

VFD220 Commands Manual - English

General commands instruction:

1. STX B n

Name: select baud rate

ACSII: <STX> <ENQ> B n<ETX>

Decimal: 002 005 066 n 003 48<=n<=55

Hex: 02H 05H 42H n 03H 30H<=n<=37H

Description: When the power is turned on, the default value of n is 0(set to 9600)

| ASCII n | Decimal n | Hex n | Baud rate |
|---------|-----------|-------|-----------|
| 0 | 48 | 30H | 9600 |
| 1 | 49 | 31H | 4800 |
| 2 | 50 | 32H | 2400 |
| 3 | 51 | 33H | 1200 |
| 4 | 52 | 34H | 600 |
| 5 | 53 | 35H | 300 |
| 6 | 54 | 36H | 38400 |
| 7 | 55 | 37H | 19200 |

2. STX C n

Name: select command set

ACSII: <STX> <ENQ> C n<ETX>

Decimal: 002 005 067 n 003 49<=n<=58

Hex: 02H 05H 43H n 03H 31H<=n<=3A

Description: When the power is turned on, the default value of n is 0(set to CD5200/20)

| ASCII n | Decimal n | Hex n | Command set |
|---------|-----------|-------|-------------|
| 0 | 48 | 30H | DSP800 |
| 1 | 49 | 31H | ESC/POS |
| 2 | 50 | 32H | ADM787 |
| 3 | 51 | 33H | ADM788 |
| 4 | 52 | 34H | AEDEX |
| 5 | 53 | 35H | UTC-S |
| 6 | 54 | 36H | UTC-E |
| 7 | 55 | 37H | CD5220 |
| 8 | 56 | 38H | NCR |
| 9 | 57 | 39H | PD6000 |
| ; | 58 | 3AH | ICD2002 |

3. STX MD5 n

Name: select international fonts set

ACSII : <STX> <ENQ> S n<ETX>

Decimal: 002 005 083 n 003 48<=n<=63

Hex: 02H 05H 53H n 03H 30H<=n<=3FH

Description: select international fonts and stored in the internal EEPROM, the next power will continue to use this setting. When the power is turned on, the default value of n is A(set to U.S.A.)

| Hex | n | International font | Hex | n | International font |
|-----|---|--------------------|-----|---|--------------------|
| 30H | | U.S.A | 38H | | Japan |
| 31H | | France | 39H | | Norway |
| 32H | | Germany | 3AH | | Denmark -2 |
| 33H | | U.K | 3BH | | Spain-2 |
| 34H | | Denmark-1 | 3CH | | Latin America |
| 35H | | Sweden | 3DH | | Korea |
| 36H | | Italy | 3EH | | Slovenia/Croatia |
| 37H | | Spain-1 | 3FH | | China |

International Code Set (Font Map)

[Appendix-3] International Code Set (Font Map)

| No. | International | 23h | 24h | 40h | 5Bh | 5Ch | 5Dh | 5Eh | 60h | 7Bh | 7Ch | 7Dh | 7Eh |
|-----|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | U.S.A | | | | | | | | | | | | |
| 1 | FRANCE | | | | | | | | | | | | |
| 2 | GERMANY | | | | | | | | | | | | |
| 3 | U.K. | | | | | | | | | | | | |
| 4 | DENMARK 1 | | | | | | | | | | | | |
| 5 | SWEDEN | | | | | | | | | | | | |
| 6 | ITALY | | | | | | | | | | | | |
| 7 | SPAIN 1 | | | | | | | | | | | | |
| 8 | JAPAN | | | | | | | | | | | | |
| 9 | NORWAY | | | | | | | | | | | | |
| 10 | DENMARK 2 | | | | | | | | | | | | |
| 11 | SPAIN 2 | | | | | | | | | | | | |
| 12 | LARTIN AMERICA | | | | | | | | | | | | |
| 13 | KOREA | | | | | | | | | | | | |
| 14 | SLOVENIA /CROATIA | | | | | | | | | | | | |
| 15 | CHINA | | | | | | | | | | | | |

4. STX MD6 n

Name: Select the Extended Character Font Table

ASCII : <STX> <ENQ> F n <ETX>

Decimal: 002 005 070 n 003 48<=n<=63

Hex: : 02H 05H 46H n 03H n=21,n=24,30H<=n<=3FH

Description: Select extended character font table and stored in the internal EEPROM, the next power will continue to use this setting. Use the font stored in 80H ... FFH.

| Hex n | Symbol | Description |
|-------|----------|-------------------------------|
| 30H | PC-437 | Standard European |
| 31H | JIS | Japanese Katakana |
| 32H | PC-850 | Multilingual |
| 33H | PC-860 | Portuguese |
| 34H | PC-863 | Canadian French |
| 35H | PC-865 | Nordic |
| 36H | PC-737 | Greek |
| 37H | WPC-1250 | Central European Windows Code |
| 38H | WPC-1251 | Cyrillic Windows Code |
| 39H | WPC-1252 | Western European Windows Code |
| 3AH | PC-866 | Cyrillic-2 (Russian) |
| 3BH | PC-852 | Latin-2 (Slavonic) |
| 3CH | PC-858 | Euro |
| 3DH | PC-775 | Baltic |
| 3EH | WPC-1253 | Greek Windows Code |
| 3FH | WPC-1254 | Turkish Windows Code |
| 21H | PC-864 | Arabic |
| 24H | Farsi | Iran |

7. Save data to demo display and Run Demo message

STX 05 D ETX Run demo message

ASCII Format STX 05 D ETX

Dec. Format [02][05][68] [03]

Hex. Format [02h][05h][44h][03h]

Description Save the being display message to demo display and Run demo message for the display.

8. Reset EEPROM and Close Demo

STX 05 07 ETX Reset EEPROM

ASCII Format STX 05 07 ETX

Dec. Format [02][05][07][03]

Hex. Format [02h][05h][07h][03h]

Description This command will reset the content of EEPROM (eg. demo scroll data, user-define character.)

