixed to Off.
1	Off	00	0	Not used. Fixed to Off.
2	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	04	4	Drawer kick-out connector pin 3 is HIGH.
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Cover is closed.
	On	20	32	Cover is opened.
6	Off	00	0	Paper is not being fed by the paper feed button.
	On	40	64	Paper is being fed by the paper feed button.
7	Off	00	0	Not used. Fixed to Off.

Second byte (error information)

Bit	Off/On	Hex	Decimal	Status for ASB
0,1	—	—	—	Undefined.
2	Off	00	0	No label detection error.
	On	04	4	Label detection error occurred.
3	—	—	—	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurred.
6	Off	00	0	No automatically recoverable error.
	On	40	64	Automatically recoverable error occurred.
7	Off	00	0	Not used. Fixed to Off.

Third byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0,1	Off	00	0	Paper roll near-end sensor: paper adequate.
	On	03	3	Paper roll near-end sensor: paper near end.
2,3	Off	00	0	Paper roll end sensor: paper present.
	On	0C	12	Paper roll end sensor: paper not present.
4	Off	00	0	Not used. Fixed to Off.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Fourth byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0-3	—	—	—	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

GS r *n*

[Name] Transmit status

[Format]				
	ASCII	GS	r	*n*
	Hex	1D	72	*n*
	Decimal	29	114	*n*

[Range] *n* = 1, 2, 49, 50

GS r *n* transmits 1 byte status data specified by ***n*** as follows: paper sensor status when ***n***=1 or 49 and drawer kick-out connector status when ***n***=2 or 50. When the paper roll end sensor detects a paper-end, the printer goes off-line and does not execute this command. Therefore, bit 2 and 3 do not transmit paper-end status.

Program Example

```
PRINT #1, CHR$(&H1D);"r";CHR$(1); ← Transmits paper sensor status
```

Paper sensor status (*n*=1, 49)

Bit	Off/On	Hex	Decimal	Status
0,1	Off	00	0	Paper roll near-end sensor: paper adequate.
	On	03	3	Paper roll near-end sensor: paper near end.
2,3	Off	00	0	Paper roll end sensor: paper present.
	On	(0C)	(12)	Paper roll end sensor: paper not present.
4	Off	00	0	Not used. Fixed to Off.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Drawer kick-out connector status (*n*=2, 50)

Bit	Off/On	Hex	Decimal	Status
0	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	01	1	Drawer kick-out connector pin 3 is HIGH.
1-3	—	—	—	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

DLE EOT *n*

[Name] Real-time status transmission

[Format]	ASCII	DLE	EOT	*n*
	Hex	10	04	*n*
	Decimal	16	4	*n*

[Range] $1 \le n \le 4$

DLE EOT *n* transmits the specified status in real time. This command is executed if the printer is off-line, the print buffer is full, or an error occurs.

n indicates the status function as follows:

n	Function
1	Transmit printer status
2	Transmit off-line status
3	Transmit error status
4	Transmit paper roll sensor status

Program Example

```
PRINT #1, CHR$(&H10);CHR$(&H4);CHR$(2); ←Transmits off-line status
```

Printer status (*n*=1)

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	Drawer kick-out connector pin 3 is LOW.
	On	04	0	Drawer kick-out connector pin 3 is HIGH.
3	Off	00	0	On-line.
	On	08	8	Off-line.
4	On	10	16	Not used. Fixed to On.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Off-line status (*n*=2)

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 is closed.
	On	04	4	Cover is opened.
3	Off	00	0	Paper is not being fed by the paper feed button.
	On	08	8	Paper is being fed by the paper feed button.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No paper-end stop.
	On	20	32	Printing stops due to paper-end.
6	Off	00	0	No error.
	On	40	64	Error occurred.
7	Off	00	0	Not used. Fixed to Off.

Error status (*n*=3)

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	No label detection error.
	On	04	4	Label detection error occurred.
3	—	—	—	Undefined.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Unrecoverable error occurred.
	On	20	32	Recoverable error occurred.
6	Off	00	0	No automatically recoverable error.
	On	40	64	Automatically recoverable error occurred.
7	Off	00	0	Not used. Fixed to Off.

Paper roll sensor status (*n*=4)

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 roll near-end sensor: paper adequate.
	On	0C	12	Paper roll near-end sensor: paper near end.
4	On	10	16	Not used. Fixed to On.
5,6	Off	00	0	Paper roll end sensor: paper adequate.
	On	60	96	Paper roll end sensor: paper not present.
7	Off	00	0	Not used. Fixed to Off.

ESC u *n*

[Name] Transmit peripheral device status

[Format]				
	ASCII	ESC	u	*n*
	Hex	1B	75	*n*
	Decimal	27	117	*n*

[Range] *n* = 0, 48

ESC u *n* transmits the status of drawer kick-out connector pin 3 as 1 byte of data when ***n***=0 or 48. This command allows the host to determine the status of a peripheral device. **GS r** is preferred for checking the status because **ESC u** is not a recommended command.

Program Example

```
PRINT #1, CHR$(&H1B);"p";CHR$(0);CHR$(25);CHR$(250); ←Generates a pulse
PRINT #1, CHR$(&H1B);"u";CHR$(0);
```

Peripheral device status

Bit	Off/On	Hex	Decimal	Status
0	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	01	1	Drawer kick-out connector pin 3 is HIGH.
1–3	—	—	—	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5, 6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

[Name] Transmit paper sensor status

[Format]	ASCII	ESC	v
	Hex	1B	76
	Decimal	27	118

ESC v transmits the status of a paper sensor as 1 byte of data. When the paper roll end sensor detects a paper-end, the printer goes off-line and does not execute this command. Therefore, bit 2 and 3 do not transmit paper-end status. **GS r** is preferred for checking the status because **ESC v** is not a recommended command.

Program Example

```
PRINT #1, CHR$(&H1B);"v";
```

Paper sensor status

Bit	Off/On	Hex	Decimal	Status
0,1	Off	00	0	Paper roll near-end sensor: paper adequate.
	On	03	3	Paper roll near-end sensor: paper near end.
2,3	Off	00	0	Paper roll end sensor: paper present.
	On	(0C)	(12)	Paper roll end sensor: paper not present.
4	Off	00	0	Not used. Fixed to Off.
5,6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Bar Code Commands

The TM-L60II/L60IIP printers support the following bar code commands:

Command	Name
GS h	Set bar code height
GS w	Set bar code width
GS k	Print bar code
GS H	Select printing position of Human Readable Interpretation (HRI) characters
GS f	Select font for HRI characters

GS h *n*

[Name]	Set bar code height			
[Format]	ASCI	GS	h	*n*
	Hex	1D	68	*n*
	Decimal	29	104	*n*
[Range]	$1 \le n \le 255$			

GS h *n* sets the height of the bar code. ***n*** specifies the number of dots in the vertical direction. One dot corresponds to 1/180 inch. The default setting is ***n***=162.

Program Example

```
PRINT #1, CHR$(&H1D);"h";CHR$(50);← Set height to 50
  PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
  PRINT #1, "496595707379";CHR$(0);
  PRINT #1, CHR$(&HA);
PRINT #1, CHR$(&H1D);"h";CHR$(100);← Set height to 100
  PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
  PRINT #1, "496595707379";CHR$(0);
  PRINT #1, CHR$(&HA);
```

Print Sample

← Height: 50 dots

← Height: 100 dots

[Name]	Set bar code width			
[Format]	ASCII	GS	w	*n*
	Hex	1D	77	*n*
	Decimal	29	119	*n*
[Range]	$2 \leq n \leq 6$			

GS w *n* sets the horizontal size of a bar code. ***n*** specifies the bar code width as shown below. The multilevel bar codes are UPC-A, UPC-E, JAN13, JAN8, CODE93, and CODE128. The binary level bar codes are CODE39, ITF, and CODABAR. The default setting is ***n***=3.

n	Module Width (mm) for Multilevel Bar Code	Binary Level Bar Code	
		Thin Element Width (mm)	Thick Element Width (mm)
2	0.282	0.282	0.706
3	0.423	0.423	1.129
4	0.564	0.564	1.411
5	0.706	0.706	1.834
6	0.847	0.847	2.258

Program Example

```
PRINT #1, CHR$(&H1D);"w";CHR$(3);← Set width size to 3
PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
PRINT #1, "496595707379";CHR$(0);
PRINT #1, CHR$(&HA);

PRINT #1, CHR$(&H1D);"w";CHR$(4);← Set width size to 4
PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
PRINT #1, "496595707379";CHR$(0);
PRINT #1, CHR$(&HA);

PRINT #1, CHR$(&H1D);"w";CHR$(5);← Set width size to 5
PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
PRINT #1, "496595707379";CHR$(0);
PRINT #1, CHR$(&HA);
```

Print Sample

① **GS k *m d1...dk NUL*** ② **GS k *m n d1...dn***

[Name] Print bar code

[Format]

①	ASCII	GS	k	*m*	*d1...dk*	*NUL*
	Hex	1D	6B	*m*	*d1...dk*	*00*
	Decimal	29	107	*m*	*d1...dk*	*0*
②	ASCII	GS	k	*m*	*n* *d1...dn*	
	Hex	1D	6B	*m*	*n* *d1...dn*	
	Decimal	29	107	*m*	*n* *d1...dn*	

[Range] ① $0 \le m \le 6$ (*k* and *d* depend on the bar code system used)

