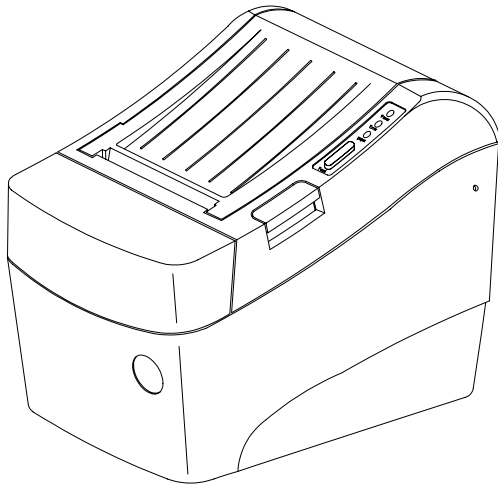


USER'S MANUAL

SRP-370/372




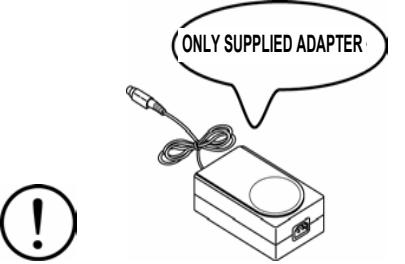










THERMAL RECEIPT PRINTER



All specifications are subjected to change without notice
<http://www.samsungminiprinters.com>

Safety Precautions

In using the present appliance, please keep the following safety regulations in order to prevent any hazard or material damage.

| | |
|--|--|
|  WARNING Violating following instructions can cause serious injury or death. | |
| <p>Do not plug several products in one multi-outlet.</p> <ul style="list-style-type: none"> • This can provoke over-heating and a fire. • If the plug is wet or dirty, dry or wipe it before usage. • If the plug does not fit perfectly with the outlet, do not plug in. • Be sure to use only standardized multi-outlets. <p>PROHIBITED</p>   | <p>You must use only the supplied adapter.</p> <ul style="list-style-type: none"> • It is dangerous to use other adapters.  |
| <p>Do not pull the cable to unplug.</p> <ul style="list-style-type: none"> • This can damage the cable, which is the origin of a fire or a breakdown of the printer. <p>PROHIBITED</p>   | <p>Keep the plastic bag out of children's reach.</p> <ul style="list-style-type: none"> • If not, a child may put the bag on his head. <p>PROHIBITED</p>   |
| <p>Do not plug in or unplug with your hands wet.</p> <ul style="list-style-type: none"> • You can be electrocuted. <p>PROHIBITED</p>   | <p>If you observe a strange smoke, odor or noise from the printer, unplug it before taking following measures.</p> <ul style="list-style-type: none"> • Switch off the printer and unplug the set from the mains. • After the disappearance of the smoke, call your dealer to repair it. <p>TO UNPLUG</p>   |
| <p>Do not bend the cable by force or leave it under any heavy object.</p> <ul style="list-style-type: none"> • A damaged cable can cause a fire. <p>PROHIBITED</p>   | |

Warning - U.S.

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice - Canada

This Apparatus complies with class "A" limits for radio interference as specified in the Canadian department of communications radio interference regulations.

Get appareil est conforme aux normes class "A" d'interference radio tel que specifier par ministre canadien des communications dans les reglements d'interference radio.

Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

INTRODUCTION

The SRP-370/372 Roll Printer are designed for use with electronic instruments such as system ECR, POS, banking equipment, computer peripheral equipment, etc.

The main features of the printer are as follows:

1. High speed printing : 47(1/6" Feed) lines per second.
2. Low noise thermal printing.
3. RS-232, Parallel, USB
4. The data buffer allows the unit to receive print data even during printing.
5. Peripheral units drive circuit enables control of external devices such as cash drawer.
6. Characters can be scaled up to 64 times compared to it's original size.
7. Bar code printing is possible by using a bar code command.
8. Different print densities can be selected by DIP switches.

Please be sure to read the instruction in this manual carefully before using your new SRP-370/372.

NOTE : The socket-outlet shall be near the equipment and it shall be easy accessible.





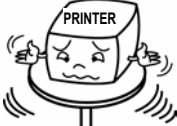



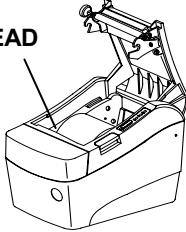




|  WARNING Violating following instructions can cause slight wound or damage the appliance. | |
|--|---|
| <p>Keep the desiccant out of children's reach.</p> <ul style="list-style-type: none"> If not, they may eat it. | <p>Install the printer on the stable surface.</p> <ul style="list-style-type: none"> If the printer falls down, it can be broken and you can hurt yourself. |
| <p>PROHIBITED</p>   | <p>PROHIBITED</p>   |
| <p>Use only approved accessories and do not try to disassemble, repair or remodel it for yourself.</p> <ul style="list-style-type: none"> Call your dealer when you need these services. | <p>Do not touch the HEAD of printer with your hand.</p> <ul style="list-style-type: none"> This can burn your hand or deteriorate printing quality. |
| <p>DISASSEMBLING PROHIBITED</p>   | <p>PROHIBITED</p>   |
| <p>Do not let water or other foreign objects in the printer.</p> <ul style="list-style-type: none"> If this happened, switch off and unplug the printer before calling your dealer. | <p>Do not use the printer when it is out of order. This can cause a fire or an electrocution.</p> <ul style="list-style-type: none"> Switch off and unplug the printer before calling your dealer. |
| <p>PROHIBITED</p>   | <p>TO UNPLUG</p>   |

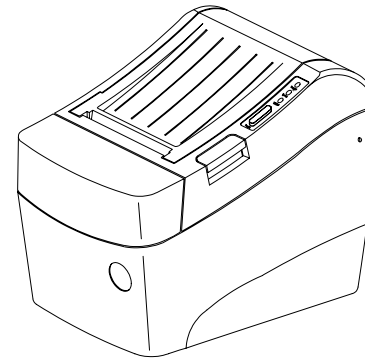
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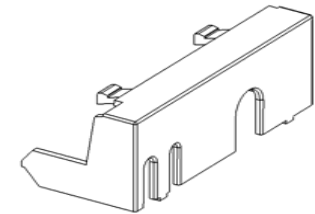
Chapter 1. Setting Up the Printer

1-1. Unpacking

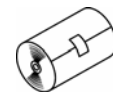
Your printer box should include these items. If any items are damaged or missing, please contact your dealer for assistance.



SRP-370/372



Cover Cable



Roll Paper



Operator's manual



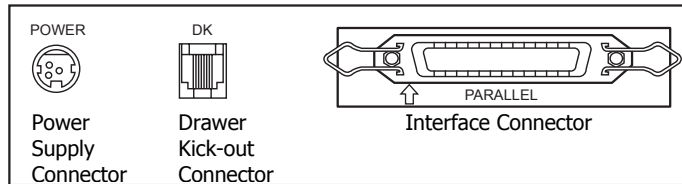
AC Adapter



Power Code

1-2. Connecting the Cables

You can connect up the three cables to the printer. They all connect to the connector panel on the back of the printer, which is shown below:

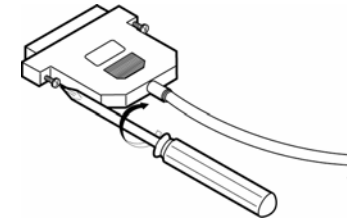


Notes : Before connecting any of the cables, make sure that both the printer and the host are turned off.

1-3. Connecting the computer

You need an appropriate interface cable.

1. Plug the cable connector securely into the printer's interface connector.
2. Tighten the screws on both sides of the cable connector.



3. Attach the other end of the cable to the computer.

1-4. Connecting the Drawer

WARNING:

Use a drawer that matches the printer specification. Using an improper drawer may damage the drawer as well as the printer.

CAUTION:

Do not connect a telephone line to the drawer kick-out connector; otherwise the printer and the telephone line may be damaged.

Plug the drawer cable into the drawer kick-out connector on the back of the printer next to the power supply connector.

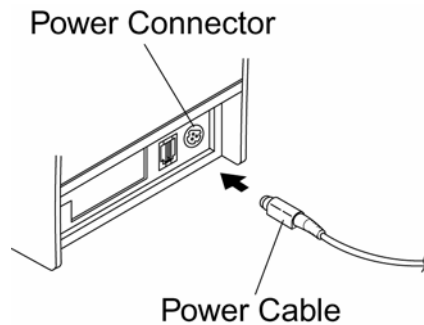
1-5. Connecting the Power Supply

CAUTIONS:

When connecting or disconnecting the power supply from the printer, make sure that the power supply is not plugged into an electrical outlet. Otherwise you may damage the power supply or the printer.

If the power supply's rated voltage and your outlet's voltage do not match, contact your dealer for assistance. Do not plug in the power cord. Otherwise, you may damage the power supply or the printer.

1. Make sure that the printer's power switch is turned off, and the power supply's power cord is unplugged from the electrical outlet.
2. Check the label on the power supply to make sure that the voltage required by the power supply matches that of your electrical outlet.
3. Plug in the power supply's cable as shown below. Notice that the flat side of the plug faces down.

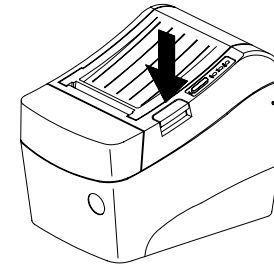


Notes : To remove the DC cable connector, make sure that the power supply's power cord is unplugged; then grasp the connector at the arrow and pull it straight out.

1-6. Installing or Replacing the Paper Roll

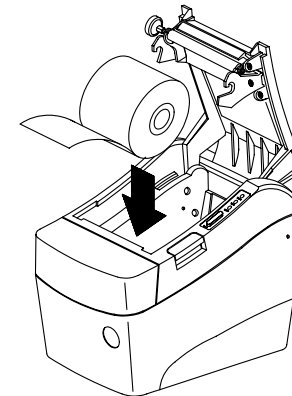
Notes : Be sure to use paper rolls that meet the specifications. Do not use paper rolls that have the paper glued to the core because the printer cannot detect the paper end correctly.

1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper roll cover by pressing the cover-open button.

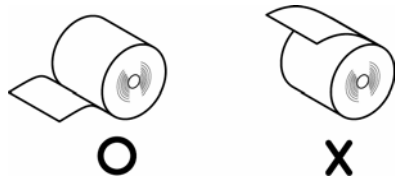


Notes : Do not open the print cover while the printer is operating. This may damage the printer.

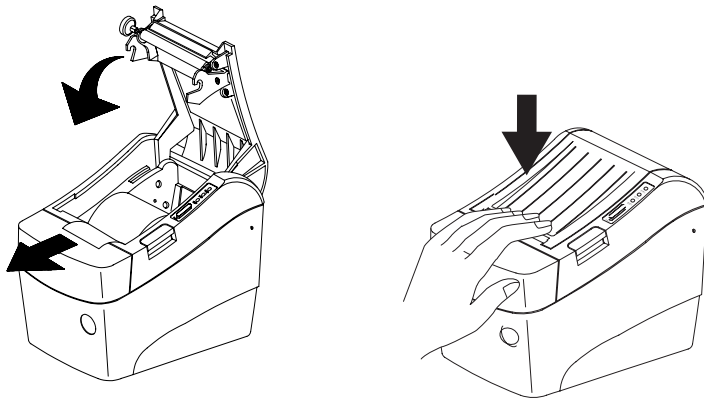
3. Remove the used paper roll core if there is one.
4. Insert the paper roll as shown.



5. Be sure to note the correct direction that the paper comes off the roll.

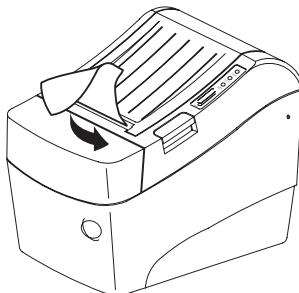


6. Pull out a small amount of paper, as shown. Then close the cover.

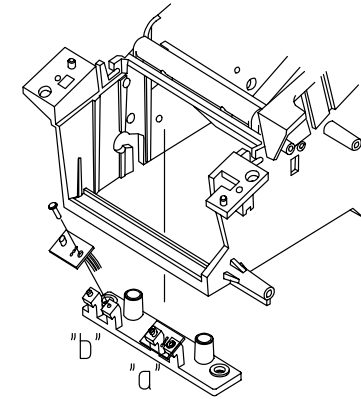


Notes : When closing the cover, press the center of printer cover firmly to prevent paper miss-loading

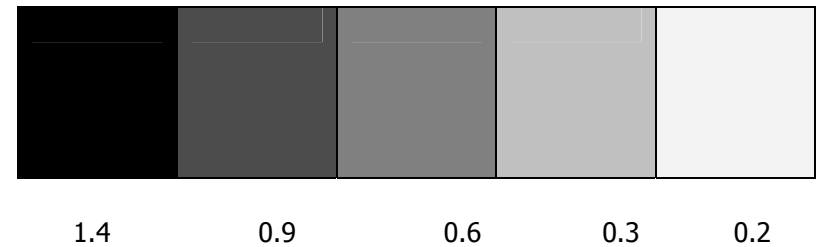
7. Tear off the paper as shown.



1-7. Adjustments and Settings

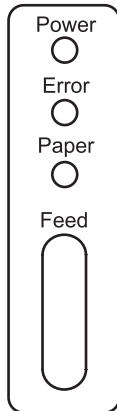


- 1) It has 2 features ; Paper end and Black mark. For detecting Paper End, it must be positioned at "a" Position in drawing and it is a factory default setting. For detecting Black mark printed on the paper, it must be moved to "b" position.
- 2) Optical density (O.D) must be higher than 0.6 in density to secure a standard working condition.
Make sure if the density of paper black mark is lesser it might be a cause of normality.
- 3) Table of O.D value (Reference)



1-8. Using the Printer

Control Panel



Button

The button can be disabled by the ESC c 5 command.

Press the FEED button once to advance paper one line. You can also hold down the FEED button to feed paper continuously.

Panel lights

POWER

The POWER light is on whenever the printer is on.

ERROR

This indicates an error.

PAPER OUT

This light indicates the near end of the paper roll. Install a new paper roll and the printer will continue printing.

When the light blinks, it indicates the self-test printing standby state or macro execution Standby state when the macro execution command is used.

1-9. Setting the DIP Switches

Serial Interface(RS-232C, RS-485) Specification

DIP Switch Set 1 Functions

| Switch No. | Function | ON | OFF | Default |
|------------|---------------------|----------------------|---------------------|---------|
| SW1-1 | Baud Rate Selection | Refer to below Table | | OFF |
| SW1-2 | | | | OFF |
| SW1-3 | Handshaking | Hardware (DTR/DSR) | Software (Xon/Xoff) | OFF |
| SW1-4 | Reserved | -- | | OFF |
| SW1-5 | Cutter Function | Disable | Enable | OFF |
| SW1-6 | Paper | 2 Color | Mono | OFF |
| SW1-7 | Reserved | -- | | OFF |
| SW1-8 | Reserved | -- | | ON |

Baud rate selection

| SW1-1 | SW1-2 | Trans- Speed | Remark |
|-------|-------|--------------|---------|
| OFF | OFF | 9600 Baud | |
| ON | OFF | 19200 Baud | |
| OFF | ON | 38400 Baud | |
| ON | ON | 115200 Baud | Default |

Dip Switch Set 2 Functions

| Switch No. | Function | ON | OFF | Default |
|------------|-------------------------------|----------------------|---------------|---------|
| SW2-1 | Select Print Density | Refer to below Table | | OFF |
| SW2-2 | | | | OFF |
| SW2-3 | | | | OFF |
| SW2-4 | Historical Control | Enable | Disable | OFF |
| SW2-5 | Reserved | -- | | OFF |
| SW2-6 | Interface Condition Selection | by Memory Switch | by DIP Switch | OFF |
| SW2-7 | Reserved | -- | | OFF |
| SW2-8 | Printing width | 2" Printing | 3" Printing | OFF |

| SW 2-1 | SW 2-2 | SW 2-3 | Print Density | Remark |
|--------|--------|--------|---------------|---------|
| ON | ON | ON | 130% | |
| OFF | ON | ON | 120% | |
| ON | OFF | ON | 110% | |
| OFF | OFF | ON | 105% | |
| OFF | OFF | OFF | 100% | Default |
| ON | OFF | OFF | 95% | |
| OFF | ON | OFF | 90% | |
| ON | ON | OFF | 80% | |

Print Density

Parallel/USB Interface Specification

| Switch No. | Function | ON | OFF | Default |
|------------|-------------------------------|----------------------|---------------|---------|
| SW2-1 | Select Print Density | Refer to below Table | | OFF |
| SW2-2 | | | | OFF |
| SW2-3 | | | | OFF |
| SW2-4 | Historical Control | Enable | Disable | OFF |
| SW2-5 | Reserved | -- | | OFF |
| SW2-6 | Interface Condition Selection | by Memory Switch | by DIP Switch | OFF |
| SW2-7 | Reserved | -- | | OFF |
| SW2-8 | Printing width | 2" Printing | 3" Printing | OFF |

| SW 2-1 | SW 2-2 | SW 2-3 | Print Density | Remark |
|--------|--------|--------|---------------|---------|
| ON | ON | ON | 130% | |
| OFF | ON | ON | 120% | |
| ON | OFF | ON | 110% | |
| OFF | OFF | ON | 105% | |
| ON | OFF | OFF | 100% | Default |
| OFF | OFF | OFF | 95% | |
| OFF | ON | OFF | 90% | |
| ON | ON | OFF | 80% | |

Print Density

| Dip Switch Set 1 | | |
|------------------|--|----------------------|
| SW 5 | ON | Auto Cutter Disabled |
| Application | Ignores Auto Cutter error for continuous printing. | |

※ Auto Cutter Enable / Disable selection

1-10. Setting the Memory Switches

This printer has "Memory Switch" set which is software switches. Memory Switch set has "MSW1", "MSW2", "MSW8", "MSW9" "Customize value", "Serial communication condition". "Memory Switch setting utility" can change the Memory Switch set to ON or OFF as shown in the table below (default : all OFF) :

Notes : The Memory Switch is available to be changed by three methods :
 - Memory Switch setting utility.
 - Control from ESC/POS command.

Settings of the Memory Switch are stored in the NV memory : therefore, even if the printer is turned off, the settings are maintained.

MSW1

| Switch | Function | ON | OFF |
|--------|----------------|--------|--------------|
| 1~4 | Reserved | -- | Fixed to OFF |
| 5 | Auto Line Feed | Enable | Disable |
| 6~8 | Reserved | -- | Fixed to OFF |

MSW2

| Switch | Function | ON | OFF |
|--------|----------------------|--------------------------|-----------------|
| 1~2 | Reserved | -- | Fixed to OFF |
| 3 | Auto Cutter Function | Full Cutting | Partial Cutting |
| 4~8 | Code Page Selection | Refer to following Table | |

Chapter 2. Hexadecimal Dumping

This feature allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

To use the hexadecimal dump function, follow these steps:

1. After you make sure that the printer is off, open the cover.
2. Turn on the printer, while holding down the FEED button.
3. Close the cover, then the printer enters the hexadecimal dump mode.
4. Run any software program that sends data to the printer. The printer will print all the codes it receives in a two-column format. The first column contains the hexadecimal codes and the second column gives the ASCII characters that corresponds to the codes.

```
0000: 1B 21 00 1B - 26 02 40 40 ;   . ! . . & . @ @
0008: 40 40 02 0D - 1B 44 0A 14 ;   @ @ . . D . .
0010: 1E 28 28 28 - 00 01 0A 41 ;   . ( ( . . . A
```

- A period (.) is printed for each code that has no ASCII equivalent.
- During the hex dump, all commands except **DLE EOT** and **DLE ENQ** are disabled.