EPSON ESC/POS

commands instruction set list

1. US MD1

Name: Select overwrite mode

ASCII: US MD1

Decimal: 31 1

Hex: 1F 01

Description: In overwriting mode, entering a character code moves to the left end of the lower line when the cursor is at the right end of the upper line, and to the left end of the upper line when the cursor is at the right end of the lower line. When the power is turned on, this mode is selected defaultly.

2. US MD2

Name: Select vertical scroll mode

ASCII: US MD2

Decimal: 31 2

Hex: 1F 02

Description: In vertical scroll mode, entering a character code moves the cursor to the left end of the lower line when the cursor is at the right end of the upper line, scrolls the characters displayed on the lower line, and clears the lower line when the cursor is at the right end of the lower line. At this time the cursor is moved to the left end of the lower line.

3. US MD3

Name: Select horizontal scroll mode

ASCII: US MD3

Decimal: 31 3

Hex: 1F 03

Description : In horizontal scroll mode, entering a character code scrolls all displayed characters one character to the left, then displays the new character at the right end.

4. BS

Name: move the cursor one character position to the left

ASCII: BS

Decimal: 8

Hex: 08

Description: When the cursor is at the left end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.

2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the

right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled one character to the right. The cursor is not moved, but the character area at the left end is cleared.

5. HT

Name: move the cursor one character position to the right

ASCII: HT

Decimal: 9

Hex: 09

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

6. US LF

Name: move the cursor up one line

ASCII: US LF

Decimal: 31 10

Hex: 1F 0A

Description: When the cursor is on the upper line, the operation of this command depends on the display mode, as follows:

1) Overwrite mode : The cursor is moved to the same column on the lower line.

2) Vertical scroll mode : The characters displayed on the upper line are scrolled to the lower line and the upper line is cleared. The cursor remains at the same position.

3) Horizontal scroll mode : The cursor is not moved.

7. LF

Name: move the cursor down one line

ASCII: LF

Decimal: 10

Hex: 0A

Description: When the cursor is on the lower line, the operation of this command depends on the display mode, as follows:

1) Overwrite mode : The cursor is moved to the same column on the upper line.

2) Vertical scroll mode : The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.

3)Horizontal scroll mode :The cursor is not moved.

8. CR

Name: move the cursor to left-most position on the current line

ASCII: CR

Decimal: 13

Hex: 0D

9. US CR

Name: move the cursor to the right-end position on the current line

ASCII: US CR

Decimal: 31 13

Hex: 1F 0D

10. HOM

Name: move the cursor to the left-end position on the upper line (home position)

ASCII: HOM

Decimal: 11

Hex: 0B

11. US B

Name: move the cursor to the 20th column of the lower line

ASCII: US B

Decimal: 31 66

Hex: 1F 42

12. US \$ x y

Name: move cursor to specified position

ASCII: US \$ x y

Decimal: 31 36 x y

Hex: 1F 24 x y

Description: moves the cursor to the xth column on the yth line. $1 \leq x \leq 20, y=1,2$

13. ESC @

Name: initialize display

ASCII: ESC @

Decimal: 27 64

Hex: 1B 40

Description: The software settings are reset to their power-on values. After initializing the display, the display screen is cleared and the cursor moves to the home position.

14. CLR

Name: clear display screen

ACSII: CLR

Decimal: 12

Hex: 0C

Description: Clear all the displayed characters. After this command is executed, the cursor moves to the home position.

15. CAN

Name: clear cursor line, and clear string mode

ACSII: CAN

Decimal: 24

Hex: 18

Description: Clears the line containing the cursor. After this command is executed, the cursor moves to the left-end position on the current line.

16. US C n

Name: set cursor ON/OFF

ACSII: US C n

Decimal: 31 67 n

Hex: 1F 43 n

Description: Turns the cursor on or off.

When n =0, the cursor is turned off.

When n =1, the cursor is turned on.

17. US . n

Name: display char 'n' and '.'

ACSII: US . n

Decimal: 31 46 n

Hex: 1F 2E n

Description: 20H<=n<=FFH

18. US , n

Name: display char 'n' and ','

ACSII: US , n

Decimal: [031][044]n

Hex: [1FH][2CH]n

Description: 20H<=n<=FFH

19. US ; n

Name: display char 'n' and ';'

ACSII: US ; n

Decimal: 31 59 n

Hex: 1F 3B n

Description: 20H<=n<=FFH

20. US X n

Name: brightness adjustment

ACSII: US X n

Decimal: 31 42 n

Hex: 1F 2A n 31H<=n<=34H

Description: Sets the brightness of the vacuum fluorescent character display tube. n selects the percentage of brightness as follows:

n = 1, Brightness Level = 40 %

n = 2, Brightness Level = 60 %

n = 3, Brightness Level = 80 %

n = 4, Brightness Level = 100 %

When the power is turned on, n = 4 is selected defaultly.

21. US E n

Name: Sets or cancels the blink interval of the display screen

ACSII: US E n

Decimal: 31 69 n

Hex: 1F 45 n 00H<=n<=FFH

Description: n specifies the blink interval. When n = 0, the display is kept on (cancels blinking).

When n = FF Hex (255 decimal), the display is turned off but the contents of the display are maintained.

When the power is turned on, n = 0 is selected defaultly.