② $65 \le m \le 73$ (*n* and *d* depend on the bar code system used)

① **GS k *m d1...dk NUL*** and ② **GS k *m n d1...dn*** select a bar code system and print the bar code. ***m*** specifies a bar code system as follows:

m		**Bar Code System**	**Number of Characters**	**Remarks**
①	0	UPC-A	$11 \le k \le 12$	$48 \le d \le 57$
	1	UPC-E	$11 \le k \le 12$	$48 \le d \le 57$
	2	JAN13 (EAN13)	$12 \le k \le 13$	$48 \le d \le 57$
	3	JAN8 (EAN8)	$7 \le k \le 8$	$48 \le d \le 57$
	4	CODE39	$1 \le k$	$48 \le d \le 57$, $65 \le d \le 90$ *d*=32, 36, 37, 43, 45, 46, 47
	5	ITF	$1 \le k$ (even number)	$48 \le d \le 57$
	6	CODABAR	$1 \le k$	$48 \le d \le 57$, $65 \le d \le 68$ *d*=36, 43, 45, 46, 47, 58
②	65	UPC-A	$11 \le n \le 12$	$48 \le d \le 57$
	66	UPC-E	$11 \le n \le 12$	$48 \le d \le 57$
	67	JAN13 (EAN13)	$12 \le n \le 13$	$48 \le d \le 57$
	68	JAN8 (EAN8)	$7 \le n \le 8$	$48 \le d \le 57$
	69	CODE39	$1 \le n \le 255$	$48 \le d \le 57$, $65 \le d \le 90$ *d*=32, 36, 37, 43, 45, 46, 47
	70	ITF	$1 \le n \le 255$ (even number)	$48 \le d \le 57$
	71	CODABAR	$1 \le n \le 255$	$48 \le d \le 57$, $65 \le d \le 68$ *d*=36, 43, 45, 46, 47, 58
	72	CODE93	$1 \le n \le 255$	$0 \le d \le 127$
	73	CODE128	$2 \le n \le 255$	$0 \le d \le 127$

In **GS k *m d1...dk NUL, d*** indicates the character code to be printed and ***k*** indicates the number of characters to be printed. In **GS k *m n d1...dn, n*** indicates the number of bar code data; the printer processes ***n*** bytes from the next character data as bar code data. ***d*** indicates the character code to be printed. If ***n*** is outside of the specified range, the printer stops command processing and processes the following data as normal data.

The following apply to **GS k** ***m d1...dk NUL*** and **GS k** ***m n d1...dn*** in standard mode:

- If ***d*** is outside of the specified range, the printer only feeds paper and processes the following data as normal data.
- If the horizontal size exceeds the printing area, the printer only feeds the paper.
- These commands feed as much paper as is required to print the bar code, regardless of the line spacing specified by other commands.
- These commands are enabled only when no data exists in the print buffer. When data exists in the print buffer, the printer processes the data following ***m*** as normal data.
- After printing a bar code, these commands set the print position to the beginning of the line.
- These commands are not affected by print modes (emphasized, double-strike, underline, or character size etc.), except for upside-down mode.

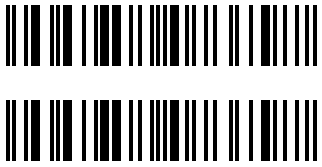
The following apply to **GS k** ***m d1...dk NUL*** and **GS k** ***m n d1...dn*** in page mode:

- These commands develop bar code data in the print buffer, but do not print it. After processing bar code data, these commands move the print position to the right-side dot of the bar code.
- If ***d*** is out of the specified range, the printer stops command processing and processes the following data as normal data. In this case, the data buffer position does not change.

Program Example

```
PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
PRINT #1, "496595707379";CHR$(0);
PRINT #1, CHR$(&HA);
PRINT #1, CHR$(&H1D);"k";CHR$(67);CHR$(12);
PRINT #1, "496595707379";← Print bar code
```

Print Sample



GS H *n*

[Name]	Select printing position of HRI characters			
[Format]	ASCII	GS	H	*n*
	Hex	1D	48	*n*
	Decimal	29	72	*n*
[Range]	$0 \le n \le 3$			
	$48 \le n \le 51$			

GS f *n*

[Name]	Select font for HRI characters			
[Format]	ASCII	GS	f	*n*
	Hex	1D	66	*n*
	Decimal	29	102	*n*
[Range]	$0 \le n \le 1$			
	$48 \le n \le 49$			

GS H *n* selects the printing position of HRI characters when printing a bar code. ***n*** selects the printing position as follows:

n	**Printing Position**
0, 48	Not printed
1, 49	Above the bar code
2, 50	Below the bar code
3, 51	Both above and below the bar code

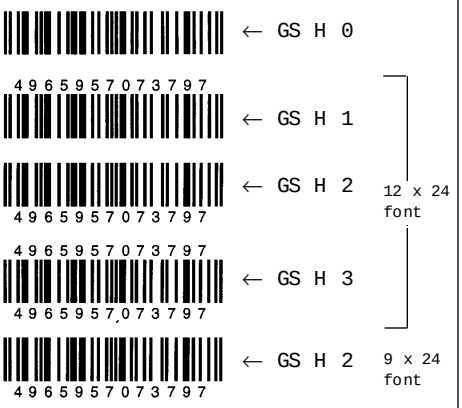
The default setting is ***n***=0. HRI characters are printed using the font specified by **GS f.**

GS f *n* selects a font for the HRI characters used when printing a bar code. When ***n***=0 or 48, the 12×24 font is selected. When ***n***=1 or 49, the 9×24 font is selected. The default setting is ***n***=0. HRI characters are printed at the position specified by **GS H**.

Program Example

```
PRINT #1, CHR$(&H1D);"h";CHR$(80);← Set height to 80 dots
PRINT #1, CHR$(&H1D);"f";CHR$(0);← Select font
FOR n=0 to 3
  PRINT #1, CHR$(&H1D);"H";CHR$(n);← Select print position
  PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
  PRINT #1, "496595707379";CHR$(0);
  PRINT #1, CHR$(&HA);
NEXT n
PRINT #1, CHR$(&H1D);"f";CHR$(1);← Select font
PRINT #1, CHR$(&H1D);"H";CHR$(2);← Select print position
PRINT #1, CHR$(&H1D);"k";CHR$(2);← Print bar code
PRINT #1, "496595707379";CHR$(0);
PRINT #1, CHR$(&HA);
```

Print Sample



Macro Function Commands

The TM-L60II/L60IIP printers support the following macro function commands:

Command	Name
GS :	Start/end macro definition
GS ^	Execute macro

GS :

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

GS ^ *r t m*

[Name]	Execute macro					
[Format]	ASCII	GS	^	*r*	*t*	*m*
	Hex	1D	5E	*r*	*t*	*m*
	Decimal	29	94	*r*	*t*	*m*
[Range]	$0 \le r \le 255$					
	$0 \le t \le 255$					
	$0 \le m \le 1$					

GS : starts or ends macro definition. Macro definition starts when this command is received during normal operation and ends when it is received during macro definition. Normal printing is performed while the macro is being defined. If the printer receives this command again immediately after previously receiving it, the printer remains in the macro undefined state. A macro is not defined when the power is turned on.

The macro definition can contain up to 2048 bytes. If the macro definition exceeds this value, the excess data is not stored.

GS ^ *r t m* executes a macro ***r*** times while waiting ***t*** × 100 msec for each macro execution. When ***m***=0, the macro executes ***r*** times continuously at the interval specified by ***t***. When ***m***=1, the printer waits for the period specified by ***t***, blinks the LED indicator, and then waits for the PAPER FEED button to be pressed. After this button is pressed, the printer executes the macro once. The printer repeats this operation ***r*** times.

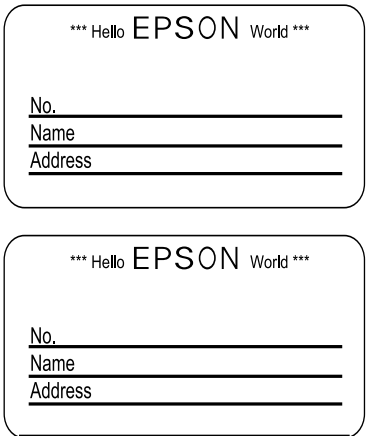
If this command is received while a macro is being defined, the printer ends macro definition mode and clears the definition. If a macro is not defined or if ***r*** is 0, nothing is executed. When the macro is executed by pressing the PAPER FEED button (***m***=1), paper cannot be fed with this button.

Program Example

```
PRINT #1, CHR$(&H1D);":";
PRINT #1, CHR$(&H1B);"a";CHR$(1);
PRINT #1, "***Hello";
PRINT #1, CHR$(&H1B);"!";CHR$(48);
PRINT #1, "EPSON";
PRINT #1, CHR$(&H1B);"!";CHR$(0);
PRINT #1, "World!***";
PRINT #1, CHR$(&HA); CHR$(&HA);
PRINT #1, CHR$(&H1B);"a";CHR$(0);
PRINT #1, CHR$(&H1B);"!";CHR$(128);
PRINT #1, "No.                ";CHR$(&HA);
PRINT #1, "Name               ";CHR$(&HA);
PRINT #1, "Address            ";
PRINT #1, CHR$(&H1B);"!";CHR$(0);
PRINT #1, CHR$(&H1D);CHR$(&HC);
PRINT #1, CHR$(&H1D);":";
PRINT #1, CHR$(&H1D);"^";CHR$(2);CHR$(0);CHR$(0);
```

Defines macro

Print Sample



Miscellaneous Function Commands

The TM-L60II/L60IIP supports the following miscellaneous function commands.

