

# ESC/POS Application Guide

# Table of Contents

|  |           |
|--|-----------|
| <b>ESC/POS COMMANDS .....</b>                    | <b>3</b>  |
| 1、COMMAND LIST .....                             | 3         |
| 2、COMMAND EXPLANATIONS .....                     | 4         |
| 2.1 <i>print commands</i> .....                  | 4         |
| 2.2 <i>Set line space commands</i> .....         | 5         |
| 2.3 <i>Set font commands</i> .....               | 6         |
| 2.4 <i>Image print commands</i> .....            | 9         |
| 2.5 <i>Initialize commands</i> .....             | 13        |
| 2.6 <i>Transmit status commands</i> .....        | 13        |
| 2.7 <i>Barcode print commands</i> .....          | 14        |
| 2.8 <i>Controlboard parameter commands</i> ..... | 16        |
| <b>APPENDIX 1: CHARACTER CODE PAGE.....</b>      | <b>17</b> |
| <b>APPENDIX B: INTERNATIONAL CHARSET.....</b>    | <b>18</b> |

# ESC/POS Commands

## 1、Command List

| Command Category | Command    | Statement                                     |
|------------------|------------|---|
| Print            | LF         | Print and feed paper                          |
|                  | HT         | Horizontal tab                                |
|                  | ESC J n    | Print and feed paper for n dots               |
|                  | ESC d n    | Print and feed paper for n lines              |
|                  | ESC = n    | Set the print online/offline                  |
| Set Line space   | ESC 2      | Set the line space to 32 dots                 |
|                  | ESC 3 n    | Set the line space to n dots                  |
|                  | ESC a n    | Set the print alignment                       |
|                  | GS L nL nH | Set the left margin                           |
|                  | ESC \$     | Set the left margin of page                   |
| Set Character    | ESC ! n    | Set the font type                             |
|                  | GS ! n     | Set character space                           |
|                  | ESC E n    | Turn bold mode on/off                         |
|                  | ESC SP n   | Set character spacing                         |
|                  | ESC S0     | Set character double width                    |
|                  | ESC DC4    | Set the width normal                          |
|                  | ESC { n    | Turn upside-down printing mode on/off         |
|                  | GS B n     | Turn black/white inverse printing mode on/off |
|                  | ESC - n    | Turn underline mode on/off                    |
|                  | ESC % n    | Set/Cancel user-defined character set         |
|                  | ESC &      | Set user-defined character                    |
|                  | ESC ?      | Cancel user-defined character                 |
|                  | ESC R n    | Select the international character sets       |
|                  | ESC t n    | Select character code page                    |
| Image print      | ESC *      | Set bit-image mode                            |
|                  | GS *       | Define NV bit image                           |
|                  | GS /       | Print NV bit image                            |
|                  | GS v       | Print raster bit image                        |
|                  | DC2 *      | Print bitmap                                  |
|                  | DC2 V      | Print MSB bitmap                              |
|                  | DC2 v      | Print LSB bitmap                              |
| Init             | ESC @      | Initialize the printer                        |
| Transmit status  | ESC u n    | Transmit Status(non-real-time)                |
|                  | GS a n     | Set/Cancel the printer states automatic       |

|                               |       |   |
|-------------------------------|-------|---|
|                               |       | back                                    |
| Barcode<br>print              | GS H  | Set print position of one-dimension HRI |
|                               | GS h  | Set the height of one-dimension barcode |
|                               | GS x  | Set the left margin of printing barcode |
|                               | GS w  | Set the width of Barcode                |
|                               | GS k  | Print barcode                           |
| Control<br>board<br>Parameter | DC2 T | Print test page                         |

## 2、Command Explanations

### 2.1 print commands

LF Print and feed paper

Format: ASCII: LF

Decimal: 10

Hexadecimal: 0A

Description: Print the data in the printer buffer, then feed paper for one line according to the current line space settings. After printing, the print position moves to the beginning of the line.

HT Horizontal tab

Format: ASCII: HT

Decimal: 09

Hexadecimal: 09

Description: Move the print position to the next tab position.

