USER'S MANUAL

for

MODEL **PB2320**

INFORMATION DISPLAY PAGER

Oi Electric Co., Ltd.
Yokohama. JAPAN
Feb. 1999

Description

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interfernce, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacture for compliance could void the user's authority to operate the equipment.

NOTE : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Parts 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does not harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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1. Pager Controls

No.	Name	Symbols Used in Doc.	Contents
1	POWER	PW	• power on / off • escape
2	SELECT	SEL	• select item • execute • turn on back light
3	UP	▲	• scroll up • increase value • turn over menu
4	DOWN	▼	• scroll down • decrease value • turn over menu
5	RIGHT	▶	• change to right item
6	LEFT	◀	• change to left item
7	PLAY	▶/■	• play voice message
8	FORWARD	▶▶	• change to next message
9	BACKWARD	◀◀	• change to previous message

These symbols are used to fill out this document.

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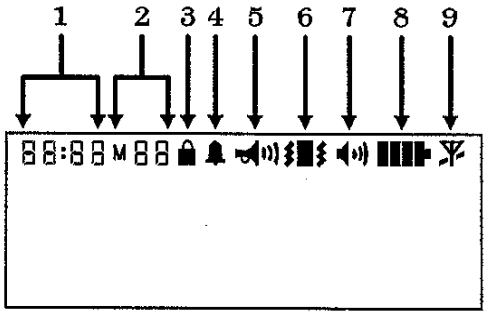
2. Display Screen

2.1. Icons



No.	Name	Contents
1	CLOCK	hh : mm in 12 hours format
2	MESSAGE NUMBER	• number of stored message • displaying message's number
3	KEY LOCK	keys are locked
4	ALARM	alarm clocks or sleep period are set
5	BEEPING VOLUME	• beeping volume level • audible alert is set
6	VIBRATOR	silent alert is set
7	VOICE VOLUME	voice message playing volume level
8	BATTERY LEVEL	
9	ANTENNA	

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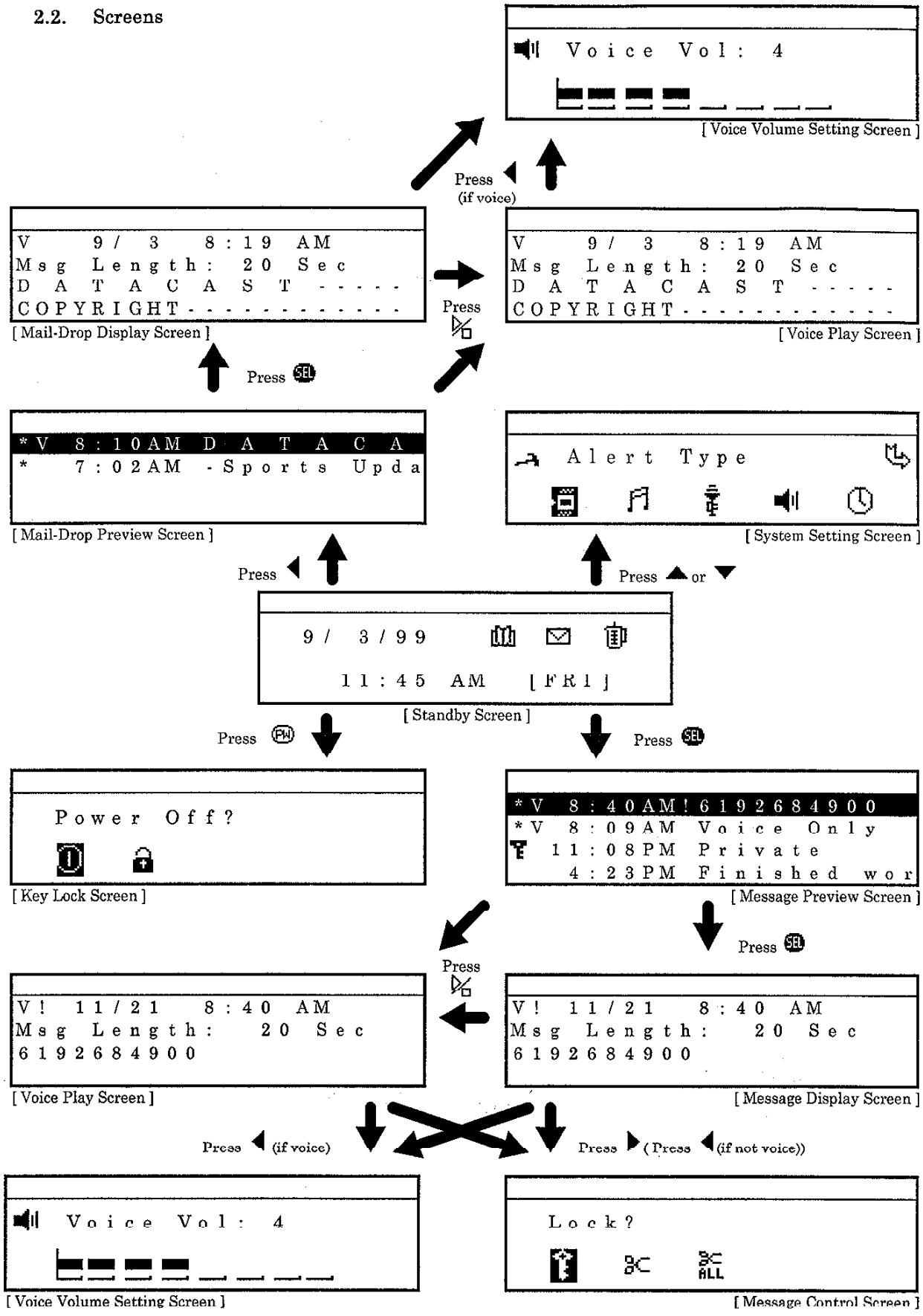
2.2. Screens



