

# CEFUCOM-21 SERIES

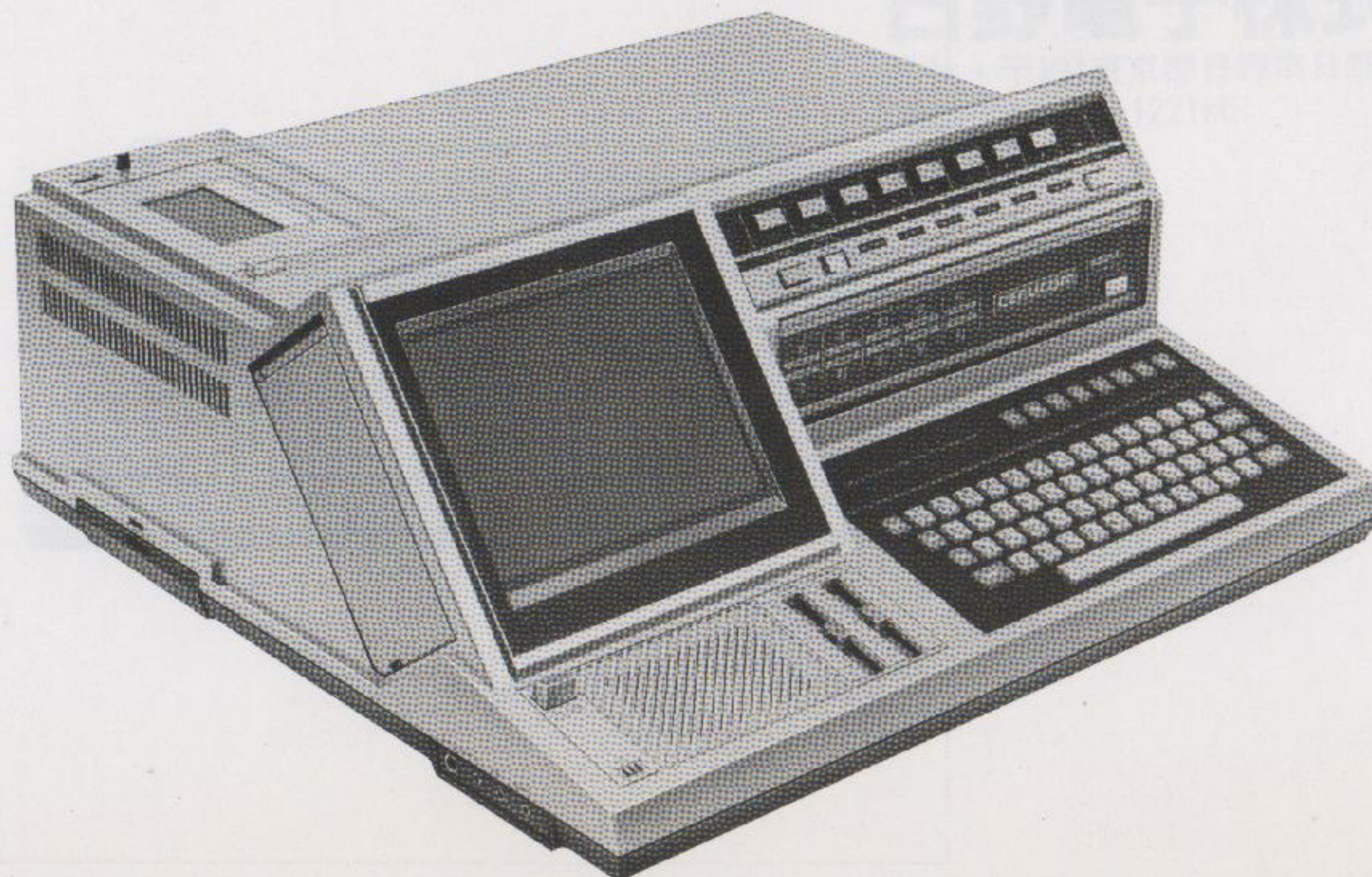
computer learning machine

Instructions for use



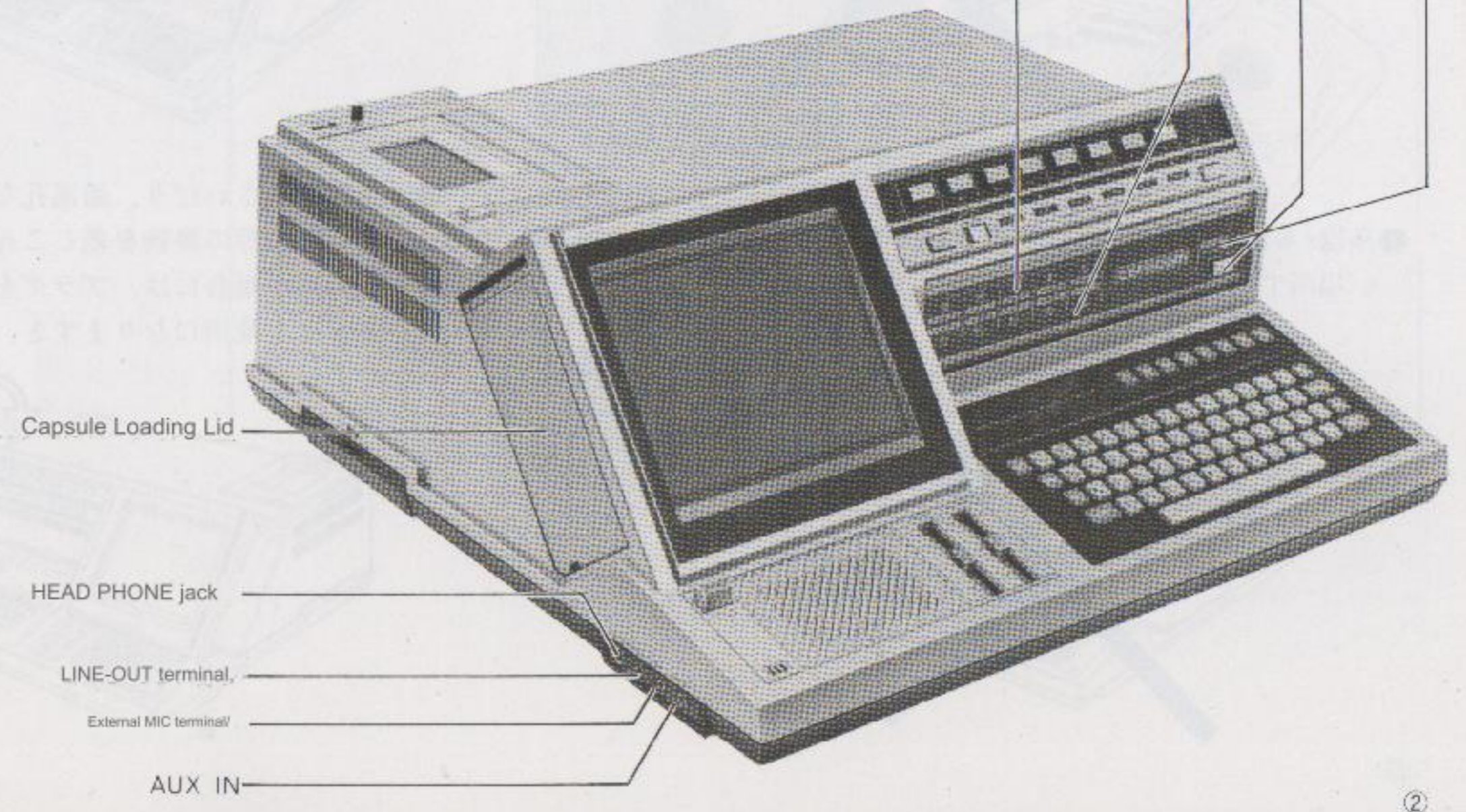
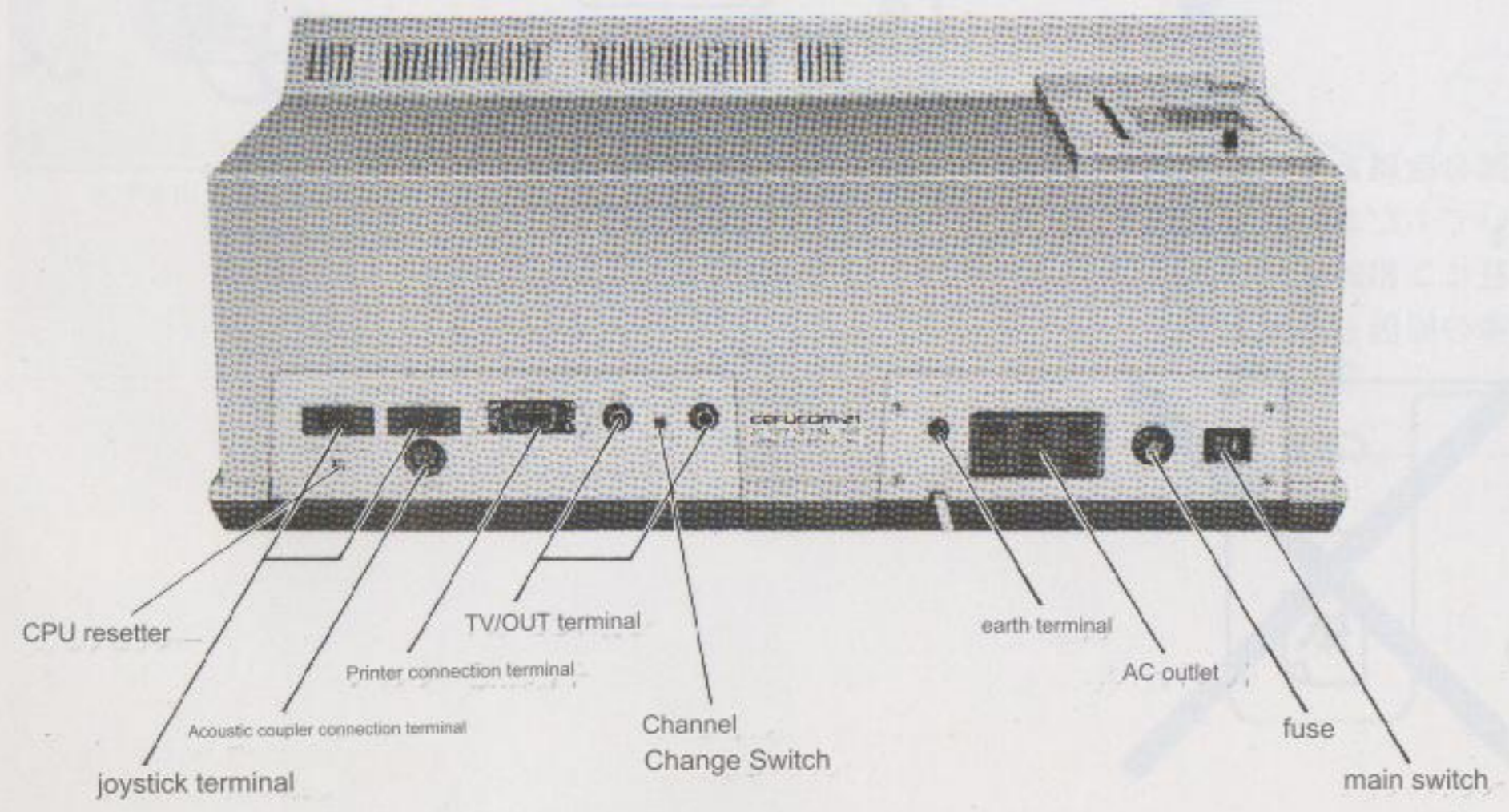
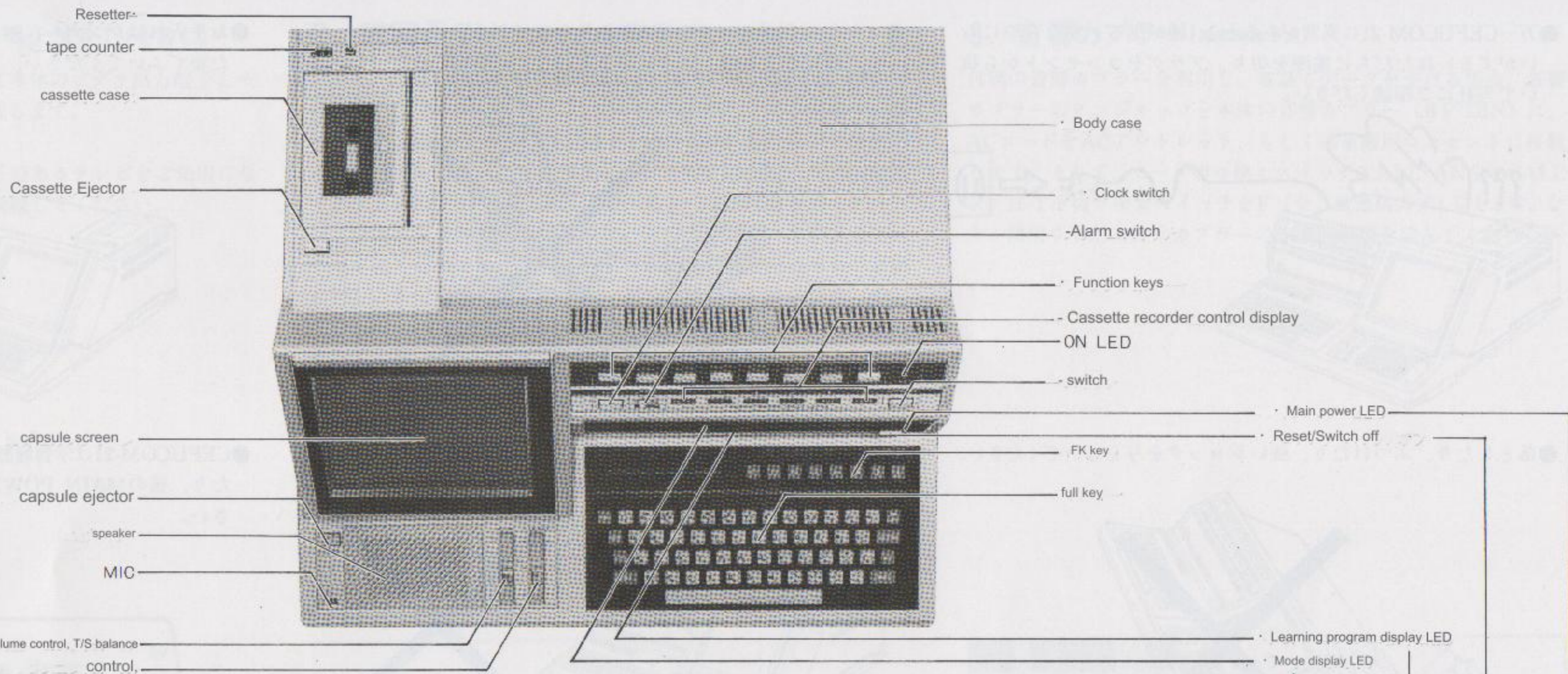
Thank you very much for purchasing the CEFUCOM-21 SERIES study material. This is a CAI (COMPUTER ASSISTED INSTRUCTION) method that makes full use of the currently popular computer functions, and at the same time, it is a unique capsule-type auto-text that automatically operates conventional textbooks using a computer. CEFUCOM-21 is a multi-purpose device that uses five models.