5. When the printing finishes, turn off the printer.
6. Turn on the printer and then the hexadecimal mode is off.

| MSW2-8 | MSW2-7 | MSW2-6 | MSW2-5 | MSW2-4 | Character Table |
|--------|--------|--------|--------|--------|-----------------|
| OFF | OFF | OFF | OFF | OFF | Page 0 437 |
| OFF | OFF | OFF | OFF | ON | Page 1 Katakana |
| OFF | OFF | OFF | ON | OFF | Page 2 850 |
| OFF | OFF | OFF | ON | ON | Page 3 860 |
| OFF | OFF | ON | OFF | OFF | Page 4 863 |
| OFF | OFF | ON | OFF | ON | Page 5 865 |
| OFF | OFF | ON | ON | OFF | Page 16 1252 |
| OFF | OFF | ON | ON | ON | Page 17 866 |
| OFF | ON | OFF | OFF | OFF | Page 18 852 |
| OFF | ON | OFF | OFF | ON | Page 19 858 |
| OFF | ON | OFF | ON | OFF | Reserved |
| OFF | ON | OFF | ON | ON | Page 22 864 |
| OFF | ON | ON | OFF | OFF | Page 23 Thai42 |
| OFF | ON | ON | OFF | ON | Page 24 1253 |
| OFF | ON | ON | ON | OFF | Reserved |
| OFF | ON | ON | ON | ON | |
| ON | OFF | OFF | OFF | OFF | |
| ON | OFF | OFF | OFF | ON | Page 28 1251 |
| ON | OFF | OFF | ON | OFF | Page 29 737 |
| ON | OFF | OFF | ON | ON | Reserved |
| ON | OFF | ON | OFF | OFF | Page 31 Thai16 |
| ON | OFF | ON | OFF | ON | Reserved |
| ON | OFF | ON | ON | OFF | Page 33 1255 |
| ON | OFF | ON | ON | ON | Reserved |
| ON | ON | OFF | OFF | OFF | |
| ON | ON | OFF | OFF | ON | Page 36 855 |
| ON | ON | OFF | ON | OFF | Page 37 857 |

MSW8

| Switch | Function | ON | OFF |
|--------|----------|----|--------------|
| 1~8 | Reserved | -- | Fixed to OFF |

MSW9

| Switch | Function | ON | OFF |
|--------|---------------------|--------------------------|--------------|
| 1 | Reserved | -- | Fixed to OFF |
| 2 | Data Length | 7 Bits | 8 Bits |
| 3 | Parity Selection | Even | Odd |
| 4 | Parity Check | Enable | Disable |
| 5 | Flow Control | DTR/DSR | XON/XOFF |
| 6~8 | Baud Rate Selection | Refer to following Table | |

| MSW9-8 | MSW9-7 | MSW9-6 | Baud Rate |
|--------|--------|--------|-----------|
| OFF | OFF | OFF | 9600 |
| OFF | OFF | ON | 19200 |
| OFF | ON | OFF | 38400 |
| OFF | ON | ON | 57600 |
| ON | OFF | OFF | 115200 |

Chapter 3. The self test

The self-test checks whether the printer has any problems. If the printer does not function properly, contact your dealer. The self-test checks the following;

1. Make sure paper roll has been installed properly.
2. Turn on the power while holding down the FEED button. The self-test begins.
3. The self-test prints the current printer status, which provides the control ROM version and the DIP switch setting.
4. After printing the current printer status, self-test printing will print the following, and pause (The PAPER LED light blinks).

**Self-test printing.
Please press the FEED button**

5. Press the FEED button to continue printing. The printer prints a pattern using the built-in character set.
6. The self-test automatically ends and cuts the paper after printing the following.

***** COMPLETED *****

The printer is ready to receive data as soon as it completes the self-test.

Chapter 4. Code Table

The following pages show the character code tables. To find the character corresponding to a hexadecimal number, count across the top of the table for the left digit and count down the left column of the table for the right digit. For example, 4A = J.

| HEX | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|-----|------|-----|----|---|---|----|---|---|----|-----|---|---|---|---|---|----|
| 0 | NUL | DLE | SP | 0 | @ | P | ' | p | Ç | É | á | ■ | ∟ | ∟ | α | ≡ |
| 1 | XON | ! | 1 | A | Q | a | q | ú | æ | í | ■ | ∟ | ∟ | β | ± | |
| 2 | " | 2 | B | R | b | r | é | Æ | ó | ■ | ∟ | ∟ | ∟ | Γ | ≤ | |
| 3 | XOFF | % | 3 | C | S | s | á | ó | ú | á | ú | ∟ | ∟ | ∟ | π | ≥ |
| 4 | EQT | \$ | 4 | D | T | d | t | ä | ö | ñ | ∟ | ∟ | ∟ | ∟ | Σ | ∟ |
| 5 | ENQ | % | 5 | E | U | e | u | à | ò | ñ | ∟ | ∟ | ∟ | ∟ | σ | ∟ |
| 6 | & | 6 | F | V | f | v | á | ú | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ | μ | + |
| 7 | ' | 7 | G | W | g | w | ç | ù | ° | ∟ | ∟ | ∟ | ∟ | ∟ | τ | ≈ |
| 8 | BS | CAN | (| 8 | H | X | h | x | ê | ÿ | ¿ | ∟ | ∟ | ∟ | ∟ | ° |
| 9 | HT |) | 9 | I | Y | i | y | ë | ø | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ | • |
| A | LF | * | : | J | Z | j | z | è | ù | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ | • |
| B | ESC | + | ; | K | [| k | { | í | ¢ | 1/2 | ∟ | ∟ | ∟ | ∟ | ∟ | √ |
| C | FF | FS | , | < | L | \ | | ì | £ | 1/4 | ∟ | ∟ | ∟ | ∟ | ∟ | ∞ |
| D | CR | GS | - | = | M |] | m | ï | ¥ | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ |
| E | . | > | N | ~ | n | ~ | ~ | Ä | Pt | « | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ |
| F | / | ? | O | _ | o | SP | À | f | » | ∟ | ∟ | ∟ | ∟ | ∟ | ∟ | SP |

**Page 0 (PC437 : USA, Standard Europe)
(International Character Set : USA)**

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

Page 1 (Katakana)

| | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | Ç | É | á | ■ | Ł | ř | Ó | — |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | û | æ | í | ■ | ± | Đ | β | ± |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | é | Æ | ó | ■ | ± | É | Ô | — |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0010 | â | ø | ú | ı | ± | Ë | Ò | 3/4 |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | à | ö | ñ | ı | — | È | õ | — |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | à | ò | Ñ | Á | + | ı | Ö | § |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | á | û | ª | Â | ã | f | u | + |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ç | ù | º | À | Ä | ı | þ | · |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | ê | ÿ | ı | © | Ł | ı | p | · |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 249 |
| 9 | 1001 | è | ö | ® | ı | ± | ı | Ú | · |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | è | Û | ¬ | ı | ± | ı | Ú | · |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | ï | ø | 1/2 | ı | ± | ı | Û | 1 |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | î | £ | 1/4 | ı | ± | ı | ÿ | 3 |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | ì | Ø | ı | ¢ | — | ı | Ý | 2 |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | Ă | X | « | ¥ | ı | ı | — | · |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | Ă | f | » | ı | ± | ı | — | SP |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 2 (PC850 : Multilingual)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | Ç | É | á | ■ | └ | ┘ | α | ≡ |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | ü | À | í | ■ | └ | ┘ | β | ± |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | é | É | ó | ■ | └ | ┘ | Γ | ≤ |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0010 | â | ô | ú | | └ | ┘ | π | ≥ |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | ä | ö | ñ | † | └ | ┘ | Σ | ƒ |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | à | ò | Ñ | † | └ | ┘ | σ | Ƶ |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | Á | ú | ª | ‡ | └ | ┘ | μ | ÷ |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ç | ù | º | ‡ | └ | ┘ | τ | ≈ |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | ê | ì | ¸ | | └ | ┘ | Φ | ° |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 249 |
| 9 | 1001 | Ê | õ | Ò | ‡ | └ | ┘ | θ | • |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | è | Û | ˆ | | └ | ┘ | Ω | • |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | í | ç | 1/2 | | └ | ┘ | δ | √ |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | Ô | £ | 1/4 | | └ | ┘ | ∞ | n |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | ì | Û | ı | | └ | ┘ | φ | ² |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | Ã | Pt | « | | └ | ┘ | ■ | ▪ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | Â | Ó | » | | └ | ┘ | ■ | SP |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 3 (PC860 : Portuguese)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | Ç | É | ı | ■ | └ | ┘ | α | |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | ü | É | ı | ■ | └ | ┘ | β | ± |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | é | Ê | ó | ■ | └ | ┘ | Γ | ≥ |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0010 | â | ô | ú | | └ | ┘ | π | ≤ |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | Â | Ë | ı | † | └ | ┘ | Σ | ƒ |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | à | ï | ı | † | └ | ┘ | σ | Ƶ |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | | û | ³ | ‡ | └ | ┘ | μ | ÷ |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ç | ù | ı | ‡ | └ | ┘ | τ | ≈ |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | ê | Ï | ı | | └ | ┘ | Φ | ° |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 249 |
| 9 | 1001 | ë | Ô | ı | ‡ | └ | ┘ | θ | • |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | è | Û | ı | | └ | ┘ | Ω | • |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | ï | ç | 1/2 | | └ | ┘ | δ | |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | î | £ | 1/4 | | └ | ┘ | ∞ | n |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | = | Û | 3/4 | | └ | ┘ | φ | ² |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | Ã | Û | « | | └ | ┘ | ■ | ▪ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | § | f | » | | └ | ┘ | ■ | SP |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 4 (PC 863 : Canadian - French)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | Ç | É | á | ■ | ┌ | └ | α | |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | ü | æ | í | ■ | └ | ┐ | β | ± |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | é | Æ | ó | iii | ┐ | π | Γ | ≥ |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0010 | â | ô | ú | | ┐ | └ | π | ≤ |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | ä | ö | ñ | + | - | └ | Σ | f |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | à | ò | Ñ | + | + | ┐ | σ | J |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | â | û | ª | ≠ | ┐ | ┐ | μ | ÷ |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ç | ù | º | ┐ | ┐ | ┐ | τ | ≈ |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | ê | ÿ | ¿ | ┐ | └ | + | Φ | ° |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 249 |
| 9 | 1001 | ë | Ö | ƒ | ≠ | ┐ | ┐ | θ | • |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | è | Ü | ƒ | | └ | ┐ | Ω | • |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | ï | ø | 1/2 | ┐ | ┐ | ■ | δ | |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | î | £ | 1/4 | ┐ | ┐ | ■ | ∞ | n |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | ì | Ø | i | ┐ | = | ■ | φ | ² |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | Å | Pt | « | ┐ | ┐ | ■ | | ▪ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | Ä | f | ☒ | ┐ | └ | ■ | | SP |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 5 (PC 865 : Nordic)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | € | | | ø | À | Ð | à | đ |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | | ‘ | i | ± | Á | Ñ | á | ñ |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | ’ | ’ | φ | ² | Â | Ò | â | ò |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0011 | f | “ | £ | ³ | Ã | Ó | ã | ó |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | ” | ” | ∕ | ´ | Ä | Ô | ä | ô |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | … | • | ¥ | μ | Å | Õ | å | õ |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | † | - | ı | ¶ | Æ | Ö | æ | ö |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ‡ | - | § | • | Ç | × | ç | + |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | ^ | ~ | ” | • | È | Ø | è | ø |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 |
| 9 | 1001 | ‰ | ™ | © | 1 | É | Ù | é | ù |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | Š | š | à | ó | Ê | Ú | ê | ú |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | (|) | ((|)) | Ë | Û | ë | û |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | œ | œ | ˆ | ¼ | Ì | Ü | ì | ü |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | | | - | ½ | Í | Ý | í | ý |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | ž | ž | ® | ¾ | Î | Þ | î | þ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | | ÿ | - | ¿ | Ï | ß | ï | ÿ |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 16 (WPC1252 : Latin 1)

| | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|----------|----------|----------|----------|----------|----------|----------|-------------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | А 128 | Р 144 | а 160 | ▣ 176 | Л 192 | ┘ 208 | р 224 | Ё 240 |
| 1 | 0001 | Б 129 | С 145 | б 161 | ▣ 177 | ┘ 193 | ┘ 209 | с 225 | ё 241 |
| 2 | 0010 | В 130 | Т 146 | в 162 | ▣ 178 | ┘ 194 | ┘ 210 | т 226 | ѐ 242 |
| 3 | 0011 | Г 131 | У 147 | г 163 | ▣ 179 | ┘ 195 | ┘ 211 | у 227 | ѐ 243 |
| 4 | 0100 | Д 132 | Ф 148 | д 164 | ▣ 180 | ┘ 196 | ┘ 212 | ф 228 | й 244 |
| 5 | 0101 | Е 133 | Х 149 | е 165 | ▣ 181 | ┘ 197 | ┘ 213 | х 229 | ï 245 |
| 6 | 0110 | Ж 134 | Ц 150 | ж 166 | ▣ 182 | ┘ 198 | ┘ 214 | ц 230 | ÿ 246 |
| 7 | 0111 | З 135 | Ч 151 | з 167 | ▣ 183 | ┘ 199 | ┘ 215 | ч 231 | ÿ 247 |
| 8 | 1000 | И 136 | Ш 152 | и 168 | ▣ 184 | ┘ 200 | ┘ 216 | ш 232 | ° 248 |
| 9 | 1001 | Й 137 | Щ 153 | й 169 | ▣ 185 | ┘ 201 | ┘ 217 | щ 233 | · 249 |
| A | 1010 | К 138 | Ъ 154 | к 170 | ▣ 186 | ┘ 202 | ┘ 218 | ъ 234 | · 250 |
| B | 1011 | Л 139 | Ы 155 | л 171 | ▣ 187 | ┘ 203 | ┘ 219 | ы 235 | √ 251 |
| C | 1100 | М 140 | Ь 156 | м 172 | ▣ 188 | ┘ 204 | ┘ 220 | ь 236 | № 252 |
| D | 1101 | Н 141 | Э 157 | н 173 | ▣ 189 | ┘ 205 | ┘ 221 | э 237 | α 253 |
| E | 1110 | О 142 | Ю 158 | о 174 | ▣ 190 | ┘ 206 | ┘ 222 | ю 238 | ■ 254 |
| F | 1111 | П 143 | Я 159 | п 175 | ▣ 191 | ┘ 207 | ┘ 223 | я 239 | NBSP 255 |

Page 17 (PC866 : Cyrillic #2)

| | 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 | Л 192 | đ 208 | Ó 224 | - 240 |
| 1 | 0001 | ü 129 | Í 145 | í 161 | ▣ 177 | ┘ 193 | Đ 209 | В 225 | ˆ 241 |
| 2 | 0010 | é 130 | Í 146 | ó 162 | ▣ 178 | ┘ 194 | Đ 210 | Ô 226 | ˆ 242 |
| 3 | 0011 | â 131 | Ô 147 | ú 163 | ▣ 179 | ┘ 195 | È 211 | Ñ 227 | ˆ 243 |
| 4 | 0100 | û 132 | Ö 148 | À 164 | ▣ 180 | ┘ 196 | ä 212 | ñ 228 | ˆ 244 |
| 5 | 0101 | ć 133 | Ĺ 149 | ą 165 | ▣ 181 | ┘ 197 | Ń 213 | ň 229 | § 245 |
| 6 | 0110 | Ç 134 | İ 150 | Ž 166 | ▣ 182 | ┘ 198 | Ā 214 | Š 230 | + 246 |
| 7 | 0111 | Ĺ 135 | Ś 151 | ž 167 | ▣ 183 | ┘ 199 | ă 215 | š 231 | ˆ 247 |
| 8 | 1000 | ı 136 | ś 152 | Ę 168 | ▣ 184 | ┘ 200 | ë 216 | Ŕ 232 | ° 248 |
| 9 | 1001 | ë 137 | Ö 153 | ę 169 | ▣ 185 | ┘ 201 | Ĳ 217 | Ú 233 | ˆ 249 |
| A | 1010 | ő 138 | Û 154 | ˆ 170 | ▣ 186 | ┘ 202 | ĳ 218 | ı 234 | · 250 |
| B | 1011 | ö 139 | Ť 155 | Ž 171 | ▣ 187 | ┘ 203 | ■ 219 | Ů 235 | Ů 251 |
| C | 1100 | ı 140 | İ 156 | Č 172 | ▣ 188 | ┘ 204 | ■ 220 | ý 236 | Ř 252 |
| D | 1101 | ž 141 | Ł 157 | ę 173 | ▣ 189 | ┘ 205 | Ĵ 221 | Ý 237 | ř 253 |
| E | 1110 | Ä 142 | x 158 | « 174 | ▣ 190 | ┘ 206 | Ű 222 | ı 238 | ■ 254 |
| F | 1111 | Ć 143 | č 159 | » 175 | ▣ 191 | ┘ 207 | ■ 223 | · 239 | 255 |

