TOSHIBA

TOSHIBA Bar Code Printer

B-EX6T Series

Key Operation Specification

First edition: February 22, 2016
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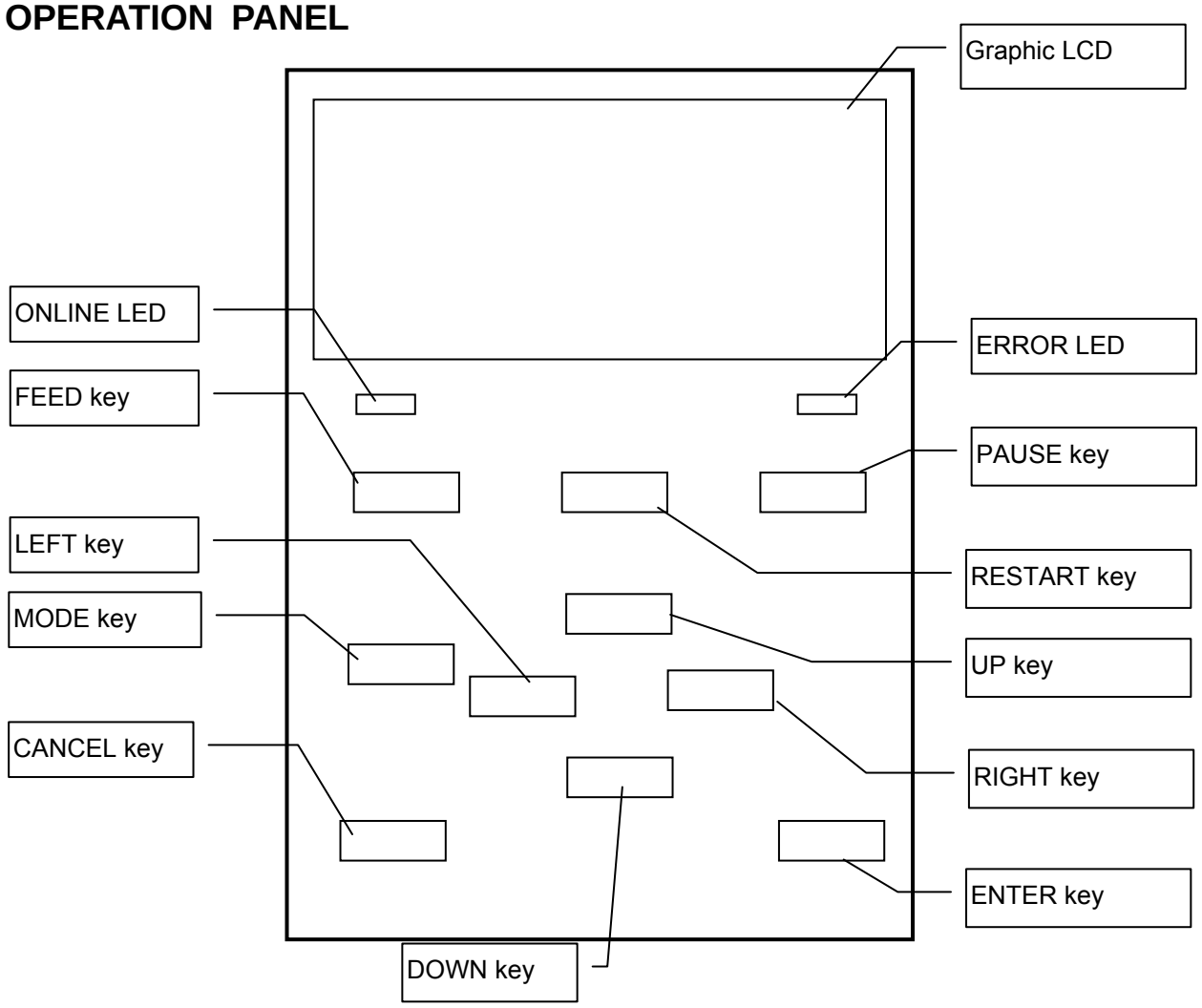
1 SCOPE

This specification describes key operations using the keys and the LCD of the B-EX6T series high-end industrial general-purpose bar code printers.

2 OUTLINE

Key operations are different depending on the printer mode: Online mode in which operations are carried out through the keys and error messages are displayed while the printer is connected to the host such as a PC, and the system mode in which self-diagnosis and setting of various parameters are performed.
This specification describes the key operation procedures with the printer keys and the LCD.
The names of the keys and LCD messages used in this specification are written in English

3 OPERATION PANEL



4 OUTLINE OF EACH MODE

This chapter describes the outline of each mode supported by the printer. Refer to each chapter for detailed information.

4.1 ONLINE MODE

This mode is mainly used by users (operators).
The label or tag can be issued in the online mode. When an error occurs, the help function shows the cause of the error, troubleshooting, and recovery from the error. The threshold setting, described below, is also a part of the online mode.

4.1.1 Threshold setting mode

Threshold setting mode is provided to correct a print failure with pre-printed media.
When using pre-print label, print start positions may not be detected correctly with the usual media sensor threshold, depending on the ink type. Such error can be prevented by setting the threshold just for the pre-printed media to be used. Since the threshold setting value is stored in the non-volatile memory, it is unnecessary to set the threshold again as long as the same pre-print media is used.

4.1.2 RFID calibration mode

In the RFID calibration mode, the distance to the optimum tag write/read position and AGC value required for properly writing/reading data on/from RFID tags are obtained through a calibration, the obtained values are set on the printer automatically, and they are reflected in the printer operation.
To write/read data on/from RFID tags with the bar code printer, it was necessary to manually set a distance to the write/read position and an AGC value, used for detecting the target tag, with @003 command and in the system mode. However, these are automatically done in the RFID calibration mode.

4.1.3 Information mode

In the information mode, the total feed amount counted during feed and printing operations is displayed on the LCD or printed in units of centimeter and inch.
Printing of the feed amount is performed on request.

4.2 USER SYSTEM MODE

The user system mode is accessible from the online mode. This mode contains the menus which might be frequently changed mainly by users (administrator) or service persons.
In addition to the menus such as parameter setting and fine adjustment common to those in the System Mode, issue condition display function, manual threshold setting, and system tools menu in which the printer dumps received data are provided.
The values set in this mode are stored in the non-volatile memory.

4.3 SYSTEM MODE

This mode is mainly used by service persons or the production department staff for adjustment of the printer before shipment. The system mode contains the menus which might be changed not so frequently.
In addition to the parameter setting and fine adjustment menus common to the User System Mode, there are sensor adjustment, interface, RFID, RTC and BASIC setting menus.
Furthermore, self-diagnosis, test print, RAM clear to initialize the printer settings, pre-shipment adjustment for factory use, and the menu which enables saving parameter settings, external characters, TPCL commands to the external USB memory or copying the data from the USB memory to the printer are provided. The values set in this mode are stored in the non-volatile memory.

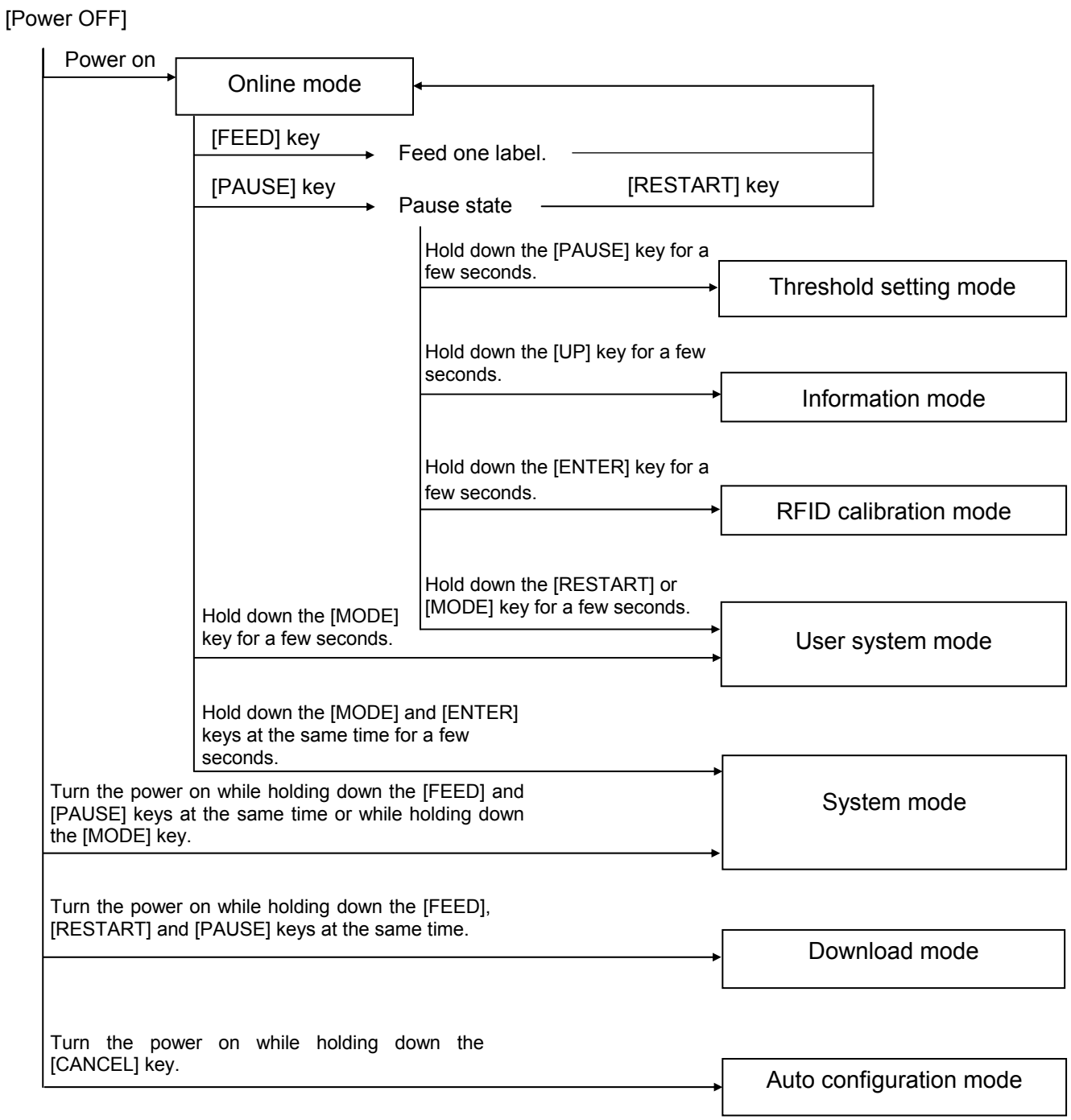
4.4 DOWNLOAD MODE

This mode is used to download boot and main programs firmware.

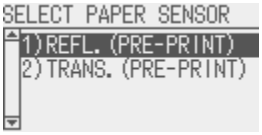
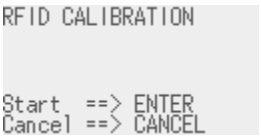
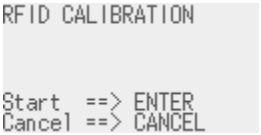
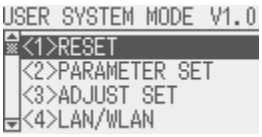
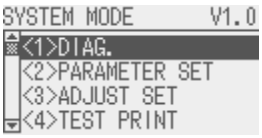
4.5 AUTO CONFIGURATION MODE

In this mode, the printer firmware is automatically updated with the program stored in a USB memory.

5 GENERAL VIEW OF KEY OPERATION



<Example of the LCD display>

Pause state	
Threshold setting mode	
RFID calibration mode	
Information mode	
User system mode	
System mode	
Download mode	
Auto configuration mode	

Notes:

1. To enter the download mode, system mode or auto configuration mode, keep holding down the specified key until each menu is shown.
2. Power off
   When the power of the printer is turned off(Enter Power SW key), the ONLINE and ERROR LEDs synchronously flashes (ON: 250ms, OFF: 250ms). When the LEDs are unlit, the printer power turns off.
   The printer power shall not be turned on again while these LEDs are flashing. Otherwise, “SYSTEM ERROR 02 POWER FAILURE” message will be displayed, and the LCD message may corrupt before the error message is displayed.
3. For the conditions to enter the Auto Configuration Mode, refer to Section12.2 Preparation for USB Memory.

6 ONLINE MODE

6.1 KEY FUNCTION

The printer behavior is not guaranteed when undefined key is operated.

6.1.1 Online Mode Screen

Key	Function
[FEED]	(1) Feedone piece of media to eject one piece of media. Use the media to feed to the print start position. If printing is attempted with the media improperly positioned, print data is not printed at the correct position. One or two pieces of media need to be fed to adjust the print start position before printing. (2) Prints the data in the image buffer on one piece of media according to the system mode setting. Note: A Clear Command or a command for drawing shall not be sent to the printer while it is printing by pressing the [FEED] key. If a command is sent, the layout will be destroyed. Also, if printing is performed by pressing [FEED] key while the data is being drawn in the image buffer, the layout may be destroyed. * For details of the following cases, refer to the parameter setting section. • How to issue the label stock having the label pitch of 25.4 mm or less in the cut issue mode when the disc cutter is used. • How to issue the label stock having the minimum label pitch or less for each print speed in the cut issue mode when the rotary cutter is used. * In the strip mode, the printer feeds labels even when the peel-off sensor is detecting a label. * When the Media Load parameter is enabled, a media feed is performed to find the print start position depending on the condition. For details, refer to Section 9.5.1 MEDIA LOAD.
[RESTART]	(1) Resume printing after a temporary stop of printing or after an error. (2) Place the printer in the initial state after startup. (3) Place the printer in the user system mode.
[PAUSE]	(1) Stop label printing temporarily. (2) Sets the threshold value.
[MODE]	(1) Place the printer in the user system mode.
[CANCEL]	(1) Clears the job.
[ENTER]	(1) Displays help messages. (2) Place the printer in the RFID calibration mode.
[UP]	(1) Place the printer in the Information mode.
[DOWN]	(1) No function.
[LEFT]	(1) No function.
[RIGHT]	(1) Displays help messages.

6.1.2 Help Screen

Key	Function
[FEED]	(1) Ends help message screen.
[RESTART]	(1) Ends help message screen.
[PAUSE]	(1) Ends help message screen.
[MODE]	(1) Ends help message screen.
[CANCEL]	(1) Ends help message screen. (2) Return to the previous help page. (3) Ends help message screen.
[ENTER]	(1) Ends help message screen. (2) Goes to the next help page. (3) Ends help message screen.
[UP]	(1) Moves the cursor upward.
[DOWN]	(1) Moves the cursor downward.
[LEFT]	(1) Returns to the previous help page. (2) Ends help message screen.
[RIGHT]	(1) Goes to the next help page. (2) Ends help message screen.

6.1.3 Manual Threshold Setting Screen

Key	Function
[FEED]	(1) Moves the cursor upward. (2) Re-sets.
[RESTART]	(1) Moves the cursor downward.
[PAUSE]	(1) Sets the threshold. (2) Fixes the selection.
[MODE]	No function.
[CANCEL]	No function.
[ENTER]	(1) Fix the selection. (2) Ends manual threshold setting.
[UP]	(1) Moves the cursor upward.
[DOWN]	(1) Moves the cursor downward.
[LEFT]	(1) Goes to the judgment result page. (2) Goes to the fine adjustment setting page.
[RIGHT]	(1) Goes to the detail page. (2) Goes to the fine adjustment setting page.

6.2 LED FUNCTION

[ONLINE] LED	Indicates that the printer is in online state.
	Flashes when the printer is communicating with the host.
	Flashes (ON: 250ms. OFF: 250ms.) in synchronization with the ERROR LED when the printer is turned off.
	Flashes in the power save mode (ON: 1 sec., OFF: 1 sec.) (Note)
[ERROR] LED	Indicates that the printer is in error state.
	Flashes when a ribbon near end condition is detected (at a 1-second interval (ON: 500ms. OFF: 500ms.)
	Flashes when a system error occurs (ON: 500ms. OFF: 500ms.)
	Flashes (ON: 250ms. OFF: 250ms.) in synchronization with the ONLINE LED when the printer is turned off.

Note: If the wireless LAN is being linked when the printer is off, both the ONLINE and ERROR LED just turns on, not flash.

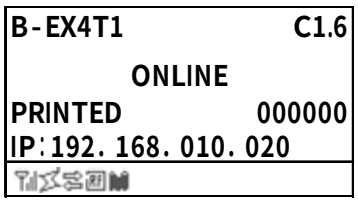
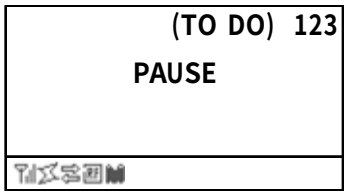
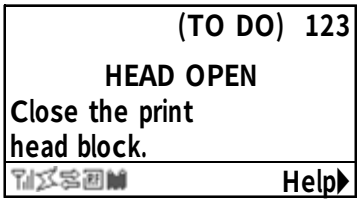
6.3 LCD FUNCTION

The LCD displays the messages which indicate the printer status.

LCD	Type	Graphics LCD
	Size	128 dots (W) x 64 dots (H)
	Display structure	Maximum of 21 digits x 5 lines

6.4 ONLINE MODE SCREEN

6.4.1 Online Mode Screen Example

Printer condition	LCD	Description of each line
Online		← Model name, Firmware version (*5) ← Message ← The number of labels printed (*1) ← IP address etc. (*4) ← Icon
Pause		← The number of remaining labels to print (*2) ← Message ← 1st line of the error message ← 2nd line of the error message (*6) ← Icon
Head open		← The number of remaining labels to print (*2) ← Message ← 1st line of the error message ← 2nd line of the error message ← Icon, Help guide (*3)

(Note):

1. Whether to display or hide the 1st, 3rd and 4th lines of online mode screen can be selected in the system mode.
2. Refer to Section 6.4.2 Icon Display for details.

(*1) The number of labels printed is the cumulative number of labels printed after a printer is powered on. Number of labels printed reset to zero when the printer is turned on. During an issue with the cut interval specified, the number of labels is updated when the label is cut normally.

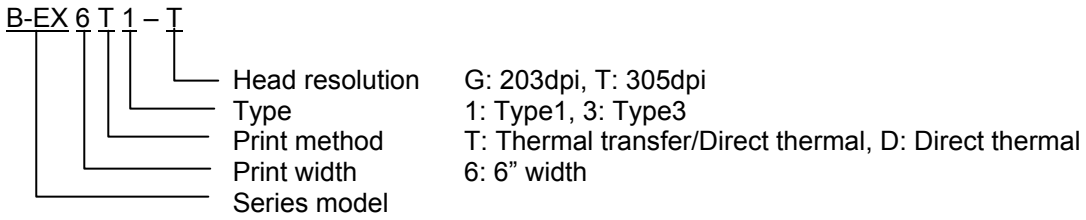
(*2) [The number of remaining labels to print] = [Specified number of labels to print] – [The number of normally printed labels before error occurs or placing the printer in pause]
When the number of remaining labels to print is zero, it is not displayed. During an issue with the cut interval specified, the number of remaining labels is updated when the label is cut normally.

(*3) The help guide is displayed only when applicable help message exists.

(*4) The message displayed here is an IP address or supplemental information such as ribbon near end.

- When LAN/WLAN setting is disabled, the IP address is not displayed even if displaying IP address is enabled in the system mode.
- The ribbon near end message is displayed when a ribbon near end is detected, regardless of whether displaying the ribbon near end message is enabled in system mode.
  A ribbon near end is detected depending on the diameter of the unused ribbon. The diameter of 38mm is equivalent to 30-meter ribbon and the diameter of 43 mm is equivalent to 70-meter ribbon, respectively.

(*5) The model name description



(*6) While the printer is in pause state, the ribbon near end message may be displayed on this line. The condition of the display is the same as *4.

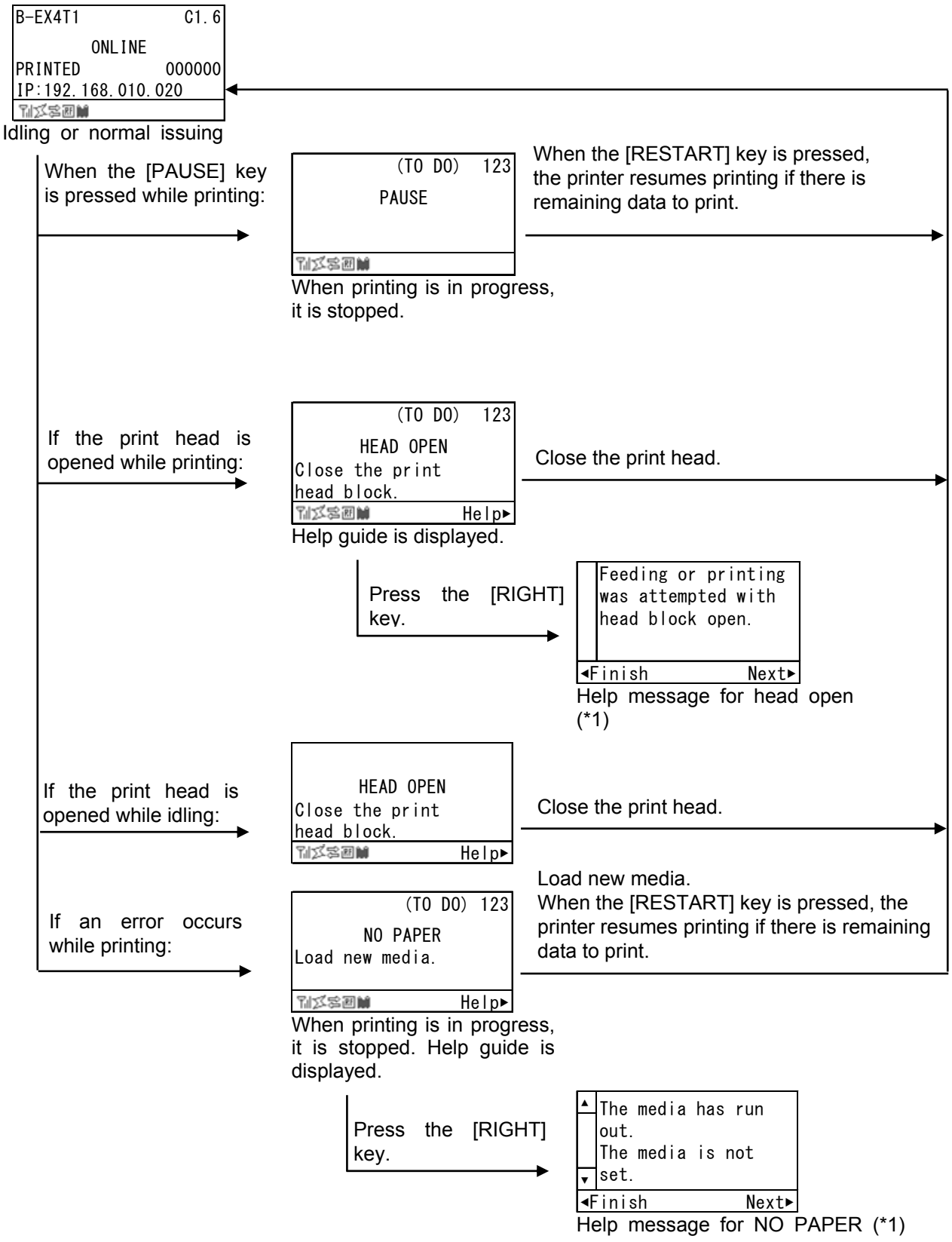
6.4.2 Icon

Five kinds of icon are displayed in the bottom line of the online mode screen.
These icons are displayed only in the online mode screen.

Icon	Explanation
Wireless LAN icon	● Displayed and used when the wireless LAN module is installed. ● The graph shows the radio field strength.  Graph 0: Outside the communication range  Graph 1: Radio field strength is weak.  Graph 2: Radio field strength is middle.  Graph 3: Radio field strength is strong.
Link icon	● Displayed and used when the wireless LAN module is installed. ● Displayed while the printer is communicating by wireless LAN. ● Flashes while roaming.  OFF: No connection  ON: Connecting to an access point Flashing: Roaming (*1)
Data transmission icon	● Appears when a print job is present.  ON: Print job is present.
RFID icon	● Displayed and used when the RFID module is installed. ● Appears when the RFID module type has been set and a communication between the printer and the RFID module is enabled. ● Flashes while communications and operating sequence are made with the RFID module. - The communications without radio wave output are included. - After radio wave output is instructed to the module, this icon flashes even when there is no radio wave output. (Flashes while the module stops outputting radio wave under the influence of other carriers or while changing the channel.)  ON: Module type has been set and the printer is ready to communicate with the RFID module.  Flashing: Communicating
Ribbon near end icon	● Ribbon near end is detected. ● Flashes when the ribbon is close to the end. ● Ribbon near end is detected depending on the diameter of unused ribbon. ∅38 mm is equivalent to 30-meter ribbon and ∅43 mm is equivalent to 70-meter ribbon.  Flashing: Ribbon near end state (*1)

(*1) The icon flashes at a 1-second interval (ON: 500 msec. OFF: 500 msec.)

6.4.3 Online Mode Screen Transition and Operation Example



(*1)
The icon flashes at a 1-second interval (ON: 500 msec. OFF: 500 msec.)

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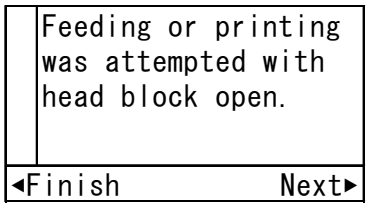
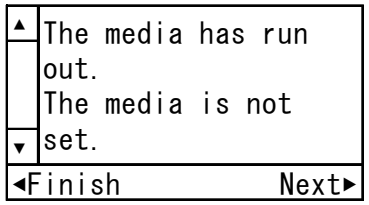
6.5 HELP SCREEN

6.5.1 Explanation of Help Screen

When “Help” is displayed at the lower right of the online mode screen, pressing the [RIGHT] or [ENTER] key causes a help message to be shown.

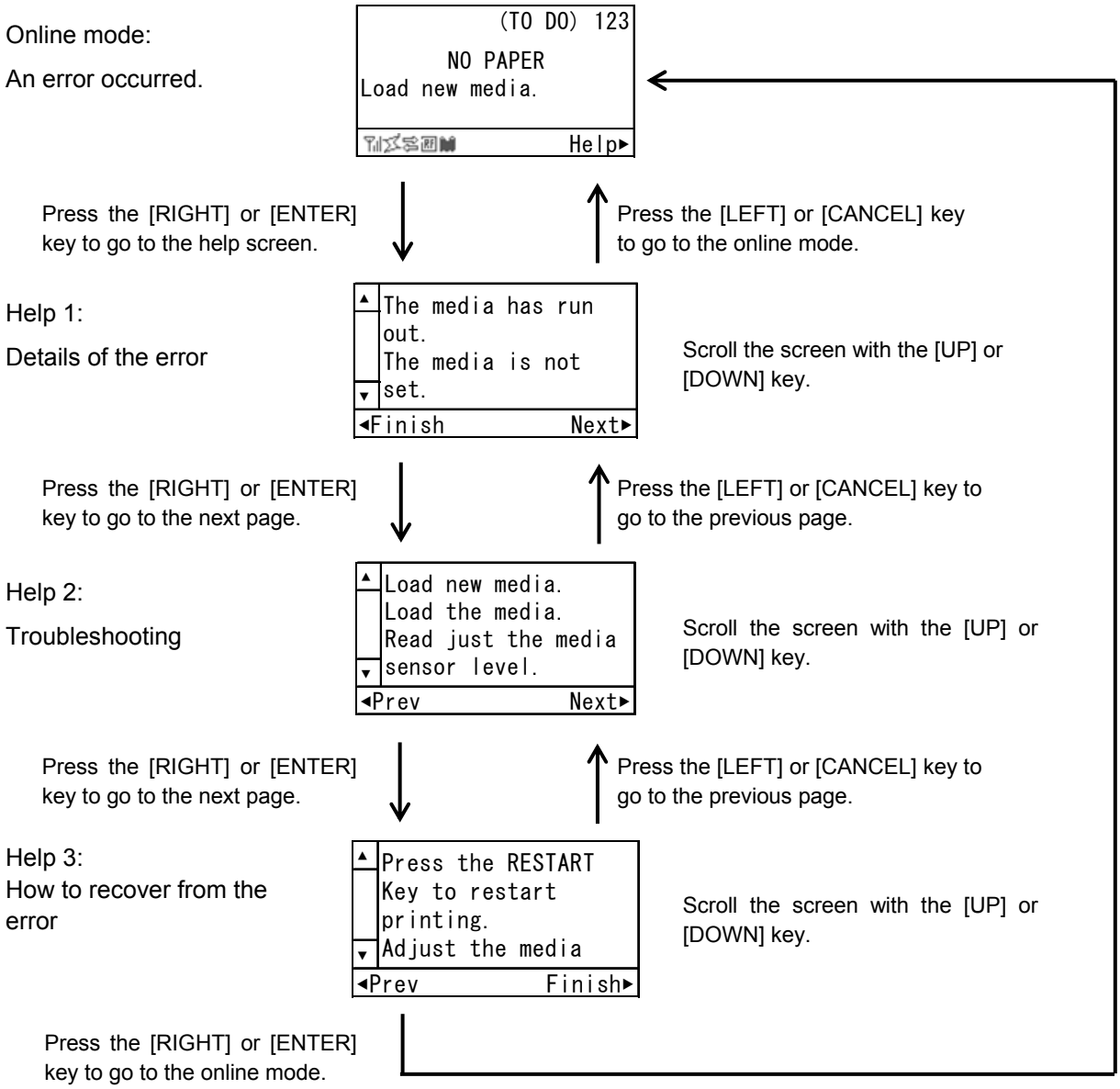
The help message is displayed on the upper four lines. When the message exceeds four lines, the up and down arrows are shown on the scrollbar on the left, and the hidden lines can be displayed by scrolling down.

Example of help message

<table>
<tr><th>Help message</th><th>Display example</th><th></th></tr>
<tr><td rowspan="2">Up to 4 lines</td><td> 
</td><td rowspan="2">← 1st line of help message
← 2nd line of help message
← 3rd line of help message
← 4th line of help message
← Help guide</td></tr>
<tr><td>Since the help message is within three lines, the scrollbar arrows are not shown.</td></tr>
<tr><td rowspan="2">5 lines or more</td><td> 
</td><td rowspan="2">← 1st line of help message
← 2nd line of help message
← 3rd line of help message
← 4th line of help message
← Help guide</td></tr>
<tr><td>Since the help message exceeds four lines, the scrollbar arrows are shown.</td></tr>
</table>

6.5.2 Help Screen Transition and Operation Example

The help screen consists of three pages, which are Help 1, Help 2 and Help 3.
Help 1 shows the details of the error, Help 2 shows a troubleshooting, and Help 3 shows how to recover from the error.



Note: When a key other than above is pressed while Help 1 or Help 2 is displayed, the help screen is ended and returned to the online mode screen.

6.6 MANUAL THRESHOLD SETTING

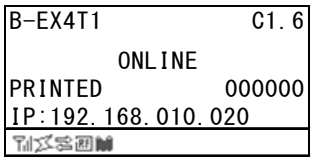
6.6.1 Outline of Threshold setting

When a label stock is printed, the printer automatically corrects the print position by detecting gaps between the labels by using the transmissive sensor to maintain a constant print position. However, when preprinted label stock is used, print positions may not be detected correctly depending on ink type used for preprints. In this case, it is required to manually set the transmissive sensor threshold through key operations and store the value in the non-volatile memory.
This threshold stored is used for printing by selecting “3: Transmissive Sensor (when using the preprinted label)” for the sensor type of the Issue Command, and data is printed at a constant print position correctly since the print positions are detected based on this threshold.