22. ESC R n

Name: select international fonts set

ACSII: ESC R n

Decimal: [027][082]n 32<=n<=44

Hex: [1BH][52H]n 00H<=n<=0CH

Description: When the power is turned on, the default value of n is SPACE (set to U.S.A.)

| Decimal n | Hex n | Country |
|-----------|-------|-----------|
| 0 | 00H | U.S.A |
| 1 | 01H | FRANCE |
| 2 | 02H | GERMANY |
| 3 | 03H | U.K. |
| 4 | 04H | DENMARKI |
| 5 | 05H | SWEDEN |
| 6 | 06H | ITALY |
| 7 | 07H | SPAIN |
| 8 | 08H | JAPAN. |
| 9 | 09H | NORMAY |
| 10 | 0AH | DENMARKII |
| 11 | 0BH | SLAVONIC |
| 12 | 0CH | RUSSIA |

23. ESC t n

Name: select fonts ,ASCII code or JIS code

ACSII: ESC t n

Decimal: [027][116] n

Hex: [1BH][74H] n 00H<=n<=09H

Description : When the power is turned on, the default value of n is 0(set to U.S.A. and Standard Europe)

| Hex n | Symbol | Description |
|-------|----------|-------------------------------|
| 00H | PC-437 | Standard European |
| 01H | JIS | Japanese Katakana |
| 02H | PC-850 | Multilingual |
| 03H | PC-860 | Portuguese |
| 04H | PC-863 | Canadian French |
| 05H | PC-865 | Nordic |
| 06H | PC-852 | Latin-2 (Slavonic) |
| 07H | PC-866 | Cyrillic-2 (Russian) |
| 08H | PC-858 | Euro |
| 09H | WPC-1252 | Western European Windows Code |

24. US T h m / Display time

ACSII Format: US T h m

Dec. Format: [031][084]h m 0<=h<=24; 0<=m<=60

Hex. Format: [1FH][54H]h m 00H<=h<=18H; 00H<=m<=3CH

Description: Display preset time on lower line , and time automatically from a preset time .
When ancommand use lower line , timing paused , perform command “US U”
could continue totime.

25.US U / Continue to display time

ACSII Format: US U

Dec. Format: [031][085]

Hex. Format: [1FH][55H]

CD 5200/20

commands instruction set list

1. ESC DC1

Name: Select overwrite mode

ACSII: ESC DC1

Decimal: 27 17

Hex: 1B 11

Description: In overwriting mode, entering a character code moves to the left end of the lower line when the cursor is at the right end of the upper line, and to the left end of the upper line when the cursor is at the right end of the lower line. When the power is turned on, this mode is selected defaultly.

2. ESC DC2

Name: Select vertical scroll mode

ACSII: ESC DC2

Decimal: 27 18

Hex: 1B 12

Description: In vertical scroll mode, entering a character code moves the cursor to the left end of the lower line when the cursor is at the right end of the upper line, scrolls the characters displayed on the lower line, and clears the lower line when the cursor is at the right end of the lower line. At this time the cursor is moved to the left end of the lower line.

3. ESC DC3

Name: Select horizontal scroll mode

ACSII: ESC DC3

Decimal: 27 19

Hex: 1B 13

Description: In horizontal scroll mode, entering a character code scrolls all displayed characters one character to the left, then displays the new character at the right end.

4. ESC Q A d1 d2 d3 dn CR

Name: set the string display mode, write string to upper line

ACSII: ESC Q A d1 d2 d3 dn CR

Decimal: 27 81 65 d1 d2 d3 dn 13

Hex: 1B 51 41 d1 d2 d3 dn 0D

Description: write string (d1 d2 d3 dn) to upper line. 20H<=dn<=FFH, 1<=n<=20.

5. ESC Q B d1 d2 d3 dn CR

Name: set the string display mode, write string to lower line

ACSII: ESC Q B d1 d2 d3 dn CR

Decimal: 27 81 66 d1 d2 d3 dn 13

Hex: 1B 51 42 d1 d2 d3 dn 0D

Description: write string (d1 d2 d3 dn) to lower line. 20H<=dn<=FFH, 1<=n<=20.

6. ESC Q D d1 d2 d3 dn CR

Name: upper line message scroll continuously

ACSII: ESC Q D d1 d2 d3 dn CR

Decimal: 27 81 68 d1 d2 d3 dn 13

Hex: 1B 51 44 d1 d2 d3 dn 0D

Description : upper line message (d1 d2 d3 dn) scroll continuously. 20H<=dn<=FFH, 1<= n<=20.

7. ESC Q O d1 d2 d3 dn CR

Name: lower line message scroll continuously

ACSII: ESC Q D d1 d2 d3 dn CR

Decimal: 27 81 79 d1 d2 d3 dn 13

Hex: 1B 51 4F d1 d2 d3 dn 0D

Description : upper line message (d1 d2 d3 dn) scroll continuously. 20H<=dn<=FFH, 1<= n<=20.

8. ESC [D

Name: move the cursor one character position to the left

ACSII: ESC [D

Decimal: 27 91 68

Hex: 1B 5B 44

Description: When the cursor is at the left end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.

2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled on character to the right. The cursor is not moved, but the character area at the left end is cleared.

9. BS

Name: move the cursor one character position to the left

ACSII: BS

Decimal: 8

Hex: 08

Description: When the cursor is at the left end of a line, the operation of this command

depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.

2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled one character to the right. The cursor is not moved, but the character area at the left end is cleared.

10. ESC [C

Name: move the cursor one character position to the right

ASCII: ESC [C

Decimal: 27 91 67

Hex: 1B 5B 43

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

11. HT

Name: move the cursor one character position to the right

ASCII: HT

Decimal: 9

Hex: 09

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

12. ESC [A

Name: move the cursor up one line

ASCII: ESC [A

Decimal: 27 91 65

Hex: 1B 5B 41

Description: When the cursor is on the upper line, the operation of this command depends on the display mode,as follows:

1)Overwrite mode :The cursor is moved to the same column on the lower line.

2)Vertical scroll mode :The characters displayed on the upper line are scrolled to the lower line and the upper line iscleared. The cursor remains at the same position.

3)Horizontal scroll mode :The cursor is not moved.

13. ESC [B

Name: move the cursor down one line

ASCII: ESC [B

Decimal: 27 91 66

Hex: 1B 5B 42

Description: When the cursor is on the lower line, the operation of this command depends on the display mode,as follows:

1)Overwrite mode :The cursor is moved to the same column on the upper line.

2)Vertical scroll mode :The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.

3)Horizontal scroll mode :The cursor is not moved.

14. LF

Name: move the cursor down one line

ASCII: LF

Decimal: 10

Hex: 0A

Description: When the cursor is on the lower line, the operation of this command depends on the display mode,as follows:

1)Overwrite mode :The cursor is moved to the same column on the upper line.

