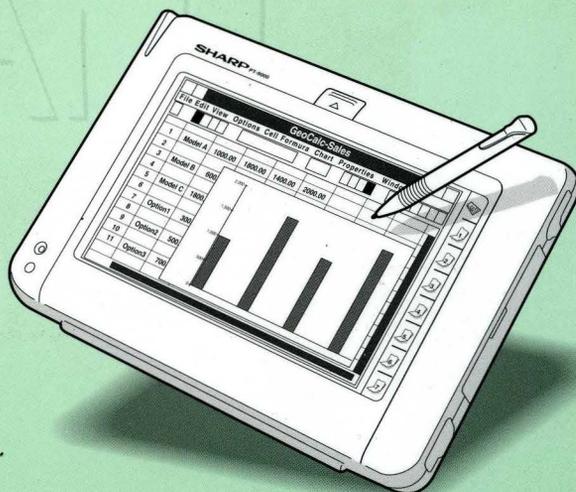


**SHARP**<sup>®</sup>

# PERSONAL INFORMATION ASSISTANT

**PT-9000**

**OPERATION MANUAL**



# FCC STATEMENT

**WARNING** - FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 cause 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.

A shielded I/F cable is required to insure compliance with FCC regulation for Class B computing equipment.

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## P R E F A C E

### OPENING THE BOX

When you open the packaging, you will find the following items:

- The PF-9000
- Touch pen × 2
- AA-size alkaline battery × 6
- CR2032 lithium battery × 2
- A 3.5" diskette
- Operation Manual (this manual)
- Application Manual

If any of above items are missing, contact your Sharp dealer.

## ABOUT THIS MANUAL

The PT-9000 manual is divided into two books, Operation Manual and Application Manual. The Operation Manual describes how each part of hardware works, how to get started and the optional devices you can purchase to expand the capability of your PT-9000. Application Manual describes how to use each application and accessory. The following topics are mentioned in this Operation Manual.

**Chapter 1 Hardware Description** provides a brief overview of the PT-9000's capabilities.

**Chapter 2 Getting Started** describes step by step how to set up the PT-9000 before use.

**Chapter 3 Information on Batteries** provides you important information on choosing batteries, operating time, and low battery indications.

**Chapter 4 Options** introduces the optional devices available with the PT-9000 and how to use them.

**Appendices** describes a variety of topics including handwriting recognition, connector pin-assignments, maintenance and troubleshooting, and specifications.

### Manual Conventions

#### NOTE

Notes provide helpful hints or suggestions on ways of performing certain operations.

#### CAUTION

Cautions warn you about how you might damage equipment or lose information if you do not follow a procedure very carefully.

# Table of Contents

<b>HARDWARE DESCRIPTION.....</b>	<b>1.1</b>
Opening the Cover.....	1.2
The Front Panel.....	1.3
The Left Side Panel .....	1.4
The Rear Panel .....	1.5
The Right Side Panel .....	1.6
The Bottom Panel .....	1.7
<b>GETTING STARTED .....</b>	<b>2.1</b>
Installing the Batteries.....	2.2
Opening the Battery Compartment Cover.....	2.2
Installing the Lithium Backup Batteries.....	2.2
Installing the Main Batteries .....	2.3
Pressing the Reset Button .....	2.5
The Startup Program .....	2.5
<b>INFORMATION ON BATTERIES .....</b>	<b>3.1</b>
Using the Proper Batteries .....	3.2
Battery Life.....	3.2
Low Battery Indicator.....	3.3
Replacing the Batteries .....	3.5
Replacing the Lithium Backup Batteries.....	3.5
Replacing the Main Batteries.....	3.7
<b>OPTIONS .....</b>	<b>4.1</b>
Memory Card .....	4.2
Installing the Memory Card .....	4.2
Changing the Memory Assignment.....	4.4
AC Adaptors.....	4.5

Lithium-Ion Rechargeable Batteries .....	4.5
Installing the Lithium-ion Batteries .....	4.5
Charging the Lithium-ion Rechargeable Batteries .....	4.7
Changing the Lithium-ion Rechargeable Batteries .....	4.8
3.5" Floppy Disk Drive Unit .....	4.8
Low Battery Indicator .....	4.9
LapLink Cable .....	4.10
External Keyboard .....	4.11
PC cards .....	4.11
Using PC Cards .....	4.12
Card Drive Assignment .....	4.12
Formatting a Hard Disk Card .....	4.13
Formatting a Series I Flash Card .....	4.13

## **APPENDICES**

<b>Handwriting Recognition .....</b>	<b>A.1</b>
<b>Connector Pin-Assignments .....</b>	<b>B.1</b>
<b>Taking Care and Troubleshooting .....</b>	<b>C.1</b>
<b>Specifications .....</b>	<b>D.1</b>

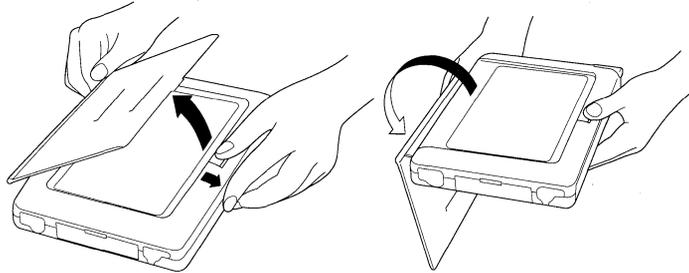


## OPENING THE COVER

Unlock the cover by sliding the catch, rotate it to the bottom of the unit, and hook the cover to the catch.

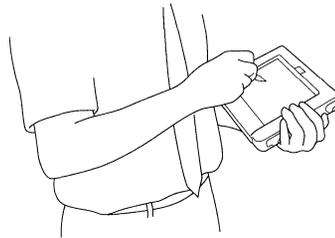
1.

2.



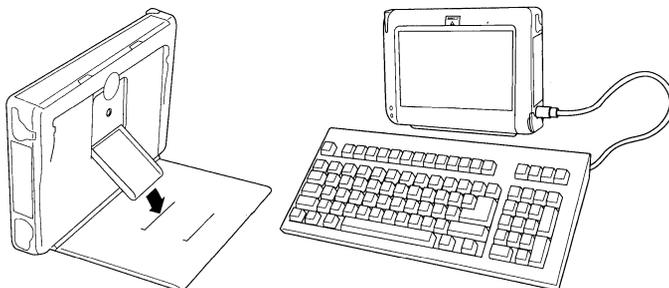
### OPERATION IN YOUR ARM

Hold the unit as shown below and operate it by using the built-in touch pen.

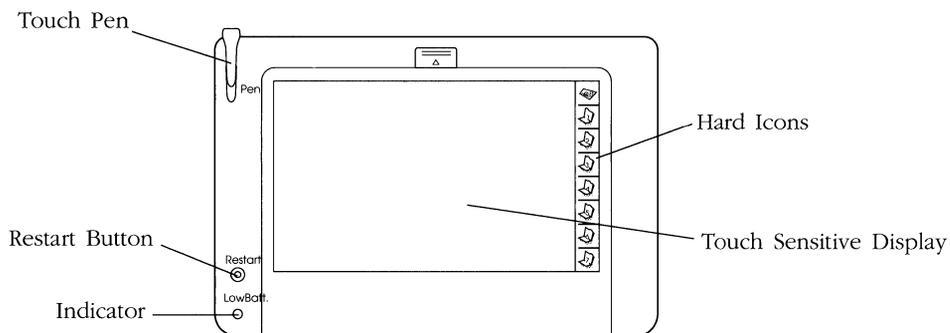


## OPERATION AT A DESK

You can also use the PT-9000 like a desktop computer by connecting an external keyboard. Open the tilt stand on the bottom of the unit and hook it to either of two notches on the display cover.



## THE FRONT PANEL



### TOUCH SENSITIVE DISPLAY

This PT-9000 contains a touch sensitive display. The display not only displays information, It allows you to enter information using the touch pen.

### HARD ICONS

The eight icons on the right of the display are hard icons. Tap the keyboard icon to display or hide the floating keyboard (if it is available in the application you are using). The numbered icons can be attached to any application you want. For detailed information how to set up these hard icons, see “Preferences” in Chapter 4 of the Application Manual.

### **TOUCH PEN**

You operate the PT-9000 using the touch pen. Touch the display of the PT-9000 with the pen to start an application and give commands to the unit. You can also write and draw in some applications by using the pen. When the touch pen is not in use, store it in the slot.

A spare touch pen is provided with your unit. Store it in a safe place for any accidental occasion.