ESC J n Print and feed paper for n dots

Format: ASCII: ESC J n

Decimal: 27 74 n

Hexadecimal: 1B 4A n

Description: n = 0-255.

Print the data in the printer buffer and feed paper for n dots.

ESC d n Print and feed paper for n lines

Format: ASCII: ESC d n

Decimal: 27 100 n

Hexadecimal: 1B 64 n

Description: n = 0-255.

Print the data in the printer buffer and feed paper for n lines.

---

ESC = n Set ASB status

---

Format:                ASCII: ESC = n  
                         Decimal: 27 61 n  
                         Hexadecimal: 1B 3d n

---

Description: n = 0,1.  
                   1: printer is online, accept data and print.  
                   0: printer is offline, don't accept data.

## 2.2 Set line space commands

---

ESC 2 Set the line space to 1/6 inch

---

Format:                ASCII: ESC 2  
                         Decimal: 27 50  
                         Hexadecimal: 1B 32

---

Description:        Set the line spacing to 4 mm, 32 dots.

---

ESC 3 n Set the line spacing to n dots

---

Format:                ASCII: ESC 3 n  
                         Decimal: 27 51 n  
                         Hexadecimal: 1B 33 n

---

Description: n = 0-255  
                   Set the line spacing to n dots.  
                   Default value is 32 dots.

---

ESC a n Set the print alignment

---

Format:                ASCII: ESC a n  
                         Decimal: 27 97 n  
                         Hexadecimal: 1B 61 n

---

Description: Align all data in a line, the meanings of n value are as follows:  
                    $0 \leq n \leq 2$  或  $48 \leq n \leq 50$   
                   Left: n=0, 48  
                   Center: n=1, 49  
                   Right: n=2, 50  
                   Default value is 0.

---

GS L nL nH Set the left margin

---

Format:                ASCII: GS L nL nH  
                         Decimal: 29 76 nL nH  
                         Hexadecimal: 1D 4c nL nH

---

---

Description: Left margin can be set by nL and nH.  
 Sets the left margin to  $(nL+nH*256)*0.125\text{mm}$  from the left edge of the printable area.  
 $0 \leq nL \leq 255$ ,  $0 \leq nH \leq 255$ , and  $0 \leq nL+nH*256 \leq 65535$ .  
 Default value is nL=0, nH=0.

---

|              |                     |
|--------------|---------------------|
| ESC \$ nL nH | Set the left margin |
|--------------|---------------------|

---

Format:                    ASCII:   ESC \$ nL nH

                          Decimal:   27 36 nL nH

                          Hexadecimal: 1B 24 nL nH

---

Description: Left margin can be set by nL and nH.  
 Sets the left margin to  $(nL+nH*256)*0.125\text{mm}$  from the left edge of the printable area.  
 $0 \leq nL \leq 255$ ,  $0 \leq nH \leq 255$ , and  $0 \leq nL+nH*256 \leq 65535$ .  
 Default value is nL=0, nH=0.

## 2.3 Set font commands

---

|         |                   |
|---------|-------------------|
| ESC ! n | Set the font type |
|---------|-------------------|

---

Format:                    ASCII:   ESC ! n

                          Decimal:   27 33 n

                          Hexadecimal: 1B 21 n

---

Description: Set the font type(black white inverse, upside-down, bold, double width, double height or underline). And the bit definitions of parameter n are shown as follows:

    Bit 0: reserved

    Bit 1: 1: black white inverse

    Bit 2: 1: upside-down

    Bit 3: 1: bold

    Bit 4: 1: double height

    Bit 5: 1: double width

    Bit 6: 1: underline

---

|        |                    |
|--------|--------------------|
| GS ! n | Set character size |
|--------|--------------------|

---

Format:                    ASCII:   GS ! n

                          Decimal:   29 33 n

                          Hexadecimal: 1D 21 n

---

---

Description: Character width is set by the bit0-bit3 of n, and character height is set by bit4-bit7 of n.