When the media with black marks printed on the back side is used, the printer automatically corrects the print position by detecting the black marks by using the reflective sensor. However, if there is reflective rate variation on the media except for the black marks, the print position cannot be corrected properly. In this case, it is required to manually set the reflective sensor threshold through key operations and store the value in the non-volatile memory.
This threshold stored is used for printing by selecting “4: Reflective Sensor (when using a manual threshold value)” for the sensor type of the Issue Command, and data is printed at a constant print position correctly since the print positions are detected based on this threshold.

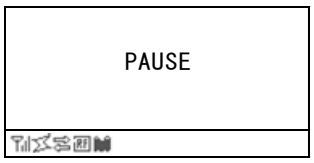
Threshold Setting Operation Example

1. Online mode:
   Online state



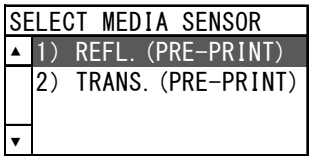
↓ Press the [PAUSE] key.

2. Online mode:
   Pause state



↓ Hold down the [PAUSE] key for 3 seconds.

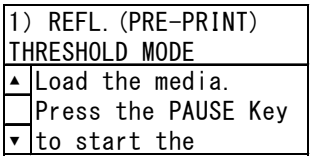
3. Threshold setting:
   Media sensor selection



Move the cursor with the [UP] or [DOWN] key.

↓ Press the [ENTER] key.

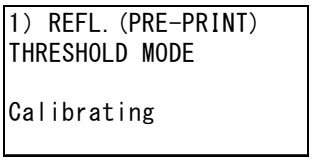
4. Threshold setting:
   Waiting for the media to be loaded



Scroll the screen with the [UP] or [DOWN] key.

↓ Press the [PAUSE] key.

5. Threshold setting:
   Calibration

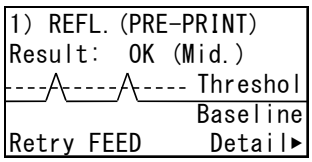


Hold down the [PAUSE] key to keep feeding the media.

↓ Release the [PAUSE] key. (Media feed stops.)

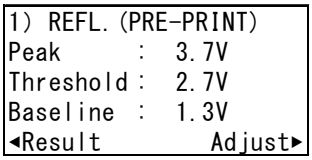
When the judgment result is OK, go to “6. Threshold setting”.
When the judgment result is NG, go to “7. Threshold setting”.

6. Threshold setting:
   6a. Judgment result: OK
   (After threshold setting)



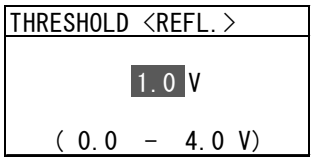
[FEED] key → “3. Media sensor selection.” (Threshold is set again.)
[ENTER] key → “2. Pause state.” (Threshold setting is completed.)
[RIGHT] key → “6b. Details of the result.” (Result and the threshold value are displayed.)

6b. Details of the result



↓ Press the [RIGHT] key.

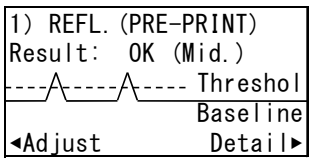
6c. Threshold fine adjustment



Operation is same as 9.7.4 THRESHOLD LEVEL.

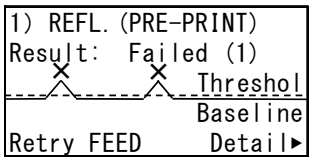
Press any of the [PAUSE], [ENTER], and [CANCEL] key.

6d. Judgment result (After the fine adjustment)



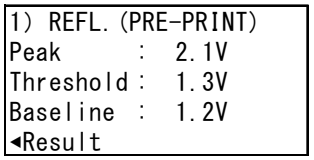
[LEFT] key → "6c. Threshold fine adjustment." (The threshold value is fine adjusted again.)
[ENTER] key → "2. Pause state." (Threshold setting is completed.)
[RIGHT] key → "6b. Details of the result." (Result and the threshold value are displayed.)

7. Threshold setting:
7a. Judgment result (NG)



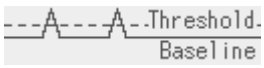
[FEED] key → "3. Media sensor selection." (Threshold is set again.)
[ENTER] key → "2. Pause state." (Threshold setting is completed.)
[RIGHT] key → "7b. Details of the result." (Result and the threshold value are displayed.)

7b. Details of the result



[LEFT] key: Go to "7a. Judgment"

The threshold setting judgment result is indicated with one of the following icon types.

No.	Display example	Icon name	Explanation
1		OK (Mid.)	Print position is detectable with the media sensor. Threshold is at the midpoint between the peak and the baseline.
2		OK (High)	Threshold is near the peak voltage, so detection of a gap/black mark may fail if the difference between the threshold and the peak voltage is very small. (Adjusting the threshold to the midpoint between the peak and the baseline enables more accurate detection.)
3		OK (Low)	Threshold is near the baseline voltage, so detection of a gap/black mark may fail if the difference between the threshold and the base voltage is very small. (Adjusting the threshold to the midpoint between the peak and the baseline enables more accurate detection.)
4		NG (1)	Print position is not detectable with the media sensor. Fine adjustment is necessary.
5		NG (1)	Print position is not detectable with the media sensor because the threshold ≤ Baseline. Fine adjustment is necessary.
6		NG (2)	Print position is not detectable with the media sensor. (Calibration may enable print position detection, but it is very difficult.)

Details of the result

Display example	Displayed item	Explanation
1) REFL.(PRE-PRINT) Peak : 3.7V Threshold : 2.7V Baseline : 1.3V ◂Result Adjust▸	• Sensor type • Peak value • Threshold voltage • Baseline voltage • Key operation guide	The calibration result and the threshold voltage are displayed. Pressing the [RIGHT] key enables setting a threshold fine adjustment value. Pressing the [LEFT] key returns the screen to the calibration result.

Notes:

(1) When the [PAUSE] key is released within 3 seconds while the printer is paused, the [PAUSE] key is invalid.

(2) To set the threshold, 1.5 pieces or more label shall be fed. (If the label feed amount is insufficient, the threshold may not be properly set. In this case, the threshold setting needs to be retried.)

(3) While the print head is lifted, the [PAUSE] key is invalid even if the [PAUSE] key is held down for 3 seconds or more.

(4) When the print position is not corrected even after the threshold is set, the sensor adjustment may be insufficient. In this case, readjust the sensor in the system mode, and set the threshold.
(When the backing paper of the label is too thick, the transmissive sensor needs to be readjusted.)

In addition, make sure that “3: Transmissive sensor (when using the preprinted label)” or “4: Reflective sensor (when using a manual threshold value)” is selected for sensor type of the Feed Command and the Issue Command.

(5) Paper end and ribbon end are not detected during the threshold setting. (The setting continues as long as the [PAUSE] key is held down even if the printer runs short of media or ribbon.)

(6) The detailed result of the calibration is shown when the [RIGHT] key is pressed while the judgment result is displayed. The measured sensor level and the currently programmed threshold fine adjustment value can be checked.

Fine adjustment value = Peak voltage – Threshold voltage

(7) Pressing the [LEFT] key returns the detailed result to the judgment result display. Pressing the [RIGHT] key causes the display to go to the threshold fine adjustment screen. This is the same menu with the threshold fine adjustment menu in section 9.7.4.1 REFLECT (Reflective sensor) or 9.7.4.2 TRANS. (Transmissive sensor).

(8) After the threshold fine adjustment value is set, the screen returns to the result display.

(9) While the result of fine adjusted threshold setting is shown, pressing the [LEFT] key returns the screen to the threshold fine adjustment screen and pressing the [RIGHT] key shows the details of the result.

(10) During a threshold setting, the media is fed at the same speed with that for the previous issue.

(11) Whether the threshold setting succeeded or not can be checked with the following methods.

■ Media feed with the [FEED] key

1) While the judgment result is displayed, press the [FEED] key to terminate the threshold setting.
   → The printer is placed in the pause state.
2) Press the [RESTART] key to clear the pause state.
   → The printer is placed in the online state.
3) Hold down the [MODE] key
   → The printer enters the system mode.
4) Select “<4>SENSOR” and “THRESHOLD SELECT”.
5) Select the applicable media sensor type (“REFLECT” or “TRANS.”) and press the [ENTER] key.
   → The selected sensor type menu is shown.
6) Select “MANUAL THRESHOLD”, press the [ENTER] key, then [MODE] key.
   → The system mode menu is displayed.
7) Turn off the power, and back to on.
   → The printer is placed in the online state.
8) Press the [FEED] key to feed the media.
   → If a paper jam occurs or the media does not stop at the print start position, retry the threshold setting.

■ Sending Issue command

1) While the judgment result is displayed, press the [FEED] key to terminate the threshold setting.
   → The printer is placed in the pause state.
2) Press the [RESTART] key to clear the pause state.
   → The printer is placed in the online state.
3) Hold down the [MODE] key.
   → The printer enters the system mode.
4) Select “<4>SENSOR” and “THRESHOLD SELECT”.
5) Select the same media sensor type with that specified by the Issue Command which is sent to the printer.

Sensor type in Issue Command	Setting
0: No sensor	Whether the threshold setting succeeded or not cannot be checked.
1: Reflective sensor	Select “<4>SENSOR”, “THRESHOLD SELECT” with the [UP], [DOWN] and [ENTER] keys. Select “REFLECT”. When the selected sensor type display is shown, select “MANUAL THRESHOLD” and press the [ENTER] key. * Select the media sensor type to the one for which the threshold was set.
2: Transmissive sensor (when using normal labels)	Select “TRANS.” When the selected sensor type display is shown, select “MANUAL THRESHOLD” and press the [ENTER] key. * Select the media sensor type to the one for which the threshold was set.
3: Transmissive sensor (when using preprinted labels)	No setting is necessary.

4: Reflective sensor (when using a manual threshold value)	No setting is necessary.

6) Press the [MODE] key.
   → The system mode menu is displayed.
7) Turn off the power, and back to on.
   → The printer is placed in the online state.
8) Send an Issue Command to make the printer print.
   → If a paper jam occurs or the media does not stop at the print start position, retry the threshold setting.

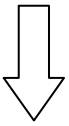
6.7 RFID CALIBRATION

The supported RFID modules and RFID tag types are as follows:

Module: B-EX700-RFID-U4-EU-R

Tag: The following tag type only (The others are unusable.)

• TSE Web (Supplier: SMARTRAC, Chip: NXP U-Code G2iL)



Feed direction

Tag name	Label pitch (mm)	Label length (mm)	Label width (mm)		Remarks
			Left	Right	
TSE Web	60	54	34		The dimensions on the left are actual measurement values.

6.7.1 Outline of the RFID Calibration

RFID calibration is a function to automatically determine the distance to the optimum write/read position and the AGC value required for properly writing/reading data on/from RFID tags.

When the result of an RFID calibration is saved (by pressing the [ENTER] key) while the detected values are shown on the screen, the value obtained through the RFID calibration is set for the CALIB. AGC and CALIB. POSITION parameters in the system mode. In addition, the following parameters are automatically set.

CALIB. MODE: ON
POWER LEVEL: 4
Q VALUE: 4

Notes:

1. Note that the optimum write/read positions and AGC value obtained through RFID calibration do not guarantee a perfect write/read, so they should be used as a guide.
2. Prior to an RFID calibration, be sure to perform an automatic calibration (User system mode → <2>SET PARAMETERS → CALIBRATE) to place the media at the print start position. In other words, an automatic calibration must be performed each time before performing RFID calibration.
3. If an RFID calibration is performed without placing the media at the print start position, an improper value may be set, which may cause an error message, “RFID WRITE ERROR”, to be shown during writing/reading data or data to be written on/read with a wrong tag.
4. Be sure to select a usable antenna position in the system mode before performing an RFID calibration. Failure to do this may cause an improper value to be set, which may cause an error message, “RFID WRITE ERROR”, to be shown during writing/reading data or data to be written on/read with a wrong tag.

Antenna position set in the system mode	Actual RF antenna position		Application
	Rotation of RF antenna	Wave director position	
FRONT	0°	FRONT	Usable
CENTER			Unusable
REAR			Unusable

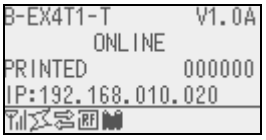
5. While an RFID calibration is performed, EPC data is written on a tag.
   The data to be written is 5555AAAA5555AAAA5555AAAA (12 bytes).
   If this data has already been written on a tag, proper operation of RFID calibration is not guaranteed. Therefore, once a tag undergoes an RFID calibration, this tag cannot be used for RFID calibration again.

6.7.2 RFID Calibration Operation Example

Note: Be sure to complete the following before performing an RFID calibration.

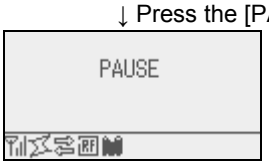
1) Select a usable antenna position in the system mode. (Refer to Section 6.7.1 Outline of the RFID Calibration.)
2) Place the RFID media at the print start position in advance by performing an automatic calibration.

[Online mode]
1. Normal state



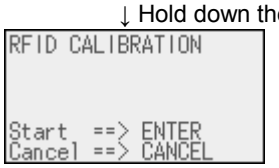
↓ Press the [PAUSE] key.

[Online mode]
2. Pause state



↓ Hold down the [ENTER] key for 3 seconds.

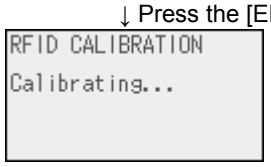
[RFID Calibration]
3. Calibration start



Pressing the [CANCEL] key returns the screen to 1. Normal state.

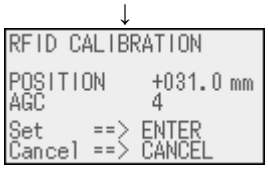
↓ Press the [ENTER] key.

[RFID Calibration]
4. Calibration is being performed.



↓

[RFID Calibration]
5a. Result: Detected.



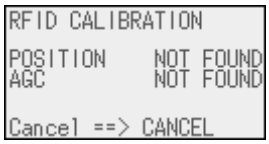
Pressing the [ENTER] key returns the screen to 1. Normal state.

The value for “POSITION” on the display is set for “CALIB. POSITION”, the value of “AGC” is set for “CALIB. AGC”, and ”CALIB. MODE” is turned ON.

Pressing the [CANCEL] key returns the screen to 1. Normal state.

The values for “POSITION” and “AGC” on the display are not saved.

[RFID Calibration]
5b. Result: Not found.



Pressing the [CANCEL] key returns the screen to 1. Normal state.

As the tag is not found, no value is saved.

Notes:

1. The position and AGC value obtained through an RFID calibration are the optimum read/write position and the optimum AGC value for the media at the print start position.
2. When the [ENTER] key is released within 3 seconds in the pause state, the [ENTER] key is invalid.
3. After performing an RFID calibration, the printer returns the RFID media to the print start position.
4. When the MOVE TO TEAROFF parameter is set to ON, an RFID calibration can be performed. In this case, the printer feeds the RFID media to the print start position temporarily, performs an RFID calibration, then returns the media to the former position.
5. If an engine-related error (such as print head open, paper end, ribbon end, and ribbon near end) occurs during an RFID calibration, the printer stops at the position of the error occurs. Therefore, the media does not return to the print start position (or the forwarded position in the case the MOVE TO TEAROFF parameter is ON.) In this case, the “5b. Result Not found screen” is displayed.
6. An RFID calibration is inoperable in the strip issue mode.
7. Do not send a command to the printer while an RFID calibration is being performed. If a command is sent during an RFID calibration, printer operation is not guaranteed.

6.8 INFORMATION MODE

6.8.1 Outline of the Information Mode

In the information mode, the total feed amount counted during feed and printing operations is displayed on the LCD in units of centimeter and inch, and printed on request.
The feed amount is counted at the end of feed or printing, and saved in the non-volatile memory.

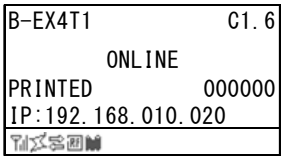
Notes:

1. The effective range of the feed amount(*1) is as follows. When the feed amount exceeds the effective range, the maximum value will be saved.
   In unit of centimeter: 0 to 320000000
   In unit of inch: 0.0 to 125984251.9
2. In the following cases, feed or printing is not counted in this feed amount(*1).
   Reverse feed, forward feed to the strip position, pre-strip feed, auto forward feed, void printing on RFID media, RFID tag position adjustment command (@003 command), pre-reverse feed when an expansion I/O device is connected, printing in offline (such as diag. test print, maintenance counter print, test print, and dump), printing in the information mode, feed for manual threshold setting, automatic calibration, and RFID calibration
3. Since the feed amount(*1) is counted based on the label pitch specified by the command, a large margin of error may be generated if the command-specified label pitch differs from the actually-measured label pitch.
4. Since the counted feed amount is saved in the non-volatile memory (EEPROM), replacement of the EEPROM is prohibited. (Except for the case the Main PC board is replaced with a service part.)

(*1): Feed amount counted in the information mode

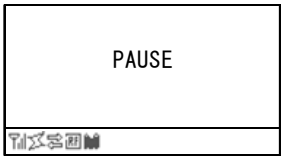
6.8.2 Information Mode Operation Example

[Online mode]
1. Normal state



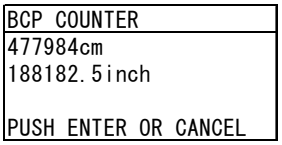
↓ Press the [PAUSE] key.

[Online mode]
2. Pause state



↓ Hold down the [UP] key for 3 seconds.

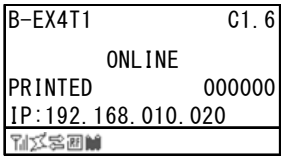
[Information mode]
3. Feed amount is displayed.



Pressing the [CANCEL] key returns the screen to 1. Normal state.

↓ Press the [ENTER] key.

[Online mode]
4. Printing is performed.



After printing is finished, the screen returns to 1. Normal state.

Notes:

1. When printing is performed in this mode, a quick reset is performed.

   Performing a quick reset causes the print count (number of labels issued) to be reset to zero and the image buffer to be cleared. When the automatic calibration is enabled, a calibration is performed after the quick reset.

   When the automatic call at power on parameter is enabled in the Saved data call command, saved data will be called after a quick reset.

2. Previous print conditions are applied to the printing performed in this mode, except:

   Print orientation

   When the mirror printing has been specified, only the mirror printing is not performed. Therefore, the bottom first mirror printing and top first mirror printing will be changed to bottom first printing and top first printing, respectively.

   Effective print width and X-coordinate fine adjustment

   When the feed amount to be printed reaches the max. number of digits (74 mm), the print position will be center-aligned.

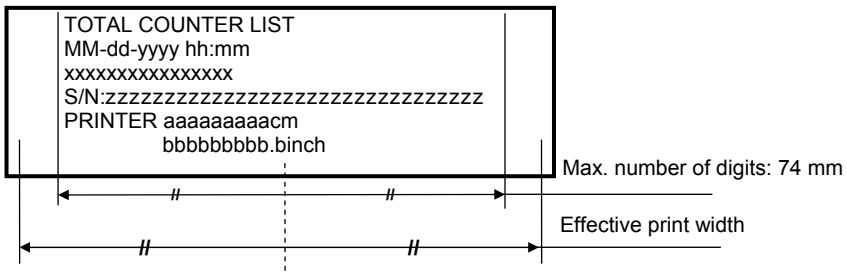
3. Before shifting to the Information mode, make sure that the printer has not received any commands related to feed or drawing. If the printer has received such commands, printing will not be performed and the printer will return to the normal state. At this time, a quick reset will not be performed.

4. Do not send a command to the printer in the Information mode.

6.8.3 Information Mode Print Sample

<Print sample>

B-EX6T1/T3: Max. number of digits: 74 mm, Center-aligned



<Print data>

Item	Information		Range
1st line	Title		TOTAL COUNTER LIST
2nd line	Date and time (*1)	MM: Month	01 to 12
		dd: Day	01 to 31
		yyyy: Year	2000 to 2099
		hh: Hour	00 to 23
		mm: Minute	00 to 59
3rd line	Model	B-EX6T1-QM/CN 203 dpi	B-EX6T1-G
		B-EX6T1-QM/CN 305 dpi	B-EX6T1-T
		B-EX6T3-QM/CN 203 dpi	B-EX6T3-G
		B-EX6T3-QM/CN 305 dpi	B-EX6T3-T
4th line	Serial number (*2)		11 to 32-digit half-size alpha-numeric (A to Z, a to z, 0 to 9, space, hyphen)
5th line	Feed amount in information mode (unit: cm)		0 to 320000000
6th line	Feed amount in information mode (unit: inch)		0 to 125984251.9

*1: When an optional real time clock is not installed, data areas in this line will be blank.
(E.g " - - : ".)

*2: In the case a serial number has never been registered to the printer, MAC address of wired LAN is printed without delimiters. If the MAC address of wired LAN cannot be obtained, this line will be blank.

6.9 JOB CANCELLATION

6.9.1 Outline of the Job Cancellation

The [CANCEL] key enables cancellation of subsequent print jobs.

Holding down the [CANCEL] key for 3 seconds while the printer is in an error* or pause state causes the printer to start a quick reset and shift to the online mode.

As long as the [CANCEL] key is held down, the data in the receive buffer is all discarded.

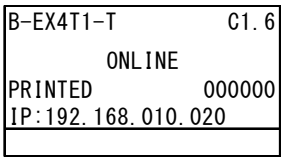
Job cancellation is finished when the [CANCEL] key is released, and the printer restores to the normal state.

*: Errors which can be recovered by a pressing the [RESTART] key
For details, refer to Section 6.10 LCD MESSAGES AND LED INDICATIONS.

*: A command error may occur if the [CANCEL] key is released before all received data has been discarded.

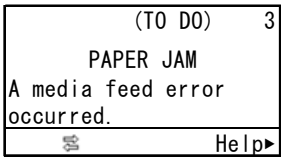
6.9.2 Job Cancellation Operation Example

[Online mode]
1. Normal state



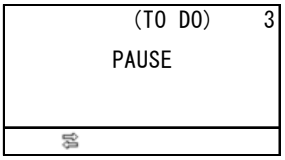
↓ Occurrence of an error or press the [PAUSE] key.

[Online mode]
2-1. Error state



Error state

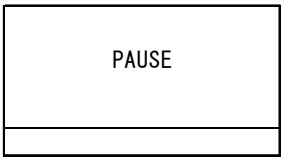
2-2. Pause state



Pause state

↓ Hold down the [CANCEL] key for 3 seconds.

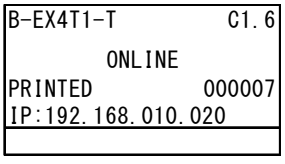
[Online mode]
3. Job cancellation after a quick reset



While the [CANCEL] key is held down, received data is discarded.

↓ Release the [CANCEL] key.

[Online mode]
4. Normal state



The printer restores to the normal state in the online mode.

6.10 LCD MESSAGES AND LED INDICATIONS

No	LCD Message 2nd line (English)	LED indications		Printer status	Restoration by the [RESTART] key Yes/No	Acceptance of Status Request and Reset Command Yes/No
		ON LINE	ERROR			
1	ONLINE	○	●	In the online mode	---	Yes
		⊙	●	In the online mode (Communicating)	---	Yes
		○	⊙	In the online mode with a ribbon near end detected (Note 1)	---	Yes
2	HEAD OPEN	●	●	A feed or an issue was attempted with the head opened.	---	Yes
		●	⊙	A feed or an issue was attempted with the head opened in a ribbon near end state. (Note 1)	---	Yes
3	PAUSE	●	●	In a pause state	Yes	Yes
		●	⊙	In a pause state with a ribbon near end detected (Note 3)	Yes	Yes
4	COMMS ERROR	●	○	A parity error or framing error has occurred during communication by RS-232C.	Yes	Yes
5	PAPER JAM	●	○	▪ A paper jam occurred during paper feed. ▪ The media is not set properly. ▪ The media actually used and the selected media sensor type do not match. ▪ The media sensor position does not align with the black mark position. ▪ The actual media size and the specified media length do not match. ▪ The media sensor level is not suitable for the actual media. ▪ The gap of pre-printed label cannot be detected.	Yes	Yes
6	CUTTER ERROR	●	○	▪ A paper jam occurred in the cutter. ▪ The cutter did not move from the home position. ▪ The cutter cover was open.	Yes	Yes
7	NO PAPER	●	○	▪ The media has run out. ▪ The media has not been set. ▪ Media sensor level is not suitable for the paper used.	Yes	Yes
8	NO RIBBON	●	○	The ribbon has run out.	Yes	Yes
9	HEAD OPEN	●	○	A feed or an issue was attempted with the head opened. (Except media feed caused by the [FEED] key or Expansion I/O)	Yes	Yes
10	HEAD ERROR	●	○	▪ A broken dot error has occurred in the thermal head. ▪ The error has occurred in the head driver.	Yes	Yes
11	EXCESS HEAD TEMP	●	○	The thermal head temperature has become excessively high.	No	Yes

12	RIBBON ERROR	●	○	▪ An abnormal condition occurred with the sensor for determining the torque of the ribbon motor. ▪ A ribbon jam occurred. ▪ The ribbon has been torn. ▪ The ribbon has not been set.	Yes	Yes
13	REWIND FULL	●	○	An overflow error has occurred in the rewinder unit.	Yes	Yes
14	SAVING ####KB/&&&&KB or SAVING %,%%%.%%%KB	○	●	External characters or PC command save mode.	---	Yes
15	FORMAT ####KB/&&&&KB or FORMAT %,%%%.%%%KB	○	●	Initializing the storage area.	---	Yes
16	NOW LOADING…	○	●	Downloading TrueType font or BASIC program	---	Yes
17	MEMORY WRITE ERR.	●	○	An error has occurred while writing data into the memory for storage. (USB memory, flash ROM on the CPU board)	No	Yes
18	FORMAT ERROR	●	○	An erase error has occurred while formatting the memory for storage (USB memory, flash Rom on the CPU board)	No	Yes
19	MEMORY FULL	●	○	Saving failed because of the insufficient capacity of the memory for storage (USB memory, flash ROM on the CPU board)	No	Yes
20	SYNTAX ERROR Command error (Refer to Notes 1 and 2)	●	○	A command error has occurred while analyzing the command.	Yes	Yes
21	POWER FAILURE	●	○	A momentary power interruption has occurred. (The LCD message may corrupt before the error message is displayed.)	No	No
22	EEPROM ERROR	●	○	A backup EEPROM cannot be read/write pr.	No	No

23	SYSTEM ERROR	●	○	When any abnormal operations as below are performed, a system error occurs. (a) Command fetch from an odd address (b) Access to the word data from a place other than the boundary of the word data (c) Access to the long word data from a place other than the boundary of the long word data (d) Access to the area of 80000000H to FFFFFFFFH in the logic space in the user system mode. (e) Undefined command placed in other than the delay slot has been decoded. (f) Undefined command in the delay slot has been decoded. (g) Command to rewrite the delay slot has been decoded.	No	No
24	DHCP CLIENT INIT…	●	●	Initializing DHCP CLIENT. * Only when DHCP is enabled	---	---
25	RFID WRITE ERROR	●	○	The printer did not succeed in writing data onto the RFID tag after having retried for the specified times.	Yes	Yes
26	RFID ERROR	●	○	The printer cannot communicate with the RFID module.	No	Yes
27	INPUT PASSWORD	●	●	The printer is waiting for an entry of password.	No	No
28	PASSWORD INVALID	●	●	A wrong password was entered consecutively for three times.	No	No
29	RFID CONFIG ERR	●	○	B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model only RFID module's destination code is not specified.	No	No
30	LOW BATTERY (Refer to Notes 4 and 5)	●	○	RTC battery is low.	No	Yes
31	INTERNAL COM ERR	●	●	A hardware error has occurred in the internal serial interface.	No	No

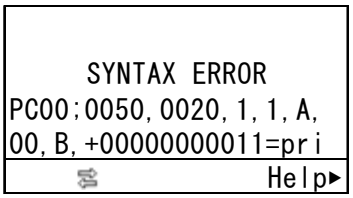
Explanation of symbols

Symbol	Explanation	Range
○:	ON	---
⊙:	Blinking	---
●:	OFF	---
%%,%%%,%%%:	Remaining memory size of the external USB memory	0 to 09,999,999 (Kbyte)
####:	Remaining memory size for PC command storage area in the internal memory	0 to 3072 (Kbyte)
&&&&:	Remaining memory size for writable character storage area	0 to 3147 (Kbyte)

Notes

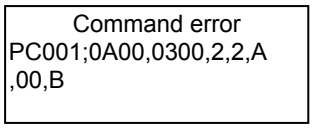
1. When the ribbon near end detection is enabled, the error LED blinks at a 1-second interval (ON for 500 msec. OFF for 500 msec.) while the printer is in a ribbon near end state.
2. When there is command error in received commands, up to 42 bytes of error command, starting from the command code, are shown on 3rd and 4th lines of the LCD.
   (However, [LF] and [NUL] are not displayed. Also, 43bytes and later are not displayed.)

   Display example



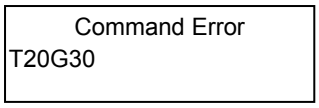
   (Example 1)
   [ESC] PC001;0**A**00,0300,2,2,A,00,B [LF][NUL]
   Command error

   LCD



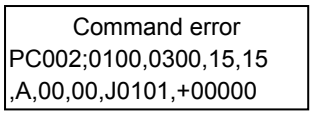
   (Example 2)
   [ESC]T20**G**30[LF][NUL]
   Command error

   LCD



   (Example 3)
   [ESC] PC002;0100,0300,15,15,A,00,00,J0101,+000000000**A**,Z10,P1[LF][NUL]
   Command error

   LCD



3. When a command error is displayed, the code other than 20H - 7FH and A0H - DFH is displayed as “?” (3FH).
4. The battery check does not work when the printer is being reset and the RTC is not installed.
5. It is necessary to follow the procedure below to use RTC function under a low battery condition:
   Turn off the printer power while the printer is in an error state. Start the printer in the system mode, set the date and time for the RTC again, then reset the printer to place the printer in online state.
   * The printer can print the programmed date and time until it is turned off.

LCD message (2nd line)

No	English
1	ONLINE
2	HEAD OPEN
3	PAUSE
4	COMMS ERROR
5	PAPER JAM
6	CUTTER ERROR
7	NO PAPER
8	NO RIBBON
9	HEAD OPEN
10	HEAD ERROR
11	EXCESS HEAD TEMP
12	RIBBON ERROR
13	REWIND FULL
14	SAVING ####KB/&&&&KB SAVING %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB FORMAT %%,%%%,%%%KB
16	NOW LOADING…
17	SETTING MODE
18	MEMORY WRITE ERR.
19	FORMAT ERROR
20	MEMORY FULL
21	SYNTAX ERROR
22	POWER FAILURE
23	EEPROM ERROR
24	SYSTEM ERROR
25	DHCP CLIENT INIT…
26	RFID WRITE ERROR
27	RFID ERROR
28	INPUT PASSWORD
29	PASSWORD INVALID
30	RFID CONFIG ERR
31	LOW BATTERY
32	INTERNAL COM ERR

No	German
1	ONLINE
2	Kopf offen.
3	PAUSE
4	Kommunikations-Fehler
5	PAPIERSTAU
6	Messer Fehler
7	Kein Papier.
8	KEIN FARBBAND
9	Kopf offen.
10	Kopf Fehler
11	Kopftemp. zu hoch
12	FARBBAND FEHLER
13	AUFWICKLER VOLL
14	SAVING ####KB/&&&&KB SAVING %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB FORMAT %%,%%%,%%%KB
16	NOW LOADING...
17	SETTING MODE
18	MEMORY WRITE ERROR
19	FORMAT ERROR
20	Speicher voll
21	SYNTAX ERROR
22	POWER FAILURE
23	EEPROM Fehler
24	SYSTEM ERROR
25	DHCP CLIENT INIT...
26	RFID WRITE ERROR
27	RFID FEHLER
28	INPUT PASSWORD
29	PASSWORT ungültig
30	RFID CONFIG Error
31	Batterie schwach
32	INTERNAL COMM ERROR

No	French
1	PRETE
2	TÊTE OUVERTE
3	PAUSE
4	ERREURS DE COMMUNICAT
5	BOURRAGE PAPIER
6	ERREUR MASSICOT
7	PAS DE PAPIER
8	PAS DE RUBAN
9	TÊTE OUVERTE
10	ERREUR DE TÊTE
11	TETE TROP CHAUDE
12	ERREUR RUBAN
13	REENROULEUR PLEIN
14	SAUVE ####KB/&&&&KB SAUVE %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB FORMAT %%,%%%,%%%KB
16	CHARGEMENT ...
17	MODE REGLAGES
18	ERR. ECRITURE MÉMOIRE
19	ERREUR DE FORMAT
20	MÉMOIRE PLEINE
21	ERREUR DE SYNTAXE
22	ERREUR D'ALIMENTATION
23	ERREUR EEPROM
24	ERREUR SYSTÈME
25	INIT CLIENT DHCP ...
26	ERREUR ECRITURE RFID
27	ERREUR RFID
28	INPUT PASSWORD
29	MOT DE PASSE INVALIDE
30	ERREUR CONFIG. RFID
31	BATTERIE FAIBLE
32	ERREUR COMM. INT.