Page 18 (PC852 : Latin2)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | Ç | É | á | ■ | ┌ | ð | ó | - |
| 1 | 0001 | ü | æ | az | ■ | └ | ð | β | ± |
| 2 | 0010 | é | Æ | ó | ■ | ┌ | é | ó | = |
| 3 | 0011 | â | ô | ú | | ┌ | É | ó | 3/4 |
| 4 | 0100 | ä | ö | - | + | - | É | ó | ¶ |
| 5 | 0101 | à | ò | · | A | + | € | σ | \$ |
| 6 | 0110 | á | û | ³ | À | ä | í | μ | + |
| 7 | 0111 | ç | ù | - | À | À | í | þ | · |
| 8 | 1000 | ê | ÿ | î | © | ┌ | ┌ | p | ° |
| 9 | 1001 | ë | ö | ┌ | ≡ | ┌ | ┌ | ú | - |
| A | 1010 | è | Ü | ┌ | | ┌ | ┌ | ú | ° |
| B | 1011 | ï | ø | 1/2 | ┌ | ┌ | ■ | ú | 1 |
| C | 1100 | î | £ | 1/4 | ┌ | ┌ | ■ | ý | 3 |
| D | 1101 | ì | ø | 3/4 | £ | = | ┌ | ÿ | 2 |
| E | 1110 | Ä | x | « | * | ┌ | ┌ | - | ■ |
| F | 1111 | À | f | » | ┌ | □ | ■ | · | SP |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 19 (PC858 : Euro)

| HEX | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | ° | β | NBSP | · | ¢ | ز | - | - |
| 1 | 0001 | · | ∞ | - | ∖ | ء | ر | ف | - |
| 2 | 0010 | · | φ | ā | ۲ | ā | ز | ق | ن |
| 3 | 0011 | √ | ± | £ | ۳ | أ | س | ك | ه |
| 4 | 0100 | ■ | 1/2 | ¤ | £ | ؤ | ش | ل | + |
| 5 | 0101 | - | 1/4 | أ | ه | م | ص | م | ى |
| 6 | 0110 | | ≈ | | ۶ | ئ | ض | ن | ي |
| 7 | 0111 | + | « | | ۷ | ا | ط | ه | غ |
| 8 | 1000 | ┌ | » | ل | ۸ | ب | ظ | و | ق، |
| 9 | 1001 | ┌ | لأ | ب | ۹ | ة | ع | ى | لا |
| A | 1010 | ┌ | لأ | ت | ف | ت | غ | ي | لا |
| B | 1011 | ┌ | | ث | ؛ | ث | ا | ض | ل |
| C | 1100 | ┌ | | ، | س | ج | ع | ك | |
| D | 1101 | ┌ | لا | ج | ش | ح | ÷ | غ | ي |
| E | 1110 | ┌ | لا | س | ص | خ | x | غ | ■ |
| F | 1111 | ┌ | لا | خ | ؟ | د | ع | م | |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 22 (PC864 : Arabic)

| HEX | HEX BIN | 8 | 9 | A | B | C | D | E | F |
|-----|---------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | ┌ | ๐ | | ฅ | ๒ | ๓ | ๔ | ๕ |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | ┐ | ๑ | ๓ | ๔ | ๕ | ๖ | ๗ | ๘ |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | └ | ๒ | ๔ | ๕ | ๖ | ๗ | ๘ | ๙ |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0011 | ┘ | ๓ | ๔ | ๕ | ๖ | ๗ | ๘ | ๙ |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | | ๔ | ๕ | ๖ | ๗ | ๘ | ๙ | ๐ |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | — | ๕ | ๖ | ๗ | ๘ | ๙ | ๐ | ๑ |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | ┌ | ๖ | ๗ | ๘ | ๙ | ๐ | ๑ | ๒ |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ┐ | ๗ | ๘ | ๙ | ๐ | ๑ | ๒ | ๓ |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | └ | ๘ | ๙ | ๐ | ๑ | ๒ | ๓ | ๔ |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 |
| 9 | 1001 | ┘ | ๙ | ๐ | ๑ | ๒ | ๓ | ๔ | ๕ |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | + | ๐ | ๑ | ๒ | ๓ | ๔ | ๕ | ๖ |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | █ | ๑ | ๒ | ๓ | ๔ | ๕ | ๖ | ๗ |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | ← | ๒ | ๓ | ๔ | ๕ | ๖ | ๗ | ๘ |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | ↑ | ๓ | ๔ | ๕ | ๖ | ๗ | ๘ | ๙ |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | → | ๔ | ๕ | ๖ | ๗ | ๘ | ๙ | ๐ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | ↓ | ๕ | ๖ | ๗ | ๘ | ๙ | ๐ | ๑ |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 23 (Thai character code 42)

| HEX | HEX BIN | 8 | 9 | A | B | C | D | E | F |
|-----|---------|------|------|------|------|------|------|------|------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | € | | NBSP | ° | ı | Π | ϖ | π |
| | | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 |
| 1 | 0001 | | ‘ | • | ± | Α | Ρ | α | ρ |
| | | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 |
| 2 | 0010 | , | ’ | Α | ² | Β | | β | ς |
| | | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 |
| 3 | 0011 | f | “ | £ | ³ | Γ | Σ | γ | σ |
| | | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 |
| 4 | 0100 | ” | ” | ¤ | ’ | Δ | Τ | δ | τ |
| | | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| 5 | 0101 | … | • | ¥ | μ | Ε | Υ | ε | υ |
| | | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 |
| 6 | 0110 | † | — | ı | ¶ | Ζ | Φ | ζ | φ |
| | | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 |
| 7 | 0111 | ‡ | — | § | · | Η | Χ | η | χ |
| | | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 |
| 8 | 1000 | | | ¨ | Ε | Θ | Ψ | θ | ψ |
| | | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 |
| 9 | 1001 | ‰ | ™ | © | Η | Ι | Ω | ι | ω |
| | | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 |
| A | 1010 | | | | Ι | Κ | Ϊ | κ | ϊ |
| | | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 |
| B | 1011 | ‘ | ’ | « | » | Λ | ÿ | λ | ÿ |
| | | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 |
| C | 1100 | | | ¬ | Ο | Μ | ά | μ | ό |
| | | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 |
| D | 1101 | | | - | ½ | Ν | έ | ν | ή |
| | | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 |
| E | 1110 | | | ® | Υ | Ξ | ή | ξ | ώ |
| | | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 |
| F | 1111 | | | — | Ω | Ο | ι | ο | |
| | | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 |

Page 24 (WPC1253 : Greek)

| HEX | HEX BIN | 8 1000 | 9 1001 | A 1010 | B 1011 | C 1100 | D 1101 | E 1110 | F 1111 |
|-----|---------|--------|--------|----------|--------|--------|--------|--------|--------|
| 0 | 0000 | Ѓ 128 | ђ 144 | NBSP 160 | ° 176 | А 192 | Р 208 | а 224 | р 240 |
| 1 | 0001 | Ѕ 129 | ‘ 145 | Ѓ 161 | ± 177 | Б 193 | С 209 | б 225 | с 241 |
| 2 | 0010 | ’ 130 | ’ 146 | Ѓ 162 | І 178 | В 194 | Т 210 | в 226 | т 242 |
| 3 | 0011 | Ѕ 131 | “ 147 | Ј 163 | і 179 | Г 195 | У 211 | г 227 | у 243 |
| 4 | 0100 | ” 132 | ” 148 | Ѡ 164 | г 180 | Д 196 | Ф 212 | д 228 | ф 244 |
| 5 | 0101 | … 133 | • 149 | Г 165 | μ 181 | Е 197 | Х 213 | е 229 | х 245 |
| 6 | 0110 | † 134 | – 150 | і 166 | ¶ 182 | Ж 198 | Ц 214 | ж 230 | ц 246 |
| 7 | 0111 | ‡ 135 | — 151 | § 167 | · 183 | З 199 | Ч 215 | з 231 | ч 247 |
| 8 | 1000 | € 136 | | Ë 168 | ë 184 | И 200 | Ш 216 | и 232 | ш 248 |
| 9 | 1001 | ‰ 137 | ™ 153 | © 169 | № 185 | Й 201 | Щ 217 | й 233 | щ 249 |
| A | 1010 | ЈБ 138 | ЈБ 154 | Є 170 | є 186 | К 202 | Ъ 218 | к 234 | ъ 250 |
| B | 1011 | ‘ 139 | ’ 155 | « 171 | » 187 | Л 203 | Ы 219 | л 235 | ы 251 |
| C | 1100 | Ѓ 140 | Ѓ 156 | ¬ 172 | ј 188 | М 204 | Ь 220 | м 236 | ь 252 |
| D | 1101 | Ѓ 141 | ќ 157 | - 173 | Ѕ 189 | Н 205 | Э 221 | н 237 | э 253 |
| E | 1110 | Ѓ 142 | ћ 158 | ® 174 | ѕ 190 | О 206 | Ю 222 | о 238 | ю 254 |
| F | 1111 | Ѓ 143 | ѡ 159 | İ 175 | ï 191 | П 207 | Я 223 | п 239 | я 255 |

Page 28 (WPC1251 : Cyrillic)

| HEX | HEX BIN | 8 1000 | 9 1001 | A 1010 | B 1011 | C 1100 | D 1101 | E 1110 | F 1111 |
|-----|---------|--------|--------|--------|--------|--------|--------|--------|----------|
| 0 | 0000 | Α 128 | Ρ 144 | ι 160 | ⏏ 176 | Λ 192 | ⏏ 208 | ω 224 | Ω 240 |
| 1 | 0001 | Β 129 | Σ 145 | κ 161 | ⏏ 177 | ⏏ 193 | ⏏ 209 | ά 225 | ± 241 |
| 2 | 0010 | Γ 130 | Τ 146 | λ 162 | ⏏ 178 | ⏏ 194 | ⏏ 210 | έ 226 | ≥ 242 |
| 3 | 0011 | Δ 131 | Υ 147 | μ 163 | 179 | ⏏ 195 | ⏏ 211 | ή 227 | ≤ 243 |
| 4 | 0100 | Ε 132 | Φ 148 | ν 164 | ⏏ 180 | ⏏ 196 | ⏏ 212 | ϊ 228 | Ï 244 |
| 5 | 0101 | Ζ 133 | Χ 149 | ξ 165 | ⏏ 181 | ⏏ 197 | ⏏ 213 | ί 229 | ÿ 245 |
| 6 | 0110 | Η 134 | Ψ 150 | ο 166 | ⏏ 182 | ⏏ 198 | ⏏ 214 | ό 230 | ÷ 246 |
| 7 | 0111 | Θ 135 | Ω 151 | π 167 | ⏏ 183 | ⏏ 199 | ⏏ 215 | ύ 231 | ≈ 247 |
| 8 | 1000 | Ι 136 | α 152 | ρ 168 | ⏏ 184 | ⏏ 200 | ⏏ 216 | ϋ 232 | ° 248 |
| 9 | 1001 | Κ 137 | β 153 | σ 169 | ⏏ 185 | ⏏ 201 | ⏏ 217 | ώ 233 | · 249 |
| A | 1010 | Λ 138 | γ 154 | ς 170 | ⏏ 186 | ⏏ 202 | ⏏ 218 | Α 234 | · 250 |
| B | 1011 | Μ 139 | δ 155 | τ 171 | ⏏ 187 | ⏏ 203 | ⏏ 219 | Ε 235 | √ 251 |
| C | 1100 | Ν 140 | ε 156 | υ 172 | ⏏ 188 | ⏏ 204 | ⏏ 220 | Η 236 | ⁿ 252 |
| D | 1101 | Ξ 141 | ζ 157 | φ 173 | ⏏ 189 | ⏏ 205 | ⏏ 221 | Ι 237 | ² 253 |
| E | 1110 | Ο 142 | η 158 | χ 174 | ⏏ 190 | ⏏ 206 | ⏏ 222 | Ο 238 | ■ 254 |
| F | 1111 | Π 143 | θ 159 | ψ 175 | ⏏ 191 | ⏏ 207 | ⏏ 223 | Υ 239 | NBSP 255 |

Page 29 (PC737 : Greek)

| | HEX | 8 | 9 | A | B | C | D | E | F |
|-----|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HEX | BIN | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
| 0 | 0000 | SP 128 | SP 144 | SP 160 | SP 176 | SP 192 | SP 208 | SP 224 | SP 240 |
| 1 | 0001 | SP 129 | SP 145 | SP 161 | SP 177 | SP 193 | SP 209 | SP 225 | SP 241 |
| 2 | 0010 | SP 130 | SP 146 | SP 162 | SP 178 | SP 194 | SP 210 | SP 226 | SP 242 |
| 3 | 0011 | SP 131 | SP 147 | SP 163 | SP 179 | SP 195 | SP 211 | SP 227 | SP 243 |
| 4 | 0100 | SP 132 | ö 148 | SP 164 | SP 180 | SP 196 | SP 212 | SP 228 | SP 244 |
| 5 | 0101 | SP 133 | SP 149 | SP 165 | SP 181 | SP 197 | SP 213 | SP 229 | SP 245 |
| 6 | 0110 | SP 134 | SP 150 | SP 166 | SP 182 | SP 198 | SP 214 | SP 230 | SP 246 |
| 7 | 0111 | SP 135 | SP 151 | SP 167 | SP 183 | SP 199 | SP 215 | SP 231 | SP 247 |
| 8 | 1000 | SP 136 | SP 152 | SP 168 | SP 184 | SP 200 | SP 216 | SP 232 | SP 248 |
| 9 | 1001 | SP 137 | SP 153 | SP 169 | SP 185 | SP 201 | SP 217 | SP 233 | SP 249 |
| A | 1010 | SP 138 | SP 154 | SP 170 | SP 186 | SP 202 | SP 218 | SP 234 | SP 250 |
| B | 1011 | SP 139 | SP 155 | SP 171 | SP 187 | SP 203 | SP 219 | SP 235 | SP 251 |
| C | 1100 | SP 140 | SP 156 | SP 172 | SP 188 | SP 204 | SP 220 | SP 236 | SP 252 |
| D | 1101 | SP 141 | SP 157 | SP 173 | SP 189 | SP 205 | SP 221 | SP 237 | SP 253 |
| E | 1110 | SP 142 | SP 158 | SP 174 | SP 190 | SP 206 | SP 222 | SP 238 | SP 254 |
| F | 1111 | SP 143 | SP 159 | SP 175 | SP 191 | SP 207 | SP 223 | SP 239 | SP 255 |

| Country | ASCII code (Hex) | | | | | | | | | | | |
|---------------|------------------|----|----|----|----|----|----|----|----|----|----|----|
| | 23 | 24 | 40 | 5B | 5C | 5D | 5E | 60 | 7B | 7C | 7D | 7E |
| 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 | i |
| Spain I | Pt | \$ | @ | i | 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 |
| Spain II | # | \$ | á | i | Ñ | ¿ | é | . | i | ñ | ó | ú |
| Latin America | # | \$ | á | i | Ñ | ¿ | é | ü | i | ñ | ó | ú |
| Korea | # | \$ | @ | [| ₩ |] | ^ | . | { | | } | ~ |

Chapter 5. Control Commands List

| Command | Name |
|------------------|--|
| HT | Horizontal tab |
| LF | Print and line feed |
| FF | Print and return to standard mode (in page mode) |
| CR | Print and carriage return |
| CAN | Cancel print data in page mode |
| DLE EOT | Real-time status transmission |
| DLE ENQ | Real-time request to printer |
| DLE DC4 | Generate pulse in real-time |
| | Execute power-off sequence |
| | Clear buffer(s) |
| ESC FF | Print data in page mode |
| ESC SP | Set right-side character spacing |
| ESC ! | Select print mode(s) |
| ESC \$ | Set absolute print position |
| ESC % | Select/cancel user-defined character set |
| ESC & | Define user-defined characters |
| ESC * | Select bit-image mode |
| ESC - | Turn underline mode on/off |
| ESC 2 | Select default line spacing |
| ESC 3 | Set line spacing |
| ESC = | Select peripheral device |
| ESC ? | Cancel user-defined characters |
| ESC @ | Initialize printer |
| ESC D | Set horizontal tab positions |
| ESC E | Turn emphasized mode on/off |
| ESC G | Turn double-strike mode on/off |
| ESC J | Print and feed paper |
| ESC L | Select page mode |
| ESC M | Select character font |
| ESC R | Select an international character set |
| ESC S | Select standard mode |
| ESC T | Select print direction in page mode |
| ESC V | Turn 90° clockwise rotation mode on/off |
| ESC W | Set printing area in page mode |
| ESC \ | Set relative print position |
| ESC a | Select justification |
| ESC c 3 | Select paper sensor(s) to output paper-end signals |
| ESC c 4 | Select paper sensor(s) to stop printing |
| ESC c 5 | Enable/disable panel buttons |

| Command | Name |
|---------------|---|
| ESC d | Print and feed n lines |
| ESC p | General pulse |
| ESC t | Select character code table |
| ESC { | Turn upside-down printing mode on/off |
| FS p | print NV bit image |
| FS q | Define NV bit image |
| GS ! | Select character size |
| GS \$ | Set absolute vertical print position in page mode |
| GS (A | Execute test print |
| GS (D | Enable/disable real-time command |
| GS (E | User setup commands |
| GS 8 L | Set graphics data |
| GS (L | |
| GS (M | Customize printer control value(s) |
| GS (N | Select character style(s) |
| GS * | Define downloaded bit image |
| GS / | Print downloaded bit image |
| GS : | Start/end macro definition |
| GS B | Turn white/black reverse printing mode on/off |
| GS H | Select printing position of HRI characters |
| GS I | Transmit printer IE |
| GS L | Set left margin |
| GS P | Set horizontal and vertical motion units |
| GS T | Set print position to the beginning of print line |
| GS V | Select cut mode and cut paper |
| GS W | Set printing area width |
| GS \ | Set relative vertical print position in page mode |
| GS ^ | Execute macro |
| GS a | Enable/disable Automatic Status Back (ASB) |
| GS b | Turn smoothing mode on/off |
| GS f | Select font for HIR characters |
| GS h | Set bar code height |
| GS k | Print bar code |
| GS r | Transmit status |
| GS v 0 | Print raster bit image |
| GS w | Set bar code width |

Command Notation

- [Name] The name of the command.
 [Format] The code sequence. ASCII Indicates the ASCII equivalents.
 Hex indicates the hexadecimal equivalents.
 Decimal indicates the decimal equivalents.
 [] k indicates the contents of the [] should be repeated k times.
 [Range] Gives the allowable ranges for the arguments.
 [Description] Describes the function of the command.

Explanation of Terms

LSB Least Significant Bit

HT

- [Name] Horizontal tab.
 [Format] ASCII HT
 Hex 09
 Decimal 9
 [Description] • Moves the print position to the next horizontal tab position.

LF

- [Name] Print and line feed.
 [Format] ASCII LF
 Hex 0A
 Decimal 10
 [Description] • In standard mode, prints the data in the print buffer and feeds one line based on the current line spacing.
 • In page mode, modes the print position in memory to feed one line based on the current line spacing.

FF

- [Name] Print and return to standard mode in page mode.
 [Format] ASCII FF
 Hex 0C
 Decimal 12
 [Description] • In page mode, prints the data in the print buffer collectively and returns to standard mode.

CR

- [Name] Print and carriage return.
 [Format] ASCII CR
 Hex 0D
 Decimal 13
 [Description] • When automatic line feed is enabled, this command functions the same as **LF**.
 [Notes] • When automatic line feed is disabled, this command is ignored **CR**.
 • The automatic line feed is ignored with a serial interface model.
 • With a parallel interface model, the automatic line feed is set with memory switch 1-5 when the printer power is turned on or reset.

CAN

- [Name] Cancel print data in page mode.
 [Format] ASCII CAN
 Hex 18
 Decimal 24
 [Description] • In page mode, deletes all the print data in the current printable area.

DLE EOT n

- [Name] Transmission real-time status.
 [Format] ASCII DLE EOT n
 Hex 10 04 n
 Decimal 16 4 n
 [Range] $1 \leq n \leq 4$
 [Description] • Transmits the status specified by n in real-time as follows:

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

- This printer transmits the following status in real time.

n=1 : Printer status

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--|
| 0 | Off | 00 | 0 | Fixed. |
| 1 | On | 02 | 2 | Fixed. |
| 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 | Fixed. |
| 5 | Off | 00 | 0 | Not in on-line waiting status. |
| | On | 20 | 32 | During on lines waiting status. |
| 6 | Off | 00 | 0 | Paper FEED button is turned Off. |
| | On | 40 | 64 | Paper FEED button is turned On. |
| 7 | Off | 00 | 0 | Fixed. |

n=2 : Off-line status

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--|
| 0 | Off | 00 | 0 | Fixed. |
| 1 | On | 02 | 2 | Fixed. |
| 2 | Off | 00 | 0 | Cover is closed. |
| | On | 04 | 4 | Cover is open. |
| 3 | Off | 00 | 0 | Paper is not being fed by using the paper FEED button. |
| | On | 08 | 8 | Paper is being fed by the paper FEED button. |
| 4 | On | 10 | 16 | Fixed. |
| 5 | Off | 00 | 0 | No paper-end stop. |
| | On | 20 | 32 | Printing is being stopped. |
| 6 | Off | 00 | 0 | No error. |
| | On | 40 | 64 | Error has occurred. |
| 7 | Off | 00 | 0 | Fixed. |

n=3 : Error status

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|---|
| 0 | Off | 00 | 0 | Fixed. |
| 1 | On | 02 | 2 | Fixed. |
| 2 | Off | 00 | 0 | No mechanical error. |
| | On | 04 | 4 | Mechanical error has occurred. |
| 3 | Off | 00 | 0 | No auto-cutter error. |
| | On | 08 | 8 | Auto-cutter error occurred. |
| 4 | On | 10 | 16 | Fixed. |
| 5 | Off | 00 | 0 | No unrecoverable error. |
| | On | 20 | 32 | Unrecoverable error has occurred. |
| 6 | Off | 00 | 0 | No automatically recoverable error. |
| | On | 40 | 64 | Automatically recoverable error has occurred. |
| 7 | Off | 00 | 0 | Fixed. |

n=4 : Continuous paper sensor status

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|---|
| 0 | Off | 00 | 0 | Fixed. |
| 1 | On | 02 | 2 | Fixed. |
| 2 | Off | 00 | 0 | Paper roll near-end sensor : paper adequate. |
| | On | 04 | 4 | Paper roll near-end sensor : paper near end. |
| 3 | Off | 00 | 0 | Paper roll near-end sensor : paper adequate. |
| | On | 08 | 8 | Paper roll near-end sensor : paper near end. |
| 4 | On | 10 | 16 | Fixed. |
| 5 | Off | 00 | 0 | Paper roll near-end sensor : paper present. |
| | On | 20 | 32 | Paper roll near-end sensor : paper not present. |
| 6 | Off | 00 | 0 | Paper roll near-end sensor : paper present. |
| | On | 40 | 64 | Paper roll near-end sensor : paper not present. |
| 7 | Off | 00 | 0 | Fixed. |

[Notes]

- If print data includes a character string with this command, the printer performs this command. User must consider this.
 - For example : Bit image data accidentally might include a data string with this command.
- Do not embed this command within another command.
 - For example : Bit image data might include this command.
- This command is ignored block data is transmitted.