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Screen	Symbols	Name
Standby		Unread Normal Message
		Unread Mail-Drop
		Message Volume(=0)
		Message Volume(=1/4)
		Message Volume(=1/2)
		Message Volume(=3/4)
		Message Volume(=1)
Key Lock		Power Off
		Key Lock
System Setting		System Setting
		Next Page
		Alert Type
		Notice Tone
		Voice Volume
		Tone Volume
		System Clock
		Alarm Clock
		Sleep Period
		LCD Contrast

The Unread Normal Message symbol indicates that at least one received normal message has not been accessed. This symbol is cleared when all messages have been read. If the pressed during message display however, the message is treated as unaccessed. The Unread Mail-Drop Message symbol is the same for the mail-drop messages.

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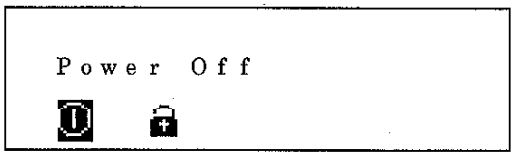
3. The Basic Operations

3.1. Turning the Pager ON

- Press PW for 1 seconds

3.2. Turning the Pager OFF

- Press PW on the Standby Screen
- Select ⏻ (Power Off) by pressing SEL



3.3. Turning on the Back Light

- Press SEL for 1 second

3.4. Waking up from Power Save Mode

When the pager are ON and left for 2 minutes without operating, message receiving, or alarming, it gets into a power save mode and displays nothing except icons. The pager wakes up from this mode by pressing any key for 1 second, message receiving, alarm clock time out, or BLD (Battery Low voltage Detection).

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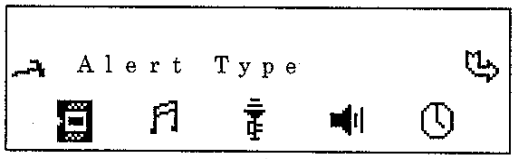
3.5. Setting the Alert Type

You can select the alert type between "none", "audible", and "silent". Any type has been selected, the LED blinks when alerting.

- **Press ▼ or ▲ on the Standby Screen**



- **Select (Alert Type Setting) by pressing SEL**

  The current setting is highlighted.

- **Change the option by pressing ◀ or ▶**

  The highlighted position moves to left or right.

- **Select an alert type (None), (Audible), (Silent) by pressing SEL**

  If you don't need to change the setting, press PW.

- **Press PW**

  The pager moves back to the Standby Screen.

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3.6. Setting the Alert Volume

- **Press ▼ or ▲ on the Standby Screen**

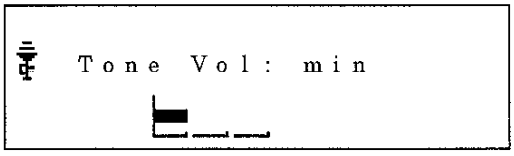
  The System Setting Menu is displayed.

- **Change the option by Pressing ◀ or ▶**

  The highlighted position moves to left or right.

- **Select (Alert Volume) by pressing SEL**

  The current setting is shown.



- **Change the volume by pressing ◀ or ▶**

  The setting changes in order.

  You can hear a sample tone at the displaying volume level.

- **Set the volume by pressing SEL**

  If you don't need to change the setting, press FW.

  The pager moves back to the System Setting Menu.

- **Press FW**

  The pager moves back to the Standby Screen.

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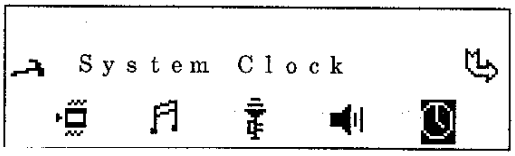
3.7. Setting the Clock

- **Press ▼ or ▲ on the Standby Screen**

  The System Setting Menu is displayed.

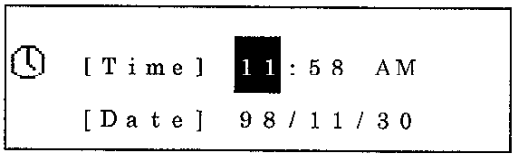
- **Change the option by Pressing ◀ or ▶**

  The highlighted position moves to left or right.



- **Select (System Clock) by pressing SEL**

  The current setting is shown.

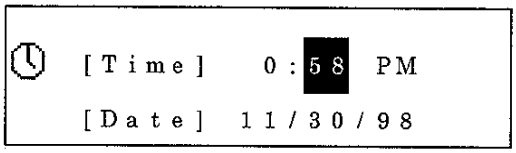


- **Change the hour by pressing ▼ or ▲**

  The setting changes in order.

- **Move the cursor by pressing ▶**

  The cursor moves to the minute.

