TOSHIBA

TOSHIBA Bar Code Printer

B-EX Series

Key Operation Specification

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1 SCOPE

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

The B-EX4T1-G and B-EX4T1-T are hereinafter collectively referred to as “B-EX4T1”, the B-EX4T2-G, B-EX4T2-T, B-EX4T2-H are referred to as “B-EX4T2”, the B-EX6T2-G and B-EX6T2-T are referred to as “B-EX6T2”, and B-EX4D2-G and B-EX4D2-T are referred to as “B-EX4D2”, respectively.

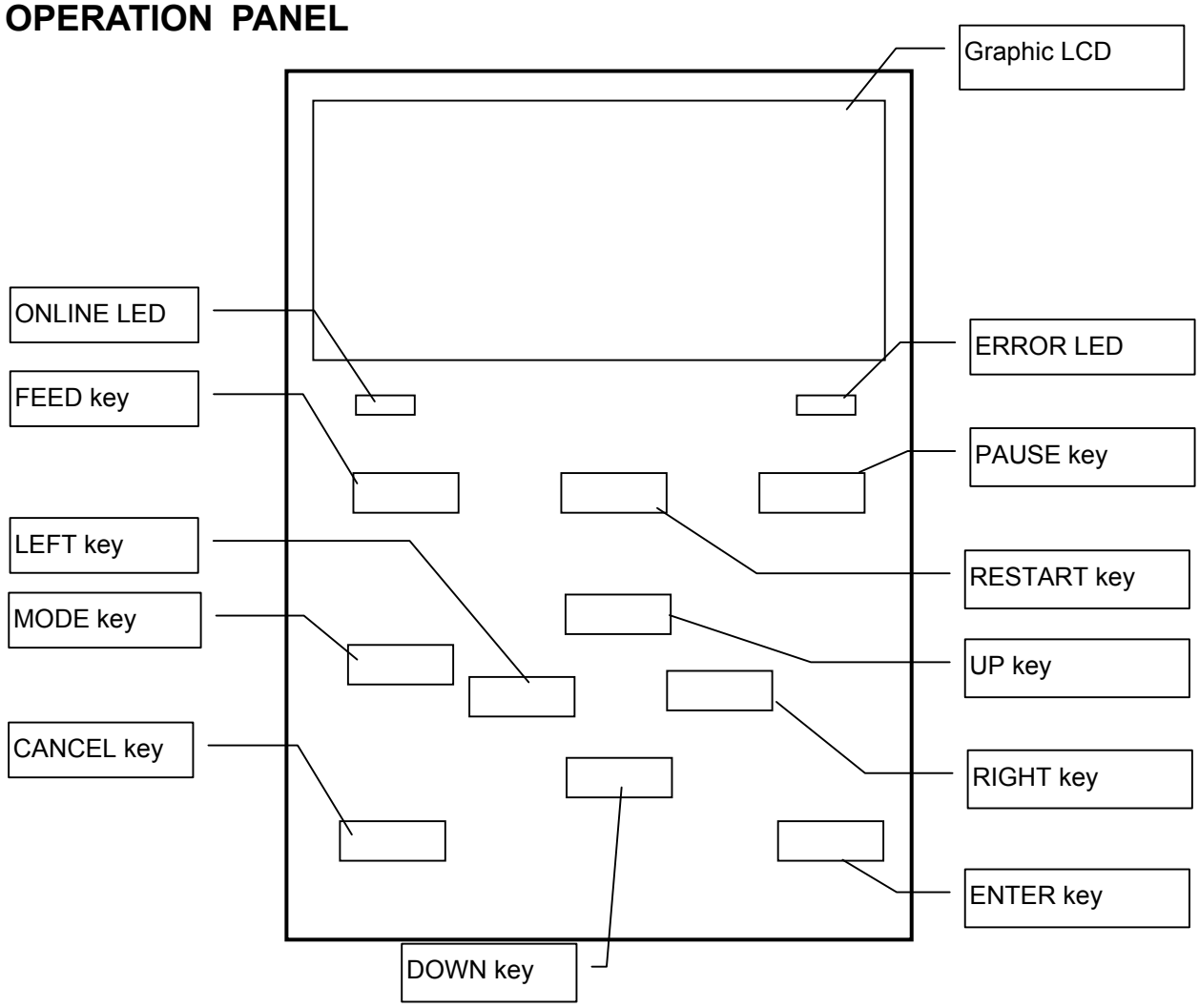
2 OUTLINE

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-test and setting of various parameters are performed.

This specification describes the key operation procedures with the printer keys and the LCD panel.

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 an 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, detection of a print position may be disabled 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, which controls the target tag, with @003 command and in the system mode. These are automatically done in the RFID calibration mode.
This specification is supported by the B-EX4T1-G/T-QM/CN with firmware version of C1.4 or later.

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.
This specification is supported from the following firmware versions:

- B-EX4T1-G/T-QM/CN: C1.0I
- B-EX4T2-G/T-QM/CN: C1.0F
- B-EX4T2-H-QM/CN: C1.0A
- B-EX4D2-G/T-QM/CN: D1.1

4.2 SYSTEM MODE

Turning the power on while holding down the both [FEED] and [PAUSE] keys, or the [MODE] key alone activates the system mode. This mode is mainly used by service persons or the Production Dept. for adjustment before shipment. The system mode contains the menus which might be changed not so frequently.
In addition to the menus common to the User System Mode, such as parameter setting, fine adjustment, and BASIC setting, there are sensor adjustment, interface, RFID and RTC 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.

4.3 USER SYSTEM MODE

The user system mode is accessible from the online mode. This mode, mainly used by users (administrator) or service persons, contains the menus which might be frequently changed.
In addition to the menus common to the System Mode, such as parameter setting, fine adjustment, and BASIC setting, there are LAN/WLAN setting, auto calibration, dump function which enables the printer to dump received data.
The values set in this mode are stored in the non-volatile memory.

4.4 DOWNLOAD MODE

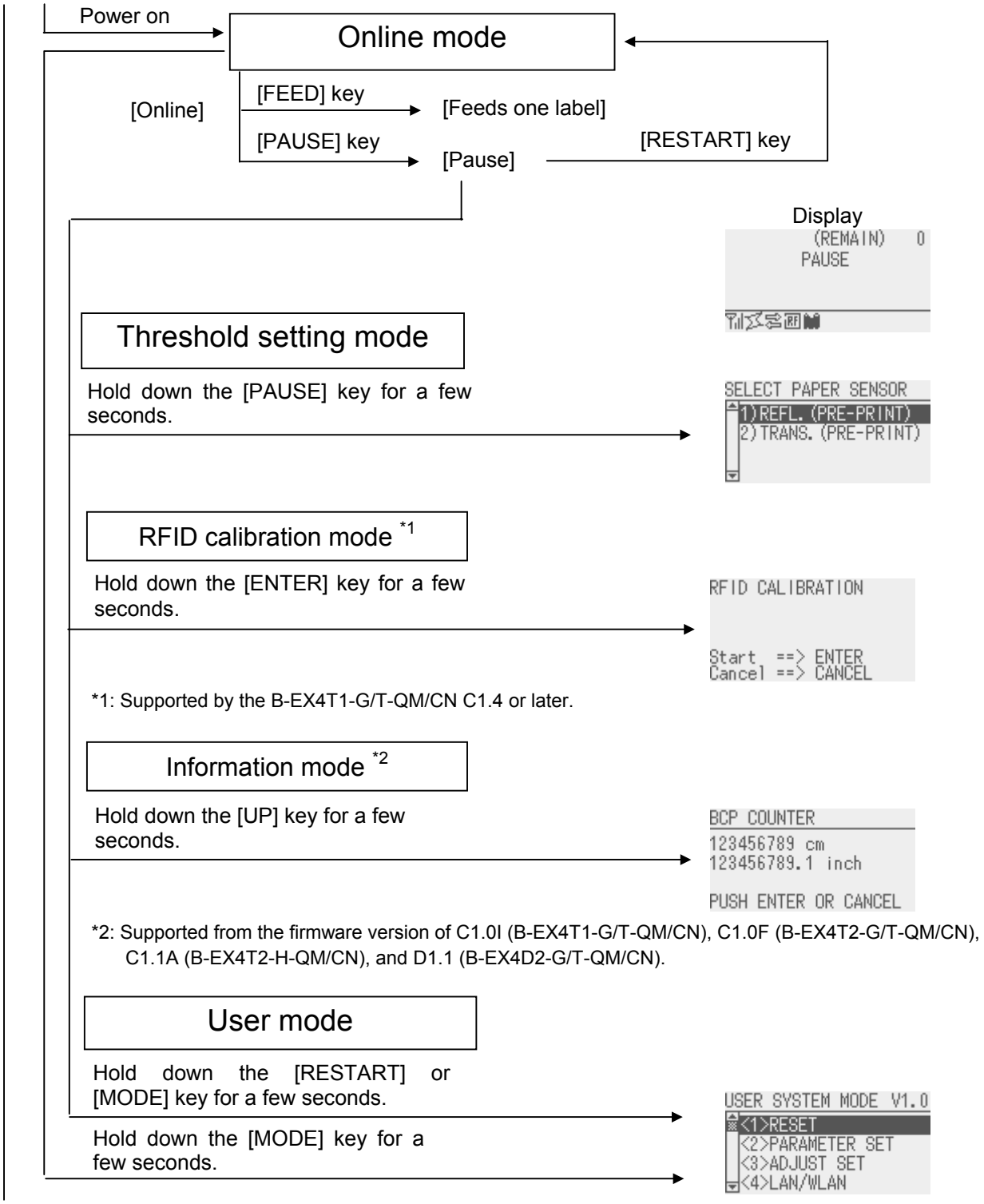
This mode is used to download boot and main programs.

4.5 AUTO CONFIGURATION MODE

This mode is used to update printer firmware stored in USB memory.

5 GENERAL VIEW OF KEY OPERATION

[Power OFF]



*1: Supported by the B-EX4T1-G/T-QM/CN C1.4 or later.

*2: Supported from the firmware version of C1.0I (B-EX4T1-G/T-QM/CN), C1.0F (B-EX4T2-G/T-QM/CN), C1.1A (B-EX4T2-H-QM/CN), and D1.1 (B-EX4D2-G/T-QM/CN).

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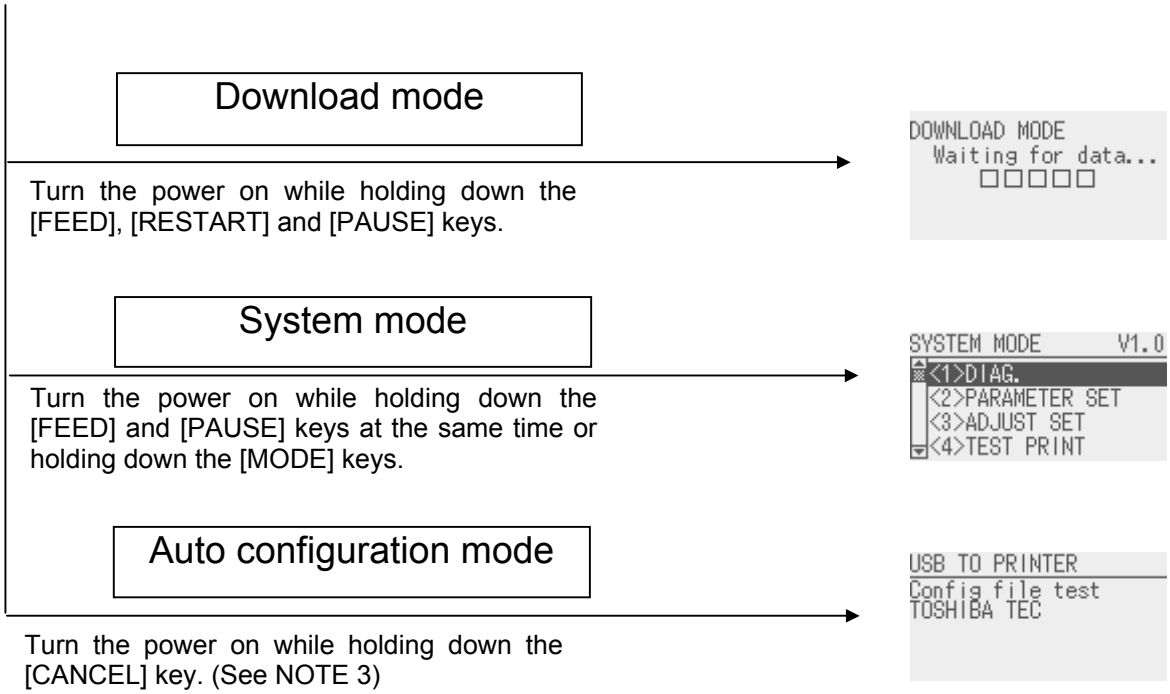


NOTES:

1. To enter the download mode, system mode or auto configuration mode, keep holding down the key until each display is shown.
2. Power off
   When the power switch of the printer is turned off, the ONLINE and ERROR LEDs synchronously flash at a 500-ms interval (ON: 250ms, OFF: 250ms). When the LEDs are unlit, the printer power turns off.
   The power switch 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 Section 11.2 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 Display

Key	Function
[FEED]	(1) Feeds one piece of media. Ejects one piece of media. Used to adjust the media to the proper position. If printing is attempted with the media improperly positioned, printing is not performed at the proper position. One or two pieces of media need to be fed to adjust the paper 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 while printing caused by a depression of the [FEED] key. If it is sent, the layout will be destroyed, and the media will not be printed properly. Also, if printing is performed by a depression of the [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, feeds labels even when the peel-off sensor is detecting a label. * When 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 8.4.1.1 MEDIA LOAD.
[RESTART]	(1) Resumes printing after a temporary stop of printing or after an error. (2) Places the printer in the usual initial state, which is obtained when the power is turned on. (3) Places the printer in the user system mode.
[PAUSE]	(1) Stops label printing temporarily. (2) Programs the threshold value.
[MODE]	(1) Places the printer in the user system mode.
[CANCEL]	(1) Clears the job.
[ENTER]	(1) Displays help messages. (2) Saves the log/receive buffer data. (B-EX4T1 Japan model with firmware V1.0I only) (3) Places the printer in the RFID calibration mode. (Supported by the B-EX4T1-G/T-QM/CN C1.4 or later).
[UP]	(1) Places the printer in the Information mode. (Supported from the firmware version C1.0I for B-EX4T1-G/T-QM/CN, C1.0F for the B-EX4T2-G/T-QM/CN, C1.1A for the B-EX4T2-H-QM/CN, and D1.1 for the B-EX4D2-G/T-QM/CN.)
[DOWN]	(1) No function.
[LEFT]	(1) No function.
[RIGHT]	(1) Displays help messages.

6.1.2 Help Display

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

6.1.3 Manual Threshold Setting Display

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) Fixes 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 menu
[RIGHT]	(1) Goes to the detail page. (2) Goes to the fine adjustment setting menu

6.2 LED FUNCTION

[ONLINE] LED	Indicates that the printer is in online state.
	Flashes when the printer is communicating with the host.
	Flashes at a 500-msec. interval (ON: 250ms., OFF: 250ms.) in synchronization with the [ERROR] LED when the printer is turned off.
[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: 500 ms., OFF: 500 ms.)
	Flashes when a system error occurs (at a 1-second interval (ON: 500 ms., OFF: 500 ms.)
	Flashes at a 500-msec. interval (ON: 250ms., OFF: 250ms.) in synchronization with the [ONLINE] LED when the printer is turned off.

NOTE: If the wireless LAN is being linked at power off time, both [ONLINE] and [ERROR] LEDs turn on, not flash.

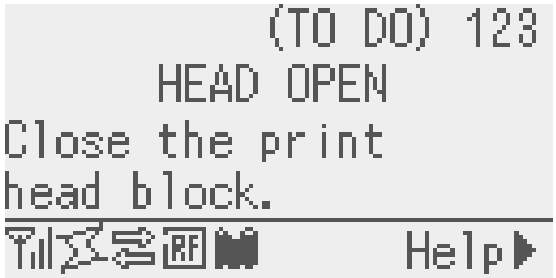
6.3 LCD FUNCTION

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 LCD DISPLAY

6.4.1 Online Mode LCD Display Example

Printer condition	LCD Display	Display contents
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)

* Whether to display or hide the 1st, 3rd and 4th lines of online mode display can be selected in the system mode.
* Refer to “Icon display” for Icon in detail.

(*1) The number of labels printed is the cumulative number of labels printed while the printer is activated. It is 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.

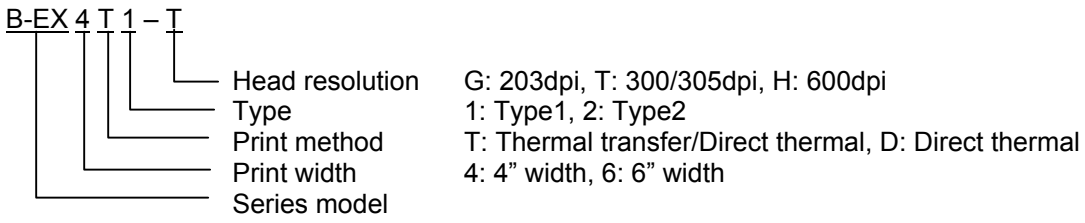
(*2) [The number of remaining labels to print] = [Specified number of labels to print] – [The number of normally printed labels before occurrence of an error or placing the printer in pause]
When the number of remaining labels to print is zero, it is not displayed. During an issue with the cut interval 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 in this area is IP address or supplemental information like 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 or not displaying the ribbon near end message is enabled in system mode.
  A ribbon near end is detected depending on 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) The ribbon near end message may be displayed on this line. The condition for display is the same as *4.

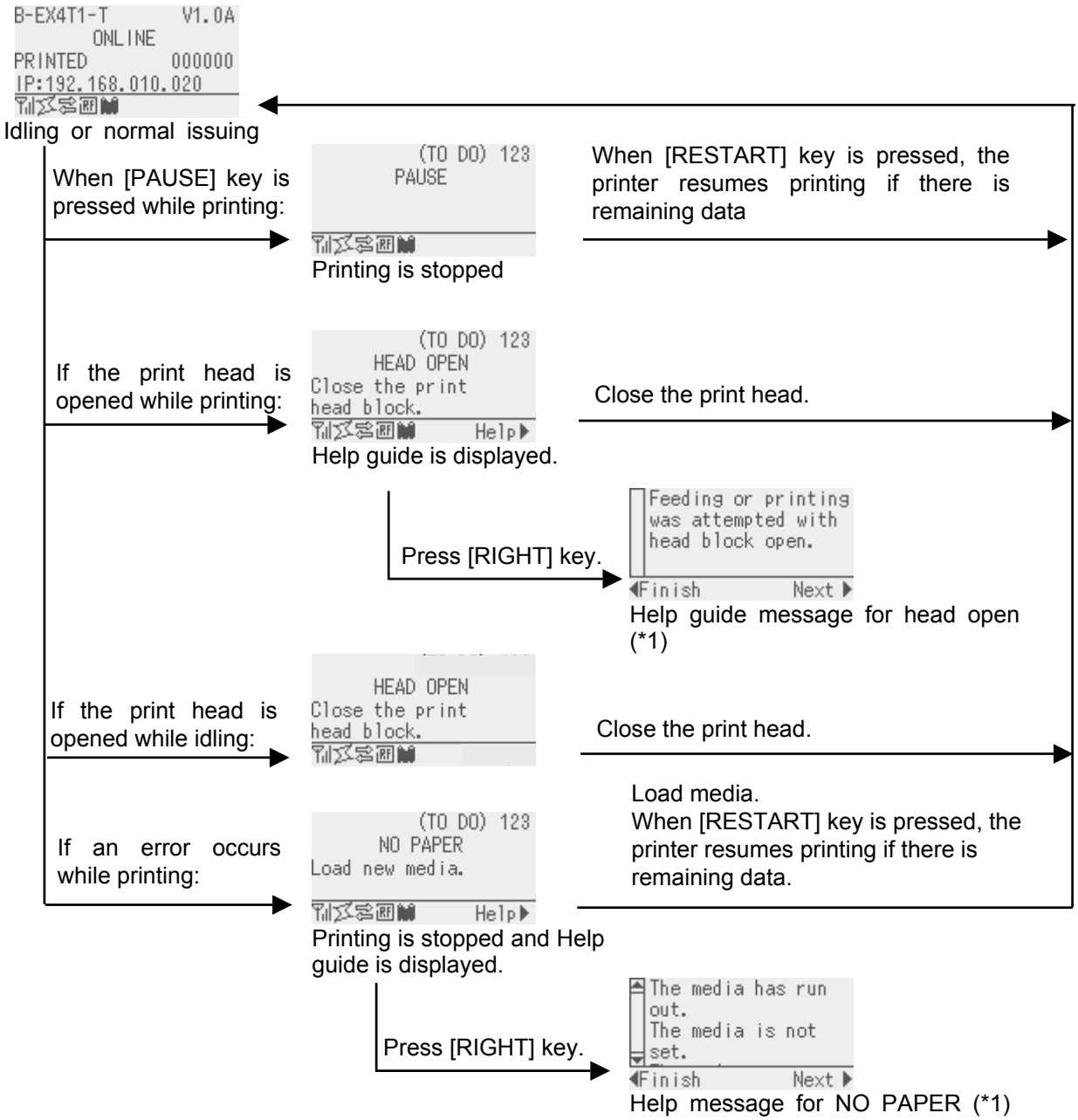
6.4.2 Icon

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

Icon	Explanation
Wireless LAN icon	● Displayed and used when the wireless LAN module is mounted. ● The graph shows the strength of radio wave.  Graph 0: Outside the communication range  Graph 1: Strength of radio wave is weak.  Graph 2: Strength of radio wave is middle  Graph 3: Strength of radio wave is strong
Link icon	● Displayed and used when the wireless LAN module is mounted. ● Displayed while the printer is communicating by wireless LAN. ● Blinks while roaming.  OFF: No connection  ON: Connecting to an access point  Blink: Roaming (*4)
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 mounted. ● Appears when a communication between the printer and the RFID module is enabled. ● Blinks during a communication with the RFID module. - The communication includes the one without radio wave output. - Blinks after radio wave output is instructed to the module even when no radio wave is output. (Blinks while the module stops outputting radio wave or changing the channel under the influence of other carrier.)  ON: Module type is set and ready to communicate  Blink: Communicating
Ribbon near end icon	● Ribbon near end is detected. ● Blinks 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.  Blinking: Ribbon near end state (*4)

(*4) Icon blinks at a 1-second interval (ON for 500 msec. and OFF for 500 msec.)

6.4.3 Online Mode Display Transition, Operation example



(*1) Refer “HELP DISPLAY TRANSITION, OPERATION EXAMPLE” for help display.

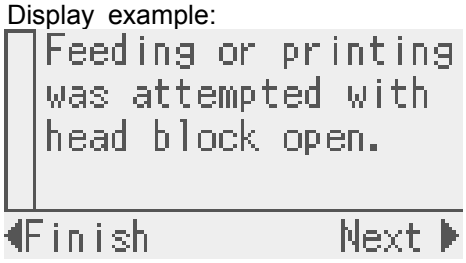
6.5 HELP DISPLAY

6.5.1 Explanation of Help Display

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

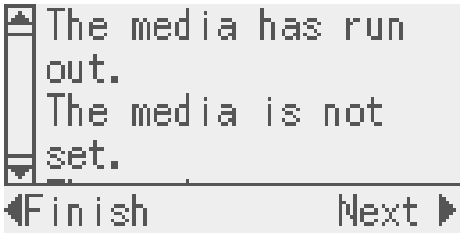
Help message is displayed on the upper four lines. When the message exceeds four lines, the hidden lines can be displayed by scrolling down. When scrolling is possible, the up and down arrows are provided on the scrollbar on the left.

Display example:



← 1st line of help message
← 2nd line of help message
← 3rd line of help message
← 4th line of help message
← Help guide

Since the help message is within three lines, the scroll bar is not provided with up and down arrows.



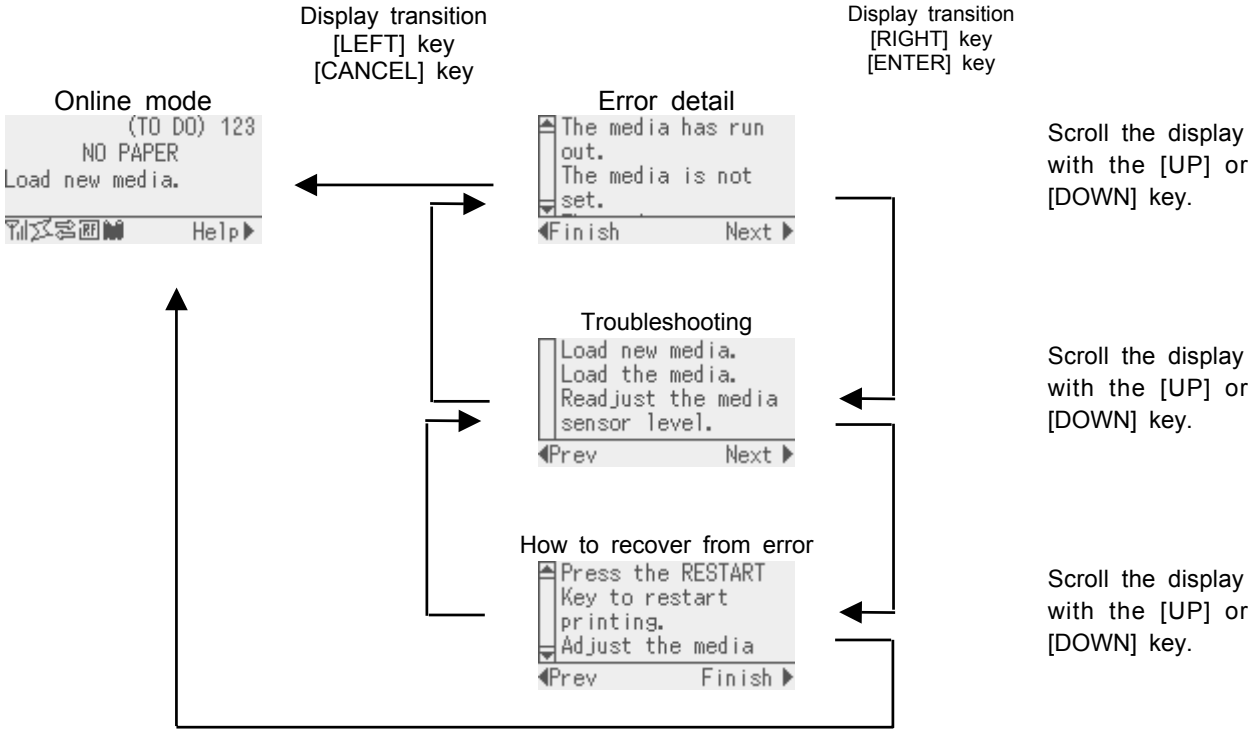
← 1st line of help message
← 2nd line of help message
← 3rd line of help message
← 4th line of help message
← Help guide

Since the help message exceeds four lines, the scroll bar is provided with the up and down arrows.

6.5.2 Help Display Transition, Operation Example

The help consists of three pages, which are Help1, Help2 and Help3.

Help1 shows the detail of the error, Help2 shows a troubleshooting, and Help3 shows how to recover from the error.



(*5) When a key other than above is pressed, the help display is ended and returned to the online mode display.

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 using the transmissive sensor to maintain a constant print position. However, when a preprinted label is used, some ink may prevent proper gap detection. In this case, it is required to manually program the transmissive sensor threshold through key operations and store the value in the non-volatile memory.
Selecting “3: Transmissive Sensor (when using the preprinted label)” for the sensor type of the Issue Command enables printing at a constant print position.

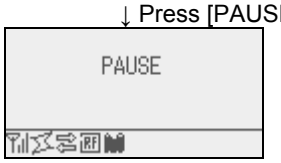
When the media with black marks printed on the back side is used, the printer automatically corrects the print position by detecting the black marks by using the reflective sensor. However, if there is reflective rate variation at a portion other than the black mark, the print position cannot be corrected properly. In this case, it is required to manually program the reflective sensor threshold through key operations and store the value in the non-volatile memory.
Selecting “4: Reflective Sensor (when using a manual threshold value)” for the sensor type of the Issue Command enables printing at a constant print position.

6.6.2 Threshold Setting Operation Example

[Online mode]
1. Normal state

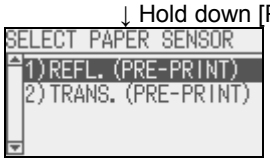
↓ Press [PAUSE] key

[Online mode]
2. Pause state



↓ Hold down [PAUSE] key for 3 seconds

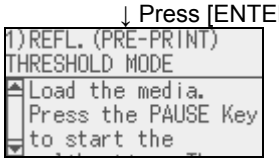
[Threshold setting]
3. Media sensor selection



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

↓ Press [ENTER] key

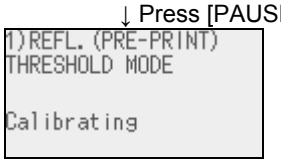
[Threshold setting]
4. Waiting for the media to be loaded



Scroll the display with the [UP] or [DOWN] key

↓ Press [PAUSE] key

[Threshold setting]
5. Calibration

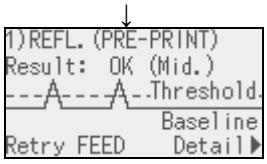


Hold down the [PAUSE] key to keep feeding the media

↓ Release [PAUSE] key.

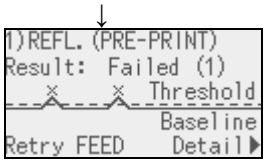
When the [PAUSE] key is released, media feed stops

[Threshold setting]
6a. Result: OK (Mid.)



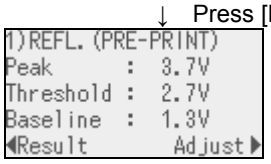
Pressing the [FEED] key returns the display to "3. Media sensor selection."
Pressing the [ENTER] key returns the display to "2. Pause condition."
Pressing the [RIGHT] key causes the display to go to "7a/7b. Detail.