DLE ENQ n

| | | | | |
|----------|-------------------------------|-----|-----|---|
| [Name] | Real-time request to printer. | | | |
| [Format] | ASCII | DLE | ENQ | n |
| | Hex | 10 | 05 | n |
| | Decimal | 16 | 5 | n |

[Range] 0 ≤ n ≤ 2

[Description] • Responds to a request from the host computer.
 - n specifies the requests as follows :

| n | Request |
|---|---|
| 0 | Works the same as when the paper FEED button is pressed once during waiting status during the operation of the GS ^ command. |
| 1 | Recovers from an error and restarts printing from the line where the error occurred. |
| 2 | Recovers from an error after clearing the receive and print buffers. |

[Notes]

- Specify n=1 or 2 after removing the cause of the error.
- If print data includes a character string with this command, the printer performs the command. User must consider this.
 - For example : Bit image data accidentally might include a data string with this command.
- Do not embed this command within another command.
 - For example : Bit image data might include this command.
- This command is ignored block data is transmitted.
- This command is ignored block data is transmitted.

DLE DC4 fn m t (fn=1)

| | | | | | | |
|---------------|--|-----|-----|----|---|---|
| [Name] | Generate pulse in real-time. | | | | | |
| [Format] | ASCII | DLE | DC4 | fn | m | t |
| | Hex | 10 | 14 | 1 | m | t |
| | Decimal | 16 | 20 | 1 | m | t |
| [Range] | fn=1 0 ≤ m ≤ 8 1 ≤ t ≤ 8 | | | | | |
| [Description] | Outputs the pulse specified by t in real-time to the connector pin specified by m as follows : | | | | | |

| n | Connector pin |
|---|----------------------------------|
| 0 | Drawer kick-out connector pin 2. |
| 1 | Drawer kick-out connector pin 5. |

- The pulse ON time or OFF time is set to [t x 100 ms].
- Specify n=1 or 2 after removing the cause of the error.
- If print data includes a character string with this command, the printer performs the command. User must consider this.
 - For example : Bit image data accidentally might include a data string with this command.
- Do not embed this command within another command.
 - For example : Bit image data might include this command.
- This command is ignored in the following states :
 - During transmission of block data.
 - During driving of drawer kick-out.
 - When an error has occurred.

DLE DC4 fn a b (fn=2)

| | | | | | | |
|---------------|---|-----|-----|----|---|---|
| [Name] | Execute power-off sequence. | | | | | |
| [Format] | ASCII | DLE | DC4 | fn | a | b |
| | Hex | 10 | 14 | fn | a | b |
| | Decimal | 16 | 20 | fn | a | b |
| [Range] | fn=2 a=1 b=8 | | | | | |
| [Description] | Executes the printer power-off sequence. <ul style="list-style-type: none"> - Stores the values of the maintenance counter. - Transmits the following power-off status (Header + Status + NUL). | | | | | |

| Power off status | Hex | Decimal | Amount of data |
|------------------|------|---------|----------------|
| Header | 3B H | 59 | 1 byte |
| Status | 30 H | 48 | 1 byte |
| NUL | 00 H | 0 | 1 byte |

[Notes]

- Executes the printer power off.
- If this command is encountered, the printer will not continue to process anything. To recover the printer to print again, it is necessary to turn the power on again or execute a hardware reset.
- If print data includes a character string with this command, the printer performs the command. User must consider this.
 - For example : Bit image data accidentally might include a data string with this command.
- Do not embed this command within another command.
 - For example : Bit image data might include this command.
- This command is ignored block data is transmitted.

DLE DC4 fn d1...d7 (fn=8)

| | | | | | | |
|----------|------------------|-----|-----|----|---------|--|
| [Name] | Clear buffer(s). | | | | | |
| [Format] | ASCII | DLE | DC4 | fn | d1...d7 | |
| | Hex | 10 | 14 | 8 | d1...d7 | |
| | Decimal | 16 | 20 | 8 | d1...d7 | |

[Range] fn=8
d1=1, d2=3, d3=20, d4=1, d5=6, d6=2, d7=8

- [Description]
- Clear all data stored in the receive buffer and the print buffer.
 - Transmits the following three bytes data.

| | Hex | Decimal | Amount of data |
|--------|------|---------|----------------|
| Header | 37 H | 55 | 1 byte |
| Flag | 25 H | 37 | 1 byte |
| NUL | 00 H | 0 | 1 byte |

[Notes]

- Enters standard mode.
- The command must be inhibited for use in a system using this printer and the EPSON OPOS.
- If print data includes a character string with this command, the printer performs the command. User must consider this.
 - For example : Bit image data accidentally might include a data string with this command.
- Do not embed this command within another command.
 - For example : Bit image data might include this command.
- This command is ignored block data is transmitted.

ESC FF

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

- [Description]
- In page mode, prints all buffered data in the printing area collectively.

ESC SP n

| | | | | |
|---------------|--|-----|----|---|
| [Name] | Set right-side character spacing. | | | |
| [Format] | ASCII | ESC | SP | n |
| | Hex | 1B | 20 | n |
| | Decimal | 27 | 32 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | <ul style="list-style-type: none"> ▪ Sets the character spacing for the right side of the character to [n ×horizontal or vertical motion units]. ▪ The maximum right-side character spacing is : <ul style="list-style-type: none"> - For ANK/Multilingual model, 35.955mm {255/180"}. - For Japanese Kanji model, 31.875mm {255/203"}. | | | |

ESC ! n

| | | | | |
|---------------|---|-----|----|---|
| [Name] | Select print mode(s). | | | |
| [Format] | ASCII | ESC | ! | n |
| | Hex | 1B | 21 | n |
| | Decimal | 27 | 33 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | ▪ Selects print mode(s) using n as follows. | | | |

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--------------------------------------|
| 0 | Off | 00 | 0 | Character font A (12 × 24) selected. |
| | On | 01 | 1 | Character font B (9 × 24) selected. |
| 1,2 | Off | 00 | 0 | Reserved. |
| 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 | Off | 00 | 0 | Reserved. |
| 7 | Off | 00 | 0 | Underline mode not selected. |
| | On | 80 | 128 | Underline mode selected. |

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 ≤ (nL + nH × 256) ≤ 65535 (0 ≤ nH ≤ 255, 0 ≤ nL ≤ 255) | | | | |
| [Description] | ▪ Sets the next print starting position, and the absolute print position, in reference to the left margin. The distance from the beginning of the line to the left margin is [(nL + nH × 256) × (vertical or horizontal motion units)]. | | | | |

ESC % n

| | | | | |
|---------------|---|-----|----|---|
| [Name] | Select/cancel user-defined character set. | | | |
| [Format] | ASCII | ESC | % | n |
| | Hex | 1B | 25 | n |
| | Decimal | 27 | 37 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | <ul style="list-style-type: none"> ▪ Select or cancels the user-defined character set. <ul style="list-style-type: none"> - When the LSB of n is 0, the user-defined character set is canceled. - When the LSB of n is 1, the user-defined character set is selected. | | | |

ESC & y c1 c2 [x1 d1...d(y x 1)]...[xk d1...d(y x xk)]

| | | | | | | | |
|---------------|--|-----|----|---|----|----|--|
| [Name] | Define user-defined characters. | | | | | | |
| [Format] | ASCII | ESC | & | y | c1 | c2 | [x1 d1...d(y x 1)]...[xk d1...d(y x xk)] |
| | Hex | 1B | 26 | y | c1 | c2 | [x1 d1...d(y x 1)]...[xk d1...d(y x xk)] |
| | Decimal | 27 | 38 | y | c1 | c2 | [x1 d1...d(y x 1)]...[xk d1...d(y x xk)] |
| [Range] | For SRP-370 | | | | | | |
| [Default] | y=3 | | | | | | |
| | 32 ≤ c1 ≤ c2 ≤ 126 | | | | | | |
| | 0 ≤ x ≤ 12 (when font A (12 × 24) is selected) | | | | | | |
| | 0 ≤ x ≤ 9 (when font B (9 × 24) is selected) | | | | | | |
| | 0 ≤ d ≤ 255 | | | | | | |
| | k=c2-c1+1 | | | | | | |
| | For SRP-372 | | | | | | |
| | y=3 (when font A (12 × 24) is selected). | | | | | | |
| | y=3 (when font C (8 × 16) selected) | | | | | | |
| | 32 ≤ c1 ≤ c2 ≤ 126 | | | | | | |
| | 0 ≤ x ≤ 12 (when font A (12 × 24) is selected) | | | | | | |
| | 0 ≤ x ≤ 9 (when font B (9 × 24) is selected) | | | | | | |
| | 0 ≤ d ≤ 255 | | | | | | |
| | k=c2-c1+1 | | | | | | |
| [Description] | <ul style="list-style-type: none"> ▪ Assigns the user-defined character pattern for the specified character codes. <ul style="list-style-type: none"> - y specifies the number of bytes in the vertical direction. - c1 specifies the beginning character code for the definition, and c2 specifies the final code. - x specifies the number of dots in the horizontal direction. - d specifies the definition data. | | | | | | |

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
 $1 \leq (nL + nH \times 256) \leq 1023$ ($0 \leq nL \leq 255, 0 \leq nH \leq 3$)
 $0 \leq d \leq 255$
 [Description] • Specifies the bit image in m mode for the number of dots specified by nL and nH.
 * dpi : dots per 25.4mm {1"}
 - For SRP-370

| m | Mode | Number of dots in vertical direction | Vertical dot density | Horizontal dot density | Number of bytes (k) |
|----|-----------------------|--------------------------------------|----------------------|------------------------|---------------------|
| 0 | 8-dot single-density | 8 | 60 dpi | 90 dpi | nL + nH x 256 |
| 1 | 8-dot double-density | 8 | 60 dpi | 180 dpi | nL + nH x 256 |
| 32 | 24-dot single-density | 24 | 180 dpi | 90 dpi | (nL + nH x 256) x 3 |
| 33 | 24-dot double-density | 24 | 180 dpi | 180 dpi | (nL + nH x 256) x 3 |

* dpi : dots per 25.4mm {1"}
 - For SRP-372

| m | Mode | Number of dots in vertical direction | Vertical dot density | Horizontal dot density | Number of bytes (k) |
|----|-----------------------|--------------------------------------|----------------------|------------------------|---------------------|
| 0 | 8-dot single-density | 8 | 203/3 dpi | 203/2 dpi | nL + nH x 256 |
| 1 | 8-dot double-density | 8 | 203/3 dpi | 203 dpi | nL + nH x 256 |
| 32 | 24-dot single-density | 24 | 203 dpi | 203/2 dpi | (nL + nH x 256) x 3 |
| 33 | 24-dot double-density | 24 | 203 dpi | 203 dpi | (nL + nH x 256) x 3 |

ESC - n

[Name] Turn underline mode on/off.
 [Format] ASCII ESC - n
 Hex 1B 2D n
 Decimal 27 45 n
 [Range] $0 \leq n \leq 2, 48 \leq n \leq 50$
 [Default] n=0
 [Description] • Turn underline mode on or off, based on the following values of n :

| n | Function |
|------|--|
| 0,48 | Turns off underline mode. |
| 1,49 | Turns on underline mode, set at 1-dot width. |
| 2,50 | Turns on underline mode, set at 2-dot width. |

ESC 2

[Name] Select default line spacing.
 [Format] ASCII ESC 2
 Hex 1B 32
 Decimal 27 50
 [Description] • For SRP-370
 - Sets the current line spacing to approximately 4.23mm {1/6"}.
 • For SRP-372
 - Sets the current line spacing to approximately 3.75mm {30/203"}.

ESC 3 n

[Name] Set line spacing
 [Format] ASCII ESC 3 n
 Hex 1B 33 n
 Decimal 27 51 n
 [Range] $0 \leq n \leq 255$
 [Default] • For SRP-370
 - Equivalent to approximately 4.23mm {1/6"}.
 • For SRP-372
 - Equivalent to approximately 3.75mm {30/203"}.
 [Description] • Sets the current line spacing to [n x vertical motion units] inches.
 [Notes] • For SRP-370
 - The maximum settable line spacing is 1016mm {40"}.
 • For SRP-372
 - The maximum settable line spacing is 900mm {35.5"}.

ESC = n

[Name] Select peripheral device.
 [Format] ASCII ESC = n
 Hex 1B 3D n
 Decimal 27 61 n
 [Range] $0 \leq n \leq 3$
 [Default] • Serial interface specification :
 - When turning on the printer : n=1
 - When executing **ESC @** :

| Setting before executing ESC @ | n | | |
|---------------------------------------|---|---|---|
| | 1 | 2 | 3 |
| After ESC @ processing | 1 | 2 | 1 |

[Description] • Selects device to which host computer sends data, using n as follows :

| n | Function |
|---|---|
| 1 | Specifies printer only. |
| 2 | Specifies customer display only. |
| 3 | Specifies printer and customer display. |

ESC ? n

| | | | | |
|---------------|--|-----|----|---|
| [Name] | Cancel user-defined characters. | | | |
| [Format] | ASCII | ESC | ? | n |
| | Hex | 1B | 3F | n |
| | Decimal | 27 | 63 | n |
| [Range] | 32 ≤ n ≤ 126 | | | |
| [Description] | ▪ Cancels user-defined characters, specified with character codes on a selected sheet. | | | |

ESC @

| | | | |
|---------------|---|-----|----|
| [Name] | Initialize printer. | | |
| [Format] | ASCII | ESC | @ |
| | Hex | 1B | 40 |
| | Decimal | 27 | 64 |
| [Range] | 32 ≤ n ≤ 126 | | |
| [Description] | ▪ Clears the data in the print buffer and resets the printer mode to the mode that were in effect when the power was turned on. | | |

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 ≤ n ≤ 255 0 ≤ k ≤ 32 | | | | |
| [Default] | n=8, 16, 24, 32, 40,....., 232, 240, 248 (for font A in a standard character size width) | | | | |
| [Description] | ▪ Sets horizontal tab positions. - n specifies the number of digits from the setting position to the left margin or the beginning of the line. - k specifies the number of bytes set for the horizontal tab position. | | | | |

ESC E n

| | | | | |
|---------------|---|-----|----|---|
| [Name] | Turn emphasized mode on / off. | | | |
| [Format] | ASCII | ESC | E | n |
| | Hex | 1B | 45 | n |
| | Decimal | 27 | 69 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | ▪ Turns emphasized mode on or off. - When the LSB of n is 0, emphasized mode is turned off. - When the LSB of n is 1, emphasized mode is turned on. | | | |

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 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | ▪ Turns double-strike mode on or off. - When the LSB of n is 0, double-strike mode is turned off. - When the LSB of n is 1, double-strike mode is turned on. | | | |

ESC J n

| | | | | |
|---------------|---|-----|----|---|
| [Name] | Print and feed paper. | | | |
| [Format] | ASCII | ESC | J | n |
| | Hex | 1B | 4A | n |
| | Decimal | 27 | 74 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Description] | ▪ Prints the data in the print buffer and feeds the paper [n X vertical motion unit]. ▪ For SRP-370 - The maximum paper feed amount is approximately 1016mm{40"} if [n X vertical motion unit] exceeds 1016mm{40"}. ▪ For SRP-372 - The maximum paper feed amount is approximately 900mm {35.5"} if [n X vertical motion unit] exceeds 900mm {35.5"}. | | | |

ESC L

| | | | |
|---------------|---|-----|----|
| [Name] | Select page mode. | | |
| [Format] | ASCII | ESC | L |
| | Hex | 1B | 4C |
| | Decimal | 27 | 76 |
| [Description] | ▪ Switches from standard mode to page mode. | | |

ESC M n

| | | | | |
|---------------|--|-----|----|---|
| [Name] | Select character font. | | | |
| [Format] | ASCII | ESC | M | n |
| | Hex | 1B | 4D | n |
| | Decimal | 27 | 77 | n |
| [Range] | For SRP-370 : n = 0, 1, 48, 49 For SRP-372 : 0 ≤ n 2, 48 ≤ n ≤ 50 | | | |
| [Default] | n=0 | | | |
| [Description] | ▪ Selects only-byte character fonts. | | | |

- For SRP-370 model :

| n | Function |
|-------|--------------------------------------|
| 0, 48 | Character font A (12 × 24) selected. |
| 1, 49 | Character font B (9 × 24) selected. |

- For SRP-372 model :

| n | Function |
|-------|--------------------------------------|
| 0, 48 | Character font A (12 × 24) selected. |
| 1, 49 | Character font B (9 × 24) selected. |

ESC R n

[Name] Select an international character set.

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

[Range] $0 \leq n \leq 13$

[Default] n=0

[Description] • Selects international character set in from the following table :

| n | Character set | n | Character set |
|---|---------------|----|---------------|
| 0 | U.S.A | 7 | Spain I |
| 1 | France | 9 | Norway |
| 2 | Germany | 10 | Denmark II |
| 3 | U.K | 11 | Spain II |
| 4 | Denmark I | 12 | Latin America |
| 5 | Sweden | 13 | Korea |
| 6 | Italy | | |

ESC S

[Name] Select standard mode.

| [Format] | ASCII | ESC | S |
|----------|---------|-----|----|
| | Hex | 1B | 53 |
| | Decimal | 27 | 83 |

[Description] • Switches from page mode to standard mode. Any data stored in the printer for printing in page mode is cleared.