2)Vertical scroll mode :The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.

3)Horizontal scroll mode :The cursor is not moved.

15. ESC [H

Name: move cursor to home position

ASCII: ESC [H

Decimal: 27 91 72

Hex: 1B 5B 48

Description: Moves the cursor to the left-end position on the upper line (home position).Home position indicates the first column of the upper line.

16. HOM

Name: move the cursor to the left-end position on the upper line (home position)

ACSII: HOM

Decimal: 11

Hex: 0B

17. ESC [K

Name: move the cursor to the 20th column of the lower line

ACSII: ESC [K

Decimal: 27 91 75

Hex: 1B 5B 4B

18. ESC [L

Name: move the cursor to left-most position on the current line

ACSII: ESC [L

Decimal: 27 91 76

Hex: 1B 5B 4C

19. CR

Name: move the cursor to left-most position on the current line

ACSII: CR

Decimal: 13

Hex: 0D

20. ESC [R

Name: move the cursor to the right-end position on the current line

ACSII: ESC [R

Decimal: 27 91 82

Hex: 1B 5B 52

21. ESC I x y

Name: move cursor to specified position

ACSII: ESC I x y

Decimal: 27 108 x y

Hex: 1B 6C x y

Description: moves the cursor to the x th column on the y th line. $1 \leq x \leq 20, y = 1, 2$

22. ESC @

Name: initialize display

ACSII: ESC @

Decimal: 27 64

Hex: 1B 40

Description: The software settings are reset to their power-on values. After initializing the display, the display screen is cleared and the cursor moves to the home position.

23. CLR

Name: clear display screen

ACSII: CLR

Decimal: 12

Hex: 0C

Description: Clear all the displayed characters. After this command is executed, the cursor moves to the home position.

24. CAN

Name: clear cursor line, and clear string mode

ACSII: CAN

Decimal: 24

Hex: 18

Description: Clears the line containing the cursor. After this command is executed, the cursor moves to the left-end position on the current line.

25. ESC * n

Name: brightness adjustment

ACSII: ESC * n

Decimal: 27 42 n

Hex: 1B 2A n

Description: Sets the brightness of the vacuum fluorescent character display tube. n selects the percentage of brightness as follows:

n = 1, Brightness Level = 40 %

n = 2, Brightness Level = 60 %

n = 3, Brightness Level = 80 %

n = 4, Brightness Level = 100 %

When the power is turned on, n = 4 is selected defaultly.

26. ESC _ n

Name: set cursor ON/OFF

ACSII: ESC _ n

Decimal: 27 95 n

Hex: 1B 5F n

Description: Turns the cursor on or off.

When n = 0, the cursor is turned off.

When n = 1, the cursor is turned on.

27. ESC f n

Name: select international fonts set

ACSII: ESC f n

Decimal: 27 102 n

Hex: 1B 66 n

Description: When the power is turned on, the default value of n is A (set to U.S.A.)

| ASCII n | Decimal n | Hex n | Country |
|---------|-----------|-------|-----------|
| A | 65 | 41H | U.S.A |
| D | 68 | 44H | DENMARKI |
| E | 69 | 45H | DENMARKII |
| F | 70 | 46H | FRANCE |
| G | 71 | 47H | GERMANY |
| I | 73 | 49H | ITALY |
| J | 74 | 4AH | JAPAN. |
| L | 76 | 4CH | SLAVONIC |
| N | 78 | 4EH | NORMAY |
| R | 82 | 52H | RUSSIA |
| S | 83 | 53H | SPAIN |
| U | 85 | 55H | U.K. |
| W | 87 | 57H | SWEDEN |

28. ESC c n

Name: select fonts ,ASCII code or JIS code

ACSII: ESC c n

Decimal: 27 99 n

Hex: 1B 63 n

Description: When the power is turned on, the default value of n is A(set to U.S.A. and Standard Europe)

| ASCII n | Hex n | Symbol | Description |
|---------|-------|----------|-------------------------|
| A | 41H | PC-437 | Standard European |
| J | 4AH | JIS | Japanese Katakana |
| R | 52H | PC-866 | Cyrillic-2 (Russian) |
| L | 4CH | PC-852 | Latin-2 (Slavonic) |
| P | 50H | PC-858 | Euro |
| W | 57H | WPC-1252 | West. Euro Windows Code |

29. US T h m / Display time

ACSII Format: US T h m

Dec. Format: [027][084]h m 0<=h<=24; 0<=m<=60

Hex. Format: [1BH][54H]h m 00H<=h<=18H; 00H<=m<=3CH

Description: Display preset time on lower line , and time automatically from a preset time .
When a command use lower line , timing paused , perform command “US U” could continue to time.

30.US U / Continue to display time

ACSII Format: US U

Dec. Format: [027][085]

Hex. Format: [1BH][55H]

General commands instruction set list:

| Command | Code description (hex) | Function description |
|-----------------|------------------------------|--|
| STX ENQ B n ETX | 02 05 42h n 03 ,30h<=n<=37h | select baud rate |
| STX ENQ C n ETX | 02 05 43h n 03 ,30H<=n<=37h | select command set |
| STX ENQ S n ETX | 02 05 53h n 03 ,30H<=n<=3fh | select international fonts set |
| STX ENQ F n ETX | 02 05 46h n 03 ,30H<=n<=3fh, | Select the Extended Character Font Table |
| STX ENQ D ETX | 02 05 44h 03 | Save data to demo display and Run Demo message |
| STX ENQ 07 ETX | 02 05 07h 03 | Reset EEPROM and Close Demo |