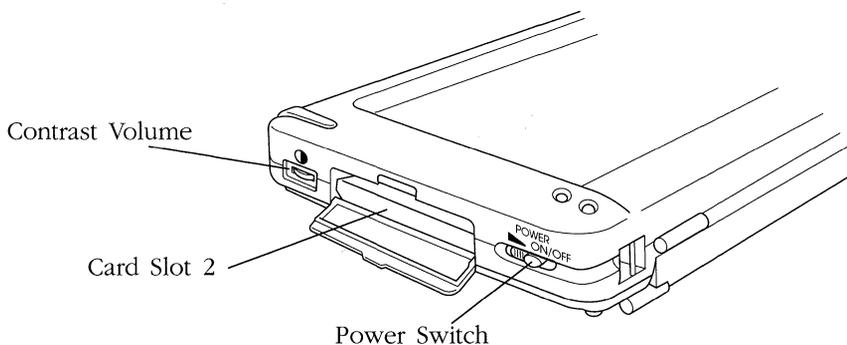
### **RESTART BUTTON**

This PT-9000 has an instant-on capability, which means when you turn on it, you can resume to the same condition that you turned off last time. This is because the PT-9000 restarts not every time you turn on but only when the restart button is pressed. Although the restart button is pressed, the contents that you stored in memory will not be lost.

### **INDICATOR**

The indicator tells you the conditions of main and backup batteries and external FDD unit battery if connected. For detailed information on low battery indications, see Chapter 3.

## **THE LEFT SIDE PANEL**



### **POWER SWITCH**

The slide switch marked "Power" turns the unit's power on and off. Slide it to turn the power ON, and slide it again to turn the power OFF.

### **CARD SLOT 2**

On the center of the left side panel is the card slot 2. To open the cover, push down the catch and open the cover downwards.

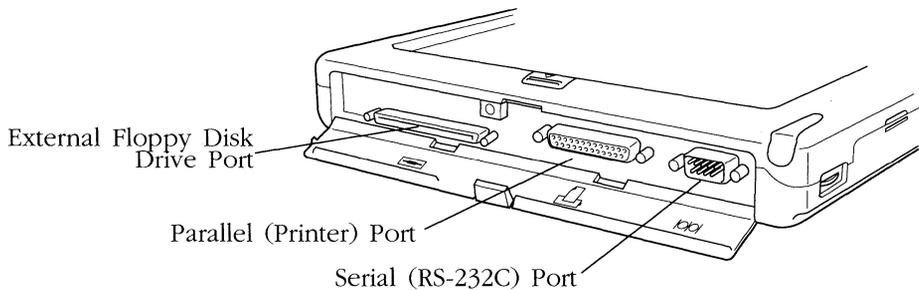
In the slot you can plug in various kinds of PC cards such as memory, modem, or applications as long as they are compatible with PCMCIA release 2.0 type I or type II.

### **CONTRAST VOLUME**

Use the dial marked “☉” on the left of the card slot 2 to adjust the contrast of characters on the screen against the background.

Turning the dial backwards lightens the screen, and turning it forwards darkens the screen.

## **THE REAR PANEL**



The rear panel of the unit has a compartment containing three connectors. Open the cover by pushing down the catch and swinging the cover downwards.

### **SERIAL (RS-232C) PORT**

The 9-pin male connector on the right is a serial (RS-232C) port. Use this port to connect serial device such as a mouse, a modem, or another computer through a cable.

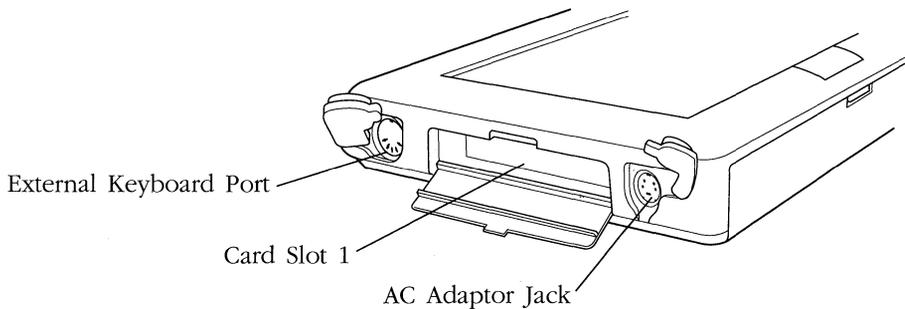
### **PARALLEL (PRINTER) PORT**

The 25-pin female connector in the center is the parallel (printer) port. Use this port to connect a device which uses the standard Centronics parallel interface, such as a printer.

### EXTERNAL FLOPPY DISK DRIVE PORT

Connect the optional 3.5" floppy disk drive unit (CE-301F) to this port. For more information on this option, see "3.5" Floppy Disk Drive Unit" section in Chapter 4 of this manual.

## THE RIGHT SIDE PANEL



There are three compartments on the right side panel.

### AC ADAPTOR JACK

The compartment marked "⏻" is the AC adaptor jack. The optional AC adaptor CE-901V or CE-902V can be connected to operate the unit by AC power. For details on these options, see "AC Adaptors" in Chapter 4 of this manual.

### CARD SLOT 1

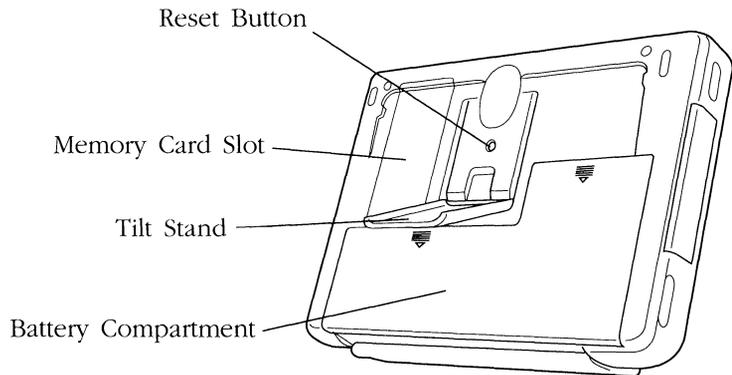
In the center of the right side panel is the card slot 1. To open the cover, push down the catch and swing the cover downwards.

In this slot, you can plug in various kinds of PC cards such as memory, modem, or applications, as long as they are compatible with PCMCIA release 2.0 type I, II or type III.

### EXTERNAL KEYBOARD PORT

The compartment with the mark "⌨" is the external keyboard port. To use it, open the rubber cover first. The PT-9000 will work with an IBM-XT compatible keyboard.

## THE BOTTOM PANEL



### **BATTERY COMPARTMENT**

The main batteries and lithium backup batteries are contained in this battery compartment. The main batteries are used for general operation, while the lithium backup batteries are used for backing up any data which you store in memory, your password, and environment data you specified.

### **RESET BUTTON**

Use the reset button to reset the unit to the state as before it was ever turned on. Use the touch pen or another pointed object to press the button.

### **CAUTION**

You should press the reset button only if you want to erase all the information you have stored in memory.

### **MEMORY CARD SLOT**

The compartment marked "Memory Expansion" is the optional memory card slot. There is a connector for the optional 1 MB memory card (CE-901B). You can upgrade the amount of memory up to 3 MB. For more detailed information on this option, see "Memory Card" section in Chapter 4 of this manual.

### **TILT STAND**

Use the tilt stand when operating the unit at your desk with an external keyboard. Pull the tilt stand out and hook it to either of the notches on the display cover.



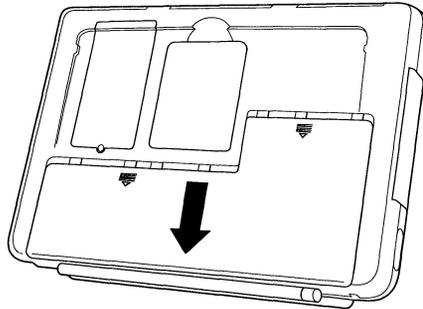


## INSTALLING THE BATTERIES

If you are going to use your PT-9000 for the first time, Let's begin with installing the batteries. The 6 AA-size alkaline batteries for main battery and two lithium (CR2032) batteries for memory backup are contained in your package. If you use an optional lithium-ion rechargeable battery instead of 6 alkaline batteries, please refer to Chapter 4 "Lithium-ion Rechargeable Batteries" section in this manual for installation.

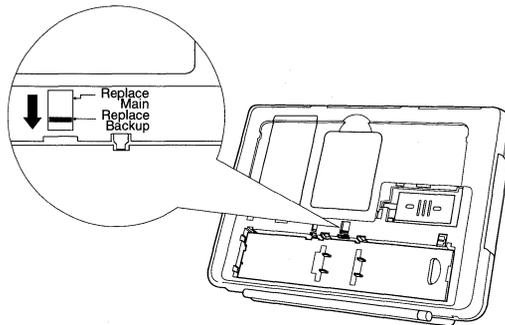
### Opening the Battery Compartment Cover

Close the display cover and turn the PT-9000 so that its bottom panel is facing up. Remove the battery cover.

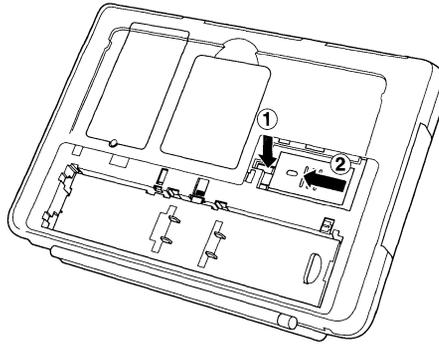


### Installing the Lithium Backup Batteries

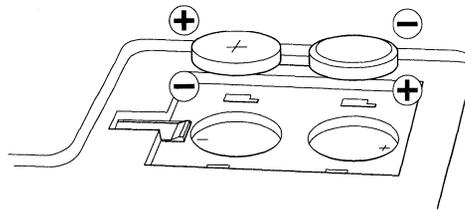
1. Slide the battery protect switch to "Replace Backup".