ESC T n

[Name] Select print direction in page mode.

| [Format] | ASCII | ESC | T | n |
|----------|---------|-----|----|---|
| | Hex | 1B | 54 | n |
| | Decimal | 27 | 84 | n |

[Range] $0 \leq n \leq 3, 48 \leq n \leq 51$

[Default] n=0

[Description] • Selects the print direction and starting position in page mode.

| n | Print Direction | Starting Position |
|------|-----------------|-------------------|
| 0,48 | Left right | Upper left |
| 1,49 | Bottom to top | Lower left |
| 1,50 | Right left | Lower right |
| 3,51 | Top bottom | Upper right |

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] $0 \leq n \leq 2, 48 \leq n \leq 50$

[Default] n=0

[Description] • Turn 90° clockwise rotation mode on/off in standard mode.
- When the paper roll is selected :

| n | Function |
|-------|--------------------------------------|
| 0, 48 | Turn off 90°clockwise rotation mode. |
| 1, 49 | Turn on 90°clockwise rotation mode. |
| 2, 50 | |

ESC W xL xH yL yH dxL dxH dyL dyH

[Name] Set relative print position.

| [Format] | ASCII | ESC | W | xL | xH | yL | yH | dxL | dxH | dyL | dyH |
|----------|---------|-----|----|----|----|----|----|-----|-----|-----|-----|
| | Hex | 1B | 57 | xL | xH | yL | yH | dxL | dxH | dyL | dyH |
| | Decimal | 27 | 87 | xL | xH | yL | yH | dxL | dxH | dyL | dyH |

[Range] $0 \leq (xL + xH \times 256) \leq 65535$ ($0 \leq xL \leq 255, 0 \leq xH \leq 255$)

$0 \leq (yL + yH \times 256) \leq 65535$ ($0 \leq yL \leq 255, 0 \leq yH \leq 255$)

$1 \leq (dxL + dxH \times 256) \leq 65535$ ($0 \leq dxL \leq 255, 0 \leq dxH \leq 255$)

$1 \leq (dyL + dyH \times 256) \leq 65535$ ($0 \leq dyL \leq 255, 0 \leq dyH \leq 255$)

[Default] • For SRP-370 :

- When a paper width of 80mm{3.15"} is selected :

$(xL + xH \times 256) = 0$ ($xL=0, xH=0$)

$(yL + yH \times 256) = 0$ ($yL=0, yH=0$)

$(dxL + dxH \times 256) = 512$ ($dxL=0, dxH=2$)

$(dyL + dyH \times 256) = 1662$ ($dyL=126, dyH=6$)

- When a paper width of 60mm{2.36"} is selected :

$(xL + xH \times 256) = 0$ ($xL=0, xH=0$)

$(yL + yH \times 256) = 0$ ($yL=0, yH=0$)

$(dxL + dxH \times 256) = 360$ ($dxL=104, dxH=1$)

$(dyL + dyH \times 256) = 1662$ ($dyL=126, dyH=6$)

- For SRP-372 :
 - When a paper width of 80mm{3.15"} is selected :
 - (xL + xH x 256) = 0 (xL=0, xH=0)
 - (yL + yH x 256) = 0 (yL=0, yH=0)
 - (dxL + dxH x 256) = 576 (dxL=64, dxH=2)
 - (dyL + dyH x 256) = 1476 (dyL=196, dyH=5)
 - When a paper width of 60mm{2.36"} is selected :
 - (xL + xH x 256) = 0 (xL=0, xH=0)
 - (yL + yH x 256) = 0 (yL=0, yH=0)
 - (dxL + dxH x 256) = 380 (dxL=128, dxH=1)
 - (dyL + dyH x 256) = 1476 (dyL=196, dyH=5)

- [Description] • Set the position and the size of the printing area.
- Horizontal starting position = [(xL + xH x 256) x (horizontal motion unites)].
 - Vertical starting position = [(yL + yH x 256) x (vertical motion unites)].
 - Horizontal printing area width = [(dxL + dxH x 256) x (horizontal motion unites)].
 - Vertical printing area width = [(dyL + dyH x 256) x (vertical motion unites)].
- The maximum printable area is 117.263mm {1662/360"} maximum.

ESC \ nL nH

- [Name] Set relative print position.
- [Format]
- | | ASCII | ESC | \ | nL | nH |
|---------|-------|-----|---|----|----|
| Hex | 1B | 5C | | nL | nH |
| Decimal | 27 | 92 | | nL | nH |
- [Range] $0 \leq (nL + nH \times 256) \leq 65535$ ($0 \leq nL \leq 255$, $0 \leq nH \leq 255$)
- [Description] • Set the print starting position based on the current position to [(nL + nH x 256) x horizontal or vertical motion unit]
- When (nL + nH x 256) is positive number, the print starting position is specified to the right based on the current position.
 - When (nL + nH x 256) is negative number, the print starting position is specified to the left based on the current position.

ESC a n

- [Name] Select justification.
- [Format]
- | | ASCII | ESC | a | n |
|---------|-------|-----|---|---|
| Hex | 1B | 61 | | n |
| Decimal | 27 | 97 | | n |
- [Range] $0 \leq n \leq 2$, $48 \leq n \leq 50$
- [Default] n=0
- [Description] • In standard mode, aligns all the data in one line to the position specified by n as follows :

| n | Justification |
|-------|---------------------|
| 0, 48 | Left justification |
| 1, 49 | Centering |
| 2, 50 | Right justification |

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] $0 \leq n \leq 255$
- [Default] n=0
- [Description] • Selects the paper sensor(s) to output paper end signals when a paper end is detected.

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|-------------------------------------|
| 0 | Off | 00 | 0 | Paper roll near-end sensor disable. |
| | On | 01 | 1 | Paper roll near-end sensor enable. |
| 1 | Off | 00 | 0 | Paper roll near-end sensor disable. |
| | On | 02 | 2 | Paper roll near-end sensor enable. |
| 2 | Off | 00 | 0 | Paper roll end sensor disable. |
| | On | 04 | 4 | Paper roll end sensor enable. |
| 3 | Off | 00 | 0 | Paper roll end sensor disable. |
| | On | 08 | 8 | Paper roll end sensor enable. |
| 4~7 | - | - | - | Reserved. |

- [Note] • This command is available only with a parallel interface and is ignored with a serial interface.

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] $0 \leq n \leq 255$
- [Default] n=0
- [Description] • Selects the paper sensor(s) to use to stop printing when a paper end is detected.

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--------------------------------|
| 0 | Off | 00 | 0 | Paper roll end sensor disable. |
| | On | 01 | 1 | Paper roll end sensor enable. |
| 1 | Off | 00 | 0 | Paper roll end sensor disable. |
| | On | 02 | 2 | Paper roll end sensor enable. |
| 2~7 | - | - | - | Reserved. |

ESC c 5 n

| | | | | | |
|---------------|---|-----|----|----|---|
| [Name] | Enable / Disable panel button. | | | | |
| [Format] | ASCII | ESC | c | 5 | n |
| | Hex | 1B | 63 | 35 | n |
| | Decimal | 27 | 99 | 53 | n |
| [Range] | 0 ≤ n ≤ 255 | | | | |
| [Default] | n=0 | | | | |
| [Description] | <ul style="list-style-type: none"> Enables or disables the panel buttons. <ul style="list-style-type: none"> When the LSB of n is 0, the panel buttons are enabled. When the LSB of n is 1, the panel buttons are disabled. | | | | |
| [Notes] | <ul style="list-style-type: none"> When the printer cover is open, the panel buttons are always ignored regardless of the setting with this command. | | | | |

ESC d n

| | | | | |
|---------------|--|-----|-----|---|
| [Name] | Print and feed n lines. | | | |
| [Format] | ASCII | ESC | d | n |
| | Hex | 1B | 64 | n |
| | Decimal | 27 | 100 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Description] | <ul style="list-style-type: none"> Prints the data in the print buffer and feeds n lines. | | | |

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 ≤ t1 ≤ 255, 0 ≤ t2 ≤ 255 | | | | | | | | | | | |
| [Description] | <ul style="list-style-type: none"> Outputs the pulse specified by t1 and t2 to connector pin m as follows : <table border="1" data-bbox="273 933 954 1013"> <thead> <tr> <th>m</th> <th>Connector pin</th> </tr> </thead> <tbody> <tr> <td>0, 48</td> <td>Drawer kick-out connector pin 2</td> </tr> <tr> <td>1, 49</td> <td>Drawer kick-out connector pin 5</td> </tr> </tbody> </table> <ul style="list-style-type: none"> t1 specifies the pulse ON time as [t1 x 2ms], and t2 specifies the pulse OFF time as [t2 x 2ms]. If t2 is smaller than t1, OFF time is set as [t1 x 2ms]. | | | | | | m | Connector pin | 0, 48 | Drawer kick-out connector pin 2 | 1, 49 | Drawer kick-out connector pin 5 |
| m | Connector pin | | | | | | | | | | | |
| 0, 48 | Drawer kick-out connector pin 2 | | | | | | | | | | | |
| 1, 49 | Drawer kick-out connector pin 5 | | | | | | | | | | | |

ESC t n

| [Name] | Select character code table. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|---|-----|-----|---|---|------|---|------------------------------|---|----------|---|----------------------|---|--------------------|---|-------------------------|---|----------------|---|----------------|---|---------------|----|---------|----|---------------------|----|-----------------|----|--------------|----|--------------|----|------------------------|----|--------------|----|-----------------|----|-------------|----|------------------------|----|---------------|-----|-------------------|
| [Format] | ASCII | ESC | t | n | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Hex | 1B | 74 | n | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Decimal | 27 | 116 | n | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Range] | 0 ≤ n ≤ 5, 16 ≤ n ≤ 24, 27 ≤ n ≤ 30, n=255 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Default] | For model without Thai character support : n=0 For model with Thai character support : n = 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Description] | <ul style="list-style-type: none"> Selects a page n from the character code table. <table border="1" data-bbox="1393 395 2087 962"> <thead> <tr> <th>n</th> <th>Page</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>PC437 (USA, standard Europe)</td> </tr> <tr> <td>1</td> <td>Katakana</td> </tr> <tr> <td>2</td> <td>PC850 (Multilingual)</td> </tr> <tr> <td>3</td> <td>PC860 (Portuguese)</td> </tr> <tr> <td>4</td> <td>PC863 (Canadian-French)</td> </tr> <tr> <td>5</td> <td>PC865 (Nordic)</td> </tr> <tr> <td>7</td> <td>855 (Cyrillic)</td> </tr> <tr> <td>8</td> <td>857 (Turkish)</td> </tr> <tr> <td>16</td> <td>WPC1252</td> </tr> <tr> <td>17</td> <td>PC866 (Cyrillic #2)</td> </tr> <tr> <td>18</td> <td>PC852 (Latin 2)</td> </tr> <tr> <td>19</td> <td>PC858 (Euro)</td> </tr> <tr> <td>22</td> <td>864 (Arabic)</td> </tr> <tr> <td>23</td> <td>Thai character code 42</td> </tr> <tr> <td>24</td> <td>1253 (Greek)</td> </tr> <tr> <td>28</td> <td>1251 (Cyrillic)</td> </tr> <tr> <td>29</td> <td>737 (Greek)</td> </tr> <tr> <td>31</td> <td>Thai character code 16</td> </tr> <tr> <td>33</td> <td>1255 (Hebrew)</td> </tr> <tr> <td>255</td> <td>User-defined page</td> </tr> </tbody> </table> | | | | n | Page | 0 | PC437 (USA, standard Europe) | 1 | Katakana | 2 | PC850 (Multilingual) | 3 | PC860 (Portuguese) | 4 | PC863 (Canadian-French) | 5 | PC865 (Nordic) | 7 | 855 (Cyrillic) | 8 | 857 (Turkish) | 16 | WPC1252 | 17 | PC866 (Cyrillic #2) | 18 | PC852 (Latin 2) | 19 | PC858 (Euro) | 22 | 864 (Arabic) | 23 | Thai character code 42 | 24 | 1253 (Greek) | 28 | 1251 (Cyrillic) | 29 | 737 (Greek) | 31 | Thai character code 16 | 33 | 1255 (Hebrew) | 255 | User-defined page |
| n | Page | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | PC437 (USA, standard Europe) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Katakana | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | PC850 (Multilingual) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | PC860 (Portuguese) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | PC863 (Canadian-French) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | PC865 (Nordic) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 855 (Cyrillic) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 857 (Turkish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | WPC1252 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | PC866 (Cyrillic #2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | PC852 (Latin 2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | PC858 (Euro) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | 864 (Arabic) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Thai character code 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | 1253 (Greek) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | 1251 (Cyrillic) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 737 (Greek) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Thai character code 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | 1255 (Hebrew) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 255 | User-defined page | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ESC { n

| | | | | |
|---------------|---|-----|-----|---|
| [Name] | Turns upside-down printing mode on/off. | | | |
| [Format] | ASCII | ESC | { | n |
| | Hex | 1B | 7B | n |
| | Decimal | 27 | 123 | n |
| [Range] | 0 ≤ n ≤ 255 | | | |
| [Default] | n=0 | | | |
| [Description] | <ul style="list-style-type: none"> Turns upside-down printing mode on or off. <ul style="list-style-type: none"> When the LSB of n is 0, upside-down printing mode is turned off. When the LSB of n is 1, upside-down printing mode is turned on. | | | |

FS p n m

[Name] Print NV bit image.
 [Format] ASCII FS p n m
 Hex 1C 70 n m
 Decimal 28 112 n m
 [Range] $1 \leq n \leq 255$
 $0 \leq m \leq 3, 48 \leq m \leq 51$
 [Description] • Prints an NV bit image n in m mode.
 dpi : dots per 25.4mm {1"}

- For SRP-370 :

| m | Mode | Vertical Dot Density (DPI) | Horizontal Dot Density (DPI) |
|-------|---------------|----------------------------|------------------------------|
| 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 |

- For SRP-372 :

| m | Mode | Vertical Dot Density (DPI) | Horizontal Dot Density (DPI) |
|-------|---------------|----------------------------|------------------------------|
| 0, 48 | Normal | 203 dpi | 203 dpi |
| 1, 49 | Double-width | 203 dpi | 203/2 dpi |
| 2, 50 | Double-height | 203/2 dpi | 203 dpi |
| 3, 51 | Quadruple | 203/2 dpi | 203/2 dpi |

FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n

[Name] Defined NV bit image.
 [Format] ASCII FS q n [xL xH yL d1...dk]1... [xL xH yL d1...dk]n
 Hex 1C 71 n [xL xH yL d1...dk]1... [xL xH yL d1...dk]n
 Decimal 28 113 n [xL xH yL d1...dk]1... [xL xH yL d1...dk]n
 [Range] $1 \leq n \leq 255$
 $1 \leq (xL + xH \times 256) \leq 1023$ ($0 \leq xL \leq 255, 0 \leq xH \leq 3$)
 $1 \leq (yL + yH \times 256) \leq 288$ ($0 \leq yL \leq 255, yH=0,1$)
 $0 \leq d \leq 255$
 $k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$

Either one of the total capacity data [0, 64k, 128k, 192k, 256k, 320k, 384k] bytes can be selected by **GS (E)**. The default value is 384 KB.

[Description] • Defines the specified NV bit image.
 - n specifies the number of the NV bit image you are defining.
 - xL, xH specify the number of dots in the horizontal direction for the NV bit image with [(xL + xH × 256) × 8].
 - yL, yH specify the number of dots in the vertical direction for the NV bit image with [(yL + yH × 256) × 8].

• If this command is processed when the NV graphics is defined with **GS (L or GS 8 L)**, delete all NV graphics data, then define the bit image data with this command.

[Notes] • Frequent write command executions by this command may damage to the NV memory. Therefore, it is recommended to write to the NV memory 10 times or less a day.
 • During processing of this command, the printer is BUSY while writing the data to the NV bit image memory and stops receiving data. Therefore, it is prohibited to transmit data, including real-time commands, during the execution of this command.

GS ! n

[Name] Select character size.
 [Format] ASCII GS ! n
 Hex 1D 21 n
 Decimal 29 33 n
 [Range] $0 \leq n \leq 255$
 (where $1 \leq$ Enlargement in vertical direction $\leq 8, 1 \leq$ Enlargement in horizontal direction ≤ 8)
 n=0
 [Default] n=0
 [Description] • Selects character size (enlargement in vertical and horizontal directions).

| Bit | Function | Setting |
|-----|--|---|
| 0 | Specifies the number of times enlarged in the vertical direction | Refer to Table 2 [Enlarged in vertical direction] |
| 1 | | |
| 2 | | |
| 3 | Specifies the number of times enlarged in the horizontal direction | Refer to Table 1 [Enlarged in horizontal direction] |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |

- Table 1 [Enlarged in horizontal direction]

| Hex | Decimal | Enlargement |
|-----|---------|-------------------|
| 00 | 0 | 1 time (standard) |
| 10 | 16 | 2 times |
| 20 | 32 | 3 times |
| 30 | 48 | 4 times |
| 40 | 64 | 5 times |
| 50 | 80 | 6 times |
| 60 | 96 | 7 times |
| 70 | 112 | 8 times |

- Table 1 [Enlarged in vertical direction]

| Hex | Decimal | Enlargement |
|-----|---------|-------------------|
| 00 | 0 | 1 time (standard) |
| 01 | 1 | 2 times |
| 02 | 2 | 3 times |
| 03 | 3 | 4 times |
| 04 | 4 | 5 times |
| 05 | 5 | 6 times |
| 06 | 6 | 7 times |
| 07 | 7 | 8 times |

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] $0 \leq (nL + nH \times 256) \leq 65535$ ($0 \leq nL \leq 255, 0 \leq nH \leq 255$)
 [Description] • Sets the absolute vertical print starting position to [(nL + nH × 256) × (vertical or horizontal motion units)].

GS (A pL pH n m

[Name] Execute test print.
 [Format] ASCII GS (A pL pH n m
 Hex 1D 28 41 pL pH n m
 Decimal 29 40 65 pL pH n m
 [Range] $(pL + pH \times 256) = 2$ (pL=2, pH=0)
 $0 \leq n \leq 2, 48 \leq n \leq 50$
 $1 \leq m \leq 3, 49 \leq m \leq 51$

[Description] Executes a test print with a specified test pattern on a specified paper type (roll paper).

- n specifies the paper type as listed below to be tested :

| m | Paper type |
|-------|------------|
| 0, 48 | Paper roll |
| 1, 49 | |
| 2, 50 | |

- m specifies a test pattern as listed below :

| m | Test pattern |
|-------|--------------------|
| 1, 49 | Hexadecimal dump |
| 2, 50 | Self Test Printing |

[Notes] The printer executes a hardware reset after the procedure to place the image into the non-volatile memory. The printer clear the receive and print buffers, and resets all settings (user-defined characters, macros, and the character styles) to the mode that was in effect at power on.

GS (D pL pH m [a1 b1]...[ak bk]

[Name] Enable/disable real-time command.
 [Format] ASCII GS (D pL pH m [a1 b1]...[ak bk]
 Hex 1D 28 44 pL pH m [a1 b1]...[ak bk]
 Decimal 29 40 68 pL pH m [a1 b1]...[ak bk]
 [Range] $3 \leq (pL + pH \times 256) \leq 65535$
 m=20
 a=1, 2
 b=0, 1, 48, 49
 [Default] a=1, b=0

| a | Type(s) of real-time commands | Default |
|---|--|---------------|
| 1 | DLE DC4 fn m t (fn=1) : Generate pulse in real-time | Enable (b=1) |
| 2 | DLE DC4 fn a b (fn=2) : Execute power-off sequence | disable (b=0) |

[Description] Enable or disables the following real-time commands.

| a | b | Function |
|---|-------|---|
| 1 | 0, 48 | DLE DC4 fn m t (fn=1) : Not processed (disabled) |
| | 1, 49 | DLE DC4 fn m t (fn=1) : Processed (enabled) |
| 2 | 0, 48 | DLE DC4 fn a b (fn=2) : Not processed (disabled) |
| | 1, 49 | DLE DC4 fn a b (fn=2) : Processed (enabled) |

- pL, pH specifies $(pL + pH \times 256)$ as the number of bytes after pH (m and [a1 b1]...[ak bk]).

- a specifies the type of real-time command.
 - b specifies enable or disable.

[Notes] If bit image data accidentally includes a character string with this command, it is recommended to use this command in advance to disable the real-time command.