No	Dutch
1	IN LIJN
2	PRINTKOP OPEN.
3	PAUZE
4	COMMUNICATIE FOUT
5	PAPIER STORING.
6	FOUT SNIJMES
7	GEEN PAPIER
8	GEEN LINT
9	PRINTKOP OPEN.
10	FOUT PRINTKOP
11	PRINTKOP OVERHIT.
12	LINT FOUT
13	OPROLEENHEID VOL
14	OPSLAAN ####KB/&&&&KB OPSLAAN %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB FORMAT %%,%%%,%%%KB
16	LADEN . . .
17	INSTELMODUS
18	MEM SCHRIJF FOUT
19	FORMAT FOUT
20	GEHEUGEN VOL
21	SYNTAX FOUT
22	VOEDING FOUT
23	FOUT EEPROM
24	SYSTEEM FOUT.
25	INIT CLIENT DHCP
26	SCHRIJFFOUT RFID
27	RFID FOUT
28	INPUT PASSWORD
29	ONGELDIG PASWOORD
30	RFID CONFIG. FOUT
31	LAGE BATTERIJ.
32	INTERNE COMM. FOUT

No	Spanish
1	PREPARADA
2	CABEZAL ABIERTO
3	PAUSA
4	ERROR DE COMUNICACION
5	ATASCO DE PAPEL
6	ERROR DE CORTADOR
7	SIN PAPEL
8	SIN CINTA
9	CABEZAL ABIERTO
10	ERROR DE CABEZAL
11	EXCESO TEMP. CABEZAL
12	ERROR DE CINTA
13	REBOBINADOR LLENO
14	SALVAR ####KB/&&&&KB SALVAR %%,%%%,%%%KB
15	FORMATO ####KB/&&&&KB FORMATO %%,%%%,%%%KB
16	CARGANDO...
17	MODO CONFIG.
18	ERROR DE ESCRITURA
19	ERROR DE FORMATO
20	MEMORIA LLENA
21	ERROR DE SINTAXIS
22	FALLO DE ALIMENTACION
23	ERROR EN LA EEPROM
24	ERROR DE SISTEMA
25	INIC. CLIENTE DHCP...
26	ERROR ESCRITURA RFID
27	ERROR EN RFID
28	INPUT PASSWORD
29	CONTRASEÑA NO VALIDA
30	ERROR DE CONFIG. RFID
31	BATERIA BAJA
32	ERR INTERNO COMUNIC.

No	Japanese
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No	Italian
1	On Line
2	Testina Aperta
3	PAUSA
4	Errore Seriale
5	Carta inceppata
6	Errore Taglierina
7	Manca Carta
8	Manca Nastro
9	Testina Aperta
10	ERRORE TESTINA
11	Temp. testa alta
12	ERRORE NASTRO
13	REWINDER PIENO
14	SALVA ####KB/&&&&KB SALVA %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB FORMAT %%,%%%,%%%KB
16	CARICAMENT
17	Configurazione
18	Err. Scritt. memoria
19	ERRORE FORMATTAZIONE
20	Memoria piena
21	SYNTAX ERROR
22	ERRORE ALIMENT.
23	Errore EEPROM
24	SYSTEM ERROR
25	DHCP CLIENT INIT...
26	RFID WRITE ERROR
27	RFID ERROR
28	INPUT PASSWORD
29	PASSWORD ERRATA
30	RFID CONFIG ERR
31	BATTERIA BASSA
32	Errore Comm Interna

No	Portuguese
1	PREPARADA
2	CABECA ABERTA
3	PAUSA
4	ERRO DE COMUNICACAO
5	PAPEL ENCRAVADO
6	ERRO DE CORTADOR
7	SEM PAPEL
8	SEM FITA
9	CABECA ABERTA
10	ERRO DE CABECA
11	EXCESSO TEMP. CABECA
12	ERRO DE FITA
13	REBOBINADOR CHEIO
14	SALVAR ####KB/&&&&KB SALVAR %%,%%%,%%%KB
15	FORMATO ####KB/&&&&KB FORMATO %%,%%%,%%%KB
16	A CARREGAR...
17	MODO CONFIG.
18	ERRO DE ESCRITA
19	ERRO DE FORMATO
20	MEMORIA CHEIA
21	ERRO DE SINTAXE
22	FALHA DE ALIMENTACAO
23	ERRO NA EEPROM
24	ERRO DE SISTEMA
25	INIC. CLIENTE DHCP...
26	ERRO ESCRITA RFID
27	ERRO EM RFID
28	INPUT PASSWORD
29	SENHA INVALIDA
30	ERRO DE CONFIG. RFID
31	POUCA BATERIA
32	ERR INTERNO COMUNIC.

No	Chinese
1	ONLINE
2	打印头打开
3	暂停
4	通讯错误
5	卡纸
6	切刀错误
7	缺纸
8	无碳带
9	打印头打开
10	打印头错误
11	过高打印头温度。
12	碳带错误
13	回卷器满
14	保存 ####KB/&&&&KB 保存 %%,%%%,%%%KB
15	格式化 ####KB/&&&&KB 格式化 %%,%%%,%%%KB
16	正在加载…
17	设置模式
18	内存写入错误
19	格式化错误
20	内存满
21	语法错误
22	电源故障
23	EEPROM 错误
24	系统错误。
25	DHCP 客户端初始化…
26	RFID 写入错误
27	RFID 错误
28	INPUT PASSWORD
29	密码无效
30	RFID 配置错误
31	电量低
32	内部通讯错误

No	Korean
1	온라인
2	헤드 열림
3	PAUSE
4	통신 에러.
5	용지 잼
6	커터 에러
7	종이가 없습니다.
8	리본이 없습니다.
9	헤드 열림
10	써멀헤드 에러.
11	헤드 이상 과열.
12	리본 에러
13	리와인더에 가득 참
14	등록 ####KB/&&&&KB
	등록 %%,%%%,%%%KB
15	초기화 ####KB/&&&&KB
	초기화 %%,%%%,%%%KB
16	등록중
17	설정 모드 중
18	메모리 쓰기 에러.
19	초기화 에러
20	메모리 오버
21	커맨드 에러
22	전원 이상
23	EEPROM 에러
24	시스템 에러
25	DHCP CLIENT 초기화중
26	RFID 쓰기 에러
27	RFID 에러
28	INPUT PASSWORD
29	패스워드 에러
30	RFID 설정 에러
31	배터리 저전압
32	내부 시리얼 에러

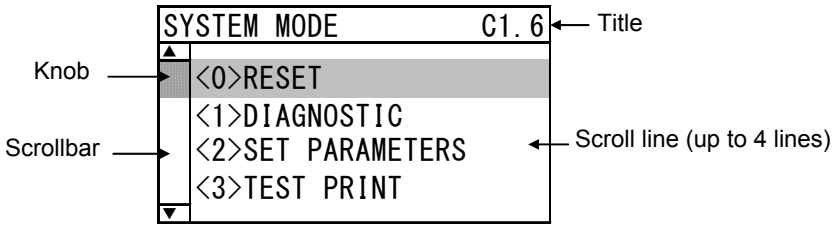
No	Turkish
1	ONLINE
2	Kafa açık
3	PAUSE
4	İLETİŞİM HATASI
5	Kağıt sıkışması
6	KESİCİ HATASI
7	Kağıt yok
8	Ribbon yok
9	Kafa açık
10	Kafa hatası
11	Kafada aşırı ısınma
12	RIBBON HATASI
13	SARICI DOLU
14	KAYIT ####KB/&&&&KB
	KAYIT %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB
	FORMAT %%,%%%,%%%KB
16	YÜKLÜYOR…
17	AYAR MODU
18	Hafızaya yazma hatası
19	FORMAT hatası
20	Hafıza dolu
21	SYNTAX HATASI
22	GÜÇ HATASI
23	EEPROM hatası
24	SISTEM HATASI
25	DHCP istemci başlıyor
26	RFID YAZMA HATASI
27	RFID HATASI
28	INPUT PASSWORD
29	GEÇERSİZ ŞİFRE
30	RFID AYAR HATASI
31	DÜŞÜK PİL
32	İç iletişim hatası

No	Polish
1	ONLINE
2	OTWARTA GŁOWICA.
3	PAUZA
4	BŁĄD COMMS
5	ZACIĘCIE PAPIERU
6	BŁĄD NOŻA
7	BRAK PAPIERU
8	BRAK TAŚMY
9	OTWARTA GŁOWICA.
10	BŁĄD GŁOWICY
11	PRZEKR TEMP GŁOWICY
12	BŁĄD TAŚMY
13	NAWIJAK PEŁEN
14	ZAPIS ####KB/&&&&KB
	ZAPIS %%,%%%,%%%KB
15	FORMAT ####KB/&&&&KB
	FORMAT %%,%%%,%%%KB
16	ŁADOWANIE...
17	TRYB USTAWIEŃ
18	BŁĄD ZAPISU PAMIĘCI
19	BŁĄD FORMATOWANIA
20	PAMIĘĆ PEŁNA
21	BŁĄD SKŁADNI
22	BŁĄD ZASILANIA
23	BŁĄD EEPROM
24	BŁĄD SYSTEMU
25	INICJ KLIENTA DHCP...
26	BŁĄD ZAPISU RFID
27	BŁĄD RFID
28	INPUT PASSWORD
29	BŁĘDNE HASŁO
30	BŁĄD KONFIG RFID
31	SŁABA BATERIA
32	WEWN. BŁĄD COMM

7 DISPLAY PATTERN AND KEY OPERATION FOR SYSTEM MODE AND USER SYSTEM MODE

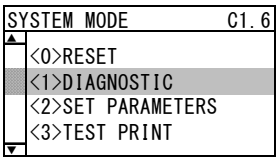
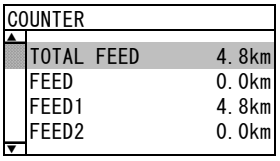
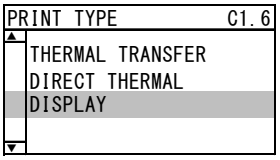
7.1 LIST BOX WITH SCROLLBAR

The list box is used for displaying the menus or items to be selected. It is comprised of the following parts.



The knob appears on the scrollbar when the number of scroll lines is over 4 lines.

There are three types of list box with scrollbar, as follows.

	Display
Menu screen (without setting value)	
Menu screen (with setting value)	
Setting value selection screen	

Key function (Menu screen)

Key	Substitute Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper-level menu without saving changes.
[ENTER]	[PAUSE]	Displays a next screen.
[UP]	[RESTART]	Moves the cursor upward. When the cursor is positioned at the top of the list, it scrolls from the top to the bottom.
[DOWN]	[FEED]	Moves the cursor downward. When the cursor is positioned at the bottom of the list, it scrolls from the bottom to the top.
[LEFT]	None	No function
[RIGHT]	None	No function

Key function (value setting display)

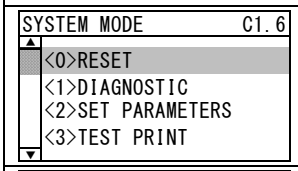
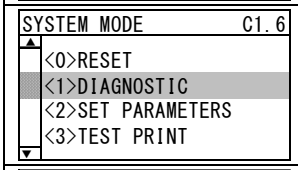
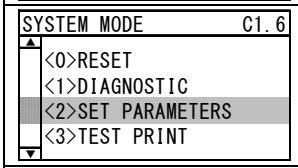
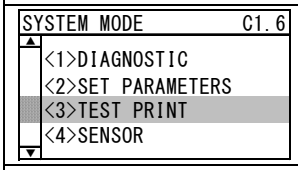
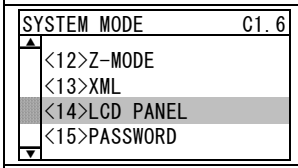
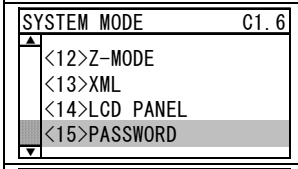
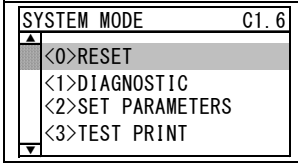
Key	Substitute Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper-level menu without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper-level menu.
[UP]	[RESTART]	Moves the cursor upward. When the cursor is positioned at the top of the list, it scrolls from the top to the bottom.
[DOWN]	[FEED]	Moves the cursor downward. When the cursor is positioned at the bottom of the list, it scrolls from the bottom to the top.
[LEFT]	None	No function
[RIGHT]	None	No function

Note:

Printer operation is not guaranteed when multiple keys are pressed at the same time except for those mentioned above ([FEED]+[RESTART]).

Movement of the cursor in screen scroll

The cursor moves in the following way with a press the [UP] or [DOWN] key. The following table shows the example of press the [DOWN] key. The [UP] key functions in the same way.

Display	Key operation	Explanation
		
	Press the [DOWN] key.	The position of the displayed menus remains unchanged and only the cursor moves down to the next item.
	Press the [DOWN] key.	The position of the displayed menus remains unchanged and only the cursor moves down to the next item.
	Press the [DOWN] key.	The entire menu list moves up by one line and the cursor moves down to the next item.
:	:	
	Press the [DOWN] key.	The entire menu list moves up by one line and the cursor moves down to the next item.
	Press the [DOWN] key.	The position of the menu list remains unchanged and only the cursor moves down to the next item.
	Press the [DOWN] key.	When the cursor is positioned at the bottom of the list, the menu and the cursor scroll from the bottom to the top.

Notes:

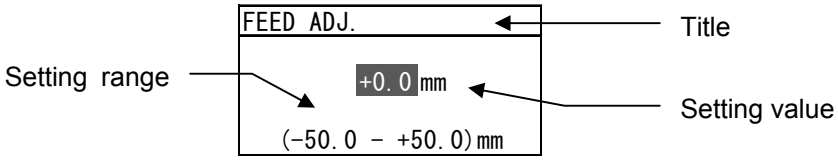
1. Cursor position when shifting from upper-level menu to its sub menu
   When shifting from upper-level menu to its sub menu, the cursor is positioned at the topmost item except for RFID setting menu (because the RFID menu items show the setting value).
2. Cursor position when shifting from upper-level menu to its subordinate value setting screen
   When shifting from upper-level menu to its subordinate value setting screen, the cursor is positioned at the currently selected item.
3. Cursor position when shifting from sub menu or value setting screen to its upper-level menu
   When shifting from lower menu or value setting screen to its upper-level menu, the cursor is positioned at the previously selected item.

4. When the [MODE] key is pressed while the main menu is displayed:
   When the [MODE] key is pressed while the main menu of the system mode or user system mode is displayed, the cursor is positioned at the topmost item.
5. When the [CANCEL] key is pressed while the main menu is displayed:
   When the [CANCEL] key is pressed while the main menu of the system mode or user system mode is displayed, the cursor does not move from the current position.

7.2 VALUE SETTING SCREEN

The value setting screen is used for setting a value by increasing or decreasing it.
It is comprised of the following parts.

Display example



Notes:

1. The currently programmable item is highlighted.
2. The display of the symbols like “+” and “-“, and the unit of measure like “mm” and “step” differs depending on the item to be set.

	Display
Setting screen with one field	FEED ADJ. +0.0 mm (-50.0 - +50.0)mm
Setting screen with multiple fields (placed horizontally)	IP ADDRESS 192.168.010.002
Setting screen with multiple fields (placed vertically)	READ RETRY 5 times (0 - 255)times 4.0 sec (0.0 - 9.9)sec

Key function (Setting screen with one field)

Key	Substitute Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper-level menu without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper-level menu.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it returns to the minimum value and increases.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it returns to the maximum value and decreases.
[LEFT]	None	No function
[RIGHT]	None	No function

Key operation (Setting screen with multiple fields (horizontal))

Key	Substitute Key	Function
[MODE]	None	Return to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Return to the upper-level menu without saving changes.
[ENTER]	[PAUSE]	Save the changes and returns to the upper-level menu.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it returns to the minimum value and increases.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it returns to the maximum value and decreases.
[LEFT]	None	Moves the cursor to the left field. The cursor does not move any further when the left-most field is selected.
[RIGHT]	None	Moves the cursor to the right field. The cursor does not move any further when the right-most field is selected.

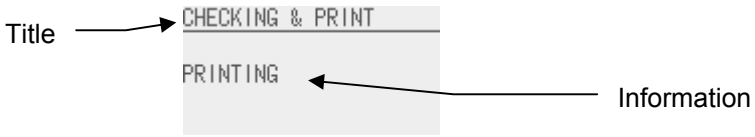
Key function (Setting screen with multiple fields (vertical))

Key	Substitute Key	Function
[MODE]	None	Return to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Return to the upper-level menu without saving changes.
[ENTER]	[PAUSE]	Save the changes and returns to the upper-level menu.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it returns to the minimum value and increases.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it returns to the maximum value and decreases.
[LEFT]	None	Moves the cursor to the upper field. The cursor does not move any further when the topmost field is selected.
[RIGHT]	None	Moves the cursor to the lower field. The cursor does not move any further when the bottom field is selected.

7.3 INFORMATION SCREEN

The information screen is used when there is no settings are configured.
It is comprised with the following:

Display example



	Display
	CHECKING & PRINT PRINTING
Scroll	FILE MAINTENANCE 00 ZEBRASTMSX5. 01 ---------- 02 SHORT.BAS 03 ----------
RFID tag read	ID READ TAG 1/1 00010203 04050607 08090A0B 0C0D0E0F

Key function

Key	Substitute Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	[FEED] + [RESTART]	Displays the upper-level menu.
[ENTER]	[PAUSE]	Displays the upper-level menu.
[UP]	[RESTART]	No function
[DOWN]	[FEED]	No function
[LEFT]	None	No function
[RIGHT]	None	No function

Key function (Scroll)

Key	Substitute Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	[FEED] + [RESTART]	Displays the next screen or upper-level menu.
[ENTER]	[PAUSE]	Displays the next screen or upper-level menu.
[UP]	[RESTART]	Moves the cursor upward. When the cursor is positioned at the top of the list, it scrolls from the top to the bottom.
[DOWN]	[FEED]	Moves the cursor downward. When the cursor is positioned at the bottom of the list, it scrolls from the bottom to the top
[LEFT]	None	No function
[RIGHT]	None	No function

Key function (RFID tag read)

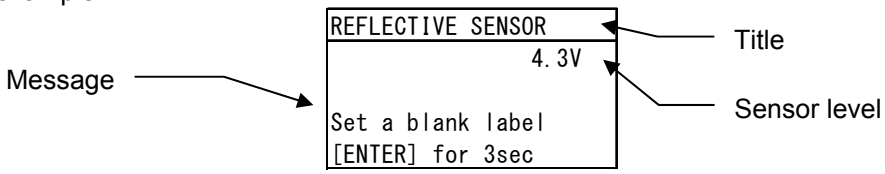
Key	Substitute Key	Function
[MODE]	None	Displays the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Displays the upper-level menu without saving changes.
[ENTER]	[PAUSE]	RFID tag is read again.
[UP]	[RESTART]	Displays the data of the previous tag. The display does not change when the first tag data is being shown.
[DOWN]	[FEED]	Displays the data of the next tag. The display does not change when the last tag data is being shown.
[LEFT]	None	No function
[RIGHT]	None	No function

7.4 SENSOR ADJUSTMENT SCREEN

The sensor adjustment screen is used only when the level of the media sensors on the printer is required to be adjusted.

It is comprised with the following :

Display example



	Display
Before adjustment	REFLECTIVE SENSOR 4.3V Set a blank label [ENTER] for 3sec
After adjustment	REFLECTIVE SENSOR 4.5V * Adjust Complete

Key function (before adjustment)

Key	Substitute Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	None	Displays the upper-level menu.
[ENTER]	None	When held down for 3 seconds or more, the sensor adjustment is performed. When this key is released within 3 seconds, the screen returns to the upper-level menu.
[UP]	None	No function
[DOWN]	None	No function
[LEFT]	None	No function
[RIGHT]	None	No function

Key function (after adjustment)

Key	Substitute Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	None	Displays re-adjustment menu.
[ENTER]	None	Displays the upper-level menu.
[UP]	None	No function
[DOWN]	None	No function
[LEFT]	None	No function
[RIGHT]	None	No function

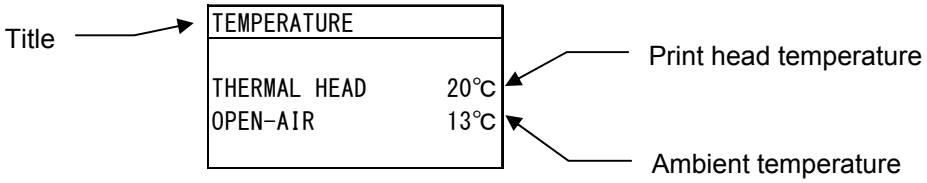
Notes:

1. The symbol “*” shown on the right side of the adjustment value indicates the completion of adjustment.
2. The voltage value being selected is updated approximately every 200 msec. interval.

7.5 TEMPERATURE DISPLAY SCREEN

Temperature display screen is used only for displaying the print head temperature and ambient temperature. It is comprised with the following :

Display example



	Display
Display of temperatures	TEMPERATURE THERMAL HEAD 20℃ OPEN-AIR 13℃

Key function

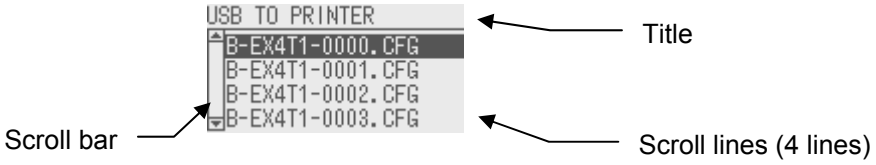
Key	Substitute Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	None	Displays the upper-level menu.
[ENTER]	None	Displays the upper-level menu.
[UP]	None	No function
[DOWN]	None	No function
[LEFT]	None	No function
[RIGHT]	None	No function

Note: Each temperature is updated approximately every 200 msec. interval

7.6 FILE SELECTION SCREEN

File selection screen is used for selecting a file when copying data from USB memory to the printer.
It is comprised with the following :

Display example



Note:
1. The scrollbar knob on the file selection screen is not displayed regardless of the number of files.

There are two types of file selection screensas follows.

Copy data selection screen	
CFG file selection screen	

Key function

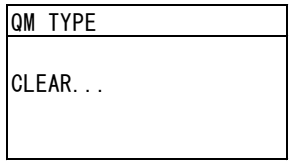
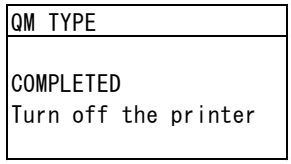
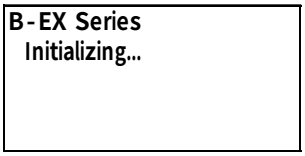
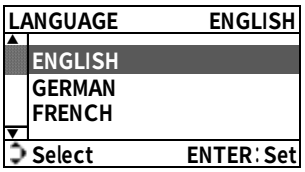
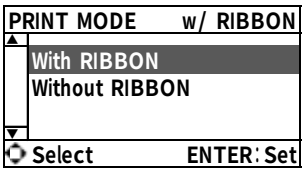
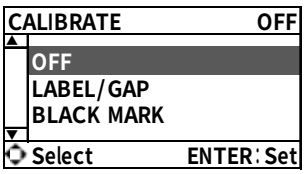
Key	Substitute Key	Function
[MODE]	None	Displays the top menu without selecting a file.
[CANCEL]	[FEED]+[RESTART]	Displays the upper-level menu without selecting a file.
[ENTER]	[PAUSE]	Displays the next page.
[UP]	[RESTART]	Moves the cursor upward. The cursor does not move any further when it is positioned at the top.
[DOWN]	[FEED]	Moves the cursor downward. The cursor does not move any further when it is positioned at the bottom.
[LEFT]	None	No function
[RIGHT]	None	No function

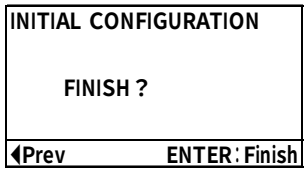
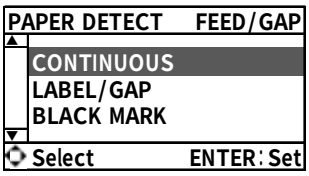
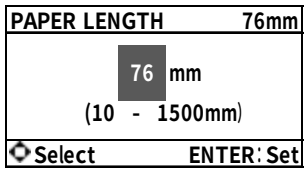
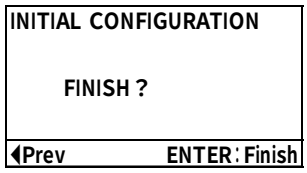
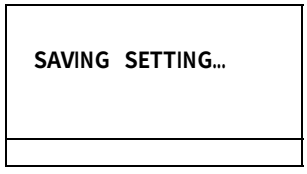
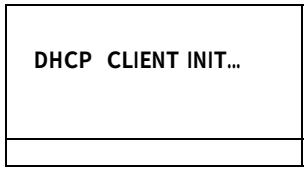
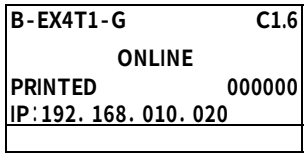
Note:
Printer operation is not guaranteed when multiple keys are pressed at the same time except for those mentioned above (e.g. [FEED]+[RESTART]).

8 Initial Setting Wizard (Not available in JA Type)

Only when the printer is started for the first time after clears a parameter, the initial setting wizard is started. This wizard enables setting the basic parameters, such as the LCD language and print mode, required for various printer settings. The values set with this wizard can be modified in the system mode and by commands.

Example of the Initial Setting Wizard Operation

	RAM clear with QM type selected	
1. Clears a parameter.	 ↓  ↓ Power OFF/ON  ↓	
2. The initial setting wizard is started.	 ↓ [ENTER] key	
3. Select a language.	 ↓ [ENTER] key	Choose an option with the [UP] or [DOWN] key.
4. Print mode	 ↓ [ENTER] key	Choose an option with the [UP] or [DOWN] key.
5. Select a calibration type.		Choose an option with the [UP] or [DOWN] key.
6.-1 When an option other than “OFF” is selected for CALIBRATE		

	6.-1-1 Finish	 ↓ [ENTER] key. 7. The settings are saved.	
6.-2 When “OFF” is selected for CALIBRATE			
	6.-2-1 Media detection	 ↓ [ENTER] key	Choose an option with the [UP] or [DOWN] key.
	6.-2-2 Media length	 ↓ [ENTER] key	Set a value with the [UP] or [DOWN] key.
	6.-2-3 Finish	 ↓ [ENTER] key. 7. The settings are saved.	
7. The settings are saved.		 ↓	
8. DHCP client is initialized.		 ↓	
9. Online mode			

Key functions (Wizard screen)

Key	Substitute key	Function
[MODE]	None	Displays the top page without saving the changes.
[CANCEL]	[FEED] + [RESTART]	Displays the upper level menu without saving the changes.
[ENTER]	[PAUSE]	In the case of option selection screen, save the changes and displays the next screen.
[UP]	[RESTART]	Moves the cursor upward. When the cursor is positioned at the

		top of the list, it scrolls from the top to the bottom.
[DOWN]	[FEED]	Moves the cursor downward. When the cursor is positioned at the bottom of the list, it scrolls from the bottom to the top.
[LEFT]	None	Displays the next screen without saving the changes.
[RIGHT]	None	Displays the upper-level screen without saving the changes.

Note:
Printer operation is not guaranteed when multiple keys are pressed at the same time except for those mentioned above ([FEED]+[RESTART]).

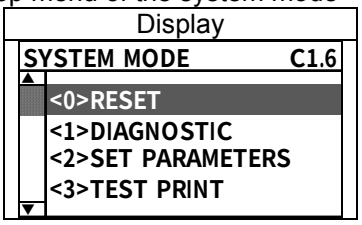
9 SYSTEM MODE

9.1 OUTLINE OF THE SYSTEM MODE

1. The printer enters the system mode with the following operations.
   - ● While the printer power is off, perform either of the following operations:
   - ･ Turn on the printer while holding down the [FEED] and [PAUSE] key at the same time.
   - ･ Turn on the printer while holding down the [MODE] key.
   - ● While the printer is online, perform the following operation:
   - ･ Hold down the [MODE] and [ENTER] keys at the same time for more than 3 seconds.
2. The system mode is intended for performing self-test and various parameter settings.
3. When the top menu is displayed, the main firmware version is shown on the right side of the title.
4. The language displayed on the LCD is Japanese when “Japanese” is selected for the LCD language parameter and English when a language other than “Japanese” is selected. (See <14>LCD PANEL.)
5. The key operations for the system mode are described below.
   For the key functions and the display configuration, refer to Section 7. DISPLAY PATTERN AND KEY OPERATION FOR SYSTEM MODE ANDUSER SYSTEM MODE.

Top menu of the system mode

Display



Top menu list

English
<0>RESET
<1>DIAG.
<2>SET PARAMETERS
<3>TEST PRINT
<4>SENSOR
<5>RAM CLEAR
<6>INTERFACE
<7>RFID
<8>RTC
<9>USB MEMORY
<10>FOR FACTORY
<11>BASIC
<12>Z-MODE
<13>XML
<14>LCD PANEL
<15>PASSWORD

Outline of the top menu

<0>RESET	Restart the printer.
<1>DIAGNOSTIC	Perform self diagnosis, print out the result, check for the print head broken elements.
<2>SET PARAMETERS	Set the parameters for printer functions
<3>TEST PRINT	Test print quality by printing slant lines, characters and barcodes.
<4>SENSOR	Display the ambient temaprature and print head temparature, and adjust each level of the media sensors.
<5>RAM CLEAR	Clear the maintenance counter and parameter settings.
<6>INTERFACE	Set the interface parameters such as network, USB, RS232C and parallel.
<7>RFID	Set the RFID-related parameters.
<8>RTC	Set the date & time of the real time clock and choose a real time renewal timing.
<9>USB MEMORY	Copy data (including firmware) to/from USB memory.
<10>FACTORY TEST	Adjust the printer before shipment.
<11>BASIC	Set the functions of the BASIC program to be downloaded to the printer.
<12>Z-MODE	Same as BASIC function.
<13>XML	Set XML functions.
<14>LCD PANEL	Select a language for the display, choose the items to be displayed, and adjust the contrast.

9.2 REFLECTING THE SYSTEM MODE SETTINGS TO THE PRINTER

The settings configured in the system mode or user system mode is saved in the printer at the following timings.

- Periodic saving at 20-msec. interval
- When Reset menu in the system mode or user system mode is performed

The changes in the settings, with a partial exception, take effect at a power on time or after a reset.

9.3 RESET

Reset the printer.