Command	Name
ESC @	Initialize printer
GS P	Set horizontal and vertical motion units
GS I	Transmit printer ID
ESC p	Generate pulse
ESC =	Select peripheral device
ESC L	Select page mode
ESC S	Select standard mode
GS <	Initialize printer mechanism
GS A	Adjust label print starting position
GS c	Print counter
GSC 0	Select counter print mode
GS C 1	Select count mode (A)
GS C 2	Set counter
GS C ;	Select count mode (B)

ESC @

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

ESC @ initializes the printer. All settings, including character font and line spacing settings, are canceled.

Program Example

```
PRINT #1, CHR$(&H1B);"!";CHR$(56);
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, CHR$(&H1B);"@";
PRINT #1, "BBBBB"; CHR$(&HA);
```

Print Sample

AAAAA

BBBBB ←All settings are canceled after **ESC @** is executed

[Name]	Set horizontal and vertical motion units				
[Format]	ASCII	GS	P	*x*	*y*
	Hex	1D	50	*x*	*y*
	Decimal	29	80	*x*	*y*
[Range]	$0 \le x \le 255$				
	$0 \le y \le 255$				

GS P *x y* sets the horizontal and vertical motion units to $1/x$ and $1/y$ inches, respectively. The horizontal and vertical motion units indicate the minimum pitch used for calculating the values of related commands (shown below). The default values are x=180 and y=360. The calculated result when using this command with other commands is truncated to the minimum value of the mechanical pitch (1/180 inch horizontal and 1/360 inch vertical) or an exact multiple of that minimum value. When x and y are set to 0, the default setting of each value is used.

Commands used with the horizontal motion unit ($1/x$) in standard mode: **ESC SP**, **ESC $**, **ESC **, **GS L**, and **GS W**.

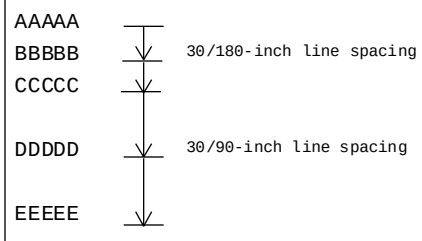
Commands used with the vertical motion unit ($1/y$) in standard mode: **ESC 3**, **ESC J**, and **GS A**.

Commands used with the horizontal and vertical motion units ($1/x$ and $1/y$) in page mode (either x or y can be used, depending on the print direction set with **ESC T**): **ESC SP**, **ESC $**, **ESC **, **ESC 3**, **ESC J**, **ESC W**, **GS $**, and **GS **.

Program Example

```
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(180);
PRINT #1, CHR$(&H1B);"3";CHR$(30); ← Set line spacing
PRINT #1, "AAAAA"; CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&HA);
PRINT #1, CHR$(&H1D);"P";CHR$(180);CHR$(90);
PRINT #1, CHR$(&H1B);"3";CHR$(30); ← Set line spacing
PRINT #1, "CCCCC"; CHR$(&HA);
PRINT #1, "DDDDD"; CHR$(&HA);
PRINT #1, "EEEEE"; CHR$(&HA);
```

Print Sample



GS I *n*

[Name] Transmit printer ID

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

[Range] $1 \le n \le 3$

$49 \le n \le 51$

GS I *n* transmits the printer ID specified by ***n*** as follows. Each printer ID consists of 1 byte of data.

n	**Printer ID**	**Specification**	**ID (hexadecimal)**
1, 49	Printer model ID	TM-L60II/L60IIP	0BH
2, 50	Type ID	See table below.	
3, 51	ROM version ID	Depends on ROM version.	

Type ID (***n***=2 or 50)

Bit	**Off/On**	**Hex**	**Decimal**	**Function**
0	Off	00	0	Two-byte character code not supported.
1	Off	00	0	Auto-cutter not equipped.
2	Off	00	0	Non-label thermal paper.
	On	04	4	Label thermal paper.
3	—	—	—	Undefined.
4	Off	00	0	Not used. Fixed to Off.
5, 6	—	—	—	Undefined.
7	Off	00	0	Not used. Fixed to Off.

Program Example

```
PRINT #1, CHR$(&H1D);"I";CHR$(1);← Transmits printer ID
```

ESC p *m t1 t2*

[Name]	Generate pulse					
[Format]	ASCII	ESC	p	*m*	*t1*	*t2*
	Hex	1B	70	*m*	*t1*	*t2*
	Decimal	27	112	*m*	*t1*	*t2*
[Range]	$m = 0, 1, 48, 49$					
	$0 \le t1 \le 255$					
	$0 \le t2 \le 255$					

ESC p *m t1 t2* sends a pulse (on time= ***t1*** × 2 msec / off time= ***t2*** × 2 msec) to the specified connector pin. When ***m***=0 or 48, the pulse is sent to drawer-kick-out connector pin 2; when ***m***=1 or 49, the pulse is sent to drawer-kick-out connector pin 5.

Program Example

```
PRINT #1, CHR$(&H1B);"p";CHR$(0);CHR$(25);CHR$(250);
```

ESC = *n*

[Name]	Select peripheral device			
[Format]	ASCII	ESC	=	*n*
	Hex	1B	3D	*n*
	Decimal	27	61	*n*
[Range]	$0 \le n \le 255$	(Only the least significant bit of *n* is enabled.)		

ESC = *n* selects the device to which the host computer sends data. When the LSB (least significant bit) of ***n*** is 1, the printer is enabled; When it is 0, the printer is disabled. The default setting is ***n***=1. If ASB is enabled when the printer is disabled by the **ESC =**, the printer transmits a 4-byte status message whenever the status changes.

Program Example

```
PRINT #1, CHR$(&H1B);"=";CHR$(1);← Printer enabled
PRINT #1, "AAAAA";
PRINT #1, CHR$(&H1B);"=";CHR$(0);← Printer disabled
PRINT #1, " BBBBB";
PRINT #1, CHR$(&H1B);"=";CHR$(1);← Printer enabled
PRINT #1, " CCCCC"; CHR$(&HA);
```

Print Sample

```
AAAAA CCCCC
```

ESC L

[Name]	Select page mode		
[Format]	ASCII	ESC	L
	Hex	1B	4C
	Decimal	27	76

ESC S

[Name]	Select standard mode		
[Format]	ASCII	ESC	S
	Hex	1B	53
	Decimal	27	83

ESC L switches from standard mode to page mode. This command is enabled only when input at the beginning of a line in standard mode; it has no effect in page mode. The following commands are not effective in page mode: **ESC V**, **ESC a**, **ESC {**, **GS L**, and **GS W**. If these commands are processed in page mode, an internal flag is activated.

ESC S switches from page mode to standard mode. This command is effective only in page mode. Data buffered in page mode is cleared. This command returns the values set by **ESC W** to the default values. The value set by the **ESC T** is maintained. The printer returns to standard mode with the **FF**, **ESC @**, and **ESC S**. This command sets the print position to the beginning of the line.

Standard mode is selected as the default.

Program Example

```
PRINT #1, CHR$(&H1B);"L";← Select page mode
PRINT #1, CHR$(&H1B);"W";CHR$(0);CHR$(0);CHR$(0);
CHR$(0);CHR$(60);CHR$(0);CHR$(180);CHR$(0);
PRINT #1, CHR$(&H1B);"T";CHR$(0);← Select print direction
PRINT #1, "AAAAA"; CHR$(&HA);← Store characters for printing
PRINT #1, "BBBBB"; CHR$(&HA);← Store characters for printing
PRINT #1, "CCCCC";
PRINT #1, CHR$(&H1B);CHR$(&HC);← Batch print
PRINT #1, CHR$(&H1B);"S";← Select standard mode
```

Print Sample

```
AAAAA
BBBBB
CCCCC
```

GS <

[Name] Initialize printer mechanism

[Format]			
	ASCII	GS	<
	Hex	1D	3C
	Decimal	29	60

GS < feeds label paper to the printing start position. This command is only effective when thermal label is selected with the paper selection DIP switch, and does not initialize the values set by other commands.

Program Example

```
PRINT #1, CHR$(&H1D);"<";
```

GS A *m n*

[Name] Adjust print starting position

[Format]					
	ASCII	GS	A	*m*	*n*
	Hex	1D	41	*m*	*n*
	Decimal	29	65	*m*	*n*

[Range] $0 \le m \le 255$ (Only the least significant bit of *m* is enabled.)

$0 \le n \le 255$

GS A *m n* adjusts the label print starting position in a selected direction, and by a specified amount from the default position. This command is effective only when Thermal Label is selected with the paper selection DIP switch. This command will be ignored unless it is received just after feeding a label to the print starting position, using the **FF**, **GS FF**, or **GS <** commands, or by pressing the PAPER FEED button, or at the time of power-on. The default setting is ***m***=0, ***n***=0. When executing the commands, the paper is fed to adjust the print starting position of the current label, as follows.

m specifies the adjusting direction. When the LSB of ***m*** = 0, the label position is adjusted in the normal direction. When the LSB of ***m*** = 1, the label position is adjusted in the reverse direction.

n specifies the adjustment amount. The adjustment amount formula is [***n*** × (vertical motion unit)] inches. The vertical motion units use the vertical value set by the **GS P**. The default setting of the vertical motion unit is 1/360 inch.