EPSON ESC/POS command list

| Command | Code description(hex) | Function description |
|-----------|--|------------------------------------|
| HT | 09 | move cursor right |
| BS | 08 | move cursor left |
| US LF | 1F 0A | move cursor up |
| LF | 0A | move cursor down |
| US CR | 1F 0D | move cursor to right-end position |
| CR | 0D | move cursor to left-end position |
| HOM | 0B | move cursor to home position |
| US B | 1F 42 | move cursor to bottom position |
| US \$ x y | 1F 24 x y , 01H<x<14H,y=1,2 | move cursor to specified position |
| CLR | 0C | clear display screen |
| CAN | 18 | clear cursor line |
| US X n | 1F 58 n 01H<n<04H | brightness adjustment |
| US E n | 1F 45 n 0<n<FFH | blink display screen |
| ESC @ | 1B 40 | initialize display |
| ESC t n | 1B 74 n 00H<n<09H | select character code table |
| ESC R n | 1B 52 n 00H<=n<0CH | select international character set |
| US r n | 1F 72 n n=00H,01H | select/cancel reverse character |
| US MD1 | 1F 01 | specify overwrite mode |
| US MD2 | 1F 02 | specify vertical scroll mode |
| US MD3 | 1F 03 | specify horizontal scroll mode |
| US @ | 1F 40 | execute self-test |
| US . n | 1F 2E n , n = a displayable character code | specify period |
| US , n | 1F 2C n , n = a displayable character code | specify comma |
| US ; n | 1F 3B n , n = a displayable character code | specify semicolon (period + comma) |
| US # n m | 1F23 n m , n= 1 or 0 , 0<m<14H | turn annunciator ON/OFF |
| ESC T h m | 1F 54 h m ,0<=h<=17H 0<=m<=3CH | display time |
| US U | 1F 55 | Continue to display time |

CD 5220-II STANDARD MODE

| Command | Code description (hex) | Function description |
|-----------------|--------------------------------|---|
| ESC DC1 | 1B 11 | overwrite mode |
| ESC DC2 | 1B 12 | vertical scroll mode |
| ESC DC3 | 1B 13 | horizontal scroll mode |
| ESC Q ACR | 1B 51 41 d1...dn 0D , n<=20 | set the string display mode, write string to upper line |
| ESC Q BCR | 1B 51 42 d1...dn 0D, n<=20 | set the string display mode, write string to lower line |
| ESC Q DCR | 1B 51 44 d1...dn 0D ,n<70 | upper line message scroll continuously |
| ESC Q OCR | 1B 51 4f d1...dn 0D | lower line message scroll continuously |
| ESC [D | 1B 5B 44 | move cursor left |
| BS | 08 | move cursor left |
| ESC [C | 1B 5B 43 | move cursor right |
| HT | 09 | move cursor right |
| ESC [A | 1B 5B 41 | move cursor up |
| ESC [B | 1B 5B 42 | move cursor down |
| LF | 0A | move cursor down |
| ESC [H | 1B 5B 48 | move cursor to home position |
| HOM | 0B | move cursor to home position |
| ESC [L | 1B 5B 4C | move cursor to left-most position |
| CR | 0D | move cursor to left-most position |
| ESC [R | 1B 5B 52 | move cursor to right-most position |
| ESC [K | 1B 5B 4B | move cursor to bottom position |
| ESC l x y | 1B 6C x y , 01H<x<14H,y=1,2 | move cursor to specified position |
| ESC @ | 1B 40 | initialize display |
| CLR | 0C | clear display screen, and clear string mode |
| CAN | 18 | clear cursor line, and clear string mode |
| ESC * n | 1B 2A n 1<=n<=04h | brightness adjustment |
| ESC _ n | 1B 5F n, n=31h or 30h | set cursor ON/OFF |
| ESC f n | 1B 66 n | select international fonts |
| ESC c n | 1B 63 n | select fonts, ASCII code or JIS code |
| ESC T h m | 1B 54 h m ,0<=h<=17H 0<=m<=3CH | display time |
| ESC U | 1B 55 | continue to display time |

DSP-800 commands instruction set list

| | | |
|---------------|-----------|----------------------|
| ASCII Command | Hex. Code | Function Description |
|---------------|-----------|----------------------|

| | | |
|------------------------|---------------------|---|
| <EOT><SOH> P n <ETB> | 04h 01h 50h n 17h | Move cursor to specified position (31h<n<58h, n=31h:home position, n=58h:right-end of lower line) |
| <EOT><SOH> C n m <ETB> | 04h 01h 43h n m 17h | Clear display range from n position to m position and move cursor to n position (31h<n<m<58h) |
| <EOT><SOH> S n <ETB> | 04h 01h 53h n 17h | Save current display data to n'th layer for demo view data (31h<n<33h) |
| <EOT><SOH> D n <ETB> | 04h 01h 44h n 17h | Display the saved demo message (31h<n<33h) |
| <EOT><SOH> A n <ETB> | 04h 01h 41h n 17h | Brightness adjustment (31h<n<34h, 31h: lowest, 34h:100%) |
| <EOT><SOH> F n <ETB> | 04h 01h 46h n 17h | Blink display screen (00h<n<FFh) |
| <EOT><SOH> % <ETB> | 04h 01h 25h 17h | Initialize display |
| <EOT><SOH> @ <ETB> | 04h 01h 40h 17h | Execute self-test |

ADM787/788 commands instruction set list

| ASCII Command | Hex. Code | Function Description |
|---------------|-----------|---|
| <CLR> | 0Ch | Clear display |
| <CR> | 0Dh | Carriage return |
| <SLE1> | 0Eh | Clear upper line and move cursor to upper left-end position |
| <SLE2> | 0Fh | Clear bottom line and move cursor to bottom left-end position |
| <DC0> n | 10h n | Set period to upper line, last n position (31h<n<44h) |
| <DC1> n | 11h n | Set line blinking (n=1: upper line, n=2: bottom line) |
| <DC2> n | 12h n | Clear Line Blinking (n=1: upper line, n=2: bottom line) |
| <SF1> | 1Eh | Clear field 1 and move cursor to field 1, first position |
| <SF2> | 1Fh | Clear field 2 and move cursor to field 2, first position |