It is equipped with a basic computer mode, and can be used not only for CAI learning, but also for time management (alarm), personal computer, tape recorder, and data communication. In computer mode, it is BASIC, and can be used by a wide range of people from beginners to enthusiasts. For details, please read this instruction manual and we hope you will use it for a long time.



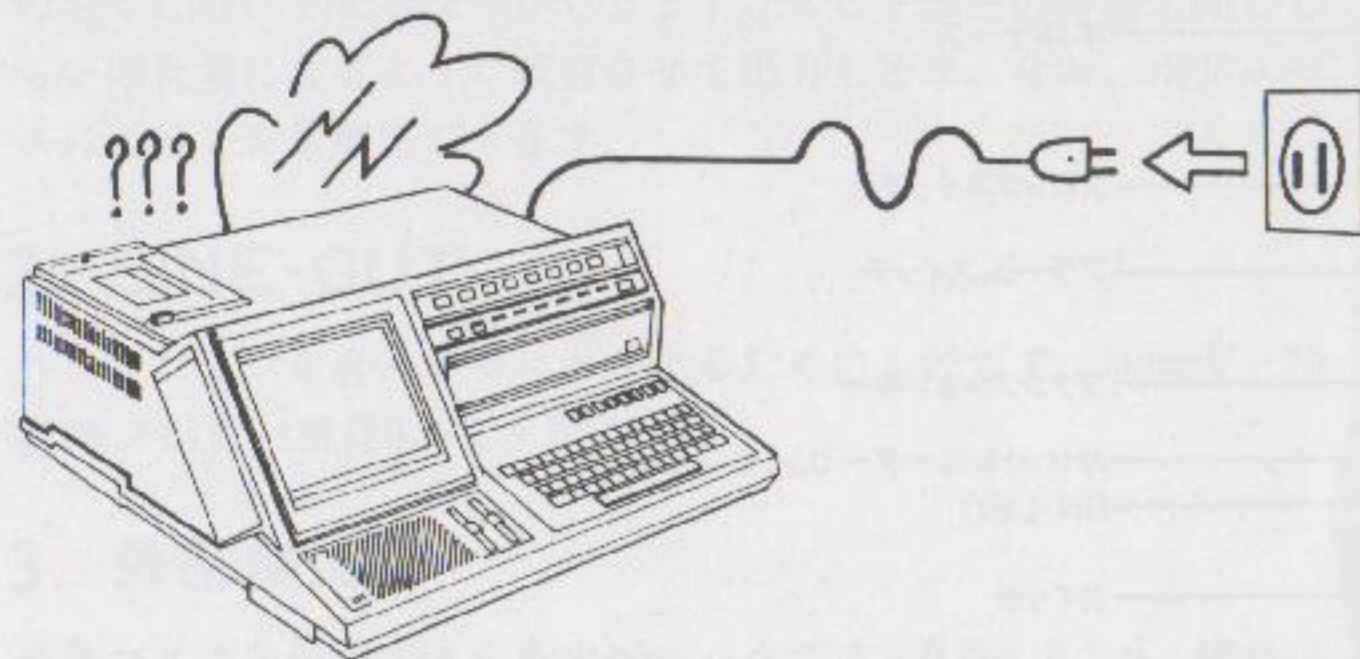
Name of each part.....	2
Precautions for use.....	3
System configuration.....	4
Types and functions of connection terminals.....	5
Connecting system equipment.....	6
Functions of each part.....	8
Internal mechanism.....	10
Equipment operation.....	11
Application mode.....	12
MODE 1 operation.....	13
MODE 2 operation.....	15
MODE 3 operation· MODE 4 operation.....	17
specification.....	18

# Name of each part

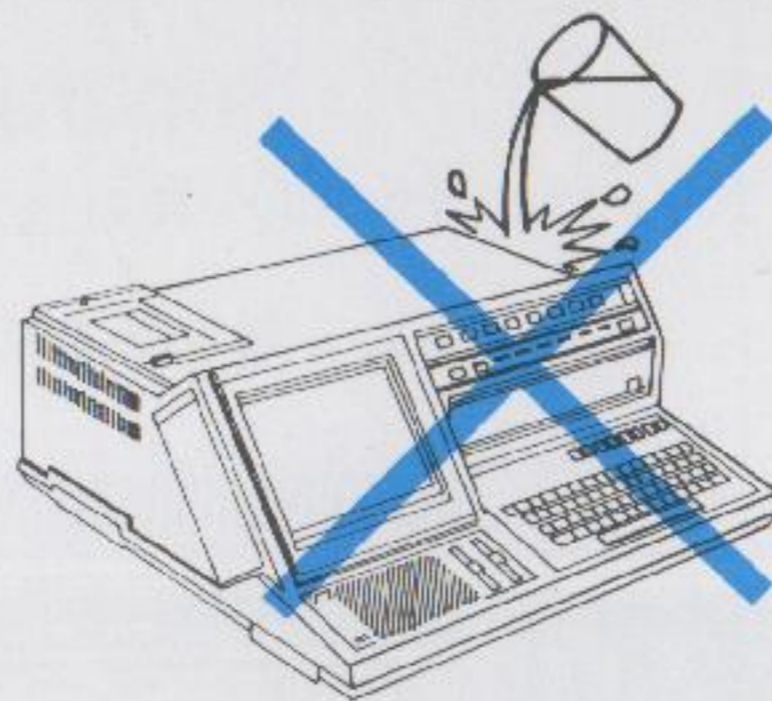


# Precautions for use

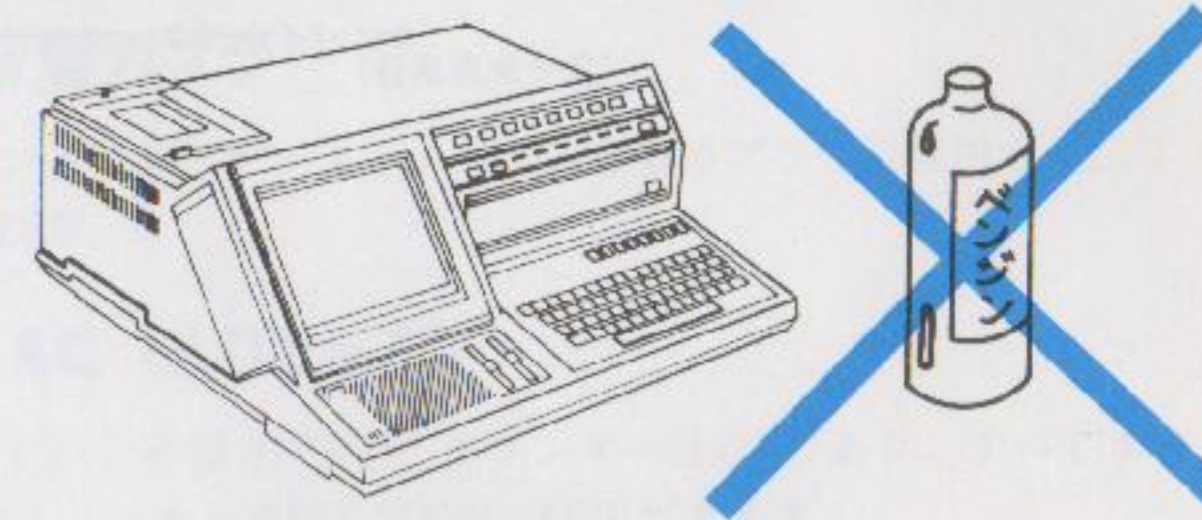
- If you notice any abnormality with the CEFUCOM-21 (smoke coming out, strange noises or smells), immediately turn off the power, unplug the unit from the outlet, and contact us.



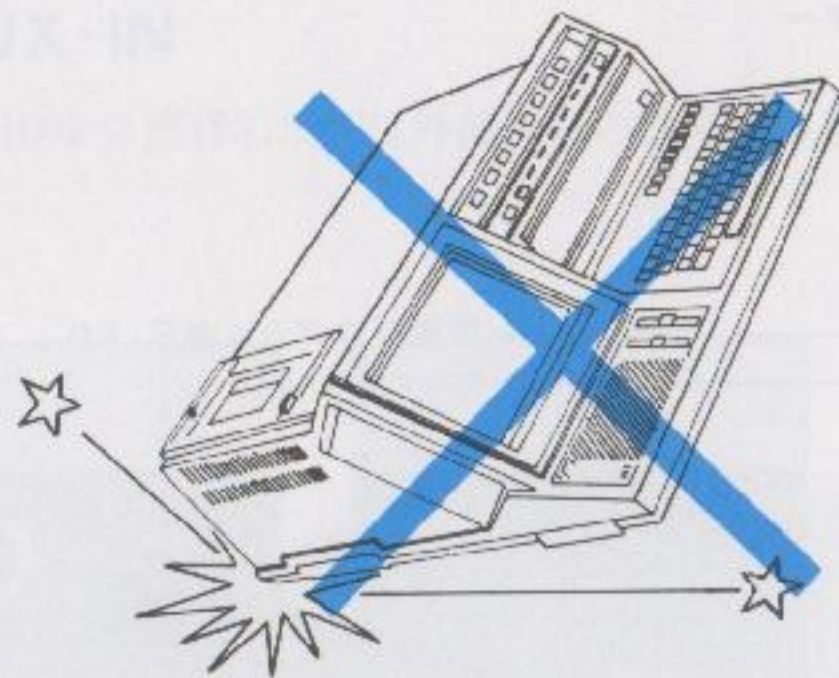
- Avoid spilling coffee, juice, or other drinks. If you do spill something, wipe it off immediately.