[Threshold setting]
6b. Result: NG (1)



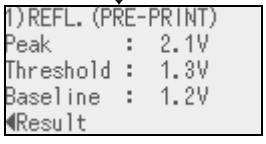
↓ Press [RIGHT] key

[Threshold setting]
7a. Detail: OK (Mid.)



Pressing the [RIGHT] key causes the display to go to "8a. Sensor Fine adjustment."
Pressing the [LEFT] key returns the display to "6a. Judgment."

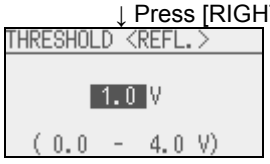
[Threshold setting]
7b. Detail: NG (1)



Pressing the [LEFT] key returns the display to "6b. Judgment

↓ Press [RIGHT] key

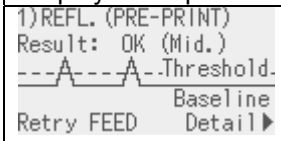
[Threshold setting]
8a. Sensor fine adjustment



Operation is same as 8.5.9 reflective sensor fine adjustment

Pressing the [PAUSE], [ENTER] or [CANCEL] key returns the display to "6a. Judgment

Judgment result

Display example	Displayed item	Explanation
	• Sensor type • Result (Text) • Result (Graph) • Key operation guide	The calibration result is shown. Pressing the [FEED] key returns the display to the media sensor selection and enables a threshold setting. Pressing the [RIGHT] key shows the measured voltages. Pressing the [ENTER] key terminates the threshold setting.
	• Sensor type • Result (Text) • Result (Graph) • Key operation guide	The result of fine adjusted threshold setting is shown. Pressing the [LEFT] key returns the display to the threshold fine adjustment. The [RIGHT] and [ENTER] keys function in the same way as above.

The threshold setting 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 voltage difference 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 voltage difference 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. Sensor adjustment is necessary.
5		NG（1）	Print position is not detectable with the media sensor. Sensor adjustment is necessary. (Threshold ≤ Baseline)
6		NG（2）	Print position is not detectable with the media sensor. (Calibration may enable print position detection, but it is very difficult.)

Detailed display

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 display to the calibration result display.

(Supplementary Explanation)

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

(2) To program the threshold, 1.5 pieces or more label shall be fed. (If the label feed amount is insufficient, the threshold may not be properly programmed. In this case, the threshold setting is required again.)

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

(4) When the proper print position is not obtained even after threshold setting, the sensor may be improperly adjusted. In this case, readjust the sensor in system mode, and program 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 detectable 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 display is shown when the [RIGHT] key is pressed while the 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 display to the result display. Pressing the [RIGHT] key causes the display to go to threshold fine adjustment screen. This is the same menu with the threshold fine adjustment menu in section 8.5.9 (Reflective sensor) or 8.5.10 (Transmissive sensor).

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

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

(10) During 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 either of 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 user system mode.
4. Select “<2>PARAMETER SET”, “Software Set”, then “THRESHOLD SELECT” with the [UP], [DOWN] and [ENTER] keys.
5. Select the applicable media sensor type (“REFLECT” or “TRANS.”) and press the [ENTER] key.
   → The selected sensor type display is shown.
6. Select “MANUAL SET”, press the [ENTER] key, then [MODE] key.
   → User system mode menu is displayed.

7. Select “<1> RESET” and press the [ENTER] key.
   → After the printer is reset, it is placed in the online mode.
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. Press the [FEED] key while the judgment result is displayed 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 user system mode.
4. Select “<2>PARAMETER SET”, “Software Set”, then “THRESHOLD SELECT” with the [UP], [DOWN] and [ENTER] keys.
5. Select the media sensor type (“REFLECT” or “TRANS.”) depending on the sensor type specified by the Issue Command, and press the [ENTER] key.

Sensor type in Issue Command	Setting
0: No sensor	Whether the threshold setting succeeded or not cannot be checked.
1: Reflective sensor	Select “REFLECT”. When the selected sensor type display is shown, select “MANUAL SET” 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 SET” 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.
   → User system mode menu is displayed.
7. Select “<1> RESET” and press the [ENTER] key.
   → After the printer is reset, it is placed in the online mode.
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

Applicable model:

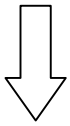
B-EX4T1-G/T-QM/CN with firmware version of C1.4 or later.

The supported RFID module 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

The RFID calibration is a function to automatically determine the distance to the optimum write/read position and 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 (<7>AUTO CALIB. in the user system mode) 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 from 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 from a wrong tag.

Applicable model	Antenna position set in the system mode	Actual antenna position		Application
		Rotation of antenna	Wave director position	
B-EX4T1-G/T-QM/ CN C1.4 or later	FRONT	0°	FRONT	Usable
	CENTER			Unusable
	REAR			Unusable

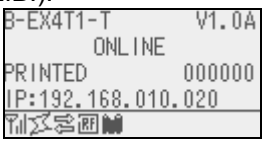
5. While an RFID calibration is performed, EPC data is written on a tag.
   The data to be written is 5555AAAA5555AAAA5555AAAA (12 bytes).
   If this data has already been written on a tag, proper operation of RFID calibration is not guaranteed. Therefore, once a tag undergoes an RFID calibration, this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

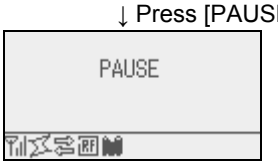
1) Select a usable antenna position in the system mode. (Refer to Section 6.7.1 Outline of the RFID Calibration.)
2) Place the RFID media at the print start position in advance by performing an automatic calibration (<7>AUTO. CALIB.).

[Online mode]
1. Normal state



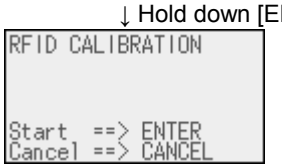
↓ Press [PAUSE] key.

[Online mode]
2. Pause state



↓ Hold down [ENTER] key for 3 seconds.

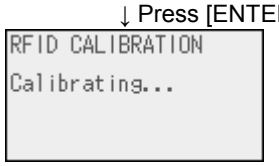
[RFID Calibration]
3. Calibration start



Press [CANCEL] key to return to the normal state.

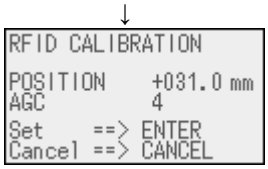
↓ Press [ENTER] key.

[RFID Calibration]
4. Calibration is being performed.



↓

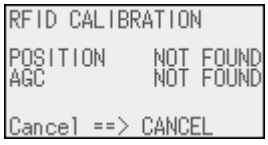
[RFID Calibration]
5a. Result: Detected.



Pressing the [ENTER] key returns the display to 1. Normal state.
The value of “POSITION” 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 display to 1. Normal state.
Values of “POSITION” and “AGC” on the display are not saved.

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



Pressing the [CANCEL] key returns the display to 1.
No value is saved.

(Supplementary Explanation)

(1) The position and AGC value obtained through an RFID calibration are calibrated with reference to the media at the print start position.
(2) When the [ENTER] key is released within 3 seconds while the printer is paused, the [ENTER] key is invalid.
(3) After performing an RFID calibration, the printer returns the RFID media to the print start position.
(4) An RFID calibration is enabled when the FORWARD WAIT parameter is set to ON. 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 moment the error occurs. Therefore, the media dos not return to the print start position (or the forwarded position in the case the FORWARD WAIT parameter is ON.) In this case, the LCD will show the display of 5a. Result Not detected.
(6) An RFID calibration is inoperable in the strip 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, and printed in units of centimeter and inch on request.
The feed amount is counted at the end of feed or printing, and saved in the non-volatile memory.

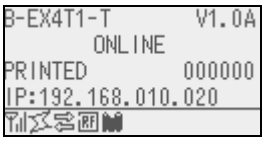
NOTES:

1. The effective range of the feed amount(*1) is as follows. When the feed amount exceeds the maximum, 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 (Diag. test print, maintenance counter print, test print, dump), printing in the information mode, manual threshold, 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

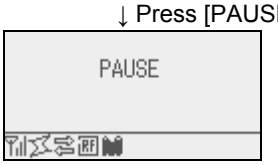
6.8.2 Information Mode Operation Example

[Online mode]
1. Normal state



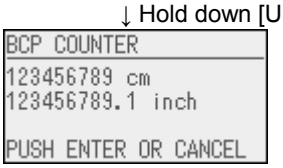
↓ Press [PAUSE] key.

[Online mode]
2. Pause state



↓ Hold down [UP] key for 3 seconds.

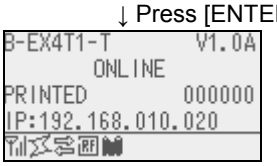
[Information mode]
3. Feed amount is displayed.



Press [CANCEL] key to return to 1. Normal state.

↓ Press [ENTER] key.

[Online mode]
4. Printing is performed.



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

(Supplementary Explanation)

(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:

Printing direction

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, the print position will be determined as follows:

	Print position	Applicable model
B-EX4T1	The feed amount at the max. number of digits (25 mm) is center-aligned.	B-EX4T1-G/T-QM/CN C1.1A
	The feed amount at the max. number of digits (74 mm) is center-aligned.	B-EX4T1-G/T-QM/CN C1.3 or later
B-EX4T2/4D2	The feed amount at the max. number of digits (25 mm) is left-aligned.	B-EX4T2-G/T-QM/CN C1.1 B-EX4D2-G/T-QM/CN D1.1
	The feed amount at the max. number of digits (74 mm) is left-aligned.	B-EX4T2-G/T-QM/CN C1.2A or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.2 or later

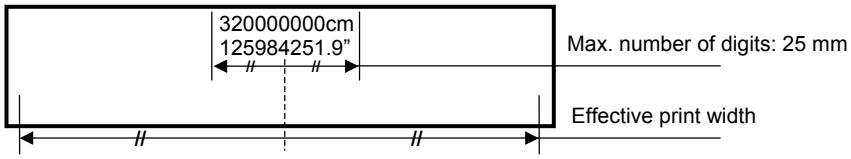
(3) Before shifting to the Information mode, make sure that the printer has not received any commands related to feed or drawing. If the printer has received such commands, printing will not be performed and the printer will return to the normal state. At this time, a quick reset will not be performed.

(4) Do not send a command to the printer in the information mode.

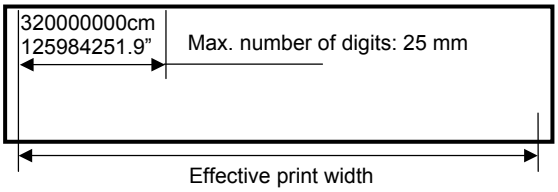
6.8.3 Information Mode Print Sample

<Print sample 1>

B-EX4T1: Max. number of digits: 25 mm, Center-aligned
<Applicable model> B-EX4T1-G/T-QM/CN C1.1A



B-EX4T2: Max. number of digits: 25 mm, Left-aligned
<Applicable model> B-EX4T2-G/T-QM/CN C1.1

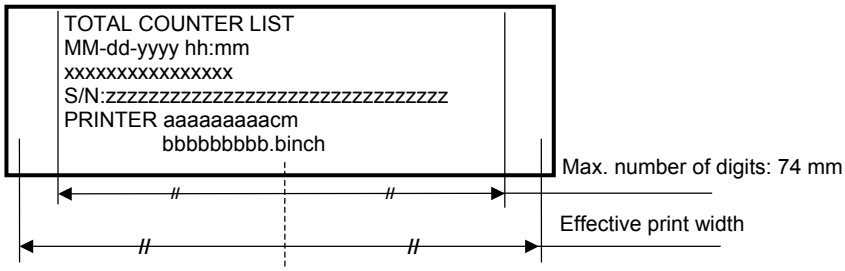


<Print data 1>

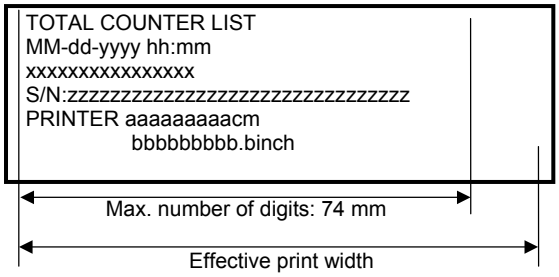
Item	Information	Range
1st line	Feed amount in the information mode (Unit: cm)	0 to 320000000
2nd line	Feed amount in the information mode (Unit: inch)	0 to 125984251.9

<Print sample 2>

B-EX4T1: Max. number of digits: 74 mm, Center-aligned
<Applicable model> B-EX4T1-G/T-QM/CN C1.3 or later



B-EX4T2/4D2: Max. number of digits: 74 mm, Left-aligned
<Applicable model> B--EX4T2-G/T-QM/CN C1.2A or later, B-EX4T2-H-QM/CN C1.1A or later,
B-EX4D2-G/T-QM/CN D1.2 or later



<Print data 2>

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-EX4T1-QM/CN 203 dpi	B-EX4T1-G
		B-EX4T1-QM/CN 305 dpi	B-EX4T1-T
		B-EX4T2-QM/CN 203 dpi	B-EX4T2-G
		B-EX4T2-QM/CN 300 dpi	B-EX4T2-T
		B-EX4T2-QM/CN 600 dpi	B-EX4T2-H
		B-EX4D2-QM/CN 203 dpi	B-EX4D2-G
		B-EX4D2-QM/CN 300 dpi	B-EX4D2-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 (refer to Section 8.3.2.1 AUTO SELF-DIAGNOSIS PRINTOUT), 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 condition.

*: Errors which can be recovered by a depression of the [RESTART] key.
For details, refer to Section 6.8 LCD MESSAGES AND LED INDICATIONS.

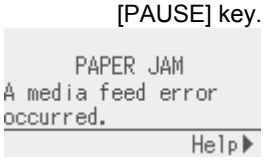
*: A command error may occur if the [CANCEL] key is released before the all received data has been discarded.

6.9.2 Job Cancellation Operation Example

[Online mode]
1. Normal condition

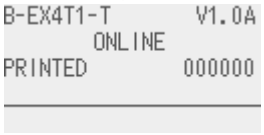
↓ Occurrence of an error of depression of the [PAUSE] key.

[Online mode]
2. Pause or error condition



↓ Hold down [PAUSE] key for 3 seconds.

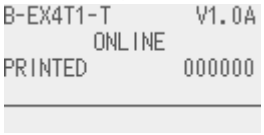
[Online mode]
3. Job cancellation after quick reset



As long as the [CANCEL] key is held down, received data is discarded.

↓ Release the [CANCEL] key.

[Online mode]
4. Normal condition



The printer restores to the online mode.

6.10 Saving Log/Receive Buffer Data

6.10.1 Outline of Log Data Save

When the [ENTER] key is held down for 3 seconds while the printer is in online or pause, the printer automatically save the print log and restart.

6.10.2 Conditions

6.10.2.1 Model

B-EX4T Type1 JP model with firmware V1.0I only

6.10.2.2 Option

- The RFID module must not installed.
- The expansion I/O board must be installed.
- A USB memory must be fitted.

6.10.2.3 Mode

To save the print log, the printer must be in the online or pause state.

6.10.3 Data to be Saved

6.10.3.1 Data type

Data to be saved is print logs and receive buffer data. Both are the same with those described in Section 9.10 LOG and 9.9 Dump Mode.

6.10.3.2 The number of files to be saved

Up to 10 files can be saved each.
When the number of files exceed 10, the latest file will be erased.

6.10.3.3 Storage location and file name

Unlike those described in Section 9.10 LOG and 9.9 Dump Mode, the files are saved in "/ATA0/LOGDATA/" direction under the following name:

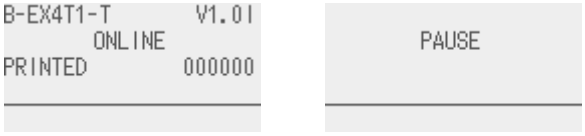
Log file:	LOG00001.TXT to LOG00010.TXT
Receive buffer data:	LOG00001.BIN to LOG00010.BIN

6.10.4 Time Required

It takes about 9 seconds for the printer to restore to the online state after it starts saving.

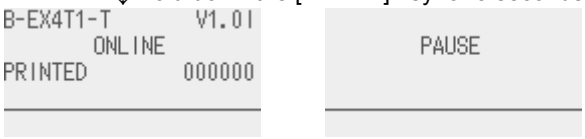
6.10.5 Log Save Operation Example

[Online mode]
[Pause mode]
1. Normal condition



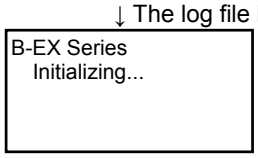
↓ Hold down the [ENTER] key for 3 seconds.

[Log save mode]
Log files are saved.
(Nothing happens to the LCD.)



↓ The log file has been saved.

After saving the log file, the printer restarts.



After saving the log file, the printer automatically restarts. Release the [ENTER] key at this timing.

6.11 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 3)	---	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.	---	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. Paper was not set properly. Label 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 level of media sensor is not suitable for the actual media. The gap of label cannot be detected due to pre-printing.	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	○	●	Writable 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 *1, *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

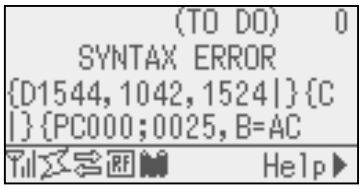
23	SYSTEM ERROR	●	○	When any abnormal operations as below are performed, a system error occurs. (a) Command fetch from an odd address (b) Access to the word data from a place other than the boundary of the word data (c) Access to the long word data from a place other than the boundary of the long word 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 a password to be entered.	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 *4,5)	●	○	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)

(*1) When there is command error in received command, 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, 43rd bytes 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 Display

Command error
PC001;0A00,0300,2,2,A
,00,B

(Example 2)

[ESC]T20**G**30[LF][NUL]

Command error

LCD Display

Command Error
T20G30

(Example 3)

[ESC] PC002;0100,0300,15,15,A,00,00,J0101,+000000000**A**,Z10,P1[LF][NUL]

Command error

LCD display

Command error
PC002;0100,0300,15,15
,A,00,00,J0101,+00000

(*2) When a command error is displayed, the code other than 20H - 7FH and A0H - DFH is displayed as “?” (3FH).

(*3) 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.

(*4) The battery check does not work when the printer is being reset and the RTC is not mounted.

(*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

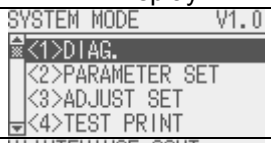
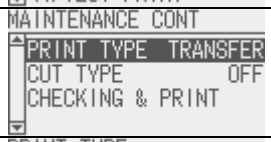
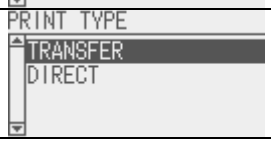
7 DISPLAY PATTERN AND KEY OPERATION FOR SYSTEM MODE AND USER MODE

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 display (without setting value)	
Menu display (with setting value)	
Setting value selection display	

Key function (Menu display)

Key	Compatible Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper hierarchy without saving changes.
[ENTER]	[PAUSE]	Displays a next screen.
[UP]	[RESTART]	Moves the cursor upward. The cursor does not move any further when the selected option is listed at the top.
[DOWN]	[FEED]	Moves the cursor downward. The cursor does not move any further when the selected option is listed at the bottom.
[LEFT]	None	No function
[RIGHT]	None	No function

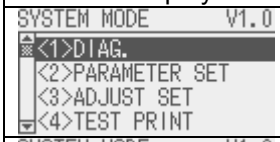
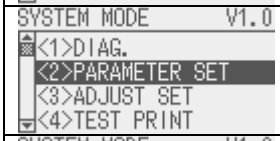
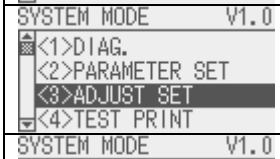
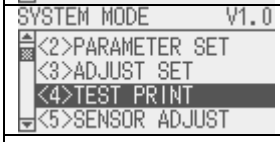
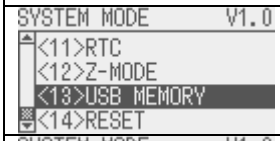
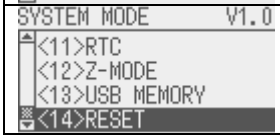
Key function (value setting display)

Key	Compatible Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper hierarchy without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper hierarchy.
[UP]	[RESTART]	Moves the cursor upward. The cursor does not move any further when the selected option is listed at the top.
[DOWN]	[FEED]	Moves the cursor downward. The cursor does not move any further when the selected option is listed at the bottom.
[LEFT]	None	No function
[RIGHT]	None	No function

When multiple keys other than specified above ([FEED] + [RESTART]) are pressed at the same time, the printer behavior is not guaranteed.

Movement of the cursor when scrolled

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

Display	Key operation	
		
	Press [DOWN] key	The position of the displayed menus remains unchanged and only the cursor moves to one line below.
	Press [DOWN] key	The position of the displayed menus remains unchanged and only the cursor moves to one line below.
	Press [DOWN] key	The entire menu moves up by one line and the cursor moves to the next item.
	Press [DOWN] key	The entire menu moves up by one line and the cursor moves to the next item.
	Press [DOWN] key	The position of the displayed menus remains unchanged and only the cursor moves to one line below.

The cursor position when shifting from upper menu to its sub menu

When shifting from upper 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.)

The cursor position when shifting from upper menu to its subordinate value setting display

When shifting from upper menu to its subordinate value setting display, the cursor is positioned at the currently selected item.

The cursor position when shifting from sub menu or value setting display to its upper menu

When shifting from lower menu or value setting display to its upper menu, the cursor is positioned at the previously selected item.

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, the cursor is positioned at the topmost item.

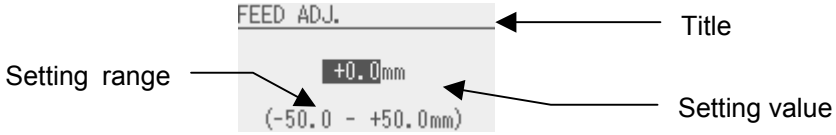
When the [CANCEL] key is pressed while the main menu is displayed:

When the [CANCEL] key is pressed while the main menu of the system mode or user system mode, the cursor does not move from the current position.

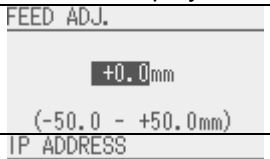
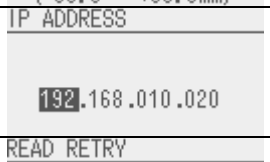
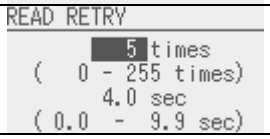
7.2 VALUE SETTING DISPLAY

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

Display example



The currently programmable item is highlighted.
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 display with one field	
Setting display with multiple fields (placed horizontally)	
Setting display with multiple fields (placed vertically)	

Key function (Setting display with one field)

Key	Compatible Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper hierarchy without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper hierarchy.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it does not increase any further.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it does not decrease any further.
[LEFT]	None	No function
[RIGHT]	None	No function

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

Key	Compatible Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper hierarchy without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper hierarchy.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it does not increase any further.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it does not decrease any further.
[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.

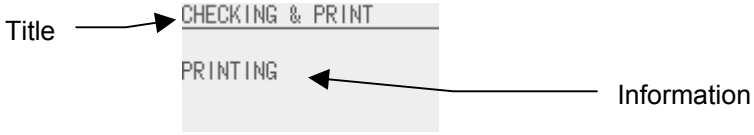
Key function (Setting display with multiple fields (vertical))

Key	Compatible Key	Function
[MODE]	None	Returns to the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Returns to the upper hierarchy without saving changes.
[ENTER]	[PAUSE]	Saves the changes and returns to the upper hierarchy.
[UP]	[RESTART]	Increases the setting value by specified step. When the setting value reaches the maximum, it does not increase any further.
[DOWN]	[FEED]	Decreases the setting value by specified step. When the setting value reaches the minimum, it does not decrease any further.
[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 DISPLAY

The information display is used when no input or setting is performed.
It is consists of the following parts.

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

Key function (Scroll)

Key	Compatible Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	[FEED] + [RESTART]	Displays the upper menu.
[ENTER]	[PAUSE]	Displays the upper menu.
[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

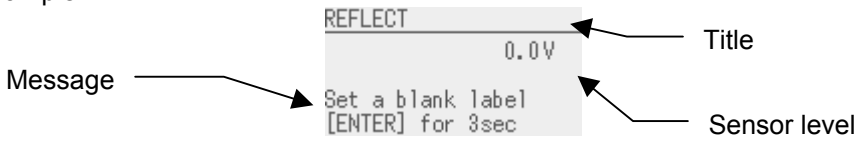
Key function (RFID tag read)

Key	Compatible Key	Function
[MODE]	None	Displays the top menu without saving changes.
[CANCEL]	[FEED] + [RESTART]	Displays the upper 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 DISPLAY

The sensor adjustment display is used only when the level of the sensors provided on the printer is adjusted. It is comprised of the following parts.

Display example



	Display
Before adjustment	REFLECT 0.0V Set a blank label [ENTER] for 3sec
After adjustment	REFLECT 0.0V * Adjust Complete

Key function (before adjustment)

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

Key function (after adjustment)

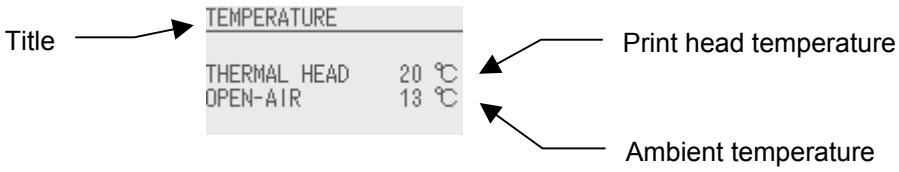
Key	Compatible Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	None	Displays re-adjustment menu.
[ENTER]	None	Displays the upper menu.
[UP]	None	No function
[DOWN]	None	No function
[LEFT]	None	No function
[RIGHT]	None	No function

The asterisk “*” shown on the right side of the adjustment value indicates the completion of adjustment.
The voltage under adjustment is updated approximately every 200 msec.

7.5 TEMPERATURE DISPLAY

Temperature display is used only for displaying the print head temperature and ambient temperature.
It is comprised of the following parts.

Display example



	Display
	TEMPERATURE THERMAL HEAD 20 ℃ OPEN-AIR 13 ℃

Key function

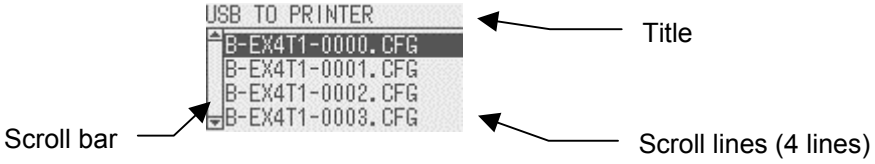
Key	Compatible Key	Function
[MODE]	None	Displays the top menu.
[CANCEL]	None	Displays the upper hierarchy display.
[ENTER]	None	Displays the upper hierarchy display.
[UP]	None	No function
[DOWN]	None	No function
[LEFT]	None	No function
[RIGHT]	None	No function

Each temperature is updated approximately every 200 msec.

7.6 FILE SELECTION DISPLAY

File selection display is used for selecting a file when copying data from USB memory to the printer.
It is comprised of the following parts.

Display example



The scrollbar on the file selection display is not provided with the knob regardless of the number of files.

There are two types of file selection displays, as follows.

Copy data selection display	
CFG file selection display	

Key function

Key	Compatible Key	Function
[MODE]	None	Displays the top menu without selecting a file.
[CANCEL]	[FEED]+[RESTART]	Displays the previous display without selecting a file.
[ENTER]	[PAUSE]	Displays the next display.
[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

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

8 SYSTEM MODE

8.1 OUTLINE OF SYSTEM MODE

The printer enters the system mode when the following operation is performed when the printer power is off.

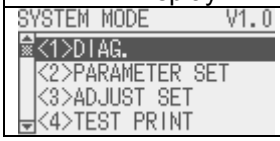
- Turn on the printer while holding down the [FEED] and [PAUSE] keys at the same time.
- Turn on the printer while holding down the [MODE] key.

The system mode is intended for performing self-test, parameter setting, and other settings.
When the top menu is displayed, the firmware version is shown on the right side of the title.

The language displayed on the panel is Japanese when Japanese is selected for the LCD language parameter, and English when English, German, French, Dutch, Spanish, Italian, Portuguese or Chinese is selected.

The key operations for the system mode are described below.

Key operations follow Section 7.1 LIST BOX WITH SCROLLBAR.

Display


Top menu for QM/CN/QQ model

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

DIAG.	Used to perform self diagnosis, print out the result, check for the print head broken elements.
PARAMETER SET	Used to set the parameters for each printer function.
ADJUST SET	Used to fine adjust the printer mechanism position and sensor.
TEST PRINT	Used to conduct test print by printing slant lines, characters and barcodes.
SENSOR ADJUST	Used to display the ambient temaprature and print head temparature, and adjust each level of the media sensor.
RAM CLEAR	Used to clear the maintenance counter and parameters.
INTERFACE	Used to set the parameters of the interface such as network, USB, RS232C and parallel.
BASIC	Used to set the function of the BASIC program when it is loaded printer.
FOR FACTORY	Used to adjust the printer before shipment.
RFID	Used to set RFID-related parameters.
RTC	Used to set the date & time of the real time clock, enable or disable the low battery check, and choose a real time renewal timing.
Z-MODE	Same as BASIC.
USB MEMORY	Used to copy data to/from USB memory.
RESET	Used to reset the printer.

8.2 REFLECTING THE SYSTEM MODE SETTINGS IN THE PRINTER

The settings configured in the system mode or user system mode are saved in the printer at the following timing, depending on the items to be saved.

- Periodic save 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.

8.3 DIAG

The main firmware version is displayed on the right side of the title.