Program Example

```
PRINT #1, CHR$(&H1D);"A";CHR$(0);CHR$(18);
```

GS c

[Name]	Print counter		
[Format]	ASCII	GS	c
	Hex	1D	63
	Decimal	29	99

GS c sets the serial counter value in the print buffer and increments or decrements the counter value.

The counter print mode is set by the **GS C 0** command, and the counter mode is set by the **GS C 1** or **GS C ;** command.

After setting the current counter value in the print buffer as print data (a character string), the printer counts up or down based on the count mode set. The counter value in the print buffer is printed when the printer receives a print command or is in the buffer-full state.

In count-up mode, if the counter value set by this command goes out of the counter operation range set by the **GS C 1** or **GS C ;** commands, it is forced to convert to the minimum value.

In count-down mode, if the counter value set by this command goes out of the counter operation range set by the **GS C 1** or **GS C ;** commands, it is forced to convert to the maximum value.

Program Example

```
PRINT #1, CHR$(&H1D);"C0";CHR$(3);CHR$(0);
PRINT #1, "AAAAA"; CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, "BBBBB"; CHR$(&H1D);"c";CHR$(&HA);
```

Print Sample

```
AAAAA   1
BBBBB   2
```

GS C 0 *n m*

[Name]	Select counter print mode					
[Format]	ASCII	GS	C	0	*n*	*m*
	Hex	1D	43	30	*n*	*m*
	Decimal	29	67	48	*n*	*m*
[Range]	$0 \le n \le 5$					
	$0 \le m \le 2, 48 \le m \le 50$					

GS C 0 ***n m*** selects a print mode for the serial number counter. ***n*** specifies the number of digits to be printed. When ***n*** = 0, the printer prints the actual digits indicated by the number value. When ***n***= 1 to 5, this command sets the number of digits to be printed. If ***n*** or ***m*** is out of the defined range, the previously set print mode is not changed. The default setting is ***n***=0, ***m***=0.

m specifies the printing position within the entire range of printed digits, as follows:

m	Printing Position	Processing of Digits Less Than Those Specified
0,48	Align right	Adds spaces to the left
1,49	Align right	Adds "0" to the left
2,50	Align left	Adds spaces to the right

Program Example

```
PRINT #1, CHR$(&H1D);"C0";CHR$(3);CHR$(0);
PRINT #1, "AAAAA"; CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, CHR$(&H1D);"C0";CHR$(4);CHR$(1);
PRINT #1, "BBBBB"; CHR$(&H1D);"c";CHR$(&HA);
```

Print Sample

```
AAAAA  1 ← Align right and adds spaces to the left
BBBBB0002 ← Align right and adds "0" to the left
```

GS C 1 *aL aH bL bH n r*

[Name] Select count mode (A)

[Format]					
ASCII	GS	C	1	*aL aH bL bH n r*
Hex	1D	43	31	*aL aH bL bH n r*
Decimal	29	67	49	*aL aH bL bH n r*

[Range]
$0 \le a_L \le 255$
$0 \le a_H \le 255$
$0 \le b_L \le 255$
$0 \le b_H \le 255$
$0 \le n \le 255$
$0 \le r \le 255$

GS C 2 *nL nH*

[Name] Set counter

[Format]					
ASCII	GS	C	2	*nL nH*
Hex	1D	43	32	*nL nH*
Decimal	29	67	50	*nL nH*

[Range]
$0 \le n_L \le 255$
$0 \le n_H \le 255$

GS C 1 a_L a_H b_L b_H n r selects a count mode for the serial number counter. a_L, a_H, b_L, or b_H specify the counter range. n indicates the stepping amount when counting up or down. r indicates the repetition number when the counter value is fixed. The default settings are as follows: a_L=1, a_H=0, b_L=255, b_H=255, n=1, r=1.

Count-up mode is specified when $[a_L + a_H \times 256] < [b_L + b_H \times 256]$ and n is not equal to 0 and r is not equal to 0. In setting count-up mode, the minimum value of the counter is $[a_L + a_H \times 256]$ and the maximum value is $[b_L + b_H \times 256]$. If counting up reaches a value exceeding the maximum, it is resumed with the minimum value.

Count-down mode is specified when $[a_L + a_H \times 256] > [b_L + b_H \times 256]$ and n is not equal to 0 and r is not equal to 0. In setting count-down mode, the maximum value of the counter is $[a_L + a_H \times 256]$ and the minimum value is $[b_L + b_H \times 256]$. If counting down reaches a value less than the minimum, it is resumed with the maximum value.

Counting stops when $[a_L + a_H \times 256] = [b_L + b_H \times 256]$ or n= 0 or r = 0.

GS C 2 n_L n_H sets the serial number counter value. n_L and n_H determine the value of the serial number counter set by $[n_L + n_H \times 256]$. The default setting is n_L=1, n_H=0.

In count-up mode, if the counter value specified by this command goes out of the counter operation range specified by the **GS C 1** or **GS C ;** commands, it is forced to convert to the minimum value set by the **GS c** command.

In count-down mode, if the counter value specified by this command goes out of the counter operation range specified by the **GS C 1** or **GS C ;** commands, it is forced to convert to the maximum value set by the **GS c** command.

Program Example

```
PRINT #1, CHR$(&H1D);"C1";CHR$(1);CHR$(0);
CHR$(44);CHR$(1);CHR$(1);CHR$(1);
PRINT #1, CHR$(&H1D);"C2";CHR$(10);CHR$(0);
PRINT #1, CHR$(&H1D);"C0";CHR$(3);CHR$(1);
PRINT #1, "Line ";CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, "Line ";CHR$(&H1D);"c";CHR$(&HA);
```

Print Sample

```
Line 010
Line 011
```

GS C ; ***sa; sb; sn; sr; sc;***

[Name]	Select count mode (B)														
[Format]	ASCII	GS	C	;	*sa*	;	*sb*	;	*sn*	;	*sr*	;	*sc*	;	
	Hex	1D	43	3B	*sa*	*3B*	*sb*	*3B*	*sn*	*3B*	*sr*	*3B*	*sc*	*3B*	
	Decimal	29	67	59	*sa*	*59*	*sb*	*59*	*sn*	*59*	*sr*	*59*	*sc*	*59*	
[Range]	"0" ≤ *sa* ≤ "65535"														
	"0" ≤ *sb* ≤ "65535"														
	"0" ≤ *sn* ≤ "255"														
	"0" ≤ *sr* ≤ "255"														
	"0" ≤ *sc* ≤ "65535"														

GS C ; ***sa ; sb ; sn ; sr ; sc ;*** selects a count mode for the serial number counter, and specifies the value of the counter.

sa, ***sb***, ***sn*** and ***sr*** are all displayed in ASCII characters using the codes for "0" to "9". ***sa*** and ***sb*** specify the counter range. ***sn*** indicates the stepping amount for counting up or down. ***sr*** indicates the repetition number with the counter value fixed. ***sc*** indicates the counter value. The default settings are as follows: ***sa***="1", ***sb***="65535", ***sn***="1", ***sr***="1", and ***sc***="1".

Count-up mode is specified when ***sa*** < ***sb*** and ***sn*** is not equal to 0 and ***sr*** is not equal to 0. When count-up mode is specified, ***sa*** is the minimum counter value and ***sb*** is the maximum counter value. If counting up reaches a value exceeding the maximum, it is resumed with the minimum value. If the counter value set by ***sc*** is outside the counter operation range, the counter value is forced to convert to the minimum value by executing the **GS c** command.

Count-down mode is specified when ***sa*** > ***sb*** and ***sn*** is not equal to 0 and ***sr*** is not equal to 0. When count-down mode is specified, ***sa*** is the maximum counter value and ***sb*** is the minimum counter value. If counting down reaches a value less than the minimum, it is resumed with the minimum value. If the counter value set by ***sc*** is outside the counter operation range, the counter value is forced to convert to the maximum value by executing the **GS c** command.

Counting stops when ***sa*** = ***sb*** or ***sn*** = 0 or ***sr*** =0.

Program Example

```
PRINT #1, CHR$(&H1D);"C;300;1;1;2;100;";
PRINT #1, CHR$(&H1D);"C0";CHR$(4);CHR$(1);
PRINT #1, CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, CHR$(&H1D);"c";CHR$(&HA);
PRINT #1, CHR$(&H1D);"c";CHR$(&HA);
```

Print Sample

```
0100
0100
0099
0099
0098
```

Character Code Tables

SP in a table represents space.