Hexadecimal 00 (Decimal 0):width(normal),height(normal)

Hexadecimal 01 (Decimal 1):width(normal),height(double)

Hexadecimal 10 (Decimal 16):width(double),height(normal)

Hexadecimal 11 (Decimal 17):width(double),height(double)

---

ESC E n Turn bold mode on/off

Format: ASCII: ESC ! n

Decimal: 27 69 n

Hexadecimal: 1B 45 n

---

Description: Turns bold mode on or off using n as follows:

0: Turns off

1: Turns on

---

ESC SP n Set character space

Format: ASCII: ESC SP n

Decimal: 27 32 n

Hexadecimal: 1B 20 n

---

Description: Set character space to n.

Default is 0.

---

ESC S0 Set character double width

Format: ASCII: ESC S0

Decimal: 27 14

Hexadecimal: 1B 0E

---

Description: Set the character printing double width.

---

ESC DC4 Set the width normal

Format: ASCII: ESC DC4

Decimal: 27 20

Hexadecimal: 1B 14

---

Description: After execute the command, the character restore normal width.

---

ESC { n Turn upside-down printing mode  
on/off

Format: ASCII: ESC { n

Decimal: 27 123 n

Hexadecimal: 1B 7B n

---

Description: n=1:Turn on.

n=0:Turn off.

Default is 0.

dx: character dot-matrix data,  $x=s \times w$

dx as follows:

|    |    |    |  |  |  |  |  |  |     |
|----|----|----|--|--|--|--|--|--|-----|
| d1 | d4 | d7 |  |  |  |  |  |  |     |
| d2 | d5 | d8 |  |  |  |  |  |  |     |
| d3 | d6 | d9 |  |  |  |  |  |  | d36 |



|    |       |
|----|-------|
|    | Bit 7 |
|    | Bit 6 |
|    | Bit 5 |
|    | Bit 4 |
| dx | Bit 3 |
|    | Bit 2 |
|    | Bit 1 |
|    | Bit 0 |

---

ESC ? n Cancel user-defined character

---

Format:           ASCII: ESC ? n  
               Decimal: 27 37 n  
               Hexadecimal: 1B 25 n

---

Description: Cancel custom character mode, use system character.

---

ESC R n Select international character

---

Forma       ASCII: ESC R n  
 t:         Decimal: 27 82 n  
            Hexadecim 1B 52 n  
            al:

---

Description: Selects an international character set n as follows:

|             |          |                  |
|-------------|----------|------------------|
| 0:USA       | 5:Sweden | 10:Denmark II    |
| 1:France    | 6:Italy  | 11:Spain II      |
| 2:Germany   | 7:Spain1 | 12:Latin America |
| 3:U.K.      | 8:Japan  | 13:Korea         |
| 4:Denmark 1 | 9:Norway |                  |

---

ESC t n Select character code page

---

Format:           ASCII: ESC t n  
               Decimal: 27 116 n  
               Hexadecimal: 1B 74 n

---

Description: Selects an page n from the character code page as follows:

|       |       |
|-------|-------|
| 0:437 | 1:850 |
|-------|-------|

## 2.4 Image print commands

---

ESC \* m n1 n2 d1 d2...dk Set bit-image mode

---

Format:           ASCII: ESC \* m n1 n2 d1 d2 ... dk  
               Decimal: 27 42 m n1 n2 d1 d2 ... dk  
               Hexadecimal: 1B 2A m n1 n2 d1 d2 ... dk

---

Description: Set print bit-image.

m =0, 1, 32, 33.  
 n1=0-255  
 n2=0-3  
 dx=0-255

$k = n1 + 256 * n2$  ( $m=0, 1$ )  
 $k = (n1 + 256 * n2) * 3$  ( $m=32, 33$ )  
 $m$  use to select bit-image type.  
 0: the height is 8 dots, horizontal scale \*2.  
 1: the height is 8 dots, horizontal scale \*1.  
 32: the height is 24 dots, horizontal scale \*2.  
 33: the height is 24 dots, horizontal scale \*1.