Contents of DIAG. menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<1>DIAG.		
		MAINTENANCE CONT	
		AUTO DIAGNOSTIC	
		HEAD CHECK	7.3 INFORMATION DISPLAY

8.3.1 MAINTENANCE CONT

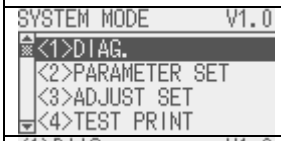
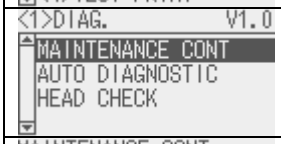
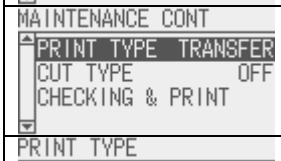
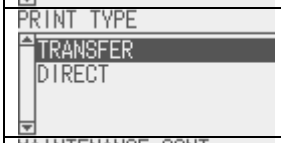
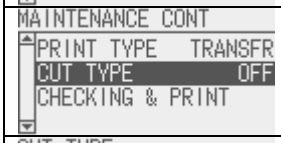
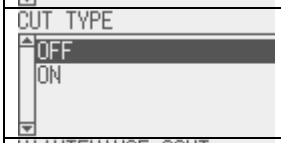
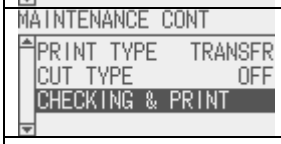
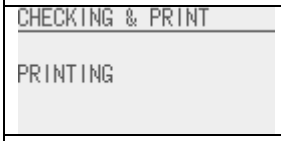
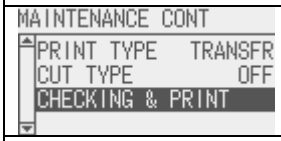
This section describes how to print out the maintenance counter data.
The following table shows the menu structure from the top menu of the system mode to MAINTENAN CE CONT.

MENU ITEM					Display pattern and key operation
SYSTEM MODE					7.1 LIST BOX WITH SCROLLBAR
	<1>DIAG.				
		MAINTENANCE CONT			
			PRINT TYPE		
				TRANSFER	
				DIRECT	
			CUT TYPE		
				OFF	
				ON	
			CHECKING & PRINT		7.3 INFORMATION DISPLAY

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 presing [ENTER], [CANCEL] or [MODE] key, the printer does not print the erroneous label.

NOTE:
For the B-EX4D2, the direct thermal mode (DIRECT) has been set as default, it is not necessary to select the print type. Even if the thermal transfer mode (TRANSFER) is selected, it will be automatically changed to the direct thermal mode when the [ENTER] key is pressed.

Menu operation example

Display	Procedure
	Turn on the printer while holding down [FEED] and [PAUSE] keys at the same time. SYSTEM MODE menus are displayed.
	Select <1>DIAG. and press [ENTER] key. Submenus of <1>DIAG. are displayed.
	Select MAINTENANCE CONT and press [ENTER] key. Submenus of MAINTENANCE CONT are displayed.
	Select PRINT TYPE and press [ENTER] key. PRINT TYPE menu is displayed.
	Select either print method. When [ENTER] key is pressed, the display returns to MAINTENANCE CONT menu.
	Press [DOWN] key, select CUT TYPE, and press [ENTER] key. CUT TYPE menu is displayed.
	Select OFF or ON for CUT TYPE. When [ENTER] key is pressed, the display returns to MAINTENANCE CONT menu.
	Press [DOWN] key, select CHECKING & PRINT, and press [ENTER] key. The maintenance counter and self-diagnosis result are printed.
While printing …	
	“PRINTING” is displayed.
When the printing normally ends:	
	The display returns to MAINTENANCE CONT menu.
When a print error occurs:	
	The printer stops printing displaying the error message. The ERROR LED turns on and the ONLINE LED turns off. The display returns to MAINTENANCE CONT menu when [ENTER] or [CANCEL] key is pressed. At this time, the ERROR LED turns off and the ONLINE LED turns on. Note that the printer does not automatically re-print the erroneous label after recovery from the error.

8.3.1.1 COUNTER PARAMETER PRINT CONTENTS

```
<< COUNTER >>
TOTAL FEED    0.0km          [QM]
FEED          0.0km
FEED1         0.0km
FEED2         0.0km
FEED3         0.0km
FEED4         0.0km
PRINT         0.0km
PRINT1        0.0km
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
RBN(FW)   +0                RBN(FW)   +0 *4
RBN(BK)   +0                RBN(BK)   +0 *4
X ADJ.    +0.0mm
THRESHOLD(R) 0.0V
THRESHOLD(T) 0.0V
HD ADJ.   +0msec *3
<< PARAMETER SETTINGS >>
MEDIA LOAD              [STD]
FORWARD WAIT            [ON] +0.0mm   [MODE1]
HU CUT/RWD.             [OFF]
RIBBON SAVE             [TAG]
PRE PEEL OFF            [OFF]
BACK SPEED              [STD]
TYPE OF RIBBON          [CSO] *1
AUTO CALIB              [OFF]
FONT                    [PC-850]   [0]
CODE                    [AUTO]
PEEL OFF STATUS         [ON]
USB I/F STATUS          [OFF]
FEED KEY                [FEED]
KANJI                   [TYPE1]
EURO CODE               [B0]
AUTO HD CHK             [OFF]
WEB PRINTER             [OFF]
RIBBON NEAR END         [OFF]
EX.I/O MODE             [TYPE1]
LBL/RBN END             [TYPE1]
MAXI CODE SPEC.         [TYPE1]
XML                     [STD]
THRESHOLD SEL(R)        [MANUAL SET]
THRESHOLD SEL(T)        [MANUAL SET]
ENERGY TYPE(T)          [Semi resin1] *7
ENERGY TYPE(D)          [Standard] *7
POWER SAVE TIME         [ 15min]
RIBBON WIDTH            [TYPE1] *5
BASIC                   [OFF]
BASIC TRACE             [OFF]
<< PANEL >>
MESSAGE                 [ENGLISH]
MACHINE NAME            [ON]
PRINT PAGE              [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 >>
SPEED                   [9600]
DATA LENGTH             [8]
STOP BIT                [1]
PARITY                  [EVEN]
CONTROL                 [XON+READY AUTO]
<< CENTRO >>
ACK/BUSY                [TYPE1]
INPUT PRIME             [ON]
PLUG & PLAY             [OFF]
<< LAN/WLAN >>
LAN/WLAN                [OFF]
SNMP                    [OFF]
PRTR IP ADDRESS         [192.168.010.020]
GATE IP ADDRESS         [000.000.000.000]
SUBNET MASK             [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]
WLAN STANDARD           [11b/g]
WLAN MODE               [INFRASTRUCTURE]
ESS ID                  [                    ]
                        [                ]
ENCRYPT                 [OFF]
WPA MODE                [OFF]
AUTH                    [OPEN SYSTEM]
DEFAULT KEY             [1]
802.1X SUPPLICANT       [OFF]
802.11b CHANNEL         [01]
802.11b BAUD RATE       [11M]
802.11g CHANNEL         [01]
802.11g BAUD RATE       [54M]
WINS                    [OFF]
WINS IP ADDRESS         [000.000.000.000]
LPR                     [OFF]
<< RFID >>
MODULE TYPE             [NONE]
TAG TYPE                [NONE          ]
RF CHANNEL              [AUTO]
ADJUST RETRY            [+00mm]
ISSUE RETRY             [   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]
HEADUP ACTION           [MODE1] *6
CALIB. MODE             [OFF] *2
CALIB. AGC              [    0] *2
CALIB. POSITION         [+000.0mm] *2
ANTENNA POSITION        [FRONT] *2
WRITE OK TAGS           9999999
VOID PRINT TAGS         9999999
<< RTC >>
BATTERY CHECK           [ON]
RENEWAL                 [BATCH]
```

*1: B-EX4T2, B-EX6T2, and B-EX4D2 only
*2: Supported by the B-EX4T1-G/T-QM/CN with firmware version of C1.4 or later.
*3: Supported from firmware version of V2.0B for the B-EX4T1-TS25-R.
*4: The way to print the ribbon motor drive voltage fine adjustment values is different depending on the model.

Model	Printout
B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later	(RIBBON WIDTH TYPE1) RBN(FW) +0 RBN(FW) +0 RBN(BK) +0 RBN(BK) +0 (RIBBON WIDTH TYPE2) RBN(FW) +0 RBN(FW) +0 RBN(BK) +0 RBN(BK) +0
Other than above	RBN(FW) +0 RBN(FW) +0 RBN(BK) +0 RBN(BK) +0

*5: Supported from firmware version of C1.2 for the B-EX4T1/EX4T2-G/T-QM/CN, C1.1A or later for the B-EX4T2-H-QM/CN, and D1.1 or later for the B-EX4D2-G/T-QM/CN.
*6: Supported from the B-EX4T1-TS25-R V2.2
*7: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed and unable to be set in the system mode and user system mode. However, the following default value will be set after a RAM clear and printed on the diag. print label.

Applicable model	Thermal transfer	Thermal direct
B-EX4T1-G/T-QM/CN C1.5 or later	SX compatible	Standard
B-EX4T2-G/T-QM/CN C1.3 or later	Multiple type	Standard

Print condition:

Label length		490 mm to 530 mm (depending on the model)
Print method		User setting
Sensor type		None
Speed	(203 dpi) B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G	6 ips
	(300 dpi/305 dpi) B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T	5 ips
	(600 dpi) B-EX4T2-H	3 ips
Print count		1
Issue mode		User setting
Other		No rewinder motor activated

<< COUNTER >>

Item	Content	Range
Counting condition		

TOTAL FEED	Total label distance covered (cannot be cleared)	0.0 to 3200.0 km
Counted when the paper feed motor are driven to feed a paper or print. (Reverse feed is also counted.) When the power is turned off, the label distance of 50.0 cm or less may be rounded down when backed up.		
FEED	Label distance covered	0.0 to 3200.0 km
Counted when the paper feed motor are driven to feed a paper or print. (Reverse feed is also counted.) When the power is off, the label distance of 50.0 cm or less may be rounded down when backed up.		
FEED1 to FEED4	History of label distances covered	0.0 to 3200.0 km
History of the last 4 label distances.		
PRINT	Print distance	0.0 to 200.0 km
Counted while printing. (Reverse feed is not counted.)		

B-EX4T1-G/B-EX4T2-G/B-EX6T2-G/B-EX4D2-G: When the power is turned off, the print distance of 8.2 m or less is rounded down when backed up. B-EX4T1-T/B-EX4T2-T/B-EX6T2-T/B-EX4D2-T: When the power is turned off, the print distance of 5.6 m or less is rounded down when backed up. B-EX4T2-H: When the power is turned off, the print distance of 2.8 m or less is rounded down when backed up.		
PRINT1 to PRINT4	History of print distances	0.0 to 3200.0 km
History of the last 4 print distances.		
CUT	Cut count	0 to 1000000
Every cut operation is counted. The cut count is saved every 4 cut operation.		
HEAD U/D	Head up/down count	0 to 2000000
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 operation.		
RIBBON	Ribbon motor drive time	0 to 2000 hours
Note: The counter value for the B-EX4D2 is indefinite. Counted when the ribbon motor is driven while paper 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	Head-up solenoid drive time	0 to 1000 hours
Counted when the ribbon saving operation is performed. When the power is turned off, drive time of 10 seconds or less is rounded down when backed up.		
232C ERR	RS-232C hardware error count	0 to 255
Counted when a parity error, overrun error or framing error occurs.		
SYSTEM ERR	System error count	0 to 15
Counted when a system error occurs.		
POWER FAIL	Momentary power interruption count	0 to 15
Counted when a momentary power interruption occurs.		

<< ADJUST >>

Item		Description	Remarks
[PC] FEED		Feed amount fine adjustment	-50.0mm to +50.0mm
CUT		Cut position (or strip position) fine adjustment	-50.0mm to +50.0mm
BACK		Back feed fine adjustment	-9.9mm to +9.9mm
TONE (T)		Print density fine adjustment (Thermal transfer print mode)	-10 to +10 step
TONE (D)		Print density fine adjustment (Direct thermal print mode)	-10 to +10 step
RBN (FW) *1		Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
RBN (BK) *1		Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +10 step
(RBN WIDTH TYPE1) *1	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +10 step
(RBN WIDTH TYPE2) *1	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +10 step
[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		Back feed fine adjustment	-9.9mm to +9.9mm

TONE (T)		Print density fine adjustment (Thermal transfer print mode)	-20 to +10 step
TONE (D)		Print density fine adjustment (Direct thermal print mode)	-20 to +10 step
RBN (FW) *1		Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
RBN (BK) *0		Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +10 step
(RBN WIDTH TYPE1) *1	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +10 step
(RBN WIDTH TYPE2) *1	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +10 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-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
HD ADJ.		Head down timing fine adjustment * Supported from firmware version of V2.0B for the B-EX4T1-TS25-R.	-30msec. to +30msec.

*1: The ribbon motor drive voltage fine adjustment parameters are different depending on the model.

Model	Parameter	
B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later	(RIBBON WIDTH TYPE1)	RBN(FW)
		RBN(BK)
	(RIBBON WIDTH TYPE2)	RBN(FW)
		RBN(BK)
Other than above	RBN(FW)	
	RBN(BK)	

NOTE: This parameter is not used for the B-EX4D2-G/T.

<< PARAMETER SETTINGS >>

Item	Description	Printed value	
MEDIA LOAD	Media loading **NOTE**: Even if the "ECO+Bfeed" is selected for the B-EX4T2, B-EX6T2, or B-EX4D2, the setting and the printer behavior will be automatically changed to "ECO".	OFF	Disabled
		STD	Feeds the detected gap/mark to print start position.
		ECO	Feeds gap/mark between print head and sensor to print start position.
		ECO+BFeed	Back feed follows ECO printer behavior.
FORWARD WAIT	Forward feed standby after issue	ON	Performed (A fine adjustment value for the stop position is also printed.)
		OFF	Not performed
FW/BK ACT.	Forward feed standby action **NOTE**: Models supporting MODE3:	MODE1	Stops after 13.7-mm forward feed.

	B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T1-TS25-R V2.1 or later	MODE2	Stops after 6-mm back feed and 3-mm forward feed. (Only when the cut mode, thermal transfer, and feed gap sensor is selected.) In other cases, the printer stops after 13.7-mm forward feed.
		MODE3 (Note)	Stops after 31.2-mm forward feed. This is an exclusive specification for issuing RFID media.
HU CUT/RWD.	Head-up operation in cut issue mode, or use of the Rewinder **NOTE**: Since head-up function is not available to the B-EX4T2, B-EX6T2, and B-EX4D2, this parameter is to choose whether to use the Rewinder. The head-up operation is fixed to OFF.	ON	Head-up operation is performed, or the rewinder is used.
		OFF	Head-up operation is not performed, or the rewinder is not used.
RBN SAVE	Use of ribbon saving module **NOTE**: Even if the "TAG" or LABEL" is selected for the B-EX4T2, B-EX6T2, or B-EX4D2, the setting and the printer behavior will be automatically changed to "OFF". *Supported only by the B-EX4T1-TS25-R V2.0 or later The difference between "ON:TAG" and "ON:TAG2", and between "ON:LBL" and "ON:LBL2", respectively, is the distance of non-print area where a ribbon save is performed. (In the case of 8 ips or faster)	ON:TAG	Used. Head lever position: "TAG"
		ON:LABEL	Used. Head lever position: "LABEL".
		ON:TAG2 *	Used. Head lever position: "TAG"
		ON:LBL2 *	Used. Head lever position: "LABEL".
		OFF	Not used
PRE PEEL OFF	Pre-peel-off process setting	ON	Pre-peel-off is performed.
		OFF	Pre-peel-off is not performed.
BACK SPEED	Back feed speed setting	STD	3 ips
		LOW	2 ips
TYPE OF RIBBON	Ribbon roll direction **NOTE**: This parameter is supported only by the B-EX4T2/B-EX6T2/ B-EX4D2. * This parameter is not used for the B-EX4D2.	CSO	Outside wound
		CSI	Inside wound
AUTO CALIB	Auto calibration setting **NOTE**: When the "ON TRANS.+Bfeed", "ON REFLECT+Bfeed" or "ON ALL+B-feed" is selected for the B-EX4T2, B-EX6T2, or B-EX4D2, the setting and the printer behavior will be automatically changed as follows. ON TRANS.+Bfeed →ON TRANS. ON REFLECT+Bfeed →ON REFLECT ON ALL+Bfeed	OFF	Auto calibration is not performed.
		ON TRANS.	Auto calibration is performed with transmissive sensor.
		ON REFLECT	Auto calibration is performed with reflective sensor.
		ON ALL	Auto calibration is performed with both sensors.
		ON TRANS+Bfeed	Back feed follows ON TRANS printer behavior.

	→ON ALL	ON REFLECT+Bfeed	Back feed follows ON REFLECT printer behavior
		ON ALL+Bfeed	Back feed follows ON ALL printer behavior.
FONT	Character code selection	PC-850	PC-850
		PC-852	PC-852
		PC-857	PC-857
		PC-8	PC-8
		PC-851	PC-851
		PC-855	PC-855
		PC-1250	PC-1250
		PC-1251	PC-1251
		PC-1252	PC-1252
		PC-1253	PC-1253
		PC-1254	PC-1254
		PC-1257	PC-1257
		LATIN9	LATIN9
		PC-866	PC-866
		Arabic	Arabic
		UTF-8	UTF-8
	Font “0” selection	0	No slash used
		Ø	Slash used
CODE	Control code type	AUTO	Automatic selection
		ESC LF NUL	ESC LF NUL method
		{ | }	{ | } method
		×× ○○ □□	Any code (Described in hex. code)
PEEL OFF STATUS	Peel-off wait status	ON	Transmitted
		OFF	Not transmitted
USB I/F STATUS	USB interface status	ON	Sends
		OFF	Not send
FEED KEY	[FEED] key function setting	FEED	One label is fed.
		PRINT	Data in the image buffer is printed on one label.
KANJI	Kanji code type	TYPE1	For WINDOWS codes
		TYPE2	For original codes
EURO CODE	Euro code setting		
AUTO HD CHK	Automatic broken dots check setting	ON	Automatic broken dots check is performed.
		OFF	Automatic broken dots check is not performed.
WEB PRINTER	Web printer function setting	ON INTERNAL	Enabled. (Internal memory is used.)
		ON EXTERNAL	Enabled. (External memory is used.)
		OFF	Disabled.
RIBBON NEAR END	Ribbon near end detection setting	30m	Ribbon near end state is detected when the remaining ribbon length is approximately 30 m.
		70m	Ribbon near end state is detected when the remaining ribbon length is approximately 70 m.
		OFF	Ribbon near end state is not detected.
EX.I/O MODE	Expansion I/O operation	TYPE1	Standard mode.

	mode	TYPE2	In-line mode.
LBL/RBN END	Label end/ribbon end process setting	TYPE1	When a label end or ribbon end state is detected, the printer stops immediately.
		TYPE2	When a label end or ribbon end state is detected, the printer prints the current label as far as possible, and then stops.
MAXI CODE SPEC.	MaxiCode specification setting	TYPE1	Compatible with the current version
		TYPE2	Special specification
XML	XML function setting	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)	Threshold value for reflective sensor	MANUAL SET	Manually set value is used.
		COMMAND SET	Command specified value is used.
THRESHOLD SEL (T)	Threshold value for transmissive sensor	MANUAL SET	Manually set value is used.
		COMMAND SET	Command specified value is used.
ENERGY TYPE(T) (*2)	Energy control for thermal transfer print <For the B-EX4T1-G/T-QM/CN C1.4 or before> (*1) “Resin3” shall not be selected for the B-EX4T1-T (QM/CN) model.	Semi resin1	Semi resin 1
		Semi resin2	Semi resin 2
		Resin1	Resin 1
		Resin2	Resin 2
		Resin3 (*1)	Resin 3 (*1)
		Reserve2	Reserved.
		Reserve3	Reserved.
		Reserve4	Reserved.
		Reserve5	Reserved.
		Reserve6	Reserved.
	<For the B-EX4T1-G/T-QM/CN C1.5 or later> (*1) “Resin3” shall not be selected for the B-EX4T1-T (QM/CN) model.	Semi resin1	Semi resin 1
		Semi resin2	Semi resin 2
		Resin1	Resin 1
		Resin2	Resin 2
		Resin3 (*1)	Resin 3 (*1)
		SX compatible	Compatible with B-SX
		Reserve1	Reserved.
		Reserve2	Reserved.
		Reserve3	Reserved.
		Reserve4	Reserved.
	<For the B-EX4T2-G/T Firmware Version C1.0C or before and B-EX6T2-G/T>	WAX1	Wax 1
		WAX2	Wax 2
		Semi resn1	Semi resin 1
		Semi resn2	Semi resin 2
		Resin1	Resin 1
		Reserve1	Reserved.
		Reserve2	Reserved.

		Reserve3	Reserved.
		Reserve4	Reserved.
		Reserve5	Reserved.
	<For the B-EX4T2-G/T Firmware Version C1.0D>	WAX1	Wax 1
		WAX2	Wax 2
		Semi resn1	Semi resin 1
		Semi resn2	Semi resin 2
		Resin1	Resin 1
		WAX3	Wax 3
		Semi resn3	Semi resin 3
		Reserve1	Reserved.
		Reserve2	Reserved.
		Reserve3	Reserved.
	<For the B-EX4T2-G/T Firmware Version C1.0E to C1.2, and B-EX4D2> Note: Since the B-EX4D2 is a direct thermal printer, these parameters are displayed but not used for actual printing.	WAX1	Wax 1
		WAX2	Wax 2
		Semi resn1	Semi resin 1
		Semi resn2	Semi resin 2
		Resin1	Resin 1
		WAX3	Wax 3
		Semi resn3	Semi resin 3
		Resin2	Resin 2
		Reserve1	Reserved.
		Reserve2	Reserved.
	<For the B-EX4T2-G/T Firmware Version C1.3 or later>	WAX1	Wax 1
		WAX2	Wax 2
		Semi resn1	Semi resin 1
		Semi resn2	Semi resin 2
		Resin1	Resin 1
		WAX3	Wax 3
		Semi resn3	Semi resin 3
		Resin2	Resin 2
		Multiple type	Multiple type
		Reserve1	Reserved.
	<For the B-EX4T2-H Firmware Version C1.0F or before>	Resin1	Resin 1
		Resin2	Resin 2
		Reserve1	Reserved.
		Reserve2	Reserved.
		Reserve3	Reserved.
		Reserve4	Reserved.
		Reserve5	Reserved.
		Reserve6	Reserved.
		Reserve7	Reserved.
		Reserve8	Reserved.
	<For the B-EX4T2-H Firmware Version C1.1A or before>	Resin1	Resin 1
		Resin2	Resin 2
		Resin3	Resin 3
		Reserve1	Reserved.
		Reserve2	Reserved.
		Reserve3	Reserved.
		Reserve4	Reserved.
		Reserve5	Reserved.
		Reserve6	Reserved.
		Reserve7	Reserved.
ENERGY TYPE(D) (*2)	Energy control for direct thermal print	Standard	Standard
		Reserve1	Reserved.
		Reserve2	Reserved.
		Reserve3	Reserved.

		Reserve4	Reserved.
		Reserve5	Reserved.
		Reserve6	Reserved.
		Reserve7	Reserved.
		Reserve8	Reserved.
		Reserve9	Reserved.
POWER SAVE TIME	Length of time until the printer enters sleep mode		
RIBBON WIDTH (*1)	Ribbon width	TYPE1	Type 1
		TYPE2	Type 2
BASIC	Basic interpreter setting	ON	Basic interpreter is enabled.
		OFF	Basic interpreter is disabled.
BASIC TRACE	Basic interpreter trace setting	ON	Trace is enabled.
		OFF	Trace is disabled.

*1: Supported from the B-EX4T1/EX4T2-G/T-QM/CN C1.2, B-EX4T2-H-QM/CN C1.1A, B-EX4D2-G/T-QM/CN D1.1. (This parameter is not used for the B-EX4D2.)

*2: *If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed.

Applicable model: B-EX4T1-G/T-QM/CN C1.5 or later
B-EX4T2-G/T-QM/CN C1.3 or later

<< PANEL >>

Item	Description	Printed value	
MESSAGE	Language selection for LCD messages	ENGLISH	English
		GERMAN	German
		FRENCH	French
		DUTCH	Dutch
		SPANISH	Spanish
		JAPANESE	Japanese
		ITALIAN	Italian
		PORTUGUESE	Portuguese
		SIMP. CHINESE	Simplified Chinese
		KOREAN	Korean (*1)
		TURKISH	Turkish (*2)
		POLISH	Polish (*2)
MACHINE NAME	Whether to display the model name	ON	Displayed.
		OFF	Hidden.
PRINT PAGE	Whether to display the number of labels printed	ON	Displayed.
		OFF	Hidden.
IP ADDRESS	Whether to display IP address	ON	Displayed.
		OFF	Hidden.
CONTRAST	LCD contrast		
SYSTEM PASSWORD	Password for system mode	ON	Password is enabled.
		OFF	Password is disabled.

*1: Korean is supported from the B-EX4T1-G/T-QM/CN C1.0I, B-EX4T2-G/T-QM/CN C1.0F, B-EX4T2-H-QM/CN C1.1A, B-EX4D2-G/T-QM/CN D1.1.

*2: Turkish and Polish are supported from the B-EX4T1-G/T-QM/CN C1.3, B-EX4T2-G/T-QM/CN C1.2A, B-EX4T2-H-QM/CN C1.1A, B-EX4D2-G/T-QM/CN D1.2.

<< STORAGE AREA >>

Item	Description	Printed value	
TTF AREA	TrueType Font storage area size	0KB to 3072KB	（in 128KB units）

EXT CHR AREA	Writable character storage area size	0KB to 3072KB	(in 128KB units)
BASIC AREA	Basic file storage area size	0KB to 3072KB	(in 128KB units)
PC SAVE AREA	PC command storage area size	0KB to 3072KB	(in 128KB units)

<< USB >>

Item	Description	Printed value	
SERIAL NUMBER	USB serial number	ENABLE	Enabled.
		DISABLE	Disabled.
	USB serial number		

<< RS-232C >>

Item	Description	Printed value	
SPEED	Baud rate	2400	2400 bps
		4800	4800 bps
		9600	9600 bps
		19200	19200 bps
		38400	38400 bps
		115200	115200 bps
DATA LENG.	Data length	7	7 bits
		8	8 bits
STOP BIT	Stop bit length	1	1 bit
		2	2 bits
PARITY	Parity	NONE	None
		ODD	Odd
		EVEN	Even
CONTROL	Transmission control method	XON/XOFF	XON/XOFF protocol (No XON output when the power is on, no XOFF output when the power is off)
		READY/BUSY	READY/BUSY (DTR) protocol (No XON output when the power is on, no XOFF output when the power is off)
		XON+READY AUTO	XON/XOFF + READY/BUSY (DTR) protocol (XON output when the power is on, XOFF output when the power is off)
		XON/XOFF AUTO	XON/XOFF protocol (XON output when the power is on, XOFF output when the power is off)
		READY/BUSY RTS	RTS protocol (No XON output when the power is on, no XOFF output when the power is off)

<< CENTRO >>

Item	Description	Printed value	
ACK/BUSY	Centronics ACK/BUSY timing	TYPE1	The ACK signal is sent to match the rising edge of ACK signal and the falling edge of the BUSY signal.
		TYPE2	The ACK signal is sent to match the falling edge of ACK signal and the falling edge of the BUSY signal.

INPUT PRIME	Reset process when the nInit signal is ON	ON	Reset is performed.
		OFF	Reset is not performed.
PLUG & PLAY	Plug-and-play operation	ON	Plug-and-play is enabled.
		OFF	Plug-and-play is disabled.