2. Hold down the latch which secures the backup battery cover (①), slide the cover toward the latch (②), then remove it.



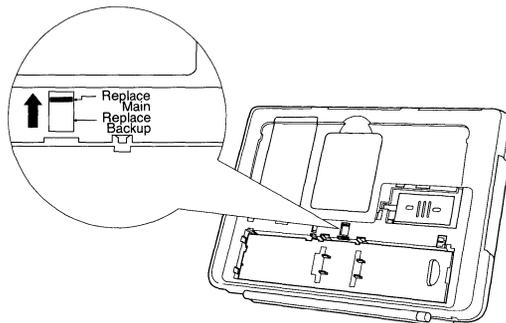
3. Install a lithium backup battery (CR2032) into the left slot with the - side down and one into the right slot with + side down.



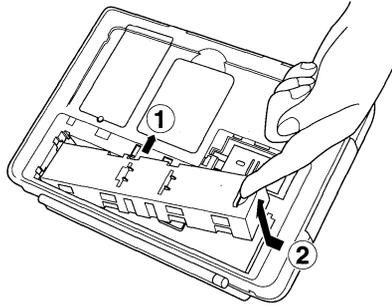
4. Replace the backup battery cover by sliding it into place from left to right until the latch clicks.

### Installing the Main Batteries

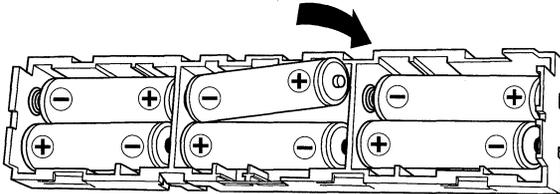
1. Slide the battery protect switch to “Replace Main”.



2. While sliding the main battery lock to “Release” (①), remove the main battery case by hooking a finger into the groove on the top of the battery case (②).



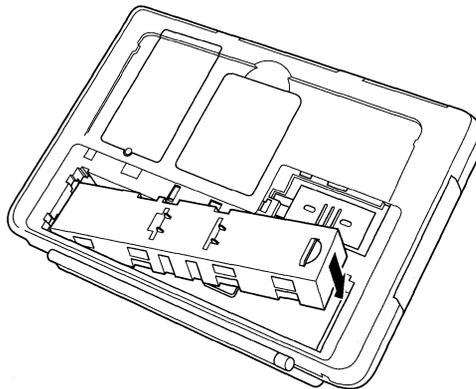
3. Install 6 AA-size alkaline batteries into the main battery case carefully, observing the correct polarity as shown below.



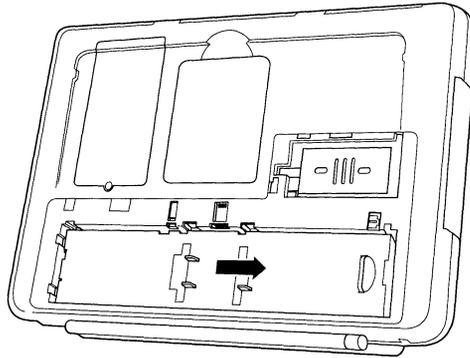
**CAUTION**

Never install the batteries incorrect polarity.

4. Turn the battery case so that its electrode is facing up and the batteries are facing down. Carefully re-install the battery case into the slot of the unit.



5. Slide the battery case in until the main battery lock clicks.



6. Replace the battery compartment cover. If the battery compartment cover is not replaced completely, the unit will not power on.

### **Pressing the Reset Button**

When you use the PT-9000 for the first time, press the reset button behind the tilt stand on the bottom panel with a pointed object. This will turn the PT-9000 power on automatically and load the startup program.

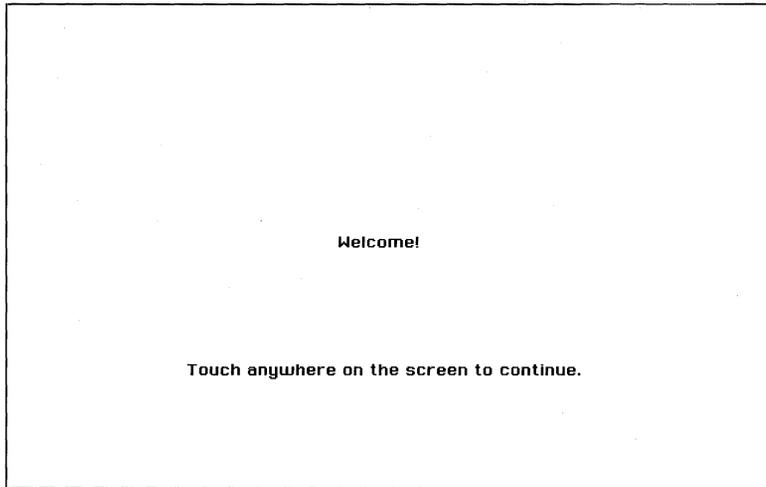
If your PT-9000 does not turn on, go back to the battery installation procedure and check the batteries installed correctly.

## **THE STARTUP PROGRAM**

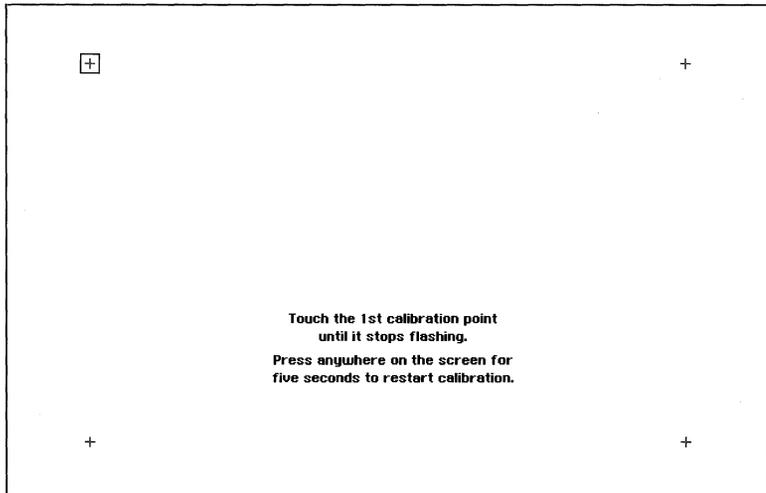
After the PT-9000 turns on, the indicator lights green for 10 seconds, the unit checks internal memory and initializes the unit. Then the unit loads the startup program, the following messages are displayed on the touch sensitive display:

### **CAUTION**

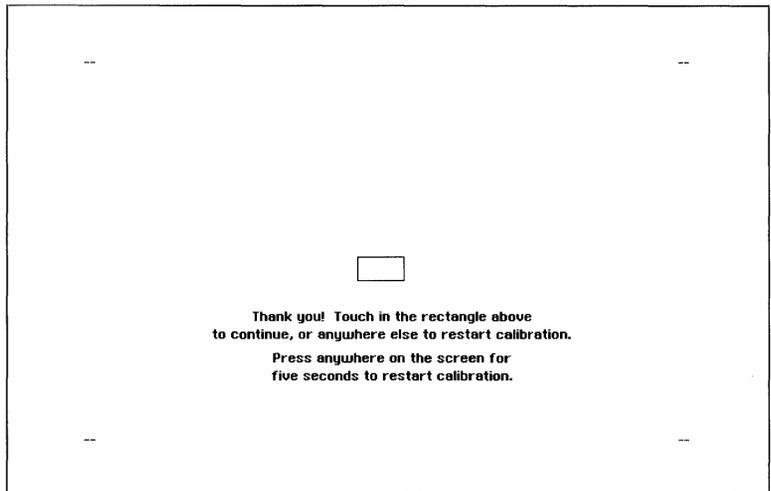
Never turn off the unit during the initialization.



Tap the screen with the provided touch pen, then the following message appears.



This procedure calibrates the unit to recognize the position on the screen which the pen touches. Tap the center of the flashing cross on the upper left of the screen gently. In the same way, tap the crosses on the upper right, lower left, and lower right of the screen. The following message appears:



Touch in the rectangle to check if the calibration is successful. If you failed, the system asks you to repeat the process from the beginning.

After the calibration of the screen, date and time should be set.

**Date & Time**  
Please enter the date & time.

Current Date: 1/1/90  
Month: 1 Day: 1 Year: 1990

Current Time: 12:00:41 AM  
Hours: 12 Minutes: 0 Seconds: 37  
◆ AM ◇ PM

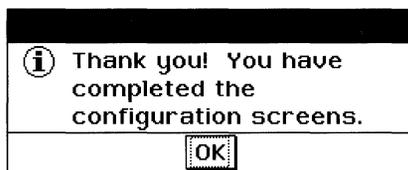
OK

Enter the current date in the Date box by tapping arrow buttons on the right of each box to increase/decrease the value.