Contents of RESET menu

Menu item
<0>RESET

9.4 DIAGNOSTIC

Contents of the DIAG. menu

Menu item
<1>DIAGNOSTIC
MAINTENANCE COUNTER
AUTO DIAGNOSTIC
HEAD CHECK

9.4.1 MAINTENANCE COUNTER

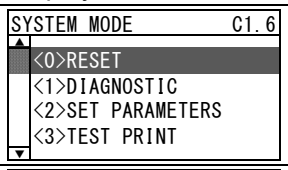
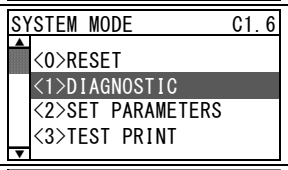
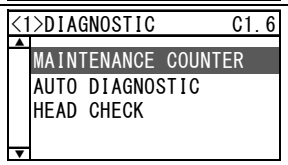
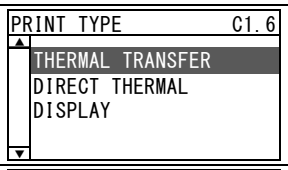
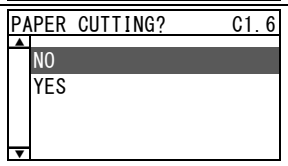
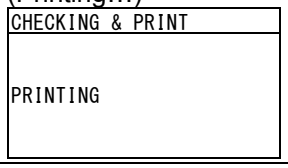
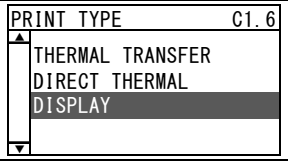
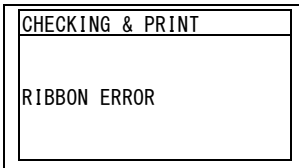
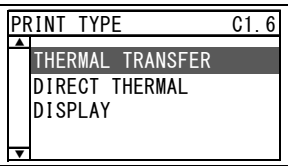
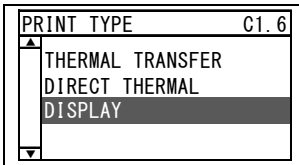
The following table shows the menu structure from the top menu of the system mode to MAINTENANCE COUNTER.

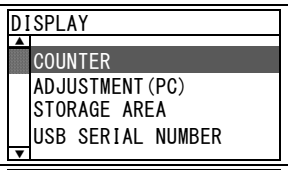
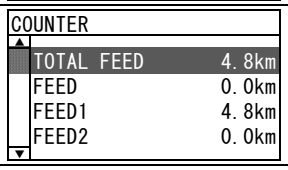
Menu item
<1>DIAGNOSTIC
MAINTENANCE COUNTER
THERMAL TRANSFER
NO
YES
DIRECT THERMAL
NO
YES
DISPLAY

Notes:

1. The MAINTENANCE COUNTER enables selecting whether to print or display the self-diag. test result (maintenance counter data and parameter settings). When THERMAL TRANSFER or DIRECT THERMAL is selected, the test result is printed. When DISPLAY is selected, the test result is displayed on the LCD.
2. When an error occurs while printing, the error message is displayed, the ERROR LED turns on, and the ONLINE LED turns off. Though the error can be cleared by pressing the [ENTER], [CANCEL] or [MODE] key, the printer does not reprint the label automatically.

3. Menu operation example

	Display	Procedure
1		1. Turn off the printer. 2. Turn on the printer while holding down [FEED] and [PAUSE] keys at the same time. 3. The top menu of the SYSTEM MODE is displayed.
2		1. Select <1>DIAGNOSTIC. 2. Press the [ENTER] key. 3. Submenus of <1>DIAGNOSTIC are displayed.
3		1. Select MAINTENANCE COUNTER. 2. Press the [ENTER] key. 3. PRINT TYPE menu is displayed.
4	When THERMAL TRANSFER or DIRECT THERMAL is selected: Note: When DISPLAY is selected, go to step 5.	
4-1		1. Select either THERMAL TRANSFER or DIRECT THERMAL. 2. Press the [ENTER] key. 3. PAPER CUTTING? Menu is displayed.
4-2	 (Printing…) 	1. Select YES or NO. 2. Press the [ENTER] key. 3. The maintenance counter data and parameter settings are printed. 4. “PRINTING” is displayed. Note: A print sample is provided in Section 9.4.1.1 Maintenance Counter/Parameter Settings Print Contents.
4-3	When the printing is completed. (Normal end)	
		1. When the printing is completed, PRINT TYPE menu is displayed again.
4-4	When an error occurred during printing	
		The printer displays the error message, and stops. The ERROR LED turns on and the ONLINE LED turns off. 1. Press the [ENTER] or [CANCEL] key. 2. PRINT TYPE menu is displayed. Note: When the [MODE] key is pressed, the top menu of the SYSTEM MODE is displayed
		The printer recovers from the error, the ERROR LED turns off and the ONLINE LED turns on. Note that the printer does not reprint the label automatically.
5.	In the case DISPLAY is selected:	
5-1		1. Select DISPLAY. 2. Press the [ENTER] key. 3. DISPLAY menu is displayed.

5-2		1. Select an item to be displayed. 2. Press the [ENTER] key. 3. The data of the selected item is displayed.
5-3		For details of the Maintenance counter data, refer to Section 9.4.1.1 Maintenance Counter/Parameter Settings Print Contents.

9.4.1.1 Maintenance Counter/Parameter Settings Print Contents

```
<< COUNTER >>
TOTAL FEED      3.7km          [QM]
FEED            2.4km
FEED1           1.3km
FEED2           0.0km
FEED3           0.0km
FEED4           0.0km
PRINT           2.4km
PRINT1          1.3km
PRINT2          0.0km
PRINT3          0.0km
PRINT4          0.0km
CUT             0
HEAD U/D        0
RIBBON          0h
SOLENOID        0h
232C ERR        0
SYSTEM ERR      0
POWER FAIL      0
<< ADJUST >>
[PC]                        [KEY]
FEED      +0.0mm            FEED      +0.0mm
CUT       +0.0mm            CUT       +0.0mm
BACK      +0.0mm            BACK      +0.0mm
TONE(T)   +0step            TONE(T)   +0step
TONE(D)   +0step            TONE(D)   +0step
(RIBBON TORQU NORM)
RBN(FW)   +0                RBN(FW)   +0
RBN(BK)   +0                RBN(BK)   +0
(RIBBON TORQU LOW)
RBN(FW)   +0                RBN(FW)   +0
RBN(BK)   +0                RBN(BK)   +0
X ADJ.    +0.0mm
THRESHOLD(R) 0.0V
THRESHOLD(T) 0.0V
<< PARAMETER SETTINGS >>
MEDIA LOAD              [STD]
MOVE TO TEAROFF         [ON] +0.0mm   [MODE1]
HEAD UP CUT/RWD.        [OFF]
RIBBON SAVE             [OFF:TAG]
PRE PEEL OFF            [OFF]
BACK FEED SPEED         [STD]
CALIBRATION             [OFF]
CODE PAGE               [PC-850]   [0]
CTRL CODE               [AUTO]
PEEL OFF STATUS         [ON]
USB I/F STATUS          [OFF]
FEED KEY                [FEED]
KANJI                   [TYPE1:Windows]
EURO CODE               [B0]
AUTO HEADD CHK          [OFF]
WEB PRINTER             [OFF]
RIBBON NEAR END         [OFF]
EX.I/O MODE             [TTEC Standard]
PAPER/RBN END           [Stop immediately]
MAXI CODE SPEC.         [TYPE1: Compatible]
XML                     [STD]
THRESHOLD SEL(R)        [MANUAL SET]
THRESHOLD SEL(T)        [MANUAL SET]
ENERGY TYPE(T)          [SR1:AG2,AG4,AG6E] *1
ENERGY TYPE(D)          [NORM:Normal] *1
POWER SAVE TIME         [ 15min]
RIBBON TORQUE           [Normal]
BASIC                   [OFF]
BASIC TRACE             [OFF]
<< PANEL >>
LANGUAGE                [ENGLISH]
MODEL NAME              [ON]
PRINTED COUNTER         [ON]
IP ADDRESS              [ON]
CONTRAST                [40]
SYSTEM PASSWORD         [OFF]
<< STORAGE AREA >>
TTF AREA                [     0KB]
EXT CHR AREA            [     0KB]
BASIC AREA              [     0KB]
PC SAVE AREA            [     0KB]
```

```
<< USB >>
SERIAL NUMBER           [DISABLE]
                        [XXXXXXXXXXXX]
<< RS-232C >>
BAUD RATE               [9600]
DATA LENGTH             [8]
STOP BIT                [1]
PARITY                  [EVEN]
CONTROL                 [XON+READY AUTO]
<< CENTRO >>
ACK/BUSY                [Rising edge]
INPUT PRIME             [ON]
PLUG & PLAY             [OFF]
<< LAN/WLAN >>
LAN/WLAN                [OFF]
SNMP                    [OFF]
IP ADDRESS              [192.168.010.020]
v6L[fe80::280:91ff:fe88:ea8                    ]
v6G[                                           ]
SUBNET MASK             [000.000.000.000]
GATEWAY ADDRESS         [255.255.255.000]
SOCKET PORT             [OFF] [08000]
DHCP                    [OFF]
DHCP CLIENT ID          [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFFFFFFFFFFFFFF]
                        [FFFFFFFF]
DHCP HOST NAME          [ABCDEFGHIJKLMNOPQRST]
                        [UVWXYZ123456]
CONNECTION MODE         [ADHOC]
ESS ID                  [                    ]
                        [                ]
ENCRYPTION              [OFF]
WPA MODE                [OFF]
AUTHENTICATION          [OPEN SYSTEM]
802.1X SUPPLICANT       [OFF]
DEFAULT KEY             EY[1]
802.11bgn CHANNEL       [ 1]
LPR                     [OFF]
<< RFID >>
MODULE TYPE             [NONE]
TAG TYPE                [NONE]
RF CHANNEL              [AUTO]
RETRY POSITION          [+00mm]
RETRY LABELS            [   3labels]
READ RETRY              [   5times] [4.0sec]
WRITE RETRY             [   5times] [4.0sec]
POWER LEVEL             [   0]
Q VALUE                 [   0]
AGC THRESHOLD           [   0]
WRITE AGC               [   0]
RETRY MIN AGC           [   0]
TAG CHECK               [PASSWORD] [ON]   [ON]
MULTI WRITE             [OFF]
CALIB. MODE             [OFF]
CALIB. AGC              [    0]
CALIB. POSITION         [+000.0mm]
ANTENNA POSITION        [FRONT]
SUCCEEDED TAGS          9999999
VOID PRINT TAGS         9999999
<< RTC >>
BATTERY CHECK           [ON]
RENEWAL                 [start of JOB]
```

*1: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed on the menu and unable to be set in the system mode and user system mode. However, the initial value (See Section 9.8.3 PARAMETER CLEAR) will be set after a parameter clear, so it is printed on the maintenance counter/parameter settings print label.

Print condition:

Label length		490 mm to 530 mm (length varies on the model)
Print method		User setting
Sensor type		None
Speed	203 dpi: B-EX6T1/T3-G	5 ips
	305 dpi: B-EX6T1/T3-T	5 ips
Print count		1
Issue mode		User setting
Others		No rewinder motor activated

<< COUNTER >>

Item	Description
	Range
	Counting condition

TOTAL FEED	[Description] Total label distance covered (cannot be cleared)
	[Range] 0.0 to 3200.0 km
	[Counting condition] Counted when the media feed motor is driven to feed or print the media. (Reverse feed is also counted.) When the power is turned off, the media distance of 50.0 cm or less may be rounded down when backed up.
FEED	[Description] Label distance covered
	[Range] 0.0 to 3200.0 km
	[Counting condition] Counted when the media feed motor is driven to feed or print the media. (Reverse feed is also counted.) When the power is turned off, the media distance of 50.0 cm or less may be rounded down when backed up.
FEED1 to FEED4	[Description] History of last 4 label distances
	[Range] 0.0 to 3200.0 km
	[Counting condition] When the maintenance counter is RAM-cleared, the label distance covered is saved as FEED 1. At this time, data which were saved in FEED 1, FEED 2 and FEED 3 are re-saved as FEED 2, FEED 3, and FEED 4, respectively.
PRINT	[Description] Print distance
	[Range] 0.0 to 200.0 km
	[Counting condition] Counted while printing. (Reverse feed is not counted.) B-EX6T1-G: When the power is turned off, the print distance of 8.2 m or less is rounded down when backed up. B-EX6T1-T: When the power is turned off, the print distance of 5.6 m or less is rounded down when backed up.
PRINT1 to PRINT4	[Description] History of last 4 print distances
	[Range] 0.0 to 3200.0 km
	[Counting condition] When the maintenance counter is RAM-cleared, the print distance is saved as PRINT 1. At this time, data which were saved in PRINT 1, PRINT 2 and PRINT 3 are re-saved as PRINT 2, PRINT 3, and PRINT 4, respectively.
CUT	[Description] Cut count
	[Range] 0 to 1000000
	[Counting condition] Every cut operation is counted. The cut count is saved every 4 cut operations.
HEAD U/D	[Description] Head up/down count

	[Range] 0 to 2000000
	[Counting condition] The number of times the print head moves up and down with the solenoid for ribbon save is counted. (A set of up and down is counted as one.) The head up/down count is saved every 4 head up/down operations.
RIBBON	[Description] Ribbon motor drive time
	[Range] 0 to 2000 hours
	[Counting condition] Counted when the ribbon motor is driven while media feed or printing. (Reverse feed is also counted.) When the power is turned off, drive time of 10 seconds or less is rounded down when backed up.
SOLENOID	[Description] Head-up solenoid drive time
	[Range] 0 to 1000 hours
	[Counting condition] Counted when the ribbon save operation is performed. When the power is turned off, drive time of 10 seconds or less is rounded down when backed up.
232C ERR	[Description] The number of times an RS-232C hardware error occurred
	[Range] 0 to 255
	[Counting condition] Counted when a parity error, overrun error or framing error occurs.
SYSTEM ERR	[Description] The number of times a system error occurred
	[Range] 0 to 15
	[Counting condition] Counted when a system error occurs.
POWER FAIL	[Description] The number of times a momentary power interruption occurred
	[Range] 0 to 15
	[Counting condition] Counted when a momentary power interruption occurs.

<< ADJUST >>

Item	Description	Remarks
[PC]/[KEY]		
FEED	Feed amount fine adjustment	-50.0mm to +50.0mm
CUT	Cut position (or strip position) fine adjustment	-50.0mm to +50.0mm
BACK	Reverse feed amount fine adjustment	-9.9mm to +9.9mm
TONE (T)	Print density fine adjustment (Thermal transfer print mode)	-20 to +20 step
TONE (D)	Print density fine adjustment (Direct thermal print mode)	-20 to +20 step
RIBBON TORQUE NORM		
RBN (FW)	Ribbon motor drive voltage fine adjustment (Ribbon take-up side)	-15 to +10 step
RBN (BK)	Ribbon motor drive voltage fine adjustment (Ribbon supply side)	-15 to +10 step
RIBBON TORQUE LOW		
RBN (FW)	Ribbon motor drive voltage fine adjustment (Ribbon take-up side)	-15 to +10 step
RBN (BK)	Ribbon motor drive voltage fine adjustment (Ribbon supply side)	-15 to +10 step
X ADJ.	X-coordinate fine adjustment	-99.5mm to +99.5mm
THRESHOLD<R>	Threshold fine adjustment for reflective sensor	0.0V to 4.0V
THRESHOLD<T>	Threshold fine adjustment for transmissive sensor	0.0V to 4.0V

<< PARAMETER SETTINGS >>

Item	
	Description
	Value to be printed

MEDIA LOAD [ ]	
	[Description] Media feed to the print start position
	[Values to be printed] OFF: Disabled. STD: Feeds the detected gap/mark to the print start position. ECO: Feeds a gap/mark positioned between the print head and the media sensor, if any, to the print start position. ECO+Backfeed: Back feed follows the above ECO printer behavior.
MOVE TO TEAROFF [1] [2] [3]	
	[Description 1] Auto feed to the cut/strip position after printing
	[Value to be printed 1] OFF: Disabled. ON: Enabled. The following media stop position fine adjustment value is also printed.
	[Description 2] Media stop position fine adjustment value Note: Printed only when the “Auto feed to the cut/strip position after printing” is set to ON.
	[Value to be printed 2] -5.0mm to+5.0mm
	[Description 3] Feed mode
	[Value to be printed 3] MODE1: Feeds the media for 16.5 mm. MODE2: Feeds the media backward for 6 mm, then feeds it forward for 3 mm. (Only when the cut mode, thermal transfer, and feed gap sensor are selected.) In other conditions, the printer feeds the media for 16.75 mm. MODE3: Feeds the media for 34.0 mm. This is an exclusive specification for issuing RFID media.
HEAD UP CUT/RWD [ ]	
	[Description] Whether to enable the head-up function during cut issue or use the Rewinder
	[Values to be printed] OFF: The head-up function is disabled during cut issue or the rewinder is not used. ON: The head-up function is enabled during cut issue or the rewinder is used.
RIBBON SAVE [ ]	
	[Description] Whether to use the ribbon saving module
	[Values to be printed] OFF: Not used. ON:TAG: The ribbon saving module is used.(Head lever position: “TAG”) ON:LABEL: The ribbon saving module is used. (Head lever position: “LABEL”) *For B-EX6T1, only Position1 is available to use since there is no distinguish between Tag position and Label position.
PRE PEEL OFF [ ]	
	[Description] Whether to enable the pre-peel-off function
	[Values to be printed] OFF: Enabled. ON: Disabled.
BACK FEED SPEED [ ]	
	[Description] Reverse feed speed
	[Values to be printed]

STD: 3 ips
LOW: 2 ips

CALIBRATION [ ]

[Description] Automatic calibration

[Values to be printed]

OFF: Disabled.
ON TRANS.: Auto calibration is performed with transmissive sensor.
ON REFL.: Auto calibration is performed with reflective sensor.
ON ALL: Auto calibration is performed with both sensors.
ON TRAS+BF: Auto calibration is performed with transmissive sensor, then the media is reversely fed.
ON REFL+BF: Auto calibration is performed with reflective sensor, then the media is reversely fed.
ON ALL+BF: Auto calibration is performed with both sensors, then the media is reversely fed.

CODE PAGE [1] [2]

[Description 1] Character code selection

[Value to be printed 1]

PC-850
PC-852
PC-857
PC-8
PC-851
PC-855
PC-1250
PC-1251
PC-1252
PC-1253
PC-1254
PC-1257
LATIN9
Arabic
PC-866
UTF-8

[Description 2] Character “0” selection

[Values to be printed]

0: with slash
Ø: without slash

CTRL CODE [ ]

[Description] Control code type

[Values to be printed]

AUTO: Automatic selection
{,|,}: {,|,} method
ESC,LF,NL: ESC,LF,NL method
MANUAL: Any code (Described in hex. code)

PEEL OFF STATUS [ ]

[Description] Whether to send a peel-off wait status to the host

[Values to be printed]

OFF: Not sent.
ON: sent.

USB I/F STATUS [ ]

[Description] Whether to send a response to the host via USB

[Values to be printed]

OFF: Not sent.
ON: Sent.

FEED KEY [ ]

[Description] Function of the [FEED] key

[Values to be printed]

FEED: The printer feeds one label.
PRINT: The printer prints data in the image buffer on one label.

KANJI CODE [ ]

[Description] Kanji code type

[Values to be printed]

TYPE1: Windows: WINDOWS codes
TYPE2: Original: Original codes

EURO CODE [ ]

[Description] Euro code setting

[Values to be printed]

20 to FF (Hex. code)

AUTO HEAD CHK [ ]

[Description] Whether to perform automatic print head check

[Values to be printed]

OFF: Not performed.
ON: Performed.

WEB PRINTER [ ]

[Description] Whether to use the printer as a web printer

[Values to be printed]

OFF: Not used.
ON INTERNAL: Used. (Internal memory is used.)
ON EXTERNAL: Used (External memory is used.)

RIBBON NEAR END [ ]

[Description] Ribbon near end detection

[Values to be printed]

OFF: Disabled.
30m: Ribbon near end status is detected when the remaining ribbon length is approximately 30 m.
70m: Ribbon near end status is detected when the remaining ribbon length is approximately 70 m.

EX. I/O MODE [ ]

[Description] Expansion I/O operation mode

[Values to be printed]

TTEC Standard: Standard mode
Inline: In-line mode

PAPER/RBN END [ ]

[Description] Printer behavior at label/ribbon end

[Values to be printed]

Stop immediately: When a label/ribbon end status is detected, the printer stops immediately.
Complete current: When a label/ribbon end status is detected, the printer prints the current label as far as possible, and then stops.

MAXICODE SPEC. [ ]

[Description] Maxicode specification

[Values to be printed]

TYPE1: Compatible: Compatible with the current version
TYPE2: Special Spec: Special specification

XML [ ]

[Description] XML data printing

[Values to be printed]

OFF: Disabled.
STD: Standard specification
ORACLE: Specification for Oracle
SAP: Specification for SAP

STD EXTERNAL: Standard specification (External memory is used.)
ORACLE EXTERNAL: Specification for Oracle (External memory is used.)
SAP EXTERNAL: Specification for SAP (External memory is used.)

THRESHOLD SEL(R) [ ]

[Description] Threshold value for the reflective sensor

[Values to be printed]
MANUAL SET: Manually set value is used.
COMMAND SET: Command specified value is used.

THRESHOLD SEL(T) [ ]

[Description] Threshold value for the transmissive sensor

[Values to be printed]
MANUAL SET: Manually set value is used.
COMMAND SET: Command specified value is used.

ENERGY TYPE (T) [ ]

[Description] Energy level applied to the print head in thermal transfer mode

[Values to be printed]
.
Generic: General-purpose
rsv1: (Reserved1): Reserved
rsv2: (Reserved2): Reserved
rsv3: (Reserved3): Reserved
rsv4: (Reserved4): Reserved
rsv5: (Reserved5): Reserved
rsv6: (Reserved6): Reserved
rsv7: (Reserved7): Reserved
rsv8: (Reserved8): Reserved
rsv9: (Reserved9): Reserved

ENERGY TYPE (D) [ ]

[Description] Energy level applied to the print head in thermal direct mode

[Values to be printed]
NORM: Normal: Standard
rsv1: (Reserved1): Reserved
rsv2: (Reserved2): Reserved
rsv3: (Reserved3): Reserved
rsv4: (Reserved4): Reserved
rsv5: (Reserved5): Reserved
rsv6: (Reserved6): Reserved
rsv7: (Reserved7): Reserved
rsv8: (Reserved8): Reserved
rsv9: (Reserved9): Reserved

Note: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed on the menu and unable to be set in the system mode and user system mode. However, the initial value will be set after a RAM clear, so it is printed on the maintenance counter/parameter settings print label.

POWER SAVE TIME [ ]

[Description] Length of time until the printer enters sleep mode

[Values to be printed]
1 min. to 240 min.

RIBBON TORQUE [ ]

[Description] Ribbon take-up torque

[Values to be printed]
Normal: Standard
Low: Low

BASIC [ ]

[Description] Basic interpreter setting

[Values to be printed]
OFF: Basic interpreter is disabled.
ON: Basic interpreter is enabled.

BASIC TRACE [ ]

[Description] Basic interpreter trace setting

[Values to be printed]
OFF: Trace is disabled.
ON: Trace is enabled.

<< PANEL >>

LANGUAGE [ ]

[Description] Selection of a language for displaying LCD messages

[Values to be printed]
ENGLISH: English
GERMAN: German
FRANCH: French
DUTCH: Dutch
SPANISH: Spanish
JAPANESE: Japanese
ITALIAN: Italian
PORTUGUESE: Portuguese
Si.CHINESE: Simplified Chinese
KOREAN: Korean
TURKISH: Turkish
POLISH: Polish

MODEL NAME [ ]

[Description] Whether to display the model name

[Values to be printed]
OFF: Hidden.
ON: Displayed.

PRINTED COUNTER [ ]

[Description] Whether to display the number of labels printed

[Values to be printed]
OFF: Hidden.
ON: Displayed.

IP ADDRESS [ ]

[Description] Whether to display IP address

[Values to be printed]
OFF: Hidden.
ON: Displayed.

CONTRAST [ ]

[Description] LCD contrast

[Values to be printed]
24 to 50

SYSTEM PASSWORD [ ]

[Description] System mode password setting

[Values to be printed]
OFF: Disabled.

ON Enabled.

<< STORAGE AREA >>

TTF AREA [ ]
[Description] TrueType Font storage area size
[Values to be printed] 0KB to 3072KB
EXT CHR AREA [ ]
[Description] External character storage area size
[Values to be printed] 0KB to 3072KB
BASIC AREA [ ]
[Description] Basic file storage area size
[Values to be printed] 0KB to 3072KB
PC SAVE AREA [ ]
[Description] PC command storage area size
[Values to be printed] 0KB to 3072KB

<< USB >>

SERIAL NUMBER [1] [2]
[Description 1] Whether to enable USB serial number
[Values to be printed] DISABLE: Disabled. ENABLE: Enabled.
[Description 2] USB serial number

<< RS-232C >>

BAUD RATE [ ]
[Description] Baud rate
[Values to be printed] 2400: 2400bps 4800: 4800bps 9600: 9600bps 19200: 19200bps 38400: 38400bps 115200: 115200bps
DATA LENGTH [ ]
[Description] Data length
[Values to be printed] 8: 8 bits 7: 7 bits
STOP BIT [ ]
[Description] Stop bit length
[Values to be printed] 1: 1 bit 2: 2 bits

PARITY [ ]

[Description] Parity

[Values to be printed]

NONE: None
EVEN: Even
ODD: Odd

CONTROL [ ]

[Description] Transmission control method

[Values to be printed]

XON+READY AUTO: XON/XOFF+ READY/BUSY(DTR) mode
(XON output when the power is on, XOFF output when the power is off)
XON/XOFF AUTO: XON/XOFF mode
(XON output when the power is on, XOFF output when the power is off)
READY/BUSY RTS: RTS mode
(No XON output when the power is on, no XOFF output when the power is off)
XON/XOFF: XON/XOFF mode
(No XON output when the power is on, no XOFF output when the power is off)
READY/BUSY: READY/BUSY(DTR)
(No XON output when the power is on, no XOFF output when the power is off)

<< CENTRO >>

ACK/BUSY [ ]

[Description] Centronics ACK/BUSY timing

[Values to be printed]

Rising edge: A rise of ACK signal and a release of BUSY occur at the same time.
Trailing edge: A fall of ACK signal and a release of BUSY occur at the same time.

INPUT PRIME [ ]

[Description] Reset process when the nInit signal is ON

[Values to be printed]

OFF: Reset is not performed.
ON: Reset is performed.

PLUG & PLAY [ ]

[Description] Plug-and-play operation

[Values to be printed]

OFF: Plug-and-play is disabled.
ON: Plug-and-play is enabled.

<< LAN/WLAN >>

LAN/WLAN [ ]

[Description] LAN type

[Values to be printed]

OFF: Disabled.
AUTO: Automatically selected.(If WLAN is installed, LAN is not available.)
LAN: Wired LAN
WLAN: Wireless LAN

SNMP [ ]

[Description] Whether to enable SNMP

[Values to be printed]

	OFF: Disabled. ON: Enabled.
IP ADDRESS [ ]	
	[Description] Printer IP address
	[Values to be printed] xxx.xxx.xxx.xxx
v6 L [ ]	
	[Description] IPv6 Link local address
	[Values to be printed] xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
v6 G [ ]	
	[Description] IPv6Global address
	[Values to be printed] xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
SUBNET MASK [ ]	
	[Description] Subnet mask
	[Values to be printed] xxx.xxx.xxx.xxx
GATEWAY ADDRESS [ ]	
	[Description] Gateway IP address
	[Values to be printed] xxx.xxx.xxx.xxx
SOCKET PORT [1] [2]	
	[Description 1] Socket communication
	[Values to be printed 1] OFF: Disabled. ON: Enabled.
	[Description 2] Socket communication port number
	[Values to be printed 2] 00000 to 65535
DHCP [ ]	
	[Description] DHCP setting
	[Values to be printed] OFF: DHCP is disabled. ON: DHCP is enabled.
DHCP CLIENT ID [ ]	
	[Description] DHCP client ID setting (Hex.)
	[Values to be printed] Max. 64 characters
DHCP HOST NAME [ ]	
	[Description] DHCP host name (ASCII)
	[Values to be printed] Max. 32 characters
CONNECTION MODE [ ]	
	[Description] Wireless LAN: Connection setting
	[Values to be printed] AP MODE INFRASTRUCTURE

ESS ID [ ]	
	[Description] Wireless LAN: ESS ID
	[Values to be printed] Max. 32 characters
ENCRYPTION [ ]	
	[Description] Wireless LAN: Encryption key setting
	[Values to be printed] OFF Note: This parameter is set by using the Printer Setting Tool. WEP40
WPA MODE [ ]	
	[Description] Wireless LAN: WPA setting
	[Values to be printed] OFF Note: This parameter is set by using the Printer Setting Tool. WPA-Personal WPA2-Personal WPA-Enterprise WPA2-Enterprise
AUTHENTICATION [ ]	
	[Description] Wireless LAN: Authentication method
	[Values to be printed] OPEN Note: This parameter is set by using the Printer Setting Tool. SHARED
802.1X SUPPLICANT [ ]	
	[Description] Wireless LAN: Authentication method
	[Values to be printed] OFF Note: This parameter is set by using the Printer Setting Tool. EAP-TLS EAP-TTLS EAP-FAST MSCHAPV2 EAP-FAST GTC PEAP MSCHAPV2 PEAP MSCHAPV2(w/o Cert) PEAP GTC PEAP GTC(w/o Cert)
DEFAULT KEY [ ]	
	[Description] Wireless LAN: Encryption key for sending
	[Values to be printed] 1 to 4
802.11bgn CHANNEL [ ]	
	[Description] Wireless LAN: 11b connection channel setting
	[Values to be printed] 1 to 14
LPR [ ]	
	[Description] Whether to enable LPR
	[Values to be printed] OFF: Disabled.

ON: Enabled.

<< RFID >>

MODULE TYPE [ ]

[Description] RFID module type

[Values to be printed]
NONE: No RFID kit is installed.
U4: B-EX706-RFID-U4-EU/US/AU-R, B-EX7060-RFID-U4-R

TAG TYPE [ ]

[Description] RFID tag type

[Values to be printed]
NONE
I-Code
Tag-it
C220
ISO15693
C210
C240
C320
EPC C1 Gen2

RF CHANNEL [ ]

[Description] RFID channel setting

[Values to be printed]
AUTO
2CH
3CH
4CH
5CH
6CH
7CH
8CH

RETRY POSITION [ ]

[Description] Feed amount to retry data write

[Values to be printed]
-99MM to +99MM

RETRY LABELS [ ]

[Description] The number of RFID labels to be issued for retry

[Values to be printed]
0 to 255 labels

READ RETRY [ ]

[Description 1] The number of times tag read is retried

[Values to be printed 1]
0 to 255 times

[Description 2] Timeout for tag read retry

[Values to be printed 2]
0 to 9.9 sec.