<< LAN/WLAN >>

Item	Description	Printed value	
LAN/WLAN	LAN selection	OFF	Disabled
		AUTO	Auto
		LAN	Wired LAN
		WLAN	Wireless LAN
SNMP	SNMP enabled/disable	ON	Enabled
		OFF	Disabled
PRTR IP ADDRESS	Printer IP address	***.***.***.***	
GATE IP ADDRESS	Gateway IP address	***.***.***.***	
SUBNET MASK	Subnet mask	***.***.***.***	
SOCKET PORT	Socket communication	ON	Enabled
		OFF	Disabled
	Socket communication port number	0 to 65535	
DHCP	DHCP setting	ON	Enabled
		OFF	Disabled
DHCP CLIENT ID	DHCP client ID setting (Hex.)	Max. 64 characters	
DHCP HOST NAME	DHCP host name (ASCII)	Max. 32 characters	
WLAN STANDARD	Wireless LAN: Standard	11b/g	11b/g
		11b	11b
		11g	11g
WLAN MODE	Wireless LAN: Connection setting	INFRASTRUCTURE	Infrastructure mode
		ADHOC	Adhoc mode
ESS ID	Wireless LAN: ESS ID	Max. 32 characters	
ENCRYPT	Wireless LAN: Encryption key setting	OFF	OFF
		WEP40	WEP40
		WEP104	WEP104
		AES	AES
		TKIP	TKIP
WPA MODE	Wireless LAN: WPA setting	OFF	OFF
		WPA	WPA
		WPA-PSK	WPA-PSK
		WPA2	WPA2
		WPA2-PSK	WPA2-PSK
AUTH	Wireless LAN: Authentication method	OPEN	Open system method
		SHARED	Shared key method
		NETWORK EAP	NETWORK EAP
DEFAULT KEY	Wireless LAN: Encryption key for sending	1 to 4	
802.1X SUPPLICANT	Wireless LAN: Authentication method	OFF	OFF
		EAP-TLS	EAP-TLS
		PEAP	PEAP
		EAP-TTLS	EAP-TTLS
		EAP-FAST	EAP-FAST
		EAP-MD5	EAP-MD5
		LEAP	LEAP
802.11b CHANNEL	Wireless LAN: 11b connection channel setting	01 to 14	

802.11b BAUD RATE	Wireless LAN: 11b speed setting	11M	11M
		5.5M	5.5M
		2M	2M
		1M	1M
802.11g CHANNEL	Wireless LAN: 11g connection channel setting	01 to 13	
802.11g BAUD RATE	Wireless LAN: 11g speed setting	54M	54M
		48M	48M
		36M	36M
		24M	24M
		18M	18M
		12M	12M
		9M	9M
		6M	6M
		11M	11M
		5.5M	5.5M
		2M	2M
		1M	1M
WINS	WINS enable/disable	ON	Enabled
		OFF	Disabled
WINS IP ADDRESS	WINS IP address	***.***.***.***	
LPR	LPR enable/disable	ON	Enabled
		OFF	Disabled

<< RFID >>

Item	Description	Printed value	
MODULE	RFID module type selection	NONE	No RFID kit is installed.
		H1	B-EX700-RFID-H1-QM-R
		H2	B-EX700-RFID-H2-R
		U2	B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model
TAG TYPE	RFID tag type selection	NONE	
		I-Code	11
		Tag-it	12
		C220	13
		ISO15693	14
		C210	15
		C240	16
		C320	17
		EPC C1 Gen2	24
RF CHANNEL	RFID channel setting	2CH to 8CH	
		AUTO	
ADJUST RETRY	RFID adjustment for retry	-99mm to +99mm	
ISSUE RETRY	Max number of RFID issue retries	0 to 255	
READ RETRY	Max number of RFID read retries	0 to 255	
	RFID read retry time-out	0 to 9.9 sec.	
WRITE RETRY	Max number of RFID write retries	0 to 255	

	RFID write retry time-out	0 to 9.9 sec.	
POWER LEVEL	RFID wireless power level setting	9 to 18	B-EX700-RFID-U2-US/EU-R
		0 to 18 (*1)	B-EX700-RFID-U4-EU/US-R, B-EX700-RFID-U4-R, U4 module preinstall model
Q VALUE	RFID module Q value	0 to 5	
AGC THRESHOLD	RFID AGC threshold setting	0 to15	
WRITE AGC	AGC threshold for data write	0 to15	
RETRY MIN AGC	AGC threshold lower limit for retry	0 to15	
TAG CHECK	RFID error tag detection	OFF	Detection is disabled.
		ON (ID)	RFID error tag detection for ID area data
		ON (ACCESS PASSWORD)	When PASS is selected, the following settings are subsequently displayed: Password setting to protect error tag detection ON: Enabled OFF: Disabled Automatic unlock function setting ON: Enabled OFF: Disabled
CALIB. MODE (*2)	RFID calibration mode	OFF	Disabled
		ON	Enabled
CALIB. AGC (*2)	Optimum AGC value obtained through RFID calibration	0 to 15	
CALIB. POSITION (*2)	Distance to the optimum read/write position obtained through RFID calibration	-999.9mm to +999.9mm	
ANTENNA POSITION (*2)	Position of the RF antenna and the wave director	FRONT	Front
		CENTER	Center
		REAR	Rear
MULTI WRITE	Hibiki tag multi-word write	ON	Enabled
		OFF	Disabled
HEADUP ACTION (*3)	Head up action during reverse feed	MODE1	The print head is raised in accordance with the ribbon save and the head up settings.
		MODE2	The print head is raised during very reverse feed.
WRITE OK TAGS	Count of RFID success label write issue	0 to 9999999	
VOID PRINT TAGS	Count of RFID failure label write issue	0 to 9999999	

*1: Supported from the printer firmware version of C1.0I for the B-EX4T1-G/T-QM/CN, C1.0F for the B-EX4T2-G/T-QM/CN, and V2.1 for the B-EX4T1-TS25-R.

*2: Supported by the B-EX4T1-G/T-QM/CN C1.4 or later.

*3: Supported from the firmware version of V2.2 for the B-EX4T1-TS25-R.

<< RTC >>

Item	Description	Printed value	
BATTERY CHECK	Battery check	ON	Enabled
		OFF	Disabled
RENEWAL	Time update timing	BATCH	per batch
		PAGE	per page

8.3.2 AUTO DIAGNOSTIC

The procedure for printing the self-diagnosis result is the same as that for the maintenance counter data. 8.3.1 MAINTENANCE CONT.
The following table shows the menu structure from top menu of the system mode to AUTO DIAGNOSTIC.

MENU ITEM					Display pattern and key operation
SYSTEM MODE					7.1 LIST BOX WITH SCROLLBAR
	<1>DIAG.				
		AUTO DIAGNOSTIC			
			PRINT TYPE		
				TRANSFER	
				DIRECT	
			CUT TYPE		
				OFF	
				ON	
			CHECKING & PRINT		7.3 INFORMATION DISPLAY

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 presing [ENTER], [CANCEL] or [MODE] key, the printer does not print the erroneous label.

NOTE:
For the B-EX4D2, the direct thermal mode (DIRECT) has been set as default, it is not necessary to select the print type. Even if the thermal transfer mode (TRANSFER) is selected, it will be automatically changed to the direct thermal mode when the [ENTER] key is pressed.

8.3.2.1 AUTO SELF-DIAGNOSIS PRINTOUT

<Printout for the models supporting SIO>
B-EX4T1-TS25-R V2.0 or later
B-EX4T1-G/T C1.1A or later
B-EX4T2-G/T C1.1 or later
B-EX4T2-H C1.1A or later
B-EX4D2-G/T D1.1 or later

```
PROGRAM B-EX4T1-T
    MAIN   XXXXXXXXX V1.0A:1A00
    BOOT   XXXXXXXXX V1.0 :8500
    WMON XXXXXXXXX V1.0 :6100
FONT        5600
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
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-EX4-MV10F. V1.0F:7479
BASIC S Z-EX4-SV10E. V1.0E:AD36
```

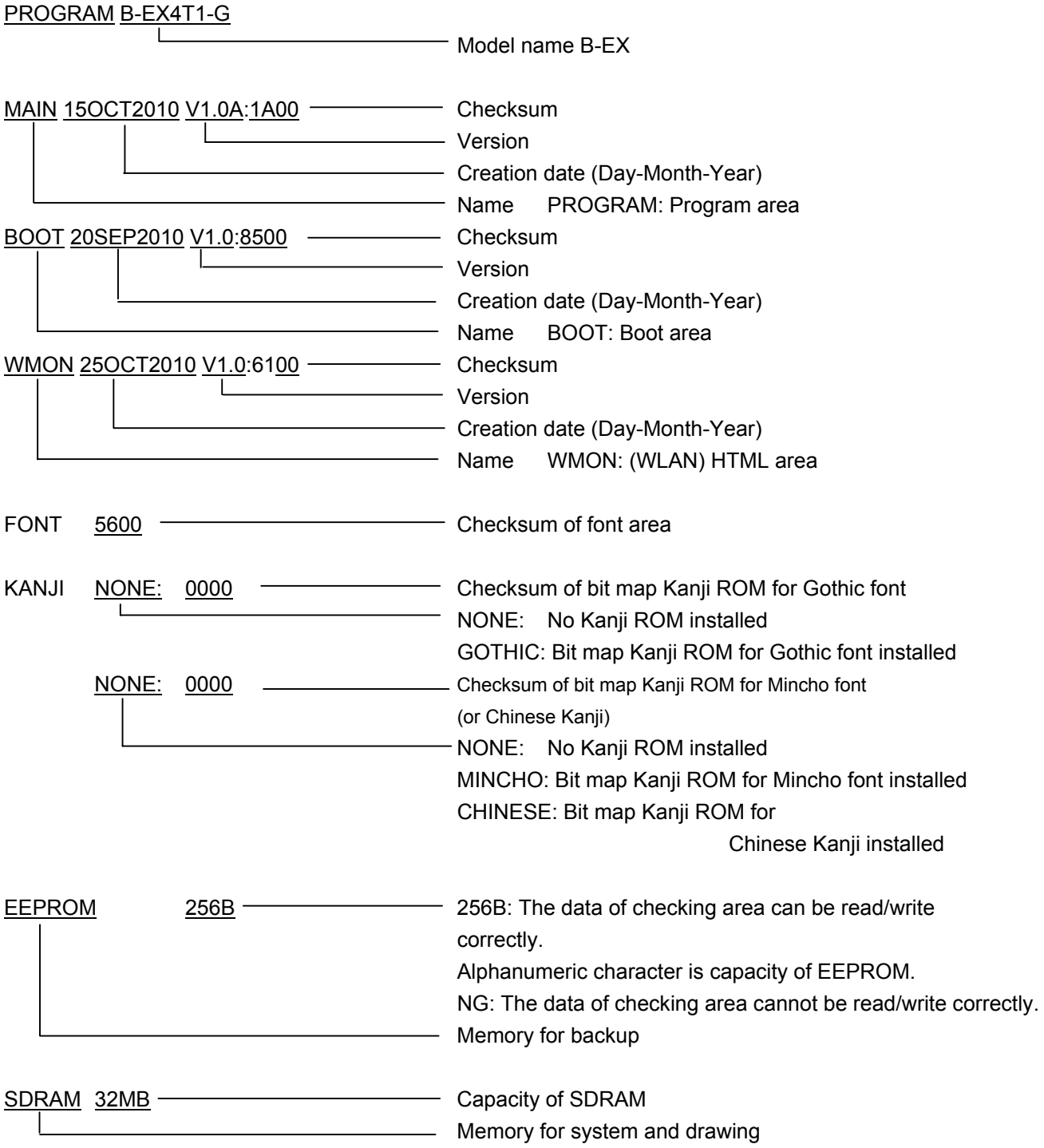
```
PROGRAM B-EX4T1-T
    MAIN   XXXXXXXXX C1.1A:F300
    BOOT   XXXXXXXXX V1.0A :0100
    WMON XXXXXXXXX V1.0 :6100
FONT        AE00
KANJI       NONE   :0000
            NONE   :0000
EEPROM      256B
SDRAM       32MB
SENSOR1     00000000,00000111
SENSOR2     [H]23˚C [A]22˚C
            [R]4.2V [T]2.5V [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
```

Print condition:

Label length		120 mm
Print method		Setting by user
Sensor type		None
Speed	(203 dpi) B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G	6 ips
	(300 dpi/305 dpi) B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T	5 ips
	(600 dpi) B-EX4T2-H	3 ips
Issuing number		1
Issuing mode		User setting
Other		No Rewinder motor activated.

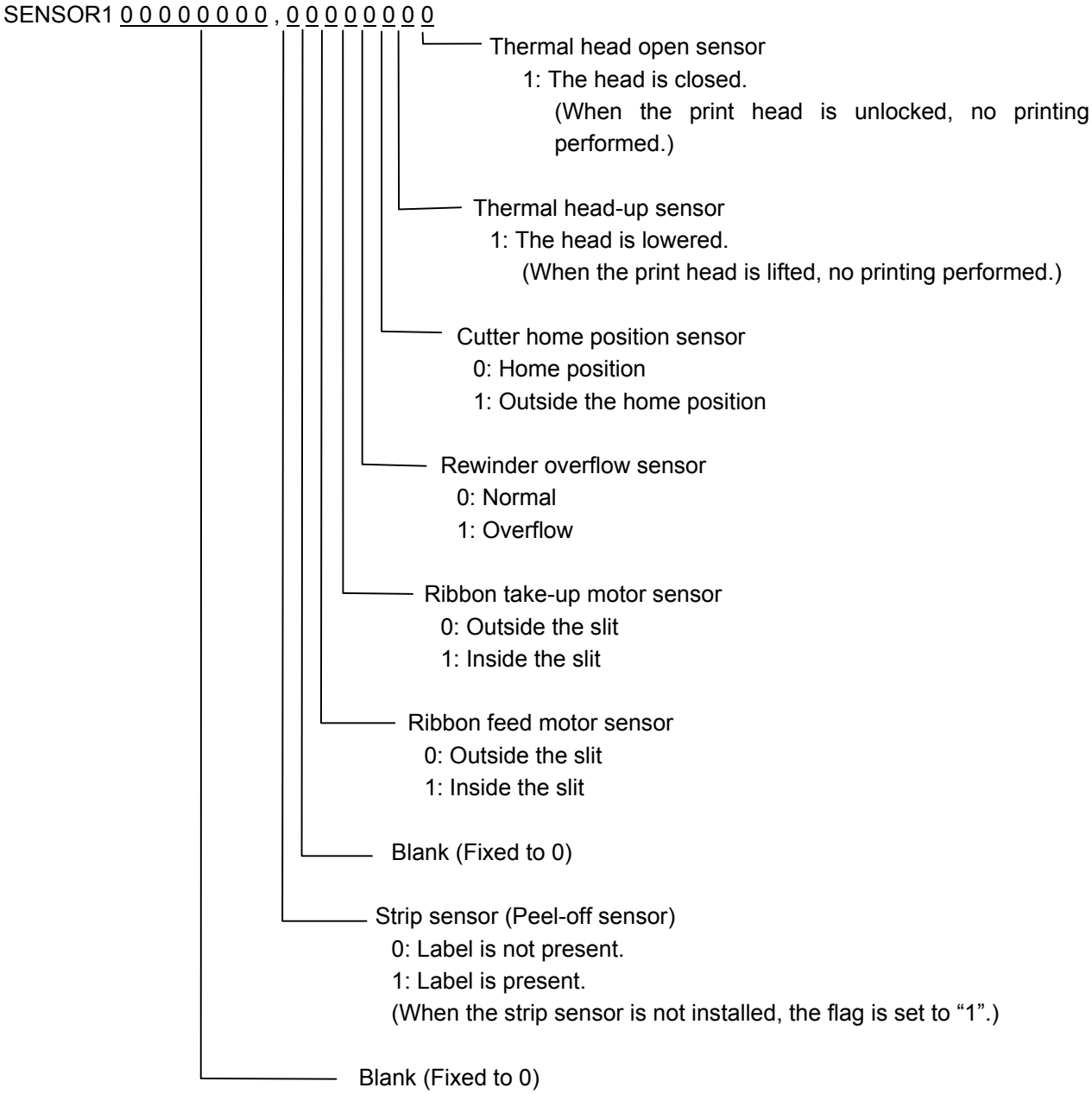
(*1) “°” (degree) of “xx°C” may not be printed correctly, depend on the type of code page.

(*2) The Basic program file name and system mode program file name are printed.
When the first 4 characters of each program file name are “Z-EX”, the checksum will be also printed.

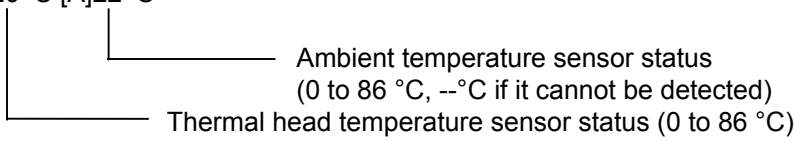

PROGRAM B-EX4T1-G
Model name B-EX
MAIN 15OCT2010 V1.0A:1A00
Checksum
Version
Creation date (Day-Month-Year)
Name PROGRAM: Program area
BOOT 20SEP2010 V1.0:8500
Checksum
Version
Creation date (Day-Month-Year)
Name BOOT: Boot area
WMON 25OCT2010 V1.0:6100
Checksum
Version
Creation date (Day-Month-Year)
Name WMON: (WLAN) HTML area
FONT 5600
Checksum of font area
KANJI NONE: 0000
Checksum of bit map Kanji ROM for Gothic font
NONE: No Kanji ROM installed
GOTHIC: Bit map Kanji ROM for Gothic font installed
NONE: 0000
Checksum of bit map Kanji ROM for Mincho font
(or Chinese Kanji)
NONE: No Kanji ROM installed
MINCHO: Bit map Kanji ROM for Mincho font installed
CHINESE: Bit map Kanji ROM for
Chinese Kanji installed
EEPROM 256B
256B: The data of checking area can be read/write
correctly.
Alphanumeric character is capacity of EEPROM.
NG: The data of checking area cannot be read/write correctly.
Memory for backup
SDRAM 32MB
Capacity of SDRAM
Memory for system and drawing

Sensor check details

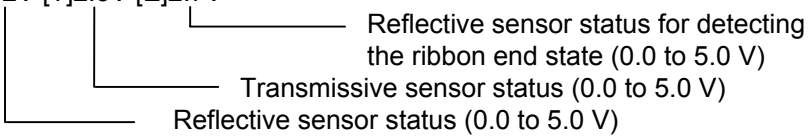
The value of non-installed sensor is unfixed.



SENSOR2 [H]20˚ C [A]22˚ C

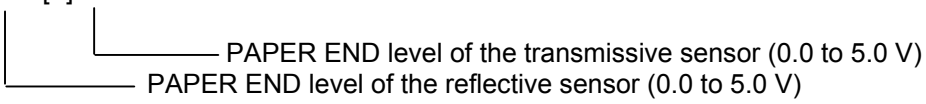


[R]4.2V [T]2.5V [E]2.7V

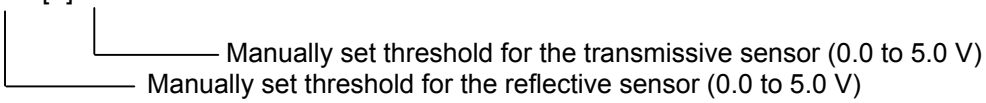


NOTE: For the B-EX4D2, the status of the ribbon end sensor is always 0.0V.

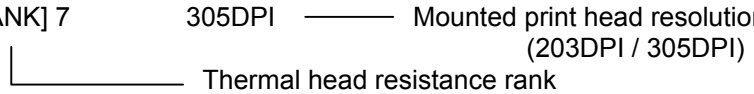
PE LV. [R]1.8V [T]2.5V



M THRE. [R]1.8V [T]2.5V



HEAD [RANK] 7 305DPI



	B-EX4T1-G B-EX6T2-G (203dpi)	B-EX4T2-G B-EX4D2-G (203dpi)	B-EX4T1-T (305dpi)	B-EX4T2-T B-EX6T2-T B-EX4D2-T (300dpi)	B-EX4T2-H (600dpi)
Resistance rank	Average resistance (ohm)				
0	704 to 728	680 to 710	880 to 910	850 to 886	1700 to 1775
1	729 to 752	711 to 740	911 to 940	887 to 924	1776 to 1850
2	753 to 776	741 to 770	941 to 970	925 to 962	1851 to 1925
3	777 to 800	771 to 800	971 to 1000	963 to 1000	1926 to 2000
4	801 to 824	801 to 830	1001 to 1030	1001 to 1038	2001 to 2075
5	825 to 848	831 to 860	1031 to 1060	1039 to 1076	2076 to 2150
6	849 to 872	861 to 890	1061 to 1090	1077 to 1114	2151 to 2225
7	873 to 896	891 to 920	1091 to 1120	1115 to 1150	2226 to 2300

LAN MAC 11-22-33-44-55-66

MAC Address for wired LAN

NOTE: A wired LAN MAC address cannot be obtained depending on the combination among the system mode start-up method, whether a wireless LAN board is installed or not, and the LAN setting. In this case, "**- **-**-**-**-**" will be printed.

System mode start-up method	Wireless LAN board	LAN setting	Wired LAN MAC address
The power is turned on while the [MODE] key is held down.	Installed/Not installed	Any setting (*1)	Printed.
The [MODE] key is pressed while the printer is starting up after a power on.	Installed.	OFF	**-**-**-**-**-**
		ON (AUTO)	**-**-**-**-**-**
		ON (LAN)	Printed.
		ON (WLAN)	**-**-**-**-**-**
	Not installed.	OFF	**-**-**-**-**-**
		ON (AUTO)	Printed.
		ON (LAN)	Printed.
		ON (WLAN)	**-**-**-**-**-**

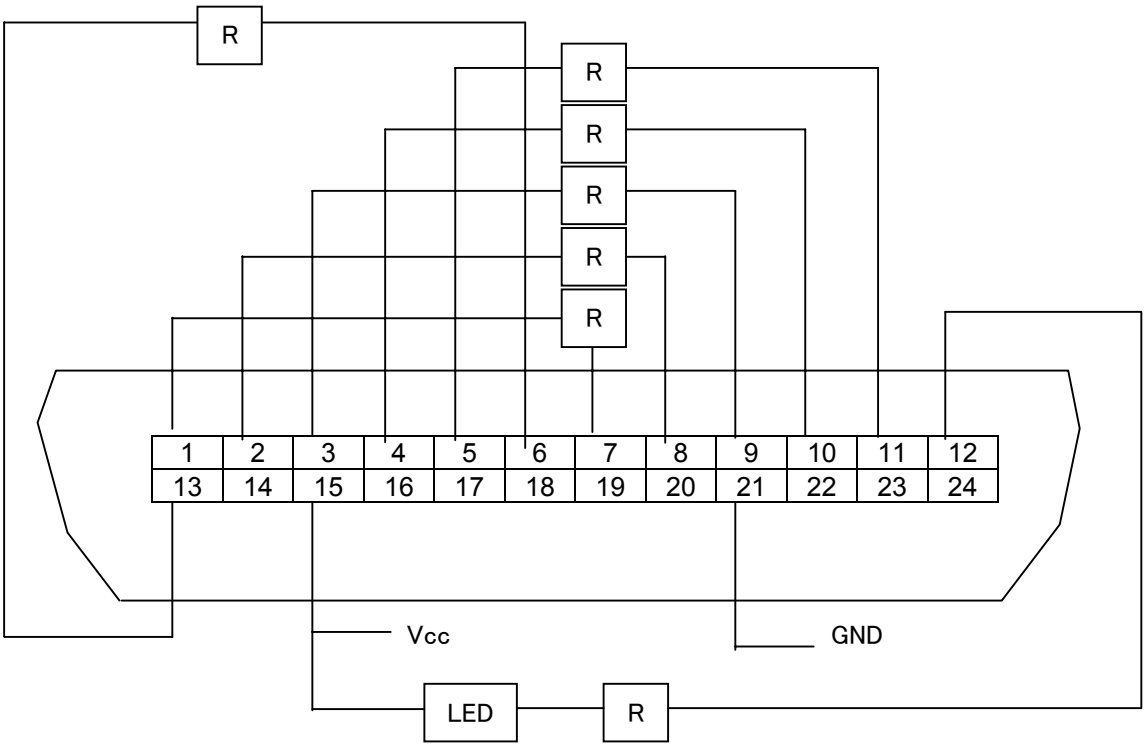
*1: Any setting means OFF, ON (AUTO), ON (LAN), or ON (WLAN).

Expansion I/O check

EXP.I/O NG

OK: Normal data
NG: Abnormal data or the loop-back jig is not connected.
Expansion I/O

Connect the cable as illustrated below, and then check the high output/high input, low output/low input.



R = 300 Ohms
Connector: FCN-781P024-G/P

Internal serial I/F check

EX.232C NG

- NG: OK: Normal data
NG: Abnormal data or the loop-back jig is not connected.
- EX.232C: Internal serial interface

External serial I/F check (Supported by the B-EX4T1-TS25-R V2.0 or later, B-EX4T1-G/T C1.1A or later, and B-EX4T2-G/T C1.1 or later)

SIO NG (0111)

- (0111): Bit configuration (x3x2x1x0)
x0: Fixed to 1
x1: Fixed to 1
x2: Fixed to 1
x3: Presence of the optional board (0: RS-232C PC board not installed, 1: RS-232C PC board installed)
- NG: OK: Normal data
NG: Abnormal data or loop-back jig is not connected.
- SIO: External serial interface

RFID module check (U2/U4 module series only)

RFID OK #00RV972 (EU0) R01

- R01: Module revision (U2 series only)
- (EU0): Destination

JP:	Japan
EU0:	Europe
US:	North America
CN2:	China
AU:	Australia
KR2:	Korea
TW:	Taiwan
IN0:	India

- #00RV972: RFID module version
- OK: OK: Normal state
NG: Erroneous state
- RFID: RFID module

RFID OK #10A A0 0 (EU0) R00

- R00: Module revision (U4 series only)
- (EU0): Destination

EU0:	Europe
US:	North America (Prohibited)
AU:	Australia (Prohibited)
KR2:	Korea
TW:	Taiwan (Prohibited)
CN2:	China
IN0:	India (Prohibited)

- #10A A0 0: RFID module version
- OK: OK: Normal state
NG: Erroneous state
- RFID: RFID module

Module versions and LCD message

B-EX700-RFID-U2-US-R

Version	LCD message
R02	US, KR2, AU, TW (Use of AU and TW is prohibited.)

B-EX700-RFID-U2-EU-R

Version	LCD message
R11	EU0, IN0 (Use of IN0 is prohibited.)

B-EX700-RFID-U4-R

Version	LCD message
R00	JPN

B-EX700-RFID-U4-US-R

Version	LCD message
R00	KR2, CN2 (Use of CN2 is prohibited.)

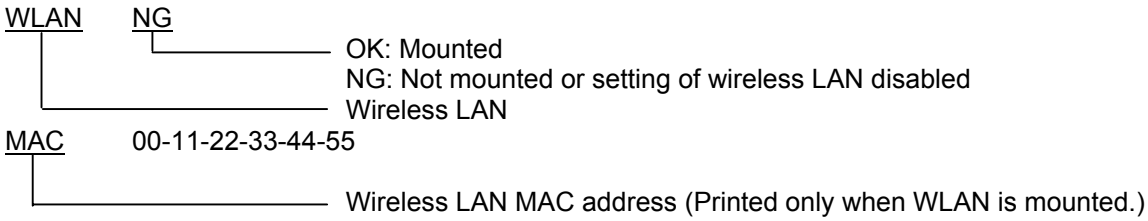
B-EX700-RFID-U4-EU-R

Version	LCD message
R00	EU0

U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R)

Version	LCD message
R00	CN2, KR2, (Use of KR2 is prohibited.)

Wireless LAN mount check

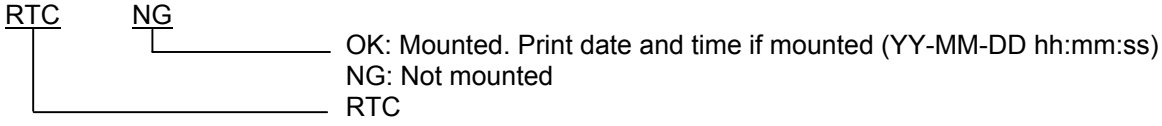


NOTE: A wireless LAN MAC address may not be printed depending on the combination of the system mode start-up method and the LAN setting, even if a wireless LAN board is installed.

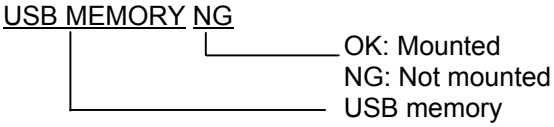
System mode start-up method	Wireless LAN board	LAN setting	Wireless LAN MAC address
The power is turned on while the [MODE] key is held down.	Installed	Any setting (*1)	Printed.
	Not installed	Any setting (*1)	Not printed.
The [MODE] key is pressed while the printer is starting up after a power on.	Installed.	OFF	Not printed.
		ON (AUTO)	Printed.
		ON (LAN)	Not printed.
		ON (WLAN)	Printed
	Not installed.	Any setting (*1)	Not printed.

*1: Any setting means OFF, ON (AUTO), ON (LAN), or ON (WLAN).

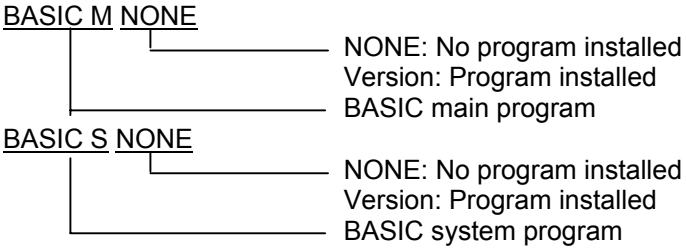
RTC mount check



USB memory mount check



BASIC program check



8.3.3 HEAD CHECK

The print head check procedure is the same as that for the maintenance counter data. 8.3.1 MAINTENANCE CONT.

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

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<1>DIAG.		
		HEAD CHECK	7.3 INFORMATION DISPLAY

While checking	
HEAD CHECK CHECKING	Displays “CHECKING”.
In the case of normal end	
HEAD CHECK NOMAL END	Displays “NORMAL END”
When broken dots are detected.	
HEAD CHECK HEAD ERROR 2/1824 dots HEAD CHECK HEAD ERROR 2/ 832 dots	The ONLINE LED turns off and the ERROR LED turns on. Displays the number of broken dots in the format of the number of broken dots out of the total number of dots. The total number of dots is right-aligned.

8.4 PARAMETER SET

Contents of the PARAMETER SET menu.

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<2>PARAMETER SET	
PRINTER SET	
SOFTWARE SET	
PANEL	
PASSWORD	

8.4.1 PRINTER SET

Contents of PRINTER SET submenu.

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<2>PARAMETER SET	
PRINTER SET	
MEDIA LOAD	
FORWARD WAIT	
FORWARD WAIT POS.	7.2 VALUE SETTING DISPLAY
FW/BK ACT.	7.1 LIST BOX WITH SCROLLBAR
HU CUT/RWD.	
RBN SAVE	
PRE PEEL OFF	
BACK SPEED	
TYPE OF RIBBON **NOTE**: This parameter is available only to the B-EX4T2, B-EX6T2 and B-EX4D2. * This parameter is not used for the B-EX4D2.	

8.4.1.1 MEDIA LOAD

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

- OFF — Media loading function is disabled (Same as feed by depression of the [FEED] key)
- STD — When the [FEED] key is pressed after the printer is tuned on, reset by a batch reset command, or the print head is closed, the printer detects the next gap/black mark and feeds the media 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 and stops the media at the print start position. At this time, the feed length between the detected gap/black mark and the home position of the media nearest from the print head is calculated based on the registered media pitch.
- ECO+Bfeed — After performing the action of the 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.

  NOTE: Since the head-up function is not available to the B-EX4T2, B-EX6T2, and B-EX4D2, the setting and the printer behavior will be automatically changed to “ECO” even if “ECO+Bfeed” is selected for these models.

Hardware	Optional ribbon saving module (solenoid) is installed.
Parameter	RBN 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 power off or a printer reset.)
Caution	Even if the hardware requirement is not satisfied (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.

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

8.4.1.2 FORWARD WAIT

- OFF — Disables the auto forward feed wait
- ON — Enables the auto forward feed wait

8.4.1.3 FORWARD WAIT POS.

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
5.0	-5.0	0.1	Decimal	Exist	2	1	None	mm

- + (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 forward wait will not be activated regardless of the parameter setting
   <Supplement> In the case labels with the different pitch (less than 20mm and 20mm or longer) are alternately placed in one label roll, the forward wait 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.