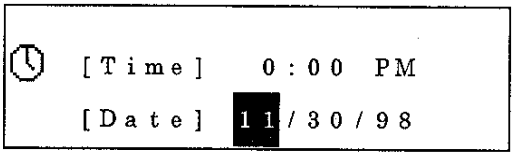


- **Change the minute by pressing ▼ or ▲**

  The setting changes in order.

- **Move the cursor by pressing ▶**

  The cursor moves to the month.



- **Change the month, day, and year in the same way**
- **Set the clock by pressing SEL**

  If the set date is out of the calendar month, the pager displays an error message, and you have to set the date again.

  If you don't need to change the setting, press PW.

  The pager moves back to the System Setting Menu.

- **Press PW**

  The pager moves back to the Standby Screen.

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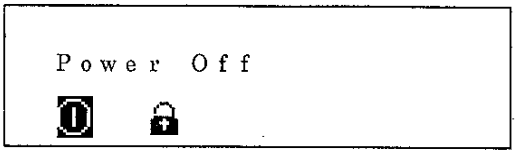
3.8. Locking and Unlocking the Buttons

When the key lock mode is enabled, all the buttons don't work except the PW on the Standby Screen. If a new message has arrived or the time for alarm has come, the buttons are unlocked automatically.

You can lock and unlock the buttons in the same way.

- **Press PW on the Standby Screen**



- **Select (Key Lock) by pressing SEL**

  If you don't need to change the setting, press PW.

  The pager moves back to the Standby Screen.

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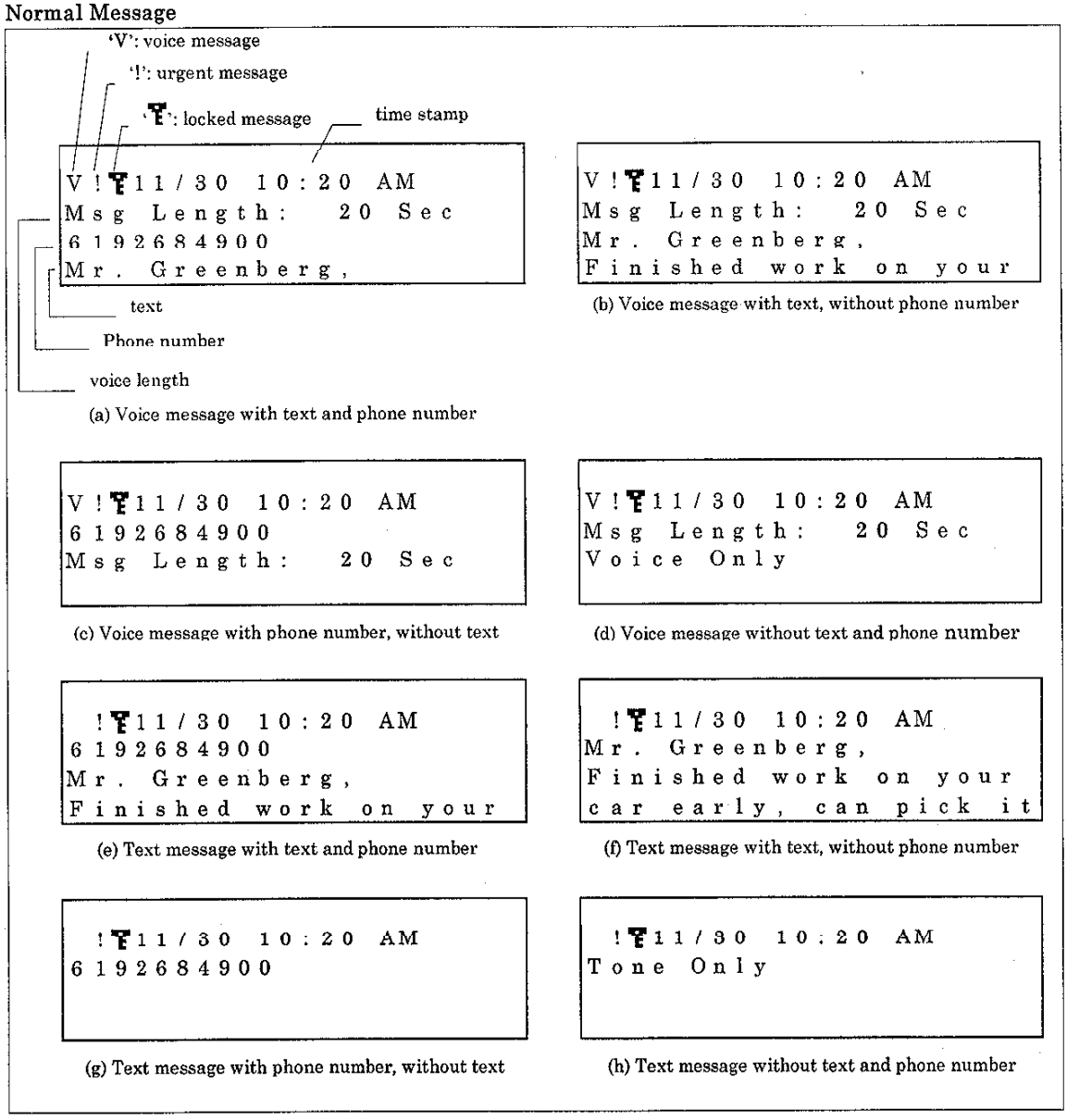
4. Reading Messages

4.1. Normal Messages and Mail-Drop Messages

The pager can have a maximum of 16 addresses, Address A to Address P in alphabetical order. A maximum of 8 in the 16 addresses is used for the mail-drop message. When the pager receives a new mail-drop message, it overwrites the new message on the old one which has the same address. A user can not delete or protect the mail-drop messages.