AEDEX commands instruction set list

| ASCII Command | Hex. Code | Function Description |
|-----------------------------|----------------------------------|--|
| ! # 1 d 1 d 2d n <CR> | 21h 23h 31h d 1 d 2d n 0Dh | Upper line display (1<n<20, 20h<dn<FFh) -. Clear upper line: ! # 1 <CR> |
| ! # 2 d 1 d 2d n <CR> | 21h 23h 32h d 1 d 2d n 0Dh | Bottom line display (1<n<20, 20h<dn<FFh) -. Clear bottom line: ! # 2 <CR> |
| ! # 4 d 1 d 2d n <CR> | 21h 23h 34h d 1 d 2d n 0Dh | Upper line message scroll continuously (1<n<40) |
| ! # 5 h m<CR> | 21h 23h 35h h m 0Dh | Display time (00h<=h<=17h,,00<=m<=3ch) -. Display previously set time: ! # 5 <CR> |
| ! # 6 d 1 d 2d n <CR> | 21h 23h 36h d 1 d 2d n 0Dh | Upper line message scroll one time (1<n<40) |
| ! # 9 d 1 d 2d n <CR> | 21h 23h 39h d 1 d 2d n 0Dh | Two line display (1<n<40) |

UTC-S commands instruction set list

| Command | Hex. Code | Function Description |
|---------|-----------|---|
| <EOT> n | 04h n | Display dimming (n=20h:20%, 40h:40%, 60h:60%, FFh:100%) |
| <BS> | 08h | Back space |

| | | |
|---------|---------|--|
| <HT> | 09h | Horizontal tab |
| <LF> | 0Ah | Line feed |
| <CR> | 0Dh | Carriage return |
| <DLE> n | 10h n | Display position (00h<n<27h, n=00h:home position, 27h:right end of lower line) |
| <DC1> | 11h | Overwrite display mode |
| <DC2> | 12h | Vertical scroll mode |
| <DC3> | 13h | Cursor on |
| <DC4> | 14h | Cursor off |
| <CAN> | 18h | Clear to end of line |
| | 19h | Clear to end of display |
| <ESC> d | 1Bh 64h | Change to UTC enhanced mode |
| <FS> | 1Ch | Flashing text start |
| <GS> | 1Dh | Flashing text stop |
| <RS> | 1Eh | Clear display and cursor home |
| <US> | 1Fh | Reset |

UTC-E commands instruction set list

| ASCII Command | Hex. Code | Function Description |
|----------------------------|------------------------------|---|
| <SI> | 0Fh | Flashing text start |
| <SO> | 0Eh | Flashing text stop |
| <ESC> u A d 1 d 2d n | 1Bh 75h 41h d 1 d 2d n | Upper line display(1<n<20, 20h<dn<FFh) |
| <CR> | 0Dh | -. Clear upper line: <ESC> u A <CR> |
| <ESC> u B d 1 d 2d n | 1Bh 75h 42h d 1 d 2d n | lower line display(1<n<20,20h<dn <FFh) |
| <CR> | 0Dh | -. Clear bottom line: <ESC> u B <CR> |
| <ESC> u D d 1 d 2d n | 1Bh 75h 44h d 1 d 2d n | Upper line message scroll continuously |
| <CR> | 0Dh | (1<n<40) |
| <ESC> u E h m <CR> | 1Bh 75h 45h h m 0Dh | Display time (00h<=h<=17h,,00<=m<=3ch) |
| | | -. Display previously set time: ! # E <CR> |
| <ESC> u F d 1 d 2d n | 1Bh 75h 46h d 1 d 2d n | Upper line message scroll one time (1<n<40) |
| <CR> | 0D | |
| <ESC> u I d 1 d 2d n | 1Bh 75h 49h d 1 d 2d n | Two line display (1<n<40) |
| <CR> | 0Dh | -. Clear display: <ESC> u I <CR> |
| <ESC> u l n <CR> | 1Bh 75h 6Ch n 0Dh | Select international code set |
| | | (30h<n<3Fh) |
| <ESC> <RS> <CR> | 1Bh 0Fh 0Dh | Change to UTC standard mode |

NCR Real POS Emulation Mode

| ASCII Command | Hex. Code | Function Description |
|-----------------|-------------|------------------------------------|
| <NUL> K or <BS> | 00 4B or 08 | Move cursor left (back space) |
| <NUL> M or <HT> | 00 4D or 09 | Move cursor right (horizontal tab) |
| <NUL> P or <LF> | 00 50 or 0A | Move cursor down (line feed) |
| <NUL> H | 00 48 | Move cursor up |

| | | |
|-----------------------------|------------------------------|---|
| <HOM> | 0B | Move cursor to home position |
| <NUL> G or <CR> | 00 47 or 0D | Move cursor to left-most position |
| <NUL> O | 00 4F | Move cursor to right-most position |
| <ESC> P x y | 1B 50 x y , 01<x<14H,y=01,02 | Move cursor to specified position |
| <CLR> | 0C | Clear display screen, and clear string mode |
| <CAN> | 18 | Clear cursor line, and clear string mode |
| <ESC> @ | 1B 40 | Initialize display |
| <ESC> <DC1> | 1B 11 | Overwrite mode |
| <ESC> <DC2> | 1B 12 | Vertical scroll mode |
| <ESC> <DC3> | 1B 13 | Horizontal scroll mode |
| <US> E n | 1F 45 n, 00<=n<=FFh | Set display screen blink interval |
| <ESC> _ n | 1B 5F n, n=30,31h | Set cursor on/off |
| <US> <DC1> n | 1F 11 n, n=01,02h | Set line blinking |
| <US> <DC2> n | 1F 12 n, n=01,02h | Clear line blinking |
| <ESC> F A d1 d n <CR> | 1B 46 41 d1...dn 0D , n<=20 | Write string character to upper line |
| <ESC> F B d1 d n <CR> | 1B 46 42 d1...dn 0D, n<=20 | Write string character to lower line |
| <ESC> F D d1 d n <CR> | 1B 46 44 d1...dn 0D ,n<70 | Upper line message scroll continuously |
| <ESC> F O d1 d n <CR> | 1B 46 4f d1...dn 0D , n<70 | Lower line message scroll continuously |