---

GS / n Print NV bit image

---

Format:           ASCII: GS / n  
                   Decimal: 29 47 n  
                   Hexadecimal: 1D 2F n

---

Description: the bitmap defined by GS \* command.

This command is to print NV bit image.  $n=0\sim 3, 48\sim 51$ .

$n=0\sim 3, 48\sim 51$ : select mode

| n | mode                           | Vertical point density | Horizontal point density |
|---|--------------------------------|------------------------|--------------------------|
| 0 | Normal                         | 203DPI                 | 203DPI                   |
| 1 | Double width                   | 203DPI                 | 101DPI                   |
| 2 | Double height                  | 101DPI                 | 203DPI                   |
| 3 | Double width and double height | 101DPI                 | 101DPI                   |

---

GS \* n1 n2 d1...dk Define NV bit image

---

Format:           ASCII: GS \* x y d1 ... d( $x*y*8$ )  
                   Decimal: 29 42 x y d1 ... d( $x*y*8$ )  
                   Hexadecimal: 1D 2A x y d1 ... d( $x*y*8$ )

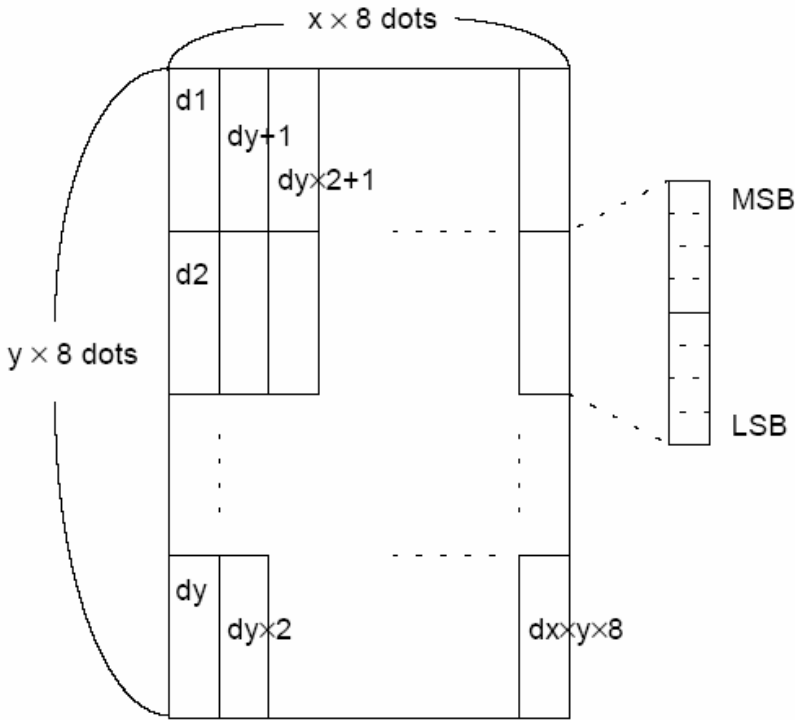
---

Description: Define NV bit image.

$y=1\sim 48, x=1\sim 255, 0\leq d\leq 255, x*y\leq 1536$

x specifies the horizontal point, y specifies the vertical point. The horizontal points are  $x*8$ , the vertical points are  $y*8$ , if  $x*y > 1536$ , the command will not be performed. d is bitmap data, 1:print, 0: not print.

the bitmap is as follows:



GS v 0 p wL wH hL hH Print raster bit image

Format: ASCII: GS v 0 p wL wH hL hH d1 ... dk

Decimal: 29 118 0 p wL wH hL hH d1 ... dk

Hexadecimal: 1D 76 0 p wL wH hL hH d1 ... dk

Description: Print raster bit image, the meanings of parameter p is as follows:

| p     | mode                        | Vertical point density | Horizontal point density |
|-------|-----------------------------|------------------------|--------------------------|
| 0, 48 | normal                      | 203.2 dpi              | 203.2 dpi                |
| 1, 49 | Double width                | 203.2 dpi              | 101.6 dpi                |
| 2, 50 | Double height               | 101.6 dpi              | 203.2 dpi                |
| 3, 51 | Double width +double height | 101.6 dpi              | 101.6 dpi                |