8.4.1.4 FW/BK ACT.

- MODE1 The printer waits for a next issue after 13.7-mm media is forwarded.
- MODE2 When the thermal transfer method and cut issue are selected, the printer feeds 6-mm media backward, then waits for next issue with 3-mm media forwarded.
- MODE3 The printer waits for a next issued after 31.2-mm media is forwarded (to prevent RFID media jam.) MODE3 is exclusively for issuing RFID media.

  NOTES:

  1. Before the printer starts printing (feed), 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/600-dpi model: 6 ips
     300-dpi/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 forward feed function is performed. If labels with the pitch of 57.2mm or less are used, they may be removed from the backing paper. Therefore, it is required to select “LABEL” or “TAG” for the RBN SAVE parameter. The speed of the auto forward feed is fixed to 3 ips.
     This feature is supported by B-EX4T1-G/T-QM/CN C1.2 or later and B-EX4T1-TS25-R V2.1 or later.

8.4.1.5 HU CUT/RWD.

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.

* The print head may not be raised depending on the rise of the solenoid’s temperature.

- OFF Head up cut is not performed or the Rewinder is not used.
- ON Head up cut is performed or the Rewinder is used.

NOTE: Since the head-up function is not available to the B-EX4T2, B-EX6T2, and B-EX4D2, this parameter is to choose whether to use the Rewinder or not. The head-up operation is fixed to OFF.

8.4.1.6 RBN SAVE

- TAG Enabled (When the head lever is set to TAG position)
- LABEL Enabled (When the head lever is set to Label position)
- OFF Disabled.
- TAG2 (NOTE3): Enabled (When the head lever is set to TAG position)
- LABEL2 (NOTE3): Enabled (When the head lever is set to Label position)

NOTES:

1. If this parameter is set to “Enabled” without the ribbon saving module not installed, the ribbon slacks and a print failure occurs. Care must be taken when setting this parameter.
   Also, the ribbon saving option shall be selected depending on the head lever position. Incorrect setting may disable the proper ribbon saving function.
2. Even if the “TAG” or LABEL” is selected for the B-EX4T2, B-EX6T2, or B-EX4D2, the setting and the printer behavior will be automatically changed to “OFF” because the head-up function is not available to these models.
3. TAG2 and LABEL2 are supported only by the B-EX4T1-TS25-R V2.0 or later. The difference between “ON:TAG” and “ON:TAG2”, and between “ON:LBL” and “ON:LBL2”, respectively, is the distance of non-print area where a ribbon save is performed. (In the case of 8 ips or faster)

8.4.1.7 PRE PEEL OFF

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

NOTE:
Pre peel off is automatically enabled when the print speed is set to 10 ips or faster for the strip issue. However, the print speed is corrected depending on the EX I/O parameter setting, as follows.

- EXI/O: TYPE 1 (Standard)
  - 203-dpi model: 10 ips
  - 300-dpi/305-dpi model: 8 ips
- EX I/O: TYPE 2 (Inline)
  - Specified speed

Accordingly, when the print speed is set to 8 ips or less, pre peel off is enabled only when this parameter is set to ON.

8.4.1.8 BACK SPEED

- STD 3 ips
- LOW 2 ips

8.4.1.9 TYPE OF RIBBON

- CSO Outside wound ribbon
- CSI Inside wound ribbon

NOTE: This parameter is available only to the B-EX4T2, B-EX6T2, and B-EX4D2.

* This parameter is not used for the B-EX4D2.

8.4.2 SOFTWARE SET

Contents of SOFTWARE SET menu

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<2>PARAMETER SET	
SOFTWARE SET	
FONT CODE	
ZERO FONT	
CODE	
MANUAL	7.2 VALUE SETTING DISPLAY
PEEL OFF STATUS	7.1 LIST BOX WITH SCROLLBAR
USB I/F STATUS	
FEED KEY	
KANJI CODE	
EURO CODE	7.2 VALUE SETTING DISPLAY
AUTO HD CHK	7.1 LIST BOX WITH SCROLLBAR
WEB PRINTER	
RBN NEAR END	
EX.I/O	
LBL/RBN END	
MAXI CODE	
XML	
THRESHOLD SELECT	
REFLECT	
TRANS.	
ENERGY TYPE (*2)	
TRANSFER	
DIRECT	
PW SAVE TIME	
RIBBON WIDTH (*1)	

*1: Supported by the B-EX4T1-G/T-QM/CN C1.2 or later, the B-EX4T2-G/T-QM/CN C1.2 or later, B-EX4T2-H-QM/CN C1.1A or later, and B-EX4D2-G/T-QM/CN D1.1 or later.

*2: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed in the software set menu.

Applicable model: B-EX4T1-G/T-QM/CN C1.5 or later
B-EX4T2-G/T-QM/CN C1.3 or later

8.4.2.1 FONT CODE

- 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

8.4.2.2 ZERO FONT

- 0 No slash used
- Ø Slash used

NOTE: The following fonts do not support a zero with a slash. Therefore, even if a zero with a slash is selected, a zero without a 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, True type font

8.4.2.3 CODE

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

8.4.2.4 MANUAL

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

・CODE1
・CODE2
・CODE3

8.4.2.5 PEEL OFF STATUS

・OFF Disabled
・ON Enabled

8.4.2.6 USB I/F STATUS

・OFF Disables sending a response via USB.
・ON Enables sending a response via USB.

NOTE:
■ In the case of the B-EX4T1-TS25-R V2.0C or later:
Whether a status response is returned via USB Function Interface or not is selected.

■ In other cases than above:
Regardless of the setting of this parameter, the status indicating the end of issue is automatically returned. The following are the commands related to the status.

[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.

[Status-related commands other than WS and WB]
Whether a status is returned or not depends on the setting of this parameter.

8.4.2.7 FEED KEY

・FEED Feeds one label.
・PRINT Prints data in the image buffer

8.4.2.8 KANJI CODE

・TYPE1 Windows code
・TYPE2 Original code

8.4.2.9 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

8.4.2.10 AUTO HD CHK

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

8.4.2.11 WEB PRINTER

- ・OFF Disables WEB printer function
- ・ON INT Enables WEB printer function (Internal memory is used)
- ・ON EXT Enables WEB printer function (External memory is used)

8.4.2.12 RBN 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.

8.4.2.13 EX.I/O

- ・TYPE1 Standard specification
- ・TYPE2 In-line specification

8.4.2.14 LBL/RBN END

- TYPE1 When a label end or ribbon end status is detected, the printer stops immediately.
- TYPE2 When a label end or ribbon end status is detected, the printer prints the current label as far as possible, then stops.

TYPE1:

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.

TYPE2:

TYPE 2 is available only when the ribbon saving function is set to OFF. When the ribbon saving is enabled, TYPE 1 will be automatically performed regardless of the selection.

[Label end]

When a label end is detected in the middle of printing, the printer completes the half-finished label and stops when the next label is at the home position, displaying the error message “NO PAPER X”. (*“X” indicates the remaining number of labels.)* The remaining number of labels = [Specified number of labels] – [The number of finished labels including half-finished one]

If a label end is detected while the specified last label is printed, the position of “X” will be blank.

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

[Ribbon end]

When a ribbon end is detected when the unfinished label length is 30 mm or more, printer prints for 20 mm and stops printing, displaying an error message “NO RIBBON X”. (“X” indicates the remaining number of labels.)

The remaining number labels = [Specified number of labels] – [The number of finished labels] – 1

If a ribbon end is detected while the specified last label is printed, the position of “X” will be blank.

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

Example of TYPE2

[Case 1] Specified number of labels = 5,

A label end is detected while the 3rd label is printed.

(1st)(2nd)(3rd)
↑

After issuing 3rd label completely, the printer stops printing, displaying “NO PAPER 2”.

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally, all of 5 labels have been finished.

[Case 2] Specified number of labels = 5,

A ribbon end is detected while the 3rd label is printed. Unfinished label length is 30 mm or more.

(1st)(2nd)(3rd)
↑

After the 3rd label is printed for 20 mm, the printer stops printing, displaying “NO RIBBON 2”.

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally, 1st, 2nd, 4th, and 5th labels have been finished.

[Case 3] Specified number of labels = 5,

A ribbon end is detected while the 3rd label is printed. Unfinished label length is less than 30 mm.

(1st)(2nd)(3rd)
↑

After issuing 3rd label completely, the printer stops printing, displaying “NO RIBBON 2”.

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally all of 5 labels have been finished.

8.4.2.15 MAXI CODE

- TYPE1 Compatible with the current version
- TYPE2 Special specification

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

8.4.2.16 XML

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

8.4.2.17 THRESHOLD SELECT

・REFLECT Reflective sensor
・TRANS. Transmissive sensor

8.4.2.17.1 REFLECT

・MANUAL SET Threshold set in the threshold mode takes effect.
・COMMAND SET Threshold set by command takes effect.

8.4.2.17.2 TRANS.

・MANUAL SET Threshold set in the threshold mode takes effect
・COMMAND SET Threshold set by command takes effect.

8.4.2.18 ENERGY TYPE

・TRANSFER
・DIRECT

This parameter is intended to make the printer perform appropriate printing for the supplies to be used. Use of a different supply from the setting may cause poor printing.
For details of the appropriate settings, refer to the Supply Specification.

NOTE: If “CN” is selected for the parameter clear destination, the ENERGY TYPE parameter is not displayed in the software set menu.
Applicable model: B-EX4T1-G/T-QM/CN C1.5 or later
B-EX4T2-G/T-QM/CN C1.3 or later

<Supplement>
When “CN” is selected for the parameter clear destination, “SX Compatible” is set for the thermal transfer and “Standard” for the thermal direct as initial values. As this parameter is not displayed in the menu, the initial values cannot be changed. (Initial values are fixed.)

8.4.2.18.1 TRANSFER

<B-EX4T1-G/T-QM/CN firmware version C1.4 or before>
・Semi resin1 Semi-resin 1
・Semi resin2 Semi-resin 2
・Resin1 Resin 1
・Resin2 Resin 2
・Resin3 Resin 3 (“Resin3” shall not be selected for the B-EX4T1-T model.)
・Reserve2 to Reserve6 Reserved

<B-EX4T1-G/T-QM/CN firmware version C1.5 or later>
・Semi resin1 Semi-resin 1
・Semi resin2 Semi-resin 2
・Resin1 Resin 1
・Resin2 Resin 2
・Resin3 Resin 3 (“Resin3” shall not be selected for the B-EX4T1-T model.)
・SX compatible SX compatible (*1)
・Reserve1 to Reserve4 Reserved

(*1) SX compatible” is a setting for securing the print quality equivalent to that of the B-SX, but it is not supported by 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-EX4T1 series.

<B-EX4T2-G/T firmware version C1.0C or before and B-EX6T2-G/T>

- Wax1 Wax 1
- Wax2 Wax 2
- Semi resin1 Semi-resin 1
- Semi resin2 Semi-resin 2
- Resin1 Resin 1
- Reserve1 to Reserve5 Reserved

<B-EX4T2-G/T firmware version C1.0D>

- Wax1 Wax 1
- Wax2 Wax 2
- Semi resin1 Semi-resin 1
- Semi resin2 Semi-resin 2
- Resin1 Resin 1
- Wax3 Wax 3
- Semi resin3 Semi resin 3
- Reserve1 to Reserve3 Reserved

<B-EX4T2-G/T firmware version C1.0E to C1.2, and B-EX4D2-G/T>

- Wax1 Wax 1
- Wax2 Wax 2
- Semi resin1 Semi-resin 1
- Semi resin2 Semi-resin 2
- Resin1 Resin 1
- Wax3 Wax 3
- Semi resin3 Semi resin 3
- Resin2 Resin 2
- Reserve1 to Reserve2 Reserved

NOTE: Since the B-EX4D2 is a direct thermal printer, this parameter is not used for actual printing.

<B-EX4T2-G/T firmware version C1.3 or later>

- Wax1 Wax 1
- Wax2 Wax 2
- Semi resin1 Semi-resin 1
- Semi resin2 Semi-resin 2
- Resin1 Resin 1
- Wax3 Wax 3
- Semi resin3 Semi resin 3
- Resin2 Resin 2
- Multiple type Multiple type
- Reserve1 Reserved

<B-EX4T2-H firmware version C1.0F or before>

- Resin1 Resin 1
- Resin2 Resin 2
- Reserve1 to Reserve8 Reserved

<B-EX4T2-H firmware version C1.1A or later>

・Resin1 Resin 1
・Resin2 Resin 2
・Resin3 Resin 3
・Reserve1 to Reserve7 Reserved

8.4.2.18.2 DIRECT

・Standard Standard
・Reserve1 to Reserve9 Reserved

8.4.2.19 PW 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.

8.4.2.20 RIBBON WIDTH

・TYPE1 Type 1
・TYPE2 Type 2

NOTE: Supported by the B-EX4T1-G/T-QM/CN C1.2 or later, B-EX4T2-G/T-QM/CN C1.2 or later, B-EX4T2-H-QM/CN C1.1A or later, and B-EX4D2-G/T-QM/CN D1.1 or later

* This parameter is not used for the B-EX4D2-G/T.

8.4.3 PANEL

Contents of PANEL menu

MENU ITEM					Display pattern and key operation
SYSTEM MODE					7.1 LIST BOX WITH SCROLLBAR
	<2>PARAMETER SET				
		PANEL			
			LCD LANGUAGE		
			LCDISPLAY		
				MACHINE NAME	
				PRINT PAGE	
				IP ADDRESS	
			CONTRAST		7.2 VALUE SETTING DISPLAY

8.4.3.1 LCD LANGUAGE

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

NOTES:

1. In the printer modes other than online, the language displayed on panel is Japanese when JAPANESE is selected, and ENGLISH WHEN ENGLISH, GERMAN, FRENCH, DUTCH, SPANISH, ITALIAN, PORTUGUESE, SIMP. CHINESE, KOREAN, TURKISH, or POLISH is selected.
2. KOREAN is supported by the following printer firmware versions:
   B-EX4T1-G/T-QM/CN C1.0I or later, B-EX4T2-G/T-QM/CN C1.0F or later, B-EX4T2-H-QM/CN C1.1A or later, B-EX4D2-G/T-QM/CN D1.1 or later
3. TURKISH and POLISH are supported by the following printer firmware versions:
   B-EX4T1-G/T-QM/CN C1.3 or later, B-EX4T2-G/T-QM/CN C1.2A or later, B-EX4T2-H-QM/CN C1.1A or later, B-EX4D2-G/T-QM/CN D1.2 or later

8.4.3.2 MACHINE NAME

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

8.4.3.3 PRINT PAGE

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

8.4.3.4 IP ADDRESS

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

8.4.3.5 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

・+ (Plus) High

・- (Minus) Low

8.4.4 PASSWORD

Menu structure of PASSWORD menu

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<2>PARAMETER SET	
PASSWORD	
PASSWORD	7.2 VALUE SETTING DISPLAY

PASSWORD

・OFF Password is not set.

・ON Password is set.

PASSWORD

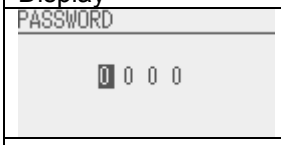
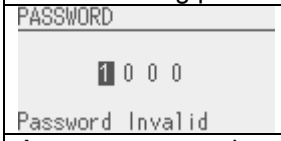
Usable input value for password

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

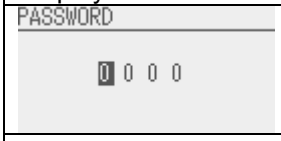
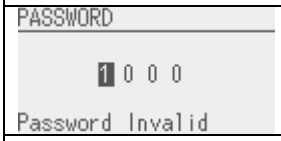
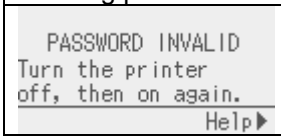
8.4.4.1 System mode and user system mode start screen when password is enabled

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

Password input for system mode

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

Password input for user system mode

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

- If you forgot the programmed system mode password, disable it with @010 command.

8.5 ADJUST SET

Contents of ADJUST SET menu

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<3>ADJUST SET			
		FEED ADJ.		7.2 VALUE SETTING DISPLAY
		CUT ADJ.		
		BACK ADJ.		
		X ADJUST		
		TONE ADJ. (TRANS.)		
		TONE ADJ. (DIRECT)		
	(*1)	RBN ADJ.<FW>		
		RBN ADJ.<FW>		
			TYPE1	
			TYPE2	
	(*1)	RBN ADJ.<BK>		
		RBN ADJ.<BK>		
			TYPE1	
			TYPE2	
		THRESHOLD <REFL.>		
		THRESHOLD <TRANS.>		

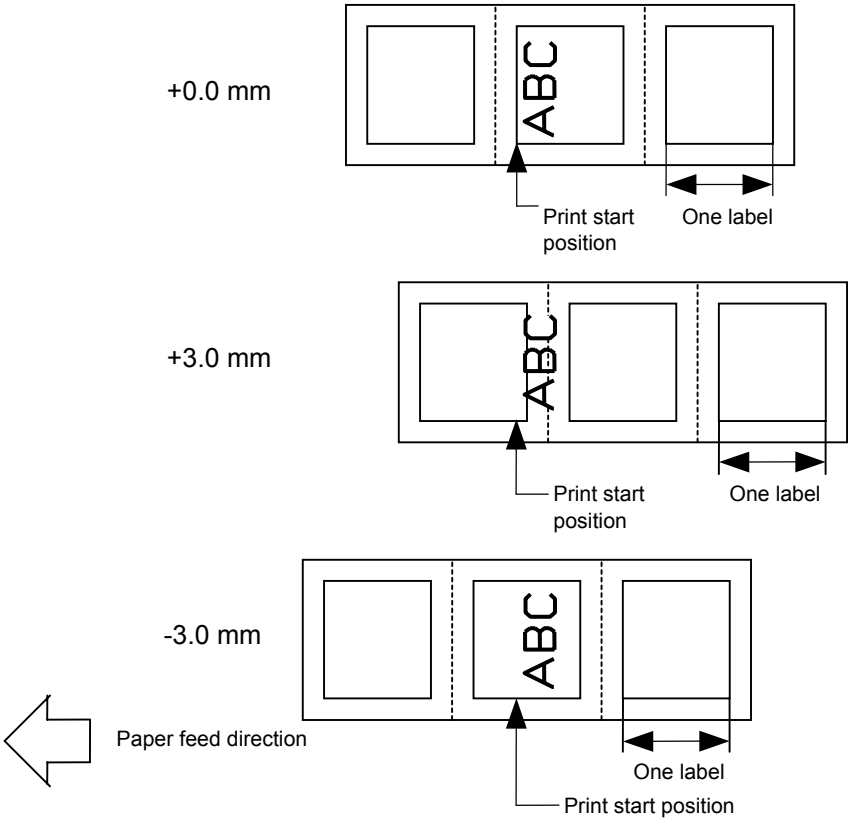
*1: Parameters depend on the model.

Applicable model	Parameter
B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later	RBN ADJ.<FW>
	TYPE1
	TYPE2
	RBN ADJ.<BK>
	TYPE1
	TYPE2
Other than above	RBN ADJ.<FW>
	RBN ADJ.<BK>

NOTE: This parameter is not used for the B-EX4D2-G/T.

8.5.1 FEED ADJ.

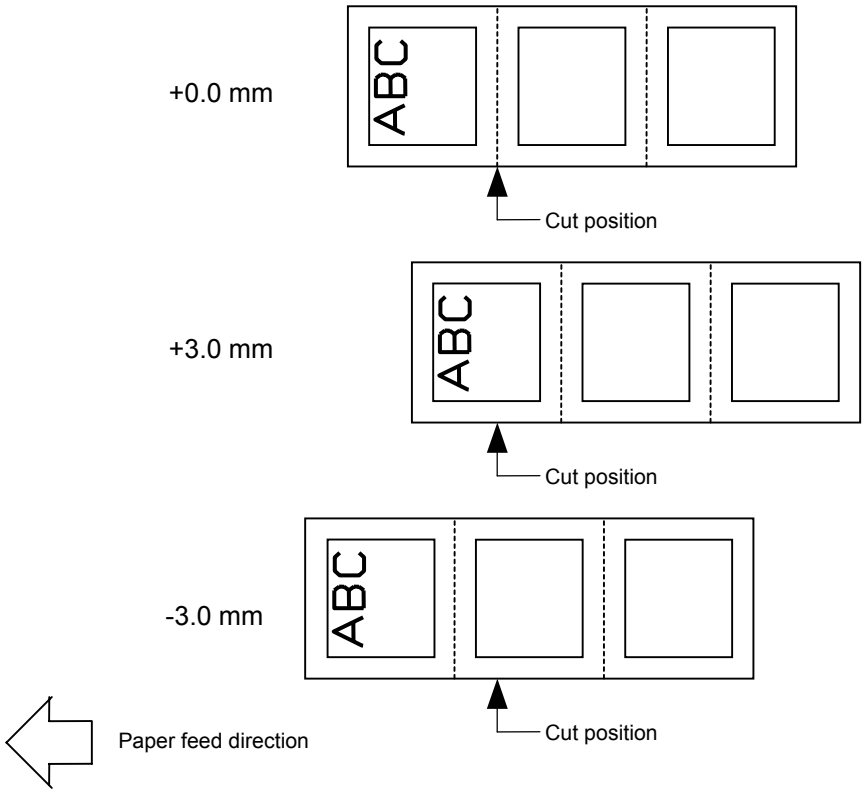
Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
50.0	-50.0	0.1	Decimal	Exist	2	1	None	mm



NOTE:
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.

8.5.2 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



[Procedure for label 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 back feed to the home position after cutting the gap area between labels. 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 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 or less, cut performed, transmissive sensor designated, cut position fine adjustment of ±10.0 mm or less, and issue mode “C”

* The head is 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.

NOTES: *1. 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.*

2. If the head-up solenoid temperature is high when a cut issue is about to be performed with the head lifted, the head may not be lifted.

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

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

(a) Cut position fine adjustment value calculation

The cut position fine adjustment value can be calculated using the following method. If a back feed to the proper home position cannot be performed using this value, the cut position needs to be adjusted with any value.

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

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

* Any decimal remainders are rounded off.

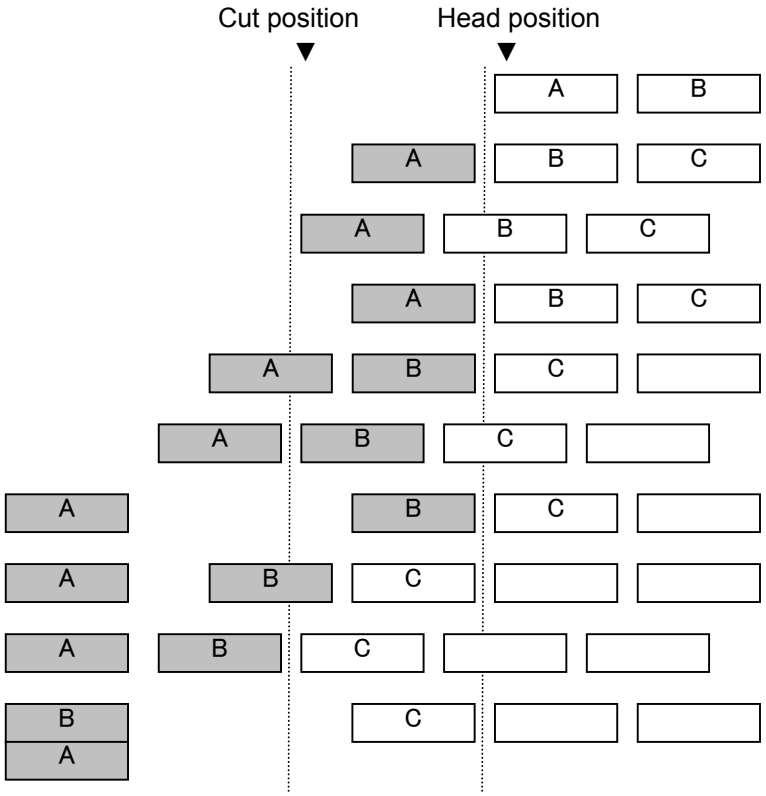
Ex) Label pitch: 30.0 mm

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

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

（b）Operation example

Issue count: 2, Cut interval = 1



(1) Idling

(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) Back feeds 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) Back feeds 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 at the front of label (C).

(10) Back feed to the home position.

[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 as follows.

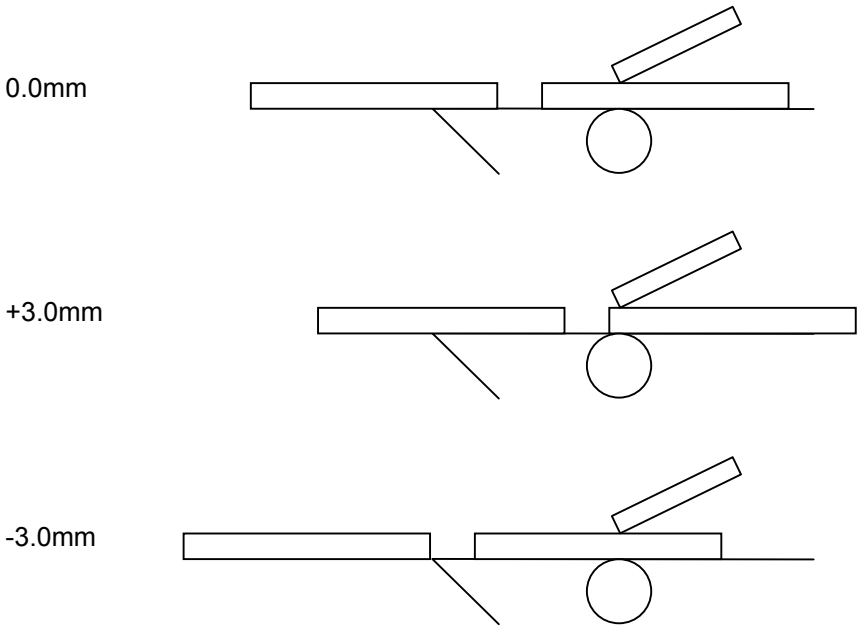
Forward feed to the cut position → Cut while feeding → Feed stops →
Head lifted → Reverse feed to the home position → Head lowered

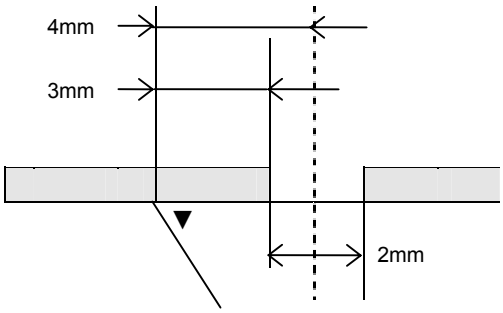
Conditions: Issue Command, Feed Command, and Eject Command received.
Label pitch: Less than the min. label pitch for each issue speed,
cut performed, transmissive sensor designated, cut position fine adjustment of ±10.0 mm or less, and issue mode “C”

* 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 is 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.

NOTES:
1. 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.
2. If the head-up solenoid temperature is high when a cut issue is about to be performed with the head lifted, the head may not be lifted.

[Strip position fine adjustment]

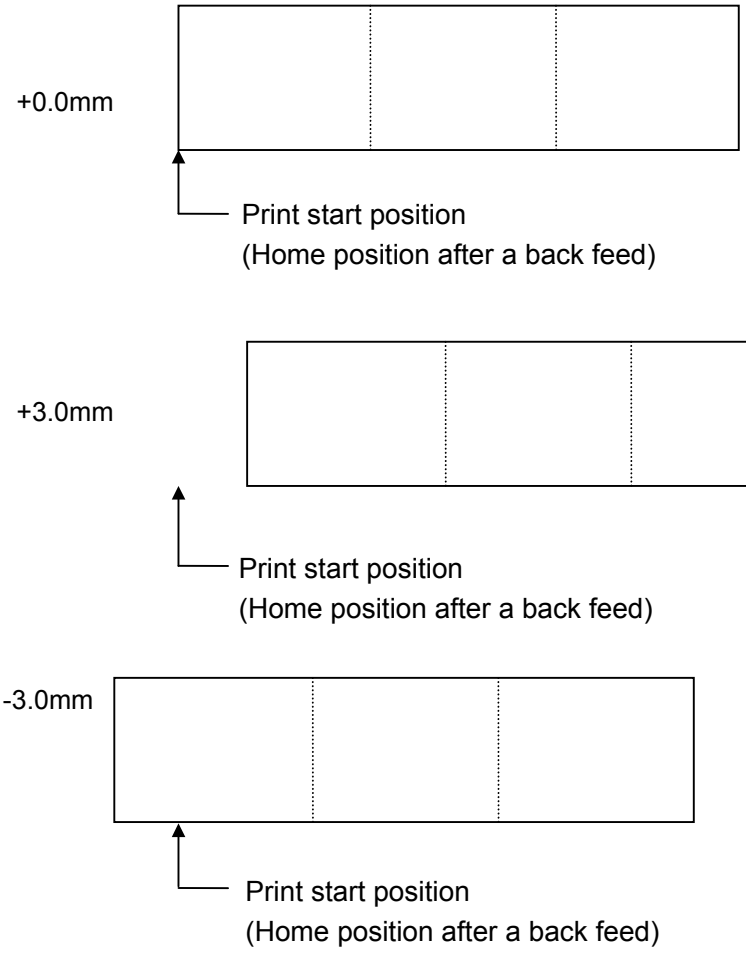




Printing in strip issue mode is stopped at the position where the distance from the middle point of the gap between labels to the end of the strip shaft is 4 mm, since the gap between labels is assumed to be 2 mm.
When the print stop position is not proper due to a greater gap, the print stop position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

8.5.3 BACK ADJ.

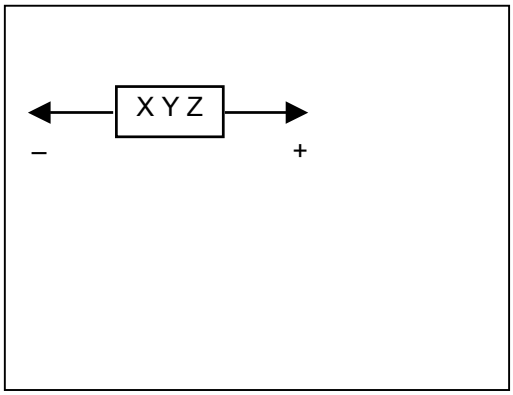
Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
9.9	-9.9	0.1	Decimal	Exist	1	1	None	mm



NOTE: There may be cases where a label is not returned to the home position depending on the print conditions, even if a back feed, of which length is the same as the forward feed, is performed. In issues where any paper sensor is used, if the label pitch length is almost the same as the distance between the thermal print head and the paper sensors (75.5 mm), a label/tag may not be returned to the home position when operations with a back feed (such as cut issues, strip issues, automatic forward feed standby) are performed. It may result in an error. In such cases, to prevent an error from occurring, the back feed length should be increased by performing the back feed fine adjustment in the + direction.