PD6000 (Logic Controls) Emulation Mode

| ASCII Command | Hex. Code | Function Description |
|-------------------------|----------------------|---|
| <DC2> | 12h | Vertical scroll mode |
| <DC1> | 11h | Normal display mode |
| <EOT> n | 04h n | Brightness control (n=FFh, 60h, 40h, 20h) |
| <BS> | 08h | Back space |
| <HT> | 09h | Horizontal tab |
| <LF> | 0Ah | Line feed |
| <CR> | 0Dh | Carriage |
| <DLE> n | 10h n | Digit select (00h< =n<=27h) |
| <DC3> | 13h | Cursor on |
| <DC4> | 14h | Cursor off |
| <US> | 1Fh | Reset |
| <ENQ> d 1d n <CR> | 05h d 1d n 0Dh | Message scroll (up to 40 characters) |

ICD-2002 (Puritron) Emulation Mode

| ASCII Command | Hex. Code | Function Description |
|---------------|-------------|--|
| <HT> | 09h | Move cursor right (only valid in overwrite mode) |
| <BS> | 08h | Move cursor left (only valid in overwrite mode) |
| <CR> | 0Dh | Move cursor to left-end position (only valid in overwrite mode) |
| <ESC> @ | 1Bh 40h | Initialize customer display to initial state |
| <ESC> C r c | 1Bh 43h r c | Move cursor to specified position (only valid in overwrite mode) |

(r=55h: upper line, r=44h: lower line, 1<c<20 : column number)

Set special effect or display mode of specified row.

| | | r | Select Row | n | Select Function |
|-------------|-------------|---|------------|-----|---|
| <ESC> E r n | 1Bh 45h r n | 58h | all rows | 30h | shift mode (default displaymode) |
| | | 55h | upper row | 31h | rotation mode |
| | | 44h | lower row | 32h | blink mode |
| | | | | 33h | clear this row and switch to shift mode |
| | | | | 34h | overwrite mode |
| | | | | 35h | vertical mode |
| <ESC> R n | 1Bh 52h n | Set international code set sets (30h<n<3Fh) | | | |

ASCII (American Standard Code for Information Interchange) Code Table

| Dec. | Hex. | Char. | ASCII Function | Description |
|------|------|--------|----------------|------------------------------------|
| 0 | 00h | Ctrl-@ | <NUL> | Null |
| 1 | 01h | Ctrl-A | <SOH> or <MD1> | Start of Heading |
| 2 | 02h | Ctrl-B | <STX> or <MD2> | Start of Text |
| 3 | 03h | Ctrl-C | <ETX> or <MD3> | End of Text |
| 4 | 04h | Ctrl-D | <EOT> or <MD4> | End of Transmission |
| 5 | 05h | Ctrl-E | <ENQ> or <MD5> | Enquiry |
| 6 | 06h | Ctrl-F | <ACK> or <MD6> | Acknowledge |
| 7 | 07h | Ctrl-G | <BEL> or <MD7> | Bell (audible or attention signal) |
| 8 | 08h | Ctrl-H | <BS> or <MD8> | Backspace |
| 9 | 09h | Ctrl-I | <HT> | Horizontal Tabulation |
| 10 | 0Ah | Ctrl-J | <LF> or <NL> | Line Feed or New Line |
| 11 | 0Bh | Ctrl-K | <VT> or <HOM> | Vertical Tabulation or Home |
| 12 | 0Ch | Ctrl-L | <FF> or <NP> | Form Feed or New Page |
| 13 | 0Dh | Ctrl-M | <CR> | Carriage Return |
| 14 | 0Eh | Ctrl-N | <SO> or <SLE1> | Shift Out |
| 15 | 0Fh | Ctrl-O | <SI> or <SLE2> | Shift In |
| 16 | 10h | Ctrl-P | <DLE> | Data Link Escape |
| 17 | 11h | Ctrl-Q | <DC1> | Device Control 1 |
| 18 | 12h | Ctrl-R | <DC2> | Device Control 2 |
| 19 | 13h | Ctrl-S | <DC3> | Device Control 3 |
| 20 | 14h | Ctrl-T | <DC4> | Device Control 4 (Stop) |
| 21 | 15h | Ctrl-U | <NAK> | Negative Acknowledge |
| 22 | 16h | Ctrl-V | <SYN> | Synchronous Idle |
| 23 | 17h | Ctrl-W | <ETB> | End of Transmission Block |
| 24 | 18h | Ctrl-X | <CAN> | Cancel |
| 25 | 19h | Ctrl-Y | | End of Medium |
| 26 | 1Ah | Ctrl-Z | <SUB> | Substitute |
| 27 | 1Bh | Ctrl-[| <ESC> | Escape |
| 28 | 1Ch | Ctrl-\ | <FS> | File Separator |
| 29 | 1Dh | Ctrl-] | <GS> | Group Separator |
| 30 | 1Eh | Ctrl-^ | <RS> or <SF1> | Record Separator |
| 31 | 1Fh | Ctrl-_ | <US> or <SF2> | Unit Separator |