When the pager has received a new normal message, it displays the message automatically, and gives notice to a user according to the alert setting. When it has received a new mail-drop message, on the contrary, it doesn't display the message automatically, and doesn't give notice to user. But if the pager has been displaying a mail-drop message and receives a new one having the same address, the pager changes displaying message to the new one.

Normal Message



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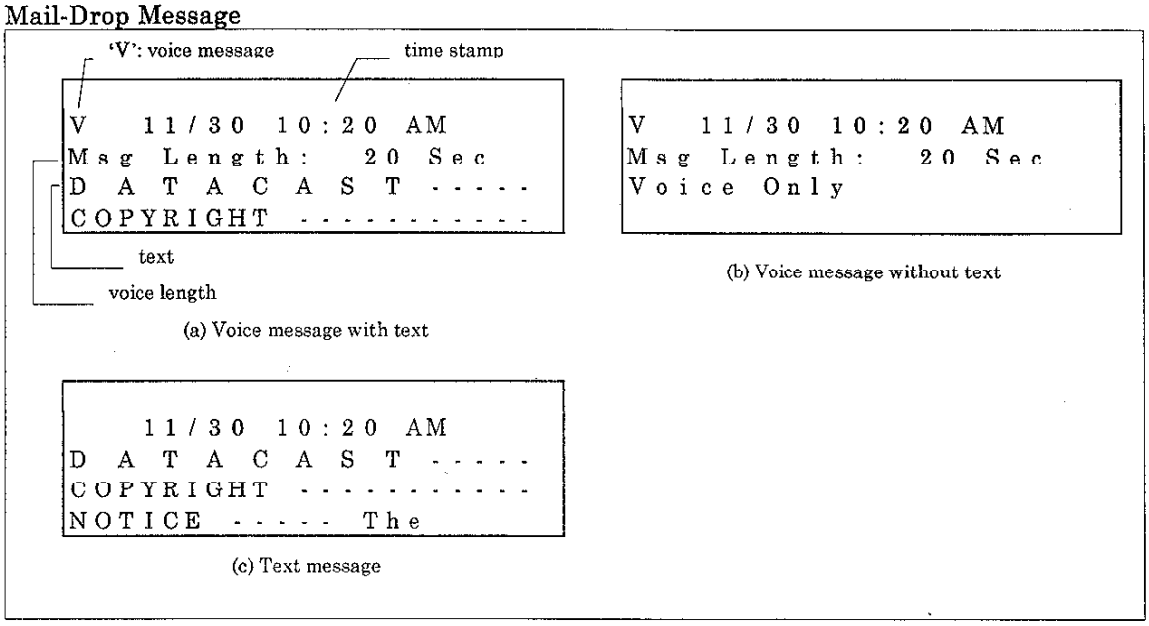
Mail-Drop Message



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4.2. Reading and Playing a New Message

When the pager receives a new normal message, displays it automatically, and gives notice to user with blinking LED and / or a tone or vibration according to the alert setting.

- **Press any key when the pager signals the arrival of a new message**

  The pager stops the signals.

- **Read the message**

  If the message is more than one page long, you can read the rest of the message by pressing ▼. Press ▼ to scroll the message down, and press ▲ to scroll up when you read the message. The pager considers the message as read by pressing these keys.

If the message is a voice message

- **Play the voice message by pressing** 🔊

  You can hear the voice message. Press 🔊 again to stop playing.

- **Press** SEL **or** PW

  The pager move back to the Message Preview Screen. The pager considers the message as read by pressing SEL.

- **Press** PW

  The pager moves back to the Standby Screen.

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4.3. Preview Screens

The pager displays message attributes and phone numbers (only for normal messages) or begging of text of four messages at once. You can select a message to read and play in this screen.

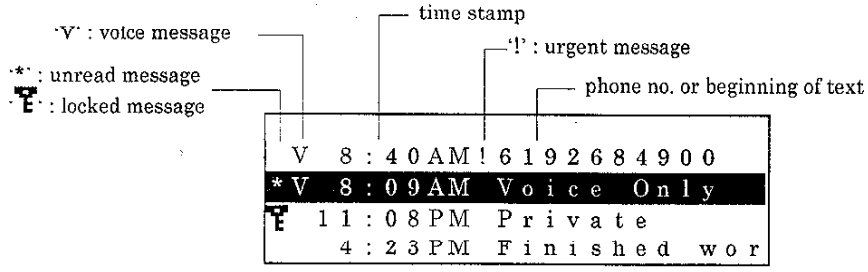
There are two preview screens, Message Preview for normal messages, and Mail -Drop Preview for mail-drop messages.

(1) Message Preview for Normal Messages

The message previews are displayed in order of received time. Upper line is later message. A highlighted line is a message to display or play.

- **Press SEL on the Standby Screen**

If there is a normal message, the pager moves to the Message Preview screen, and highlights the latest unread message if it has, otherwise highlights the latest message.



- **Changing the highlighted message**

[Change by One Line] The highlighted line moves up by pressing ▼, moves down by ▲.