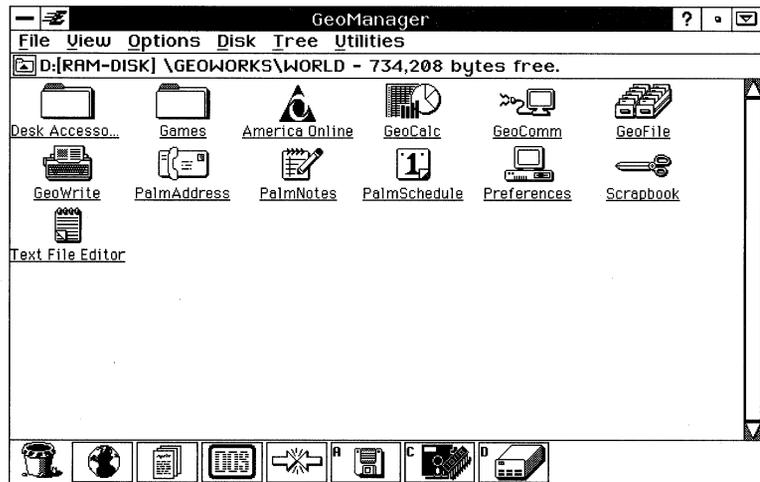
In the same way, enter the current time in the Time box with the 12-hour format. Tap the radio button to select AM/PM.

After entering the time and date, tap OK button.

The following message appears:



Tapping OK button loads the GeoManager. The following screen appears:



This completes the preparation, and your PT-9000 is now ready for you to use.

For information about the built-in applications and accessories, see the appropriate chapters in the Application Manual.

**NOTE**

If you set the password available, the password input screen appears at anytime when you turn on the unit, except when the unit is turned on by a modem ring or an alarm.



## USING THE PROPER BATTERIES

- Use six AA-size alkaline batteries as the main battery.
- Be aware that the use of AA-size manganese batteries instead of alkaline batteries for the main battery will shorten the operating time of the unit.
- Do not use any rechargeable type AA-size batteries because their output voltage is different from AA-size alkaline batteries. Using any AA-size rechargeable batteries causes the unit not only to reduce the operating time and to hang up, but also to lose data stored in memory.
- Always replace all six AA-size batteries at the same time, with six of the same type of new batteries. Using different types of batteries (e.g. alkaline batteries and manganese batteries) together or using old batteries and new ones together will reduce the performance of the unit, cause it to hang up, and also could cause a battery explosion which does serious damage to the unit.
- Use only lithium batteries (CR2032) for the backup battery.

### CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type batteries supplied with your unit. Discard used batteries according to the manufacturer's instructions.

## BATTERY LIFE

You can operate the unit with six alkaline batteries for about 22 hours at 10% use of the built-in applications without any external devices installed. If you install any external devices, the battery life will be reduced.

Even if the low battery indication does not appear, you should replace the lithium backup batteries annually.

## LOW BATTERY INDICATOR

There is an indicator on the lower-left corner on the front panel. It lights in various patterns to tell you the conditions of main, lithium backup, and the External FDD unit batteries if installed.

When both the main battery and lithium backup battery have enough power, the indicator lights green for 10 seconds after turning the power on. After that the indicator turns off.

When the main battery power becomes low, the indicator blinks orange and the alarm beeps for 10 seconds. You should replace the main battery with new batteries.

When the main battery becomes dangerously low, the indicator blinks orange and continues to beep. You have to turn the power off and replace the main battery immediately. If not, the alarm beeps for 30 seconds, then the unit turns the power off automatically. The unit will not turn on until you replace the main battery with new batteries.

### NOTE

When the main battery becomes quite low and the system turns off, the system cannot turn on until the main battery is replaced. If the system does not turn on, replace the main battery with new batteries.

When the main battery is enough but the lithium backup battery is depleted, the indicator blinks red and the alarm beeps for 10 seconds.

When both the main battery and lithium backup battery become low, the indicator blinks orange and red alternately and the alarm beeps for 10 seconds.

### CAUTION

If the unit is left with both the main and lithium batteries depleted, the contents in memory may be lost.

For other battery and indicator conditions, see the following tables.

In the table, OK means the battery power is sufficient.

Low means the battery power is low and should be replaced as soon as possible.

Q-Low means the battery power is too low to operate or backup the information stored in the unit.

BATTERY STATUS			LED COLOR / STATUS			BEEP	POWER OFF	SEE NOTE
AC ADAPTOR	MAIN BATTERY	BACKUP BATTERY	GREEN	ORANGE	RED			
On	OK	OK	On	–	–	–	No	
	Low	OK	–	Blink	–	10 Sec	No	
	Q-Low	OK	–	On	–	10 Sec	No	
	OK	Low	–	–	Blink	10 Sec	No	
	Low	Low	–	Blink	Blink	10 Sec	No	
	Q-Low	Low	–	On	Blink	10 Sec	No	*1
Off	OK	OK	10 Sec	–	–	–	No	*2
	Low	OK	–	Blink	–	10 Sec	No	
	Q-Low	OK/Low	–	Blink	–	On	Yes	*3
	OK	Low	–	–	Blink	10 Sec	No	
	Low	Low	–	Blink	Blink	10 Sec	No	

\*1 The indicator blinks red and orange alternately.

\*2 The indicator turns off after it lights for 10 seconds when the unit is turned on.

\*3 The indicator blink becomes faster gradually, and after 30 seconds' blink, the unit turns off automatically.

FDD UNIT BATTERY *4	LED GREEN	BEEP	POWER OFF	SEE NOTE
OK	–	–	No	
Low	Blink	10 Sec	No	
Q-Low	Blink	10 Sec	Yes	*5

\*4 The indication occurs alternately with indication of main and backup battery conditions. Note that when the AC adaptor is connected to the unit, the condition of FDD unit battery is always recognized as OK because the FDD unit is powered by AC.

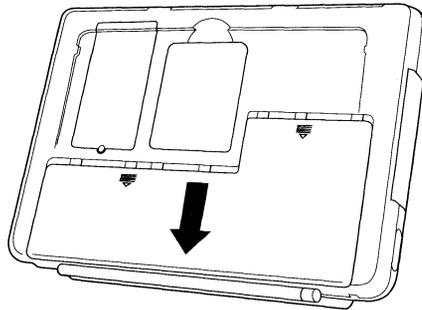
\*5 When the FDD battery moves to Q-Low from Low, the unit turns off automatically. If the FDD unit battery is still Q-low after the main unit is turned on, the FDD is not available until the FDD batteries are replaced.

## REPLACING THE BATTERIES

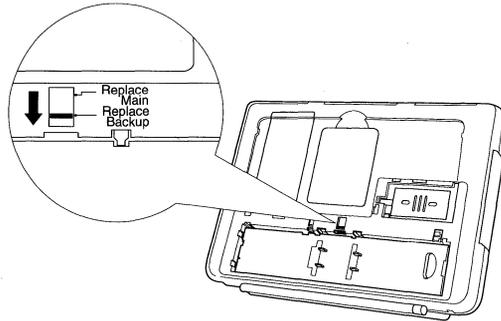
- Before changing the batteries, always turn off the unit.
- If you are changing both the main and the lithium backup batteries, change the lithium backup batteries first, then change the main batteries.
- Never remove both the main and lithium backup batteries at the same time, or you will lose all the data stored in memory.
- Always replace all six AA-size batteries at the same time, with identical new batteries. Using different types of batteries (e.g. alkaline batteries and manganese batteries) together or using old batteries and new ones together will reduce the performance of the unit, cause it to hang up, and also could cause a battery explosion which does serious damage to the unit.

### Replacing the Lithium Backup Batteries

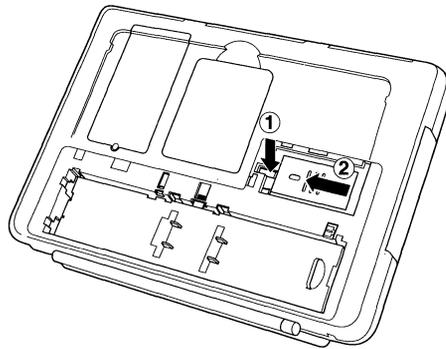
1. Turn off the unit.
2. With the display cover closed, place the unit with its bottom panel facing up. Sliding and removing the battery compartment cover reveals the battery compartment.



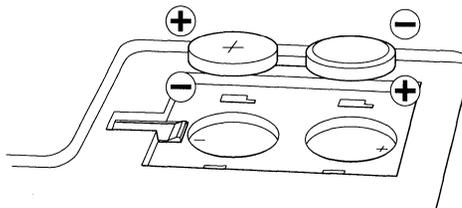
- Slide the battery protect switch to “Replace Backup”.



- Hold down the latch which secures the backup battery cover (①), and slide the cover toward the latch (②), then remove it.



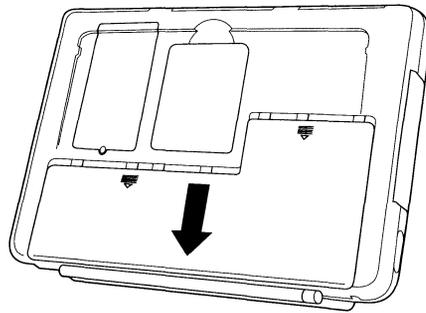
- Remove the old lithium batteries and install two new lithium batteries (CR2032) of the same type. Place one into the left slot with the - side down and one into the right slot with + side down.