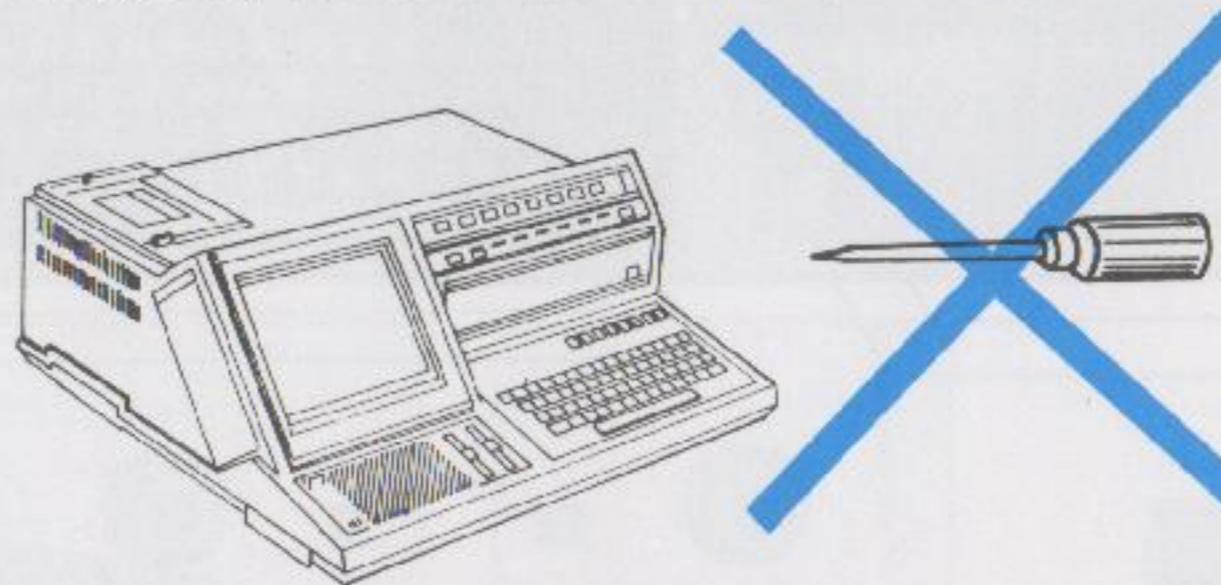
- When cleaning, avoid using chemicals such as thinner or benzene, and wipe with a dry cloth.



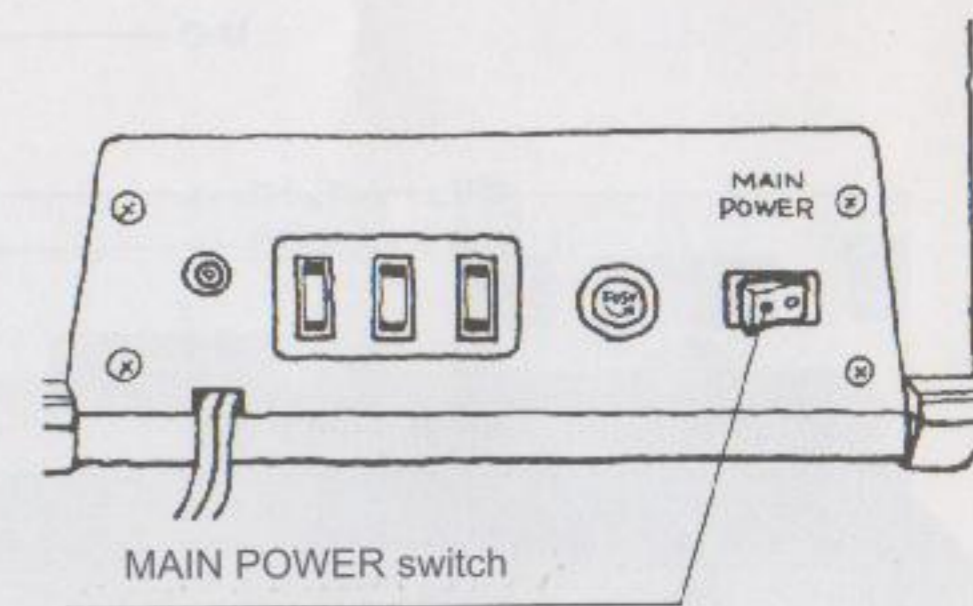
- Do not drop, hit, or subject to strong shocks.



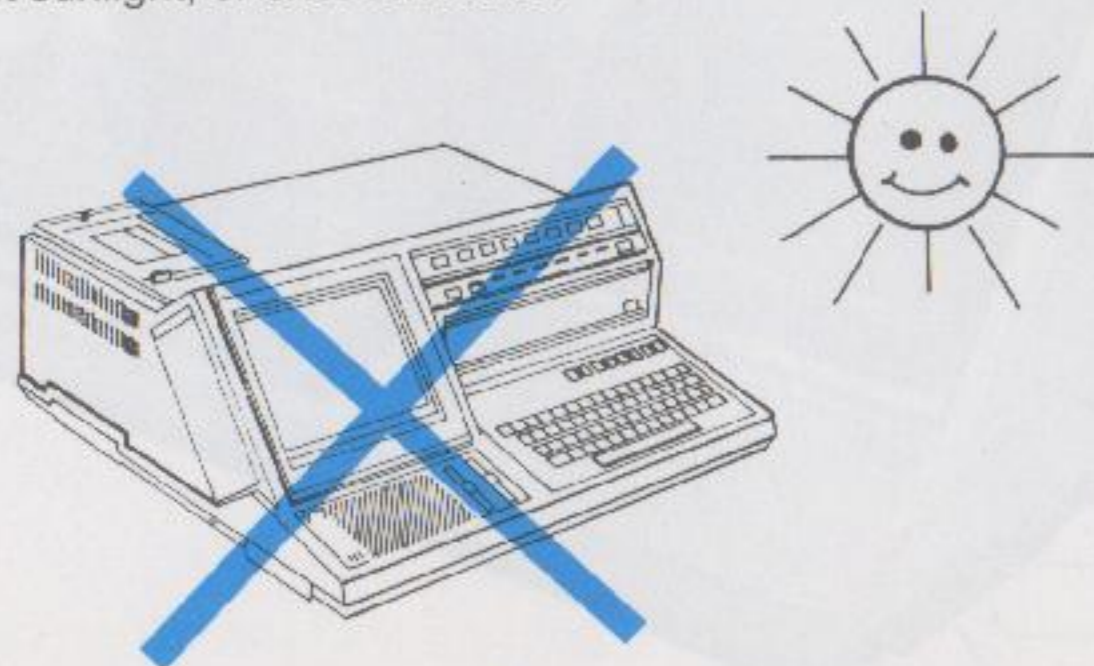
- Never open the case. There are parts inside that pose a risk of electric shock. Doing so may also result in breakdown of the product.



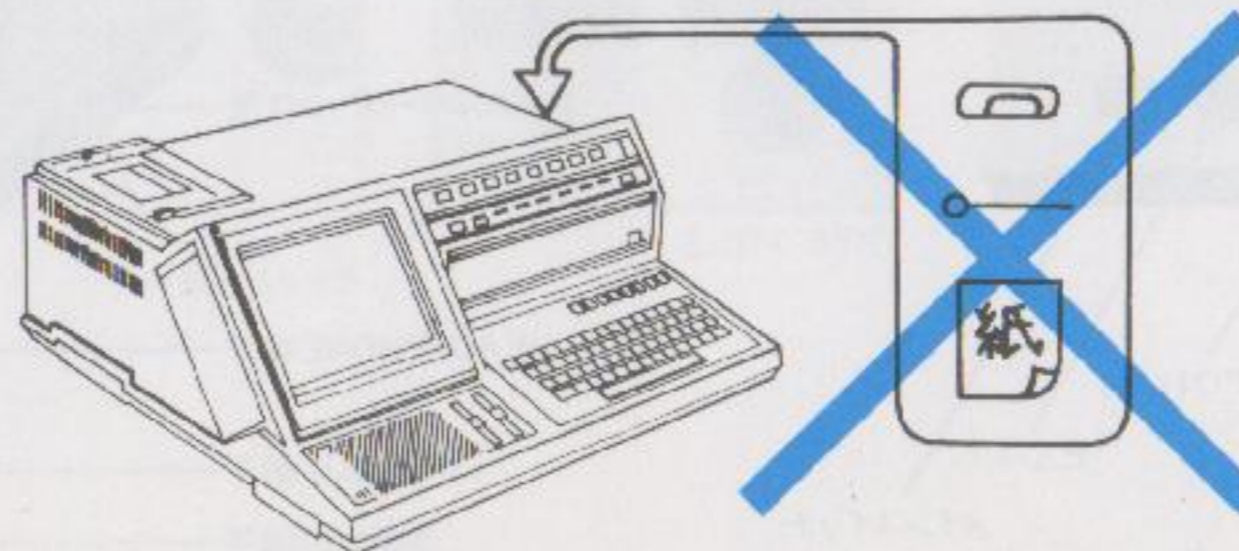
- Since CEFUCOM-21 manages the learning history, please do not unplug the AC cord or turn off the MAIN POWER switch.



- Avoid using the product in places with high temperatures, high humidity, direct sunlight, or excessive dust.



- Do not block the ventilation holes or insert metal, flammable objects or other foreign objects into the interior through the ventilation holes. If a foreign object does get inside the unit, unplug it and contact us. Continuing to use the unit in this condition may result in electric shock or breakdown.



# System configuration

## System features

### ■Features of the individual learning machine CEFUCOM-21

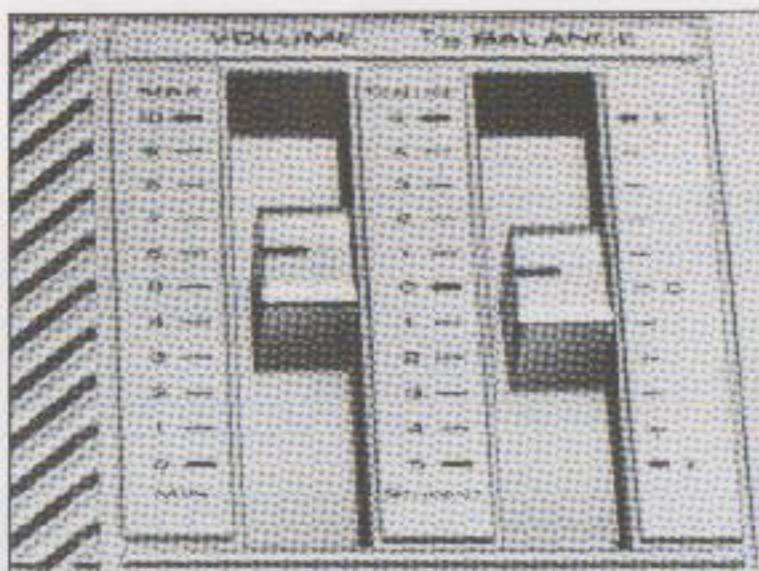
1 This is a multi-function, multi-purpose device with five modes: study time schedule, CAI learning, computer, tape recorder, and information.

② It is a microcomputer learning machine with individual learning management functions that meets all the requirements of CAI equipment.

③ It is an interactive learning machine with a computer.

4) This is a learning machine that uses audio on tape, text on a CRT (cathode ray tube), and cassette-type autotext.

The computer also has a T/S (Teacher/Student) function, which allows you to change the volume of the teacher's and student's voices when learning LL with CAI.



## System configuration.

### (1) CEFUCOM-21 main unit

CEFUCOM-21 includes a capsule-type auto text function that stores special printing in a roll, a tape recorder and its amplifier, control circuit, etc. The tape recorder has two tracks, one of which contains audio and the other a digital signal. This digital signal is used to display information on the CRT screen, control learning, display rolls, etc.

### (2) Acoustic coupler (to be implemented in the future)

When you call the other party (DEMOS-E Center) and the line is connected, you can place the handset on the acoustic coupler to receive signals through the telephone line. These signals are displayed as text information on the CRT through the main unit. Programs can also be transmitted.