| Dec. | Hex. | Char. | Dec. | Hex. | Char. | Dec. | Hex. | Char. | Dec. | Hex. | Char. | Dec. | Hex. | Char. | Dec. | Hex. | Char. |
|------|------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|-------|
| 32 | 20h | SP | 48 | 30h | 0 | 64 | 40h | @ | 80 | 50h | P | 96 | 60h | ` | 112 | 70h | p |
| 33 | 21h | ! | 49 | 31h | 1 | 65 | 41h | A | 81 | 51h | Q | 97 | 61h | a | 113 | 71h | q |
| 34 | 22h | " | 50 | 32h | 2 | 66 | 42h | B | 82 | 52h | R | 98 | 62h | b | 114 | 72h | r |
| 35 | 23h | # | 51 | 33h | 3 | 67 | 43h | C | 83 | 53h | S | 99 | 63h | c | 115 | 73h | s |
| 36 | 24h | \$ | 52 | 34h | 4 | 68 | 44h | D | 84 | 54h | T | 100 | 64h | d | 116 | 74h | t |
| 37 | 25h | % | 53 | 35h | 5 | 69 | 45h | E | 85 | 55h | U | 101 | 65h | e | 117 | 75h | u |
| 38 | 26h | & | 54 | 36h | 6 | 70 | 46h | F | 86 | 56h | V | 102 | 66h | f | 118 | 76h | v |
| 39 | 27h | ' | 55 | 37h | 7 | 71 | 47h | G | 87 | 57h | W | 103 | 67h | g | 119 | 77h | w |
| 40 | 28h | (| 56 | 38h | 8 | 72 | 48h | H | 88 | 58h | X | 104 | 68h | h | 120 | 78h | x |
| 41 | 29h |) | 57 | 39h | 9 | 73 | 49h | I | 89 | 59h | Y | 105 | 69h | i | 121 | 79h | y |
| 42 | 2Ah | * | 58 | 3Ah | : | 74 | 4Ah | J | 90 | 5Ah | Z | 106 | 6Ah | j | 122 | 7Ah | z |
| 43 | 2Bh | + | 59 | 3Bh | ; | 75 | 4Bh | K | 91 | 5Bh | [| 107 | 6Bh | k | 123 | 7Bh | { |
| 44 | 2Ch | , | 60 | 3Ch | < | 76 | 4Ch | L | 92 | 5Ch | \ | 108 | 6Ch | l | 124 | 7Ch | |
| 45 | 2Dh | - | 61 | 3Dh | = | 77 | 4Dh | M | 93 | 5Dh |] | 109 | 6Dh | m | 125 | 7Dh | } |
| 46 | 2Eh | . | 62 | 3Eh | > | 78 | 4Eh | N | 94 | 5Eh | ^ | 110 | 6Eh | n | 126 | 7Eh | ~ |
| 47 | 2Fh | / | 63 | 3Fh | ? | 79 | 4Fh | O | 95 | 5Fh | _ | 111 | 6Fh | o | 127 | 7Fh | DEL |

5*7 Dot Matrix Character Font Table (ASCII with PC-437)

| <div>Lower Nibble</div> <div>Upper Nibble</div> | D3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| | D1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | |
| | D0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | |
| D7D6D5D6 | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 0 0 0 0 | 0 | | | | | | | | | | | | | | | | |
| 0 0 0 1 | 1 | | | | | | | | | | | | | | | | |
| 0 0 1 0 | 2 | | | | | | | | | | | | | | | | |
| 0 0 1 1 | 3 | | | | | | | | | | | | | | | | |
| 0 1 0 0 | 4 | | | | | | | | | | | | | | | | |
| 0 1 0 1 | 5 | | | | | | | | | | | | | | | | |
| 0 1 1 0 | 6 | | | | | | | | | | | | | | | | |
| 0 1 1 1 | 7 | | | | | | | | | | | | | | | | |
| 1 0 0 0 | 8 | | | | | | | | | | | | | | | | |
| 1 0 0 1 | 9 | | | | | | | | | | | | | | | | |
| 1 0 1 0 | A | | | | | | | | | | | | | | | | |
| 1 0 1 1 | B | | | | | | | | | | | | | | | | |
| 1 1 0 0 | C | | | | | | | | | | | | | | | | |
| 1 1 0 1 | D | | | | | | | | | | | | | | | | |
| 1 1 1 0 | E | | | | | | | | | | | | | | | | |
| 1 1 1 1 | F | | | | | | | | | | | | | | | | |

5*7 Dot Matrix Character Font Table (Code Area = 80h ~ FFh)

4.1 PC-437 (Standard European / U.S Script) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

























































































4.2 Japanese Katakana (JIS) Character Code Set

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

4.3 PC-850 (Multilingual International) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

4.4 PC-860 (Portuguese) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|
| 80H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| 90H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| A0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| B0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| C0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| D0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| E0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| F0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |



























































































4.5 PC-863 (Canadian French) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

























































































4.6 PC-865 (Nordic) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

A4.11 PC-852 (Latin 2) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|
| 80H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D0H |  |  |  |  |  |  |  |  |  |  | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

































































































































A4.12PC-858 (Euro) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|
| 80H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| 90H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| A0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| B0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| C0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| D0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| E0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |
| F0H |  |  |  |  |  |  |  |  |  |  |  | | | | | |

A4.13 WPC-1253 (Greek) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

4.14 WPC-1254 (Turkish) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| 80H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| E0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F0H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

A4.15PC-737 (Greek) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

4.16PC-775 (Baltic) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80H | | | | | | | | | | | | | | | | |
| 90H | | | | | | | | | | | | | | | | |
| A0H | | | | | | | | | | | | | | | | |
| B0H | | | | | | | | | | | | | | | | |
| C0H | | | | | | | | | | | | | | | | |
| D0H | | | | | | | | | | | | | | | | |
| E0H | | | | | | | | | | | | | | | | |
| F0H | | | | | | | | | | | | | | | | |

A4.17 PC-864 (Arabic) Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | | | | | |
| 90 | | | | | | | | | | | | | | | | |
| A0 | | | | | | | | | | | | | | | | |
| B0 | | | | | | | | | | | | | | | | |
| C0 | | | | | | | | | | | | | | | | |
| D0 | | | | | | | | | | | | | | | | |
| E0 | | | | | | | | | | | | | | | | |
| F0 | | | | | | | | | | | | | | | | |

A4.18 Farsi Character Font Table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | | | | | |
| 90 | | | | | | | | | | | | | | | | |
| A0 | | | | | | | | | | | | | | | | |
| B0 | | | | | | | | | | | | | | | | |
| C0 | | | | | | | | | | | | | | | | |
| D0 | | | | | | | | | | | | | | | | |
| E0 | | | | | | | | | | | | | | | | |
| F0 | | | | | | | | | | | | | | | | |