GS (E pL pH fn [parameter]

[Name] Customize NV memory area.
 [Description] Customize the NV user memory area. The table below explains the functions available in this command. Executes commands related to the user setting mode by specifying the function code fn.

| fn | Format | No. | Function |
|----|--|-----|--|
| 1 | GS (E pL pH fn d1 d2 | 1 | Changes into the user setting mode. |
| 2 | GS (E pL pH fn d1 d2 d3 | 2 | Ends the user setting mode session. (Performs a soft reset.) |
| 3 | GS (E pL pH fn [a1 b18...b11]... [ak bk8...bk1] | 3 | Sets value(s) for the memory switch. |
| 4 | GS (E pL pH fn a | 4 | Transmits the settings of the memory switch to the host. |
| 11 | GS (E pL pH fn a d1...dk | 11 | Sets the communication conditions for the serial interface. |
| 12 | GS (E pL pH fn a | 12 | Transmits the communication conditions for the serial interface. |

pL, pH specifies $(pL + pH \times 256)$ as the number of bytes after pH (fn and [parameter]).

The user setting mode is a special mode to change the values in the NV user memory with this command.
 In Function 2, the printer performs software reset. Therefore, the printer clears the receive and print buffers, and resets all settings (user-defined characters, macros, and the character style) to the mode in effect at power on.

[Notes] Frequent write commands by this command, may damage the NV memory. Therefore, it is recommended to write to NV memory no more than 10 times a day.
 While processing this command, the printer is BUSY while writing data to the user NV memory and stops receiving data. Therefore it is prohibited to transmit data including the real-time commands during the execution of this command.

<Function 1> **GS (E pL pH fn d1 d2 (fn=1)**

| | | | | | | | | | |
|----------|---------|----|----|----|----|----|----|----|----|
| [Format] | ASCII | GS | (| E | pL | pH | fn | d1 | d2 |
| | Hex | 1D | 28 | 45 | pL | pH | fn | d1 | d2 |
| | Decimal | 29 | 40 | 69 | pL | pH | fn | d1 | d2 |

[Range] (pL + pH x 256) = 3 (pL=3, pH=0)
fn=1
d1=73, d2=78

[Description] • Enter the user setting mode and notifies that the mode has changed.

| | Hexadecimal | Decimal | Number of Data |
|--------|-------------|---------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 20H | 32 | 1 byte |
| NUL | 00H | 0 | 1 byte |

• The following commands are enabled in the user setting mode.
<Function 2> through <Function 12> of **GS (E, GS I.**

<Function 2> **GS (E pL pH fn d1 d2 d3 (fn=2)**

| | | | | | | | | | | |
|----------|---------|----|----|----|----|----|----|----|----|----|
| [Format] | ASCII | GS | (| E | pL | pH | fn | d1 | d2 | d3 |
| | Hex | 1D | 28 | 45 | pL | pH | fn | d1 | d2 | d3 |
| | Decimal | 29 | 40 | 69 | pL | pH | fn | d1 | d2 | d3 |

[Range] (pL + pH x 256) = 4 (pL=4, pH=0)
fn=2
d1=79, d2=85, d3=84

[Description] • Ends the user setting mode and performs a software reset. Therefore, the printer clears the receive and print buffers, and resets all settings (user-defined character, downloaded bit images, macros, and the print mode) to the mode that was in effect at power on.
• This function code (fn=2) is enabled only in the user setting mode.

<Function 3> **GS (E pL pH fn [a1 b18...b11]...[ak bk8...bk1] (fn=3)**

| | | | | | | | | | |
|----------|---------|----|----|----|----|----|----|-------------------|----------------|
| [Format] | ASCII | GS | (| E | pL | pH | fn | [a1 b18...b11]... | [ak bk8...bk1] |
| | Hex | 1D | 28 | 45 | pL | pH | fn | [a1 b18...b11]... | [ak bk8...bk1] |
| | Decimal | 29 | 40 | 69 | pL | pH | fn | [a1 b18...b11]... | [ak bk8...bk1] |

[Range] (pL + pH x 256) = 10, 37
fn=3
a=1, 2, 8, 9
b=48, 49, 50

[Default] • Msw2-1, Msw2-2, and Msw-8-8 are set to On (b=49), and all other switches are set to Off (b=48).

[Description] • Change the memory switch specified by a to the values specified by b.
- When b=48, the applicable bit is turned to Off.
- When b=49, the applicable bit is turned to On.
- When b=50, the applicable bit is not changed.
• When a=1, the memory switch 1 is set as follows :

| Bit | Setting value | Function |
|-----|---------------|--------------------------------|
| 1~4 | | Reserved |
| 5 | 48 | Automatic line feed : Disabled |
| | 49 | Automatic line feed : Enabled |
| 6~8 | | Reserved |

• When a=2, the memory switch 2 is set as follows :

| Bit | Setting value | Function |
|-----|---------------|-------------------------------|
| 1~2 | | Reserved. |
| 3 | 48 | Autocutter : Partial Cutting. |
| | 49 | Autocutter : Full Cutting. |
| 4~8 | | Code Page selection. |

| MSW2-8 | MSW2-7 | MSW2-6 | MSW2-5 | MSW2-4 | Character Table |
|--------|--------|--------|--------|--------|-----------------|
| 48 | 48 | 48 | 48 | 48 | Page 0 437 |
| 48 | 48 | 48 | 48 | 49 | Page 1 Katakana |
| 48 | 48 | 48 | 49 | 48 | Page 2 850 |
| 48 | 48 | 48 | 49 | 49 | Page 3 860 |
| 48 | 48 | 49 | 48 | 48 | Page 4 863 |
| 48 | 48 | 49 | 48 | 49 | Page 5 865 |
| 48 | 48 | 49 | 49 | 48 | Page 16 1252 |
| 48 | 48 | 49 | 49 | 49 | Page 17 866 |
| 48 | 49 | 48 | 48 | 48 | Page 18 852 |
| 48 | 49 | 48 | 48 | 49 | Page 19 858 |
| 48 | 49 | 48 | 49 | 48 | Reserved |
| 48 | 49 | 48 | 49 | 49 | Page 22 864 |
| 48 | 49 | 49 | 48 | 48 | Page 23 Thai42 |
| 48 | 49 | 49 | 48 | 49 | Page 24 1253 |
| 48 | 49 | 49 | 49 | 48 | Reserved |
| 48 | 49 | 49 | 49 | 49 | |
| 49 | 48 | 48 | 48 | 48 | Page 28 1251 |
| 49 | 48 | 48 | 49 | 48 | Page 29 737 |
| 49 | 48 | 48 | 49 | 49 | Reserved |
| 49 | 48 | 49 | 48 | 48 | Page 31 Thai16 |
| 49 | 48 | 49 | 48 | 49 | Reserved |
| 49 | 48 | 49 | 49 | 48 | Page 33 1255 |
| 49 | 48 | 49 | 49 | 49 | Reserved |
| 49 | 49 | 48 | 48 | 48 | |
| 49 | 49 | 48 | 48 | 49 | Page 36 855 |
| 49 | 49 | 48 | 49 | 48 | Page 37 857 |

• When a=8, the memory switch 8 is set as follows :

| Bit | Setting value | Function |
|-----|---------------|-----------|
| 1~8 | | Reserved. |

• When a=9, the memory switch 9 is set as follows :

| Bit | Setting value | Function |
|-----|---------------|-------------------------|
| 2 | 48 | Data Length : 8 Bits |
| | 49 | Data Length : 7 Bits |
| 3 | 48 | Parity : odd |
| | 49 | Parity : even |
| 4 | 48 | Parity Check : Disable |
| | 49 | Parity Check : Enable |
| 5 | 48 | Flow Control : DTR/DSR |
| | 49 | Flow Control : XON/XOFF |
| 6~8 | | Baud Rate Selection. |

| MSW9-8 | MSW9-7 | MSW9-6 | Baud Rate |
|--------|--------|--------|-----------|
| 48 | 48 | 48 | 9600 |
| 48 | 48 | 49 | 19200 |
| 48 | 49 | 48 | 38400 |
| 48 | 49 | 49 | 57600 |
| 49 | 48 | 48 | 115200 |

<Function 4> **GS (E pL pH fn a (fn=4)**

[Format] ASCII GS (E pL pH fn a
Hex 1D 28 45 pL pH fn a
Decimal 29 40 69 pL pH fn a

[Range] $(pL + pH \times 256) = 2$ (pL=2, pH=0)

fn=4

a=1, 2, 8

[Description] • Transmits the setting value(s) of the memory switch specified by a.

| | Hexadecimal | Decimal | Amount of Data |
|--------|-------------|----------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 21H | 33 | 1 byte |
| Data | 30H or 31H | 48 or 49 | 8 bytes |
| NUL | 00H | 0 | 1 byte |

• Data for the setting is transmitted as 8 bytes or a data string in the order from bit 8 to bit 1, as follows :

- Off : Hexadecimal = 30H / Decimal = 48

- On : Hexadecimal = 31H / Decimal = 49

<Function 11> **GS (E pL pH fn a d1...dk (fn=11)**

[Format] ASCII GS (E pL pH fn a d1...dk
Hex 1D 28 45 pL pH fn a d1...dk
Decimal 29 40 69 pL pH fn a d1...dk

[Range] $3 \leq (pL + pH \times 256) \leq 65535$ ($0 \leq pL \leq 255, 0 \leq pH \leq 255$)

fn=11

$1 \leq a \leq 4$

$48 \leq d \leq 57$

$1 \leq k \leq 6$

[Default] • When a=1 : (d1...dk)="19200"

• When a=2 : d=48

• When a=3 : d=48

• When a=4 : d=56

[Description] • Sets the communication conditions of the serial interface specified by a according to value d.

| a | Communication Condition | d |
|---|-------------------------|----------------------|
| 1 | Baud rate | k bytes of (d1...dk) |
| 2 | Parity | 1 byte of (d1) |
| 3 | Flow control | 1 byte of (d1) |
| 4 | Data length | 1 byte of (d1) |

- Baud rate setting (d1...dk)

| Baud rate (bps) | d1 | d2 | d3 | d4 | d5 | d6 |
|-----------------|----|----|----|----|----|----|
| 2400 | 50 | 52 | 48 | 48 | -- | -- |
| 4800 | 52 | 56 | 48 | 48 | -- | -- |
| 9600 | 57 | 54 | 48 | 48 | -- | -- |
| 19200 | 49 | 57 | 50 | 48 | 48 | -- |
| 38400 | 51 | 56 | 52 | 48 | 48 | -- |
| 57600 | 53 | 55 | 54 | 48 | 48 | -- |
| 115200 | 49 | 49 | 53 | 50 | 48 | 48 |

- Parity setting (d1)

| d1 | Parity |
|----|-------------|
| 48 | No parity |
| 49 | Odd parity |
| 50 | Even parity |

- Flow control setting (d1)

| d1 | Flow control |
|----|--------------|
| 48 | DTR / DSR |
| 49 | XON / XOFF |

- Data length setting (d1)

| d1 | Data length |
|----|-------------|
| 55 | 7 bits |
| 56 | 8 bits |

[Notes]

• If the value specified with a, d1 is out of range, this command is ignored. (The setting is not changed)

• This function code fn=11 is enabled only in the user setting mode.

<Function 12> **GS (E pL pH fn a (fn=12)**

[Format] ASCII GS (E pL pH fn a
Hex 1D 28 45 pL pH fn a
Decimal 29 40 69 pL pH fn a

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
fn=12
1 ≤ a ≤ 4

[Description] ▪ Transmits the communication conditions of the serial interface specified by a.

| a | Communication Condition |
|---|-------------------------|
| 1 | Baud rate |
| 2 | Parity |
| 3 | Flow control |
| 4 | Data length |

| | Hexadecimal | Decimal | Amount of Data |
|-------------------------------------|-------------|---------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 33H | 39 | 1 byte |
| Type of the communication condition | 31H - 34H | 49 - 52 | 1 byte |
| Separator | 1FH | 31 | 1 byte |
| Setting value | 30H - 39H | 48 - 57 | 1 - 6 bytes |
| NUL | 00H | 0 | 1 byte |

▪ Configuration of the setting value

- When the baud rate (a=1) is specified :

| Baud rate (bps) | d1 | d2 | d3 | d4 | d5 | d6 |
|-----------------|----|----|----|----|----|----|
| 9600 | 57 | 54 | 48 | 48 | -- | -- |
| 19200 | 49 | 57 | 50 | 48 | 48 | -- |
| 38400 | 51 | 56 | 52 | 48 | 48 | -- |
| 57600 | 53 | 55 | 54 | 48 | 48 | -- |
| 115200 | 49 | 49 | 53 | 50 | 48 | 48 |

- When the parity setting (a=2) is specified :

| d1 | Parity |
|----|-------------|
| 48 | No parity |
| 49 | Odd parity |
| 50 | Even parity |

- When the flow control setting (a=3) is specified :

| d1 | Flow control |
|----|--------------|
| 48 | DTR / DSR |
| 49 | XON / XOFF |

- When the data length setting (a=4) is specified :

| d1 | Data length |
|----|-------------|
| 55 | 7 bits |
| 56 | 8 bits |

▪ If a is out of range, this command ignores the value which is specified with a.

GS (L pL pH m fn [parameter]
GS 8 L p1 p2 p3 p4 m fn [parameter]

[Name] Select graphics data.
[Format] ASCII GS (L pL pH m fn [parameter]
Hex 1D 28 4C pL pH m fn [parameter]
Decimal 29 40 76 pL pH m fn [parameter]

ASCII GS (L p1 p2 p3 p4 m fn [parameter]
Hex 1D 28 4C p1 p2 p3 p4 m fn [parameter]
Decimal 29 40 76 p1 p2 p3 p4 m fn [parameter]

* In the description below **GS (L** is used for the explanation.

- Note that **GS (L** and **GS 8 L** have the same Function.

- If the [parameter] of each format exceeds 65533 bytes use **GS 8 L**.

[Description] ▪ Processes graphics data according to the function code fn.

| fn | Format | Function No. | Function |
|-------|---|--------------|--|
| 0, 48 | GS (L pL pH m fn | Function 48 | Transmits the NV graphics memory capacity. |
| 2, 50 | GS (L pL pH m fn | Function 50 | Prints the graphics data in the print buffer. |
| 3, 51 | GS (L pL pH m fn | Function 51 | Transmits the remaining capacity of the NV graphics memory. |
| 64 | GS (L pL pH m fn d1 d2 | Function 64 | Transmits the defined NV graphics key code list. |
| 65 | GS (L pL pH m fn d1 d2 d3 | Function 65 | Deletes all NV graphics data. |
| 66 | GS (L pL pH m fn kc1 kc2 | Function 66 | Deletes the specified NV graphics data. |
| 67 | GS (L pL pH m fn a kc1 kc2 b xL xH yL yH [c d1...dk]1...[c d1 dk]b | Function 67 | Defines the raster graphics data in the non-volatile memory. |
| 69 | GS (L pL pH m fn kc1 kc2 x y | Function 69 | Prints the specified NV graphics data. |
| 112 | GS (L pL pH m fn a bx by c xL xH yL yH d1...dk | Function 112 | Stores the raster graphics data in the print buffer memory. |

▪ pL, pH specifies (pL + pH x 256) as the number of bytes after pH(m, fn, and [parameter]).

▪ Frequent write command executions by this command may damage the NV memory. Therefore, it is recommended to write to the NV memory no more than 10 times a day.

▪ While processing this command, the printer is BUSY while writing data to the NV graphics memory and stops receiving data. Therefore it is prohibited to transmit data including the real-time commands during the execution of this command.

<Function 48> **GS (L pL pH m fn (fn=0, 48)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|----|---|
| [Format] | ASCII | GS | (| L | pL | pH | fn | m |
| | Hex | 1D | 28 | 4C | pL | pH | fn | m |
| | Decimal | 29 | 40 | 76 | pL | pH | fn | m |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
m=48
fn=0, 48

[Description] Transmits the total capacity of the NV bit-image memory (number of bytes in the memory area).

| | Hexadecimal | Decimal | Amount of Data |
|--------|-------------|---------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 30H | 48 | 1 byte |
| Data | 30H - 39H | 48 - 57 | 1 - 8 bytes |
| NUL | 00H | 0 | 1 byte |

- The total capacity data is converted to character codes corresponding to decimal data, then transmitted from the MSB.
- The data length is variable.
- The total capacity of the UV user memory is selectable as any one of [0, 64K, 128K, 192K, 256K, 320K, 384K] bytes with **GS (E**. The default value is 384 KB.

<Function 50> **GS (L pL pH m fn (fn=2, 50)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
m=48
fn=2, 50

[Description] Prints the buffered graphics which is stored by the process of Function 112.
Feeds paper by the amount corresponding to the number of dots in the y direction of the buffered graphics.

<Function 51> **GS (L pL pH m fn (fn=3, 51)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
m=48
fn=3, 51

[Description] Transmits the number of bytes of remaining memory (unused area) in the NV user memory.

| | Hexadecimal | Decimal | Amount of Data |
|--------|-------------|---------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 31H | 49 | 1 byte |
| Data | 30H - 39H | 48 - 57 | 1 - 8 bytes |
| NUL | 00H | 0 | 1 byte |

- The number of bytes of remaining memory is converted to character codes corresponding to decimal data, then transmitted from the MSB.
- The data length is variable.

<Function 64> **GS (L pL pH m fn d1 d2 (fn=64)**

| | | | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|----|----|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn | d1 | d2 |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn | d1 | d2 |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn | d1 | d2 |

[Range] (pL + pH x 256) = 4 (pL=4, pH=0)
m=48
fn=64
d1=75, d2=67

[Description] Transmits the defined NV graphics key code list.
When the key code is present :

| | Hexadecimal | Decimal | Amount of Data |
|--------|-------------|----------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 72H | 114 | 1 byte |
| Status | 40H or 41H | 64 or 65 | 1 byte |
| Data | 30H - 39H | 48 - 57 | 2 - 80 bytes |
| NUL | 00H | 0 | 1 byte |

When the key code is not present :

| | Hexadecimal | Decimal | Amount of Data |
|--------|-------------|---------|----------------|
| Header | 37H | 55 | 1 byte |
| Flag | 72H | 114 | 1 byte |
| Status | 40H | 64 | 1 byte |
| NUL | 00H | 0 | 1 byte |

- If the number of the key code exceed 40, the key code is transmitted dividing up to 40.
 - The status if the continuous transmission data block is present is 41H.
 - The status if the continuous transmission data block is not present is 40H.
- After the [Header-NULL] is transmitted, the printer receives a response from the host; then it performs the process defined by the response. (See the tables below.)
 - When the status (existence of the next data block) is Hexadecimal = 41H / Decimal = 65

| Response | | Process performed |
|----------|---------|------------------------------------|
| ASCII | Decimal | |
| ACK | 6 | Transmits the next data. |
| NAK | 21 | Transmits the previous data again. |
| CAN | 24 | Ends the process. |

When the status (for the last data block) is Hexadecimal = 40H / Decimal = 64

| Response | | Process performed |
|----------|---------|------------------------------------|
| ASCII | Decimal | |
| ACK | 6 | Ends the process. |
| NAK | 21 | Transmits the previous data again. |
| CAN | 24 | Cancel the process. |

<Function 65> **GS (L pL pH m fn d1 d2 d3** (fn=65)

| | | | | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|----|----|----|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn | d1 | d2 | d3 |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn | d1 | d2 | d3 |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn | d1 | d2 | d3 |

[Range] (pL + pH x 256) = 5 (pL=5, pH=0)
 m=48
 fn=65
 d1=67, d2=76, d3=82

[Description] • Deletes all defined NV graphics data.

<Function 66> **GS (L pL pH m fn kc1 kc2** (fn=66)

| | | | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|-----|-----|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn | kc1 | kc2 |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn | kc1 | kc2 |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn | kc1 | kc2 |

[Range] (pL + pH x 256) = 4 (pL=4, pH=0)
 m=48
 fn=66

32 ≤ kc1 ≤ 126
 32 ≤ kc2 ≤ 126

[Description] • Deletes the NV graphics data defined by the key codes kc1 and kc2.