WRITE RETRY [ ]

[Description 1] The number of times tag write is retried

	[Values to be printed 1] 0 to 255 times
	[Description 2] Timeout for tag write retry
	[Values to be printed 2] 0 to 9.9 sec.
POWER LEVEL [ ]	
	[Description] Radio output level
	[Values to be printed] 0 to 18: B-EX706-RFID-U4-EU/US/AU-R, B-EX7060-RFID-U4-R
Q VALUE [ ]	
	[Description] RFID module Q value
	[Values to be printed] 0 to 15
AGC THRESHOLD [ ]	
	[Description] AGC threshold setting
	[Values to be printed] 0 to 15
WRITE AGC [ ]	
	[Description] AGC threshold for data write
	[Values to be printed] 0 to 15
RETRY MIN AGC [ ]	
	[Description] AGC threshold lower limit for retry
	[Values to be printed] 0 to 15
TAG CHECK [1] [2] [3]	
	[Description 1] Error tag detection
	[Values to be printed 1] OFF: Error tag detection is not performed. EPCCODE: Error tag detection is performed. ID area data is read before data write to check for error. PASSWORD: Error tag detection is performed. Access password area is read before data write to check for error. Note: This value is valid only for GEN2 tags.
	[Description 2] Password setting to protect error tag detection Note: Only when “ON (ACCESS PASSWORD)” is selected for TAG CHECK
	[Values to be printed 2] OFF: Disabled. ON: Enabled.
	[Description 3] Auto unlock function Note: Only when “ON (ACCESS PASSWORD)” is selected for TAG CHECK
	[Values to be printed 3] OFF: Disabled. ON: Enabled.
MULTI WRITE [ ]	
	[Description] Hibiki tag multi-word write
	[Values to be printed] OFF: Disabled.

ON: Enabled.
CALIB. MODE [ ]
[Description] RFID calibration function
[Values to be printed] OFF: Disabled. ON: Enabled.
CALIB. AGC [ ]
[Description] Optimum AGC value obtained through RFID calibration
[Values to be printed] 0 to 15
CALIB. POSITION [ ]
[Description] Distance to the optimum read/write position obtained through RFID calibration
[Values to be printed] -999.9mm to +999.9mm
ANTENNA POSITION [ ]
[Description] Combinational position of the RF antenna and the wave director
[Values to be printed] FRONT: Front CENTER: Center REAR: Rear
SUCCEEDED TAGS
[Description] The number of times data write succeeded
[Values to be printed] 0 to 9999999
VOID PRINT TAGS
[Description] The number of times data write failed
[Values to be printed] 0 to 9999999

<< RTC >>

BATTERY CHECK [ ]
[Description] Battery check
[Values to be printed] OFF: Disabled. ON: Enabled.
RENEWAL [ ]
[Description] Time update timing
[Values to be printed] start of JOB: Every batch every PAGE: Every page

9.4.2 AUTO DIAGNOSTIC

The procedure for printing the self-diagnosis result is the same as that for the maintenance counter/parameter setting data described in 9.4.1 MAINTENANCE COUNTER.
The following table shows the menu structure from top menu of the system mode to AUTO DIAGNOSTIC.

The menu structure of AUTO DIAGNOSTIC

Menu item
<1>DIAGNOSTIC
AUTO DIAGNOSTIC
THERMAL TRANSFER
NO
YES
DIRECT THERMAL
NO
YES
DISPLAY

Note:
When an error occurs while printing, the error message is displayed, the ERROR LED turns on, and the ONLINE LED turns off. Though the error can be cleared by pressing the [ENTER], [CANCEL] or [MODE] key, the printer does not reprint the label automatically.

9.4.2.1 AUTO SELF-DIAGNOSIS PRINTOUT

```
PROGRAM B-EX6T1-T
    MAIN   XXXXXXXXX K1.0 :F100
    BOOT   XXXXXXXXX C1.0B :0000
    WMON XXXXXXXXX V1.0 :6100
FONT        AE00
KANJI       NONE   :0000
            NONE   :0000
EEPROM      256B
SDRAM       32MB
SENSOR1     00000000,00000111
SENSOR2     [H]23゜C [A]22゜C
            [R]4.2V [T]2.5V [E]0.6V
PE LV.      [R]1.8V [T]2.5V
M THRE.     [R]1.8V [T]2.5V
HEAD        [RANK]7          305DPI
LAN MAC     11-22-33-44-55-66
EXP.I/O     NG
EX.232C     NG
SIO         NG(0111)
RFID        OK   #00RV972   (EU0) R01
WLAN        OK Ver1.1.3
MAC         00-11-22-33-44-55
RTC         NG
USB MEMORY NG
BASIC M Z-EX4T1—M13 V1.3:02DC
BASIC S Z-EX4T1—S11 V1.1:BF1E
```

Note:
"°" (degree) of "xx°C" may not be printed correctly, depend on the type of code page.

Print condition:

Label length		120 mm
Print method		User setting
Sensor type		None
Speed	(203 dpi) B-EX6T1/T3-G	5 ips
	(305 dpi) B-EX6T1/T3-T	5 ips
Issuing number		1
Issuing mode		User setting
Others		Rewinder motor not activated.

9.4.3 HEAD CHECK

The print head check procedure is the same as that for the maintenance counter data described in 9.4.1 MAINTENANCE COUNTER.

The following table shows the menu structure from the top menu of the system mode to HEAD CHECK.

The menu structure of HEAD CHECK

Menu item
<1>DIAGNOSTIC
HEAD CHECK

Types of message during head check	
While checking	HEAD CHECK CHECKING
Normal end	HEAD CHECK NORMAL END
When broken dots are detected At this time, the ONLINE LED turns off and the ERROR LED turns on.	HEAD CHECK HEAD ERROR 16 /832 dots

9.5 SET PARAMETERS

Contents of the SET PARAMETERS menu

Menu item
<2>SET PARAMETERS
MEDIA LOAD
FEED KEY
MOVE TO TEAROFF
FW/BK ACT.
RIBBON SAVE
HEAD UP CUT/RWD
PRE PEEL OFF
BACK FEED SPEED
AUTO HEAD CHECK
RIBBON NEAR END
PAPER/RBN END
CALIBRATE
POWER SAVE TIME
CODE PAGE
ZERO FONT
CTRL CODE
PEEL OFF STATUS
KANJI CODE
EURO CODE
MAXICODE SPEC
FEED ADJ.
CUT ADJ.
BACK ADJ.
X ADJUST
HEAT ENERGY TYPE
TONE ADJ.<T>
TONE ADJ.<D>
RIBBON TORQUE
FRONT RIBBON MOTOR
REAR RIBBON MOTOR
RIBBON WINDING

9.5.1 MEDIA LOAD

- OFF — Media loading function is disabled. (Same as a feed by press the [FEED] key)
- STD — When the [FEED] key is pressed after the printer is turned on, reset by a batch reset command, or the print head is closed, the printer feeds the media to detect the next gap/black mark. When the gap/black mark is detected, the printer feeds the media for the distance from the sensor to the print start position.
- ECO — When the [FEED] key is pressed after the printer is reset by a batch reset command or the print head is closed, the printer feeds the media to detect the next gap/black mark. When the gap/black mark is detected, the printer feeds the media, which is positioned nearest from the print head, to the print start position. At this time, the feed length is calculated based on the stored media pitch.

- ECO+Backfeed After performing above-mentioned ECO, the printer feeds the media backward for the label pitch length while raising the print head if the following conditions are satisfied.

Notes: 1. This function is enabled only when the sensor type is set to other than “None”.

2. Conditions for enabling ECO + Backfeed

Hardware	Optional ribbon saving module (solenoid) is installed.
Parameter	RIBBON SAVE parameter is set to TAG or LABEL.
Operation	Media pitch falls between 20mm and 100mm. The previous issue mode was Batch. (The issue mode is not reset by a power off or a printer reset.)
Caution	Even if the hardware requirement is not satisfied (i.e. the optional ribbon saving module is not installed), the printer feeds the media backward when the other requirements are satisfied. However, this operation is not guaranteed as it is outside of the specification.

3. In the case the printer cannot detect a gap/black mark while feeding the media, an error occurs on the following condition. Regarding an error during a feed, refer to the External Equipment Interface Specification for the B-EX series, Section 7 Error Processing.

OFF	When the relation between the stored media pitch (A) and the media pitch detected by the sensor (B) does not satisfy the following formula, it will be an error: $(A) \times 50\% \leq (B) \leq (A) \times 150\%$
STD ECO ECO + Backfeed	When a gap/black mark is not detected while feeding 1500-mm media, it will be an error.

9.5.2 FEED KEY

- FEED Feed one label.
- PRINT Print data in the image buffer on one label.

9.5.3 MOVE TO TEAROFF

- OFF Disables the auto feed to the cut/strip position after printing.
- ON Enables the auto feed to the cut/strip position after printing.

9.5.3.1 MOVE TO TEAROFF POS.

When the "MOVE TO TEAROFF” parameter is set to ON, the feed amount can be fine adjusted.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+5.0	-5.0	0.1	Decimal	Exist	1	1	None	mm

Note: Feed amount setting

- + (Plus) Increases the forward feed amount.
- - (Minus) Decreases the forward feed amount.

Notes:

1. If the pitch of the media used for the previous issue was less than 20mm, the auto feed to the cut/strip position after printing will not be activated regardless of the parameter setting.
   * In the case labels with the different pitch (less than 20mm and 20mm or longer) are alternately placed in one label roll, the forward feed is not activated for the labels with the pitch of less than 20mm. Therefore it stays at the print stop position without being fed backward. Before the next label with the pitch of 20mm or larger is printed, however, it is automatically fed backward along with the previously printed label. This may cause the print data to be printed on the previous label.
2. The media will stay at the forwarded position even if the power is turned off/on, the printer is reset, or the print head is opened/closed.

9.5.4 FW/BK ACT.

- MODE1: Normal: The printer waits for a next issue after media is forwarded 16.5-mm.
- MODE2: SHORT CUT LAB: When the thermal transfer method and cut issue are selected, the printer feeds 6-mm media backward, then waits for next issue with media forwarded 3-mm.
- MODE3: for RFID: The printer waits for a next issued after media is forwarded 34.0-mm (to prevent RFID media jam.)

Notes:

1. When MODE2 is selected and the printer starts printing (feed) from the forwarded position, it feeds the media for 3 mm from this position and temporarily stops. The feed speed for this 3-mm distance to the home position is the max. speed that can be accelerated from the previous speed (See the following). After the temporary stop, the printer prints or feeds the media at the specified speed.
   203-dpi model: 5 ips
   305-dpi model: 5 ips
   * Except for the multi-step acceleration area for short-pitch labels, the print speed will be accelerated up to the specified speed when the media has not been forwarded.
2. When MODE3 is selected and the RBN SAVE parameter is set to “LABEL” or “TAG”, the printer will raise the print head while the auto feed to the cut/strip position is performed.
   If labels with the pitch of 57.2mm or less are used, they may peel off from the backing paper. Therefore, it is required to select “LABEL” or “TAG” for the RBN SAVE parameter. The speed of the auto feed is fixed to 3 ips.

9.5.5 RIBBON SAVE

- OFF The ribbon saving module is not used.
- TAG POSITION The ribbon saving module is used.(Head lever position: “TAG”)
- LABEL POSITION The ribbon saving module is used.(Head lever position: “LABEL”)

Notes:

1. If this parameter is set to “TAG POSITION” or “LABEL POSITION” without the ribbon saving module installed, the ribbon slacks and a print failure occurs. Caution required when setting this parameter.
2. For B-EX6T1, only Position1 is available to use since there is no distinguish between Tag position and Label position.

9.5.6 HEAD UP CUT/RWD.

- OFF The head-up function is disabled during cut issue or the rewinder is not used.
- ON The head-up function is enabled during cut issue or the rewinder is used.

Notes:

1. Whether or not to activate the head up action in the cut issue or to use the Rewinder in the batch or strip issue is selected.

2. When this parameter is set to ON, the head-up function is enabled in the cut issue mode and the built-in rewinder is usable in the batch issue mode, respectively.

9.5.7 PRE PEEL OFF

- OFF Disables pre peel off.
- ON Enables pre peel off.

Notes:
1. Pre peel off is automatically enabled when the print speed is set to 10 ips or faster for the strip issue. (For the print speed of less than 10 ips, the pre peel off is enabled only when this parameter is set to ON.) However, the print speed may be corrected depending on the EX I/O parameter setting as follows.
   - EXI/O: TYPE 1 (Standard)
     203-dpi model: 10 ips
     305-dpi model: 8 ips
   - EX I/O: TYPE 2 (Inline)
     Specified speed
2. The pre peel off speed is the min. forward feed speed (3 ips).

9.5.8 BACK FEED SPEED

- STD 3 ips
- LOW 2 ips

9.5.9 AUTO HEAD CHECK

- OFF Disables the auto print head check.
- ON Enables the auto print head check.

9.5.10 RIBBON NEAR END

- OFF Ribbon near end is not detected.
- 30m Ribbon near end is detected when the remaining ribbon is 30-m long (Equivalent to ribbon diameter of 38 mm)
- 70m Ribbon near end is detected when the remaining ribbon is 70-m long (Equivalent to ribbon diameter of 43 mm)

Note: Since a detected remaining ribbon length has some margin of error, use the specified length as a guide.

9.5.11 PAPER/RBN END

- Stop immediately When a label end or ribbon end status is detected, the printer stops immediately.
- Complete current When a label end or ribbon end status is detected, the printer prints the current label as far as possible, then stops.

Notes:

1. Stop immediately:
   When a label end or ribbon end is detected in the middle of printing, printing is immediately stopped. When the printing is restarted, first the initial feed is performed, then the printer starts printing from the unfinished label.

2. Complete current:
   The “Complete current” is valid only when the ribbon save function is set to OFF. Even when the ribbon save function is enabled, the behavior of the “Stop immediately” will be automatically performed regardless of the setting. The printer behavior of the “Complete current” at the detection of label end and ribbon end is as follows.

   (1) Label end detection

   • Printer behavior
   When a label end is detected in the middle of printing, the printer completes the half-finished printing and stops when the next label is at the home position, displaying the error message.
   * Printing of the half-finished label is completed.

   • LCD message
   “NO PAPER”

   • The remaining number of labels
   [Specified number of labels] – [The number of finished labels at the time of printing stop (including the half-finished label)]
   If a label end is detected while the last one of the specified number of labels is printed, the remaining number of labels on the LCD will be blank.

   • Printer behavior at restart
   When the printing is restarted, first the initial feed is performed, then the printer starts printing from the next label. In case the label end was detected while the last one of the specified number of labels was printed, only the initial feed is performed, and if the status response has been set to ON, an issue end status is sent after a feed end status.

   <Example>

   Specified number of labels = 5, A label end is detected while the 3rd label is printed.

   Printing: 1st label … Finished (*)

   Printing: 2nd label ... Finished (*)

   Printing: 3rd label … After an error is detected, printing of this label is completed. Finished (*)

   Stop with error … “NO PAPER” is displayed on the LCD.

   Initial feed … Restart

   Printing: 4th label … Finished (*)

   Printing: 5th label … Finished (*)

   (*) Completely printed labels: 1st to 5th labels

(2) Ribbon end detection: In the case unfinished label length is 30 mm or more

• Printer behavior

The printer prints for 20 mm and stops printing with error.

* Printing of the half-finished label is not completed.

• LCD message

“NO RIBBON”

• The remaining number of labels

[Specified number of labels] – [The number of finished labels at the time of printing stop] - 1

If a ribbon end is detected while the last one of the specified number of labels is printed, the remaining number of labels on the LCD will be blank.

• Printer behavior at restart

When the printing is restarted, first the initial feed is performed, then the printer starts printing from the next label. In case the ribbon end was detected while the last one of the specified number of labels was printed, only the initial feed is performed.

<Example>

Specified number of labels = 5, A ribbon end is detected while the 3rd label is printed. Unfinished label length is 30 mm or more

Printing: 1st label … Finished (*)

Printing: 2nd label ... Finished (*)

Printing: 3rd label … After an error is detected, the 3rd label is printed for the length of 20 mm and the printing stops.

Stop with error … “NO RIBBON” is displayed on the LCD.

Initial feed … Restart

Printing: 4th label … Finished (*)

Printing: 5th label … Finished (*)

(*) Completely printed labels: 1st, 2nd, 4th and 5th labels

(3) Ribbon end detection: In the case unfinished label length is less than 30 mm

• Printer behavior

When a label end is detected in the middle of printing, the printer completes the half-finished printing and stops when the next label is at the home position, displaying the error message.

* Printing of the half-finished label is completed.

• LCD message

“NO RIBBON”

• The remaining number labels

[Specified number of labels] – [The number of finished labels at the time of printing stop (including the half-finished label)]

If a ribbon end is detected while the last one of the specified number of labels is printed, the remaining number of labels on the LCD will be blank.

• Printer behavior at restart

When the printing is restarted, first the initial feed is performed, then the printer starts printing from the next label. In case the label end was detected while the last one of the specified number of labels was printed, only the initial feed is performed, and if the status response has been set to ON, an issue end status is sent after a feed end status.

<Example>

Specified number of labels = 5, A ribbon end is detected while the 3rd label is printed. Unfinished label length is less than 30 mm

Printing: 1st label … Finished (*)

Printing: 2nd label ... Finished (*)

Printing: 3rd label … After an error is detected, printing is completed. Finished (*)

Stop with error … "NO RIBBON" is displayed on the LCD.

Initial feed … Restart

Printing: 4th label … Finished (*)

Printing: 5th label … Finished (*)

(*) Completely printed labels: 1st to 5th labels

9.5.12 CALIBRATE

- OFF: Auto calibration is not performed.
- ON TRANSMISSIVE: Auto calibration is performed with transmissive sensor.
- ON REFLECTIVE Auto calibration is performed with reflective sensor.
- ON ALL: Auto calibration is performed with both sensors.
- ON TRANS+BackFeed: Auto calibration is performed with transmissive sensor, then the media is fed backward.
- ON REFL+BackFeed: Auto calibration is performed with reflective sensor, then the media is fed backward.
- ON ALL+BackFeed: Auto calibration is performed with both sensors, then the media is fed backward.

Notes:

1. When this parameter is enabled, an automatic calibration starts at an open/close of the print head and when power is on.
2. When this parameter is enabled, the media length, effective print length, sensor type and whether the ribbon is used or not, will be specified with commands, as handled as follows.

		Printer behavior after automatic calibration is performed
Whether the ribbon is used or not		The values obtained through the calibration will take effect until next calibration is performed or the printer power is turned off. (Settings specified by commands are ignored.)
Sensor type		The values obtained through the calibration will take effect after the calibration is completed. Afterward, the sensor specified by a command is ignored.
Media	Media pitch	After the automatic calibration is performed, the values obtained through the calibration will take effect until next calibration is performed or the printer power is turned off. (Settings specified by commands are ignored.)
	Effective print length	
	Gap length	

3. When the auto calibration with reflective sensor is selected, the lowest voltage detected by the reflective sensor is considered as a black mark level. And, the sum of this voltage and the threshold fine adjustment value will be stored as a threshold.

4. When the auto calibration with transmissive sensor is selected, the highest voltage detected by the transmissive sensor is considered as a gap level. After subtracting the threshold fine adjustment value from this voltage, the result will be stored as a threshold.

5. When "ON ALL" is selected, the highest voltage detected by transmissive sensor or the lowest voltage detected by the refrective sensor is considered as a gap level. After subtracting the threshold fine adjustment value for each sensor from this voltage, the result will be stored as a threshold.

6. The printer feeds about 160 mm long media to detect a black mark/gap and determine the threshold. When the printer has detected more than one black marks/gaps during this 160-mm media feed, the printer measures the media pitch and stops the automatic calibration 1 mm short of the bottom of a black mark or gap.

7. If the second black mark/gap is not found under the above conditions, the printer continues media feed for up to 500.0 mm to find the second black mark/gap. If it still cannot be detected, the printer will stop, as a paper jam.

8. This function supports the media pitch of 10.0 mm to 150.0 mm.

9. When the cutter is installed and a previous issue mode was cut mode, the media is cut and ejected after an automatic calibration completes.

10. While the automatic calibration is in operation, labels do not stop at the strip position even in strip or special strip mode.

11. When a label end occurs during an automatic calibration, the printer stops, resulting in an error. Closing the print head after loading a new label can clear the error and resume the automatic calibration.

12. During an automatic calibration, the ribbon motors are rotated. Even if the ribbon is not loaded, no ribbon error occurs. However, the print condition will be automatically changed to “No ribbon” after the calibration ends.

13. When “ON TRANS+BackFeed”, “ON REFL+BackFeed” or “ON ALL+BackFeed” is selected and if the following conditions are satisfied, the printer feeds the media backward for the media pitch length while lifting the print head.

Hardware	Optional ribbon saving module (solenoid) is installed.
Parameter setting	RIBBON SAVE parameter is set to TAG or LABEL.
Operating condition	Media pitch falls between 20mm and 100mm. The previous issue mode was Batch without cut. (The issue mode and the cut interval are not reset by a power off or a printer reset.)
Remarks	Even if the hardware requirement is not satisfied (i.e. the optional ribbon saving module is not installed), the printer feeds the media backward when the other requirements are satisfied. However, this operation is not guaranteed as it is outside of the specification.

14. The feed speed during the automatic calibration is 3 ips.

15. The print head must not be opened during automatic calibration as the subsequent printer operation is not guaranteed. If the print head is opened, turn off the power and back to on.

16. During an automatic calibration, the ribbon save is not performed even if setting is enabled.

9.5.13 POWER SAVE TIME

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
240	1	1	Decimal	None	3	0	None	Min.

9.5.14 CODE PAGE

- PC-850
- PC-852
- PC-857
- PC-8
- PC-851
- PC-855
- PC-1250
- PC-1251
- PC-1252
- PC-1253
- PC-1254
- PC-1257
- LATIN9
- Arabic
- PC-866
- UTF-8

9.5.15 ZERO FONT

- 0 Without slash
- Ø With slash

Note: The following fonts do not support zero with slash. Therefore, even if a zero with slash is selected, a zero without slash is used.

[Bit map fonts]
OCR-A, OCR-B, GOTHIC725 Black, Japanese Kanji, Chinese

[Outline fonts]
Price fonts 1, 2, and 3, DUTCH801 Bold, BRUSH738 Regular, GOTHIC725 Black, TrueTypeFont

9.5.16 CTRL CODE

- AUTO
- {,|,}
- ESC,LF,NUL
- MANUAL

9.5.16.1 MANUAL

- CODE1
- CODE2
- CODE3

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
0xFF	0x00	1	Hex	None	2	0	None	h

9.5.17 PEEL OFF STATUS

- OFF Disabled
- ON Enabled

9.5.18 KANJI CODE

- TYPE1:Windows: Windows code
- TYPE2:Original: Original code

9.5.19 EURO CODE

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
0xFF	0x20	1	Hex.	None	2	0	None	h

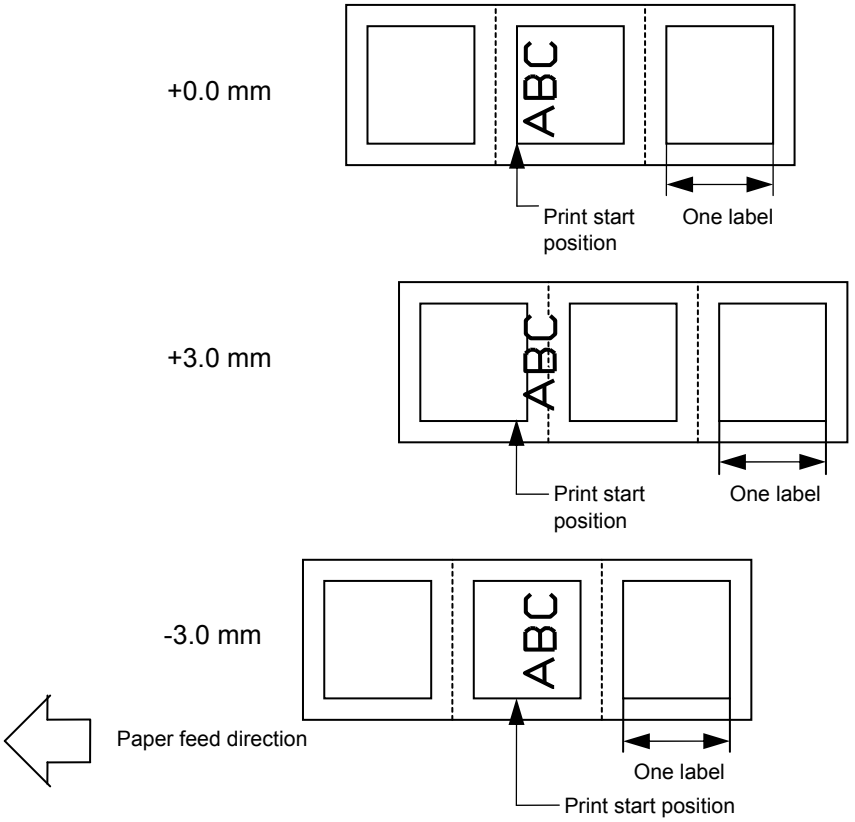
9.5.20 MAXICODE SPEC

- TYPE1:Compatible: Compatible with the current version
- TYPE2: Special Spec Special specification

Note: The mode specified by the command may be different from the actual mode, depending on the status of this parameter. Also, the data transmission method differs partly.
For details, refer to the B-EX Series External Equipment Interface Specification.

9.5.21 FEED ADJ.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+50.0	-50.0	0.1	Decimal	Exist	2	1	None	mm

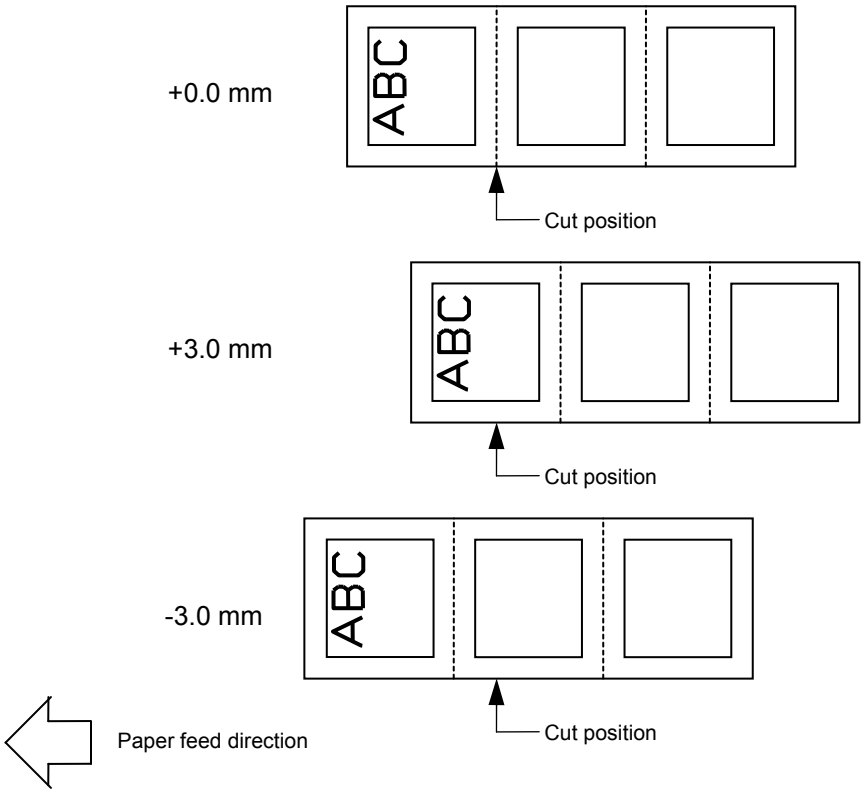


Note: The feed amount fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is ±50.0mm.

Note: A value which is equal to or larger than the media pitch (FEED ADJ. ≥ Media pitch) must not be set. If the set fine adjustment value causes the printer to feed the media backward from the print stop position to the next print start position, the printer operation is not guaranteed.

9.5.22 CUT ADJ

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+50.0	-50.0	0.1	Decimal	Exist	2	1	None	mm



Notes:

1. The cut position fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is ±50.0mm.
2. Solution for the problem with labels having label pitch of less than 25.4 mm when the disc cutter is used
   The minimum label pitch of the label which can be cut in normal use is 25.4 mm. When a label having a label pitch of less than 25.4 mm is used (although it is out of specifications), the edge of the label is caught by the edge of the thermal head during a reverse feed to the home position after cutting a label gap. Therefore, the label may not be fed back to the proper home position. By performing either method below, the problem will be solved.

   [Method 1] Lift the head.

   When the following conditions are all met, the cut operation is performed as follows.

   Head lifted → Forward feed to the cut position → Head lowered → Cut →
   Head lifted → Reverse feed to the home position → Head lowered

   Conditions: Issue Command, Feed Command, and Eject Command received.
   Label pitch of 25.4 mm, cut performed, transmissive sensor designated, cut position fine adjustment of ±10.0 mm or less, and issue mode “C”

   * The print head can be lifted/lowered only when the optional ribbon saving module is mounted and the ribbon saving function is set to ON with the parameter setting menu.
   * When the ribbon saving module is not installed, use Method 2 since the print head is not lifted/lowered.
   * If the bottom edge of the last label advances past the feed roller while the print head is lifted during label feed to cut, the sensor may not be able to detect an error even if the label cannot be fed any more.
   * If the head-up solenoid temperature is high, the print head may not be lifted.

[Method 2] Adjust the cut position fine adjustment value.

The cut position fine adjustment value can be calculated using the following method. If a calculated value does not work to feed the media backward to the proper home position, the cut position needs to be re-adjusted with another value.

Note: When this procedure is used, one or more printed labels are left between the print head and the cutter. Therefore, these labels need to be removed by an issue or a label feed.

(1) Cut position fine adjustment value calculation

$$\text{Cut position fine adjustment value} = (\text{Number of labels left between head and cutter}) \times (\text{Label pitch})$$

$$= \left(\frac{32.8\ \text{mm}}{\text{Label pitch}} \right) \times (\text{Label pitch})$$

* Any decimal remainders are rounded off.

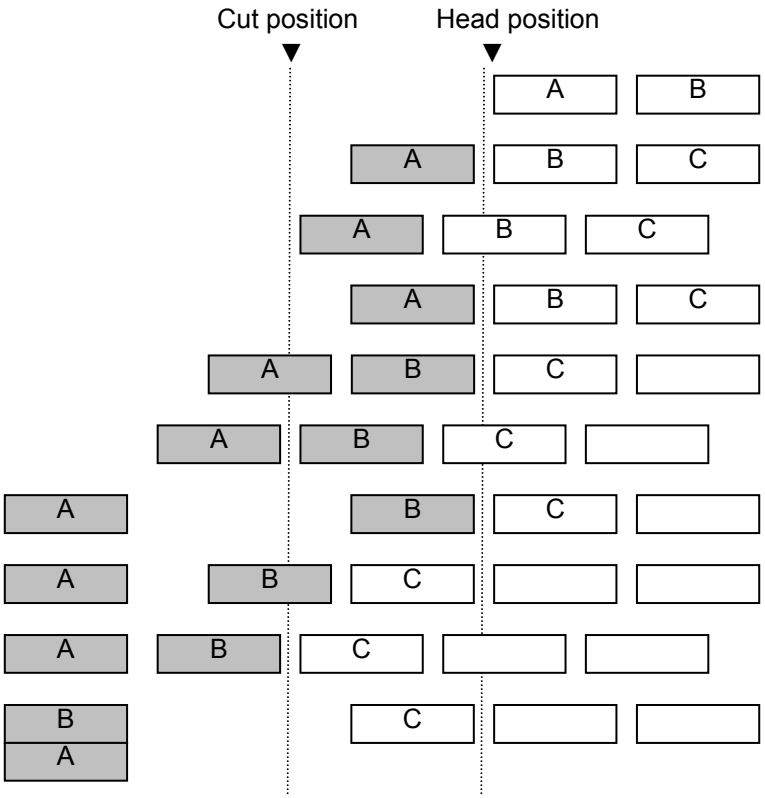
Ex) Label pitch: 30.0 mm

$$\text{Cut position fine adjustment value} = \left(\frac{32.8\ \text{mm}}{30.0\ \text{mm}} \right) \times (30.0\ \text{mm})$$

$$= 1 \times 30.0\ \text{mm}$$
$$= +30.0\ \text{mm}$$

(2) Operation example

Issue count: 2, Cut interval = 1



(1) Idle

(2) Completes printing the first label (A).

(3) Feeds the label to the cut position, then cuts the gap in front of label (A).