[Change by One Page] Older message's page is displayed by pressing ▶, and the top line is highlighted. If there is no older page, the display doesn't change.
Later message's page is displayed by pressing ◀, and the most upper line is highlighted. If there is no later page, the display doesn't change.

[Page Jump] The Oldest message's page is displayed by pressing ▶ for 1 sec, and the most bottom line is highlighted. If there is no older page, the display doesn't change.
The latest message's page is displayed by pressing ◀ for 1 sec, and the top line is highlighted. If there is no later page, the display doesn't change.

- **Select a message**

[Display Message] The highlighted message is displayed by pressing SEL.

[Play Voce Message] The highlighted message is displayed by pressing . If the message is a voice message, the pager starts playing the voice.

The pager considers the message as read by pressing these keys.

- **Press PW**

The pager moves back to the Standby Screen.

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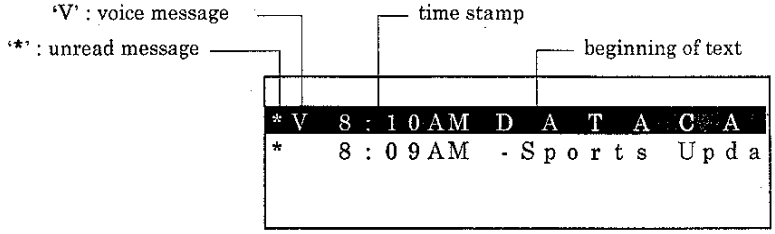
(2) Mail-Drop Messages

The message previews are displayed in order of received time. Upper line is later message. A highlighted line is a message to display or play.

- **Press ◀ on the Standby Screen**

If there is a mail-drop message, the pager moves to the Message Preview screen, and highlights an unread message if it has, otherwise highlights the latest message.



- **Changing the highlighted message**

  Same operation with the Message Preview.

- **Select a message**

  Same operation with the Message Preview.

- **Press** (FW)

  The pager moves back to the Standby Screen.

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4.4. Reading and Playing the Stored Normal Messages

A normal message has a message number in order of arrival. The latest message has the largest number.

- **Select a normal message to read on the Message Preview Screen**

  See above section of the "Preview Screens".

- **Read the message**

  If the message is displayed one page over, you can read the rest of the message by pressing ▼. Press ▼ to scroll the message down, and press ▲ to scroll up when you read the message. The pager considers the message as read by pressing ▼ or ▲.

If the message is a voice message

- **Play the voice message by pressing** ▷□

  You can hear the voice message. Press ▷□ again to stop playing. The pager considers the message as read when finishes up playing the voice.

- **Changing message**

  By pressing ◁◁, the pager changes displaying message to later message. If it is after playing operation and the message is a voice message, the pager plays the voice. If the message isn't a voice message, the pager makes a sound instead of voice.

  By pressing ▷▷, the pager changes displaying message to older message. If it is after playing operation and the message is a voice message, the pager plays the voice. If the message isn't a voice message, the pager makes a sound instead of voice.

- **Press SEL or PW**

  The pager move back to the Message Preview Screen.

  The pager considers the message as read if SEL is pressed.

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4.5. Reading and Playing the Stored Mail-Drop Messages

- **Select a mail-drop message on the Mail-Drop Preview Screen**

  See above section of the "Preview Screens".

Reading or playing operations are same with normal message.

See the above section of the "Reading and Playing the Stored Normal Messages".

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4.6. Playing the Voice Message in the Enhanced Mode

The pager can play the voice message in the 'Enhanced Mode'. In the 'Enhanced Mode', the pager starts to play the voice message again from the beginning at 80 % of normal speed and the volume level is increased by two levels.

- **Play the voice message**

  See above section of the "Reading and Playing the Stored Normal Messages" or "Reading and Playing the Stored Mail-Drop Messages".

- **Press for 1 second while playing**

  The pager stops playing and starts playing the voice again from the beginning in the enhanced mode.

4.7. Setting the Voice Volume from Message Displaying Screens

When the pager is displaying a voice message, you can change the voice volume setting to play. The setting has 8 levels.

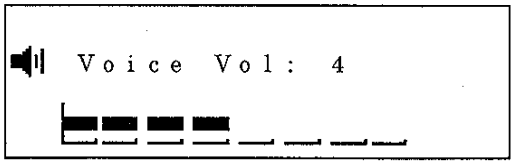
- **Select a voice message**

  See above section of the "Reading and Playing the Stored Normal Messages" or "Reading and Playing the Stored Mail-Drop Messages".

- **Press ◀**

  This operation is available for displaying a voice message and not playing.

  The pager moves to the Voice Volume Setting screen, and displays current setting.



- **Change the setting by pressing ◀ or ▶**

  The pager makes a sound with the displaying volume level.

- **Set the volume by pressing SEL**

  If you don't need to change the setting, press PW.

  The pager moves back to message displaying screen.

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4.8. Locking Messages for Protection

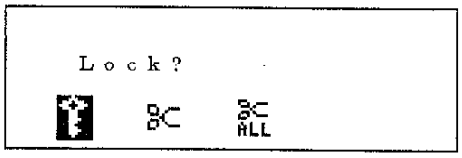
Only normal messages can be locked. The locked messages does not be deleted. You can lock by 10 message.

- **Display the normal message to lock**

  See above section of the "Reading and Playing the Stored Normal Messages"

- **Press ▶**

  The pager displays the Message Control Screen.