Page 0 (PC437: U.S.A., Standard Europe) (International character set: U.S.A)

HEX	BIN	0 0000	1 0001	2 0010	3 0011	4 0100	5 0101	6 0110	7 0111	8 1000	9 1001	A 1010	B 1011	C 1100	D 1101	E 1110	F 1111
0	0000	NUL 00	DLE 16	SP 32	0 48	@ 64	P 80	` 96	p 112	Ç 128	É 144	á 160	▒ 176	└ 192	┴ 208	α 224	≡ 240
1	0001	01	17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	▒ 177	┴ 193	┬ 209	ß 225	± 241
2	0010	02	18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	▒ 178	┬ 194	┬ 210	Γ 226	≥ 242
3	0011	03	19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	│ 179	├ 195	└ 211	π 227	≤ 243
4	0100	EOT 04	20	$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	┤ 180	─ 196	┌ 212	Σ 228	⌠ 244
5	0101	05	21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	╡ 181	┼ 197	┌ 213	σ 229	⌡ 245
6	0110	06	22	& 38	6 54	F 70	V 86	f 102	v 118	å 134	û 150	ª 166	╢ 182	├ 198	┌ 214	µ 230	÷ 246
7	0111	07	23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	º 167	╖ 183	╟ 199	┼ 215	τ 231	≈ 247
8	1000	08	CAN 24	(40	8 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	¿ 168	╕ 184	└ 200	┼ 216	Φ 232	° 248
9	1001	HT 09	25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	⌐ 169	╣ 185	┌ 201	┘ 217	θ 233	• 249
A	1010	LF 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	¬ 170	║ 186	┴ 202	┌ 218	Ω 234	· 250
B	1011	11	ESC 27	+ 43	; 59	K 75	[91	k 107	{ 123	ï 139	¢ 155	½ 171	╖ 187	┬ 203	▒ 219	δ 235	√ 251
C	1100	FF 12	28	, 44	< 60	L 76	\ 92	l 108	¦ 124	î 140	£ 156	¼ 172	╜ 188	╟ 204	▬ 220	∞ 236	n 252
D	1101	CR 13	GS 29	− 45	= 61	M 77	] 93	m 109	} 125	ì 141	¥ 157	¡ 173	╜ 189	═ 205	▌ 221	ø 237	² 253
E	1110	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	Ä 142	Pt 158	« 174	╛ 190	╪ 206	▐ 222	∈ 238	■ 254
F	1111	15	31	/ 47	? 63	O 79	_ 95	o 111	SP 127	Å 143	ƒ 159	» 175	┐ 191	┴ 207	▬ 223	∩ 239	SP 255

Page 1 (Katakana)

HEX	BIN	8 1000	9 1001	A 1010	B 1011	C 1100	D 1101	E 1110	F 1111
0	0000	ー 128	丄 144	SP 160	ー 176	タ 192	ミ 208	二 224	× 240
1	0001	ー 129	丅 145	。 161	ア 177	チ 193	ム 209	卞 225	円 241
2	0010	ー 130	十 146	「 162	イ 178	ツ 194	メ 210	丰 226	年 242
3	0011	ー 131	卜 147	」 163	ウ 179	テ 195	モ 211	彐 227	月 243
4	0100	■ 132	一 148	、 164	エ 180	ト 196	ヤ 212	◢ 228	日 244
5	0101	■ 133	一 149	・ 165	オ 181	ナ 197	ユ 213	◣ 229	時 245
6	0110	■ 134	丨 150	ヲ 166	カ 182	ニ 198	ヨ 214	◥ 230	分 246
7	0111	■ 135	丨 151	ァ 167	キ 183	ヌ 199	ラ 215	◤ 231	秒 247
8	1000	丨 136	厂 152	ィ 168	ク 184	ネ 200	リ 216	♠ 232	〒 248
9	1001	▌ 137	冂 153	ゥ 169	ケ 185	ノ 201	ル 217	♥ 233	市 249
A	1010	▌ 138	乚 154	ェ 170	コ 186	ハ 202	レ 218	✦ 234	区 250
B	1011	▌ 139	亅 155	ォ 171	サ 187	ヒ 203	ロ 219	♣ 235	町 251
C	1100	▌ 140	𠂉 156	ャ 172	シ 188	フ 204	ワ 220	● 236	村 252
D	1101	▌ 141	丶 157	ュ 173	ス 189	ヘ 205	ン 221	○ 237	人 253
E	1110	▌ 142	乀 158	ョ 174	セ 190	ホ 206	゛ 222	／ 238	▒ 254
F	1111	┼ 143	乁 159	ッ 175	ソ 191	マ 207	° 223	＼ 239	SP 255

Page 2 (PC850: Multilingual)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	á 160	▒ 176	└ 192	ð 208	Ó 224	— 240
1	0001	ü 129	æ 145	í 161	▒ 177	┴ 193	Ð 209	ß 225	± 241
2	0010	é 130	Æ 146	ó 162	▒ 178	┬ 194	Ê 210	Ô 226	‗ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	Ë 211	Ò 227	¾ 243
4	0100	ä 132	ö 148	ñ 164	┤ 180	─ 196	È 212	õ 228	244
5	0101	à 133	ò 149	Ñ 165	Á 181	┼ 197	ı 213	Õ 229	§ 245
6	0110	å 134	û 150	ª 166	Â 182	ã 198	Í 214	µ 230	÷ 246
7	0111	ç 135	ù 151	º 167	À 183	Ã 199	Î 215	þ 231	¸ 247
8	1000	ê 136	ÿ 152	¿ 168	© 184	╚ 200	Ï 216	Þ 232	° 248
9	1001	ë 137	Ö 153	® 169	╣ 185	╔ 201	┘ 217	Ú 233	¨ 249
A	1010	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Û 234	· 250
B	1011	ï 139	ø 155	½ 171	╗ 187	╦ 203	■ 219	Ù 235	¹ 251
C	1100	î 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	ý 236	³ 252
D	1101	ì 141	Ø 157	¡ 173	¢ 189	═ 205	¦ 221	Ý 237	² 253
E	1110	Ä 142	× 158	« 174	¥ 190	╬ 206	Ì 222	¯ 238	▮ 254
F	1111	Å 143	ƒ 159	» 175	┐ 191	¤ 207	▀ 223	´ 239	SP 255

Page 3 (PC860: Portuguese)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	á 160	▒ 176	└ 192	╨ 208	α 224	240
1	0001	ü 129	À 145	í 161	▒ 177	┴ 193	╤ 209	ß 225	± 241
2	0010	é 130	È 146	ó 162	▒ 178	┬ 194	╥ 210	Γ 226	≥ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	╙ 211	π 227	≤ 243
4	0100	ã 132	õ 148	ñ 164	┤ 180	─ 196	╘ 212	Σ 228	⌠ 244
5	0101	à 133	ò 149	Ñ 165	╡ 181	┼ 197	╒ 213	σ 229	⌡ 245
6	0110	Á 134	Ú 150	ª 166	╢ 182	╞ 198	╓ 214	µ 230	÷ 246
7	0111	ç 135	ù 151	º 167	╖ 183	╟ 199	╫ 215	τ 231	≈ 247
8	1000	ê 136	Ì 152	¿ 168	╕ 184	╚ 200	╪ 216	Φ 232	° 248
9	1001	Ê 137	Õ 153	ò 169	╣ 185	╔ 201	┘ 217	θ 233	• 249
A	1010	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Ω 234	· 250
B	1011	Í 139	¢ 155	½ 171	╗ 187	╦ 203	■ 219	δ 235	251
C	1100	Ô 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	∞ 236	n 252
D	1101	ì 141	Ù 157	¡ 173	╜ 189	═ 205	▌ 221	ø 237	² 253
E	1110	Ã 142	₧ 158	« 174	╛ 190	╬ 206	▐ 222	238	■ 254
F	1111	Â 143	Ó 159	» 175	┐ 191	╧ 207	▀ 223	239	SP 255

Page 4 (PC863: Canadian-French)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	¦ 160	▒ 176	└ 192	╨ 208	α 224	240
1	0001	ü 129	È 145	´ 161	▒ 177	┴ 193	╤ 209	ß 225	± 241
2	0010	é 130	Ê 146	ó 162	▓ 178	┬ 194	╥ 210	Γ 226	≥ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	╙ 211	π 227	≤ 243
4	0100	Â 132	Ë 148	¨ 164	┤ 180	─ 196	╘ 212	Σ 228	⌠ 244
5	0101	à 133	Ï 149	¸ 165	╡ 181	┼ 197	╒ 213	σ 229	⌡ 245
6	0110	134	û 150	ª 166	╢ 182	╞ 198	╓ 214	µ 230	÷ 246
7	0111	ç 135	ù 151	¯ 167	╖ 183	╟ 199	╫ 215	τ 231	≈ 247
8	1000	ê 136	¤ 152	î 168	╕ 184	╚ 200	╪ 216	Φ 232	° 248
9	1001	ë 137	Ô 153	⌐ 169	╣ 185	╔ 201	┘ 217	Θ 233	• 249
A	1010	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Ω 234	· 250
B	1011	ï 139	¢ 155	½ 171	╗ 187	╦ 203	█ 219	δ 235	251
C	1100	î 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	∞ 236	n 252
D	1101	‗ 141	Ù 157	¾ 173	╜ 189	═ 205	▌ 221	ø 237	² 253
E	1110	À 142	Û 158	« 174	╛ 190	╬ 206	▐ 222	238	■ 254
F	1111	§ 143	ƒ 159	» 175	┐ 191	╧ 207	▀ 223	239	SP 255