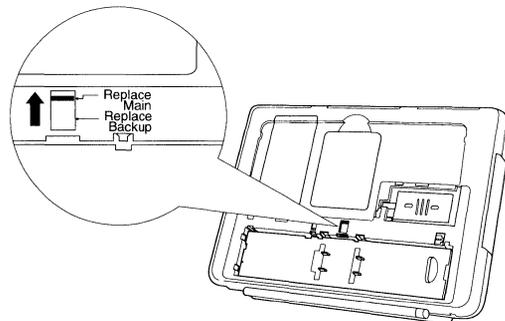
6. Replace the backup battery cover by sliding it into place from left to right until the latch clicks.
7. Replace the battery compartment cover.
8. Confirm if the unit turns on correctly. If it doesn't power on, return to the installation procedure and check whether the batteries are installed properly.

### Replacing the Main Batteries

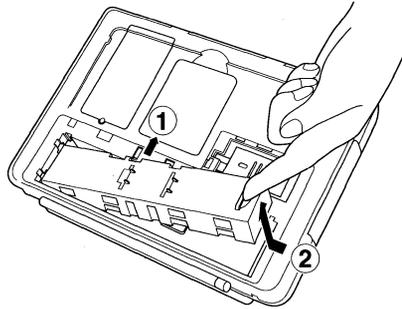
1. Turn off the unit.
2. With the display cover closed, place the unit with its bottom panel facing up. Sliding and removing the battery compartment cover reveals the battery compartment.



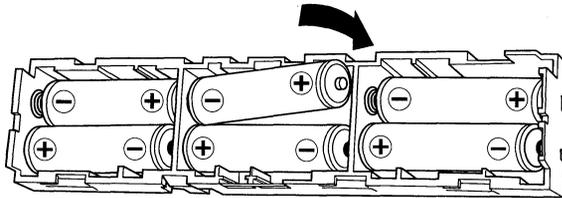
3. Slide the battery protect switch to "Replace Main".



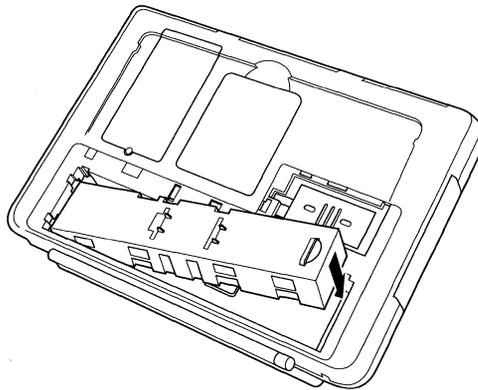
4. With sliding the main battery lock to “Release” (①), remove the main battery case by hooking a finger into the groove on the top of the battery case(②).



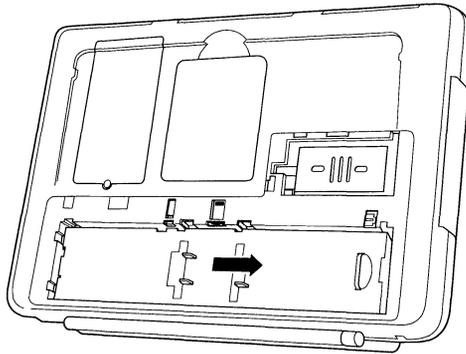
5. Remove the old batteries and install 6 new AA-size alkaline batteries of the same type into the main battery case carefully, observing the correct polarity as shown below.



6. Turn the battery case with its electrode facing up and the batteries facing down. Install the battery case carefully into the slot of the unit.



7. Slide the battery case to the right until the main battery lock clicks.



8. Replace the battery compartment cover. If the battery compartment cover is not replaced completely, the unit will not power on.
9. Confirm if the unit turns on correctly. If the new batteries are installed correctly, the unit will turn on and the indicator will light for 10 seconds. If it doesn't power on, return to the battery installation procedure and check whether the batteries are installed properly.





**CAUTION**

Before connecting any peripherals, be sure to turn off the unit.

Some of the options described in this chapter may not be available in some countries. Contact your local Sharp dealer concerning availability.

**MEMORY CARD**

Your PT-9000 comes with 2 MB of memory (RAM). You can expand the memory capacity to 3 MB with a CE-901B 1 MB memory card.

**Installing the Memory Card**

To avoid electrical damage to your PT-9000, remove all of the main and the backup batteries before you install a memory card.

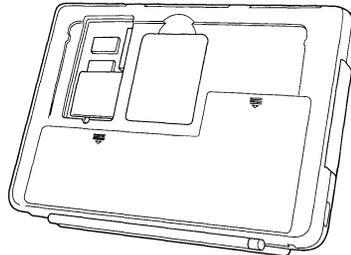
**CAUTION**

Removing all the batteries causes the unit to lose all the data you stored in memory including your password and Preferences settings. We strongly recommend that you make a backup copy of important data on a PCMCIA card, a floppy disk, or your host computer.

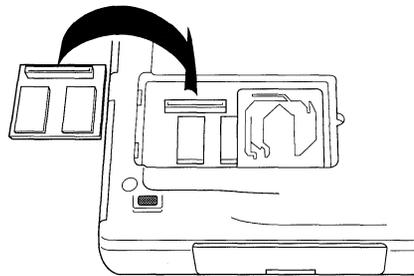
*To Install the memory card,*

1. Turn the PT-9000's power off and place the PT-9000 with its bottom panel facing up.
2. Remove all the main and the lithium backup batteries. For details on removing the batteries, refer to the "Replacing the Batteries" section in Chapter 3.

3. Using a Phillips-head screwdriver, loosen the screw which secures the cover marked “Memory Expansion”, then remove the cover. In the compartment you see a memory card which has already been installed and a connector on the left of the memory card.



4. With the connector on the memory card facing down, push it firmly until the connectors on the memory card and in the compartment fully mate.



**CAUTION**

Never remove the memory card installed to the right side connector.

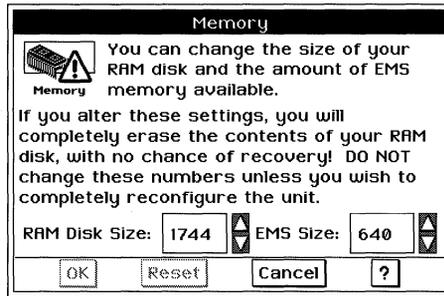
5. Replace the compartment cover, and secure the screw.
6. Reinstall the main and the backup batteries. For installing the batteries, see chapter 2 in this manual.
7. Press the reset button on the bottom panel behind the tilt stand. Pressing the reset button turns the PT-9000 power on automatically.

## Changing the Memory Assignment

After installing the memory card, you can assign the added memory as disk space for data storage (RAM Disk), or expanded memory (EMS) for program execution in order to increase system performance.

*To Change the Preference settings*

1. Turn on the unit and choose Main Applications from the Express Menu. Then choose Preferences from the submenu.
2. Tap Memory, and the Memory dialog box appears.



3. Set the RAM Disk Size value by tapping the up or down arrow button on the right of RAM Disk Size: box. The value increases or decreases by 16. The EMS size is increased or decreased automatically depending on the RAM Disk Size value.

If you want to return the value to the one before your change, tap Reset.

### NOTE

The system requires at least 640 KB of EMS area for the minimum operation.

4. Tap OK to accept the memory size value.
5. The system displays a confirmation message. Tap Yes to accept. The system will restart with the new memory assignment.

### CAUTION

If you change the memory configuration, all the information in the memory will be lost as when you press the reset button. We strongly recommend that you make a backup copy of important data on a PCMCIA card, a floppy disk, or your host computer.

## AC ADAPTORS

An optional AC adaptor (product number CE-901V) allows you to operate the PT-9000 under AC power or to charge optional lithium-ion rechargeable batteries. CE-902V is the AC adaptor only for AC operation, it cannot charge a lithium-ion rechargeable battery.

### CAUTION

Use only the correct AC adaptor for your PT-9000. Using another adaptor could damage it. Be sure to plug the AC adaptor into a grounded outlet or use a grounded plug adaptor.

*To use an AC adaptor,*

1. Plug the AC adaptor into a grounded outlet. Use a grounded plug adaptor if necessary.
2. Open the cover marked “” on the right side panel.
3. Plug the cord from the AC adaptor into the jack.

### NOTE

Although you are using the system under AC power, be sure to install main and backup batteries anyway. Otherwise you will lose all your data if the AC adaptor is disconnected accidentally.

## LITHIUM-ION RECHARGEABLE BATTERIES

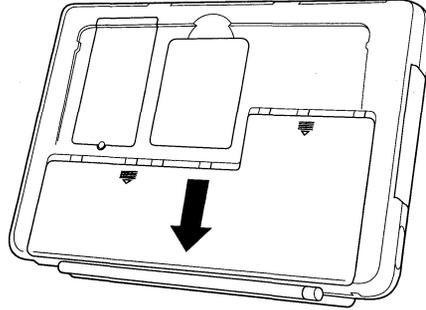
You can use the CE-901EB lithium-ion rechargeable battery pack as the main battery instead of AA-size alkaline batteries. You can operate the system with either one or two lithium-ion batteries installed.