(4) Feeds the label backward to the home position.

(5) Completes printing the second label (B).

(6) Feeds the label to the cut position, then cuts the gap in front of label (B).

(7) Feeds the label backward to the home position.

(8) To eject label (B), feeds the third label (C).

(9) Feeds the label to the cut position, then cuts the gap in front of label (C).

(10) Feeds the label backward to the home position.

3. Procedure for label having less than the min. label pitch for each issue speed when the rotary cutter is used

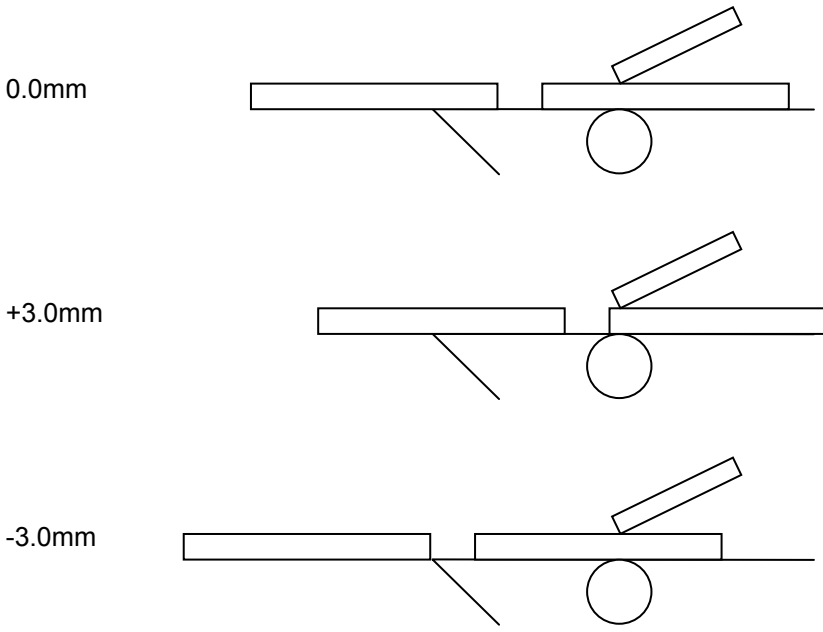
When the following conditions are all met, the cut operation for the last label to be cut is performed as follows.

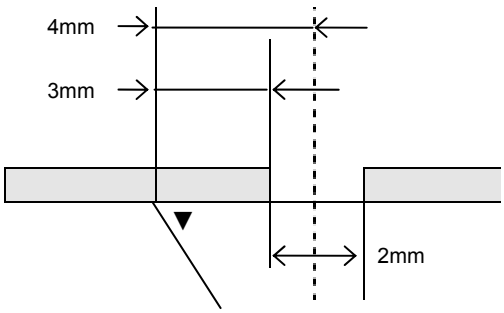
Forward feed to the cut position → Cut while feeding → Feed stops →
Head lifted → Reverse feed to the home position → Head lowered

Conditions: Issue Command, Feed Command, and Eject Command received.
Label pitch: Less than the min. label pitch for each issue speed,
cut performed, transmissive sensor designated, cut position fine adjustment of ±10.0 mm or less, and issue mode “C”

* For the Issue Command, this procedure is effective only when the next Issue Command is not received at the last label to be cut.
* The print head can be lifted/lowered only when the optional ribbon saving module is mounted and the ribbon saving function is set to ON with the parameter setting menu. When the ribbon saving module is not installed, the print head is not lifted or lowered.
* If the bottom edge of the last label advances past the feed roller while the print head is lifted during label feed to cut, the sensor may not be able to detect an error even if the label cannot be fed any more.
* If the head-up solenoid temperature is high, the print head may not be lifted.

4. Strip position fine adjustment

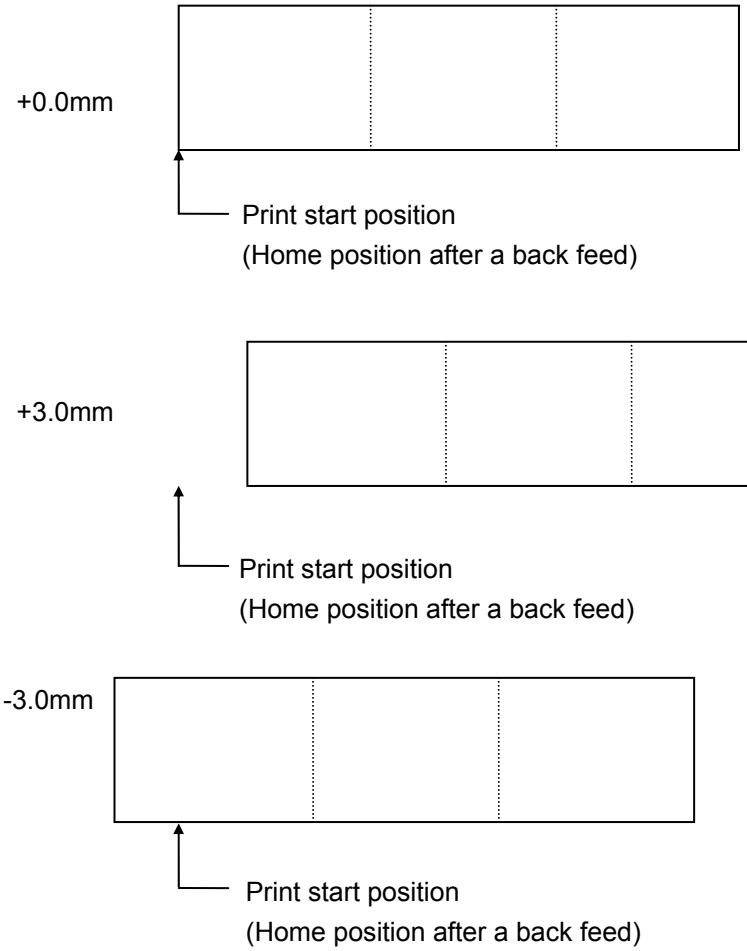




Printing in strip issue mode is stopped at the position where the distance from the middle point of the gap between labels to the end of the strip shaft is 4 mm, since the gap between labels is assumed to be 2 mm.
When the print stop position is not proper due to a greater gap, the print stop position should be adjusted using the strip position fine adjust function.

9.5.23 BACK ADJ.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+9.9	-9.9	0.1	Decimal	Exist	1	1	None	mm



Note:

1. The reverse feed amount fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is ±9.9mm.

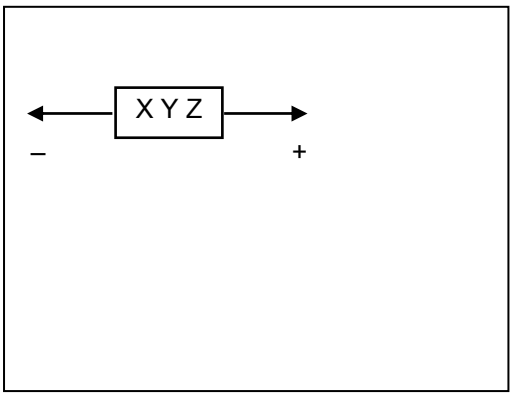
Note: There may be cases where a label is not returned to the home position depending on the print conditions, even if the media is fed backward for the same amount as the forward feed. For issuing media with the media sensor, if the label pitch is almost the same as the distance between the print head and the media sensor (75.5 mm), the media may not be returned to the home position when operations including a reverse feed (such as cut issues, strip issues, automatic forward feed) are performed. It may result in an error. To prevent this error from occurring, increase the reverse feed amount by performing the reverse feed amount fine adjustment in the + direction.

9.5.24 X ADJUST

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+99.5	-99.5	0.1	Decimal	Exist	2	1	None	mm

Notes:

1. The X ADJUST parameter can fine adjust the print position in X-coordinate (horizontal direction). The fine adjustment shall be performed so that the print position falls within the effective print width. (The X coordinate fine adjustment in the negative (-) direction is effective until the print field reaches coordinate 0. The coordinate does not change any further even if the fine adjustment is continued in the negative direction.)



2. The X-coordinate fine adjustment value is not applied to self-diagnosis results printing (maintenance counter and parameter settings, and auto diagnosis).
3. The X-coordinate fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is ±99.5mm.

9.5.25 HEAT ENERGY TYPE

- TRANS.(RIBBON)
- DIRECT THERMAL

Remarks: The HEAT ENERGY TYPE parameter is intended to make the printer perform appropriate printing for the supplies used (media such as label and tag, and ribbon). Use of a different supply from the setting may cause poor printing. For details, refer to the Supply Specification for the B-EX6T1 series.

Note: If “CN” is selected for the parameter clear destination, this parameter is not displayed on the menu. Therefore, the initial value of this parameter cannot be changed. (The initial value is fixed. See Section 9.8.3 PARAMETER CLEAR.)

9.5.25.1 TRANS. (RIBBON)

- SR1:AG2,AG4,AG6E
- SR2:RG2,FG2,SG2
- R1: AS1
- R2: RS1
- R3: (Resin3)
- Generic
- rsv1: (Reserved1)
- rsv2: (Reserved2)
- rsv3: (Reserved3)
- rsv4: (Reserved4)

Notes:
1. “Generic” is a setting for securing the print quality equivalent to that of the B-SX, but it is not effective at the print speed of 10 ips or faster. If 10 ips or faster print speed is specified, the printer operation is not guaranteed. For details, refer to the Supply Specification for the B-EX6T1 series.

9.5.25.2 DIRECT

- NORM: Normal
- rsv1: (Reserved1)
- rsv2: (Reserved2)
- rsv3: (Reserved3)
- rsv4: (Reserved4)
- rsv5: (Reserved5)
- rsv6: (Reserved6)
- rsv7: (Reserved7)
- rsv8: (Reserved8)
- rsv9: (Reserved9)

Note: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed on the menu and unable to be set in the system mode and user system mode. However, the initial value will be set after a RAM clear, so it is printed on the maintenance counter/parameter settings print label.

9.5.26 TONE ADJ. <T>

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+20	-20	1	Decimal	Exist	2	0	None	Step

Remarks:
1. Setting a value in the positive (+) direction, the print tone becomes darker. And, setting a value in the negative (-) direction, the print tone becomes lighter.
   +20 ← (Darker) ← 0 → (Lighter) → -20
2. The print tone fine adjustment value (thermal transfer) is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -20 ~ +20. If the value exceeds the print head rating, it is automatically corrected.
3. The factory default is +0step.

9.5.27 TONE ADJ. <D>

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+20	-20	1	Decimal	Exist	2	0	None	Step

Remarks:
1. Setting a value in the positive (+) direction, the print tone becomes darker. And, setting a value in the negative (-) direction, the print tone becomes lighter.
   +20 ← (Darker) ← 0 → (Lighter) → -20
2. The print tone fine adjustment value (thermal transfer) is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -20 ~ +20. If the value exceeds the print head rating, it is automatically corrected.
3. The factory default is +0.

9.5.28 RIBBON TORQUE

- Normal
- Low

9.5.29 FRONT RIBBON MOTOR

The menu structure of FRONT RIBBON MOTOR menu

Menu item
<2>SET PARAMETERS
FRONT RIBBON MOTOR
Normal Torque
Low Torque

9.5.29.1 Normal Torque

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+10	-15	1	Decimal	Exist	2	0	None	Step

Notes:
1. The fine adjustment value is not effective for the reverse rotation.
2. The fine adjustment value for the ribbon take-up motor is limited depending on the print speed.

Print speed	5 ips or slower	8 ips or slower	10 ips or faster
Fine adjustment value	+10 to +6	+5 to +1	-0 to -15

3. The ribbon motor torque fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -15 or +10.

9.5.29.2 Low Torque

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+10	-15	1	Decimal	Exist	2	0	None	Step

Notes:
1. The fine adjustment value is not effective for the reverse rotation.
2. The fine adjustment value for the ribbon take-up motor is limited depending on the print speed.

Print speed	5 ips or slower	8 ips or slower	10 ips or faster
Fine adjustment value	+10 to +6	+5 to +1	0 to -15

3. The ribbon motor torque fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -15 or +10.

9.5.30 REAR RIBBON MOTOR

The menu structure of REAR RIBBON MOTOR menu

Menu item
<2>SET PARAMETERS
REAR RIBBON MOTOR
Normal Torque
Low Torque

9.5.30.1 Normal Torque

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+10	-15	1	Decimal	Exist	2	0	None	Step

Notes:
1. The fine adjustment value is not effective for the reverse rotation.
2. The fine adjustment value for the ribbon supply motor is applicable to every print speed.

Print speed	All print speeds
Fine adjustment value	-15 to +10

3. The ribbon motor torque fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -15 or +10.

9.5.30.2 Low Torque

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+10	-15	1	Decimal	Exist	2	0	None	Step

Notes:
1. The fine adjustment value is not effective for the reverse rotation.
2. The fine adjustment value for the ribbon supply motor is applicable to every print speed.

Print speed	All print speeds
Fine adjustment value	-15 to +10

3. The ribbon motor torque fine adjustment value is the sum of the fine adjustment values set in the system mode (by key operation) and set by command (from the PC). The max. value is -15 or +10.

9.5.31 Ribbon Width

- NORM: Normal
- rsv1: (Reserved1)
- rsv2: (Reserved2)
- rsv3: (Reserved3)
- rsv4: (Reserved4)
- rsv5: (Reserved5)
- rsv6: (Reserved6)
- rsv7: (Reserved7)
- rsv8: (Reserved8)
- rsv9: (Reserved9)

9.6 TEST PRINT

Contents of TEST PRINT menu

Menu item
<3>TEST PRINT
PRINT CONDITION
SLANT LINE(1DOT)
SLANT LINE(3DOT)
CHARACTERS
BARCODE
NON-PRINTING
FACTORY TEST
AUTO PRINT(TRANS.)
AUTO PRINT(REFL.)

9.6.1 PRINT CONDITION

The menu structure of PRINT CONDITION

Menu item
<3>TEST PRINT
PRINT CONDITION
ISSUE COUNT
PRINT SPEED
SENSOR
PRINT TYPE
ISSUE TYPE
LABEL PITCH
PAPER FEED

Notes:

1. Initial value for each parameter at a power on

   ISSUE COUNT: 1
   PRINT SPEED: 5 ips
   SENSOR: TRANSMISSIVE
   PRINT TYPE: THERMAL TRANSFER
   ISSUE TYPE: NO CUT
   LABEL PITCH: 76mm
   PAPER FEED: FEED

2. Each fine adjustment value is effective for test print. However, the X-coordinate fine adjustment is excluded.
3. When an error occurs during a test print, an error message is displayed and printing is stopped. At this time, the error LED turns on and the online LED turns off.
4. The error is cleared by pressing the [CANCEL] key and [ENTER] key, and the display returns to the test print menu. At this time, the error LED turns off and the online LED turns on. Printing is not automatically resumed after the error is cleared.
5. The label size greater than the image buffer length cannot be designated. If it is designated, the printer prints data equivalent to the image buffer length then stops, or the printer stops because of an error.
6. When the transmissive sensor is selected, the gap between labels shall be 3 mm.

9.6.1.1 ISSUE COUNT

- 1
- 3
- 5
- 10
- 50
- 100
- 500
- 1000
- 5000

9.6.1.2 PRINT SPEED

Selectable printer speed differs depending on the resolution.

Resolution / Print speed	203dpi	305dpi
3 ips	Supported	Supported
5 ips	Supported	Supported
8 ips	Supported	Supported
10 ips	Supported	Supported
12 ips	Supported	Supported

Note: When the peel-off issue mode is selected, the maximum speed is limited to 10 ips.

9.6.1.3 SENSOR

- NONE
- TRANSMISSIVE
- REFLECTIVE
- MANUAL TRANS.
- MANUAL REFL.

9.6.1.4 PRINT TYPE

- THERMAL TRANSFER
- DIRECT THERMAL

9.6.1.5 ISSUE TYPE

- NO CUT
- WITH CUT
- PEEL OFF

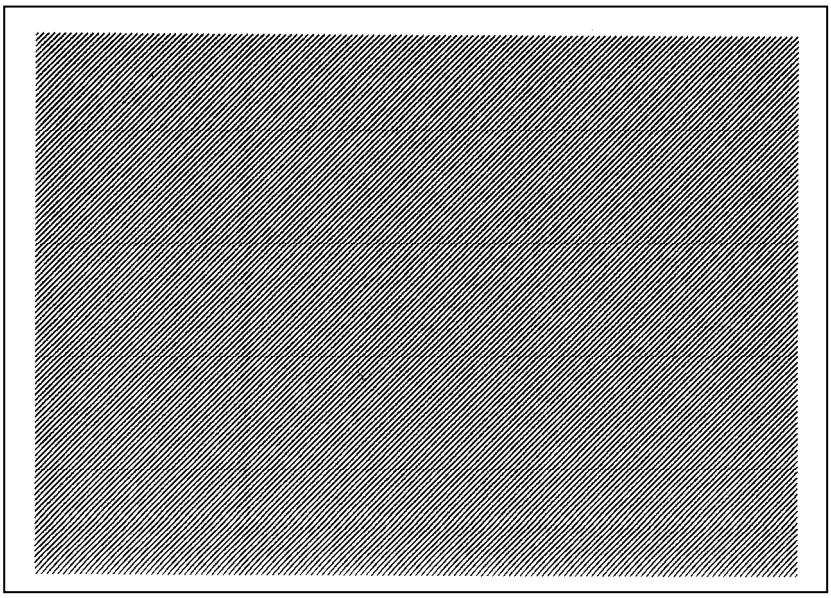
9.6.1.6 LABEL PITCH

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
999	5	1	Decimal	None	3	0	None	mm

9.6.1.7 PAPER FEED

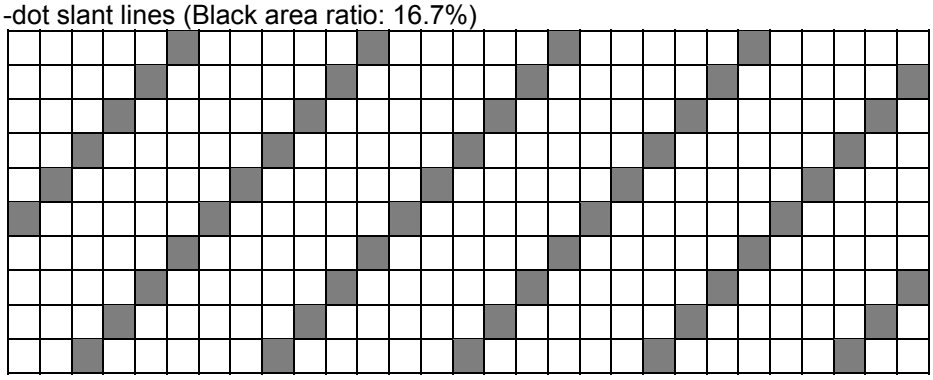
- NO FEED
- FEED

9.6.2 SLANT LINE (1DOT)

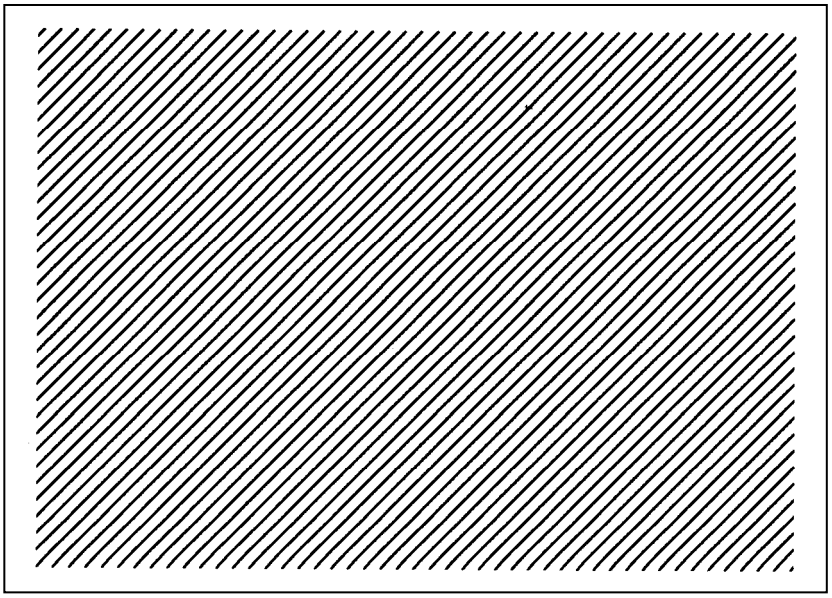


1-dot slant lines

Magnification of slant lines
1-dot slant lines (Black area ratio: 16.7%)

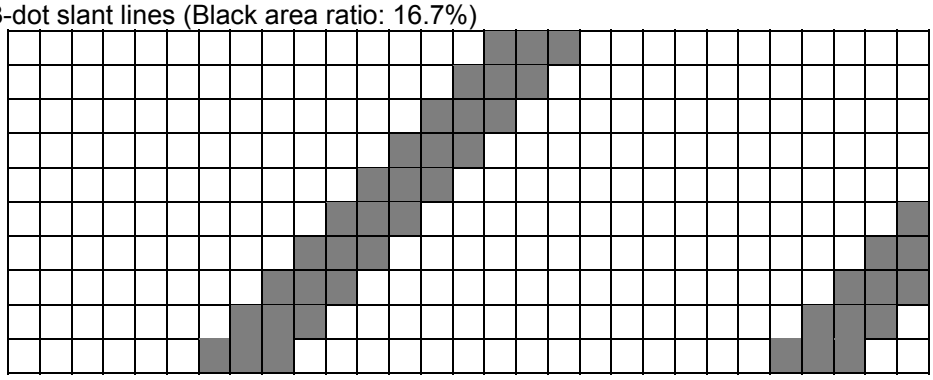


9.6.3 SLANT LINE (3DOT)



3-dot slant lines

Magnification of slant lines
3-dot slant lines (Black area ratio: 16.7%)



9.6.4 CHARACTERS

Gothic + Mincho

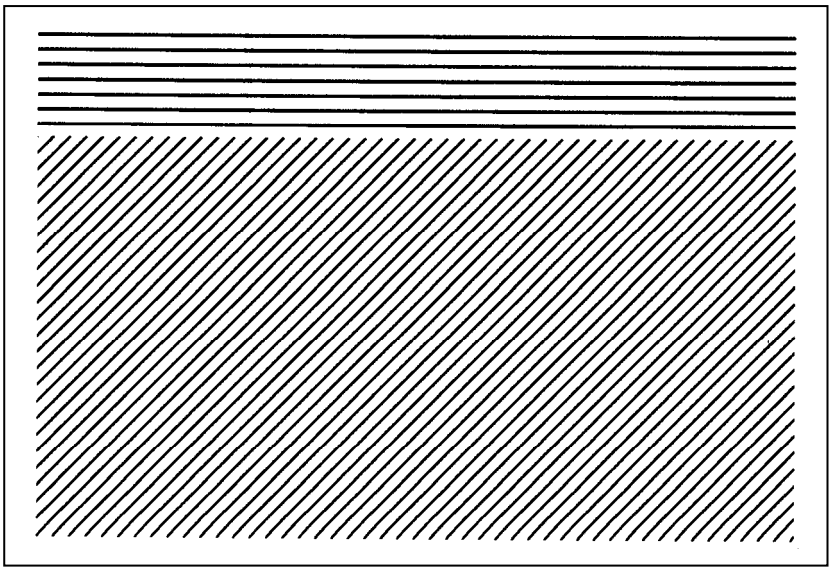
Gothic + Chinese

9.6.5 BARCODE

9.6.6 NON-PRINTING

The printer feeds blank label.

9.6.7 FACTORY TEST



9.6.8 AUTO PRINT (TRANS.)

The factory test print is performed on the following conditions, therefore, the parameter settings and the print density fine adjustment value are ignored.

Key functions after printing of each test pattern are as follows.

- [ENTER] key (or its substitute key): Next printing is performed.
- [CANCEL] key (or its substitute key): The display returns to the menu.
- Other keys: Invalid

<Factory test print patterns and print conditions>

Print test pattern		1 blank label
		3-dot slant lines
		Barcode
		Characters
Issue count		5 labels each
Print speed	203 dpi	5 ips
	305 dpi	5 ips
Sensor type		Transmissive sensor
Print method		Thermal transfer
Issue mode		Batch issue
Label pitch		76 mm
Print density fine adjustment value		±0

9.6.9 AUTO PRINT (REFL.)

The factory test print is performed on the following conditions. therefore, the parameter settings and the print density fine adjustment value are ignored.

Key functions after printing of each test pattern are as follows.

- [ENTER] key (or its substitute key): Next printing is performed.
- [CANCEL] key (or its substitute key): The display returns to the menu.
- Other keys: Invalid

<Factory test print patterns and print conditions>

Print test pattern		1 blank label
		3-dot slant lines
		Barcode
		Characters
Issue count		5 labels each
Print speed	203 dpi	5 ips
	305 dpi	5 ips
Sensor type		Reflective sensor
Print method		Thermal transfer
Issue mode		Batch issue
Label pitch		76 mm
Print density fine adjustment value		±0

9.7 SENSOR

Contents of SENSOR menu

Menu item
<4>SENSOR
TEMPERATURE
ADJUSTMENT
THRESHOLD SELECT
THRESHOLD LEVEL

9.7.1 TEMPERATURE

The ambient temperature and print head temperature are displayed.
Only when the temperature is below zero, the symbol of minus (-) is displayed.
The display is updated every 200 msec.
The range of each temperature is shown below.

Ambient temperature	-20 to 100
Print head temperature	-20 to 100

9.7.2 ADJUSTMENT

The menu structure of ADJUSTMENT menu

Menu item
<2>SET PARAMETERS
SENSOR
ADJUSTMENT
REFLECTIVE SENSOR
TRANSMISSIVE SENSOR
PEPER END LEVEL
RIBBON SENSOR

9.7.2.1 REFLECTIVE SENSOR

The sensor level of the reflective sensor is registered.
Place the tag paper to be used on the reflective sensor so that the sensor can detect a print (blank) area.
The display of the currently detected value is updated every 200 msec.
Hold down the [ENTER] key for 3 seconds or more.
When the registration of the “print area level” is completed, “Adjust Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.
If the registration failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on.
The ERROR LED turns off when the upper-level menu is displayed.
The setting range is as below.

Reflective sensor	0.0V to 5.0 V

9.7.2.2 TRANSMISSIVE SENSOR

The sensor level of the transmissive sensor is registered.
Remove some labels and place the backing paper so that the Transmissive sensor can detect it.
The display of the currently detected value is updated every 200 msec.
Hold down the [ENTER] key for 3 seconds or more.
When the registration of the “label gap level” is completed, “Adjust Complete” is displayed and an asterisk

(*) is shown on the right side of the voltage.
If the registration failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on. The ERROR LED turns off when the upper-level menu is displayed.
The setting range is as below.

Transmissive sensor	0.0V to 5.0 V

9.7.2.3 PAPER END LEVEL

Paper end level of the transmissive sensor and the reflective sensor is registered.
Remove any media from the printer.
The display of the currently detected value is updated every 200 msec.
Hold down the [ENTER] key for 3 seconds or more.
When the registration of the “paper end level” is completed, “Adjustment Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.
If the registration failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on. The ERROR LED turns off when the upper-level menu is displayed.
The setting range is as below.

Reflective sensor	0.0V to 5.0 V
Transmissive sensor	0.0V to 5.0 V

9.7.2.4 RIBBON SENSOR

Ribbon level is registered.
Set the ribbon so that the ribbon end sensor can detect a ribbon area.
The display of the currently detected value is updated every 200 msec.
Hold down the [ENTER] key for 3 seconds or more.
When the registration of the “ribbon level” is completed, “Adjust Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.
If the registration failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on. The ERROR LED turns off when the upper-level menu is displayed.
The setting range is as below.

Ribbon end sensor	0.0V to 5.0 V

9.7.3 THRESHOLD SELECT

- REFLECT Threshold value for the reflective sensor is selected.
- TRANS. Threshold value for the transmissive sensor is selected.

9.7.3.1 REFLECT

- MANUAL THRESHOLD Threshold set in the manual threshold setting mode is used.
- By COMMAND Threshold set by command is used.

9.7.3.2 TRANS.

- MANUAL THRESHOLD Threshold set in the manual threshold setting mode is used.
- By COMMAND Threshold set by command is used.

9.7.4 THRESHOLD LEVEL

The menu structure of THRESHOLD LEVEL menu

Menu item
<2>SET PARAMETERS
THRESHOLD LEVEL
REFLECT
TRANS.

9.7.4.1 REFLECT

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
4.0	0.0	0.1	Decimal	None	1	1	None	V

Note: If “0.0 V” is set, the value “0.0 V” is automatically corrected to the initial value “1.0 V”.

9.7.4.2 TRANS.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
4.0	0.0	0.1	Decimal	None	1	1	None	V

Note: If “0.0 V” is set, the value “0.0 V” is automatically corrected to the initial value “1.4 V”.

9.8 RAM CLEAR

Contents of RAM CLEAR menu

Menu item
<8>RAM CLEAR
NO RAM CLEAR
MAINTE.CNT CLEAR
PARAMETER CLEAR

9.8.1 NO RAM CLEAR

This option is provided for users who access this menu by mistake, and intended to exit from the RAM clear menu without performing any RAM clear.

9.8.2 MAINTE.CNT CLEAR

The following maintenance counter data is cleared.

- ALL COUNTER
- FEED
- PRINT
- CUT
- OTHER

Notes: 1. Maintenance counter data to be cleared and the initial values after maintenance counter clear

Maintenance counter item	Initial value	Parameter and cleared items				
		ALL COUNTER	FEED	PRINT	CUT	OTHER
① Label distance covered	0 km	Cleared	Cleared			
② Print distance	0 km	Cleared		Cleared		
③ Cut count	0	Cleared			Cleared	
④ Head up/down count	0	Cleared				Cleared
⑤ Ribbon motor drive time	0 hours	Cleared				Cleared
⑥ Head-up solenoid driver time	0 hours	Cleared				Cleared
⑦ RS-232C hardware error count	0	Cleared				Cleared
⑧ System error count	0	Cleared				Cleared
⑨ Momentary power interruption count	0	Cleared				Cleared

<Reference: Maintenance counter printout>

```
<< COUNTER >>
TOTAL FEED  4.8km                                  [QM]
FEED        0.0km··· ①Label distance covered
FEED1       4.8km
FEED2       0.0km
FEED3       0.0km
FEED4       0.0km
PRINT       0.0km··· ②Print distance
PRINT1      4.5km
PRINT2      0.0km
PRINT3      0.0km
PRINT4      0.0km
CUT         0 ····· ③Cut count
HEAD U/D    0 ····· ④Head up/down count
RIBBON      0h ····· ⑤Ribbon motor drive time
SOLENOID    0h ····· ⑥Head-up solenoid driver time
232C ERR    0 ····· ⑦RS-232C hardware error count
SYSTEM ERR  0 ····· ⑧System error count
POWER FAIL  0 ····· ⑨Momentary power interruption count
```

2. LCD message while a maintenance counter clear is performed

	Display
While clearing	ALL COUNTER CLEAR. . .
After the maintenance counter clear is completed	ALL COUNTER COMPLETED Turn off the printer

3. After the maintenance counter clear is completed, turn off the printer when “COMPLETED. Turn off the printer” is displayed.

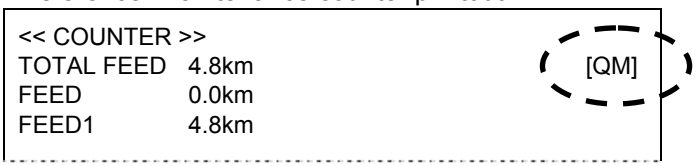
9.8.3 PARAMETER CLEAR

The parameter settings are cleared and reset to the initial values for each destination.
When the printer is started for the first time after a parameter clear, the initial setting wizard is started. This wizard enables setting the basic parameters (LCD language, use of the ribbon, media type, etc.) required for various settings.