### (3) CRT (cathode ray tube)

A home color television, a color monitor television (composite type), or a green monitor television can be used as the CRT. Learning information can be read from a tape recorder and displayed on the CRT screen. Information from an acoustic coupler can also be displayed.

AZIOTIS SAZN

# Connection terminal types and functions

## 1. HEAD PHONES

This is a 6.34mm mono output, and can be used to monitor all CAI, CPU, and TAPE PLAY/REC. The output is attenuated so that the volume is the same as the speaker volume. The volume can be adjusted with the volume control.

## 2. LINE-OUT

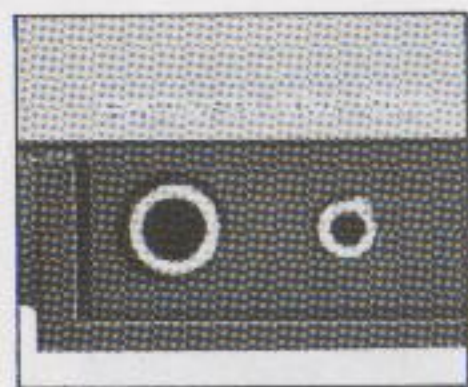
Includes headphones for monitoring. 500mV/10 kh mono output (3.5mm diameter)

## 3. External MIC

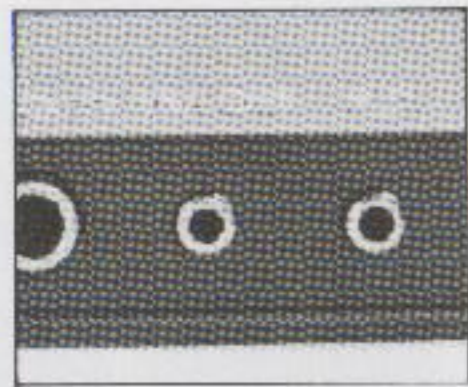
This is a jack for using an external microphone. The diameter is 3.5 mm. The function is the same as the BUILT-IN MIC.

## 4. AUX-IN

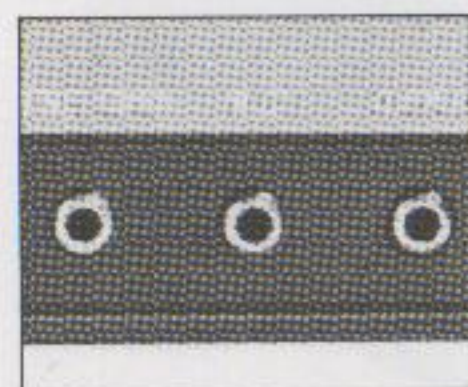
500mV/100k, 3.5mm diameter. This is a jack for recording signals from an external source.



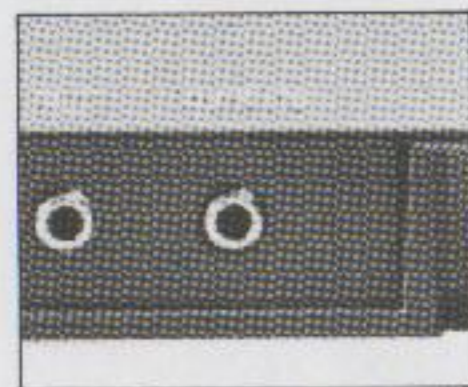
① HEAD PHONES



② LINE-OUT



③ External MIC



④ AUX-IN

## 5. TV-OUT / VIDEO

This is a video output terminal for outputting to a TV monitor. RCA type.

## 6. TV-OUT / RF

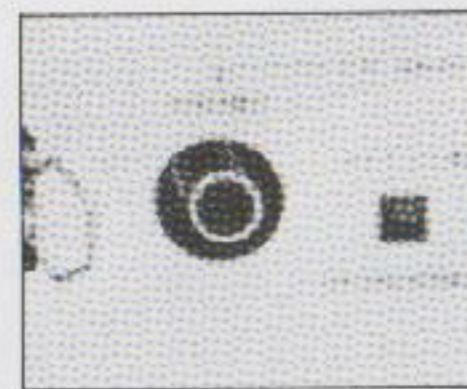
RF modulated video output. RCA type.

## 7. Channel change switch

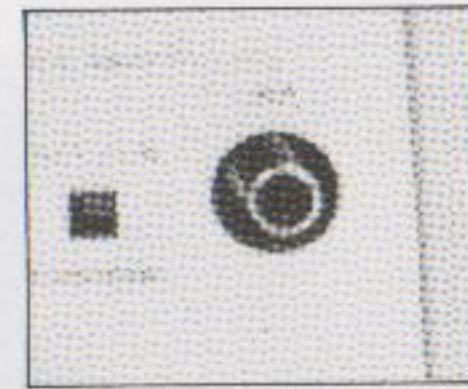
If the switch is not pressed, it switches to channel 1; if it is pressed, it switches to channel 2.

## 8. JOY STICK

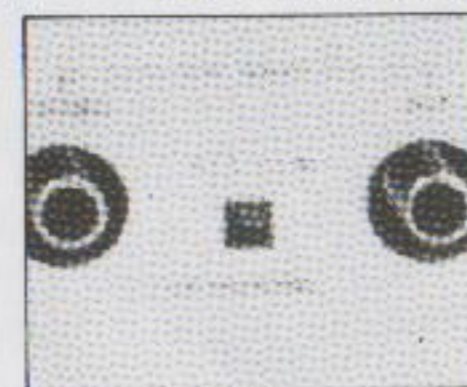
There are two joystick (gaming) connection terminals. 9P connector.



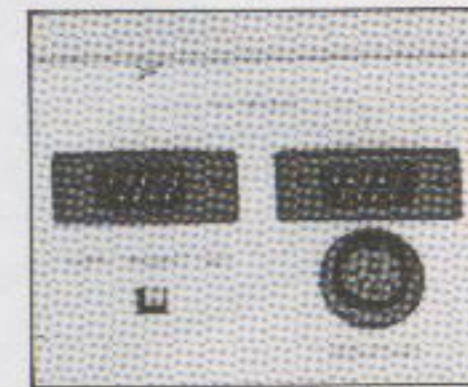
⑤ TV-OUT / VIDEO



⑥ TV-OUT / RF



⑦ Channel changeover switch



⑧ JOY STIC

## 9. PRINTER

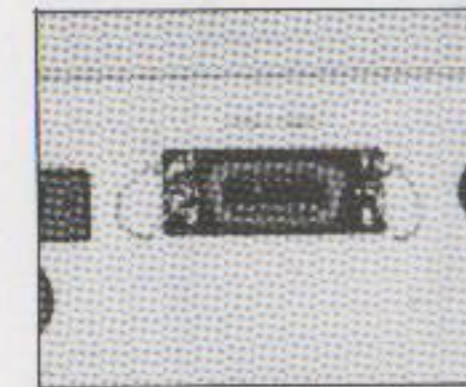
This is the connection terminal for a printer (optional) that prints out the contents displayed on the TV screen. 14-pin connector.

## 10. Acoustic coupler (future implementation)

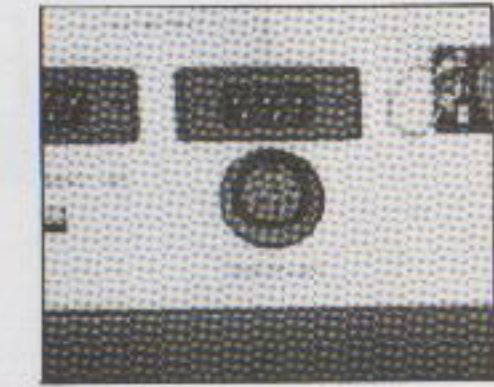
For connecting CCI Contac Data System acoustic couplers. 8P DIN.

## 11. AC OUTLETS

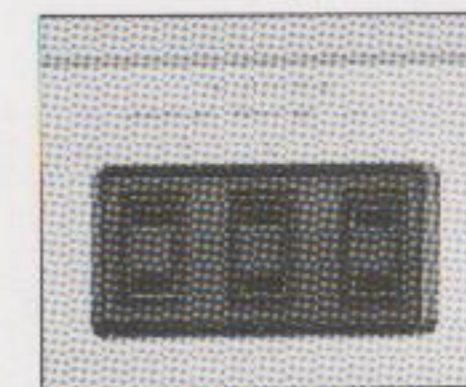
There are three, one for the CRT (TV), one for the audio coupler, and one for the printer, and all of them can be turned on/off in conjunction with the power switch on the main unit.



⑨ PRINTER



⑩ acoustic coupler



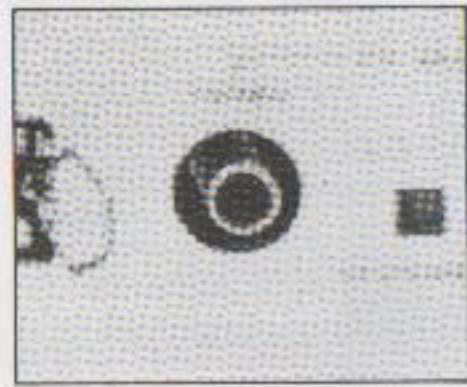
⑪ AC OUTLETS

# Connecting system equipment

## 1. CRT monitor (including TVs with video input terminals)

Use the included TV monitor cable to connect the video output terminal of the unit to the video input terminal of the TV monitor.

If you are using a household television with a video input terminal, connect it in the same way as a monitor television.

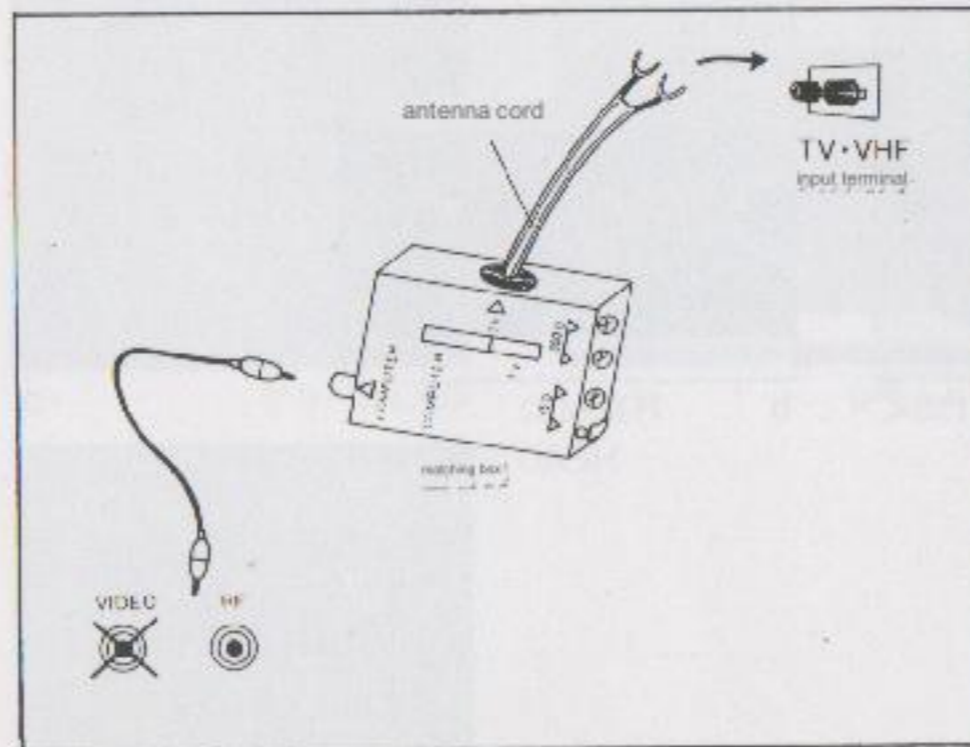


Video output terminal (left side)

## 2. Home TV (without video input terminal)

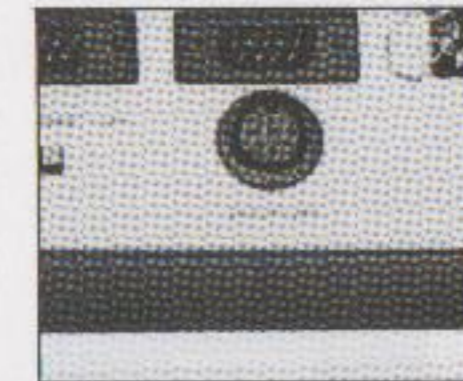
If you are using a home TV that does not have a video input terminal, connect the TV antenna cord of the matching box to the VHF300 Q antenna input terminal of the TV, and connect the COMPUTER terminal of the matching box to the RF output terminal of the main unit using the included TV monitor cable. Next, tune the VHF channel of the TV you are using to 1 or 2.