### Installing the Lithium-ion Batteries

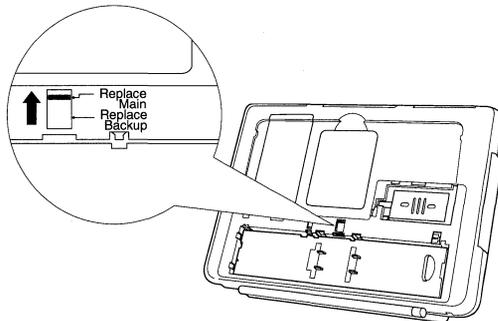
*To install the lithium-ion batteries,*

1. Turn the PT-9000's power off and place the PT-9000 with its bottom panel facing up.

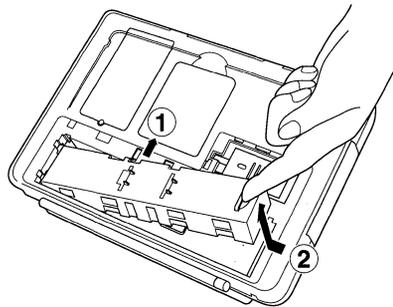
2. Remove the battery compartment cover by sliding in the direction of the arrows.



3. Slide the battery protect switch to “Replace Main”.

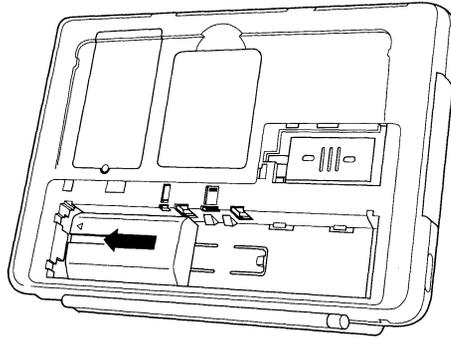


4. While sliding the main battery lock to “Release” (①), remove the main battery case by hooking a finger into the groove on the top of the battery case (②).



5. Place a lithium-ion battery in each side of the main battery slot. Make sure the arrow mark on the top of each battery points toward the outside.

6. Slide the battery until it meets the electrode.



7. If you install the second lithium-ion battery, install it in same way.
8. Replace the battery cover.

**NOTE**

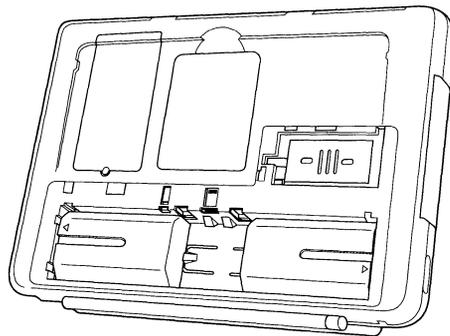
When the battery case is not in use, keep it in a safe place.

### Charging the Lithium-ion Rechargeable Batteries

After installing the lithium-ion batteries for the first time, you need to charge them using the optional AC adaptor CE-901V. To charge the batteries, turn off the unit, and connect the AC adaptor.

The lithium-ion batteries are charged only when the unit power is off. They are not charged while the unit is in use.

If you install the two lithium-ion batteries, the battery connected to the left side in the following illustration is charged first. After the first battery is fully charged, the second battery is charged.



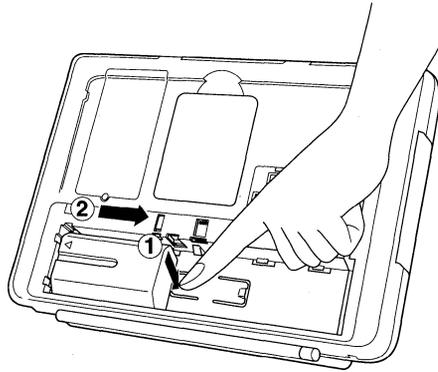
It takes about 2 hours to fully charge a battery. A fully charged battery can run the PT-9000 for about 12 hours.

### **Changing the Lithium-ion Rechargeable Batteries**

Before changing the main batteries, be sure to the lithium backup batteries are not depleted. If the lithium backup batteries are depleted, change the backup batteries first, then change the main batteries. Otherwise the contents of memory may be lost.

*To remove the lithium-ion rechargeable batteries,*

1. Remove the battery compartment cover.
2. Hold down the latch which secures the lithium-ion battery (①), and disconnect the electrode of the battery by sliding the battery (②).



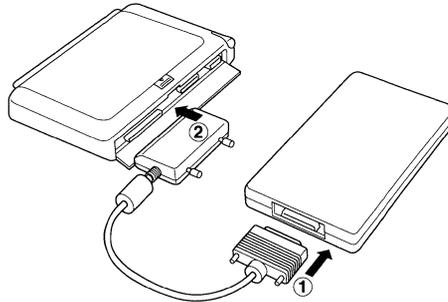
### **3.5" FLOPPY DISK DRIVE UNIT**

The CE-301F 3.5" floppy disk drive (FDD) unit can be connected to the external floppy disk drive port on the rear panel of the unit.

*To connect the FDD unit:*

1. Install the batteries in the FDD unit by following the manual provided with the FDD unit.
2. Turn the unit off by sliding the power switch.
3. Open the cover on the rear panel of the unit, by pushing down the catch.

4. Connect the 25-pin male connector of the cable provided with the FDD unit to the rear of the FDD unit. Then connect the other end of the cable to the FDD unit port marked “” on the rear of the PT-9000.



5. Fasten the screws on each side of the connector.
6. Turn the unit on.

**NOTE**

While connected, the optional FDD unit is assigned as drive A.

*To disconnect the FDD unit:*

1. Turn the unit power off.
2. Loosen the screws on each side of the connectors, and disconnect the FDD cable from the PT-9000.

**Low Battery Indicator**

The battery condition of the external FDD unit is indicated by the indicator on the lower-left corner of the PT-9000. The following table shows the battery condition under each indication.

In the table, OK means the battery power is sufficient.

Low means the battery power is low and should be replaced as soon as possible. Q-Low means the battery power is too low to operate the unit.

FDD UNIT BATTERY *1	LED GREEN	BEEP	POWER OFF	SEE NOTE
OK	–	–	No	
Low	Blink	10 Sec	No	
Q-Low	Blink	10 Sec	Yes	*2

\*1 The indication occurs alternately with indication of main and backup battery conditions. Note that when the AC adaptor is connected to the unit, the condition of FDD unit battery is always recognized as OK because the FDD unit is powered by AC.

\*2 When the FDD battery moves to Q-Low from Low, the unit turns off automatically. If the FDD unit battery is still Q-low after the main unit is turned on, the FDD is not available until the FDD batteries are replaced.

## LAPLINK CABLE

To communicate between PT-9000 and your host computer by using the GeoHost program supplied with your PT-9000, the optional LapLink cable CE-303CB is necessary. For details on GeoHost, see Appendix C in the Application Manual.

### *To connect the LapLink Cable*

1. Turn off the unit by sliding the power switch.
2. Open the cover on the rear panel of the unit by pushing down the catch.
3. Connect the single 9-pin female connector of the LapLink cable to the serial (RS-232C) port marked "00" on the rear of the unit.
4. Connect either the 9-pin or the 25-pin connector on the other end of the LapLink cable to the 9-pin or 25-pin serial port of the remote computer.

## EXTERNAL KEYBOARD

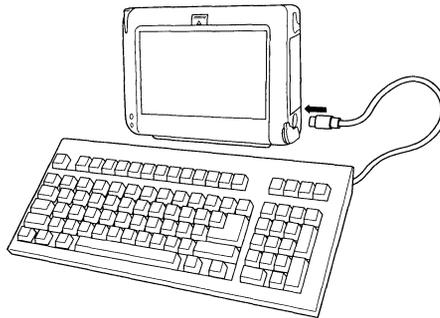
You can use the system with an optional external IBM-XT compatible keyboard. Connect the keyboard through the port on the lower right side of the unit.

### NOTE

When using the system with an external keyboard connected, it is recommended that you should run the system using AC power through an optional AC adaptor CE-901V or CE-902V. Since the external keyboard requires power to be supplied by the PT-9000, it will reduce battery life.

### *To use an external keyboard*

1. Turn off the unit.
2. Connect the AC adaptor to the AC adaptor jack marked “” on the right side of the unit:
3. Connect an external keyboard to the external keyboard port marked “” on the lower right side of the unit.



4. Turn the unit back on.

## PC CARDS

The PT-9000 has two slots for PC cards, slot 1 on the right side panel and slot 2 on the left side panel. The card slot 1 will accept cards that conform to PCMCIA release 2.0 types I, II or III, the card slot 2 will accept cards that conform to PCMCIA release 2.0, types I or II.

When you use a PCMCIA hard disk card, it is recommended that you run the system using AC power through an optional AC adaptor CE-901V or CE-902V, since the hard disk card requires more power to be supplied by the PT-9000.