<Function 67> **GS (L pL pH m fn a kc1 kc2 b xL xH yL yH [c d1...dk]1...[c d1...dk]b** (fn=67)

| | | | | | | | | | | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|---|-----|-----|---|----|----|----|----|-----------------------------|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn | a | kc1 | kc2 | b | xL | xH | yL | yH | [c d1...dk]1...[c d1...dk]b |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn | a | kc1 | kc2 | b | xL | xH | yL | yH | [c d1...dk]1...[c d1...dk]b |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn | a | kc1 | kc2 | b | xL | xH | yL | yH | [c d1...dk]1...[c d1...dk]b |

[Range] • **GS (L** parameter
 3 ≤ (pL + pH x 256) ≤ 65535 (0 ≤ pL ≤ 255, 0 ≤ pH ≤ 255)
 • **GS 8 L** parameter
 3 ≤ (p1 + p2 x 256 + p3 x 65535 + p4 x 16777216) ≤ 4294967295
 (0 ≤ p1 ≤ 255, 0 ≤ p2 ≤ 255, 0 ≤ p3 ≤ 255, 0 ≤ p4 ≤ 255)
 • Common parameter for **GS 8 L / GS (L**
 m=48
 fn=67
 a=48
 32 ≤ kc1 ≤ 126
 32 ≤ kc2 ≤ 126
 b=1, 2
 1 ≤ (xL + xH x 256) ≤ 8192
 1 ≤ (yL + yH x 256) ≤ 2304
 c=49 (when the monochrome paper is selected)
 c=50 (when the two-color paper is selected)
 0 ≤ d ≤ 255
 k = (int ((xL + xH x 256) + 7) / 8) x (yL + yH x 256)

[Description] • The total capacity of the UV user memory is selectable as any one of [0, 64K, 128K, 192K, 256K, 320K, 384K] bytes with **GS (E**. The default value is 384KB.
 • Defines the raster graphics data in the NV graphics area.
 - b specifies the number of the color of the defined data.
 - xL, xH specifies the defined data in the horizontal direction to (xL + xH x 256) dots.
 - yL, yH specifies the defined data in the vertical direction to (yL + yH x 256) dots.
 - c specifies the color of the defined data.

| c | Defined data color |
|----|--------------------|
| 49 | Color 1 |
| 50 | Color 2 |

- Color 1 means black (high level of energy) in the specified tow-color thermal paper.
 - Color 2 means red (low level of energy) in the specified tow-color thermal paper.

[Notes] • If the color is specified with b and a single color also is specified with c, the printer stops processing the command, and regards the defined data as effective up to the time when the printer stops processing, then disregards the remaining data after it.
 • When this command is processed while NV bit image data is defined with **FS q**, the printer deletes all NV bit image data, then defines data with this command.

<Function 69> **GS (L pL pH m fn kc1 kc2 b x y** (fn=69)

| | | | | | | | | | | | | |
|----------|---------|----|----|----|----|----|---|----|-----|-----|---|---|
| [Format] | ASCII | GS | (| L | pL | pH | m | fn | kc1 | kc2 | x | y |
| | Hex | 1D | 28 | 4C | pL | pH | m | fn | kc1 | kc2 | x | y |
| | Decimal | 29 | 40 | 76 | pL | pH | m | fn | kc1 | kc2 | x | y |

[Range] (pL + pH x 256) = 6 (pL=6, pH=0)
 m=48, fn=69
 32 ≤ kc1 ≤ 126
 32 ≤ kc2 ≤ 126
 x=1, 2
 y=1, 2

[Description] • Prints the NV graphics data defined by the key codes kc1 and kc2. The graphics data is enlarged by x and y in the horizontal and vertical directions.

<Function 112> **GS (L pL pH m fn a bx by c xL xH yL yH d1...dk** (fn=112)

[Format] ASCII GS (L pL pH m fn a bx by c xL xH yL yH d1...dk
 Hex 1D 28 4C pL pH m fn a bx by c xL xH yL yH d1...dk
 Decimal 29 40 76 pL pH m fn a bx by c xL xH yL yH d1...dk

[Range] • **GS (L** parameter
 $11 \leq (pL + pH \times 256) \leq 65535$ ($0 \leq pL \leq 255, 0 \leq pH \leq 255$)
 • **GS 8 L** parameter
 $11 \leq (p1 + p2 \times 256 + p3 \times 65535 + p4 \times 16777216) \leq 4294967295$
 ($0 \leq p1 \leq 255, 0 \leq p2 \leq 255, 0 \leq p3 \leq 255, 0 \leq p4 \leq 255$)
 • Common parameter for **GS 8 L / GS (L**
 m=48, fn=112, a=48
 bx=1, 2
 by=1, 2
 c=49 (when the monochrome paper is selected)
 c=50 (when the two-color paper is selected)
 - When single-color paper is specified :
 $1 \leq (yL + yH \times 256) \leq 1662$ (when by = 1)
 $1 \leq (yL + yH \times 256) \leq 831$ (when by = 2)
 - When two-color paper is specified :
 $1 \leq (yL + yH \times 256) \leq 831$ (when by = 1)
 $1 \leq (yL + yH \times 256) \leq 415$ (when by = 2)
 $0 \leq d \leq 255$
 $k = (\text{int}((xL + xH \times 256) + 7) / 8) \times (yL + yH \times 256)$

[Description] • Stores the raster graphics data, enlarged by bx and by in the horizontal and vertical directions to the print buffer.
 - xL, xH specifies the raster graphics data in the horizontal direction as (xL + xH x 256) dots.
 - xL, xH specifies the raster graphics data in the vertical direction to (yL + yH x 256) dots.
 - c specifies the color of the defined data.

| c | Printing color |
|----|----------------|
| 49 | Color 1 |
| 50 | Color 2 |

- Color 1 means black (high level of energy) in the specified tow-color thermal paper.
 - Color 2 means red (low level of energy) in the specified tow-color thermal paper.

[Notes] • In standard mode, each color can be defined only once.

GS (M pL pH fn m

[Name] Customize printer.
 [Description] • Protects or recovers values or data set or defined in the active area by commands.

| fn | Function No. | Descriptions |
|-------|--------------|---|
| 1, 49 | Function 1 | Copies the settings stored in the active area to the storage area (save settings). |
| 2, 50 | Function 2 | Copies the settings stored in the storage area to the storage area (load settings). |
| 3, 51 | Function 3 | Enables or disables automatic loading of the settings upon initialization. |

- Active area : Volatile memory (RAM)
 - Storage area : Non-volatile memory (Flash ROM)

• List of commands

| Setting value | Command |
|--------------------------------|---|
| Status | ESC c 3, GS a |
| Defined data | GS : |
| Character Kind of character | ESC M, ESC R, ESC t |
| style | ESC !, ESC -, ESC E, ESC G, ESC V, ESC f, GS !, GS B, GS b, GS (N |
| etc | ESC SP, ESC 2, ESC 3 |
| Bar code | GS H, GS f, GS h, GS w |
| 2-dimension code | <Function 065> through <Function 070> of GS (k |
| Print position | ESC D, ESC T, ESC a, GS L, GS W |
| etc | ESC c 4, ESC c 5, GS (D, GS P |

<Function 1> **GS (M pL pH fn m** (fn=1, 49)

[Format] ASCII GS (M pL pH fn m
 Hex 1D 28 4D pL pH fn m
 Decimal 29 40 77 pL pH fn m

[Range] $(pL + pH \times 256) = 2$ (pL=2, pH=0)
 fn=1, 49
 m=1, 49

[Description] • Copies the setting stored in the active area to the mth storage area.

[Notes] • Frequent write command executions by this command may damage the NV memory. Therefore, it is recommended to write to the NV memory no more than 10 times a day.
 • While processing this command, the printer is BUSY while writing data to the NV user memory and stops receiving data. Therefore it is prohibited to transmit data including the real-time commands during the execution of this command.

<Function 2> **GS (M pL pH fn m (fn=2, 50)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|----|---|
| [Format] | ASCII | GS | (| M | pL | pH | fn | m |
| | Hex | 1D | 28 | 4D | pL | pH | fn | m |
| | Decimal | 29 | 40 | 77 | pL | pH | fn | m |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
fn=2, 50
m=0, 1, 48, 49

[Description] • When (m=0,48), initializes all settings in the active area, as described in these specifications.
• When (m=1,49), copies the setting stored in the mth storage area to the active area. If no data in the storage area is protected, all settings in the active area are initialized as described in these specifications.

<Function 3> **GS (M pL pH fn m (fn=3, 51)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|----|---|
| [Format] | ASCII | GS | (| M | pL | pH | fn | m |
| | Hex | 1D | 28 | 4D | pL | pH | fn | m |
| | Decimal | 29 | 40 | 77 | pL | pH | fn | m |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
fn=3, 51
m=0, 1, 48, 49

[Description] • When m=0,48, does not load data in the storage area to the active area upon initialization.
• When m=1,49, loads data in the storage area to the active area upon initialization.

GS (N pL pH fn [parameter]

[Name] Select character style.

[Description] • Executes commands for the character style as specified by the function code fn.

| fn | Format | Function No. | Description |
|----|-------------------|--------------|--------------------------|
| 48 | GS (N pL pH fn m | Function 48 | Selects character color. |

<Function 48> **GS (N pL pH fn m (fn=48)**

| | | | | | | | | |
|----------|---------|----|----|----|----|----|----|---|
| [Format] | ASCII | GS | (| N | pL | pH | fn | m |
| | Hex | 1D | 28 | 4E | pL | pH | fn | m |
| | Decimal | 29 | 40 | 78 | pL | pH | fn | m |

[Range] (pL + pH x 256) = 2 (pL=2, pH=0)
fn=48
m=49 (when the monochrome paper is selected)
m=49,50 (when the two-color paper is selected)

[Default] m=49

[Description] • Prints characters in the color specified by m.

| m | Color |
|----|---------|
| 49 | Color 1 |
| 50 | Color 2 |

- Color 1 means black (high level of energy) in the specified two-color thermal paper.

- Color 2 means red (low level of energy) in the specified two-color thermal paper.

GS * x y [d1...d(x x y x 8)]

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

[Range] 1 ≤ x ≤ 255
1 ≤ y ≤ 48 (where x x y ≤ 1536)
0 ≤ d ≤ 255

[Description] • Defines the downloaded bit image using the number of dots specified by x and y.

- x specifies the number of dots in the horizontal direction.
- y specifies the number of dots in the vertical direction.

• When the memory switch 8-7 is On, the user-defined character and the downloaded bit image cannot be defined simultaneously. The downloaded bit image data is cleared with this command.

GS / m

| | | | | |
|----------|-----------------------------|----|----|---|
| [Name] | Print downloaded bit image. | | | |
| [Format] | ASCII | GS | / | m |
| | Hex | 1D | 2F | m |
| | Decimal | 29 | 47 | m |

[Range] 0 ≤ m ≤ 3, 48 ≤ m ≤ 51

[Description] • Prints the defined downloaded bit image in m mode.
- For SRP-370

| 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 |

- For SRP-372

| m | Mode | Vertical dot density | Horizontal dot density |
|-------|---------------|----------------------|------------------------|
| 0, 48 | Normal | 203 dpi | 203 dpi |
| 1, 49 | Double-width | 203 dpi | 203/2 dpi |
| 2, 50 | Double-height | 203/2 dpi | 203 dpi |
| 3, 51 | Quadruple | 203/2 dpi | 203/2 dpi |

dpi : dots per 25.4mm {1"}

GS :

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

[Description] • Starts or ends macro definition.
- The contents of the macro can be defined up to 2048 bytes.

GS B n

[Name] Turns white/black reverse printing mode on / off.
 [Format] ASCII GS B n
 Hex 1D 42 n
 Decimal 29 66 n
 [Range] $0 \leq n \leq 255$
 [Default] n=0
 [Description] • Turns white/black reverse printing mode on or off.
 - When the LSB of n is 0, white/black reverse mode is turned off.
 - When the LSB of n is 1, white/black reverse mode is turned on.

GS H n

[Name] Selects the printing position of HRI characters.
 [Format] ASCII GS H n
 Hex 1D 48 n
 Decimal 29 72 n
 [Range] $0 \leq n \leq 3, 48 \leq n \leq 51$
 [Default] n=0
 [Description] • Selects the printing position of HRI characters when printing a bar code.
 - n selects the execution of printing and 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. |

GS I n

[Name] Transmits printer ID.
 [Format] ASCII GS I n
 Hex 1D 49 n
 Decimal 29 73 n
 [Range] $1 \leq n \leq 3, 49 \leq n \leq 51, 65 \leq n \leq 69, n=112$
 $1 \leq n \leq 3, 49 \leq n \leq 51, 65 \leq n \leq 69$, (when TM-T88II compatible mode is selected.)
 [Description] • Transmits the printer ID specified.
 - n specifies the types of the printer ID.

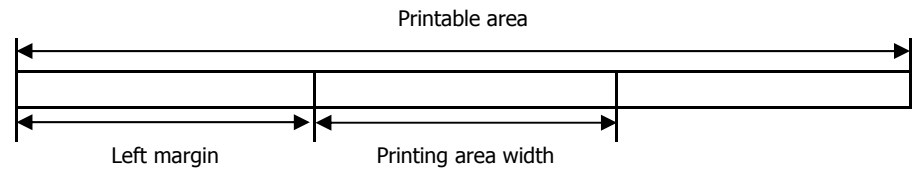
| n | Printer ID type | ID |
|-------|---------------------|--------------------------------|
| 1, 49 | Printer model ID | Hexadecimal : 2EH Decimal : 46 |
| 2, 50 | Type ID | See table below. |
| 3, 51 | Firmware version ID | Depends on firmware version. |

- n specifies the printer information.

| n | Printer ID type | ID |
|----|------------------|-----------------------------|
| 65 | Firmware version | Depends on firmware version |
| 66 | Manufacturer | BIXOLON |
| 67 | Printer name | SRP-370/372 |

GS L nL nH

[Name] Set left margin.
 [Format] ASCII GS L nL nH
 Hex 1D 4C nL nH
 Decimal 29 76 nL nH
 [Range] $0 \leq nL \leq 255$
 $0 \leq nH \leq 255$
 [Default] $(nL + nH \times 256) = 0$ (nL=0, nH=0)
 [Description] • Sets the left margin specified by nL and nH.
 - The left margin is $[(nL + nH \times 256) \times (\text{horizontal motion units})]$.



GS P x y

[Name] Set horizontal and vertical motion units.
 [Format] ASCII GS P x y
 Hex 1D 50 x y
 Decimal 29 80 x y
 [Range] $0 \leq x \leq 255$
 $0 \leq y \leq 255$
 [Default] For ANK/Multilingual model : x=180, y=360
 For Japanese Kanji model : x=203, y=406
 [Description] • Turns white/black reverse printing mode on or off.
 - For SRP-370
 When x=0, the default setting of the horizontal motion unit is used.
 When $1 \leq x \leq 255$, the horizontal motion unit is set to $25.4/x$ mm $\{(1/x)''\}$.
 When y=0, the default setting of the vertical motion unit is used.
 When $1 \leq y \leq 255$, the vertical motion unit is set to $25.4/y$ mm $\{(1/y)''\}$.
 - For SRP-372
 When x=0, the default setting of the horizontal motion unit is used.
 When $1 \leq x \leq 255$, the horizontal motion unit is set to $25.4/x$ mm $\{(1/x)''\}$.
 When y=0, the default setting of the vertical motion unit is used.
 When $1 \leq y \leq 255$, the vertical motion unit is set to $25.4/y$ mm $\{(1/y)''\}$.

GS T n

[Name] Set print position to the beginning of print line.
 [Format] ASCII GS T n
 Hex 1D 54 n
 Decimal 29 84 n
 [Range] n=0, 1, 48, 49
 [Description] • Sets the print position to the beginning of the print line.
 - n specifies how data in the print buffer is processed when this command is executed.

| n | Function |
|-------|--|
| 0, 48 | Sets the print position after the data in the print buffer is deleted. |
| 1, 49 | Sets the print position after the data in the print buffer is printed. |

- When printing is specified (n=1,49), the printer prints the data in the print buffer and executes a line feed, based on the line feed amount to be set.
 - When deleting is specified (n=0,48), the printer executes the cancel process for the print data in the print buffer, and keeps other data or setting values except for the print data.

① **GS V m**
 ② **GS V m n**

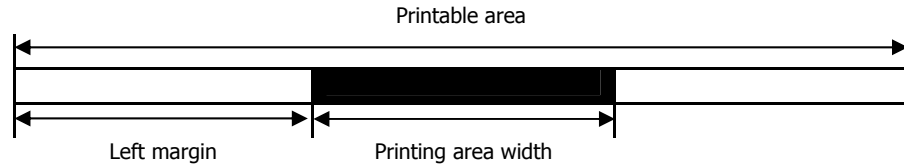
[Name] Select cut mode and cut paper.
 [Format] ① ASCII GS V m
 Hex 1D 56 m
 Decimal 29 86 m
 ② ASCII GS V m n
 Hex 1D 56 m n
 Decimal 29 86 m n
 [Range] ① m=0, 1, 48, 49
 ② m=65, 66, 0 ≤ n ≤ 255
 [Description] • Cuts paper in the specified mode.

| m | Function |
|----------------|--|
| 0, 48 1, 49 | Cuts paper (one point left uncut, full cut). |
| 65, 66 | Feeds and cuts paper (one point left uncut, full cut). |

- n specifies how data in the print buffer is processed when this command is executed.
 • Full cut or one point left uncut cannot be changed by software.

GS W nL nH

[Name] Set printing area width.
 [Format] ASCII GS W nL nH
 Hex 1D 57 nL nH
 Decimal 29 87 nL nH
 [Range] 0 ≤ nL ≤ 255
 0 ≤ nH ≤ 255
 [Default] • For SRP-370
 (nL + nH x 256)=512 (nL=0, nH=2) (for 80mm of the paper width)
 (nL + nH x 256)=384 (nL=128, nH=1) (for 60mm of the paper width)
 (nL + nH x 256)=360 (nL=104, nH=1) (for 58mm of the paper width)
 • For SRP-372
 (nL + nH x 256)=576 (nL=64, nH=2) (for 80mm of the paper width)
 (nL + nH x 256)=436 (nL=180, nH=1) (for 60mm of the paper width)
 (nL + nH x 256)=420 (nL=164, nH=1) (for 58mm of the paper width)
 [Description] • Sets the printing area width specified with nL and nH.
 - The printing area width is [(nL + nH x 256) x (horizontal motion units)].



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 ≤ nL ≤ 255
 0 ≤ nH ≤ 255
 [Description] • Sets the relative vertical print starting position from the current position in page mode. The distance from the current position to the starting position is [(nL + nH x 256) x (vertical or horizontal motion units)].

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 ≤ r ≤ 255
 0 ≤ t ≤ 255
 m=0, 1
 [Description] • Executes a macro.
 - r specifies the number of times to execute the macro.
 - t specifies the waiting time for executing the macro.
 - m specifies macro executing mode from the table below.

| m | Function |
|---|--|
| 0 | Executes the macro r times at the interval specified by t. |
| 1 | After waiting for the time specified by t, the PAPER OUT LED flashes to indicate that the FEED button must be pressed. After the button is pressed, the macro is executed once. This operation is then repeated r times. |

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 ≤ n ≤ 255

[Default] n=0 when memory switch 1-3 is Off.

n=2 when memory switch 1-3 is On.