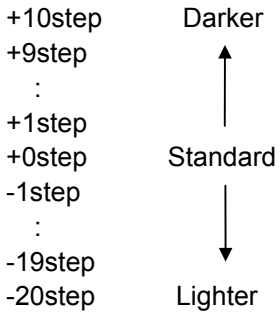
8.5.4 X ADJUST

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



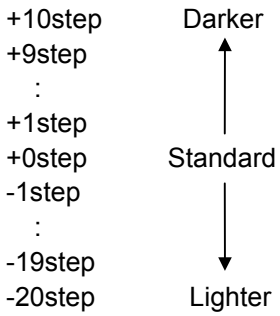
8.5.5 TONE ADJ. (TRANS.)

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
10	-20	1	Decimal	Exist	2	0	None	Step



8.5.6 TONE ADJ. (DIRECT)

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
10	-20	1	Decimal	Exist	2	0	None	Step



8.5.7 RBN ADJ.<FW>

The reference section depends on the model.

Refer to	Applicable model
8.5.7.1 RBN ADJ.<FW>	Other than below.
8.5.7.2 RBN ADJ.<FW> 8.5.7.2.1 TYPE1 8.5.7.2.2 TYPE2	B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later

NOTE: This parameter is not used for the B-EX4D2-G/T.

8.5.7.1 RBN ADJ.<FW>

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

The fine adjustment value is not effective for the reverse rotation.
The fine adjustment value for the ribbon take-up motor is limited depending on the print speed.
NOTE: Since the B-EX4D2 is a direct thermal printer, this parameter is displayed but not used for actual printing.

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

*1: For the B-EX4T1-TS25-R firmware version V2.0 or later, each time the fine adjustment value is changed by one, the factor changes by 3%, in the case the factor of fine adjustment value “0” is 100%.

B-EX4T1-TS25-R V2.0 or later			
Fine adjustment value	Factor *1	Fine adjustment value	Factor *1
+10	130%	-3	91%
+9	127%	-4	88%
+8	124%	-5	85%
+7	121%	-6	82%
+6	118%	-7	79%
+5	115%	-8	76%
+4	112%	-9	73%
+3	109%	-10	70%
+2	106%	-11	67%
+1	103%	-12	64%
0	100%	-13	61%
-1	97%	-14	58%
-2	94%	-15	55%

8.5.7.2 RBN ADJ.<FW>

8.5.7.2.1 TYPE1

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

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

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

8.5.7.2.2 TYPE2

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

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

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

8.5.8 RBN ADJ.<BK>

The reference section depends on the model.

Refer to		Applicable model
8.5.8.1 RBN ADJ.<BK>		Other than below.
8.5.8.2 RBN ADJ.<BK>		B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later
	8.5.8.2.1 TYPE1	
	8.5.8.2.2 TYPE2	

NOTE: This parameter is not used for the B-EX4D2-G/T.

8.5.8.1 RBN ADJ.<BK>

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

The fine adjustment value is not effective for the reverse rotation.
All fine adjustment values are applicable to every print speed.
NOTE: Since the B-EX4D2 is a direct thermal printer, this parameter is displayed but not used for actual printing.

*1: For the B-EX4T1-TS25-R firmware version V2.0 or later, each time the fine adjustment value is changed by one, the factor changes by 3%, in the case the factor of fine adjustment value “+5” is 100%.

B-EX4T1-TS25-R V2.0 or later			
Fine adjustment value	Factor *1	Fine adjustment value	Factor *1
+10	115%	-3	76%
+9	112%	-4	73%
+8	109%	-5	70%
+7	106%	-6	67%
+6	103%	-7	64%
+5	100%	-8	61%
+4	97%	-9	58%
+3	94%	-10	55%
+2	91%	-11	52%
+1	88%	-12	49%
0	85%	-13	46%
-1	82%	-14	43%
-2	79%	-15	40%

8.5.8.2 RBN ADJ.<BK>

8.5.8.2.1 TYPE1

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

The fine adjustment value is not effective for the reverse rotation.
All fine adjustment values are applicable to every print speed.

8.5.8.2.2 TYPE2

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

The fine adjustment value is not effective for the reverse rotation.
All fine adjustment values are applicable to every print speed.

8.5.9 THRESHOLD <REFL.>

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 returned to the initial value (1.0 V) when the power is turned OFF then ON.

8.5.10 THRESHOLD <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 returned to the initial value (1.4 V) when the power is turned OFF then ON.

Supplementary explanation

- When the [RESTART] and [FEED] keys are pressed at the same time, the display returns to the system mode menu.
- When the [RESTART] or [FEED] key is held down for 0.5 seconds or more when a fine adjustment value is being set, the printer enters the repeat mode, in which the key is entered repeatedly.
- A changed fine adjustment value is stored in memory by pressing the [PAUSE] key.

- The printer is controlled by the sum of the fine adjustment parameter programmed on the printer and the fine adjustment command from the PC. However, the maximum values for each fine adjustment are as follows:

  Feed fine adjustment ..... ±50.0 mm
  Strip position fine adjustment ..... ±50.0 mm
  Back feed fine adjustment ..... ±9.9 mm
  Print density fine adjustment ..... -20 step to ±10 step
  X-coordinate fine adjustment ..... ±99.5 mm
  Ribbon motor drive voltage fine adjustment (Take-up) ..... -15 to +10 step
  Ribbon motor drive voltage fine adjustment (Back tension) .... -15 to +10 step

- The X-coordinate fine adjustment is performed to fine adjust the X-coordinate of the drawing in the left or right direction. Adjust the X-coordinate in the effective print range. (After the value reaches the coordinate "0", the value remains unchanged even if a subsequent fine adjustment is performed in the negative direction.)
- The X-coordinate fine adjustment is not effective for the self-test results printout (maintenance counter, various parameters, and automatic self-test) and the test print.
- The print density fine adjustment value is +0 step at the time of shipment from the factory.
- The ribbon take-up/back tension motors drive voltage fine adjustment values are the sum of the fine adjustment by the command (from the PC) and the fine adjustment in the system mode (by key operation). The range of fine adjustment is from –15 to +10 for both the ribbon take-up motor and the ribbon back tension motor.
- The print density fine adjustment value is the sum of the fine adjustment by command (from the PC) and the fine adjustment in the system mode (by key operation). The respective max. Fine adjustment values are –20 to +10. The max value for each print speed is as below. When the value exceeds the maximum, it is automatically corrected to the max value.

[Both direct thermal and thermal transfer]

	B-EX4T1		B-EX4T2			B-EX6T2		B-EX4D2	
Speed	203 dpi	305 dpi	203 dpi	300 dpi	600 dpi	203 dpi	300 dpi	203 dpi	300 dpi
2 ips					+10				
3 ips	+10	+10	+10	+10	+10	+10	+10	+10	+10
4 ips					+10				
5 ips		+10		+10	+10		+10		+10
6 ips	+10		+10		+10	+10		+10	
8 ips		+10		+10			+10		+10
10 ips	+10	+10	+10	+10		+10	+10	+10	+10
12 ips	+10	+10	+10	+10				+10	+10
14 ips	+10	+10							

8.5.11 HDDWNADJ

This is the function to fine adjust the head-down timing.

Fine adjustment of the head-down timing is required to be performed with @080 command, not through key operations on the printer. (For the @008 command, refer to External Equipment Interface Specification for the B-EX Series.)

The factory default is 0 msec., and the adjustment value will not be initialized by a RAM clear.

* This function is supported from the firmware version of V2.0B for the B-EX4T1-TS25-R.

8.6 TEST PRINT

Contents of TEST PRINT menu

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<4>TEST PRINT			
		PRINT CONDITION		
			ISSUE COUNT	
			PRINT SPEED	
			SENSOR	
			PRINT TYPE	
			ISSUE TYPE	
			LABEL PITCH	7.2 VALUE SETTING DISPLAY
			PAPER FEED	7.1 LIST BOX WITH SCROLLBAR
		SLANT LINE (1DOT)		7.3 INFORMATION DISPLAY
		SLANT LINE (3DOT)		
		CHARACTERS		
		BARCODE		
		NON-PRINTING		
		FACTORY TEST		
		AUTO PRINT (TRANS.)		
		AUTO PRINT (REFL.)		

NOTE: In the case of the B-EX4D2, even if the thermal transfer mode is selected for the PRINT TYPE, it will be automatically changed to the direct thermal mode when the [ENTER] key is pressed.

8.6.1 PRINT CONDITION

This menu enables setting print conditions for test print.

8.6.1.1 ISSUE COUNT

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

8.6.1.2 PRINT SPEED

Selectable printer speed differs depending on the resolution.

B-EX4T TYPE 1		B-EX4T TYPE 2			B-EX6T		B-EX4D2	
203dpi	305dpi	203dpi	300dpi	600dpi	203dpi	300dpi	203 dpi	300 dpi
3 ips	3 ips	3 ips	3 ips	2 ips	3 ips	3 ips	3 ips	3 ips
6 ips	5 ips	6 ips	5 ips	3 ips	6 ips	5 ips	6 ips	5 ips
10 ips	8 ips	10 ips	8 ips	4 ips	10 ips	8 ips	10 ips	8 ips
12 ips	10 ips	12 ips	10 ips	5 ips		10 ips	12 ips	10 ips
14 ips	12 ips		12 ips	6 ips				12 ips
	14 ips							

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

8.6.1.3 SENSOR

- NONE
- TRANS.
- REFLECT
- MANUAL TRANS.
- MANUAL REFL.

8.6.1.4 PRINT TYPE

- TRANSFER
- DIRECT

8.6.1.5 ISSUE TYPE

- NO CUT
- WITH CUT
- PEEL OFF

8.6.1.6 LABEL PITCH

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
999 (*1) 500 (*2)	5	1	Decimal	None	3	0	None	mm

*1: Applicable to the B-EX4T1-G/T, B-EX4T2-G/T, B-EX6T2-G/T, and B-EX4D2-G/T.
*2: Applicable to the B-EX4T2-H.

8.6.1.7 PAPER FEED

- NO FEED
- FEED

Initial values when turning the power on

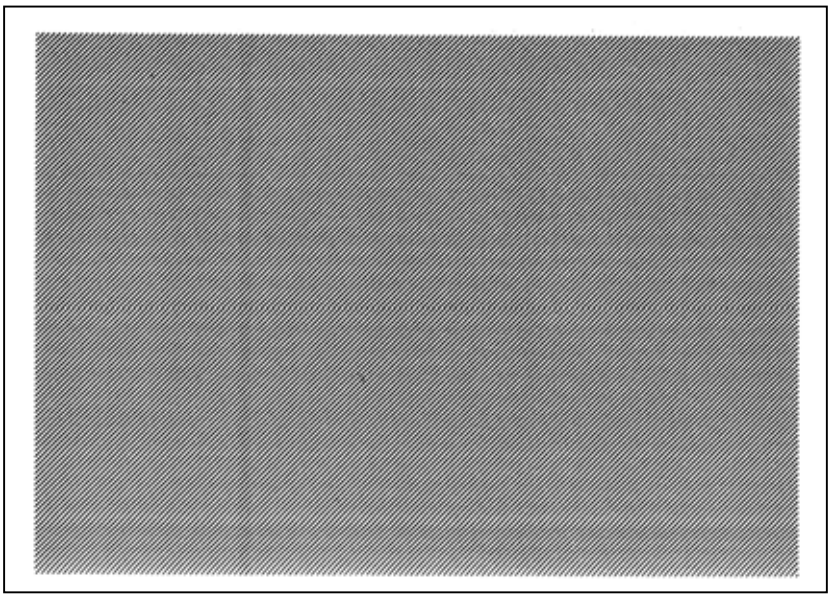
ISSUE COUNT	1 piece
PRINT SPEED	6”/sec. B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G, B-EX4D2-G
	5”/sec. B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T
	3”/sec. B-EX4T2-H
SENSOR	Transmissive sensor
PRT TYPE	B-EX4T1/EX4T2/EX6T2: Thermal transfer B-EX4D2: Direct thermal
TYPE	Batch issue
LABEL LEN.	76 mm
PAPER	Enabled

Supplementary explanation:

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

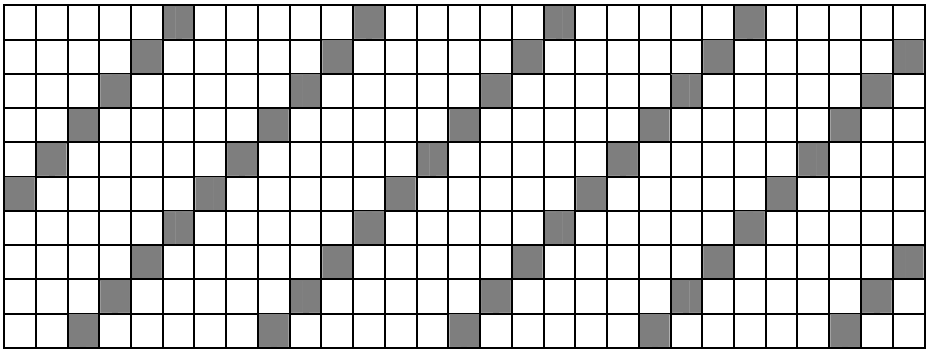
- For the B-EX4T1, the rotary cutter does not support the print speed of 10 ips or faster. When the rotary cutter is mounted (regardless of the cut issue is specified), the print speed is corrected to 8 ips even if 10 ips is selected.
- For B-EX4T1-G, specifying less than 15.0-mm pitch label for 3 ips print speed or less than 30.0-mm pitch label for 6 ips, printing is performed without cut.
- For B-EX4T1-T, specifying less than 15.0-mm pitch label for 3 ips print speed, less than 25.0-mm pitch label for 5 ips, or less than 38.0-mm pitch label for 8 ips, printing is performed without cut.
- In the case of the B-EX4D2, even if the thermal transfer mode is selected for the PRT TYPE, it will be automatically changed to the direct thermal mode.

8.6.2 SLANT LINE (1DOT)

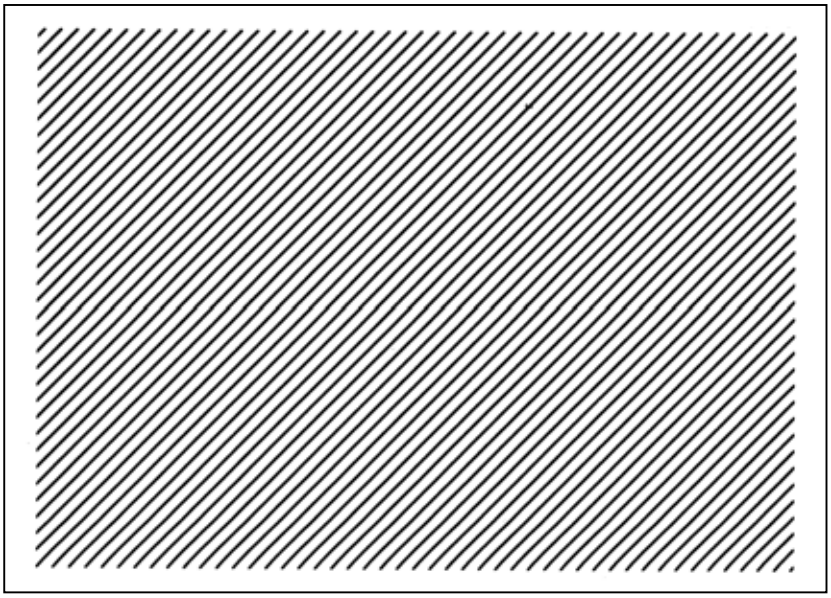


1-dot slant line

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

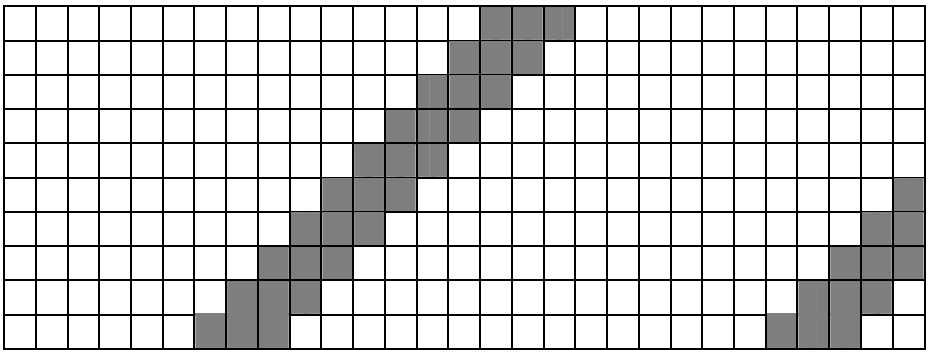


8.6.3 SLANT LINE (3DOT)



3-dot slant line

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



8.6.4 CHARACTERS

Gothic + Mincho

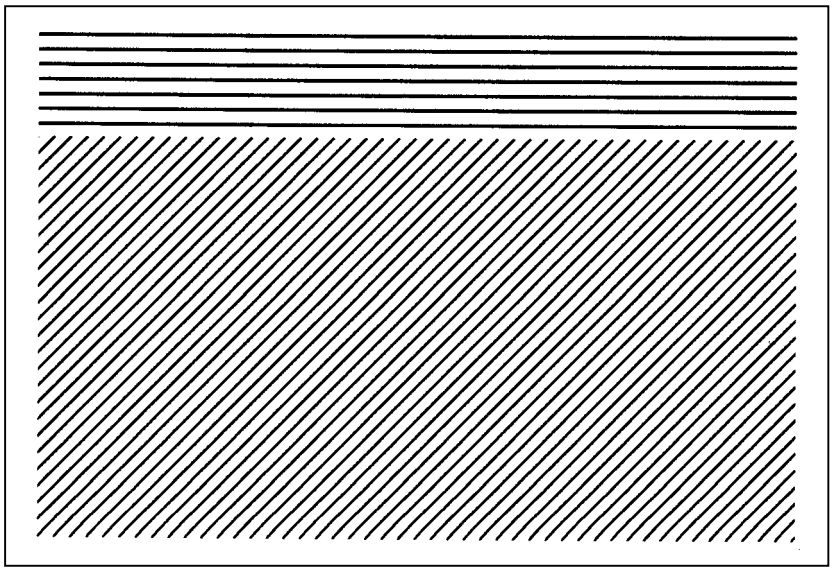
Gothic + Chinese

8.6.5 BARCODE

8.6.6 NON-PRINTING

The printer feeds blank label.

8.6.7 FACTORY TEST



8.6.8 AUTO PRINT (TRANS.)

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

- After each test pattern is printed, the factory test print is performed when the [ENTER] key (or its compatible key) is pressed.
- When the [CANCEL] key (or its compatible key) is pressed, the display returns to the menu.
- Other keys are invalid.

Print test pattern	Feeding 1 label
	Printing 3-dot slant lines
	Printing barcode
	Printing characters
Issue count	5 labels each
Print speed	6”/sec. B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G
	5”/sec. B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T
	3”/sec. B-EX4T2-H
Sensor type	Transmissive sensor
Print method	B-EX4T1/EX4T2/EX6T2: Thermal transfer B-EX4D2: Direct thermal
Issue mode	Continuous issue
Label pitch	76 mm
Print density fine adjustment value	±0

8.6.9 AUTO PRINT (REFL.)

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

- After each test pattern is printed, the factory test print is performed when the [ENTER] key (or its compatible key) is pressed.
- When the [CANCEL] key (or its compatible key) is pressed, the display returns to the menu.
- Other keys are invalid.

Print test pattern	Feeding 1 label
	Printing 3-dot slant lines
	Printing barcode
	Printing characters
Issue piece5 pieces each	5 labels each
Print speed	6”/sec. B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G
	5”/sec. B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T
	(600 dpi) B-EX4T2-H: 3”/sec.
Sensor type	Transmissive sensor
Print method	B-EX4T1/EX4T2/EX6T2: Thermal transfer B-EX4D2: Direct thermal
Issue type	Continuous issue
Label pitch	76 mm
Print density fine adjustment value	±0

8.7 SENSOR ADJUST

Contents of SENSOR ADJUST menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<<5>SENSOR ADJUST		
		TEMPERATURE	7.5 TEMPERATURE DISPLAY
		REFLECT	7.4 SENSOR ADJUSTMENT DISPLAY
		TRANS.	
		PE REFL./TRANS.	
		RIBBON	

8.7.1 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 below.

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

8.7.2 REFLECT

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 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, “Adjustment Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.

If the adjustment failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on.

The ERROR LED turns off when the upper hierarchy menu is displayed.

The setting range is as below.

Reflective sensor	0.0V to 5.0 V

8.7.3 TRANS.

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, “Adjustment Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.

If the adjustment failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on.

The ERROR LED turns off when the upper hierarchy menu is displayed.

The setting range is as below.

Transmissive sensor	0.0V to 5.0 V

8.7.4 PE REFL./TRANS.

Paper end level of the transmissive sensor and the reflective sensor is registered.

Remove any media from the media sensor.

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 adjustment failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on. The ERROR LED turns off when the upper hierarchy 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

8.7.5 RIBBON

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, “Adjustment Complete” is displayed and an asterisk (*) is shown on the right side of the voltage.

If the adjustment failed due to sensor failure, “SENSOR ERROR” is displayed and the ERROR LED turns on. The ERROR LED turns off when the upper hierarchy menu is displayed.

The setting range is as below.

Ribbon end sensor	0.0V to 5.0 V

NOTE: In the case of the B-EX4D2, the status of the ribbon end sensor is always 0.0V.

8.8 RAM CLEAR

Contents of RAM CLEAR menu

<B-EX4T1, B-EX4T2, B-EX6T2>

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<6>RAM CLEAR			
		NO RAM CLEAR		
		MAINTE.CNT CLEAR		
			ALL COUNTER	
			FEED	
			PRINT	
			CUT	
			OTHER	
		PARAMETER CLEAR		
			QM TYPE	
			JA TYPE	
			CN TYPE	

<B-EX4D2>

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<6>RAM CLEAR			
		NO RAM CLEAR		
		MAINTE.CNT CLEAR		
			ALL COUNTER	
			FEED	
			PRINT	
			CUT	
			OTHER	
		PARAMETER CLEAR		
		(NOTE)	QQ TYPE	
			QM TYPE	
			CN TYPE	

NOTE: For the B-EX4D2 D1.1 or later, the displayed order has been changed as follows.

PARAMETER CLEAR	
	QM TYPE
	QQ TYPE
	CN TYPE

8.8.1 NO RAM CLEAR

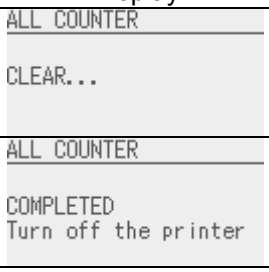
This option is provided for users who access this menu by mistake, and intended to exit from the RAM clear menu without performing any RAM clear.

8.8.2 MAINTE.CNT CLEAR

The maintenance counter, including label distance covered, is cleared.

Initial value after maintenance counter clear

Item	Initial value
Label distance covered	0 km
Print distance	0 km
Cut count	0
Head up/down count	0
Ribbon motor drive time	0 hours
Head-up solenoid driver time	0 hours
RS-232C hardware error count	0
System error count	0
Momentary power interruption count	0

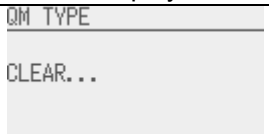
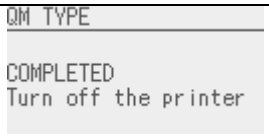
Display	
	While clearing
	After the maintenance counter clear is completed

Turn off the printer when “COMPLETED. Turn off the printer” is displayed after the RAM clear is completed.

8.8.3 PARAMETER CLEAR

The parameters settings are cleared.

Destination is selectable for parameter clear. The destination code printed on the top right corner of the maintenance counter printout shows which destination was selected for the parameter clear.

Display	
	While clearing
	After the parameter clear is completed

Initial values after clearing the parameters

Function	QM	QQ	CN
Media Load	OFF	OFF	OFF
Forward wait	OFF	OFF	OFF
Auto forward/reverse wait fine adjustment value	0.0mm	0.0mm	0.0mm
Wait movement	MODE1	MODE1	MODE1
HU CUT/RWD.	OFF	OFF	OFF
Ribbon save	OFF	OFF	OFF
Pre peel-off process	OFF	OFF	OFF

Back feed	STD	STD	STD
Type of ribbon * This is available only to the B-EX4T2, B-EX4D2, and B-EX6T2.	CSO	CSO	CSO

Parameter setting/Software control setting

Function	QM	QQ	CN
Character code	PC-850	PC-850	PC-850
0 character type	None slash	None slash	None slash
Control code	AUTO	AUTO	AUTO
Control code (CODE1)	0x1b	0x1b	0x1b
Control code (CODE2)	0x0a	0x0a	0x0a
Control code (CODE3)	0x00	0x00	0x00
Peel-off wait status	OFF	OFF	OFF
USB STATUS	OFF	OFF	OFF
FEED Key	FEED	FEED	FEED
Kanji special code	TYPE1	TYPE1	TYPE1
Euro code	0xb0	0xb0	0xb0
Auto broken dot check	OFF	OFF	OFF
WEB printer	OFF	OFF	OFF
Ribbon near end	OFF	OFF	OFF
Expansion I/O mode	TYPE1	TYPE1	TYPE1
Paper/ribbon end	TYPE1	TYPE1	TYPE1
MaxiCode specification	TYPE1	TYPE1	TYPE1
XML	STD	STD	STD
Threshold selection (Reflective sensor)	Command	Command	Command
Threshold selection (Transmissive sensor)	Command	Command	Command
Print control (Thermal transfer) B-EX4T1-G/T-QM/CN C1.4 or before	Semi resin1	---	Semi resin1
Print control (Thermal transfer) B-EX4T1-G/T-QM/CN C1.5 or later	Semi resin 1	---	SX compatible
Print control (Thermal transfer) B-EX4T2-G/T-QM/CN C1.2 or before, B-EX6T2-G/T	Wax1	---	Wax1
Print control (Thermal transfer) B-EX4T2-G/T-QM/CN C1.3 or later	Wax 1	---	Multiple type
Print control (Thermal transfer) B-EX4T2-H	Resin1	---	Resin1
Print control (Thermal transfer) B-EX4D2-G/T	Wax 1	Wax 1	Wax 1
Print control (Direct Thermal)	Standard	Standard	Standard
Length of time to power save mode	15 minutes	15 minutes	15 minutes
Ribbon width	TYPE1 (*1)	---	TYPE1 (*1)

*1: Supported by the B-EX4T1-G/T-QM/CN C1.2 or later, the B-EX4T2-G/T-QM/CN C1.2 or later, B-EX4T2-H-QM/CN C1.1A or later, and B-EX4D2-G/T-QM/CN D1.1 or later.

Parameter setting/LCD display

Function	QM	QQ	CN	
LCD display language	English	English	English	B-EX4T1 before C1.0:
			Chinese	B-EX4T1 C1.0 or later: B-EX4T2 B-EX6T2 B-EX4D2
LCD detail display: model name	ON	ON	ON	
LCD detail display: print number	ON	ON	ON	
LCD detail display: IP address	OFF	OFF	OFF	
Contrast adjustment	40	40	40	

Parameter setting/Password setting

Function	QM	QQ	CN
Password enable/disable	Not cleared	Not cleared	Not cleared
Password value	Not cleared	Not cleared	Not cleared

Fine adjustment value setting

Function	QM	QQ	CN
Feed amount	0.0mm	0.0mm	0.0mm
Cut position	0.0mm	0.0mm	0.0mm
Back feed	0.0mm	0.0mm	0.0mm
X-coordinate	0.0mm	0.0mm	0.0mm
Print density (Thermal transfer)	0step	0step	0step
Print density (Direct thermal)	0step	0step	0step
Ribbon (take-up motor) *1	0step	0step	0step
Ribbon (take-up motor) *1			
TYPE1	0step	---	0step
TYPE2	0step	---	0step
Ribbon (feed motor) *1	+5step	+5step	+5step
Ribbon (feed motor) *1			
TYPE1	+5step	---	+5step
TYPE2	+5step	---	+5step
Reflective sensor	1.0V	1.0V	1.0V
Transmissive sensor	1.4V	1.4V	1.4V
Head down timing (B-EX4T1-TS25-R V2.0B or later)	---	---	---

*1: The function depends on the model.