- **Select (Lock) by pressing SEL**

  The message is locked. **If you don't need to protect the message, press PW.**

  If 10 messages have been locked and you try to lock more, the pager gives warning of this. You would lock the message after unlock another locked one.

  The pager moves back to the Message Preview Screen.

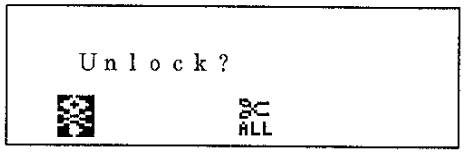
4.9. Unlocking locked Messages

- **Display the normal message to unlock**

  See above section of the "Reading and Playing the Stored Normal Messages"

- **Press ▶**

  The pager displays the Message Control Screen.



- **Select (Unlock) by pressing SEL**

  The message is unlocked. **If you don't need to unlock the message, press PW.**

  The pager moves back to the Message Preview Screen.

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4.10. Deleting a Normal Message

You can delete an unlocked message. Only normal messages can be deleted.

- **Display a unlocked normal message to delete**

  See above section of the "Reading and Playing the Stored Normal Messages"

- **Press ▶**

The pager displays the Message Control Screen. If the pager displays "Unlock ?" here, the message is locked. You should do again after unlock.

- **Change the option by Pressing ◀ or ▶**

  The highlighted position moves to left or right.

- **Select ✂ (Delete) by pressing SEL**

  The pager counts down for about 10 sec.

- **press SEL for 1 sec (while counting)**

  The message is deleted. **If you don't need to delete the message, press PW.** If the pager ends counting, it doesn't delete the message.

After deleted (some normal message are remaining)

The pager moves to the Message Preview Screen.

After deleted (no normal message is remaining)

The pager moves to the Standby Screen.

Not deleted

The pager remains on the Message Control Screen. If you don't need to delete the message, press PW. **Then the pager moves back to the message displaying screen.**

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4.11. Deleting All Normal Messages

You can delete all unlocked messages. The locked messages are never deleted.

- **Display a normal message**

  See above section of the "Reading and Playing the Stored Normal Messages".

- **Press ▶**
- **Change the option by pressing ◀ or ▶**

  The highlighted position moves to left or right. A case of unlocked message is given below.

- **Select ALL (Delete All) by pressing SEL**

  The pager counts down for about 10 sec.

- **press SEL for 1 sec (while counting)**

  All unlocked messages are deleted. **If you don't need to delete any messages, press PW.** If the pager ends counting, it doesn't delete any messages.

After deleted (some normal message are remaining)

The pager moves to the Message Preview Screen.

After deleted (no normal message is remaining)

The pager moves to the Standby Screen.

Not deleted

The pager remains on the Message Control Screen. If you don't need to delete any messages, press PW. Then the pager moves back to the message displaying screen.

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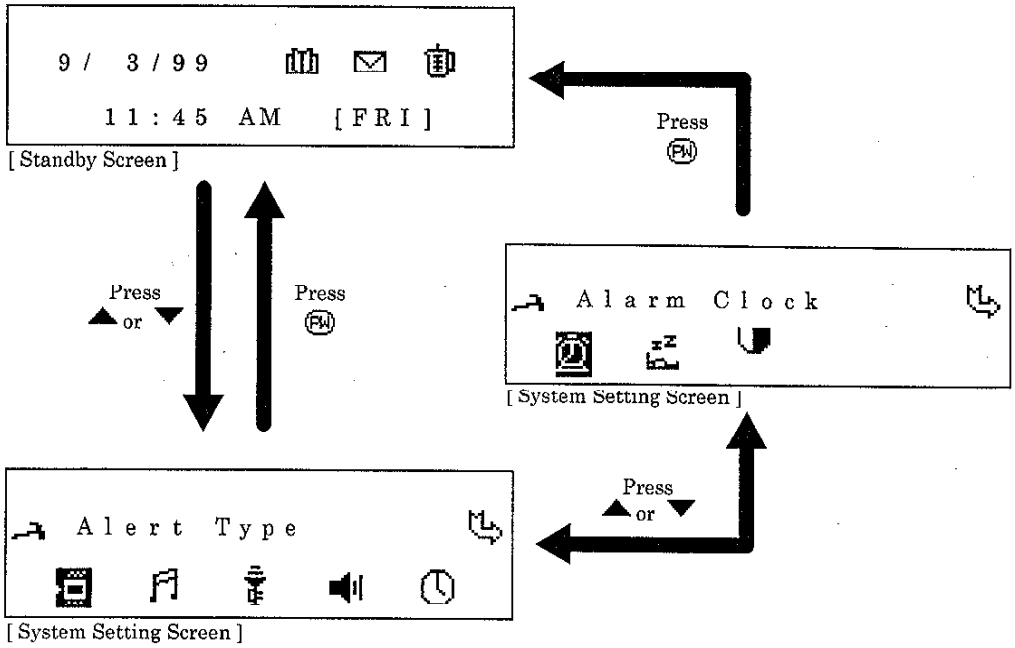
5. System Settings



	Alert Type Setting *
	Notice Tone Setting
	Tone Volume Setting *
	Voice Volume Setting
	System Clock Setting *

	Alarm Clock Setting
	Sleep Period Setting
	LCD Contrast Setting

*** : See Section 3 "Basic Operations".**

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5.1. Setting the Notice Tone

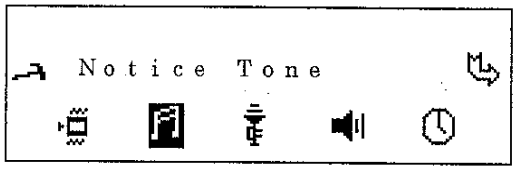
You can choose a notice tone out of 10 for the message arrival.