Page 5 (PC865: Nordic)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç 128	É 144	á 160	▒ 176	└ 192	╨ 208	α 224	240
1	0001	ü 129	æ 145	í 161	▒ 177	┴ 193	╤ 209	ß 225	± 241
2	0010	é 130	Æ 146	ó 162	▓ 178	┬ 194	╥ 210	Γ 226	≥ 242
3	0011	â 131	ô 147	ú 163	│ 179	├ 195	╙ 211	π 227	≤ 243
4	0100	ä 132	ö 148	ñ 164	┤ 180	─ 196	╘ 212	Σ 228	⌠ 244
5	0101	à 133	ò 149	Ñ 165	╡ 181	┼ 197	╒ 213	σ 229	⌡ 245
6	0110	å 134	û 150	ª 166	╢ 182	╞ 198	╓ 214	µ 230	÷ 246
7	0111	ç 135	ù 151	º 167	╖ 183	╟ 199	╫ 215	τ 231	≈ 247
8	1000	ê 136	ÿ 152	¿ 168	╕ 184	╚ 200	╪ 216	Φ 232	° 248
9	1001	ë 137	Ö 153	⌐ 169	╣ 185	╔ 201	┘ 217	Θ 233	• 249
A	1010	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Ω 234	· 250
B	1011	ï 139	ø 155	½ 171	╗ 187	╦ 203	█ 219	δ 235	251
C	1100	î 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	∞ 236	n 252
D	1101	ì 141	Ø 157	¡ 173	╜ 189	═ 205	▌ 221	ø 237	² 253
E	1110	Ä 142	₧ 158	« 174	╛ 190	╬ 206	▐ 222	238	■ 254
F	1111	Å 143	ƒ 159	¤ 175	┐ 191	╧ 207	▀ 223	239	SP 255

International character set

Country	ASCII code (hexadecimal)												
	Hex	**23**	**24**	**40**	**5B**	**5C**	**5D**	**5E**	**60**	**7B**	**7C**	**7D**	**7E**
	Dec	**35**	**36**	**64**	**91**	**92**	**93**	**94**	**96**	**123**	**124**	**125**	**126**
U.S.A.		#	$	@	[	\	]	^	`	{	¦	}	~
France		#	$	à	°	ç	§	^	`	é	ù	è	¨
Germany		#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.		£	$	@	[	\	]	^	`	{	¦	}	~
Denmark I		#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden		#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy		#	$	@	°	\	é	^	ù	à	ò	è	ì
Spain		Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
Japan		#	$	@	[	¥	]	^	`	{	¦	}	~
Norway		#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II		#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü

Using Character Code Tables

The example below uses Page 0 (PC437) (see page 1-67) to illustrate the use of the character code tables.

You can find the character "A" in Page 0 as follows:

The decimal value for the character "A" is 65.

Follow its column straight up to find the digits.

Hexadecimal . . .4

Binary 0100

These numbers are the most significant bits of the ASCII code.

Follow its row to the left to find the digits.

Hexadecimal . . .1

Binary 0001

These numbers are the least significant bits of the ASCII code.

The combination of the numbers above is the ASCII code for character "A".

Decimal . . . . . .<65>10

Hexadecimal . . .<41>H

Binary . . . . . .<01000001>B

Chapter 2
Application

This chapter presents an example illustrating ESC/POS command functions and printing results. The example shows how to issue a label containing bar codes. Set the paper selection function of the DIP switch to thermal label before turning on the printer.

Bar Codes Label Issuing

Procedure	Commands Used	Description
1. Print message A	**ESC a**, **ESC !**, **LF**	Sets the print position to the center with **ESC a** and prints message A with **LF**.
2. Print bar code	**GS H**, **GS f**, **GS h**, **GS k**, **ESC J**	Prints bar code after selecting the height of the bar code with **GS h** and the printing position of the HRI characters with **GS H**.
3. Print message B	**ESC a**, **ESC J**	Prints message B using **ESC J**.
4. Print date	**ESC a**, **ESC !**, **GS FF**	Sets the print position to the right using **ESC a**, selects font B (9 x 24) with **ESC !**, and prints the date with **GS FF**. *The paper LED blinks when the label is ejected from the position where the label can be peeled off. Press the PAPER FEED switch and peel off the label. The next label feeds to the starting position.

Print Sample

Program Example

```
PRINT #1, CHR$(&H1B);"@";← Initializes the printer

NO$="00001" : GOSUB start
NO$="00002" : GOSUB start
END

start:
   PRINT #1, CHR$(&H1B);"a";CHR$(1);← Selects center print position
   PRINT #1, CHR$(&H1B);"!";CHR$(40);← Selects character print mode
                                       (emphasized + double-height + double-width)
   PRINT #1, "EPSON";
   PRINT #1, CHR$(&H1B);"!";CHR$(8);← Cancels double-width
   PRINT #1, "Rental Video"; CHR$(&HA);
   PRINT #1, CHR$(&H1B);"!";CHR$(0);← Cancels emphasized

   PRINT #1, CHR$(&H1D);"H";CHR$(2);← Selects printing position for HRI characters
   PRINT #1, CHR$(&H1D);"f";CHR$(1);← Selects HRI characters
   PRINT #1, CHR$(&H1D);"h";CHR$(35);←Sets bar code height
   PRINT #1, CHR$(&H1D);"k";CHR$(4);"*";NO$;"*";CHR$(0);
   PRINT #1, CHR$(&H1B);"J";CHR$(5);

   PRINT #1, CHR$(&H1B);"-";CHR$(2);← Sets underline width to 2 dots
   PRINT #1, "NAME                    ";
   PRINT #1, CHR$(&H1B);"J";CHR$(70);
   PRINT #1, CHR$(&H1B);"-";CHR$(0);← Cancels previous character print mode

   PRINT #1, CHR$(&H1B);"a";CHR$(2);← Selects right print position
   PRINT #1, CHR$(&H1B);"!";CHR$(1);← Selects font B (9 x 24)
   PRINT #1, "1996.4.10";
   PRINT #1, CHR$(&H1D);CHR$(HC);← Prints and feeds the label print starting position


   V$=INPUT$(1)← Ready to input (waiting to input)
   RETURN
```

Prints message A

Prints bar code

Prints message B

Prints the date and feeds the label to the print starting position

Chapter 3
Command Reference

Command Classification

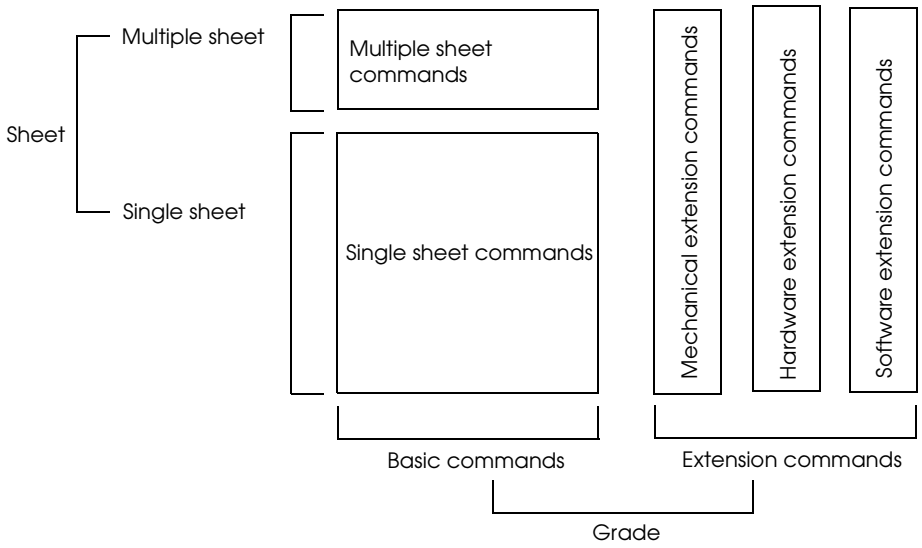
ESC/POS printer commands in this chapter are classified by function and by *sheet* and *grade*. The sheet and grade classification is called *matrix classification*.

The *sheet* classification is divided into *single sheet commands* and *multiple sheet commands*. The *grade* classification is separated into *basic commands* and *extension commands*.

Basic commands are defined as fundamental printer controls, including print commands and character type selection commands. *Extension commands* are defined as control codes for functions specific to individual printers. These commands are further divided into *mechanical extension commands* that relate to additional mechanical functions such as stamp and auto-cutter units, *hardware extension commands* that relate to additional hardware functions such as panel button control, and *software extension commands* that relate to additional software functions such as user-defined and Bar code control.

The commands can also be classified by function, which is how they are presented in Chapter 1 and the Function Type table in this chapter. The function types, such as Print Commands and Line Spacing Commands, are briefly explained in the corresponding sections of Chapter 1.

The illustration below shows the ESC/POS command overview diagram for printers.



Function Type

Function Type	Command	Name	Matrix Category	Supported Command
Print commands	**LF**	Print and line feed	Basic single	●
	FF	1. Print and eject cut sheet (in standard mode)	Mechanical extension	
		2. Print and return to standard mode (in page mode)	Mechanical extension	●
		3. Print and feed label to print starting position (on label)	Mechanical extension	●
	CR	Print and carriage return	Mechanical extension	●
	ESC FF	Print data in page mode	Software extension	●
	ESC J	Print and feed paper	Mechanical extension	●
	ESC K	Print and reverse feed	Mechanical extension	
	ESC d	Print and feed ***n*** lines	Basic single	●
	ESC e	Print and reverse feed ***n*** lines	Mechanical extension	
	GS FF	Print and eject label	Hardware extension	●
Line spacing commands	**ESC 2**	Select default line spacing	Mechanical extension	●
	ESC 3	Set line spacing	Mechanical extension	●
	ESC C	Set cut sheet eject length	Mechanical extension	
Character commands	**CAN**	Cancel print data in page mode	Software extension	●
	ESC SP	Set right-side character spacing	Basic single	●
	ESC !	Select print mode(s)	Basic single	●
	ESC %	Select/cancel user-defined character set	Software extension	●
	ESC &	Define user-defined characters	Software extension	●
	ESC –	Turn underline mode on/off	Software extension	●
	ESC ?	Cancel user-defined characters	Software extension	●
	ESC E	Turn emphasized mode on/off	Software extension	●
	ESC G	Turn double-strike mode on/off	Software extension	●
	ESC R	Select an international character set	Basic single	●
	ESC V	Turn 90° clockwise rotation mode on/off	Software extension	●
	ESC r	Select print color	Mechanical extension	
	ESC t	Select character code table	Basic single	●
	ESC z	Turn parallel printing mode on/off for receipt and journal	Mechanical extension	
The TM-L60II/L60IIP supports the commands marked with a ● in the "Supported Command" column.				