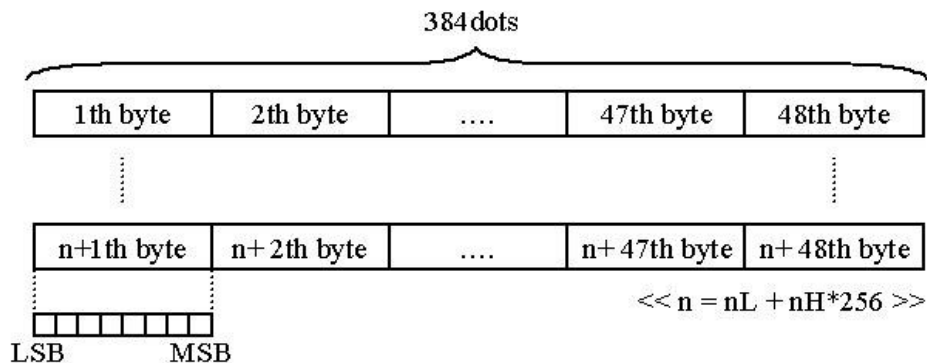
$W=wL+wH*256$  specifies W bytes in horizontal direction for the bit image.

$H=wL+wH*256$  specifies H bytes in vertical direction for the bit image.



---

Description: Print LSB bitmap. The width of the bitmap is 384.  
 The height of the bitmap is  $nL+nH*256$ .  
 The bitmap format is as follows:



## 2.5 Initialize commands

---

|       |  |                        |
|-------|--|------------------------|
| ESC @ |  | Initialize the printer |
|-------|--|------------------------|

---

Format:            ASCII: ESC @  
                   Decimal: 27 64  
                   Hexadecimal: 1B 40

---

Description: Initializes the printer:

- Clear the data in the print buffer;
- Resets the printer mode to the modes that were in effect.

## 2.6 Transmit status commands

---

|        |  |  |
|--------|--|--|
| GS a n |  | Set/Cancel the printer states automatic back |
|--------|--|--|

---

Format:            ASCII: GS a n  
                   Decimal: 29 97 n  
                   Hexadecimal: 1D 61 n

---

---

Description: Set /cancel the printer states back automatically, the meanings of bits are as follows:

| bit | On/off    | Hex | Decimal | ASB status                |
|-----|-----------|-----|---------|---------------------------|
| 0   | Off       | 00  | 0       | Not used, fixed to off    |
| 1   | off<br>on | 00  | 0       | Online/offline status off |
|     |           | 02  | 2       | Online/offline status on  |
| 2   | off<br>on | 00  | 0       | Error status off          |
|     |           | 04  | 4       | Error status on           |
| 3   | off<br>on | 00  | 0       | Paper sensor status off   |
|     |           | 08  | 8       | Paper sensor status on    |
| 4   |           | –   | –       | Not defined               |
| 5   |           | –   | –       | Not defined               |
| 6   | off       | 00  | 0       | Not used, fixed to off    |
| 7   | –         | –   | –       | Not defined               |

---

ESC u n

Transmit Status(non-real-time)

---

Format:                    ASCII: GS r n  
                               Decimal: 29 114 n  
                               Hexadecimal: 1D 72 n

---

Description: Transmit the status using n as follows:

| n     | Function                      |
|-------|-------------------------------|
| 1, 49 | Transmits paper sensor status |

Paper sensor status (n=1, 49)

| bit  | On/off | Hex  | Decimal | ASB Status                                |
|------|--------|------|---------|---|
| 0, 1 | off    | 00   | 0       | Not used. Fixed to Off.                   |
| 2, 3 | Off    | 00   | 0       | Paper near-end sensor: paper adequate.    |
|      | On     | (0C) | (12)    | Paper near-end sensor: paper not present. |
| 4    | Off    | 00   | 0       | Not used. Fixed to Off.                   |
| 5, 6 | On     | 00   | 00      | Not used. Fixed to On.                    |
|      | Off    | 00   | 00      | Not used. Fixed to Off.                   |
| 7    | Off    | 00   | 0       | Not used. Fixed to Off.                   |