- **Press ▼ or ▲ on the Standby Screen**

  The pager displays the System Setting Menu.

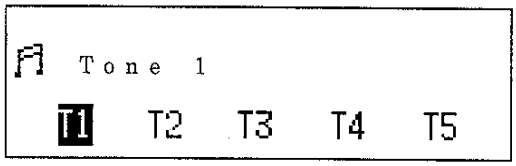
- **Change the option by pressing ◀ or ▶**

  The highlighted position moves to left or right.



- **Select (Notice Tone Setting) by pressing SEL**

  The current setting is highlighted.



- **Change the option by pressing ◀ or ▶**

  The highlighted position moves to left or right, and the pager makes sounds of the tone.

- **Select a tone by pressing SEL**

  If you don't need to change the setting, press FW.

  The pager moves back to the system setting menu.

- **Press FW**

  The pager moves back to the Standby Screen.

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5.2. Setting the Voice Volume

You can adjust the voice playing volume by 8 levels. There are two ways to set the volume, from the Setting Screen or a message displaying screen.

(1) From the System Setting Screen

- **Press ▼ or ▲ on the Standby Screen**

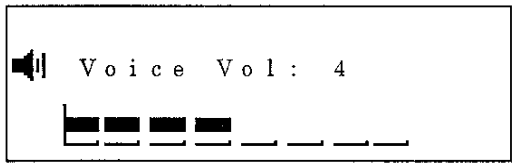
  The pager displays the system setting menu.

- **Change the option by pressing ◀ or ▶**

  The highlighted position moves to left or right.

- **Select (Voice Volume Setting) by pressing SEL**

  The current setting is displayed.



- **Change the setting by pressing ◀ or ▶**

  The pager makes a sound with the displaying volume level.

- **Set the volume by pressing SEL**

  If you don't need to change the setting, press PW.

  The pager moves back to the system setting menu.

- **Press PW**

  The pager moves back to the Standby Screen.

(2) From Message Displaying Screens

See above section of the "Setting the Voice Volume From Message Displaying Screens".

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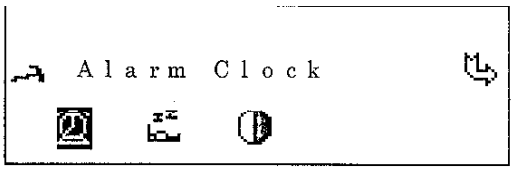
5.3. Setting the Alarm Clock

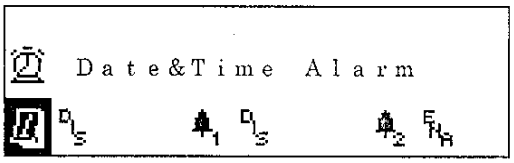
The pager has three alarm clocks, one Date & Time alarm and two Daily alarms. The Date & Time alarm gives the alarm at set time on set date. The Daily alarm gives the alarm at set time on set day of the week. The way to give the alarm is according to alert setting. If the sleep period has been set and it is in the period, however, the alarms don't give the alarm except LED blinking even when the alarm time comes.

- **Press ▼ or ▲ on the Standby Screen**
- **Turn the page by pressing ▼ or ▲**



- **Select (Alarm Clock Setting) by pressing SET**

The alarm menu is displayed. The Date & Time Alarm is highlighted. You can see the alarms are ENABLED or DISABLED. The alarm works when its status is set ENABLED.



To set an alarm clock, select it on this menu. To end up the setting, press FW.

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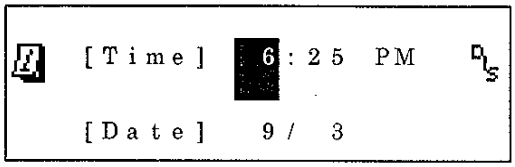
(1) Setting the Date & Time alarm

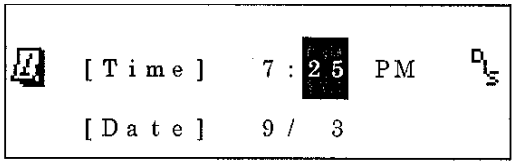
- **Select (Date & Time Alarm Setting) by pressing SEL**

  The current setting is displayed. The "hour" is highlighted.



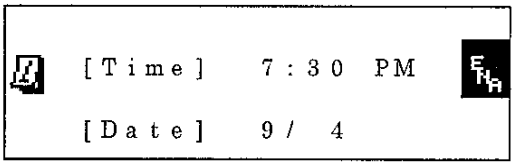
- **Change the hour by pressing ▼ or ▲**
- **Move the cursor by pressing ▶**

  The cursor moves to the "minute".



- **Change the minute by pressing ▼ or ▲**
- **Change the month and the day in the same way**
- **Move the cursor to the alarm status by pressing ▶**
- **Change the status ENA (Enabled) by pressing ▼ or ▲**

The time alarm works when the status is set ENA (enabled). If you want to disable the alarm, set the status to DIS (disabled) here.