[Description] • Specifies the status items for ASB (Automatic Status Back).

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--|
| 0 | Off | 00 | 0 | Drawer kick-out connector pin 3 disable. |
| | On | 01 | 1 | Drawer kick-out connector pin 3 enable. |
| 1 | Off | 00 | 0 | Online/Offline status disabled. |
| | On | 02 | 2 | Online/Offline 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 | Off | 00 | 0 | Reserved. |
| 5 | Off | 00 | 0 | Reserved. |
| 6 | Off | 00 | 0 | Panel button status disabled. |
| | On | 40 | 64 | Panel button status enabled. |
| 7 | Off | 00 | 0 | Reserved. |

• The status to be transmitted is the four bytes that follows.

- First byte (printer information)

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|--|
| 0 | Off | 00 | 0 | Fixed. |
| 1 | Off | 00 | 0 | Fixed. |
| 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 | Online. |
| | On | 08 | 8 | Offline. |
| 4 | Off | 10 | 16 | Fixed. |
| 5 | Off | 00 | 0 | Cover is closed. |
| | On | 20 | 32 | Cover is opened. |
| 6 | Off | 00 | 0 | Paper is not being fed by using the paper FEED button. |
| | On | 40 | 64 | Paper is being fed by using the paper FEED button. |
| 7 | Off | 00 | 0 | Fixed. |

• When the cover is open while the printing is stopped, the printer becomes offline.
- Second byte (printer information)

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|---|
| 0 | Off | 00 | 0 | Not on online waiting status. |
| | On | 01 | 1 | During online waiting status. |
| 1 | Off | 00 | 0 | Panel button OFF. |
| | On | 02 | 2 | Panel button ON. |
| 2 | Off | 00 | 0 | No mechanical error. |
| | On | 04 | 4 | Mechanical error has occurred. |
| 3 | Off | 00 | 0 | No Auto Cutter error. |
| | On | 08 | 8 | Auto Cutter error occurred. |
| 4 | Off | 00 | 0 | Fixed. |
| | Off | 00 | 0 | No unrecoverable error. |
| 5 | On | 20 | 32 | Unrecoverable error has occurred. |
| | Off | 00 | 0 | No automatically recoverable error. |
| 6 | On | 40 | 64 | Automatically recoverable error has occurred. |
| | Off | 00 | 0 | Fixed. |
| 7 | Off | 00 | 0 | Fixed. |

- Third byte (paper sensor information)

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|---|
| 0 | Off | 00 | 0 | Paper roll near-end sensor : paper adequate. |
| | On | 01 | 1 | Paper roll near-end sensor : paper near end. |
| 1 | Off | 00 | 0 | Paper roll near-end sensor : paper present. |
| | On | 02 | 2 | Paper roll near-end sensor : paper not present. |
| 2 | Off | 00 | 0 | Paper roll end sensor : paper present. |
| | On | 04 | 4 | Paper roll end sensor : paper near end. |
| 3 | Off | 00 | 0 | Paper roll end sensor : paper present. |
| | On | 08 | 8 | Paper roll end sensor : paper not present. |
| 4 | Off | 00 | 0 | Fixed. |
| 5 | Off | 00 | 0 | Reserved. |
| 6 | Off | 00 | 0 | Reserved. |
| 7 | Off | 00 | 0 | Fixed. |

• The paper roll end sensor is unstable when the cover is open.

- Fourth byte (paper sensor information)

| Bit | Off/On | Hex | Decimal | Function |
|-----|--------|-----|---------|-----------|
| 0 | On | 01 | 1 | Reserved. |
| 1 | On | 02 | 2 | Reserved. |
| 2 | On | 04 | 4 | Reserved. |
| 3 | On | 08 | 8 | Reserved. |
| 4 | Off | 00 | 0 | Fixed. |
| 5 | Off | 00 | 0 | Reserved. |
| 6 | Off | 00 | 0 | Reserved. |
| 7 | Off | 00 | 0 | Fixed. |

[Notes]

• When the memory switch Msw 8-7 is On, the printer transmits the ASB data to the host whether the host can receive or not.

• When the memory switch Msw 8-7 is On, the printer transmits the ASB data with the panel button status always being ignored.

[Reference]

APPENDIX J

GS b n

[Name] Turns smoothing mode on/off.
 [Format] ASCII GS b n
 Hex 1D 62 n
 Decimal 29 98 n
 [Range] $0 \leq nL \leq 255$
 [Default] n=0
 [Description] • Turns smoothing mode on or off.
 - When the LSB of n is 0, smoothing mode is turned off.
 - When the LSB of n is 1, smoothing mode is turned on.

GS f n

[Name] Select font for HRI characters.
 [Format] ASCII GS f n
 Hex 1D 66 n
 Decimal 29 102 n
 [Range] For ANK/Multilingual model : n=0, 1, 48, 49
 For Japanese Kanji model : $0 \leq n \leq 2, 48 \leq n \leq 50$
 [Default] n=0
 [Description] • Selects a font for the HRI characters used when printing a bar code.
 - n specifies the font of the HRI characters as follows :

| n | Font |
|-------|------------------|
| 0, 48 | Font A (12 x 24) |
| 1, 49 | Font B (9 x 17) |

GS h n

[Name] Selects bar code height.
 [Format] ASCII GS h n
 Hex 1D 68 n
 Decimal 29 104 n
 [Range] $1 \leq nL \leq 255$
 [Default] n=162
 [Description] • Selects the height of the bar code as n dots.

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

[Range] ① $0 \leq m \leq 6$ (k and d depend on the bar code system used)
 ② $65 \leq m \leq 73$ (n and d depend on the bar code system used)
 [Description] • Selects a bar code system and prints the bar code.

For ①

| m | Bar Code System | Range of k | Range of d |
|---|-----------------|--------------------------|---|
| 0 | UPC-A | $11 \leq k \leq 12$ | $48 \leq d \leq 57$ |
| 1 | UPC-E | $11 \leq k \leq 12$ | $48 \leq d \leq 57$ |
| 2 | JAN13(EAN) | $12 \leq k \leq 13$ | $48 \leq d \leq 57$ |
| 3 | JAN8(EAN) | $7 \leq k \leq 8$ | $48 \leq d \leq 57$ |
| 4 | CODE39 | $1 \leq k$ | $48 \leq d \leq 57, 65 \leq d \leq 90,$ $d=32,36,37,43,45,46,47$ |
| 5 | ITF | $1 \leq k$ (even number) | $48 \leq d \leq 57$ |
| 6 | CODABAR | $1 \leq k$ | $48 \leq d \leq 57, 65 \leq d \leq 68,$ $d=36,43,45,46,47,58$ |

For ②

| m | Bar Code System | Range of k | Range of d |
|----|-----------------|-----------------------------------|---|
| 65 | UPC-A | $11 \leq n \leq 12$ | $48 \leq d \leq 57$ |
| 66 | UPC-E | $11 \leq n \leq 12$ | $48 \leq d \leq 57$ |
| 67 | JAN13(EAN) | $12 \leq n \leq 13$ | $48 \leq d \leq 57$ |
| 68 | JAN8(EAN) | $7 \leq n \leq 8$ | $48 \leq d \leq 57$ |
| 69 | CODE39 | $1 \leq n \leq 255$ | $48 \leq d \leq 57, 65 \leq d \leq 90,$ $d=32,36,37,43,45,46,47$ |
| 70 | ITF | $1 \leq n \leq 255$ (even number) | $48 \leq d \leq 57$ |
| 71 | CODABAR | $1 \leq n \leq 255$ | $48 \leq d \leq 57, 65 \leq d \leq 68,$ $d=36,43,45,46,47,58$ |
| 72 | CODE93 | $1 \leq n \leq 255$ | $0 \leq d \leq 127$ |
| 73 | CODE128 | $2 \leq n \leq 255$ | $0 \leq d \leq 127$ |

[Notes] • User must consider the quiet zone of the bar code (left and right spaces of the bar code).

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
 [Description] Transmits the normal status specified by n as follows :

| n | Function |
|-------|---|
| 1, 49 | Transmits paper sensor status. |
| 2, 50 | Transmits drawer kick-out connector status. |

• Paper sensor status (n=1, 49) :

| Bit | Off/On | Hex | Decimal | Function |
|------|--------|-----|---------|--|
| 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 | Fixed. |
| 5 | Off | 00 | 0 | Reserved. |
| 6 | Off | 00 | 0 | Reserved. |
| 7 | Off | 00 | 0 | Fixed. |

- Bits 2 and 3 : This command cannot be executed since the printer becomes offline when the paper roll end sensor detects the paper not present. Therefore, the status of bit 2 (1) and bit 3 (1) is not transmitted.

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

| AAWBit | Off/On | Hex | Decimal | Function |
|--------|--------|-----|---------|--|
| 0 | Off | 00 | 0 | Drawer kick-out connector pin 3 is LOW. |
| | On | 01 | 1 | Drawer kick-out connector pin 3 is HIGH. |
| 1 | Off | 00 | 0 | Reserved. |
| 2 | Off | 00 | 0 | Reserved. |
| 3 | Off | 00 | 0 | Reserved. |
| 4 | Off | 00 | 0 | Fixed. |
| 5 | Off | 00 | 0 | Reserved. |
| 6 | Off | 00 | 0 | Reserved. |
| 7 | Off | 00 | 0 | Fixed. |

GS v 0 m xL xH yL yH d1...dk

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

[Range] $0 \leq m \leq 3, 48 \leq m \leq 51$
 $1 \leq (xL + xH \times 256) \leq 128$ ($0 \leq xL \leq 128, xH=0$)
 $1 \leq (yL + yH \times 256) \leq 4095$ ($0 \leq yL \leq 255, 0 \leq yH \leq 15$)
 $0 \leq d \leq 255$
 $k = (xL + xH \times 256) \times (yL + yH \times 256)$

[Description] • Prints a raster bit image in m mode.
 - m specifies the bit image mode.
 <For SRP-370>

| 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 |

<For SRP-372>

| m | Mode | Vertical dot density | Horizontal dot density |
|-------|---------------|----------------------|------------------------|
| 0, 48 | Normal | 203 dpi | 203 dpi |
| 1, 49 | Double-width | 203 dpi | 203/2 dpi |
| 2, 50 | Double-height | 203/2 dpi | 203 dpi |
| 3, 51 | Quadruple | 203/2 dpi | 203/2 dpi |

dpi : dots per 25.4mm {1"}

- xL, xH specifies (xL + xH x 256) byte(s) in the horizontal direction for the bit image.
- yL, yH specifies (yL + yH x 256) dot(s) in the vertical direction for the bit image.
- d specifies the definition data of the bit image data.

GS w n

[Name] Set bar code width.
 [Format] ASCII GS w n
 Hex 1D 77 n
 Decimal 29 119 n

[Range] $2 \leq n \leq 6$
 n=3

[Description] • Set the horizontal size of the bar code, using n as follows :
 <For SRP-370>

| n | Multi-level Bar Code Module Width (mm) | 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 |

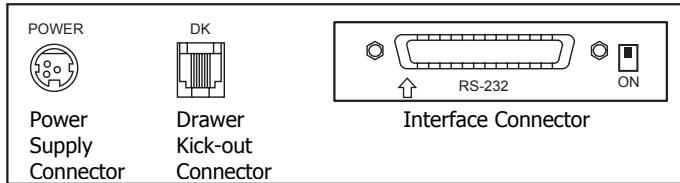
<For SRP-372>

| n | Multi-level Bar Code Module Width (mm) | Binary-level Bar Code | |
|---|---|-------------------------|--------------------------|
| | | Thin element width (mm) | Thick element width (mm) |
| 2 | 0.250 | 0.250 | 0.626 |
| 3 | 0.375 | 0.375 | 1.001 |
| 4 | 0.500 | 0.500 | 1.251 |
| 5 | 0.626 | 0.626 | 1.627 |
| 6 | 0.751 | 0.751 | 2.002 |

[Notes] • Multi-level bar codes are as follows :
 - UPC-A, UPC-E, JAN13, HAN8, CODE93, CODE128
 • Binary-level bar codes are as follows :
 - CODE39, ITF, CODABAR

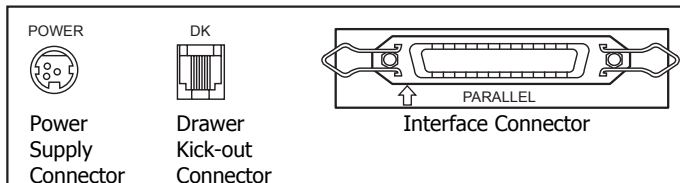
APPENDIX

A. Connectors

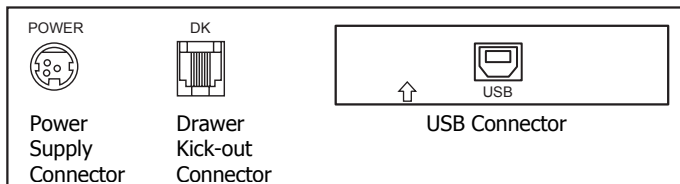


※ When the Dip Switch is "ON" on the Serial Interface Board, DTR and RTS are connected each other.

SRP-370/372 Connector (Serial Interface)

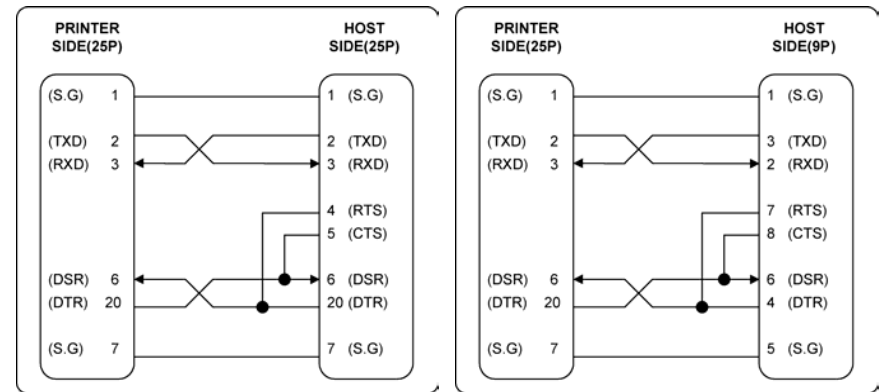


SRP-370P/372P Connector (Parallel Interface)



SRP-370U/372U Connector (USB Interface)

RS-232C Cable Connection



Interface Connector

Serial Interface (RS-232)

| Pin No. | Signal name | Direction | Function |
|---------|-------------|-----------|---------------------|
| 1 | FG | - | Frame Ground |
| 2 | TxD | Output | Transmit Data |
| 3 | RxD | Input | Receive Data |
| 4 | RTS | Output | Ready To Send |
| 5 | CTS | Input | Clear To Send |
| 6 | DSR | Input | Data Set Ready |
| 7 | SG | - | Signal Ground |
| 20 | DTR | Output | Data Terminal Ready |

Parallel Interface (IEEE-1284)

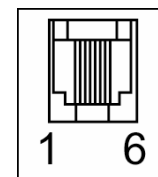
| Pin No. | Source | Compatibility Mode | Nibble Mode | Byte Mode |
|---------|----------------|--------------------|---------------------|--------------|
| 1 | Host | nStrobe | HostClk | HostClk |
| 2 | Host / Printer | Data 0 (LSB) | - | Data 0 (LSB) |
| 3 | Host / Printer | Data 1 | - | Data 1 |
| 4 | Host / Printer | Data 2 | - | Data 2 |
| 5 | Host / Printer | Data 3 | - | Data 3 |
| 6 | Host / Printer | Data 4 | - | Data 4 |
| 7 | Host / Printer | Data 5 | - | Data 5 |
| 8 | Host / Printer | Data 6 | - | Data 6 |
| 9 | Host / Printer | Data 7 (MSB) | - | Data 7 (MSB) |
| 10 | Printer | nAck | PtrClk | PtrClk |
| 11 | Printer | Busy | PtrBusy /Data3,7 | PtrBusy |
| 12 | Printer | Perror | AckDataReq/Data2,6 | AckDataReq |
| 13 | Printer | Select | Xflag /Data1,5 | Xflag |
| 14 | Host | nAutoFd | HostBusy | HostBusy |
| 15 | | NC | NC | NC |
| 16 | | GND | GND | GND |
| 17 | | FG | FG | FG |
| 18 | Printer | Logic-H | Logic-H | Logic-H |
| 19~30 | | GND | GND | GND |
| 31 | Host | nInit | nInit | nInit |
| 32 | Printer | nFault | nDataAvail /Data0,4 | nDataAvail |
| 33 | | GND | ND | ND |
| 34 | Printer | DK_Status | ND | ND |
| 35 | Printer | +5V | ND | ND |
| 36 | Host | nSelectIn | 1284-Active | 1284-Active |

USB Interface

| Pin No. | Signal Name | Assignment (Color) | Function |
|---------|-------------|--------------------|---------------|
| Shell | Shield | Drain Wire | Frame Ground |
| 1 | VBUS | Red | Host Power |
| 2 | D- | White | Data Line(D-) |
| 3 | D+ | Green | Data Line(D+) |
| 4 | GND | Black | Signal Ground |

Drawer Connector

| Pin No. | Signal name | Direction |
|---------|---------------------------------|-----------|
| 1 | Frame ground | - |
| 2 | Drawer kick- out drive signal 1 | Output |
| 3 | Drawer open/close signal | Input |
| 4 | +24V | - |
| 5 | Drawer kick- out drive signal 2 | Output |
| 6 | Signal ground | - |



B. Notes

Paper dust inside the printer may lower the print quality. In this case clean the printer as follows.

- 1) Open the printer cover and remove the paper if exists.
- 2) Clean the print head with a cotton swab moistened with alcohol solvent.
- 3) Clean the platen roller and paper end sensor with cotton swab moistened with water.
- 4) Insert a paper roll and close the printer cover.

The remained amount of paper detected by paper near end sensor varies with the diameter of the paper core. To adjust the remained amount, contact your dealer.

C. Specification

| | | |
|---|----------------|---|
| Printing method | | Thermal line printing |
| Dot density | | 180 X 180 dpi (7dots/mm) 203 X 203 dpi (8dots/mm) |
| Printing width | | 57.5mm, 72.192 ± 0.2mm |
| Paper width | | 58mm,80mm,82.5 mm |
| Characters per line (default) | | 180 DPI 42 (Font A) 203 DPI 48 (Font A) 56 (Font B) 64 (Font B) |
| Printing speed | 180 DPI | Mono : 47 lines/sec(1/6" Feed) 200mm/sec Color : 23.6 Line/ Sec(1/6inch feed) 100mm/sec |
| | 203 DPI | Mono : 42 lines/sec(1/6" Feed) 180mm/sec Color : 21 Line/ Sec(1/6inch feed) 90mm/sec |
| Receive Buffer Size | | 4K Bytes |
| NOTE : Printing speed may be slower, depending on the data transmission speed and the combination of control commands. | | |
| Supply voltage | Input voltage | 100~240 VAC |
| | Frequency | 50/60 Hz |
| | Output voltage | +24 VDC |
| Environmental Conditions | Temperature | 0 ~ 45 °C (Operating) -10 ~ 50 °C (Storage) |
| | Humidity | 30 ~ 80 % RH (Operating) 10 ~ 90 % RH (Storage) ; Except for paper |
| MCBF * | Mechanism | Monochrome :70,000,000Lines 2Color :35,000,000Lines |
| Auto cutter life * | | 1,200,000 Cut |

* These values are calculated under printing level 2 with recommended paper at normal temperature.

* These values may vary with environment temperature, printing level, etc.

KD04-00046E
Rev. 1.00

BIXOLON[®]
SAMSUNG mini printers