## 2.7 Barcode print commands

---

GS H n

Set print position of one-dimension HRI

---

---

|         |                      |
|---------|----------------------|
| Format: | ASCII: GS H n        |
|         | Decimal: 29 72 n     |
|         | Hexadecimal: 1D 48 n |

---

Description:  $0 \leq n \leq 255$   
Set the print position of one-dimension HRI, the meanings of parameter n is as follows:  
0: not print HRI  
1: HRI above the barcode  
2: HRI bellow the barcode  
3: HRI above and bellow the barcode

GS h n Set the height of one-dimension barcode

---

|         |                      |
|---------|----------------------|
| Format: | ASCII: GS h n        |
|         | Decimal: 29 104 n    |
|         | Hexadecimal: 1D 68 n |

---

Description: Set the height of the barcode to n dots.  
 $1 \leq n \leq 255$ .  
Default value is 50.

GS x n Set the left margin of printing barcode

---

|         |                      |
|---------|----------------------|
| Format: | ASCII: GS x n        |
|         | Decimal: 29 120 n    |
|         | Hexadecimal: 1D 78 n |

---

Description: The start position is 0→255

GS w n Set the width of Barcode

---

|         |                      |
|---------|----------------------|
| Format: | ASCII: GS w n        |
|         | Decimal: 29 119 n    |
|         | Hexadecimal: 1D 77 n |

---

Description: Set the width of a bar in the barcode to n dots.  
 $n = 2, 3$ .  
Default value is 2.

GS k m d1 d2 ... dk NUL Print barcode

---

GS k m n d1 d2 ... dn

---

|           |                                |
|-----------|--------------------------------|
| Format: 1 | ASCII: GS k m d1 d2 ... dk NUL |
|           | Decima 29 107 m d1 d2 ... dk 0 |
|           | 1:                             |
|           | Hexade 1D 6B m d1 d2 ... dk 00 |
|           | cimal:                         |

|           |                                |
|-----------|--------------------------------|
| Format: 2 | ASCII: GS k m n d1 d2 ... dn   |
|           | Decima 29 107 m n d1 d2 ... dn |
|           | 1:                             |

Hexade 1D 6B m n d1 d2 ... dn  
cimal:

Description: m: encoding method

Format 1:  $0 \leq m \leq 10$

Format 2:  $65 \leq m \leq 75$

n: encoding data length

| m      | method  | length | Legal character              |
|--------|---------|--------|------------------------------|
| 0, 65  | UPC-A   | 11, 12 | 48-57                        |
| 1, 66  | UPC-E   | 11, 12 | 48-57                        |
| 2, 67  | EAN13   | 12, 13 | 48-57                        |
| 3, 68  | EAN8    | 7, 8   | 48-57                        |
| 4, 69  | CODE39  | varlen | 32, 36, 37, 43, 45-57, 65-90 |
| 5, 70  | I25     | even   | 48-57                        |
| 6, 71  | CODEBAR | varlen | 36, 43, 45-58, 65-68         |
| 7, 72  | CODE93  | varlen | 0-127                        |
| 8, 73  | CODE128 | varlen | 0-127                        |
| 9, 74  | CODE11  | varlen | 48-57                        |
| 10, 75 | MSI     | varlen | 48-57                        |

If has illegal character in data, the barcode will not be printed.

If the length is larger than the effect printing width, the print result will be uncertainty.