(Select the channel that does not have a broadcasting station in your area.) If you are using channel 2, push the channel change switch all the way in, and if you are using channel 1, push it out a little. You can change the channel by pressing it with a thin object such as the tip of a pencil.

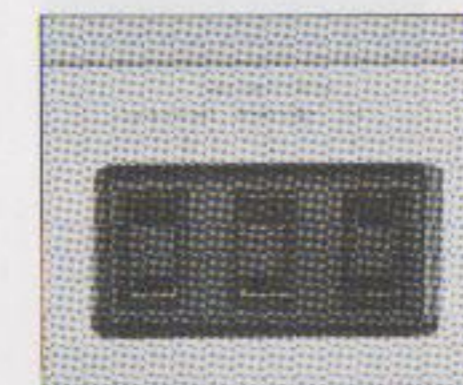


## 3. Acoustic coupler (future implementation)

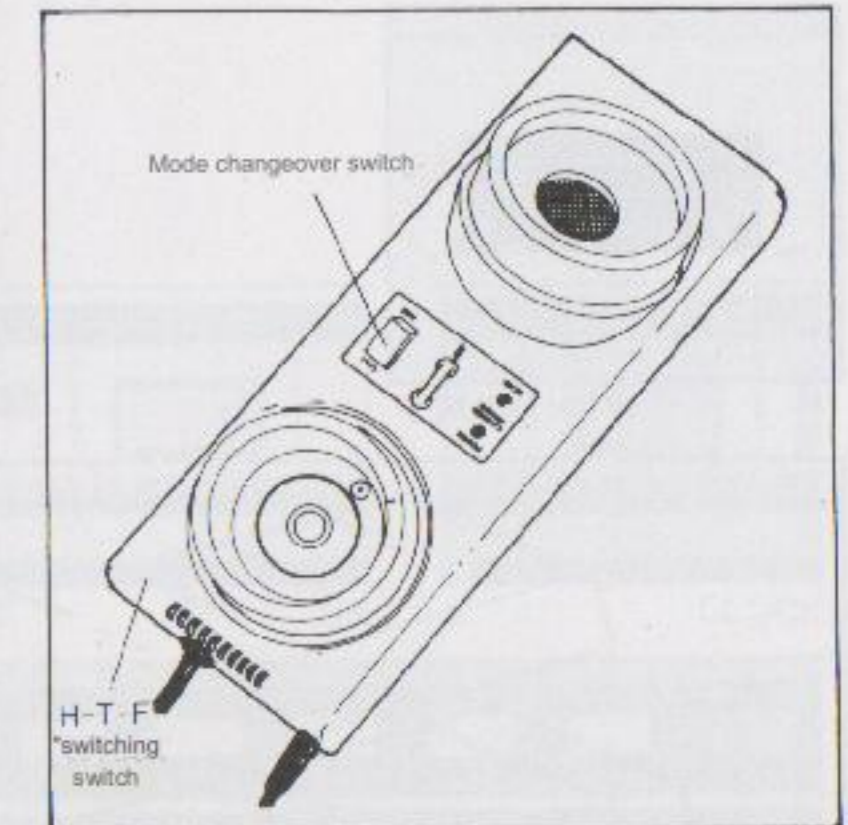
When using the included acoustic coupler to receive data over the phone, connect the pin jack of the acoustic coupler to the acoustic coupler (8P DIN) on the main unit, and connect the AC cord to an AC outlet or household power outlet. Then, set the mode switch (CALL/ANS) to CALL and the H-T-F switch to F (full-duplex communication mode). Please read the coupler's instruction manual carefully before use.



Acoustic coupler (8P DIN) terminal



AC OUTLETS



acoustic coupler

# Connecting system equipment

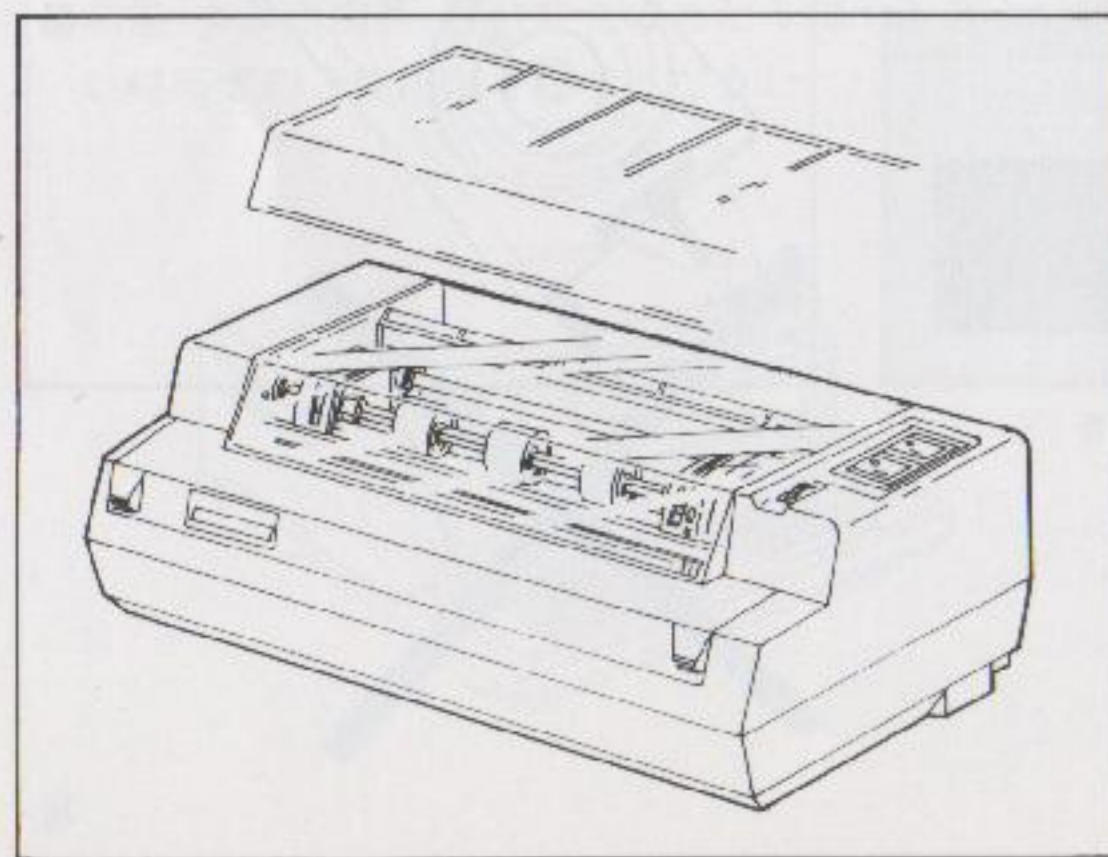
## 4. Printer

Connect the printer (optional) cable to the printer terminal of the CEFUCOM-21.

Caution) Please note that if you turn the power of the main unit ON/OFF while the printer is ON, random characters will be printed on the printer.



PRINTER terminal



PRINTER

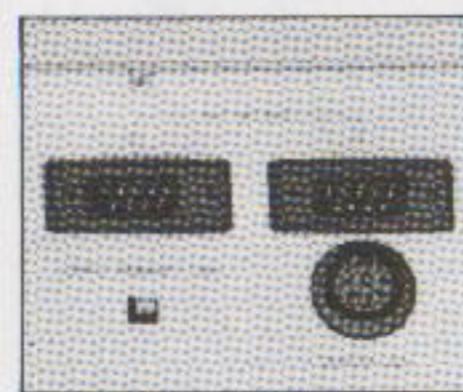
## 5. Other connection terminals

A joystick can be connected to the joystick terminal. Please consult your dealer for the type of joystick that can be used.

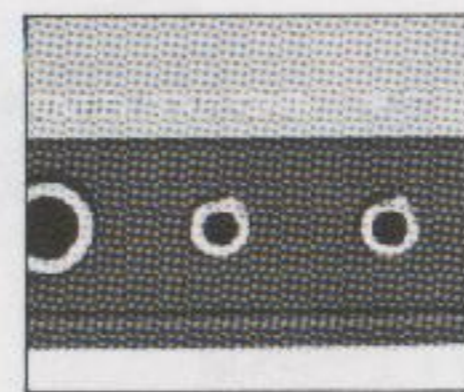
b. External microphone and headphones When using an external MIC or HEAD PHONES, insert it into the respective connection terminal.

c. AUX-IN When recording directly from another device, connect a patch cord to this jack.

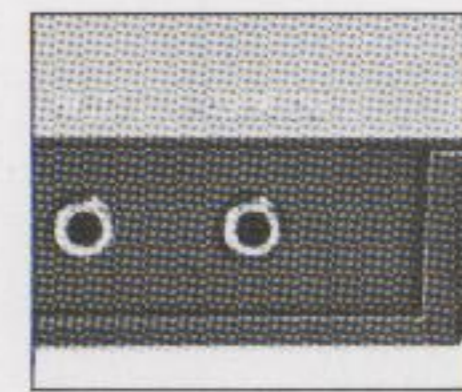
d. LINE OUT If you want to output the sound from the CEFUCOM-21 speaker from another device, connect a patch cord to this terminal.



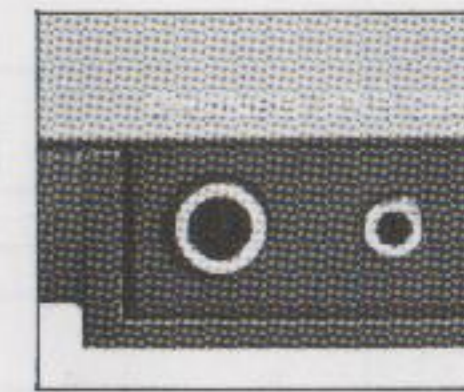
a JOY STICK



b EXTERNAL  
MIC HEAD PHONES



c AUX-IN



d LINE-OUT



# Functions of each part

## 1. Display

The display consists of the LED on the main unit and a CRT used together with the main unit. When the MAIN POWER switch is turned off, all displays go off. This section explains the function of the LED on the main unit.

There are five mode LEDs. The LED that indicates the selected mode lights up, allowing you to see the mode at a glance.

b. Progress LED When CAI uses the embroidering mode, this progress LED manages the amount of learning to be done in a day. For example, the progress LED lights up as follows to indicate whether or not you are progressing according to the set schedule. The progress LED that lights up before selecting the chart indicates the learning progress of the person who studied the most recently.

AHEAD: Indicates that more learning is being done than scheduled. ON: Indicates that the amount of learning is being done according to schedule.

BEHIND: Indicates that you are behind schedule.

CONTINUE: If you do not study for even one day, a warning message will appear telling you to make more continuous efforts.

c. Alarm LED Indicates if an alarm has been set within the next 24 hours.

d. ON LED Lights up when the switch is turned on.

e. MAIN POWER LED When the MAIN POWER switch is on, the memory timer learning history is backed up, so please make sure that it is always on.

If you unplug the AC cord, the learning history cannot be managed, so do not unplug it.

Sai.



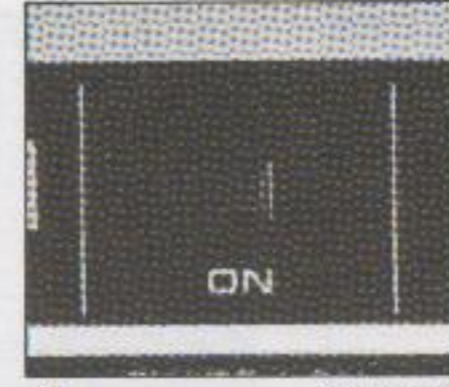
a mode LED



b Progress LED



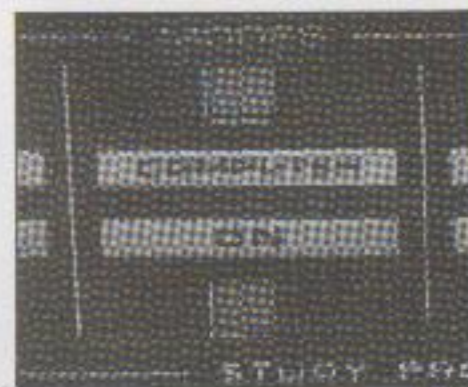
c Alarm LED



d ON LED



AHEAD



ON



e MAIN POWER LED



BEHIND



CONTINUE

## 2. Key

a. RESET/SW OFF Press this key to display the date and time.