## Using PC Cards

*To insert a card:*

1. Open the appropriate card drive on the side panel of the unit by pushing down the catch and levering the cover downward.

### NOTE

You can remove the card slot hinged cover by levering it downward. Replace the card slot cover when the card slot is not in use or when you carry the unit.

2. Insert a card firmly until its connector fully mates to the connector in the slot. If the card is installed completely, the eject button on the side of the card drive pops out.

*To eject a card:*

Push the eject button on the side of the card drive, then the card pops out. Pull the card and remove it.

### CAUTION

When you use a SRAM card, be sure to install a battery in the card. If the battery is not installed or it is discharged, the data stored in the card will be lost when the unit is turned off.

## Card Drive Assignment

The drive assignment of the installed card varies according to the type of card.

PC CARD TYPE	DRIVE ASSIGNMENT	
	CARD SLOT 1	CARD SLOT 2
Hard Disk Card	E	F
SRAM Card	G, H	I, J
Flash RAM Card	K	L

The drive H and J are available when you divide the capacity of SRAM card into two drives.

## Formatting a Hard Disk Card

When you format an ATA / IDE drive and it reports an incorrect size, this indicates that the disk drive is not formatted properly. You can initialize the drive properly by following these steps.

1. Find the number of heads, cylinders, and sectors the drive contains in the disk drive's documentation.
2. Disable the Global Power Management of the Power Management option in Preferences.
3. Create a DOS Launcher in GeoManager that executes the C:\DOS\ATAINIT utility with the following command line:

```
<drive letter> /S /C /P <cylinders> <heads> <sectors>
```

<drive letter> is "E:" if the drive is in slot 1, or "F:" if the drive is in slot 2.

<cylinder> is a decimal number with the number of cylinders.

<heads> is the number of heads the drive has.

<sectors> is the number of sectors.

For example, if the drive is in slot 1, has 814 cylinders, 6 heads, and 17 sectors, the command line would be

```
E: /S /C /P 814 6 17
```

For more information on creating a DOS Launcher, see Chapter 9 in the Application Manual.

4. Set the "Ask before returning" of the DOS Launcher to No.
5. Double-tap the created icon to execute the command.

## Formatting a Series I Flash Card

There is an additional step you will have to do with the Series I Flash cards which do not have CIS. If the "unsupported card" error message comes up after an unformatted card is inserted, follow these steps:

1. Disable the Global Power Management of the Power Management option in Preferences.
2. Create a DOS Launcher in GeoManager that executes the C:\DOS\TFORMAT utility with the command line "/Q K:" (or "/Q L:" if the card is in slot 2).
3. Set the "Ask before returning" to No.
4. Double-tap the created icon to execute the command.

It takes a number of minutes to format since the Series I cards are very slow to format.



## A P P E N D I X A

# Handwriting Recognition

This appendix gives you hints regarding characters which can be recognized by this unit.

The unit recognizes hand printed letters and numbers. You can enter hand printed characters on the sketch page or in the writing grid. When you use handwritten characters while the text tool is active, your handwritten characters are converted into typed characters.

The following tips will help the unit to recognize your handwriting:

- Print each letter or number clearly.
- Keep your letters upright. Try not to write letters with a slant.
- Make sure you keep the pen on the screen as you write — you don't need to write down hard, however, writing with less pressure may not be recognized properly.
- Do not write too slowly.
- Print large characters. You can use the whole writing grid square or text field.
- Some characters are so similar they cannot be distinguished by the unit, characters such as Z and 2, S and 5, O and 0, and I and 1. The following table shows how to make each character clearer.

- |   |   |   |
|---|---|---|
| • Writing the Z with a horizontal slash through it. | z | Z |
| • Writing the 5 in two strokes instead of one.      | 5 | 5 |
| • Writing the 0 (zero) with a slash through it.     | 0 | 0 |
| • Writing the 1 with a line under it.               | 1 | 1 |

The following table shows characters that can be successfully recognized by the PT-9000 and those that could not be recognized.

Successful Characters	Unsuccessful	Comments
A A A A A	A A	
B B B		
C C	C	
D D D D		
E E E E E		
F F		
G G G G G		Can be confused for the number 6.
H H H H	H H	
I I I		Can be confused for a lowercase "l", or the number 1 if surrounded by other numbers.
J J J		
K K K	K	
L L	L	
M M M M M		
N N N N N		
O O		
P P P		
Q Q Q	Q	
R R R R R		
S S		
T T T T		
U U U		
V V V		
W W W W	W	
X X		
Y Y Y Y		
Z Z Z	Z	Can be confused for the number 2.

Successful Characters	Unsuccessful	Comments
a ā â		
b b̄ b̂ b		
c c̄ ĉ c	e	
d d̄ d̂ d	d̂	
e ē ê e	l	
f f̄ f̂ f		
g ḡ ĝ g		
h h̄ ĥ h		
i ī î i	l	Must be dotted.
j j̄ ĵ j		
k k̄ k̂ k	k	
l l̄ l̂ l		Can be confused for a capital "I", or the number 1 if surrounded by other numbers.
m m̄ m̂ m		
n n̄ n̂ n		
o ō ô o		
p p̄ p̂ p		
q q̄ q̂ q	9	
r r̄ r̂ r		
s s̄ ŝ s		
t t̄ t̂ t		
u ū û u		
v v̄ v̂ v		
w w̄ ŵ w		
x x̄ x̂ x		
y ȳ ŷ y		
z z̄ ẑ z		Can be confused for the number 2.

Successful Characters

Unsuccessful

Comments

1 1 1 |

1 1

Can be confused for a capital "I" or a lowercase "l".

2 2 2

3 3 3

4 4 4

5 5 5

Can be confused for the letter "S".

6 6 6

6

7 7 7

7 7 7

8 8 8

9 9 9

9 9

0 0 0

0

Can be confused for the letter "O". Make a Small round mark, do not just tap the screen (used in numeric fields only.)

period, decimal .

space =

The double-underline space symbol must be written at the baseline. You can also get a space simply by leaving a space between words when you write.

plus +

+

equals =

divide ÷

÷

Plus, equals and divide are recognized in the calculator only.

? ? ? ? ?

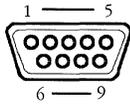
new line



A P P E N D I X B

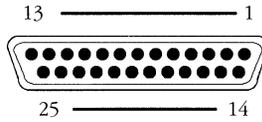
# Connector Pin- Assignments

## SERIAL (RS-232C) PORT



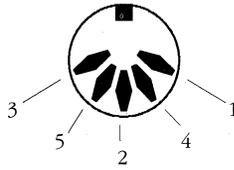
PIN NO.	SIGNAL NAME	ABBREVIATION	DIRECTION
1	Carrier detect	CD	Input
2	Receive data	RD	Input
3	Transmit data	TD	Output
4	Data terminal ready	DTR	Output
5	Signal ground	SG	-
6	Data set ready	DSR	Input
7	Request to send	RTS	Output
8	Clear to send	CTS	Input
9	Ring indicator	RI	Input

## PARALLEL (PRINTER) PORT



PIN NO.	SIGNAL NAME	ABBREVIATION	DIRECTION
1	Strobe	$\overline{\text{STROBE}}$	Output
2	Data 0	DATA0	Output
3	Data 1	DATA1	Output
4	Data 2	DATA2	Output
5	Data 3	DATA3	Output
6	Data 4	DATA4	Output
7	Data 5	DATA5	Output
8	Data 6	DATA6	Output
9	Data 7	DATA7	Output
10	Acknowledge	$\overline{\text{ACK}}$	Input
11	Busy	BUSY	Input
12	Paper empty	PE	Input
13	Select	SLCT	Input
14	Auto feed	$\overline{\text{AUTO FEED}}$	Output
15	Printer Error	$\overline{\text{PERROR}}$	Input
16	Initialize printer	$\overline{\text{INIT}}$	Output
17	Select input	$\overline{\text{SLCT IN}}$	Output
18-25	Ground	GND	–

## EXTERNAL KEYBOARD PORT



PIN NO.	SIGNAL NAME	ABBREVIATION	DIRECTION
1	+Keyboard Clock	+KBD CLK	Input/Output
2	+Keyboard Data	+KBD DATA	Input/Output
3	Reserved		–
4	Ground	GND	Power
5	+5.0 Vdc	+5.0 V	Power

A P P E N D I X C

# Taking Care and Troubleshooting

## TAKING CARE OF YOUR PT-9000

### Dos and Don'ts

Your PT-9000 is a precision instrument, so handle it with care. For example:

- Do not take it into harsh environments where it might be subjected to rapid changes in temperature, dampness, or excessive dust.
- Do not expose it to excessive vibration.
- Do not apply excessive pressure to the touch sensitive display. Do not use a sharp pointed object on the display. It is recommended that you use only the touch pen supplied with your PT-9000 to enter commands or write on the display.
- When carrying the unit such as in a briefcase, be sure to close the display cover.

### Cleaning

- You should keep the PT-9000 free of dust by using a clean, dry, lint-free cloth. Do not use alcohol, benzene or other organic solvents which might damage the case.
- If the screen becomes blurred, you can clean it by using a small amount of neutral detergent on a lint-free cloth.