Function Type	Command	Name	Matrix Category	Supported Command
Character commands (continued)	**ESC {**	Turn upside-down printing mode on/off	Basic single	●
	GS !	Select character size	Software extension	●
	GS B	Turn white/black reverse printing mode on/off	Software extension	●
	GS b	Turn smoothing mode on/off	Software extension	●
Printing paper commands	**ESC c 0**	Select paper type(s) for printing	Basic multiple	
	ESC c 1	Select paper type(s) for command settings	Mechanical extension	
	ESC f	Set cut sheet wait time	Mechanical extension	
Paper sensor commands	**ESC c 3**	Select paper sensor(s) to output paper-end signals	Mechanical extension	●
	ESC c 4	Select paper sensor(s) to stop printing	Mechanical extension	●
Print position commands	**HT**	Horizontal tab	Software extension	●
	RS	Journal tab	Mechanical extension	
	ESC $	Set absolute print position	Software extension	●
	ESC D	Set horizontal tab positions	Software extension	●
	ESC T	Select print direction in page mode	Software extension	●
	ESC W	Set printing area in page mode	Software extension	●
	**ESC **	Set relative print position	Software extension	●
	ESC a	Select justification	Software extension	●
	GS $	Set absolute vertical print position in page mode	Software extension	●
	GS L	Set left margin	Software extension	●
	GS W	Set printing area width	Software extension	●
	**GS **	Set relative vertical print position in page mode	Software extension	●
Status commands	**DLE EOT**	Real-time status transmission	Hardware extension	●
	DLE EOT BS	Transmit real-time MICR status	Hardware extension	
	ESC u	Transmit peripheral device status	Hardware extension	●
	ESC v	Transmit paper sensor status	Hardware extension	●
	GS ENQ	Transmit real-time printer status	Hardware extension	
	GS a	Enable/disable Automatic Status Back (ASB)	Hardware extension	●
	GS r	Transmit status	Hardware extension	●
The TM-L60II/L60IIP supports the commands marked with a ● in the "Supported Command" column.				

Function Type	Command	Name	Matrix Category	Supported Command
Bit-image commands	**ESC ✻**	Select bit-image mode	Basic single	●
	GS ✻	Define downloaded bit image	Software extension	●
	GS /	Print downloaded bit image	Software extension	●
Bar code commands	**GS H**	Select printing position of HRI characters	Software extension	●
	GS f	Select font for HRI characters	Software extension	●
	GS h	Set bar code height	Software extension	●
	GS k	Print bar code	Software extension	●
	GS w	Set bar code width	Software extension	●
Macro function commands	**GS :**	Start/end macro definition	Software extension	●
	GS ^	Execute macro	Software extension	●
Kanji control commands	**FS !**	Select print mode(s) for Kanji characters	Software extension	
	FS &	Select Kanji character mode	Software extension	
	FS –	Turn underline mode on/off for Kanji characters	Software extension	
	FS .	Cancel Kanji character mode	Software extension	
	FS 2	Define user-defined Kanji characters	Software extension	
	FS C	Select Kanji character code system	Software extension	
	FS S	Set left- and right-side Kanji character spacing	Software extension	
	FS W	Turn quadruple-size mode on/ off for Kanji characters	Software extension	
Mechanism control commands	**ESC <**	Return home	Mechanical extension	
	ESC F	Set/cancel cut sheet reverse eject	Mechanical extension	
	ESC U	Turn unidirectional printing mode on/off	Mechanical extension	
	ESC i	Partial cut (one point left uncut)	Mechanical extension	
	ESC m	Partial cut (three points left uncut)	Mechanical extension	
	ESC o	Stamp	Mechanical extension	
	ESC q	Paper release	Mechanical extension	
	GS V	Select cut mode and cut paper	Mechanical extension	
Panel button commands	**ESC c 5**	Enable/disable panel buttons	Hardware extension	●
	ESC c 6	Enable/disable on-line button	Hardware extension	
The TM-L60II/L60IIP supports the commands marked with a ● in the "Supported Command" column.				

Function Type	Command	Name	Matrix Category	Supported Command
MICR commands	**FS a 0**	Read check paper	Mechanical extension	
	FS a 1	Load check paper to print starting position	Mechanical extension	
	FS a 2	Eject check paper	Mechanical extension	
	FS b	Request retransmission of check paper reading result	Mechanical extension	
	FS c	MICR mechanism cleaning	Mechanical extension	
Miscellaneous function commands	**DLE ENQ**	Real-time request to printer	Software extension	
	ESC =	Select peripheral device	Software extension	●
	ESC @	Initialize printer	Basic single	●
	ESC L	Select page mode	Software extension	●
	ESC S	Select standard mode	Software extension	●
	ESC p	Generate pulse	Hardware extension	●
	FS L	Select double density page mode	Software extension	
	GS <	Initialize printer mechanism	Mechanical extension	●
	GS A	Adjust label print starting position	Hardware extension	●
	GS C 0	Select counter print mode	Software extension	●
	GS C 1	Select count mode (A)	Software extension	●
	GS C 2	Set counter	Software extension	●
	GS C ;	Select count mode (B)	Software extension	●
	GS E	Select head control method	Hardware extension	
	GS I	Transmit printer ID	Hardware extension	●
	GS P	Set horizontal and vertical motion units	Software extension	●
	GS c	Print counter	Software extension	●
	GS z 0	Set on-line recovery wait time	Software extension	
The TM-L60II/L60IIP supports the commands marked with a ● in the "Supported Command" column.				

Reference Table

Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
HT	Horizontal tab	Moves the printing position to the next horizontal tab position.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●
LF	Print and line feed	Prints the data in the print buffer and feeds one line based on the current line spacing.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FF	1. Print and eject cut sheet (in standard mode)	Prints the data in the print buffer and ejects the cut sheet.														●	●	●	●		●
	2. Print and return to standard mode (in page mode)	Prints the data in the print buffer and returns to standard mode.					●		●								●				●
	3. Print and feed label to print starting position (on label)	Prints the data in the print buffer and feeds the next label to the print starting position.						●	●												
The commands supported by each printer are marked by a ● or a O. The functions of the commands marked by a O may differ, depending on the printer model.																					

Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
CR	Print and carriage return	When auto line feed is enabled, this command functions in the same way as **LF**. When auto line feed is disabled, this command prints the data in the print buffer and does not feed the paper.		○	○		○		○	●	●	●	●	●	●	○	●	●	●	●	○
CAN	Cancel print data in page mode	Clears all the print data in the printing area in page mode.					●		●								●				●
RS	Journal tab	Moves the print position to the beginning of the journal paper.																	●		
DLE EOT	Real-time status transmission	Transmits a specified status in real time.					●		●	●	●						●	●	●		●
DLE EOT BS	Real-time MICR status transmission	Transmits MICR status in real time.																○	○		
DLE ENQ	Real-time request to printer	Responds to a request from the host computer upon receiving this command.					●			●	●						●	●	●		
ESC FF	Print data in page mode	Prints the data in the print buffer in page mode.					●		●												
ESC SP	Set right-side character spacing	Sets the right-side character spacing.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

The commands supported by each printer are marked by a ● or a O. The functions of the commands marked by a O may differ, depending on the printer model.

Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
ESC !	Select print mode(s)	Selects a print mode(s).	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC $	Set absolute print position	Sets the print starting position from the beginning of the line.		●	●	●	●	●	●								●	●	●		
ESC %	Select/ cancel user-defined character set	Selects or cancels the user-defined character set.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC &	Define user-defined characters	Defines user-defined characters for a specified character code.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC *	Select bit-image mode	Selects a bit-image mode for a specified number of dots.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC –	Turn underline mode on/off	Turns underline mode on or off.				●	●	●	●	●	●	○	○	○	○		●	●	●		
ESC 2	Select default line spacing	Sets the line spacing to 1/6 inch.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC 3	Set line spacing	Sets the line spacing to a specified value.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC <	Return home	Moves the print head to the home position.								●	●	●	●	●	●		●	●	●		
ESC =	Select peripheral device	Selects the device to which the host computer sends data.		●	●	●	●	●	●	●	●						●	●	●		●
ESC ?	Cancel user-defined characters	Cancels the user-defined characters for a specified character code.					●		●	●	●						●	●	●		
The commands supported by each printer are marked by a ● or a O. The functions of the commands marked by a O may differ, depending on the printer model.																					