Pressing this button activates the SW OFF function, cutting off the power including the AC outlet. Pressing this button to return to the mode selection screen from each mode activates the RESET function. It is designed not to be activated even if you touch it just a little.

b. SWITCH ON Press this key to turn on the power and the LED will light up.

At the same time, the AC outlet will also be turned on.

c. CLOCK This key is only active when CAI is in embroidery mode. When you press this key, the date, day of the week, and time are displayed in the left corner of the CRT. However, if the above spaces are already occupied, you can use them. Please note that it will be erased when displayed.

d. The FUNCTION key arrangement has keys 1 to 8 from the left. Key functions and behavior change according to the selected mode.

To make it easier to operate, the function of each key is clearly displayed on the CRT.

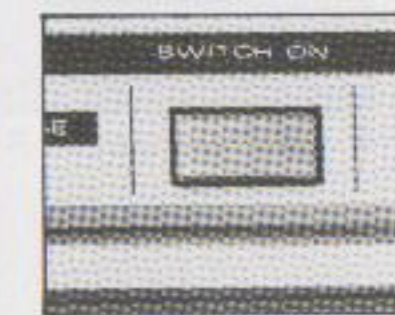
e. TAPE CPU Computer mode and tape recorder mode

In this mode, it can be used as a tape recorder.

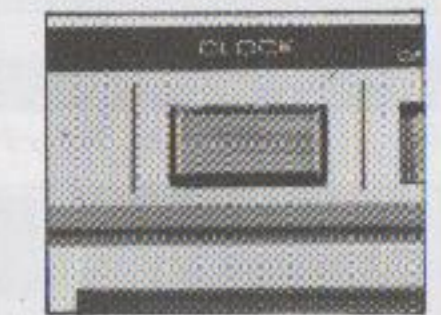
There are 8 key positions: 3-REC, 4-PLAY, 5-REW, 6-FFWD, 7-STOP, and 8-PAUSE. The indications are printed underneath each key.



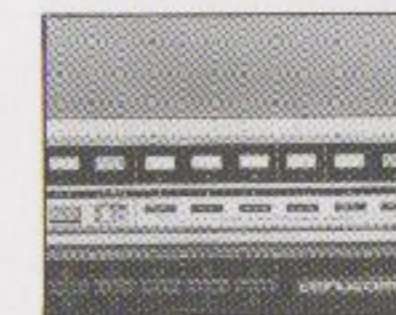
a RESET/SW OFF



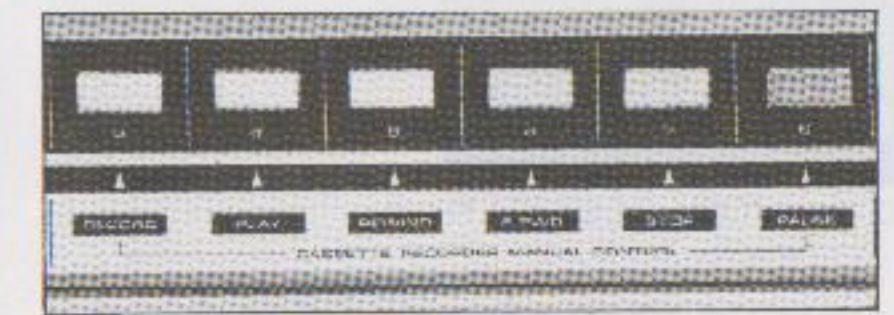
b ON



c CLOCK



d FUNCTION

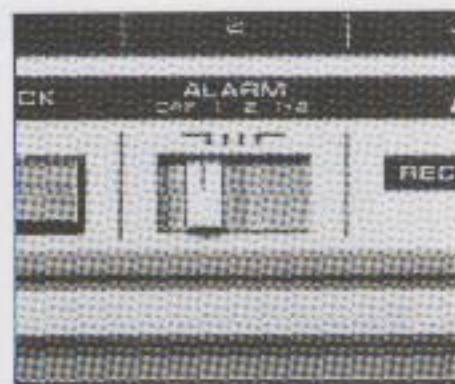


e TAPE-CPU

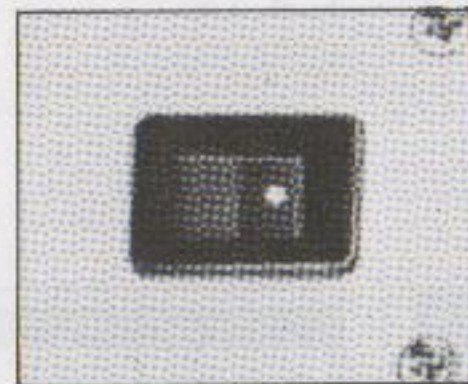
## 3. Switch

a. **ALARM switch** This is a 4-position switch, from the left, with OFF, 1, 2, and 1+2. When it is OFF, the alarm will not sound even if the set alarm time arrives. When it is 1, the alarm will sound when alarm 1 is set. When it is 2, it will sound only when alarm 2 is set, and when it is 1+2, it will sound when both alarms are set. When the time arrives, a melody will sound and the CRT will turn ON, displaying the date and time. However, the melody will stop once a mode has been selected. To select a mode, press the RETURN key. To turn off the power, press the RESET/SW OFF switch.

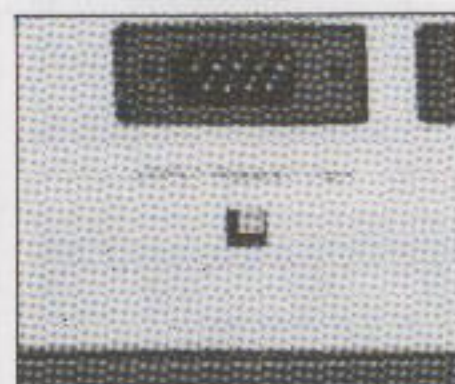
b. **MAIN POWER SWITCH** This is the main power switch. When this switch is turned OFF, the power is turned off. When this switch is turned ON, the MAIN POWER LED lights up.  
**C. CPU RESETTER** If the CPU (computer) malfunctions for some reason, pressing this switch will reset it to normal.



a ALARM switch



b. POWER switch



c CPU RESETTER

## 4. Others

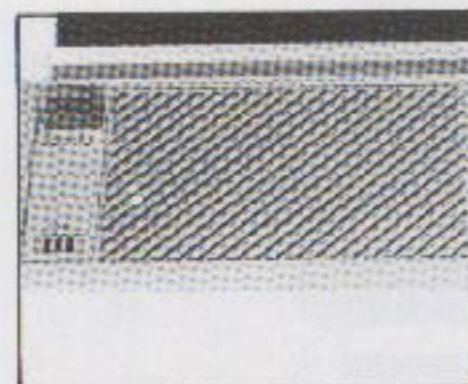
a. **SPEAKER** There is one speaker, which operates during PLAY. During REC, the microphone is in operation, so the speaker does not operate to prevent feedback.

b. The **VOLUME** knob is for adjusting the speaker volume in all modes. However, when using a microphone in CAI or TAPE mode, the speaker is muted to prevent feedback, so use headphones.

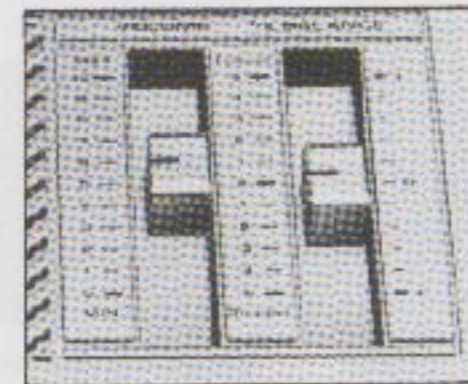
In CPU mode, you can adjust the monitor volume and synthesizer volume when C-LOAD is in progress. If you do not need these, turn down the volume. The headphone monitor output can be adjusted with this volume regardless of the mode.

c. **T/S BALANCE** This function only works when CAI is in embroidery mode. The upper side will make the teacher's voice louder, and the lower side will make the student's voice louder.

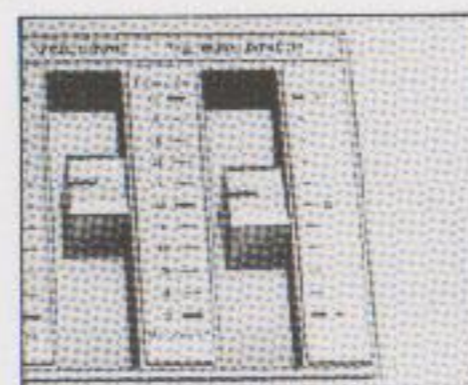
d. **MIC** This recorder has a built-in microphone, an external microphone terminal and an AUX terminal, which function only when recording in CAI or TAPE mode. The order of priority is AUX, external MIC, and BUILT-IN MIC.



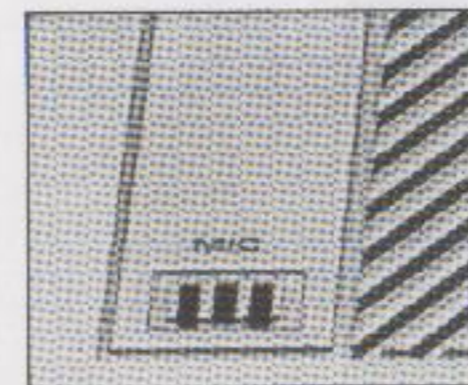
a SPEAKER



b VOLUME



c T/S BALANCE



d MIC

e. **CAPSULE EJECTOR** Press to eject the capsule.

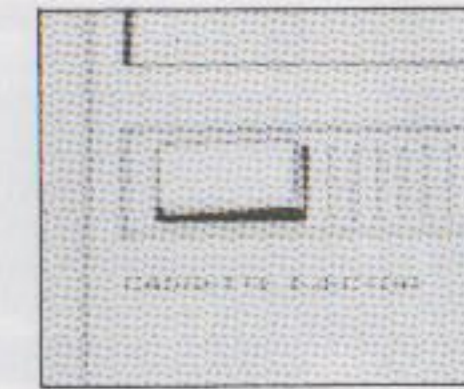
However, you cannot press this button while CAI is in operation, so in that case, press the RESET key first.

f. **CASSETTE EJECTOR** Used only to stop the tape and eject the cassette.