Applicable model	Parameter	
B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later	Ribbon (take-up motor)	TYPE1
		TYPE2
	Ribbon (feed motor)	TYPE1
		TYPE2
Other than above	Ribbon (take-up motor)	
	Ribbon (feed motor)	

Interface setting/Network

Function	QM	QQ	CN
Wire/Wireless LAN selection	AUTO	AUTO	AUTO
SNMP	ON	ON	ON
IP address	Not cleared	Not cleared	Not cleared
Gateway	Not cleared	Not cleared	Not cleared
Subnet mask	Not cleared	Not cleared	Not cleared
Socket port	Not cleared	Not cleared	Not cleared
Port number	Not cleared	Not cleared	Not cleared
DHCP	OFF	OFF	OFF
DHCP client ID	Not cleared	Not cleared	Not cleared
DHCP host name	Not cleared	Not cleared	Not cleared
Wireless LAN standard	802.11b/g	802.11b/g	802.11b/g
Wireless LAN connection mode	INFRA	INFRA	INFRA
Encryption	OFF	OFF	OFF
WPA authentication	OFF	OFF	OFF
Authentication	OFF	OFF	OFF
WEP default Key	1	1	1
802.11b channel	1	1	1
802.11b send rate	11M	11M	11M
802.11g channel	1	1	1
802.11g send rate	54M	54M	54M
WINS	OFF	OFF	OFF
WINS address	0,0,0,0	0,0,0,0	0,0,0,0
LPR	ON	ON	ON

INTERFACE setting/USB

Function	QM	QQ	CN
USB serial ID	OFF	OFF	OFF

INTERFACE setting/RS-232C

Function	QM	QQ	CN
Communication speed	9600bps	9600bps	9600bps
Data length	8bit	8bit	8bit
Stop bit	1bit	1bit	1bit
Parity	NONE	NONE	NONE
Flow control	XON+READY AUTO	XON+READY AUTO	XON+READY AUTO

INTERFACE setting/Centro

Function	QM	QQ	CN
ACK/BYSY	TYPE1	TYPE1	TYPE1
Input prime	ON	ON	ON
Plug and play	OFF	OFF	OFF

BASIC setting

Function	QM	QQ	CN
Basic function	OFF	OFF	OFF
Trace function	OFF	OFF	OFF

RFID setting

Function	QM	QQ	CN
Module setting	NONE	NONE	NONE
Tag type setting	NONE	NONE	NONE
Error tag detection	Not cleared	Not cleared	Not cleared
Access password	Not cleared	Not cleared	Not cleared
Password protection enable/disable	Not cleared	Not cleared	Not cleared
Password protection	Not cleared	Not cleared	Not cleared
Auto un-lock	Not cleared	Not cleared	Not cleared
Issue retry number	3	3	3
Read retry count	5	5	5
Read retry time	4.0 second	4.0 second	4.0 second
Write retry count	5	5	5
Write retry time	2.0 second	2.0 second	2.0 second
Write retry position	0mm	0mm	0mm
Wireless output level	251	251	251
AGC threshold	0	0	0
Channel	AUTO	AUTO	AUTO
Q value	0	0	0
AGC threshold	0	0	0
AGC threshold Min.	0	0	0
Multi word write	OFF	OFF	OFF
Head up action *2	MODE1	---	MODE1
RFID calibration *1	OFF	---	OFF
AGC value *1	0	---	0
Read/write position *1	+0.0 mm	---	+0.0 mm
Antenna position *1	Not cleared	---	Not cleared
RFID write success label issue number	Not cleared	Not cleared	Not cleared
RFID write failure label issue number	Not cleared	Not cleared	Not cleared

*1: Supported by the B-EX4T1-G/T-QM/CN C1.4 or later.

*2: Supported by the B-EX4T1-TS25-R V2.2 or later.

RTC setting

Function	QM	QQ	CN
Battery check	Not cleared	Not cleared	Not cleared
Overwrite for printing	Not cleared	Not cleared	Not cleared

Z-MODE

Function	QM	QQ	CN
Z-MODE	OFF	OFF	OFF

User system mode

Auto calibration

Function	QM	QQ	CN
Auto calibration	OFF	OFF	OFF

Settings programmed not in the system mode/user system mode

Function	QM		QQ		CN	
Print speed	B-EX4T1-G B-EX4T2-G B-EX6T2-G	6 ips	B-EX4D2-G	6 ips	B-EX4T1-G B-EX4T2-G B-EX6T2-G	6 ips
	B-EX4T1-T B-EX4T2-T B-EX6T2-T B-EX4D2-T	5 ips			B-EX4T1-T B-EX4T2-T B-EX6T2-T B-EX4D2-T	5 ips
	B-EX4T2-H	3 ips			B-EX4T2-H	3 ips
Sensor	Transmissive		Transmissive		Transmissive	
Print method	Thermal transfer		Direct thermal		Thermal transfer	
Issue mode	Batch		Batch		Batch	
Rotation	Bottom first		Bottom first		Bottom first	
Label pitch	76.2mm		76.2mm		76.2mm	
Effective print length	74.2 mm		74.2 mm		74.2 mm	
Effective print width	B-EX4T1 B-EX4T2	104 mm	104 mm		B-EX4T1 B-EX4T2	104 mm
	B-EX6T2	152 mm			B-EX6T2	152 mm

8.9 INTERFACE

Contents of INTERFACE menu

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE			
		NETWORK		
			LAN/WLAN	
			SNMP	
			SETTING	
		USB		
		RS-232C		
		CENTRO.		

8.9.1 NETWORK

Menu structure of NETWORK

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE			
		NETWORK		
			LAN/WLAN	
			SNMP	
			SETTING	

The general network setting is selected.

8.9.1.1 LAN/WLAN

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

8.9.1.2 SNMP

- OFF
- ON

8.9.1.3 SETTING

MENU ITEM						Display pattern and key operation
SYSTEM MODE						7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE					
		NETWORK				
			SETTING			
				BASIC INFORMATION		7.3 INFORMATION DISPLAY
				IP ADDRESS		7.2 VALUE SETTING DISPLAY
				GATEWAY ADDRESS		
				SUBNET MASK		
				SOCKET PORT		7.1 LIST BOX WITH SCROLLBAR
				PORT NUMBER		7.2 VALUE SETTING DISPLAY
				DHCP		7.1 LIST BOX WITH SCROLLBAR
				DHCP CLIENT ID		
					ASCII	7.2 VALUE SETTING DISPLAY
					HEX	
				DHCP HOST NAME		
				WLAN STANDARD		7.1 LIST BOX WITH SCROLLBAR
				WLAN MODE		
				DEFAULT KEY		7.2 VALUE SETTING DISPLAY
				802.11b CHANNEL		
				802.11b BAUD		7.1 LIST BOX WITH SCROLLBAR
				802.11g CHANNEL		7.2 VALUE SETTING DISPLAY
				802.11g BAUD		7.1 LIST BOX WITH SCROLLBAR
				WINS		
				WINS ADDRESS		7.2 VALUE SETTING DISPLAY
				LPR		7.1 LIST BOX WITH SCROLLBAR

8.9.1.3.1 BASIC INFORMATION

The following information is displayed.

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

8.9.1.3.2 IP ADDRESS

IP address is displayed and set.

8.9.1.3.3 GATEWAY ADDRESS

Gateway address is displayed and set.

8.9.1.3.4 SUBNET MASK

Subnet mask is displayed and set.

8.9.1.3.5 SOCKET PORT

- OFF
- ON

8.9.1.3.6 PORT NUMBER

Socket port number is displayed and set.

8.9.1.3.7 DHCP

- OFF
- ON

8.9.1.3.8 DHCP CLIENT ID

- ASCII DHCP client ID is entered with ASCII code.
- HEX DHCP client ID is entered with hex. code.

8.9.1.3.8.1 ASCII

Input DHCP client ID with ASCII code.
64 characters (00 to 63)

8.9.1.3.8.2 HEX

Input DHCP client ID with hexadecimal code.
64 characters (00 to 63)

8.9.1.3.9 DHCP HOST NAME

Input DHCP host name with ASCII code.
32 characters (00 to 31)

8.9.1.3.10 WLAN STANDARD

- 11b/g
- 11b
- 11g

8.9.1.3.11 WLAN MODE

Combination between the wireless LAN connection mode and authentication

ADHOC	OPEN			OFF
				WEP40
				WEP104
INFRA	OPEN			OFF
				WEP40
				WEP104
	SHARED			WEP40
				WEP104
	802.1x	OPEN	TLS	WEP40
				WEP104
			TTLS	WEP40
				WEP104
			LEAP	WEP40
				WEP104
			PEAP	WEP40
				WEP104
			MD5	WEP40
				WEP104
			EAP-FAST	WEP40
				WEP104
		SHARED KEY	EAP-MD5	WEP40
				WEP104
		NETWORK EAP		WEP40
				WEP104
	WPA	OPEN	TLS	
			TTLS	
			LEAP	
			PEAP	
			EAP-FAST	
		NETWORK EAP		
	WPA-PSK			
	WPA2	OPEN	TLS	
			TTLS	
			LEAP	
			PEAP	
			EAP-FAST	
		NETWORK EAP		
	WPA2-PSK			

8.9.1.3.12 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

8.9.1.3.13 802.11b 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

8.9.1.3.14 802.11b BAUD

- 11M
- 5.5M
- 2M
- 1M

8.9.1.3.15 802.11g CHANNEL

Max. value	Min. value	Step	Display	Sign	Integer digit	Decimal place	0-padding	Unit of measure
13	1	1	Decimal	None	1	0	None	None

8.9.1.3.16 802.11g BAUD

- 54M
- 48M
- 36M
- 24M
- 18M
- 12M
- 9M
- 6M
- 11M
- 5.5M
- 2M
- 1M

8.9.1.3.17 WINS

- OFF
- ON (MANUAL)
- ON (DHCP)

8.9.1.3.18 WINS ADDRESS

WINS Address is displayed and set.

8.9.1.3.19 LPR

- OFF
- ON

8.9.2 USB

Menu structure of USB

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE		
		USB	

8.9.2.1 USB SERIAL ID

- OFF
- ON

8.9.3 RS-232C

Menu structure of RS-232C

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE			
		RS-232C		
			SPEED	
			DATA LENGTH	
			STOP BIT	
			PARITY	
			CONTROL	

8.9.3.1 SPEED

- 2400 bps
- 4800 bps
- 9600 bps
- 19200 bps
- 38400 bps
- 115200 bps

8.9.3.2 DATA LENGTH

- 8 bits
- 7 bits

8.9.3.3 STOP BIT

- 1 bit
- 2 bits

8.9.3.4 PARITY

- NONE
- EVEN
- ODD

8.9.3.5 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)

8.9.4 CENTRO.

Menu structure of CENTRO.

MENU ITEM				Display pattern and key operation
SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<7>INTERFACE			
		CENTRO.		
			ACK/BUSY	
			INPUT PRIME	
			PLUG & PLAY	

8.9.4.1 ACK/BUSY

- TYPE1
- TYPE2

8.9.4.2 INPUT PRIME

- OFF
- ON

8.9.4.3 PLUG & PLAY

- OFF
- ON

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

8.10 BASIC

Contents of BASIC menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<8>BASIC		
		BASIC	
		FILE MAINTENANCE	7.3 INFORMATION DISPLAY
		TRACE	7.1 LIST BOX WITH SCROLLBAR
		EXPAND MODE	

8.10.1 BASIC

- OFF
- ON

8.10.2 FILE MAINTENANCE

The block number and BASIC program file name (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, a hyphen (-) is displayed in place of the file name.

8.10.3 TRACE

- OFF
- ON

8.10.4 EXPAND MODE

The printer switches the mode to execute the BASIC program.

8.11 FOR FACTORY

Contents of FOR FACTORY menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<9>FOR FACTORY		
		HEAD UP ADJUST	
		PANEL TEST	
		KEY TEST	

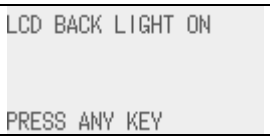
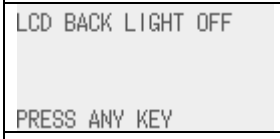
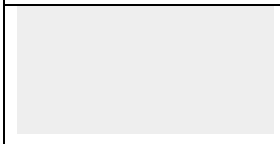
8.11.1 HEAD UP ADJUST

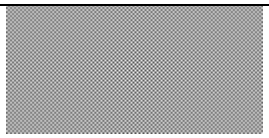
The head-up solenoid is turned on for 10 seconds.

8.11.2 PANEL TEST

The test is performed in the following order.

The display language is English regardless of the language selected for LCD Language parameter.

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. A 1-dot box is displayed along the ends 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 1234567890123456789O1 abcdefghijklmnopqustu 09876543210987654321O 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.
		Returns to the upper hierarchy display when the [ENTER] or [CANCEL] key is pressed.

8.11.3 KEY TEST

The test is performed in the following order.
The display language is English regardless of the language selected for LCD Language parameter.
When an expected key is not pressed, the printer waits until that key is pressed.
If the key test does not proceed to the next test even after the expected key is pressed, the key may be broken. In this case, turn off the printer.

FEED KEY PRESS TEST	PRESS FEED KEY	
		Press the [FEED] key.
RESTART KEY PRESS TEST	PRESS RESTART KEY	
		Press the [RESTART] key.

PAUSE KEY PRESS TEST	PRESS PAUSE KEY	
		Press the [PAUSE] key.
UP KEY PRESS TEST	PRESS UP KEY	
		Press the [UP] key.
RIGHT KEY PRESS TEST	PRESS RIGHT KEY	
		Press the [RIGHT] key.
DOWN KEY PRESS TEST	PRESS DOWN KEY	
		Press the [DOWN] key.
LEFT KEY PRESS TEST	PRESS LEFT KEY	
		Press the [LEFT] key.
MODE KEY PRESS TEST	PRESS MODE KEY	
		Press the [MODE] key.
CANCEL KEY PRESS TEST	PRESS CANCEL KEY	
		Press the [CANCEL] key.
ENTER KEY PRESS TEST	PRESS ENTER KEY	
		Press the [ENTER] key.
END DISPLAY	KEY TEST COMPLETE PRESS ENTER KEY	
		Returns to the upper hierarchy display when the [ENTER] or [CANCEL] key is pressed.

8.12 RFID

Contents of RFID menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<10>RFID		
		TEST	
		ID READ	7.3 INFORMATION DISPLAY
		MODULE	7.1 LIST BOX WITH SCROLLBAR
		MODULE TYPE	
		COUNTRY	
		TAG	
		RF CHANNEL	
		RETRY	
		ADJ RETRY POSITION	7.2 VALUE SETTING DISPLAY
		ISSUE RETRY LABELS	
		READ RETRY	
		WRITE RETRY	
		UHF SETTING	7.1 LIST BOX WITH SCROLLBAR
		POWER LEVEL	7.2 VALUE SETTING DISPLAY
		Q VALUE	
		AGC THRESHOLD	
		WRITE AGC THRESHOLD	
		WRITE RETRY MIN AGC	
		CALIB. MODE *1	
		CALIB. AGC *1	
		CALIB. POSITION *1	
		ANTENNA POSITION *1	
		Other	7.1 LIST BOX WITH SCROLLBAR
		TAG CHECK	
		MULTI WRITE	
		HEADUP ACTION *2	
		CARRIER SENSE	

*1: Supported by the B-EX4T1-G/T-QM/CN C1.4 or later.

*2: Supported by the B-EX4T1-TS25-R V2.2 or later.

8.12.1 TEST

The following information related to the read test displayed.

・ID READ

8.12.1.1 ID READ

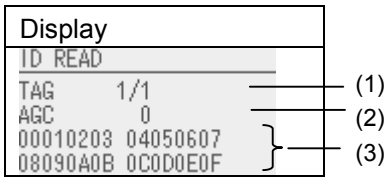
The printer enters the read test mode, and a read test is performed each time the [ENTER] key is pressed. When the data of a tag can be read, it is displayed on the LCD.

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

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



(1) The number tag being read/The total number of tags read
（Mostly, only 1 tag is read.）
(2) For the UHF module, AGC value of the read tag is displayed with decimal number.
(3) Data displayed on 3rd and 4th lines are expressed with hex. code.
The displayed data differs depending on the module type.
B-EX700-RFID-H1-QM-R: Tag ID
B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R): EPC code of EPC area

・In the case of 32 digits or more data, only the first 32 digits are displayed. When data is less than 32 digits, 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.

8.12.2 MODULE

The following information related to the module setting is displayed.

- MODULE TYPE
- COUNTRY
- TAG
- RF CHANNEL

8.12.2.1 MODULE TYPE

- NONE — No RFID module is installed.
- H1 — B-EX700-RFID-H1-QM-R
- H2 — B-EX700-RFID-H2-R
- U2 — B-EX700-RFID-U2-EU-R (Europe, India)
  B-EX700-RFID-U2-US-R (North America, Australia, Taiwan, Korea)
  B-EX700-RFID-U4-R (Japan)
  B-EX700-RFID-U4-EU-R (Europe)
  B-EX700-RFID-U4-US-R (Korea)
  U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R) (China)

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

8.12.2.2 COUNTRY

The country code of the currently installed module is displayed.

If the module type is set to other than “U2”, “INVALID” is displayed.

It is possible to change the country setting when the module type is set to “U2” and the actually installed module type is U2-US or U2-EU. 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
H1/H2	B-EX700-RFID-H1-QM-R B-EX700-RFID-H2-R		INVALID
U2	No module installed.		No RFID Module
	B-EX700-RFID-U2-EU-R B-EX700-RFID-U2-US-R	Country setting done. *1	[ENTER] for Setting
	B-EX700-RFID-U4-R B-EX700-RFID-U4-EU-R B-EX700-RFID-U4-US-R U4 module preinstall model	No country setting done	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. In the case the B-EX700-RFID-U4-R is installed in the B-EX4T1-TS25-R, be sure to select JPN. (A blank line may be displayed, but ignore it.)
For the selectable country codes, refer to Module version and LCD message in Section 8.3.2.1.

8.12.2.3 TAG

Selectable tag types vary according to the module setting.

The number in the table indicates the scroll line number.

	NONE	H1	H2	U2 (*1)
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

*1: U4 and U4 module preinstall models are included.

8.12.2.4 RF CHANNEL

A channel used for RFID tag write is set.

When a channel is chosen from 2CH to 8CH, that channel will be continuously used.

When the channel is set to AUTO, an available channel is searched in the following order:

(2CH → 8CH → 6CH → 4CH → 3CH → 7CH → 5CH → 2CH)

The channel setting works effectively only for the B-EX700-RFID-U4-R (See NOTE).

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

NOTE: The frequencies used for the B-EX700-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

8.12.3 RETRY

The following information related retry is displayed.

- ADJ RETRY POSITION
- ISSUE RETRY LABELS
- READ RETRY
- WRITE RETRY

8.12.3.1 ADJ RETRY POSITION

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, this function and a retry are not performed. Only the value of -3mm or less or +3mm or more is effective.

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

8.12.3.2 ISSUE RETRY LABLES

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

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

8.12.3.3 READ RETRY

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

The printer retries to read the data in an RFID tag for up to specified number of times. If the timeout period expired before the max. number of retries have been done, the printer stops the retries at the time. Whenever the printer writes data onto an RFID tag, the tag is read first. The max. number of retries set by this parameter becomes also effective in this pre-read.

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 timeout for RFID tag read retry is set.

If the printer has retries for the max. number of times within the RFID read retry timeout, 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 becomes also effective in this pre-read.

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

8.12.3.4 WRITE RETRY

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

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

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 timeout for RFID tag write retry is set.

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

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

8.12.4 UHF SETTING

The formation related UHF setting is displayed.

- POWER LEVEL
- Q VALUE
- AGC THRESHOLD
- WRITE AGC THRESHOLD
- WRITE RETRY MIN AGC
- CALIB. MODE*1
- CALIB. AGC *1
- CALIB. POSITION *1
- ANTENNA POSITION *1

*1: Supported by the B-EX4T1-G/T-QM/CN C1.4 or later.

8.12.4.1 POWER LEVEL

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

Radio output level of UHF.

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

In the case of the B-EX700-RFID-U2-EU/US-R, a value shown on the LCD ranges from 0 to 18 though the setting range is 9 to 18. If a value from 0 to 8 is set, the printer operation is not guaranteed.

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

	Initial value	Max. value	Min. value
B-EX700-RFID-U2-EU-R/US-R	18	18	9
B-EX700-RFID-U4-R B-EX700-RFID-U4-EU/US-R U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R) Note: Supported from the B-EX4T1-G/T-QM/CN C1.0I, the B-EX4T2-G/T-QM/CN C1.0F, and B-EX4T1-TS25-R V2.1.	18	18	0

8.12.4.2 Q VALUE

This is effective only for the B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R).

In the case multiple RFID tags are read at the same time, this menu is useful to pinpoint a target tag. Set the Q value to "1" or greater (2 is recommended) with the [UP] or [DOWN] key. 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.

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.

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

8.12.4.3 AGC THRESHOLD

This is effective only for the B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R)

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.

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

8.12.4.4 WRITE AGC THRESHOLD

This is effective only for the B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R).

When the Q value is set to 1 or greater, 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.

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.

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

8.12.4.5 WRITE RETRY MIN AGC

This is effective only for the B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, U4 module preinstall model (B-EX4T1/EX4T2-GS18/TS18-CN-R).

When the Q value is set to 1 or greater, the AGC threshold lower limit for retry becomes effective.

Even if a tag's gain is lower than the AGC threshold for data write, a data write to the tag may be successful in a retry if the gain is greater than the lower limit. For a retry, the printer lowers the threshold to the highest gain of the tag if it is greater than the lower limit or to the lower limit if it is greater than the highest gain of the tag.

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 to 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.

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

8.12.4.6 CALIB. MODE

・OFF
・ON

This parameter is to select whether the RFID calibration function is enabled or not.
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. Also, 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.)
When the values obtained through an RFID calibration are set, this parameter will automatically turn ON.
Applicable model: B-EX4T1-G/T-QM/CN C1.4 or later
For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

8.12.4.7 CALIB. 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

By performing an RFID calibration, an AGC (response level from an RFID tag) value is automatically obtained and set. This parameter is effective only when the CALIB. MODE parameter is set to ON.
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.
Applicable model: B-EX4T1-G/T-QM/CN C1.4 or later.
For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

8.12.4.8 CALIB. POSITION

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

By performing an RFID calibration, an optimum data read/write position (distance from the home position) is automatically obtained and set. This parameter is effective only when the CALIB. MODE parameter is set to ON.
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.
The feed direction is indicated by "+" (backward) and "–" (forward). Setting values ranging from -2.9mm to +2.9mm do not affect the read/write position fine adjustment.
Applicable model: B-EX4T1-G/T-QM/CN C1.4 or later.
For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

8.12.4.9 ANTENNA POSITION

・FRONT … Reserved
・CENTER … Reserved
・REAR

This parameter, used for an RFID calibration, is to select the combinational position of the RF antenna and the wave director. A “usable” antenna position must be selected for this parameter. Otherwise, the printer operation is not guaranteed. (Refer to Section 6.7.1 Outline of the RFID Calibration.)
This function is supported by the B-EX4T1-G/T C1.4 or later.
For details of the RFID calibration, refer to Section 6.7 RFID CALIBRATION.

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

8.12.5 OTHER

The following information related RFID is displayed.

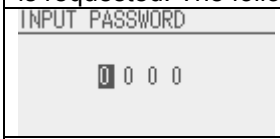
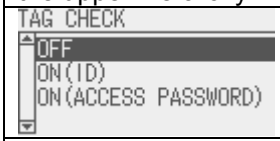
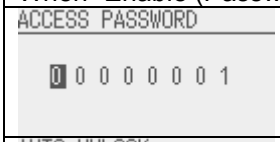
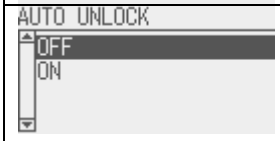
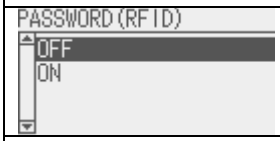
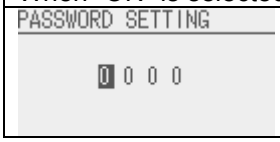
・ TAG CHECK
・ MULTI WRITE
・ HEADUP ACTION *1
・ CARRIER SENSE

*1: Supported by the B-EX4T1-TS25-R V2.2 or later.

8.12.5.1 TAG CHECK

OFF	Error tag detection is not performed. 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 performed. 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 performed 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.

To prevent unauthorized changes of the setting, a password to protect the error tag detection setting can be programmed.

Display	Operation
When the TAG CHECK parameter is set to ON (ACCESS PASSWORD)", an entry of the password is requested. The following explanation is for when protected password is enabled.	
	Input the default password "0000" or 4-digit password programmed in Step 6.
When the password matches, TAG CHECK parameter setting screen appears.	
If the entered password does not match, an error message is displayed and the screen returns to the upper hierarchy menu.	
	Select a tag check option. ・ Disable ・ Enable (ID) ・ Enable (Password)
When "Disable" or "Enable (ID)" is selected, the password setting is disabled and the screen returns to the upper hierarchy.	
When "Enable (Password)" is selected, the access password entry is requested.	
	Input 8-digit access password.
	Choose whether or not to enable the auto unlock function. ・ OFF ・ ON When "ON" is selected, locked tags are automatically unlocked by the access password and data write is enabled.
	Choose whether or not to set the password to protect the error tag detection setting. ・ OFF ・ ON
When "OFF" is selected, this menu is ended and the upper hierarchy menu is shown.	
When "ON" is selected, the password can be programmed.	
	Input 4-digit password.

8.12.5.2 MULT WRITE

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. Additionally, the B-EX700-RFID-U4-R, B-EX700-RFID-U4-EU/US-R, and U4 module preinstall model do not support this function.

・OFF
・ON

8.12.5.3 HEADUP ACTION

This function is used for setting the head up action during a reverse feed of an RFID tag.

- MODE1 Whether the print head is raised or not is determined depending on the system mode setting (RBN SAVE) or command (Issue command, Feed command, or Reverse feed command).
- MODE2 When an RFID module is installed in the printer and a minimum of 3-mm reverse feed is performed, the print head is raised regardless of the system mode setting or command setting.

<Supplementary explanation>

(1) This parameter is available to the B-EX4T1-TS25-R with the firmware version V2.2 or later.

(2) When MODE2 is selected, the printer behavior will be as follows:

Head up → Reverse feed → Stop → Head down

(3) When MODE2 is selected with an RFID module not installed, MODE1 action will be performed.

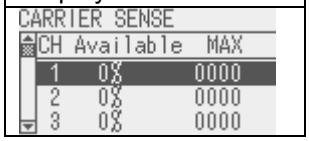
(4) When MODE2 is selected, the print head is raised in the following cases. (The print head is not raised with MODE1 setting.)

- Reverse feed during an auto forward wait
- Reverse feed to the print start position after a cut operation
- Reverse feed after VOID print due to on-the-fly RFID write error
- Reverse feed to the print start position after a peel-off operation
- Reverse feed to the print start position during a pre-peel-off operation
- Pre-reverse feed
- Reverse feed while the ribbon saving function or head-up function is not enabled in an Issue Command, Feed command or Reverse feed command.
- Reverse feed by a Issue command or Feed command when a combination of the print speed and the non-print area does not enable the ribbon saving function or head-up function
- Reverse feed by a U2 command on the condition that does not enable a head-up function (feed amount = 20 mm or less).

8.12.5.4 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. (This function is enabled only when the B-EX700-RFID-U4-R is used.)

Display example

Display


- 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.
- MAX column shows the value of the maximum radio wave picked up. The larger the value is, the stronger radio wave source exists nearby.
- “MAX 0011” means the value of the maximum radio wave picked up.
- The display can be scrolled up or down, from Channel 1 (1CH) to channel 9 (9CH), by using the [UP] or [DOWN] key.
- Pressing the [ENTER] key causes the printer to perform a carrier sense again. To quit a carrier sense, press the [CANCEL] key.
- When the RFID module type is set to “NONE” or a communication cannot be established, a message, “NO RFID MODULE”, is displayed.
- When the RFID module type is set to other than U2, a message, “NOT AVAILABLE” is displayed.
- When the RFID module type is set to U2 but effective data cannot be obtained, a message, “NO RESPONSE” is displayed.
- If the RFID module’s country setting is not specified (user-inaccessible setting) for the B-EX700-RFID-U2-EU/US-R, B-EX700-RFID-U4-EU/US-R or U4 module preinstall model, an “RFID CONFIG ERR” message is displayed.

8.13 RTC

Contents of RTC menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<11>RTC		
		DATE TIME	7.2 VALUE SETTING DISPLAY
		BATTERY CHECK	7.1 LIST BOX WITH SCROLLBAR
		RENEWAL	

8.13.1 DATE TIME

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

8.13.2 BATTERY CHECK

- OFF
- ON

8.13.3 RENEWAL

- BATCH 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.
- 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.

8.14 Z-MODE

Contents of Z-MODE menu

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<12>Z-MODE	

This menu is displayed only when the destination is other than JA.

- OFF (Disabled)
- ON SETTING OFF (Z-Mode is enabled. BASIC system mode program is not started immediately.)
- ON SETTING ON (Z-Mode is enabled. BASIC system mode program is started immediately.)

The Z-Mode menu has the function 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 only. The display and the procedure are different from the BASIC.

Turning the Z-MODE parameter setting from “OFF” to “ON SETTING OFF” or “ON SETTING ON” causes the MEDIA LOAD parameter setting to be automatically changed as follows:

Model	Firmware version	MEDIA LOAD parameter setting
B-EX4T1 QM	C1.1B or later	ECO
B-EX4T2	C1.1A or later	STD
B-EX4T2H	C1.0G or later	STD
B-EX6T2	C1.0 or later	STD
Other combinations of model and firmware version		Unchanged

It is possible to change the above settings by setting the MEDIA LOAD parameter again.

8.15 USB MEMORY

The following table shows the error messages which may be displayed while USB memory is used, and description of the errors.

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 space.	Insufficient memory
FILE NOT FOUND Check the data and the settings.	No applicable file found
UNKNOWN ERROR	Other errors

NOTE: Depending on the remaining memory size or the USB memory status, a write error may occur even when the USB memory is under the insufficient free space condition.

Usable USB memory's file system is as follows:

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

To use USB memories of the other file system, they need to be formatted to either of the above on the PC in advance.

Contents of USB MEMORY menu

MENU ITEM			Display pattern and key operation
SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<13>USB MEMORY		
		USB TO PRINTER	
		PRINTER TO USB	

8.15.1 USB TO PRINTER

- COPIED DATA
- CONFIG FILE

The data store in USB memory is copied to the printer.

- COPIED DATA — File (*.DAT) containing firmware (BOOT/MAIN/ CG/KANJI/HTML), storage area information, 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 11.Auto Configuration Mode.

After an item to be saved is selected, the file selection display is shown.
For the file selection display, see Section 7.6 FILE SELECTION DISPLAY.
(The scrollbar on the file selection display is not provided with the knob regardless of the number of files.)
The confirmation display appears when a file is selected from the file selection display.
(When CFG files is selected, the message included in the CFG file is shown prior to the confirmation display.)
After confirming the data copy, the printer reads data from USB memory.
It takes about 3 to 5 minutes to read all information.