9.8.3.1 Parameters to be cleared

After the parameter settings are cleared, the initial values for a selected destination are set.
・QM TYPE
・JA TYPE
・CN TYPE

Notes:
1. The destination code printed on the upper right corner of the maintenance counter printout shows which destination was selected for the parameter clear.
<Reference: Maintenance counter printout>



2. LCD message while a maintenance counter clear is performed

	Display
While clearing	QM TYPE CLEAR. . .
After the parameter clear is completed	QM TYPE COMPLETED Turn off the printer

3. Parameter settings to be cleared and the initial values set after parameter clear

■ Settings printed on the maintenance counter/parameter setting data printout

<<ADJUST>>

Item			Description	Initial value
[PC] / [KEY]				
	FEED		Feed amount fine adjustment value	[PC] +0.0mm [KEY] +0.0mm
	CUT		Cut position/Strip position fine adjustment value	[PC] +0.0mm [KEY] +0.0mm
	BACK		Reverse feed amount fine adjustment value	[PC] +0.0mm [KEY] +0.0mm
	TONE(T)		Print tone fine adjustment value (Thermal transfer)	[PC] +0step [KEY] +0step
	TONE(D)		Print tone fine adjustment value (Direct thermal)	[PC] +0step [KEY] +0step
	RIBBON TORQUE NORM			
		RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up side)	[PC] +0step [KEY] +0step
		RBN(BK)	Ribbon motor drive voltage fine adjustment (Supply side)	[PC] +0step [KEY] +5step
	RIBBON TORQUE LOW			
		RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up side)	[PC] +0step [KEY] +0step
		RBN(BK)	Ribbon motor drive voltage fine adjustment (Supply side)	[PC] +0step [KEY] +5step
RIBBON WIDTH			Ribbon width	“6
X ADJ.			X-coordinate fine adjustment value	+0.0mm
THRESHOLD(R)			Manual threshold fine adjustment for reflective sensor	1.0V
THRESHOLD(T)			Manual threshold fine adjustment for transmissive sensor	1.4V

<< PARAMETER SETTINGS>>

Item	Description		Initial value
MEDIA LOAD	Media feed to the print start position		ON
MOVE TO TEAROFF	Auto feed to the cut/strip position after printing	QM TYPE CN TYPE	OFF
		JA TYPE	When the cutter installed: ON When cutter not installed: OFF
	Media stop position fine adjustment value		+0.0mm
	Feed mode	QM TYPE CN TYPE	MODE1
		JA TYPE	When the cutter installed: MODE2 When cutter not installed: MODE1
HEAD UP CUT/RWD	Whether to enable the head-up function during cut issue or use the Rewinder		OFF
RIBBON SAVE	Whether to enable the ribbon saving function	QM TYPE CN TYPE	OFF
		JA TYPE	TAG

PRE PEEL OFF	Whether to enable the pre-peel-off function	OFF
BACK FEED SPEED	Reverse feed speed	STD
CALIBRATION (Note)	Auto calibration	OFF
CODE PAGE	Character code selection	PC-850
	Character “0” selection	0 (without slash)
CTRL CODE	Control code type	AUTO
PEEL OFF STATUS	Whether to send a peel-off wait status to the host	OFF
USB I/F STATUS	Whether to return a response to the host via USB	OFF
FEED KEY	[FEED] key function	FEED
KANJI CODE	Kanji code type	TYPE1: Windows
EURO CODE	EURO code setting	B0 (0xb0)
AUTO HEAD CHK	Auto print head check	OFF
WEB PRINTER	Web printer function	OFF
RIBBON NEAR END	Ribbon near end detection	OFF
EX. I/O MODE	Expansion I/O operating mode	TTEC Standard
PAPER/RBN END	Printer behavior at label/ribbon end	Stop immediately
MAXICODE SPEC.	MaxiCode specification	TYPE1: Compatible
XML	XML data type to be printed	STD
THRESHOLD SEL (R)	Threshold value for reflective sensor	COMMAND SET
THRESHOLD SEL (T)	Threshold value for transmissive sensor	COMMAND SET
ENERGY TYPE (T)	Energy level applied to the print head in thermal transfer mode	Generic
ENERGY TYPE (D)	Energy level applied to the print head in thermal direct mode	NORM: Normal
POWER SAVE TIME	Length of time until the printer enters sleep mode	15min
RIBBON TORQUE	Ribbon torque	Normal
BASIC	BASIC interpreter setting	OFF
BASIC TRACE	BASIC interpreter trace setting	OFF

Note: Though the setting value is reset to the initial value by clearing a parameter, the first online operation after clearing a parameter is based on the value set with the initial setting wizard.

<< PANEL >>

Item	Description		Initial value
LANGUAGE	LCD message language	QM TYPE	ENGLISH
		JA TYPE	JAPANESE
		CN TYPE	Simplified CHINESE
MODEL NAME	Whether to display the model name		ON
PRINTED COUNTER	Whether to display the number of labels printed		ON
IP ADDRESS	Whether to display the IP address		ON
CONTRAST	Contrast of the LCD		40
SYSTEM PASSWORD	System mode password		Not cleared.

		* The password is not cleared, either.

<< STORAGE AREA >>

Item	Description	Initial value
TTF AREA	TrueTypeFont storage area size	Not cleared.
EXT CHR AREA	External characters storage area size	Not cleared.
BASIC AREA	BASIC file storage area size	Not cleared.
PC SAVE AREA	PC command storage area size	Not cleared.

<< USB >>

Item	Description	Initial value
SERIAL NUMBER	USB serial number	DISABLE

<< RS-232C >>

Item	Description		Initial value
BAUD RATE	Baud rate		9600bps
DATA LENGTH	Data length		8bits
STOP BIT	Stop bit length		1bit
PARITY	Parity	QM TYPE CN TYPE	NONE
		JA TYPE	EVEN
CONTROL	Transmission control method		XON+READY AUTO

<< CENTRO >>

Item	Description	Initial value
ACK/BUSY	ACK/BUSY timing	Rising edge
INPUT PRIME	Whether to reset the printer when the INIT signal is ON	ON
PLUG & PLAY	Plug and play	OFF

<< LAN/WLAN >>

Item	Description		Initial value
LAN/WLAN	Selection of LAN type		AUTO
SNMP	SNMP		ON
IP ADDRESS	Printer IP address		Not cleared.
SUBNET MASK	Subnet mask		Not cleared.
GATEWAY ADDRESS	Gateway address		Not cleared.
SOCKET PORT	Whether to enable socket communication	QM TYPE CN TYPE	Not cleared.
		JA TYPE	ON
DHCP	DHCP		ON
DHCP CLIENT ID	DHCP ID		Not cleared.
DHCP HOST NAME	DHCP host name		Not cleared.
CONNECTION MODE	WLAN: Communication mode		INFRASTRUCTURE
ESS ID	WLAN: ESS ID		TOSHIBATEC
ENCRYPTION	WLAN: Encryption		OFF

WPA MODE	WLAN: WPA	OFF
AUTHENTICATION	WLAN: Authentication method	OPEN
802.1X SUPPLICANT	WLAN: Authentication method	OFF
DEFAULT KEY	WLAN: Encryption key	1
802.11bgn CHANNEL	WLAN：AP Mode channel	1
LPR	Whether to enable LPR	ON

<< RFID >>

Item	Description	Initial value
MODULE TYPE	RFID module type	NONE
TAG TYPE	RFID tag type	NONE
RF CHANNEL	RFID channel setting	AUTO
RETRY POSITION	RFID adjustment for retry	+00mm
RETRY LABELS	Max. number of RFID issue retries	3 labels
READ RETRY	Max. number of RFID read retries	5 times
	RFID read retry timeout	4.0 sec.
WRITE RETRY	Max. number of RFID write retries	5 times
	RFID write retry timeout	2.0 sec.
POWER LEVEL	Radio intensity level	251
Q VALUE	RFID module Q value	0
AGC THRESHOLD	RFID AGC threshold setting	0
WRITE AGC	AGC threshold for data write	0
RETRY MIN AGC	AGC threshold lower limit for retry	0
TAG CHECK	RFID error tag detection	Not cleared
MULTI WRITE	Hibiki tag multi-word write	OFF
CALIB. MODE	RFID calibration mode	OFF
CALIB. AGC	Optimum AGC value obtained through RFID calibration	0
CALIB. POSITION	Distance to the optimum read/write position obtained through RFID calibration	+000.0mm
ANTENNA POSITION	Position of the RF antenna and the wave director	Not cleared.
SUCCEEDED TAGS	Number of times data write succeeded	Not cleared.
VOID PRINT TAGS	Number of times data write failed	Not cleared.

<< RTC >>

Item	Description	Initial value
BATTERY CHECK	Battery check	Not cleared.
RENEWAL	Time update timing	Not cleared.

■ Settings not printed on the maintenance counter/parameter setting data printout

System mode:

<12>Z-MODE

Item	Initial value
Z-MODE	OFF

User system mode:

<5>SHOW ISSUE COND.

Item	Initial value
Sensor (Note)	TRANSMISSIVE
Mode	BATCH
Print Speed	203 dpi: 5 ips 305 dpi: 5 ips
Ribbon (Note)	RBN w/o save
Direction	BOTTOM
Media pitch (Note)	203 dpi: 76.0mm 305 dpi: 76.0mm
Print length	203 dpi: 74.1mm 305 dpi: 74.2mm
Print width	203 dpi: 160.0mm 305 dpi: 160.0mm
Media width	Not cleared

Note: Though the setting value is reset to the initial value by a parameter clear, the first online operation after a parameter clear is performed based on the value set with the initial setting wizard.

9.9 INTERFACE

Contents of INTERFACE menu

Menu item
<6>INTERFACE
LAN/WLAN
USB
RS-232C
CENTRONICS
EXP.I/O

9.9.1 LAN/WLAN

The menu structure of LAN/WLAN

Menu item
<6>INTERFACE
LAN/WLAN
LAN/WLAN
BASIC INFORMATION
IP ADDRESS
SUBNET MASK
GATEWAY ADDRESS
DHCP
DHCP CLIENT ID
DHCP HOST NAME
SOCKET PORT
PORT NUMBER
LPR
WLAN
SNMP
WEB PRINTER

9.9.1.1 LAN/WLAN

- OFF
- ON (AUTO)
- ON (LAN)
- ON (WLAN)

9.9.1.2 BASIC INFORMATION

The following network-related information is displayed.

- IP address
- Subnet mask
- Gateway address
- Socket port status
- Socket port number

9.9.1.3 IP ADDRESS

IP address is displayed and set.

9.9.1.4 SUBNET MASK

Subnet mask is displayed and set.

9.9.1.5 GATEWAY ADDRESS

Gateway address is displayed and set.

9.9.1.6 DHCP

Select whether to enable DHCP.

- OFF
- ON

9.9.1.7 DHCP CLIENT ID

Enter a DHCP client ID with Hex. code.
Setting range: 00 to 63 (64 bytes)

9.9.1.8 DHCP HOST NAME

Enter a DHCP host name with ASCII code.
Setting range: 00 to 31 (32 bytes)

9.9.1.9SOCKET PORT

Select whether to enable the socket communication.

- OFF
- ON

9.9.1.10 PORT NUMBER

Socket port number is displayed and set.
Setting range: 00000 to 65535

9.9.1.11 LPR

Select whether to enable the LPR.

- OFF
- ON

9.9.1.12 WLAN

The menu structure of WLAN

Menu item
<6>INTERFACE
LAN/WLAN
WLAN
WLAN STANDARD
CONNECTION MODE
ESSID
WEP DEFAULT KEY
AP MODE CHANNEL

9.9.1.12.1 WLAN STANDARD

- 802.11b/g/n

9.9.1.12.2 CONNECTION MODE

- AP MODE
- INFRASTRUCTURE

Note: For the combinations of WLAN connection mode and authentication, refer to the Network Specification, Section 9.7 Parameter Setting.

9.9.1.12.3 ESSID

Enter an ESSID with ASCII code.

Setting range: 00 to 31 (32 bytes)

9.9.1.12.4 WEP DEFAULT KEY

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
4	1	1	Decimal	None	1	0	None	None

9.9.1.12.5 AP MODE CHANNEL

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
14	1	1	Decimal	None	2	0	None	None

9.9.1.13 SNMP

- OFF
- ON

9.9.1.14 WEB PRINTER

- OFF: Disables web printer function.
- ON(Internal Memory): Enables web printer function (using an internal memory).
- ON(External Memory): Enables web printer function (using an external memory).

9.9.2 USB

The menu structure of USB

Menu item
<6>INTERFACE
USB
USB SERIAL ID
USB I/F STATUS

9.9.2.1 USB SERIAL ID

- OFF
- ON

9.9.2.2 USB I/F STATUS

- OFF: No response is returned.
- ON: Returns a response to the host via USB.

Notes:

1. Regardless of the setting of this parameter, the status indicating the end of issue is automatically returned.
2. Transmission of the commands related to the status is performed as follows.
   1) WS, WB, or WN command
      - In the case the USB and other interface cables are connected to the printer:
        Whether a status is returned or not depends on the setting of this parameter.
        Example) When this parameter is set to ON and a WS or WB command is sent to the printer via LAN, the printer returns the status via both LAN and USB.
      - In the case only the USB cable is connected to the printer:
        A status will be returned regardless of the setting of this parameter.

   2) Status-related commands other than WS, WB and WN
      Whether a status is returned or not depends on the setting of this parameter.
      Example 1) When a command is sent via the interface other than USB, a status will not be returned regardless of the setting of this parameter.
      Example 2) When a command is sent via USB, whether a status is returned or not depends on the setting of this parameter.
      * When this parameter is set to OFF, no status is returned via USB even if the USB cable is connected.

9.9.3 RS-232C

The menu structure of RS-232C

Menu item
<6>INTERFACE
RS-232C
BAUD RATE
DATA LENGTH
STOP BIT
PARITY
CONTROL

9.9.3.1 BAUD RATE

- 2400 bps

- 4800 bps
- 9600 bps
- 19200 bps
- 38400 bps
- 115200 bps

9.9.3.2 DATA LENGTH

- 8 bits
- 7 bits

9.9.3.3 STOP BIT

- 1 bit
- 2 bits

9.9.3.4 PARITY

- NONE
- EVEN
- ODD

9.9.3.5 CONTROL

- XON+READY AUTO (Outputs XON at power on, XOFF at power off)
- XON+XOFF AUTO (Outputs XON at power on, XOFF at power off)
- READY/BUSY RTS (Outputs no XON/OFF at power on/off)
- XON+XOFF (Outputs no XON/OFF at power on/off)
- READY/BUSY (Outputs no XON/OFF at power on/off)

9.9.4 CENTRONICS

The menu structure of CENTRO.

Menu item		
<6>INTERFACE		
	CENTRONICS	
		ACK/BUSY
		INPUT PRIME
		PLUG & PLAY

9.9.4.1 ACK/BUSY

- Rising edge
- Trailing edge

9.9.4.2 INPUT PRIME

- OFF
- ON

9.9.4.3 PLUG & PLAY

- OFF

- ON

Note: Plug & play function of USB is always enabled regardless of this setting.

9.9.5 EXP.I/O

- TTEC Standard
- Inline

9.10 RFID

Contents of RFID menu

Menu item
<7>RFID
TEST
MODULE
RETRY
UHF SETTING
OTHER
CARRIER SENSE

9.10.1 TEST

RFID tag data related to the test is read.

Menu item
<7>RFID
TEST
ID READ

9.10.1.1 ID READ

The printer enters the read test mode, and a read test is performed each time the [ENTER] key is pressed. When the data of a tag can be read, it is displayed on the LCD.

When the read test failed, the following message is displayed on the LCD.

Error message	Error description
MODULE TYPE ERROR	RFID module type has been set to NONE or a communication cannot be established.
COUNTRY CONFIG ERROR	Country code has not been set.
READ ERROR Confirm Setting or set other Tag.	The type of the tag to be read and one selected by the RFID tag type selection do not match.
NOT AVAILABLE	Not supported.
NO RESPONSE	No response from the tag
READ TIMEOUT Set a RF-Tag on Ant.	Timeout
UNKNOWN ERROR	Other errors

Note:

Only the tags selected for the RFID tag type can be read.

If the type of the tag to be read and one selected by the RFID tag type selection do not match, the read test results in an error. Therefore, RFID tag type shall be selected before the read test is started.

<Display example>

Display
ID READ TAG 1/16 (1) AGC 0 (2) 00010203 04050607 (3) 08090A0B 0C0D0E0F (3)

・The number of tag being read/The total number of tags read

(Mostly, only 1 tag is read.)

- For the UHF module, AGC value of the read tag is displayed with decimal number.
- Data displayed on the 3rd and 4th lines are expressed with hex. code. (16 digits x 2 lines = 32 digits)

The displayed data differs depending on the module type.

RFID module	Displayed data
B-EX706-RFID-U4-R B-EX706-RFID-U4-EU/US/AU-R	EPC code of EPC area

- In the case of 16 bytes or more data, only the first 16 bytes are displayed. When data is less than16 bytes, the vacant digits will be filled with spaces.
- If more than one tag is read at one time, especially when short-pitch tags are used, pressing the [UP] or [DOWN] key shows the other tags' data.

9.10.2 MODULE

The information related to the module setting is displayed.

The menu structure of MODLE

Menu item
<7>RFID
MODULE
MODULE TYPE
COUNTRY
TAG
RF CHANNEL

9.10.2.1 MODULE TYPE

- NONE — No RFID module is installed.
- UHF band (U4) — B-EX706-RFID-U4-R (Japan)
  B-EX706-RFID-U4-EU-R (Europe)
  B-EX706-RFID-U4-US-R (U.S.A)
  B-EX706-RFID-U4-AU-R (Australia)

Note: This setting will become effective after the printer power is turned off, and back to on.

9.10.2.2 COUNTRY

When the module type is set to "U4", the country code of the currently installed module is displayed.

If the module type is set to other than "U4", "INVALID" is displayed.

It is possible to change the country setting only when the module type is set to "U4" and the actually installed module is US or EU or AU. However, this menu is password-protected because changing the country setting causes the output frequency to change.

The following message is displayed depending on the module type setting, the mounted module type, and the module mount condition.

Module Type parameter	Module type and status	Message
NONE	No module installed.	NONE
U4	No module installed.	No RFID Module

	B-EX706-RFID-U4-R B-EX706-RFID-U4-EU-R B-EX706-RFID-U4-US-R B-EX706-RFID-U4-AU-R	No country setting	Need Setting for use [ENTER] for Setting

*1: Selectable country codes differ depending on the RFID module type. Multiple country codes may be displayed when setting a country code, but be sure to select the country where the RFID module is used. Setting a different country code is prohibited.
For the selectable country codes, refer to Section 9.4.2.1 Module version and LCD message.

9.10.2.3 TAG

Selectable tag types vary according to the module setting.
The number in the table indicates the scroll line number.

	NONE	H1	H2	U2/U4
NONE	1	1	1	1
I-Code	2	2		
Tag-It	3	3		
C220	4	4		
ISO15693	5	5	2	
C210	6	6		
C240	7	7		
C320	8	8		
EPC C1 Gen2	9			2

9.10.2.4 RF CHANNEL

A channel used for RFID tag write is set.

- AUTO
- 2CH
- 3CH
- 4CH
- 5CH
- 6CH
- 7CH
- 8CH

Notes:

1. When a channel is chosen from 2CH to 8CH, that channel will be continuously used.
2. When the channel is set to AUTO, an available channel is searched in the following order:
   (2CH → 8CH → 6CH → 4CH → 3CH → 7CH → 5CH → 2CH)
3. The channel setting works effectively only for the B-EX706-RFID-U4-R(*).
   *: The frequencies used for the B-EX706-RFID-U4-R are as follows.

Channel	2CH	3CH	4CH	5CH	6CH	7CH	8CH
Frequency (MHz)	921.0	921.2	921.4	921.6	921.8	922.0	922.2

9.10.3 RETRY

The parameters related to retry are set.
The menu structure of RETRY menu

Menu item
<7>RFID
RETRY
RETRY POSITION
RETRY LABELS
READ RETRY
WRITE RETRY

9.10.3.1 RETRY POSITION

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+99	-99	1	Decimal	None	2	0	None	mm

If writing data on a tag failed, the printer feeds the RFID tag forward or backward for specified length, in order to retry data write. When “0” is set for this parameter, a retry is not performed.
Only the value of -3mm or less or +3mm or more is effective.

9.10.3.2 RETRY LABLES

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
255	0	1	Decimal	None	3	0	None	Labels

When issuing an RFID tag failed, the printer prints the error (Void) pattern, and retries to issue a tag for up to the specified number of times. If the printer does not succeed even after having retried for the specified number of times, the printer stops, resulting in an RFID WRITE error.

9.10.3.3 READ RETRY

The number of times tag read is retried and the timeout for read retry are set.

(1) The number of times tag read is retried

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
255	0	1	Decimal	None	3	0	None	Times

The printer retries to read the data in an RFID tag for up to the specified number of times. If the data readretry period expired before the specified number of retries, the printer stops the retries at the time. Whenever the printer writes data onto an RFID tag, the tag will be read first. The max. number of retries set by this parameter is also used for this pre-read.

(2) The timeout for RFID tag read retry

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
9.9	0.0	0.1	Decimal	None	1	1	None	Second

The printer retries to read the data in an RFID tag for the specified length of time. If the printer has retried for the specified number of times within the RFID read retry period, the printer stops the retries at the time. Whenever the printer writes data onto an RFID tag, the tag is read first. The read retry timeout set by this parameter is also used for this pre-read.

9.10.3.4 WRITE RETRY

The number of times tag write is retried and the timeout for write retry are set.

(1) The number of times tag write is retried

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure

255	0	1	Decimal	None	3	0	None	Times

The printer retries to write data onto an RFID tag for up to the specified number of times. If the data write period expired before the specified number of retries, the printer stops the retries at the time.

(2) The timeout for RFID tag write retry

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
9.9	0.0	0.1	Decimal	None	1	1	None	Second

The printer retries to write data on an RFID tag for the specified length of time.

If the printer has retried for the specified number of times within the RFID write retry timeout, the printer stops the retries at the time.

9.10.4 UHF SETTING

The parameters related to UHF setting are set.

The menu structure of UHF SETTING

Menu item
<7>RFID
UHF SETTING
POWER LEVEL
Q VALUE
AGC THRESHOLD
WRITE AGC THRESHOLD
WRITE RETRY MIN AGC
CALIB. MODE
CALIB. AGC
CALIB. POSITION
ANTENNA POSITION

9.10.4.1 POWER LEVEL

Radio output level of UHF is set.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
See Note 1.	See Note 1.	1	Decimal	None	3	0	None	None

Notes:

1. The maximum and minimum values vary depending on the module type.

	Max. value	Min. value	Initial value
B-EX700-RFID-U4-R B-EX700-RFID-U4-EU/US/AU-R	18	0	18

2. The range of output level is 18 (approx. 100mW) to 0 (approx. 1mW).

9.10.4.2 Q VALUE

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
15	0	1	Decimal	None	2	0	None	None

In the case multiple RFID tags are read at the same time, this menu is useful to focus on a target tag. Set the Q value to “1” or above (2 is recommended). Q value “0” causes the tags to interfere with each other and disables proper data write.

When the Q value is set, set an AGC threshold for data write and an AGC threshold lower limit for retry, also. Setting all these values enables writing data to a tag placed just above the antenna.
Actually, the problem of reading multiple tags at the same time does not occur with most RFID tag types. It is not necessary to change the default setting of “0”.

Note: This is effective only for the following modules:
- B-EX706-RFID-U4-R
- B-EX706-RFID-U4-EU/US/AU-R

9.10.4.3 AGC THRESHOLD

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
15	0	1	Decimal	None	2	0	None	None

When the obtained gain of an RFID tag is lower than the AGC threshold, the tag is considered as an error tag even if a data write succeeds.
When the AGC threshold is set to “0”, all tags are writable.
When this parameter is set to “8”, for example, tags with the AGC threshold level of 7 or less are considered as error tags.
The optimum value is different depending on the tag types.

Note: This is effective only for the following modules:
- B-EX700-RFID-U4-R
- B-EX700-RFID-U4-EU/US/AU-R

9.10.4.4 WRITE AGC THRESHOLD

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
15	0	1	Decimal	None	2	0	None	None

When the Q value is set to 1 or above, the AGC threshold for data write becomes effective.
When the obtained gain of an RFID tag is lower than the AGC threshold for data write, a data write operation is not performed. In other words, setting an AGC threshold for data write enables writing data only to a tag placed just above the antenna.
Supposing that the gain of a tag just above the antenna is 14 and that of a tag off the antenna is 7, setting the threshold to 11 (a value between 8 and 14) enables the printer to write data only to the tag just above the antenna.
When the threshold is set to 0, a data write operation is performed regardless of the gain of a tag.
Both of the AGC threshold and the AGC threshold for data write are used to determine whether a tag is defective or not, but the timing of a gain measurement is different. In the case of the AGC threshold, this is performed after data is written to a tag. On the contrary, when the AGC threshold for data write is effective a measurement is performed before data is written. And if a gain value is lower than the threshold, a data write operation is not performed.
The optimum value differs depending on the tag type.
Actually, the problem of reading multiple tags at the same time does not occur with most RFID tag types. It is not necessary to change the default setting of “0”.

Note: This is effective only for the following modules:
- B-EX706-RFID-U4-R
- B-EX706-RFID-U4-EU/US/AU-R

9.10.4.5 WRITE RETRY MIN AGC

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
15	0	1	Decimal	None	2	0	None	None

When the Q value is set to 1 or above, the AGC threshold lower limit for retry becomes effective.
In the case the printer could not find any tag whose gain is over the AGC threshold for data write, the AGC threshold is lowered to the highest gain of the detected tags whose gains are over the AGC threshold lower limit for retry specified with this parameter.

Example 1

AGC threshold for data write: 11
Lower limit for retry: 9
Detected tag's gain: 10

As the gain of the tag is lower than the threshold, a data write operation is not performed for this tag at the first try. However, the gain is greater than the lower limit.
Then the printer retires to write data to this tag according to a new AGC threshold of 10.
In this case, a retry of a data write will mostly succeed because the detected tag's gain is greater than the new threshold. (However, the success rate is not 100% because a gain of a tag is not always the same.)

Example 2

AGC threshold for data write: 11
Lower limit for retry: 9
Detected tag's gain: 8

As the gain of the tag is lower than the threshold, a data write operation is not performed for this tag at the first try. Also, the gain is lower than the lower limit.
Then the printer retries to write data to this tag according to a new AGC threshold of 9.
In this case, a retry of data write will mostly fail because the detected tag's gain is lower than the new threshold. (However, the error rate is not 100% because a gain of a tag is not always the same.)

When the same value is set for the AGC threshold for data write and the AGC threshold lower limit for retry, respectively, the threshold will not be changed for a retry.
The optimum value differs depending on the tag type.
However, the problem that multiple tags are read at the same time does not occur with most RFID tag types. It is not necessary to change the default setting of "0".

Note: This is effective only for the following modules:
- B-EX706-RFID-U4-R
- B-EX706-RFID-U4-EU/US/AU-R

9.10.4.6 CALIB. MODE

This parameter is to select whether the RFID calibration function is enabled or not.
- OFF
- ON

Notes:
1. When enabled (ON), the AGC value (CALIB. AGC) and the distance to the read/write position (CALIB. POSITION) obtained through an RFID calibration become effective.
2. When enabled (ON), the printer will automatically feed RFID media forward/backward for the distance specified by CALIB. POSITION parameter before writing/reading RFID tag. Therefore, @003 command's parameters "a" and "bbbb" become invalid. (For details of the @003 command, refer to the External Equipment Interface Specification for the B-EX Series.)
3. When the values obtained by an RFID calibration are set, this parameter will automatically turn ON.

4. For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

9.10.4.7 CALIB. AGC

By performing an RFID calibration, an AGC (response wave intensity from an RFID tag) value is automatically obtained and set.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
15	0	1	Decimal	None	2	0	None	None

Notes:

1. This parameter is effective only when the CALIB. MODE parameter is set to ON.
2. Data write/read is performed only for the tags having the AGC value equal to or larger than the AGC value set for this parameter. When the AGC value is less than the one set for this parameter, RFID WRITE ERROR occurs.
3. For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

9.10.4.8 CALIB. POSITION

By performing an RFID calibration, an optimum data read/write position (distance from the home position) is automatically obtained and set.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
+999.9	-999.9	0.1	Decimal	None	3	1	None	mm

Notes:

1. This parameter is effective only when the CALIB. MODE parameter is set to ON.
2. The printer will automatically feed RFID media forward/backward for the distance specified by CALIB. POSITION parameter before writing/reading RFID tag, which is normally performed with @003 command.
3. The feed direction is indicated by "+" (backward) and "–" (forward).
4. Setting values ranging from -2.9mm to +2.9mm do not reflect the read/write position fine adjustment.
5. For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

9.10.4.9 ANTENNA POSITION

This parameter, used for an RFID calibration, is to select the combinational position of the RF antenna and the wave director.

- FRONT
- CENTER
- REAR

<Combination of the RF antenna and the wave director>

Antenna position	Antenna rotation	Wave director position	Application
FRONT	0°	0 mm	Usable
CENTER			Unusable
REAR			Unusable

Notes:

1. A "usable" antenna position must be selected for this parameter.
2. If an RFID calibration is performed with "Unusable" antenna position selected, the printer operation is not guaranteed. (Refer to Section 6.7.1 Outline of the RFID Calibration.)
3. For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

9.10.5 OTHER

The menu structure of OTHER

Menu item

<7>RFID		
	OTHER	
		TAG CHECK
		MULTI WRITE

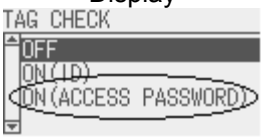
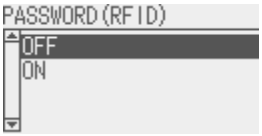
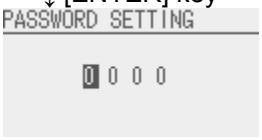
9.10.5.1 TAG CHECK

- OFF: Error tag detection is not performed.
- ON (ID): Error tag detection is performed.
- ON (ACCESS PASSWORD): Error tag detection is performed.

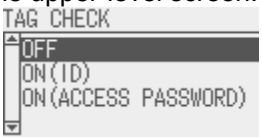
Notes:

1. Description of the options
   - OFF: Error tag detection is disable.
     Though a tag is read before writing data on it, data is always written on the tag whatever data is set as the header data.
   - ON (ID): Error tag detection is enable.
     A tag (EPC area for GEN2 tags) is read before writing data on it, and data is written on the tag only when the header data is “A5A5”.
   - ON (ACCESS PASSWORD): Error tag detection is enable.
     Error tag detection is enable only for GEN2 tags. The access password area of a tag is read before writing data on it. Only when the data read matches the access password setting data, the data is written on the tag.
2. To prevent unauthorized changes of the setting, a password can be set to protect the error tag detection setting. (For the password setting procedure, see below.)

3. Example of operation when “ON (ACCESS PASSWORD)” is selected

	Display	Operation
1. TAG CHECK screen		Select “ON (ACCESS PASSWORD)”.
	↓ [ENTER] key	
2. Access password entry screen		Enter an 8-digit access password.
	↓ [ENTER] key	
3. Auto unlock setting screen		Choose whether or not to enable the auto unlock function. When “ON” is selected, locked tags are automatically unlocked by the access password and data write is enabled.
	↓ [ENTER] key	
4. Tag check setting protection password setting screen		Choose whether or not to set the password to protect the error tag detection setting. When “OFF” is selected, this menu is ended and the upper-level menu is displayed. When “ON” is selected, the password entry screen is displayed.
	(When “ON” is selected) ↓ [ENTER] key	
5. Tag check setting protection password setting screen		Enter a 4-digit protection password.
	↓ [ENTER] key This menu is ended, and the upper-level screen is displayed.	