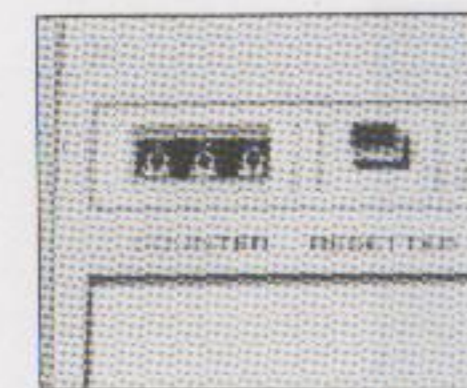
g. **TAPE COUNTER** When recording/playing back a cassette tape, this allows you to see the remaining capacity at a glance. Pressing the resetter resets the counter to 000.



e CAPSULE EJECTOR



f CASSETTE EJECTOR



g TAPE COUNTER

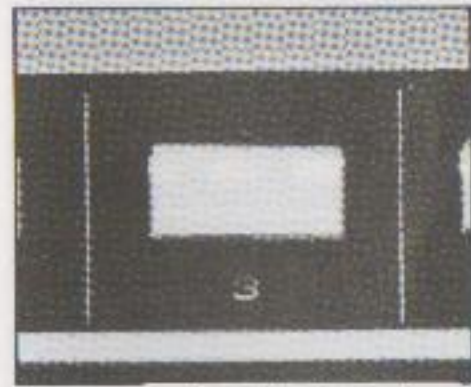
c) When registering or changing a learner's name:

[3] Press RETURN and the cursor will appear at the student's name

(c). Using the full keys, you can register up to 20 characters in either katakana or romaji. To correct a name you have already entered, move the cursor to the area to be corrected and enter the correct characters. Press RETURN to complete the registration or change. There is no need to enter any other blank spaces as they will be managed by the computer.

d) To cancel your learning history:

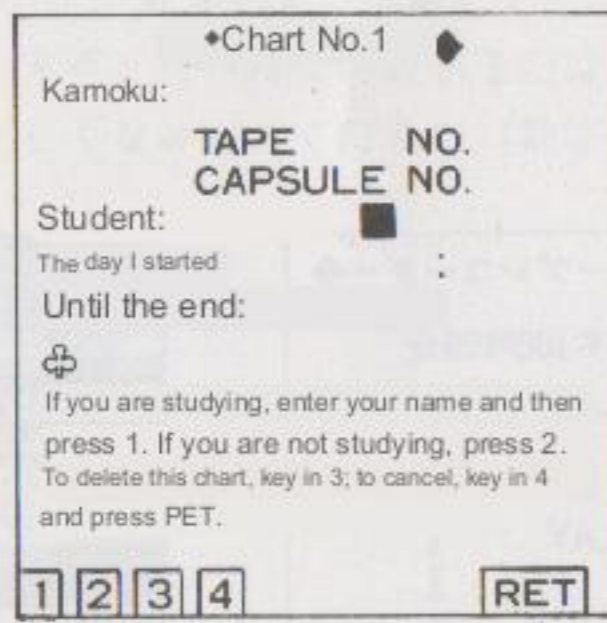
If you have completed the entire course or have a medical record that you wish to delete for other unavoidable reasons, press 4 RETURN to return to the CAI Edit screen (a), where the learning history such as the study subject and student name will be deleted and the medical record will become empty.



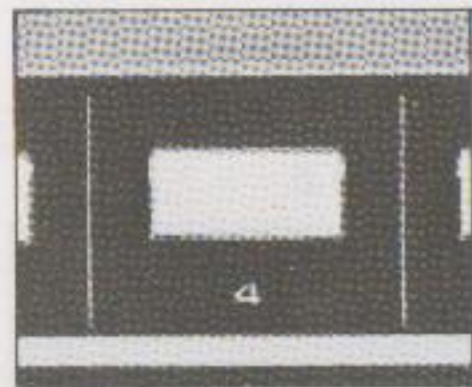
function key 3



return key



c



function key 4

### Material error message

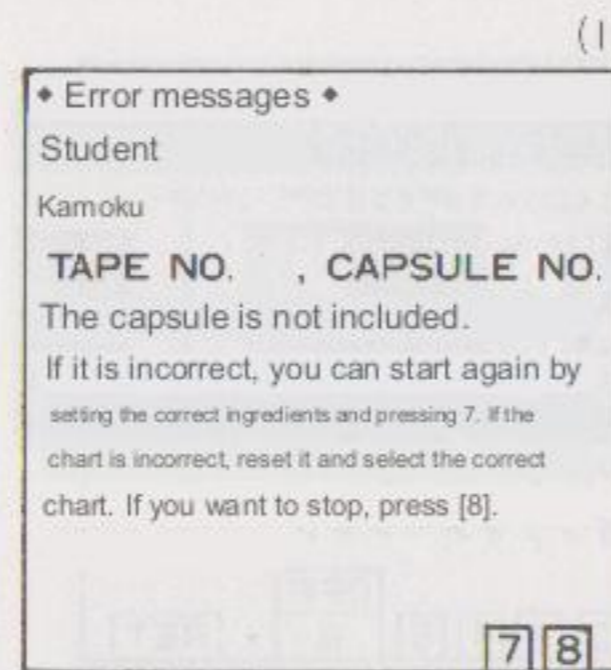
If an error message like the one shown in the figure appears along with an alarm sound when you move to CAI learning, this means the following: Press function key ⑦ to restart learning, or 8 to stop learning, and the screen will return to mode selection.

### (1) When "Capsule not included"

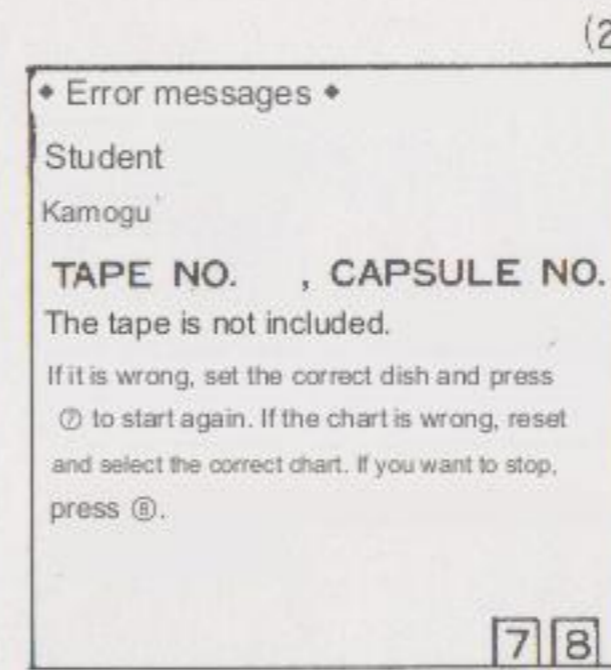
- a) If you do not have a learning history, please insert the capsule of your choice.
- b) If there is a learning history, insert the learning materials for the student, the subject, and the capsule number shown on the screen. It also appears when the learning materials are not properly installed or the lid is not properly closed. The capsule is locked when you press it enough and hear a clicking sound. Also, make sure the cover is properly locked before starting.

### (2) If the message "No tape inserted"

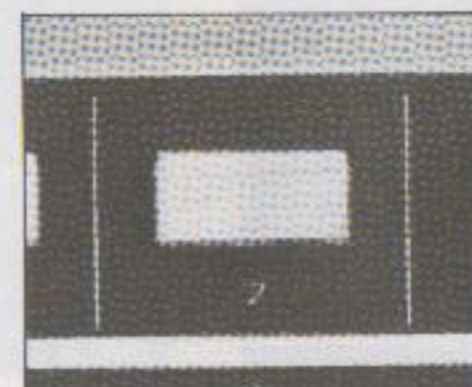
appears, insert the correct tape following a) and b) above.



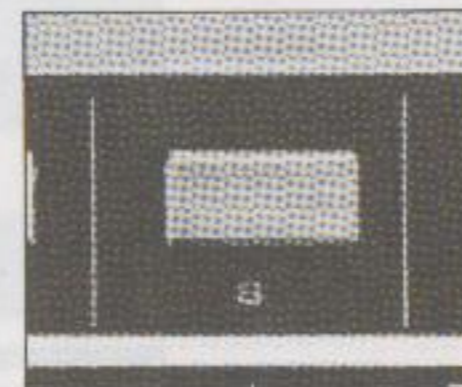
Error message screen 1



Error message screen 2



Function key 7



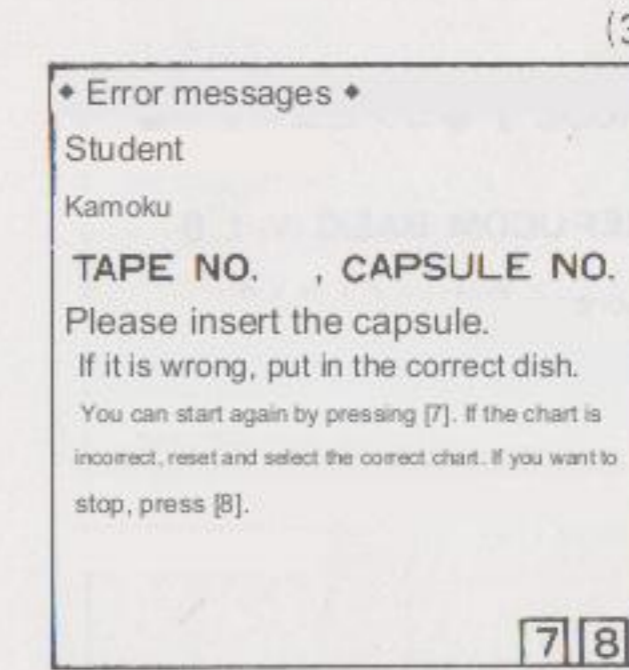
Function key 8

### (3) "Please insert the capsule": B3GOM

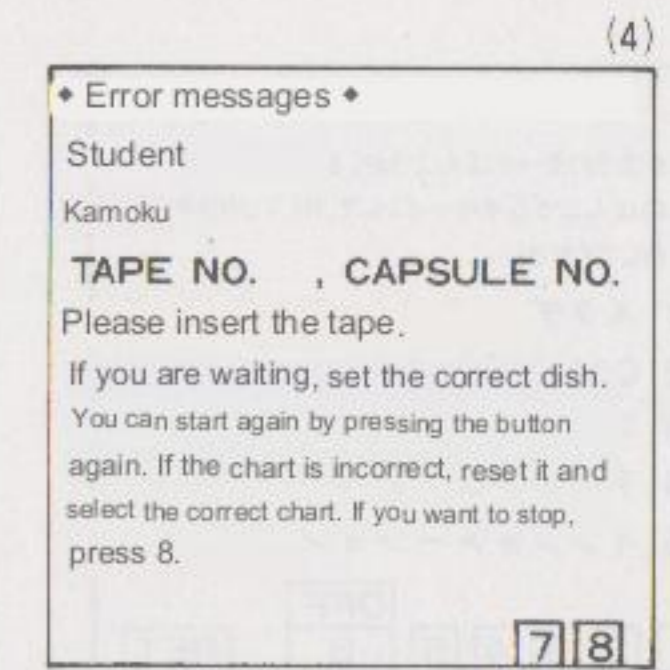
This message appears when the wrong capsule is inserted. Please reinsert the capsule correctly according to the instructions on the screen.

### (4) When you say "Please insert a tape":

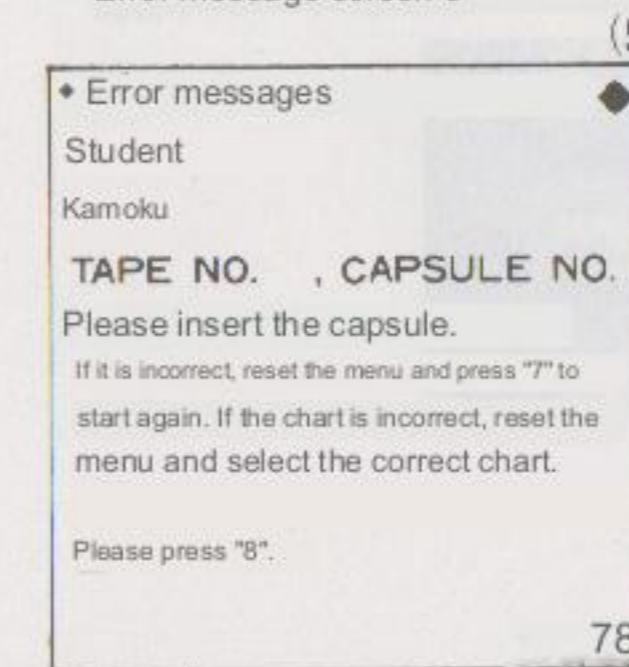
This message appears when the wrong tape is inserted. Please reinsert it correctly.