Copy 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.
NOTES:

1. B-EX4T1-G and B-EX4T1-T, B-EX4T2-G and B-EX4T2-T, and B-EX6T2-G and B-EX6T2-T are regarded as the same mode, respectively.
2. When the CPU is the SH type, QM and CN models are regarded as the same model.
   (When printers provided with the V850 type CPU, they are regarded as the same model regardless of the destination.)
3. Printer models are identified by the CPUs (SH type and V850 type).

Parameters of copy data

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.

Example 1: In the case of the B-EX4T2-H, “Resin1” for the Energy type (Transfer) parameter is the 1st option. When the B-EX4T2-H parameter settings are copied to the B-EX4T2-G (C1.0D), “Resin1” will be the 5th option.

Example 2: When the Energy type (Transfer) parameter for the B-EX4T2-G (C1.0D) has been set to “Wax3”, and the parameter settings are copied to the B-EX4T2-H, the Energy type (Transfer) parameter will not be updated.

When the error occurs during an access to the USB memory, the error message described in Section 8.15 USB MEMORY is displayed.
The printer does not retry the operation.

8.15.2 PRINTER TO USB

- ALL

Printer copies firmware (BOOT/MAIN/CG/KANJI/HTML), storage area information, and parameter settings to a USB memory.
After 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 information.
A file is automatically created in the USB memory and named in the following format based on the printer model and saved date.
/ATA0/SYSTEM/B-EX4T1-T1105.DAT (e.g. B-EX4T Type1 305dpi model, the 11th Nov.)

If a file with the same name already exists in the USB memory, it will be overwritten.
When the error occurs during an access to the USB memory, the error message described in Section 8.15 USB MEMORY the operation.

8.16 RESET

Contents of RESET menu

MENU ITEM	Display pattern and key operation
SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<14>RESET	

The printer is reset.

9 USER SYSTEM MODE

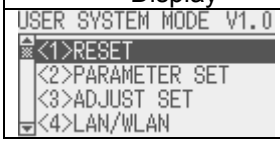
9.1 OUTLINE OF USER SYSTEM MODE

The printer enters the user system mode when the following operation is performed from the online state.

- Press the [PAUSE] key to place the printer in pause state, then hold down the [PAUSE] key.
- Hold down the [MODE] key.

The user system mode is intended for performing parameter and other settings.
The key operations for the user system mode are described below.

Key operations follow Section 7.1 LIST BOX WITH SCROLLBAR.

Display


Top menu for QM/QQ/CN model

English
<1>RESET
<2>PARAMETER SET
<3>ADJUST SET
<4>LAN/WLAN
<5>BASIC
<6>Z-MODE
<7>AUTO CALIB
<8>DUMP MODE
<9>LOG

<1>RESET	Same as 8.16 RESET of the system mode.
<2>PARAMETER SET	Same as 8.4 PARAMETER SET of the system mode
<3>ADJUST SET	Same as 8.5ADJUST SET of the system mode
<4>LAN/WLAN	Used to enable or disable the network device. The detailed settings for the network need to be done in the system mode.
<5>BASIC	Same as 8.10 BASIC of the system mode
<6>Z-MODE	Same as 8.14 Z-MODE of the system mode
<7>AUTO CALIB	Used to enable or disable the auto calibration function.
<8>DUMP MODE	Used to print or save the data sent from the host in USB memory.
<9>LOG	Used to save print logs in USB memory

9.2 RESET

Same as 8.16 RESET of the system mode.

Contents of RESET menu

MENU ITEM		Display pattern and key operation
USER SYSTEM MODE		7.1 LIST BOX WITH SCROLLBAR
	<1>RESET	

9.3 PARAMETER SET

Same as 8.4 PARAMETER SET of the system mode.

Contents of PARAMETER SET menu

MENU ITEM			Display pattern and key operation
USER SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<2>PARAMETER SET		
		PRINTER SET	
		SOFTWARE SET	
		PANEL	
		PASSWORD	

9.4 ADJUST SET

Same as 8.5 ADJUST SET of the system mode.

Contents of ADJUST SET menu

MENU ITEM				Display pattern and key operation
USER SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<3>ADJUST SET			
		FEED ADJ.		7.2 VALUE SETTING DISPLAY
		CUT ADJ.		
		BACK ADJ.		
		X ADJUST		
		TONE ADJ. (TRANS.)		
		TONE ADJ. (DIRECT)		
	(*1)	RBN ADJ.<FW>		
		RBN ADJ.<FW>		
			TYPE1	
			TYPE2	
	(*1)	RBN ADJ.<BK>		
		RBN ADJ.<BK>		
			TYPE1	
			TYPE2	
		THRESHOLD <REFL.>		
		THRESHOLD <TRANS.>		

*1: Parameters depend on the model.

Applicable model	Parameter	
B-EX4T1-G/T-QM/CN C1.2 or later B-EX4T2-G/T-QM/CN C1.2 or later B-EX4T2-H-QM/CN C1.1A or later B-EX4D2-G/T-QM/CN D1.1 or later	RBN ADJ.<FW>	TYPE1
		TYPE2
	RBN ADJ.<BK>	TYPE1
		TYPE2
Other than above	RBN ADJ.<FW>	
	RBN ADJ.<BK>	

* This parameter is not used for the B-EX4D2-G/T.

9.5 LAN/WLAN

Contents of LAN/WLAN menu

MENU ITEM			Display pattern and key operation
USER SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<4>LAN/WLAN		
		LAN/WLAN	
		SNMP	

9.5.1 LAN/WLAN

・OFF
・ON (AUTO)
・ON (LAN)
・ON (WLAN)

The printer status differs depending on whether the wireless LAN module is installed or not.

LAN connection	Wired LAN		Wireless LAN	
Wireless LAN module / Setting	Not installed	Installed	Not installed	Installed
OFF	Disabled	Disabled	Disabled	Disabled
ON (AUTO)	Enabled	Disabled	Disabled	Enabled
ON (LAN)	Enabled	Enabled	Disabled	Disabled
ON (WLAN)	Disabled	Disabled	Disabled	Enabled

9.5.2 SNMP

・OFF
・ON

9.6 BASIC

Same as 8.10 BASICof the system mode.

Contents of BASIC menu

MENU ITEM			Display pattern and key operation
USER SYSTEM MODE			7.1 LIST BOX WITH SCROLLBAR
	<5>BASIC		
		BASIC	
		FILE MAINTENANCE	7.3 INFORMATION DISPLAY
		TRACE	7.1 LIST BOX WITH SCROLLBAR
		EXPAND MODE	

9.7 Z-MODE

Same as 8.14 Z-MODE of the system mode.

Contents of Z-MODE menu

MENU ITEM		Display pattern and key operation
USER SYSTEM MODE		7.1 LIST BOX WITH SCROLLBAR
	<6>Z-MODE	

This menu is displayed only when the destination is other than JA.

9.8 AUTO CALIB

Contents of AUTO CALIB menu

MENU ITEM	Display pattern and key operation
USER SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<7>AUTO CALIB	

AUTO CALIB

- OFF
- ON TRANS.
- ON REFLECT
- ON ALL
- ON TRANS.+Bfeed

  NOTE: Since the head-up function is not provided to the B-EX4T2, B-EX6T2, and B-EX4D2, the setting and the printer behavior will be automatically changed to “ON TRANS.” even if “ON TRANS.+Bfeed” is selected for these models.

- ON REFLECT+Bfeed

  NOTE: Since the head-up function is not provided to the B-EX4T2, B-EX6T2, and B-EX4D2, the setting and the printer behavior will be automatically changed to “ON REFLECT” even if “ON REFLECT+Bfeed” is selected for these models.

- ON ALL+Bfeed

  NOTE: Since the head-up function is not provided to the B-EX4T2, B-EX6T2, and B-EX4D2, the setting and the printer behavior will be automatically changed to “ON ALL” even if “ON ALL+Bfeed” is selected for these models.

Explanation of printer behavior

1. When AUTO CALIB is enabled, an automatic calibration starts at an open/close of the print head and at a power on time.

2. When the automatic calibration is enabled, the media length, effective print length, sensor type and whether the ribbon is used or not are set, as follows.

   Printer behavior after automatic calibration is performed

<table>
<tr><th colspan="2"></th><th>QM/CN model</th><th>QQ model</th></tr>
<tr><td colspan="2">Whether the ribbon is used or not</td><td>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.)</td><td>Since this model is not provided with the ribbon mechanism, “No ribbon” is always selected.</td></tr>
<tr><td colspan="2">Sensor type</td><td colspan="2">After the automatic calibration is performed, the values obtained through the calibration will take effect after the calibration is completed. Afterward, the sensor specified by a command is ignored.</td></tr>
<tr><td rowspan="3">Media</td><td>Media pitch</td><td colspan="2" rowspan="3">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.)</td></tr>
<tr><td>Effective print length</td></tr>
<tr><td>Gap length</td></tr>
</table>

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

4. When the auto calibration with transmissive sensor is selected, the highest voltage detected by the feed gap sensor is considered as a gap level. After subtracting the threshold fine adjustment value from this voltage, the result will be adopted 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/black mark level. After subtracting the threshold fine adjustment value for each sensor from this voltage, the result will be adopted 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 detects 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 until the second black mark/gap is found. If it still cannot be detected, the printer will stop, resulting in a paper jam.

8. This function is available only when the media pitch is 10.0 mm to 150.0 mm.

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

10. When the automatic calibration is in operation, labels do not stop at a 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 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, this function does not result in an error. However, the print condition will be automatically changed to “No ribbon” after the calibration ends.

13. When “+ Bfeed” is selected, the printer feeds the media backward for the media pitch length while lifting the print head if the specified conditions are satisfied.

Hardware	Optional ribbon saving module (solenoid) is installed.
Parameter setting	RBN 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 power off or a printer reset.)
Caution	Even if the hardware requirement is not satisfied (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 it is set to be enabled.

9.9 DUMP MODE

Contents of DUMP MODE menu

MENU ITEM				Display pattern and key operation
USER SYSTEM MODE				7.1 LIST BOX WITH SCROLLBAR
	<8>DUMP MODE			
		BUFFER		
		DUMP LIST		
			USB MEMORY	7.3 INFORMATION DISPLAY
			PRINT	

9.9.1 BUFFER

- RS-232C RS-232C receive buffer
- CENTRO. Centronics receive buffer
- LAN Network I/F receive buffer
- BASIC1 BASIC Interpreter: I/F → Interpreter buffer
- BASIC2 BASIC Interpreter: Interpreter → I/F buffer
- USB USB receive buffer
- RFID RFID receive buffer

9.9.2 DUMP LIST

Output destination is selected.

9.9.2.1 USB MEMORY

Data in the receive buffer is saved in USB memory.

When the data is saved in USB memory, a file is automatically created in the USB memory and named in the following format based on the printer model and saved date

.

/ATA0/DUMP/ B-EX4T1_DUMP_1007291030.BIN

(B-EX4T Type 1 mode 2010-Jul-29 10:30)

If a file with the same name already exists in the USB memory, it will be overwritten.

In the case of the RS-232C and Centronics, a 0 KB file is output if the optional board is not installed.

When an error occurs during an access to the USB memory, the same message described in Section 8.15 USB MEMORYdisplayed.

The printer does not retry the operation after displaying the message.

9.9.2.2 PRINT

- ON DEMAND　Prints 166 lines of data (approx. 50 cm), then stops displaying “Printing…”.
  Pressing the [CANCEL] key causes the printing to stop and the display to return to the upper hierarchy menu.
  Pressing the [ENTER] (or any other key than [CANCEL]) restarts printing.
- ALL　Prints all data in the receive buffer page by page.

```
                                        :
                                        :
                                        :
                                        :
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
7B 41 58 3B 2B 30 30 30 2C 2B 30 30 30 2C 2B 30    {AX;+000,+000,+0
30 7C 7D 7B 44 30 37 37 30 2C 31 31 30 30 2C 30    0|}{D0760,1100,0
37 34 30 7C 7D 7B 43 7C 7D 7B 4C 43 3B 30 30 33    740|}{C|}{LC;003
30 2C 30 30 32 30 2C 30 30 33 30 2C 30 36 36 30    0,0020,0030,0660
2C 30 2C 32 7C 7D 7B 4C 43 3B 30 30 37 30 2C 30    ,0,2|}{LC;0070,0
30 32 30 2C 30 30 37 30 2C 30 36 36 30 2C 30 2C    020,0070,0660,0,
39 7C 7D 7B 4C 43 3B 30 30 35 30 2C 30 30 32 30    9|}{LC;0050,0020
                                        :
                                        :
                                        :
                                        :
44 45 46 47 48 49 4A 7C 7D 7B 50 43 31 30 3B 30    DEFGHIJ|}{PC10;0
33 35 30 2C 30 34 30 30 2C 31 2C 31 2C 4B 2C 30    350,0400,1,1,K,0
30 2C 42 3D 41 42 43 44 65 66 67 68 69 6A 6B 6C    0,B=ABCDefghijkl

6D 6E 6F 70 7C 7D 7B 50 56 30 32 3B 30 33 33 30    mnop|}{PV02;0330
2C 30 36 36 30 2C 30 32 37 30 2C 30 32 35 30 2C    ,0660,0270,0250,
41 2C 30 30 2C 42 3D 42 7C 7D 7B 50 56 30 33 3B    A,00,B=B|}{PV03;
                                        :
                                        :
                                        :
                                        :
3B 30 39 30 30 2C 30 31 38 30 2C 54 2C 48 2C 30    ;0900,0180,T,H,0
35 2C 41 2C 30 3D 31 32 33 34 35 36 37 38 39 30    5,A,0=1234567890
41 42 43 44 45 7C 7D 00 00 00 00 00 00 00 00 00    ABCDE|}.........
```

Print direction

Print conditions

Print width	Approximately 100mm
Sensor	None
Print speed	6 ips B-EX4T1-G, B-EX4T2-G, B-EX6T2-G, B-EX4D2-G 5 ips B-EX4T1-T, B-EX4T2-T, B-EX6T2-T, B-EX4D2-T 3 ips B-EX4T2-H
Print mode	Current setting

NOTE: For the B-EX4D2, the print mode is always set to the direct thermal.

16-byte data is printed on one line.

Data is printed, starting from the newest data to the older data.

Data pointed by the receive buffer write pointer is printed in bold type.

Size of receive buffer

	B-EX4T1, B-EX4T2, B-EX4D2, B-EX6T2 (except Japan model)	B-EX6T2 (Japan model only)
RS-232C:	1 MB (Max. 65536 lines)	6 MB (Max. 393216 lines)
Centronics:	1 MB (Max. 65536 lines)	6 MB (Max. 393216 lines)
Network I/F:	1 MB (Max. 65536 lines)	6 MB (Max. 393216 lines)
BASIC1:	8 KB (Max. 512 lines)	8 KB (Max. 512 lines)
BASIC2:	8 KB (Max. 512 lines)	8 KB (Max. 512 lines)
USB:	1 MB (Max. 65536 lines)	6 MB (Max. 393216 lines)
RFID	8 KB (Max. 512 lines)	8 KB (Max. 512 lines)

To print all of the receive buffer data, the label with the length below is required.

	B-EX4T1, B-EX4T2, B-EX4D2, B-EX6T2 (except Japan model)	B-EX6T2 (Japan model only)
RS-232C:	198.2 m (Other than 600 dpi) 198.6 m (600 dpi)	1189.2 m
Centronics:	198.2 m (Other than 600 dpi) 198.6 m (600 dpi)	1189.2 m
Network I/F:	198.2 m (Other than 600 dpi) 198.6 m (600 dpi)	1189.2 m
BASIC1:	2 m	2 m
BASIC2:	2 m	2 m
USB:	198.2 m (Other than 600 dpi) 198.6 m (600 dpi)	1189.2 m
RFID	2 m	2 m

If an error occurs when printing the receive buffer dump, the printer displays an error message, and stops. The error is cleared by pressing the [PAUSE] key, and the display is returned to the PRINT menu. Pressing the [MODE] key causes the display to return to the User System Mode top menu.
After the error is cleared, data is not automatically reprinted

9.10 LOG

Contents of LOG menu

MENU ITEM	Display pattern and key operation
USER SYSTEM MODE	7.1 LIST BOX WITH SCROLLBAR
<9>LOG	
PRINTER TO USB	

9.10.1 PRINTER TO USB

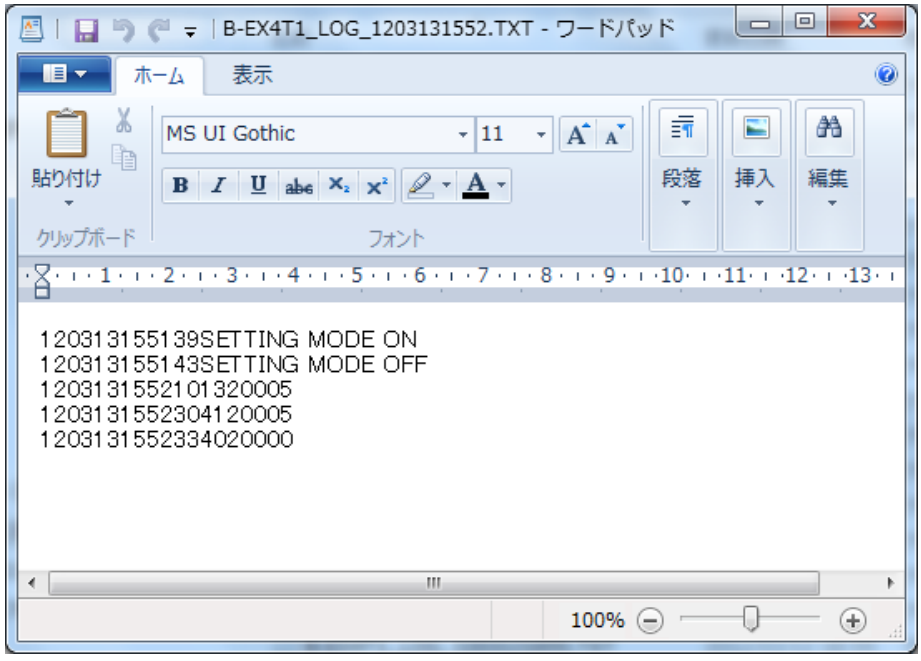
Print logs are saved in USB memory.

When the print logs are saved in the USB memory, a file is automatically created in the USB memory and named in the following formatted based on the printer model and saved data.

/ATA0/LOG/B-EX4T1_LOG_1007291030.TXT
(B-EX4T Type 1 mode 2010-Jul-29 10:30)
If a file with the same name already exists in the USB memory, it will be overwritten.

When an error occurs during an access to the USB memory, the same message described in 8.15 USB MEMORY is displayed.
The printer does not retry the operation after displaying the message.

When a generated log file is opened on a PC, the print logs are shown in the following example.



NOTES:
1. Since “LF” is used as the line feed code in generated log files, lines may not be properly changed depending on the text editor used.
2. Generated log files are saved as text files.

Print log format

The following tables show the format of a print log.

<CASE 1>
YYMMDDhhmmssAABCCCC

Log	Description
YY	Year (00 to 99)
MM	Month (01 to 12)
DD	Day (01 to 31)
hh	Hour (00 to 24)
mm	Minute (00 to 59)
ss	Second (00 to 59)
AA	Detailed status For details, refer to Section 8 Status Response in the B-EX Series External Equipment Interface Specification.
B	Status type (Fixed to 2: Automatic status transmission)
CCCC	Remaining labels to print (0000 to 9999)

<CASE 2> When the B-EX Setting Tool is used
YYMMDDhhmmssZZZ …ZZZ

Log	Description
YY	Year (00 to 99)
MM	Month (01 to 12)
DD	Day (01 to 31)
hh	Hour (00 to 24)
mm	Minute (00 to 59)
ss	Second (00 to 59)
ZZZ … ZZZ	Log message Capital letter (115 digits) Message list (2 types) SETTING MODE ON SETTING MODE OFF Description of message SETTING MODE ON (When the printer shifts to the parameter setting mode) ・The printer shifts to the parameter setting mode when the printer information is obtained with the parameter setting menu of the setting tool. ・The printer shifts to the parameter setting mode when the printer information is obtained with the maintenance menu of the setting tool. SETTING MODE OFF (When the printer exits from the parameter setting mode) ・After the printer information is obtained with the parameter setting menu, the printer is restored to online mode and the printer exists from the parameter setting mode. ・After the printer information is obtained with the maintenance menu, the printer exits from the parameter setting mode.

NOTE:

In the case the printer information, which was obtained with the parameter setting menu of the B-EX Setting Tool, is updated, a reboot of the printer will be prompted when the printer is restored to online mode. As the print log is cleared when the printer is rebooted, the parameter settings should not be updated before saving the print log. For details, refer to the B-EX Setting Tool Operation Manual.

<CASE 3> B-EX4T1 Japan model with firmware V1.0I only
YYMMDDhhmmssPR,AAAAAAAA,BBBBBBBB,CCCC,DDDD,EEEE,FF,GGGGGG,HHHHHHHH,II,JJ,KKK …KKK,LLL…LLL,MMMMMMMM,NNNN,OOOO,PPPP

Log	Description
YY	Year (00 to 99)
MM	Month (01 to 12)
DD	Day (01 to 31)
hh	Hour (00 to 24)
mm	Minute (00 to 59)
ss	Second (00 to 59)
PR	Define character (fixed to “PR”)
AAAAAAAA	Ambient temperature
BBBBBBBB	Print tone fine adjustment value
CCCC	Print tone fine adjustment value (thermal transfer)
DDDD	Print tone fine adjustment value (direct thermal)
EEEE	Power voltage
FF	Head voltage rank
GGGGGGGG	Print head temperature
HHHHHHHH	Print ratio
II	Supply type (thermal transfer)
JJ	Supply type (direct thermal)
KKK … KKK	Energizing time (4-digit data x 9, which are comma-separated)
LLL … LLL	Contribution ratio (2-digit data x 16, which are comma separated)
MMMMMMMM	Chopping section
NNNN	Chopping negation time
OOOO	Chopping cycle
PPPP	Power supply pattern

<CASE 4>
ZZZ …ZZZ (Those not applicable to the above-mentioned CASES 1 to 3)

Log	Description
ZZZ … ZZZ	Print log output from the OS. The contents vary case by case.

Print Log Size

Print logs are stored in two files in the RAM, and they are unified into one when saved in a USB memory. The maximum log size of each file in the RAM is 10KB. If the log size exceeds 10KB, the oldest file will be erased to create a new file. So, the maximum size of log files that can be saved in a USB memory is 20KB.

NOTE: For the B-EX4T1 JP model with firmware V1.0I, the size of log file that can be stored in the RAM is up to 100KB, and in a USB memory is up to 200KB, respectively.

Timing for Resetting Print Log

- When the printer is reset by executing the reset menu in the user system mode or by sending a Reset Command (excluding the Reset Command {WR|})
- When the printer power is turned off and back to on

  Errors which are not restorable with a depression of the [RESTART] key can be cleared only by turning the printer off and on. Therefore, the log of such errors cannot be saved in a USB memory.
  Refer to Section 6.8 LCD Messages and LED Indications for non-restorable errors.

Timing for Saving Print Log in USB Memory

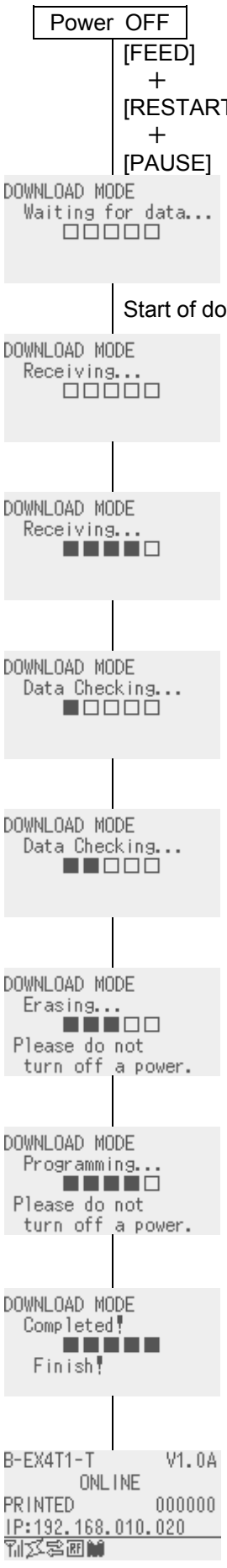
- After executing PRINTER TO USB menu, the print log is saved in a USB memory.
  The information to be saved only includes the statuses automatically transmitted (excluding the non-restorable error statuses) and shift to/exit from the parameter setting mode.
  For details of the automatic status transmission, refer to Section 8 Status Response in the B-EX Series External Equipment Interface Specification.

Example of print log saved in a file

120313155139SETTING MODE ON	(Shift to the parameter setting mode)
120313155143SETTING MODE OFF	(Exit from the parameter setting mode)
1203131552101320005	(Paper end with 5 labels unprinted)
1203131552304120005	(Reprint: Initial feed was performed.)
1203131552334020000	(Printing normally ended.)

The above print log indicates the following printer actions occurred:
The printer ran out of the labels when 5 out of 10 labels had been printed. Then, a new label stock was loaded, the [RESTART] key was pressed, and printing was restarted.

10 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 is 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 rebooted, and placed in the online state.

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

When an error occurs while downloading in the download mode, the following error message is 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:

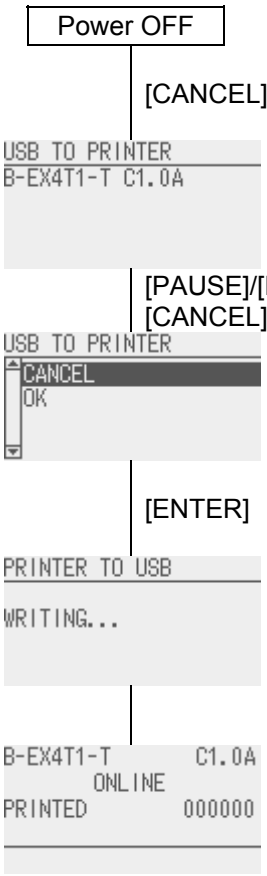
1. When an error occurs, the printer stops and never recovers unless the power is turned off and on.
2. After a write error occurs, turning the printer off and back to on causes "DOWNLOAD MODE" to be displayed and the printer to enter the download mode. The program needs to be downloaded again.
3. While "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 with error.
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. Holding down the [FEED]+[RESTART]+[PAUSE] keys at the timing of printer reset, initiated by executing the reset function in the system mode or user system mode, causes the forced download mode display to appear 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.

11 Auto Configuration Mode

11.1 Outline of the Auto Configuration Mode

Turning on the printer while holding down the [CANCEL] key causes the printer to enter auto configuration mode .

The auto configuration mode allows for automatically downloading the master firmware and restarting the printer. To enter the auto configuration mode, an optional RTCUSB host, a USB memory, and proper CFG file must be prepared. Failure to do this disables the printer to enter the auto configuration mode. Instead, the printer will start in the online mode.



(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 be placed in the online state

11.2 Preparation for USB Memory

To execute the auto configuration mode, the firmware file (*.bin) to 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 causes the printer to start in the online mode.

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

Example: When BOOT/MAIN/CG 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

11.3 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 under the following path under the name of “AUTO CONFIG.CFG”.

/ATA0/SYSTEM/AUTOCONFIG.CFG

11.3.1 Format

Auto configuration file has the following formats.

B-EX4T1-G,0020	Model information
B-EX4T1-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

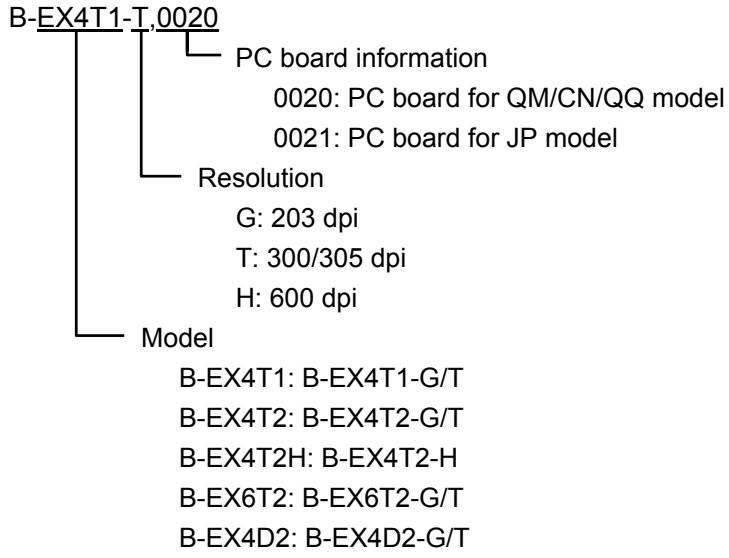
11.3.2 Model Information

Applicable model’s information is stored.

The information is comma separated. The first half is the model name (the above example indicates B-EX4T Type 1 203-dpi model) and the last 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:



11.3.3 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.

11.3.4 Firmware File to be Downloaded

Name of the file to be downloaded.

12 Power Save Function

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.

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

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 following operations 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.

Conditions for allowing usual messages to be displayed in the power save mode

When the following occurs in the power save mode, the LCD wakes up.

- A key is pressed in (Except for [RESTART] or [FEED] key which causes printing or paper feed)
- 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.)

Message in the power save mode

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

Multi-language	Online mode (except for manual threshold setting)
Japanese/English	System mode, User system mode and manual threshold setting in online mode

Power save mode display

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.

Display
POWER SAVING MODE

Conditions for displaying “POWER SAVING MODE” again

When the power save mode is continued and there is no printer status change, such as head lock lever lock/unlock, 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 on the condition no printer operation is done.

Conditions for exiting the power save mode

The power save mode is terminated when:

- Printing is performed.
- Printing is caused by a depression of the [RESTART] key
- Paper feed/re-print is caused by a depression of the [FEED] key
- 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.
- The printer receives T command.
- The printer receives XS command.
- The printer receives IB command.
- The printer receives RFID-related command accompanied by printer action
- Automatic calibration is performed with the head lever locked.
- Up and down of the solenoid is tested during the Factory Adjust menu in the system mode
- Sensor adjustment is performed in the system mode.