Command	Name	Function	Supported Command																		
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
ESC @	Initialize printer	Clears the data in the print buffer and resets the printer mode to the mode that was in effect when the power was turned on.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC C	Set cut sheet eject length	Sets the eject length for cut sheet to a specified number of lines.														●	●	●	●		●
ESC D	Set horizontal tab positions	Sets the horizontal tab positions.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●
ESC E	Turn emphasized mode on/off	Turns emphasized mode on or off.				●	●	●	●	●	●	○	○	○	○		●	●	●		
ESC F	Set/cancel cut sheet reverse eject	Sets or cancels the cut sheet reverse eject specified by **FF**.																			●
ESC G	Turn double-strike mode on/off	Turns double-strike mode on or off.				●	●	●	●	●	●	○	○	○	○		●	●	●		
ESC J	Print and feed paper	Prints the data in the print buffer and feeds the paper a specified distance.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC K	Print and reverse feed	Prints the data in the print buffer and feeds the paper a specified distance in the reverse direction.									●				●			●	●		●
ESC L	Select page mode	Switches from standard mode to page mode.					●		●								●				●

The commands supported by each printer are marked by a ● or a O. The functions of the commands marked by a O may differ, depending on the printer model.

Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
ESC R	Select an international character set	Selects a country's character set.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC S	Select standard mode	Switches from page mode to standard mode.					●		●												
ESC T	Select print direction in page mode	Selects the print direction and starting position in page mode.					●		●								●				●
ESC U	Turn unidirectional printing mode on/off	Turns unidirectional printing mode on or off.								●	●	●	●	●	●		●	●	●	●	
ESC V	Turn 90° clockwise rotation mode on/off	Turns 90° clockwise rotation mode on or off.		●	●	●	●	●	●							●	●				
ESC W	Set printing area in page mode	Sets the position and the size of the printing area in page mode.					●		●								●				●
**ESC **	Set relative print position	Sets the print starting position based on the current position.		●	●	●	●	●	●								●	●	●		
ESC a	Select justification	Aligns all the data in one line to a specified position.		●	●	●	●	●	●	●	●						●	●	●		
ESC c 0	Select print paper(s)	Selects paper type(s) for printing.												●	●	●	●	●	●		
ESC c 1	Select paper type(s) for command settings	Selects paper type(s) for use with various command settings.														●	●	●	●		

The commands supported by each printer are marked by a ● or a O. The functions of the commands marked by a O may differ, depending on the printer model.

Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
ESC c 3	Select paper sensor(s) to output paper-end signals	Selects paper sensor(s) to output paper-end signals.		○	○		○		○	○	○	○	○	○	○	○	○		○		○
ESC c 4	Select paper sensor(s) to stop printing	Selects the paper sensor(s) that stops printing when the paper runs out.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●
ESC c 5	Enable/ disable panel buttons	Enables or disables the panel buttons.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC c 6	Enable/ disable on-line button	Enables or disables the ON-LINE switch.	●													●					
ESC d	Print and feed ***n*** lines	Prints the data in the print buffer and feeds ***n*** lines.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC e	Print and reverse feed ***n*** lines	Prints the data in the print buffer and feeds ***n*** lines in the reverse direction.									●				●			●	●		●
ESC f	Set cut sheet wait time	Sets the time that the printer waits for cut sheet to be inserted and the time from insertion of the sheet to the start of printing.												●	●	●	●	●	●		●
ESC i	Partial cut (one point left uncut)	Executes a partial cut of the paper with one point left uncut.	●		●	●	●					●	●					●	●		

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Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
ESC m	Partial cut (three points left uncut)	Executes a partial cut of the paper with three points left uncut.	●		●	●						●	●					●	●		
ESC o	Stamp	Executes stamp printing.																●	●		
ESC p	Generate pulse	Sends a specified pulse to a specified connector pin.		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC q	Paper release	Releases the paper.														●	●				●
ESC r	Select print color	Selects the print color.	●									●	●	●	○					●	
ESC t	Select character code table	Selects a page from the character code table.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ESC u	Transmit peripheral device status	Transmits the status of a specified connector pin.		○	○	●	●	●	●			○	○	○	○	○	●	●	●	●	●
ESC v	Transmit paper sensor status	Transmits the status of a paper sensor.	●	○	○	●	●	●	●			○	○	○	○	○	●	●	●	●	●
ESC z	Turn parallel printing mode on/off for receipt and journal	Turns parallel printing mode on or off for receipt and journal paper.																	●		
ESC {	Turn upside-down printing mode on/off	Turns upside-down printing mode on or off.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FS !	Select print mode(s) for Kanji characters	Selects print mode(s) for Kanji characters.				●						○	○	○	○		○		○		

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Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
FS &	Select Kanji character mode	Selects Kanji character mode.				●						○	○	○	○		○		○		
FS –	Turn underline mode on/off for Kanji characters	Turns underline mode on or off for Kanji characters.				●						○	○	○	○		○		○		
FS .	Cancel Kanji character mode	Cancels Kanji character mode.				●						○	○	○	○		○		○		
FS 2	Define user-defined Kanji characters	Defines user-defined Kanji characters for specified character codes.				●						○	○	○	○		○		○		
FS C	Select Kanji character code system	Selects the Kanji character code system.				●						○	○	○	○		○		○		
FS L	Select double density page mode	Switches from standard mode to double-density page mode.															○				
FS S	Set left- and right-side Kanji character spacing	Selects the right- and left-side Kanji character spacing.				●						○	○	○	○		○		○		
FS W	Turn quadruple-size mode on/off for Kanji characters	Turns quadruple-size mode on or off for Kanji characters.				●						○	○	○	○		○		○		
FS a 0	Read check paper	Selects the MICR function and reads the check paper.																○	○		

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			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
FS a 1	Load check paper to print starting position	Loads check paper to the print starting position.																○	○		
FS a 2	Eject check paper	Ejects the check paper.																○	○		
FS b	Request retransmission of check paper reading result	Retransmits the previous check paper (MICR character) reading results.																○	○		
FS c	MICR mechanism cleaning	Cleans the MICR mechanism.																○	○		
GS ENQ	Transmit real-time printer status	Transmits the status of the printer upon receiving this command.																●	●		
GS FF	Print and eject label	Prints the data in the print buffer and ejects the label.						●	●												
GS !	Select character size	Selects the character width and height.					●		●												
GS $	Set absolute vertical print position in page mode	Sets the absolute vertical print starting position for characters in page mode.					●		●												
GS ✻	Define downloaded bit image	Defines a downloaded bit image using a specified number of dots.		●	●	●	●	●	●								●	●	●		

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			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
GS /	Print downloaded bit image	Prints a downloaded bit image using a specified mode.		●	●	●	●	●	●								●	●	●		
GS :	Start/end macro definition	Starts or ends a macro definition.		●	●	●	●	●	●												
GS <	Initialize printer mechanism	Feeds a label to the print starting position.						●	●												
GS A	Adjust label print starting position	Sets the label position relative to the default position.						●	●												
GS B	Turn white/ black reverse printing mode on/off	Turns white/black reverse printing mode on or off.					●		●												
GS C 0	Set counter print mode	Selects a print mode for the serial counter.						●	●												
GS C 1	Select count mode (A)	Selects a count mode for the serial counter.						●	●												
GS C 2	Set counter	Sets the counter value.						●	●												
GS C ;	Select count mode (B)	Selects a count mode for the serial counter and specifies the counter value.						●	●												
GS E	Select head control method	Selects the print speed and head energizing time.										●	●	●	●		●	●	●		

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Command	Name	Function	Supported Command																	
			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
GS H	Select printing position of HRI characters	Selects the printing position of HRI characters when printing a bar code.		●	●	●	●	●	●												
GS I	Transmit printer ID	Transmits a specified printer ID.					●		●	●	●						●	●	●		●
GS L	Set left margin	Sets the left margin using specified values in standard mode.					●		●								●				
GS P	Set horizontal and vertical motion units	Sets the horizontal and vertical motion units.					●		●								●	●	●		
GS V	Select cut mode and cut paper	Cuts the specified paper.					●			●											
GS V	Select cut mode and cut paper	Advances the specified paper to the cut position and performs the cut.					●			●	●										
GS W	Set printing area width	Sets the printing area width to a defined area in standard mode.					●		●								●				
**GS **	Set relative vertical print position in page mode	Moves the vertical print starting position in page mode to a specified distance from the current position.					●		●												
GS ^	Execute macro	Executes a macro.		●	●	●	●	●	●												

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			TM-267II	TM-T Series				TM-L Series		TM-U200		TM-300/300M				TM-270	TM-U375 TM-U375M	TM-U925	TM-U950 TM-U950M	TM-215S	TM-295
				T60	T80	T80M	T85	L60	L60II	B	D	A	B	C	D						
GS a	Enable/ disable Automatic Status Back (ASB)	Selects a status for ASB transmission.					●		●	●	●						●	●	●		●
GS b	Turn smoothing mode on/off	Selects or cancels smoothing.					●		●												
GS c	Print counter	Selects a serial counter value in the print buffer and increments or decrements the counter value.						●	●												
GS f	Select font for HRI characters	Selects a font for the HRI characters used when printing a bar code.		●	●	●	●	●	●												
GS h	Set bar code height	Selects the height of a bar code.		●	●	●	●	●	●												
GS k	Print bar code ①	Selects a bar code system and prints the bar code.		●	●	●	●	●	●												
GS k	Print bar code ②	Selects a bar code system and prints the bar code.					●		●												
GS r	Transmit status	Transmits a specified status.					●		●	●	●						●	●	●		●
GS w	Set bar code width	Selects the horizontal size of the bar code.		●	●	●	●	●	●												
GS z 0	Set on-line recovery wait time	Sets the on-line recovery wait time.								●	●										

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