## 2.8 Controlboard parameter commands

DC2 T

Print test page

Format: ASCII: DC2 T  
Decimal: 18 84  
Hexadecimal: 12 54

Description: Print test page



# Appendix 1: Character Code Page

## PC437

|   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | Ç | ü | é | â | ä | à | å | ç | ê | ë | è | ï | î | í | Ä | Å |
| 9 | É | æ | Æ | ô | ö | ò | û | ù | ÿ | Ö | Ü | ¢ | £ | ¥ | ℳ | f |
| A | á | í | ó | ú | ñ | Ñ | ª | º | ¿ | ¬ | ½ | ¾ | ¿ | « | » |   |
| B | ▒ | ▒ | ▒ |   | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ |
| C | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ |
| D | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ |
| E | α | β | Γ | π | Σ | σ | μ | τ | Φ | Θ | Ω | δ | ∞ | φ | ε | ∩ |
| F | ≡ | ± | ≥ | ≤ |   |   | ÷ | ≈ | ° | · | · | √ | ⁿ | ᶻ | ■ |   |

## PC850

|   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | Ç | ü | é | â | ä | à | å | ç | ê | ë | è | ï | î | í | Ä | Å |
| 9 | É | æ | Æ | ô | ö | ò | û | ù | ÿ | Ö | Ü | ø | £ | Ø | × | f |
| A | á | í | ó | ú | ñ | Ñ | ª | º | ¿ | © | ¬ | ½ | ¼ | ¿ | « | » |
| B | ▒ | ▒ | ▒ |   | ┐ | Á | Â | À | © | ┐ | ┐ | ┐ | ┐ | ¢ | ¥ | ┐ |
| C | ┐ | ┐ | ┐ | ┐ | ┐ | á | â | à | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ┐ | ○ |
| D | ø | Ð | Ê | Ë | È | Ì | Í | Î | Ï | ┐ | ┐ | ■ | ■ | ¡ | ì | ■ |
| E | Ó | ß | Ô | Õ | Ö | Ø | µ | þ | ƒ | Ú | Û | Ü | Ý | Ý | ˉ | ´ |
| F | - | ± | — | ¾ | ¶ | § | ÷ | , | ° | ˆ | · | ¹ | ³ | ² | ■ |   |

## Appendix B: International Charset

|    | Country       | 23 | 24 | 40 | 5B | 5C | 5D | 5E | 60 | 7B | 7C | 7D | 7E |
|----|---------------|----|----|----|----|----|----|----|----|----|----|----|----|
| 0  | U.S.A         | #  | \$ | @  | [  | \  | ]  | ^  | '  | {  |    | }  | ~  |
| 1  | France        | #  | \$ | à  | °  | ç  | §  | ^  | '  | é  | ù  | è  | ¨  |
| 2  | Germany       | #  | \$ | §  | Ä  | Ö  | Ü  | ^  | '  | ä  | ö  | ü  | ß  |
| 3  | U.K.          | &  | \$ | @  | [  | \  | ]  | ^  | '  | {  |    | }  | ~  |
| 4  | Denmark I     | #  | \$ | @  | Æ  | Ø  | Å  | ^  | '  | æ  | ø  | å  | ~  |
| 5  | Sweden        | #  | □  | É  | Ä  | Ö  | Å  | Ü  | é  | ä  | ö  | å  | ü  |
| 6  | Italy         | #  | \$ | @  | °  | \  | é  | ^  | ù  | à  | ò  | è  | ì  |
| 7  | Spain I       | Pt | \$ | @  | í  | Ñ  | ¿  | ^  | '  | ¨  | ñ  | }  | ~  |
| 8  | Japan         | #  | \$ | @  | [  | ¥  | ]  | ^  | '  | {  |    | }  | ~  |
| 9  | Norway        | #  | □  | É  | Æ  | Ø  | Å  | Ü  | é  | æ  | ø  | å  | ü  |
| 10 | Denmark II    | #  | \$ | É  | Æ  | Ø  | Å  | Ü  | é  | æ  | ø  | å  | ü  |
| 11 | Spain II      | #  | \$ | á  | í  | Ñ  | ¿  | é  | '  | ì  | ñ  | ó  | ú  |
| 12 | Latin America | #  | \$ | á  | í  | Ñ  | ¿  | é  | ü  | ì  | ñ  | ó  | ú  |
| 13 | Korea         | #  | \$ | @  | [  | ₩  | ]  | ^  | '  | {  |    | }  | ~  |