4. Example of operation when the tag check setting protection password has been set (when “ON” is set on the tag check setting protection password setting screen)

	Display	Operation
1. SYSTEM MODE ⇒ <7>RFID ⇒ OTHER ⇒ TAG CHECK		
2. Tag check setting protection password entry screen		Enter the 4-digit protection password.
	↓ [ENTER] key * When the password matched: The TAG CHECK screen is displayed. * When the password unmatched: Error message is displayed. Press the [ENTER] key to exit this menu and return to the upper-level screen.	
3. TAG CHECK screen		

When “OFF” or “ON(ID)” is selected, the tag check setting protection password will be automatically set to “OFF”. (After this, the tag check setting protection password entry screen will not appear when opening the TAG CHECK menu.)

9.10.5.2 MULT WRITE

- OFF
- ON

Notes:

1. Gen2-compatible Hibiki tag (HITACHI) has a function which reduces the time to write data on the RFID chips. This is called “Multi-word write”. Use of this function enables a speed-up of the data write operation. However, this function is unique to the Hibiki tag, and not usable with the other Gen2-compatible chips.
2. The following modules do not support this function.
   - B-EX706-RFID-U4-R
   - B-EX706-RFID-U4-EU/US/AU-R

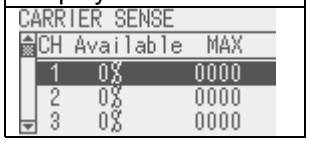
9.10.6 CARRIER SENSE

The printer enters the carrier sense mode, and performs a carrier sense. Environmental radio wave of each channel is picked up for about 30 times during 5 seconds.

The menu structure of CARRIER SENSE

Menu item
<7>RFID
CARRIER SENSE

Display example

Display


Notes:

1. This function is supported only by the B-EX706-RFID-U4-R.
2. The left-most number indicates a channel number. The percentage means the availability of the channel, which is determined by performing approx. 30 carrier senses. Thus, “100%” means that any other devices do not use this channel.
3. The MAX column shows the value of the maximum radio wave picked up. The larger the value is, the stronger radio wave source exists nearby.
4. The display can be scrolled up or down, from Channel 1 (1CH) to channel 9 (9CH), by using the [UP] or [DOWN] key.
5. Pressing the [ENTER] key causes the printer to perform a carrier sense again. To exit a carrier sense, press the [CANCEL] key.
6. When the RFID module type is set to “NONE” or a communication cannot be established, a message, “NO RFID MODULE”, is displayed.
7. When the RFID module type is set to other than U2, a message, “NOT AVAILABLE” is displayed.
8. When the RFID module type is set to U2 but effective data cannot be obtained, a message, “NO RESPONSE” is displayed.
9. If the RFID module’s country setting is not specified (user-inaccessible setting), an “RFID CONFIG ERR” message is displayed.

9.11 RTC

Contents of RTC menu

Menu item
<8>RTC
DATA/TIME
BATTERY CHECK
RENEWAL

9.11.1 DATE TIME

This setting is effective only when the optional RTC module is installed.
Date and time are set.

9.11.2 BATTERY CHECK

- OFF
- ON

9.11.3 RENEWAL

- Start of JOB — As the real time clock data is read only for the first media in a batch, the same time is printed on the all media.
- Every PAGE — As the real time clock data is read at the start of printing each media, a real time can be printed on each media.

9.12 USB MEMORY

Contents of USB MEMORY menu

Menu item
<9>USB MEMORY
USB TO PRINTER
PRINTER TO USB

Notes:

1. The following table shows the error messages and descriptions which may be displayed while USB memory is used:
   After the error message is displayed, the operation is not retried.

Message	Description
FORMAT ERROR Check the settings.	Format error or no memory installed
MEMORY WRITE ERR. Check the data and the settings.	Write error
MEMORY READ ERR. Check the data and the settings.	Read error
MEMORY FULL Free some memory space.	Insufficient memory
FILE NOT FOUND Check the data and the settings.	No applicable file found
UNKNOWN ERROR	Other errors

2. Depending on the remaining memory size or the USB memory status, a write error may occur even in the case of insufficient free space.
3. Usable USB memory's file system is as follows. To use other file system in USB memory, they need to be formatted to either of the following on the PC in advance.

File system	Max. size
FAT (FAT16)	2GB
FAT32	8GB

9.12.1 USB TO PRINTER

- COPIED DATA
- CONFIG FILE

Notes:

1. The data store in USB memory is copied to the printer.
   - COPIED DATA — File (*.DAT) containing firmware (BOOT/MAIN/CG/KANJI/HTML), storage area data, and parameter settings
     The file is created in binary format when "PRINTER TO USB" is executed.
   - CONFIG FILE — File (*.CFG) in which the path of the firmware (BOOT/MAIN/CG/KANJI/HTML) is saved
     The file is created in text format when the master media is made. The format of the file is described in Section 12.Auto Configuration Mode.
2. When an item to be saved is selected, the file selection screen is shown.
3. For the file selection screen, see Section 7.6 FILE SELECTION .
   * The scrollbar on the file selection screen is not provided with the knob regardless of the number of files.
4. The confirmation display appears when a file is selected from the file selection screen.

* When CFG files is selected, the message included in the CFG file is shown prior to the confirmation display.

5. After confirming the data copy, the printer reads data from USB memory.
6. It takes about 3 to 5 minutes to read all data.
7. Copied Data
   When saving other model's data is attempted, only the parameter settings are read. In this case, parameters not supported by the destination printer are inapplicable. It takes about 3 seconds to copy data.
   * B-EX6T1/T, B-EX6T1-G, B-EX6T3-Tand B-EX6T3-G are regarded as the same model.
8. Copied Data of Parameters
   Parameters not supported by the destination printer are read, but not applied. Also, even if the destination printer has the same parameters with the source printer, options may be different.
9. When an error occurs during an access to the USB memory, the error message described in Section 9.12 USB MEMORY is displayed. The printer does not retry the operation.

9.12.2 PRINTER TO USB

- ALL

Notes:

1. The firmware (BOOT/MAIN/CG/KANJI/HTML), storage area data, and parameter settings are copied to the USB memory.
2. When an item to be saved is selected, the confirmation display is shown and the data is stored in the USB memory. It takes about 40 seconds to copy all data.
3. A file is automatically created in the USB memory and named in the following format based on the printer model and the date of creation.
   /ATA0/SYSTEM/B-EX6T1-T1105.DAT (e.g. B-EX6T Type1 305dpi model, Nov. 5)
   If a file with the same name already exists in the USB memory, it will be overwritten.
4. When the error occurs during an access to the USB memory, the error message described in Section 9.12 USB MEMORY is displayed. The printer does not retry the operation.

9.13 FACTORY TEST

Contents of FACTORY TEST menu

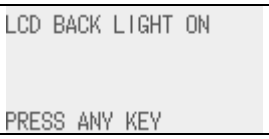
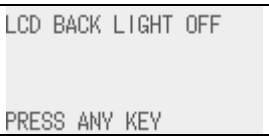
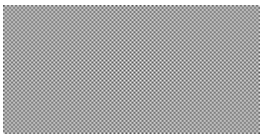
Menu item
<10>FACTORY TEST
HEAD UP ADJUST
PANEL TEST
KEY TEST

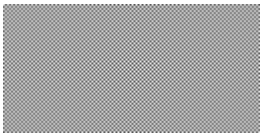
9.13.1 HEAD UP ADJUST

The head-up solenoid is turned on for 10 seconds.

9.13.2 PANEL TEST

The LCD test is performed in the following order.
(Start) ⇒ Backlight test ⇒ Missing dot test ⇒ Character display test ⇒ Contrast test ⇒ (End)
The display language is English regardless of the LCD Language parameter setting.

	LCD	Operation and LCD/LED status
Backlight test		ONLINE LED turns on. ERROR LED turns on. Backlight turns on.
		Press any key.
		ONLINE LED turns on. ERROR LED turns on. Backlight turns off.
		Press any key.
Missing dot test		ONLINE LED turns on. ERROR LED turns on. Backlight turns on. 1-dot line is displayed along the edges of the LCD.
		Press any key.
		ONLINE LED turns on. ERROR LED turns on. Backlight turns on. All LCD dots are on.
		Press any key.
		ONLINE LED turns on. ERROR LED turns on. Backlight turns on. All LCD dots are off.
		Press any key.
		ONLINE LED turns on. ERROR LED turns on. Backlight turns on. 1-dot check pattern is displayed. The upper left corner dot is black.
		Press any key.

		ONLINE LED turns on. ERROR LED turns on. Backlight turns on. 1-dot check pattern is displayed. The upper left corner dot is white.
		Press any key.
Character display test	ABCDEFGHIJKLMNOPQRSTU 12345678901234567890 1 abcdefghijklmnopqustu 09876543210987654321 0 ZYXWVUTSRQPONMLKJIHGF	ONLINE LED turns on. ERROR LED turns on. Backlight turns on. Character display
		Press any key.
Contrast test	CONTRAST TEST 24	ONLINE LED turns on. ERROR LED turns on. Backlight turns on. Displays with the minimum contrast.
		Press any key.
	CONTRAST TEST 40	ONLINE LED turns on. ERROR LED turns on. Backlight turns on. Displays with the default contrast.
		Press any key.
	CONTRAST TEST 50	ONLINE LED turns on. ERROR LED turns on. Backlight turns on. Displays with the maximum contrast.
		Press any key.
End display	LCD/LED TEST COMPLETE PRESS ENTER KEY	ONLINE LED turns on. ERROR LED turns off. Backlight turns on.
		Press the [ENTER] or [CANCEL] key to return to the upper-level menu.

9.13.3 KEY TEST

The test is performed in the following order.
(Start) ⇒ FEED key test ⇒ RESTART key test ⇒ PAUSE key test ⇒ UP key test ⇒ RIGHT key test ⇒ DOWN key test ⇒ LEFT key test ⇒ MODE key test ⇒ CANCEL key test ⇒ ENTER key test ⇒ (End)
The display language is English regardless of the LCD Language parameter setting.

	LCD	Operation and LCD/LED status
FEED KEY TEST	PRESS FEED KEY	
		Press the [FEED] key.
RESTART KEY TEST	PRESS RESTART KEY	
		Press the [RESTART] key.

PAUSE KEY TEST	PRESS PAUSE KEY	
		Press the [PAUSE] key.
UP KEY TEST	PRESS UP KEY	
		Press the [UP] key.
RIGHT KEY TEST	PRESS RIGHT KEY	
		Press the [RIGHT] key.
DOWN KEY TEST	PRESS DOWN KEY	
		Press the [DOWN] key.
LEFT KEY TEST	PRESS LEFT KEY	
		Press the [LEFT] key.
MODE KEY TEST	PRESS MODE KEY	
		Press the [MODE] key.
CANCEL KEY TEST	PRESS CANCEL KEY	
		Press the [CANCEL] key.
ENTER KEY TEST	PRESS ENTER KEY	
		Press the [ENTER] key.
END DISPLAY	KEY TEST COMPLETE PRESS ENTER KEY	
		Press the [ENTER] or [CANCEL] key to return to the upper-level menu.

Notes:

1. If a key other than designated is pressed, the printer waits until the designated key is pressed. (The test does not proceed to the next.)
2. If the key test does not proceed to the next test even after the designated key is pressed, the key may be broken. In this case, turn off the printer.

9.14 BASIC

Contents of BASIC menu

Menu item
<11>BASIC
BASIC
FILE MAINTENANCE
TRACE
SYSTEM PROGRAM

9.14.1 BASIC

- OFF
- ON

9.14.2 FILE MAINTENANCE

The block numbers and BASIC program file names (up to 12 characters) stored in the BASIC program storage area are displayed. If the file name exceeds 12 characters, the overflowing characters are not displayed.

When no file is stored, Place of the file name is displayed with a hyphen (-).(-) is

9.14.3 TRACE

- OFF
- ON

9.14.4 SYSTEM PROGRAM

The printer changes the mode to execute the BASIC program.

9.15 Z-MODE

Contents of Z-MODE menu

Menu item
<12>Z-MODE

- OFF Disabled.
- ON Z-Mode is enabled. BASIC system mode program screen is not displayed immediately.
- ON with SETTING Z-Mode is enabled. BASIC system mode program screen is displayed immediately.

Notes:

1. The Z-Mode menu has the function only to select whether to enable or disable the BASIC program (same function with the BASIC ON/OFF) and to start the BASIC system mode program. The display and the procedure are different from the BASIC.
2. By turning the Z-MODE parameter setting from “OFF” to “ON” or “ON with SETTING”, the MEDIA LOAD parameter is automatically set as follows. This can be changed by setting the MEDIA LOAD parameter again after the Z-MODE is enabled.

Model	MEDIA LOAD parameter setting
B-EX6T1/T3QM	ECO
Others	Unchanged

9.16 XML

Contents of XML menu

Menu item
<13>XML

- OFF Disables XML function.
- STD Standard specification
- ORACLE Specification for Oracle
- SAP Specification for SAP
- STD (EXT memory) Standard specification (external memory is used)
- ORACLE (EXT memory) Specification for Oracle (external memory is used)
- SAP (EXT memory) Specification for SAP (external memory is used)

Note:
When the XML feature is enabled, the user system mode functions are not guaranteed. It is required to terminate the user system mode with reset. For the functions covered by the system mode, settings configured in the system mode must be used.

9.17 LCD PANEL

Contents of LCD PANEL menu

Menu item	
<14>LCD PANEL	
	LANGUAGE
	DISPLAY
	CONTRAST

9.17.1 LCD LANGUAGE

- ENGLISH
- GERMAN
- FRENCH
- DUTCH
- SPANISH
- JAPANESE
- ITALIAN
- PORTUGUESE
- Simplified CHINESE
- KOREAN
- TURKISH
- POLISH

Note:
In the printer modes other than online, the language displayed on the LCD panel is JAPANESE when JAPANESE is selected, and ENGLISH when ENGLISH, GERMAN, FRENCH, DUTCH, SPANISH, ITALIAN, PORTUGUESE, Simplified CHINESE, KOREAN, TURKISH, or POLISH is selected.

9.17.2 DISPLAY

The menu structure of DISPLAY

Menu item
<14>LCD PANEL
DISPLAY
MODEL NAME
PRINTED COUNTER
IP ADDRESS

9.17.2.1 MODEL NAME

- OFF Model name is hidden.
- ON Model name is displayed.

9.17.2.2 PRINTED COUNTER

- OFF The number of labels printed is hidden.
- ON The number of labels printed is displayed.

9.17.2.3 IP ADDRESS

-
- OFF IP address is hidden.
- ON IP address is displayed.
-

9.17.3 CONTRAST

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
50	24	2	Decimal	None	2	0	Enabled	None

Note: Contrast setting

- + (Plus) Higher contrast
- - (Minus) Lower contrast

9.18 PASSWORD

Contents of PASSWORD menu

Menu item
<15>PASSWORD

- OFF Password is not set.
- ON Password is set.

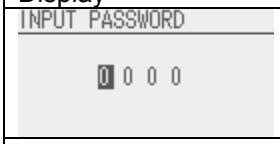
9.18.1 PASSWORD

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
F	0	1	Hex.	None	1	0	None	None

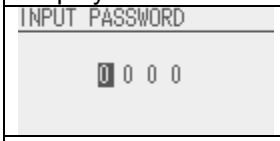
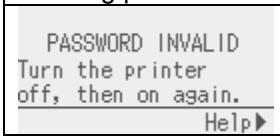
9.18.1.1 System mode and user system mode start screen when password is enabled

When the password is enabled, the password entry screen is displayed at the time the system mode or user system mode is started.

Password entry for system mode

Display	Procedure
	Turn on the printer while holding down the [FEED] and [RESTART] keys at the same time. The password entry screen is displayed.
	Enter the password.
	The printer enters the system mode.
When a wrong password is entered or the [CANCEL] key or [MODE] key is pressed	
	Password invalid message is displayed.
A wrong password was entered for 3 times consecutively.	
	The printer starts in online mode.

Password entry for user system mode

Display	Procedure
	Turn on the printer, press the [PAUSE] key to place the printer in pause state. Then, hold down the [MODE] key for 3 seconds. The password entry screen is displayed.
	Enter the password.
	The printer enters the user system mode.
When a wrong password is entered or the [CANCEL] key or [MODE] key is pressed	
	Password invalid message is displayed.
A wrong password was entered for 3 times consecutively.	
	The printer locks. Turn off printer and back to on.

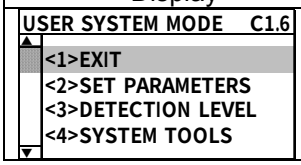
Note:
If you forgot the system mode password, disable it with @010 command

10 USER SYSTEM MODE

10.1 OUTLINE OF USER SYSTEM MODE

1. The printer enters the user system mode with the following operations.
   - ● While the printer is in pause state, perform either of the following operations:
   - ･ Hold down the [RESTART] key for 3 sec. or more.
   - ･ Hold down the [MODE] key for 3 sec. or more.
   - ● While the printer is online, perform the following operation:
   - ･ Hold down the [MODE] key for 3 sec. or more.
2. The user system mode is intended for performing various parameter settings.
3. The key operations for the user system mode are described below.
   For the key functions and display, see Section 7. DISPLAY PATTERN AND KEY OPERATION FOR SYSTEM MODE ANDUSER SYSTEM MODE.

Top screen of user system mode

Display


Top menu list

English
<1>EXIT
<2>SET PARAMETERS
<3>DETECTION LEVEL
<4>SYSTEM TOOLS
<5>SHOW ISSUE CONDITION
<6>RESET

Outline of the top menu

<1>EXIT	Used to return the printer to online state. (The printer is not reset.)
<2>SET PARAMETERS	Used to set the parameters for each printer function.
<3>DETECTION LEVEL	Used to set the thershold value.
<4>SYSTEM TOOLS	Used to print data sent from the host or store it in USB memory.
<5>SHOW ISSUE CONDITION	Used to display the print conditions (such as sensor type, print speed and orientation).
<6>RESET	Used to reset the printer.

10.2 EXIT

The printer state is returned from the user system mode to the online mode. (No reset is performed.)
Some parameter settings are reset when the Exit is performed. The parameters to be reset are indicated with “Reset Req.”. Other parameters are not reset

Contents of EXIT menu

Menu item
<1>EXIT

10.3 SET PARAMETERS

Same as 9.5 SET PARAMETERS of the system mode.

10.4 DETECTION LEVEL

Contents of DETECTION LEVEL menu

Menu item
<3>DETECTION LEVEL
1)REFL.(PRE-PRINT)
2)TRANS.(PRE-PRINT)

Same as 6.6 MANUAL THRESHOLD SETTING.

10.5 SYSTEM TOOLS

Menu item	
<4>SYSTEM TOOLS	
DUMP	
RS-232C	
USB	
PRINT	*1
ON DEMAND	
ALL	
CENTRONICS	⇒ The subsequent menus are same as *1.
LAN/WLAN	⇒ The subsequent menus are same as *1.
BASIC1	⇒ The subsequent menus are same as *1.
BASIC2	⇒ The subsequent menus are same as *1.
USB	⇒ The subsequent menus are same as *1.
RFID	⇒ The subsequent menus are same as *1.
LOG	
PRINTER TO USB	
CANCEL	
OK	

10.6 SHOW ISSUE CONDITION

Contents of SHOW ISSUE CONDITION menu

Menu item	
<5>SHOW ISSUE CONDITION	
Sensor	(*1)
Mode	(*1)
Print speed	(*1)
Ribbon	(*1)
Direction	(*1)
Media pitch	(*1)
Print length	(*1)
Print width	(*1)
Media width	(*1)

Notes:

The current setting value for each parameter is shown in the position of (*1). The options for the parameters are as follows.

1. Sensor
   - NO
   - REFLECTIVE
   - TRANSMISSIVE
   - TR.Threshold
   - RE.Threshold
2. Mode
   - BATCH
   - CUT (yyy) * yyy: Cut interval (1 to 100)
   - PEEL OFF
   - PEEL OFF (Appl)
3. Print speed

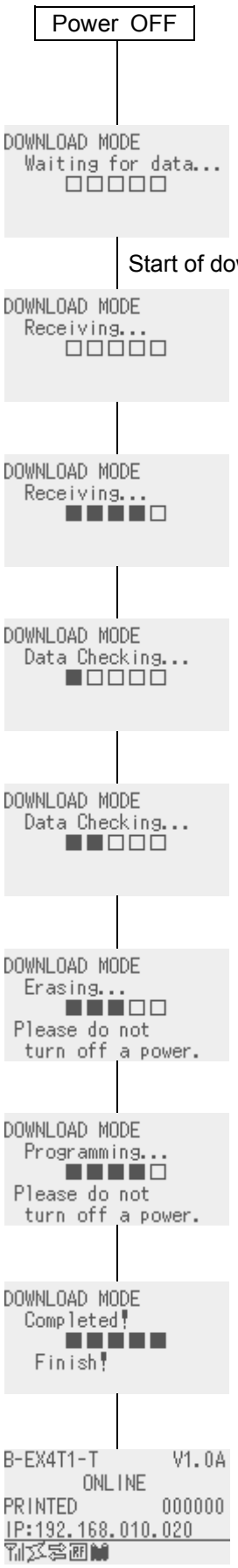
   * Selectable print speed differs depending on the model.
   - 3ips B-EX6T1/T3-G/T
   - 5ips B-EX6T1/T3-G/T
   - 8ips B-EX6T1/T3-G/T
   - 10ips B-EX6T1/T3-G/T
   - 12ips B-EX6T1/T3-G/T
4. Ribbon
   - NO (Direct)
   - RBN w/ save
   - RBN w/o save
   - NO w/ headup
5. Direction
   - BOTTOM
   - TOP
   - BOTM/Mir
   - TOP/Mir
6. Media pitch
   - (10.0 - 1500.0) mm
7. Print length
   - (6.0 - 1498.0) mm
8. Print width
   - (10.0 - 160.0) mm
9. Media width
   - (50.0 - 165.0) mm

10.7 RESET

Contents of RESET menu

Menu item
<6>RESET

11 DOWNLOAD



(1) Power off state

(2) Turn the power on while holding down the [FEED], [RESTART] and [PAUSE] keys at the same time.

(3) Download mode display

(4) Send a download command.

(5) The printer starts receiving the data.

(6) The printer is receiving the data

(7) Data is being checked.

(8) Data is being checked.

(9) The flash ROM is being erased.

(10) Downloaded data is being written.

(11) Downloading is completed.

(12) After downloading is completed, the printer will be automatically restarted, and placed in the online state.

* DOWNLOAD MODE2 is unused. There is no difference in downloading procedure from DOWNLOAD MODE.

When error occurs while downloading data with download mode, the following error message will be displayed:

Error message

Error message	Description
DOWNLOAD MODE Syntax Error Please retry after checking the data	Communication error (Command error)
DOWNLOAD MODE Check SUM Error Please retry after checking the data	The checksum of the boot program does not end with “00”.
DOWNLOAD MODE PCB ID Conflict Please retry after checking the data	Downloading the boot program for wrong PCB was attempted.
DOWNLOAD MODE Model Type Conflict Please retry after checking the data	Downloading the boot program for wrong printer model was attempted.
DOWNLOAD MODE Data Size Over Please retry after checking the data	The data size is too large.
DOWNLOAD MODE fail! Format Error Call a service person.	Format error
DOWNLOAD MODE fail! Write Error Call a service person.	Write error

Notes:

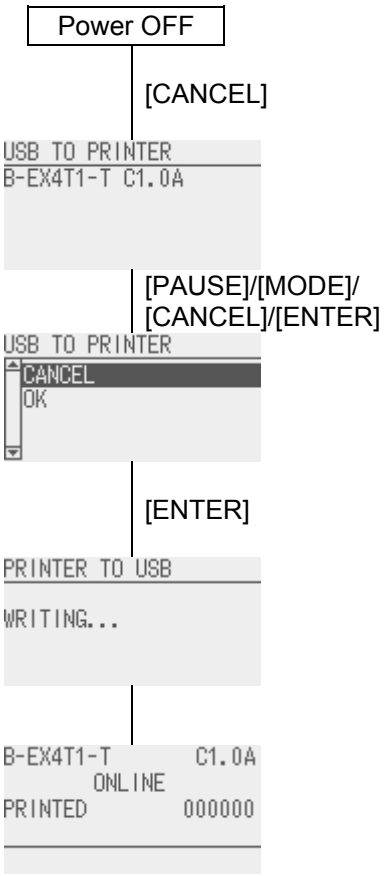
1. When an error occurs, the printer stops and never recovers unless the power is turned off and on.
2. After a write error occurs, turning the printer off and back and “DOWNLOAD MODE” to be displayed and the printer to enter the loading mode. The program needs to be loaded again.
3. While “DOWNLOAD MODE” is displayed, the expansion I/O output status becomes indefinite.
4. When there is a difference in the model name between the boot program and the actual printer, “MODEL TYPE ERROR” is displayed and the printer stops.
5. When the checksum for the boot program does not end with “00H”, “CHECKSUM ERROR” is displayed and the printer stops with error.
6. After receiving the all data of the boot program, the printer compares it with the currently installed boot program, and erases the flash memory for writing data if there is a difference.
   When there is no difference, the downloading normally ends without erasing the memory or writing data.
7. The LCD may show the message “Initializing…” when the printer is turned off in the download mode. This does not affect the printer operation.
8. When the [FEED]+[RESTART]+[PAUSE] keys are held down at the timing of printer reset in the system mode or user system mode, the forced download mode display appears on the LCD. This menu is not executable. The printer must be turned off and back to on while the [FEED]+[RESTART]+[PAUSE] keys are held down.

12 Auto Configuration Mode

12.1 Outline of the Auto Configuration Mode

When turning on the printer while holding down the [CANCEL] key , the printer to start auto configuration mode.

The auto configuration mode allows for automatically downloading the master firmware and restarting the printer.



(1) Power off state

(2) Turn on the printer while holding down the [CANCEL] key.

(3) Auto configuration mode display

(4) Press the [PAUSE], [MODE], [CANCEL] or [ENTER] key to show the next display.

(5) Confirmation display

(6) Select “OK” and press the [ENTER] key.
* When “CANCEL” is selected, the printer returns to the online state without downloading the firmware.

(7) The firmware is being downloaded.

(8) After downloading is completed, the printer will return to the online state.

12.2 Preparation for USB Memory

To execute the auto configuration mode, the firmware file (*.bin) should be downloaded and the dedicated CFG file need to be created in the USB memory in advance. To enter the auto configuration mode, the RTCUSB host, USB memory, correct CFG file need to be all prepared. Lack of any one of these disables shifting to the auto configuration mode, but starts normally..

Each file is saved in the SYSTEM directory created in the root directory in the USB memory.

Example: When BOOT/MAIN/CG programs are downloaded:

/ATA0/SYSTEM/B-EX-BOOT-Vx.x-xx.bin
/ATA0/SYSTEM/B-EX-MAIN-Vx.x-xx.bin
/ATA0/SYSTEM/B-EX-CG-Vx.x-xx.bin
/ATA0/SYSTEM/AUTOCONFIG.CFG

12.3 Auto Configuration File

To execute the auto configuration mode, it is required to create the auto configuration file, which is an exclusive CFG file, in the USB memory in advance.

The auto configuration file is stored in the following path under the name of “AUTO CONFIG.CFG”.

/ATA0/SYSTEM/AUTOCONFIG.CFG

12.3.1 Format

Auto configuration file has the following formats.

Example	Description
B-EX6T1-G,0020	Model information
B-EX6T1-T C1.0A	Display message
/ATA0/SYSTEM/B-EX-BOOT-Vx.x-xx.bin	Firmware file to be downloaded
/ATA0/SYSTEM/B-EX-MAIN-Vx.x-xx.bin	Firmware file to be downloaded
/ATA0/SYSTEM/B-EX-CG-Vx.x-xx.bin	Firmware file to be downloaded

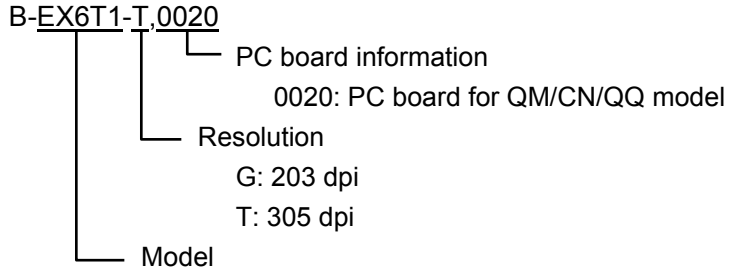
12.3.2 Model Information

Applicable model’s information is stored.

The information is comma separated. The first half is the model name (the above example indicates B-EX6T Type 1 203-dpi model) and the second half is the PC board information.

If the actual printer and this model information do not match, the auto configuration mode will not start.

Description of the model information:



12.3.3 Display Message

A message displayed on the LCD while the printer is in the auto configuration mode.

Word-wrap feature is enabled.

Only characters that can be expressed with ASCII are allowed to be input.

12.3.4 Firmware File to be downloaded

Name of the file to be downloaded

13 Power Save Function

1. Printer status allowing shift to the power save mode

When the following status continues for a specified length of time, the printer will enter the power save mode and show the power save mode message. (Refer to 5. Power save mode display described below.)

- ONLINE (Idle, communicating)
- Pause
- Error
- Waiting for removal of a label from the media outlet
- System mode (except for the menus that use the 27V line, such as self-diagnosis, test print and sensor adjustment.)
- User system mode (except for the menus that use the 27V line, such as dumping.)
- Pause of the expansion I/O

2. Conditions for exiting the power save mode

The power save mode is terminated when:

- Printing is performed.
- Key is pressed.
- The status of the expansion I/O pause signal or active signal changes (because the message indicating a pause state is displayed on the LCD.)
- Printing or paper feed is initiated through the expansion I/O, or printing is caused by a release of the printer from the pause state instructed through the expansion I/O
- The printer receives U1/U2 command (Forward feed/reverse feed command).
- The printer receives T command (Feed command).
- The printer receives XS command (Issue command).
- The printer receives IB command (Eject command).
- The printer receives RFID-related command accompanied by printer action
- The head lever is locked/unlocked (because the message notifying the head lever unlock state is displayed on the LCD.)
- Automatic calibration is performed with the head lever locked.
- Up and down of the solenoid is tested during the Factory Test menu in the system mode.
- Sensor adjustment is performed in the system mode.

3. Display and key operations during the power save mode

When the printer enters the power save mode, it shows “POWER SAVING MODE” on the LCD and turns off the LCD backlight. However, the operations mentioned in 6 enable the printer to display usual messages and turn on the LCD backlight even in the power save mode. If the printer status remains unchanged for 30 seconds, “POWER SAVING MODE” is displayed and the LCD backlight turns off again.

4. LED during the power save mode

While the printer is in the power save mode, the state of the LEDs is as follows.

- ONLINE LED: Flashes (ON: 1000msec. OFF: 1000msec.)
- ERROR LED: OFF

5. Message in the power save mode

The language differs depending on the printer status before the printer enters the power save mode.

Printer status before power save	Supported language
Online mode (except for manual threshold setting)	Multi-language
System mode, User system mode and manual threshold setting in online mode	Japanese/English

Power save mode display

Display
POWER SAVING MODE

When the printer is placed in the power save mode by above-mentioned printer status allowing shift to the power save mode, “POWER SAVING MODE” is displayed.

6. Conditions for displaying usual messages in the power save mode

When the following occurs in the power save mode, the power save mode is terminated.

- key is pressed.
- The head lever is unlocked or locked in the power save mode. (This is because there is a message indicating the head lever unlock.)
- There is a change in the pause signal line or active signal line of the expansion I/O. (This is because there is a message indicating a pause state.)

7. Conditions for displaying “POWER SAVING MODE”

When there is no key operations or head lever status change and the power save mode is continued for 30 seconds, “POWER SAVING MODE” is displayed on the LCD.

When data is saving in the storage area, “POWER SAVING MODE” is displayed in 30 seconds after the completion of the data save if no printer operation is done.