## TROUBLESHOOTING

This section describes how to handle some common problems with setting up and operating the PT-9000. Refer to this section before you resort to contacting your Sharp dealer for assistance.

### General Operation

**THE POWER DOES NOT TURN ON.**

**Possible Problem 1** Low Battery.

**Suggestion** Install new batteries.

**Possible Problem 2** Battery compartment cover is opened.

**Suggestion** Replace the battery compartment cover.

**Possible Problem 3** The batteries are installed with incorrect polarity.

**Suggestion** Reinstall the batteries.

**THE DISPLAY REMAINS BLANK AFTER YOU TURN ON THE UNIT.**

**Possible Problem** Contrast is not adjusted

**Suggestion** Turn the contrast volume on the left side panel to adjust the contrast.

## Writing and Drawing

**TAPPING A BUTTON HAS NO EFFECT.**

**Possible Problem** Pen digitizer isn't calibrated correctly.

**Suggestion** Realign the pen digitizer in Preferences.

## Options

**I CANNOT PRINT OUT FROM THE UNIT.**

**Possible Problem** Printer is not set properly.

**Suggestion** Reset the Printer and Port options in Preferences.

**EXTERNAL FLOPPY DISK DRIVE UNIT IS NOT RECOGNIZED.**

**Possible Problem 1** Connectors do not fully mate

**Suggestion** Check that the cables are connected correctly.

**Possible Problem 2** Floppy disk drive batteries are not installed.

**Suggestion** Install the batteries.

## Error Codes

If you see some error messages (error code KR-01 to 09 or KR-18) when operating the unit, the only way to return to GEOS is to press the restart button on the lower left of the screen. Pressing the restart button restarts the unit and loses the information entered after the last time you saved. The contents of the RAM disk (drive D) will not be lost.





## STANDARD SYSTEM

### Hardware

**Dimensions:** 234 mm (W) × 163 mm (D) × 36 mm (H)  
9.2"(W) × 6.4"(D) × 1.4"(H)

**Weight:** 1.1 kg (2.4 lbs)

including 6 AA-size alkaline batteries and 2 lithium batteries (CR2032)

**Power Source:** AA-size alkaline battery × 6 / lithium-ion rechargeable battery × 1 or 2 / AC adaptor (CE-901V/CE-902V), with lithium battery (CR2032) × 2 (for memory backup)

### Temperature:

Operating: 5°C to 40°C (41°F to 104°F)

Storage/ Transit: -20°C to 60°C (-4°F to 140°F)

### Humidity:

Operating: 20% to 80 %

Storage/ Transit: 10% to 90%

### Processor:

VG230 running at 16 MHz / 8 MHz

### RAM:

2 MB Pseudo SRAM

640 KB for conventional memory

32 KB for video memory

1,376 KB for RAM disk or Expanded memory

### ROM:

128 KB OTP-ROM for IPL, BIOS, and power-on check

6 MB Mask ROM for Application Software, Utilities, Drivers

### Parallel Port:

Centronics Interface 25-pin female D-SUB connector

### Serial Port:

RS-232C Interface 9-pin male D-SUB connector

**3.5" FDD Port:**

3.5" Floppy disk drive 80-pin special connector

**IC Card Slot:**

PCMCIA Standard 2.0 68-pin connector 2 ports

Slot 1: Type I, II, or III

Slot 2: Type I or II

**Screen:**

STN (Super Twisted Nematic) black and white LCD

Active Viewing Area: 160 mm × 100 mm (6.3" × 3.9")

Resolution: 640 × 400 pixels

8 gray shades

**Tablet:**

Resistive film digitizing tablet

Resolution: 160 points / inch

8 Hard Icon area on the right edge of the screen

**Touch Pen:**

Cordless without switch

**External Keyboard Ports:**

6-pin female mini DIN connector

IBM-XT compatible keyboard can be connected

**Battery Life:**

Battery life may vary depending on usage.

## SOFTWARE

**Operation System:**

GEOS 2.0, Graphical User Interface

**Input Method:**

Handwriting recognition (Free format, printing type)

On-screen Keyboard

**Applications:**

GeoCalc            Spreadsheet application

GeoWrite          Word processing application

GeoFile            Graphical forms-based database

**Communications:**

GeoComm      Telecommunication application  
GeoHost      Can be installed to a desktop PC  
                 Provided with a 3.5" diskette.

**Personal Information Manager:**

PalmAddress    Address book application  
PalmSchedule    Calendar, Scheduler, To-do list  
PalmNotes      Memorandum  
Calculator      Calculation, regular form calculation  
World Clock     World map, World clock

**Other Applications and Accessories:**

GeoManager    System management application  
Scrapbook      Graphics and text storage application  
Text File Editor Text editing  
Games          Solitaire, Pyramid, Uki  
Preferences    System configuration applicaiton

**OPTIONS****MEMORY CARD: CE-901B**

1 MB memory card, EMS support  
Size: 34mm (W) × 36mm (D) × 6mm (H)  
1.34" (W) 1.42"×(D)× 0.24"(H)  
Weight: 5g (0.01 lbs)

**AC ADAPTOR: CE-901V**

Charger Function for Lithium-ion Rechargeable Battery  
Input: 100V - 240V  
Output: 9V, 1.34A  
Size: 130 mm (W) × 74 mm (D) × 29 mm (H)  
5.1" (W) × 2.9" (D) × 1.1" (H)

**AC ADAPTOR: CE-902V**

**NOTE**

The voltages and sizes of this option vary in countries.

Input: 120V

Output: 9V, 1.1A

Size: 54 mm (W) × 48 mm (D) × 30 mm (H)

2.1" (W) × 1.9" (D) × 1.2" (H)

or

Input: 220V - 240V

Output: 9V, 1.1A

Size: 60 mm (W) × 50 mm (D) × 30 mm (H)

2.4" (W) × 2.0" (D) × 1.2" (H)

**LITHIUM-ION RECHARGEABLE BATTERY: CE-901EB**

Lithium-ion rechargeable battery pack

Size: 38.4mm (W) × 70.8mm (D) × 20.6mm (H)

1.5" (W) × 2.8" (D) × 0.8" (H)

Weight: 95g (0.21 lbs)

**3.5" FLOPPY DISK DRIVE UNIT: CE-301F**

3.5" 1.44 MB 2HD drive

Powered by 6 AA-size batteries

Cable: Converts 80-pin connector to 25-pin D-SUB connectors

Size: 222mm(W) × 124mm(D) × 31.5mm(H)

8.75" (W) × 4.9" (D) × 1.25" (H)

Weight: Approx. 1.0kg (2.2lbs)

**LAPLINK CABLE: CE-303CB**

9-pin D-SUB connector to 9-pin or 25-pin D-SUB connector

Connects to another computer using GeoHost.





## A

AC adaptor 3.4, 3.5  
AC adaptor jack 1.6, 4.5

## B

battery  
  backup battery 2.2, 3.2, 3.4,  
  3.5  
  low battery 3.3  
  changing 3.5  
  compartment 1.7  
  indicator 1.3, 3.3  
  installing 2.2  
  main battery 2.3  
  optional battery 4.5  
battery protect switch 2.2, 2.3,  
  3.6, 3.7, 4.6  
bottom panel 1.7

## C

card drive 1.4, 1.5, 1.6  
connectors 1.5, 1.6  
  AC adaptor jack 1.6, 4.3  
  external FDD 1.5, 1.6, 4.3  
  external keyboard 1.6, 4.11  
  parallel (printer) port 1.5  
  pin-assignment B.2  
  serial (RS-232C) port 1.5  
contrast volume 1.4

## D

display 1.3

## E

EMS 4.2  
error messages C.2  
expanded memory 4.2  
external FDD port 1.5, 4.9  
external keyboard 1.5, 4.11

## F

flash card 4.12  
floppy disk drive 4.9  
  battery low 3.4, 4.10  
front panel 1.3

## I

indicator (low battery) 1.3, 1.4

## K

keyboard 1.6  
  option 4.11

## L

left panel 1.4  
low battery alarm 3.3

## M

main battery lock 2.4, 3.8, 4.6  
memory  
  expanded 4.2  
  option 4.2

## O

options  
  AC adaptor 3.4, 4.5  
  floppy disk drive unit 4.8  
  keyboard 4.11  
  LapLink cable 4.10  
  lithium-ion rechargeable  
  battery 4.5  
  memory card 4.2  
  PC card 4.11  
  specifications D.4

## P

parallel port 1.5, B.3  
pin-assignments B.1  
PCMCIA 1.5, 1.6, 4.11  
  card 4.11  
  slot 1.5, 1.6  
power switch 1.4

## R

RAM 1.7, 4.2  
rear panel 1.5  
Reset button 1.7, 2.5, 4.3  
restart button 1.4  
right side panel 1.6

## **S**

- serial (RS-232C) port 1.5
  - pin-assignments B.2
- Specifications D.1
  - options D.4
  - software D.3
  - standard system D.2
- SRAM card 4.12
- startup program 2.5

## **T**

- temperature D.2
- tilt stand 1.3, 1.7
- touch pen 1.3, 2.5
- touch sensitive display 1.3, 2.5
- troubleshooting C.1



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