- **Set the alarm by pressing SEL**

  If you don't need to change the setting, press PW.

  The pager moves back to the menu.

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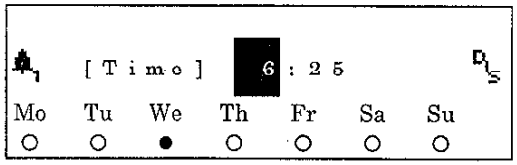
(2) Setting the Daily Alarm

There are Daily Alarm 1 and 2. The operation to set these alarm clocks is same. The case of Daily Alarm 1 would be described here.

- **Select 1 (Daily Alarm 1 Setting) by pressing SEL**

  The current setting is displayed. The "hour" is highlighted.



- **Change the hour by pressing ▼ or ▲**
- **Move the cursor by pressing ▶**

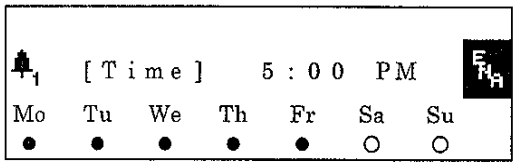
  The cursor moves to the "minute".

- **Change the minute by pressing ▼ or ▲**
- **Move the cursor to Monday status by pressing ▶**
- **Set the status ● (ON) or ○ (OFF) by pressing ▼ or ▲**

  In this way, you can disable or enable the daily alarm for each day of the week.

- **Move the cursor to the alarm status**
- **Set the status ENA (Enabled) by pressing ▼ or ▲**

  If you want to disable the alarm, set the status to DIS (disabled) here.



- **Set the alarm by pressing SEL**

  If you don't need to change the setting, press PW.

  At least one status of the days should be on, or you can't set the alarm and the pager will display 'Set Error'.

  The pager moves back to the menu.

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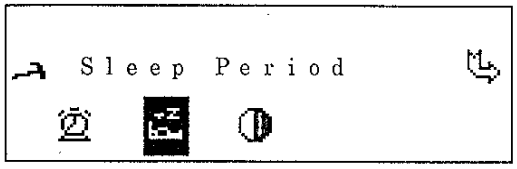
5.4. Setting Sleep Period

If the pager receives a new message, it doesn't give a signal with sound and vibration but blinking LED light during the sleep period. And it never makes any sound except sample tone on volume setting, playing voice, and text indication.

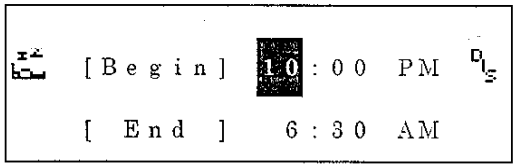
- **Press ▼ or ▲ on the Standby Screen**

  The system setting menu is displayed.
- **Turn the page by pressing ▼ or ▲**
- **Change the option by pressing ◀ or ▶**



- **Select (Sleep Period Setting) by pressing SEL**

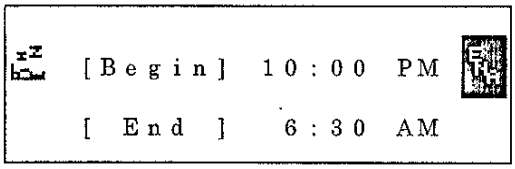
  The current setting is displayed, and "hour" of the [begin] is highlighted.



- **Change the beginning hour by pressing ▼ or ▲**
- **Move the cursor by pressing ▶**

  The cursor moves to "minute" of the [Begin].
- **Change the beginning minute by pressing ▼ or ▲**
- **Move the cursor by pressing ▶**

  The cursor moves to "hour" of the [End].
- **Change the hour and minute of the [End] in same way**
- **Move the cursor to the sleep period status**
- **Set the status to (Enabled) by pressing ▼ or ▲**



The sleep period timer works when the status is ENABLED.

- **Set the sleep period by pressing SEL**

  If you don't need to change the setting, press PW.

  If the begin and end time are the same, the sleep period is not set and the pager displays 'Set Error'.

  The pager moves back to the system setting menu.
- **Press PW**

  The pager moves back to the Standby Screen.

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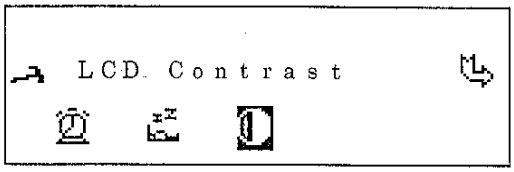
5.5. Setting the LCD Contrast

You can adjust the LCD contrast by 5 levels from -2 to +2.

- **Press ▼ or ▲ on the Standby Screen**

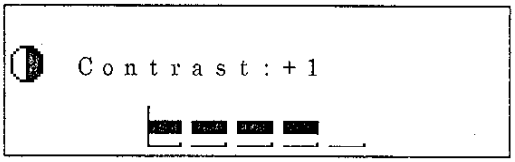
  The system setting menu is displayed.

- **Turn the page by pressing ▼ or ▲**
- **Change the option by pressing ◀ or ▶**



- **Select (LCD Contrast Setting) by pressing SEL**

  The current setting is displayed.



- **Change the setting by pressing ◀ or ▶**
- **Set the contrast by pressing SEL**

  If you don't need to change the setting, press PW.

  The pager back to the system setting menu.

- **Press PW**

  The pager moves back to the Standby Screen.

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