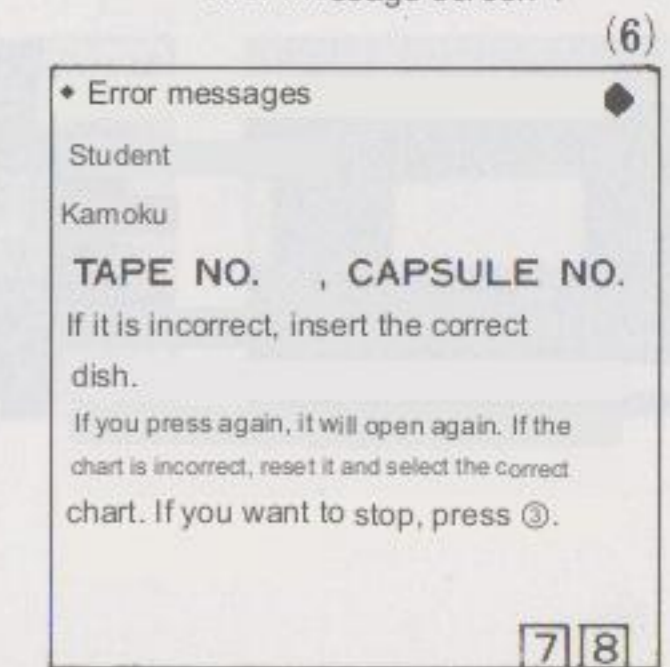
Error message screen 3



Error message screen 4



Error message screen 5



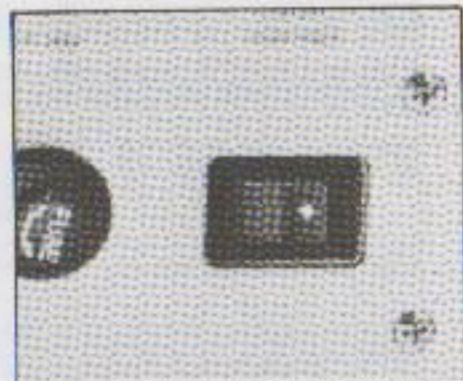
Error message screen 6

## A. POWER-ON~POWER-OFF

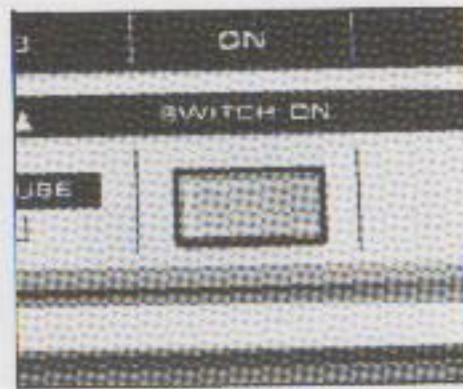
•How to turn the power on Make sure the main power switch on the back of the unit is ON. To turn the power on manually, press the SWITCH ON switch. The unit will also turn on automatically at the date and time of the preset weekly learning program. Two alarms, Alarm 1 and Alarm 2, can be set for each day of the weekly learning program. The alarms start ringing as soon as the power is turned on. Alarm 1 sounds for 15 seconds, followed by a 45-second pause, and this pattern is repeated. Alarm 2 sounds for 45 seconds, followed by a 15-second pause. This alarm will continue for 5 minutes if it is not learned, and then the power will turn off automatically. If the alarm is learned within 5 minutes of sounding, the alarm will stop.

•How to turn the power off If the weekly learning program automatically turns the power on but the learning is not completed within 5 minutes, the power will be turned off automatically.

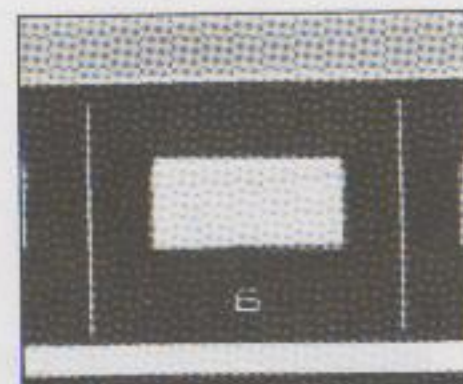
The student can intentionally turn off the power when the time display screen (a) is displayed, by using the RESET/SW OFF switch, or



MAIN POWER switch



SWITCH ON switch



function key 6



return key

This only applies when you press Ⓢ RETURN on the mode selection screen

(b).

If you want to turn off the power in any mode, press RESET/SW OFF to return to the mode selection screen, then press function key 6 and RETURN.

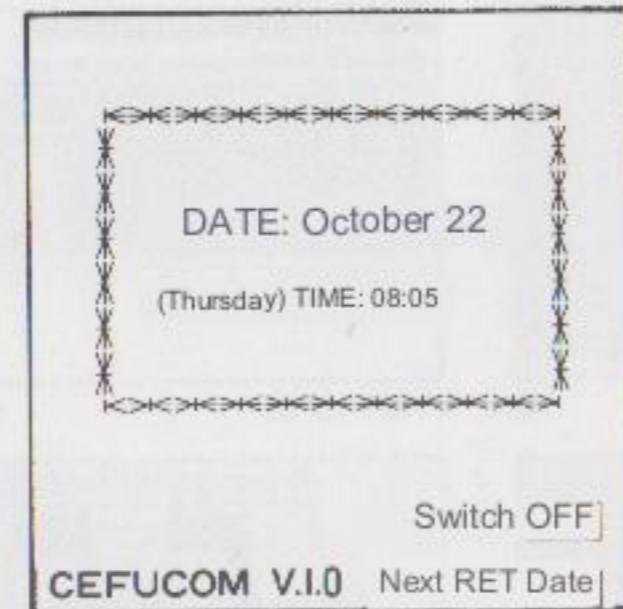
## B. Date and time display

When the power is turned on, the date and time are displayed on the CRT screen as shown in Figure (a). This date and time is controlled by a timer powered by a built-in battery, and will continue to function for at least one month even if the power is turned off. If the date and time are incorrect due to some accident, or if the time is incorrect when you purchase the unit, or if the date and time are displayed abnormally, correct them in the Study Time Schedule mode on the next screen.

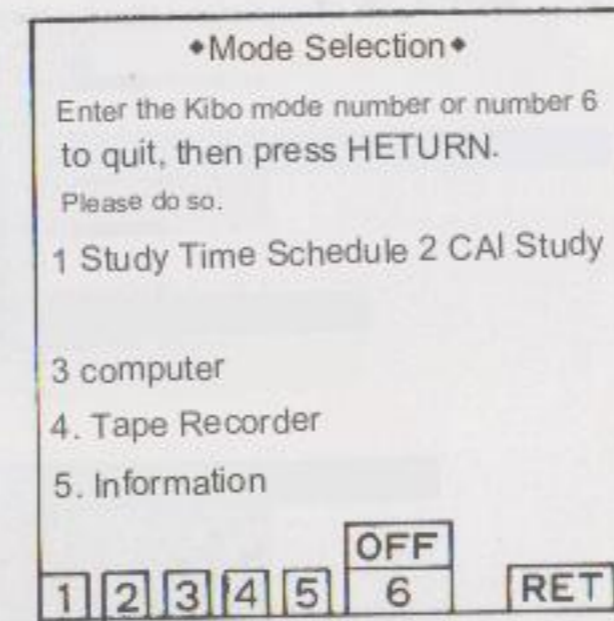
### c. Mode selection

After checking the date and time, press the RETURN key. The screen will change to the mode selection (b), and you can select the purpose for which you will use CEFUCOM-21.

On this screen, press the function key corresponding to the number of the mode you want to use, then press the RETURN key to return to the screen for the selected mode.



a and time display



b Mode selection screen



return key

# Application mode

## 1. Study Time Schedule Mode

An alarm signal will automatically arm the unit twice a day at different times for one week.

## 2. CAI Learning Mode

Learning is done through computer control.

## 3. Computer Mode

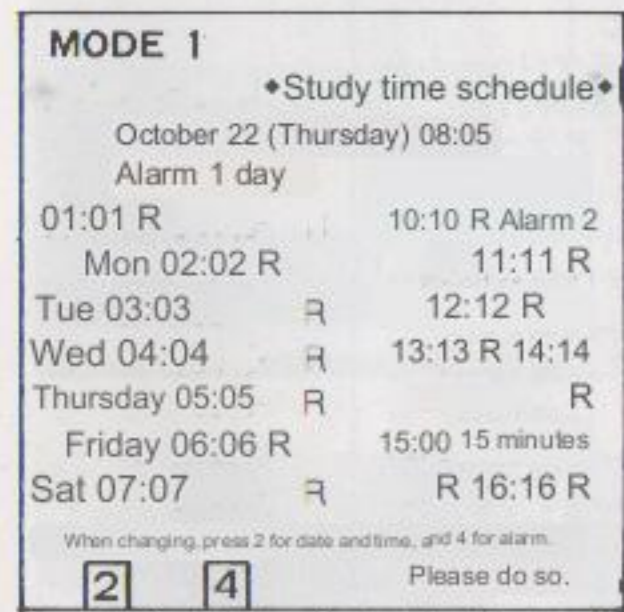
It operates in BASIC. Programs can be loaded and saved from the built-in TAPE RECORDER, so no external tape recorder is required. A joystick can be connected when using it for games, etc.

## 4. Tape Recorder Mode

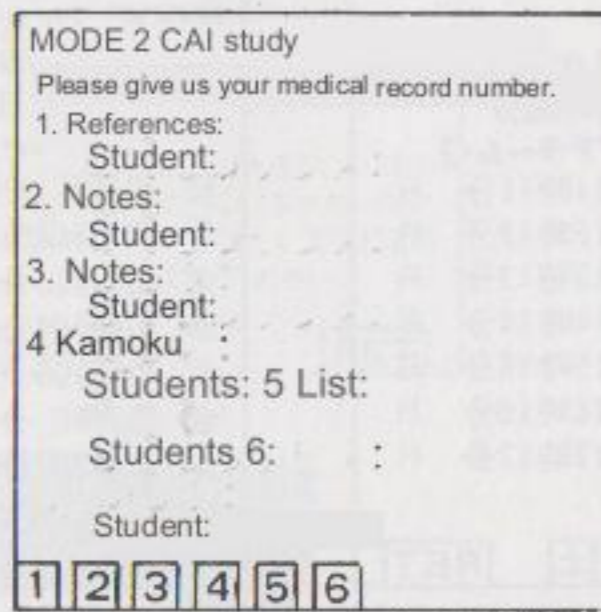
The built-in tape recorder can be used as a monaural tape recorder for normal recording, and can also be used in conjunction with a CRT.

## 5. Information Mode (Planned for future implementation)

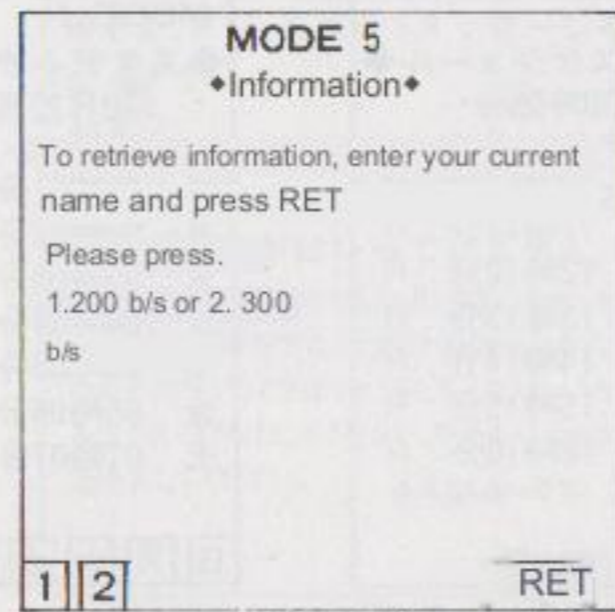
Information sent from the center via an acoustic coupler is displayed on a CRT or printer. Programs can also be received.



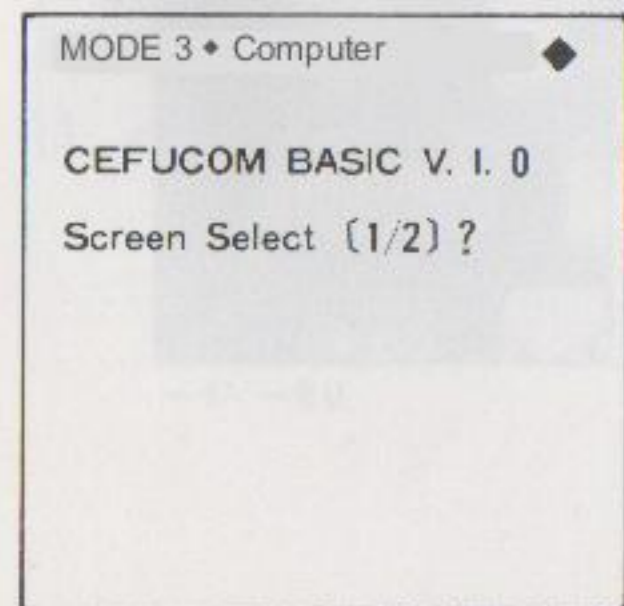
1. Study Time Schedule Mode



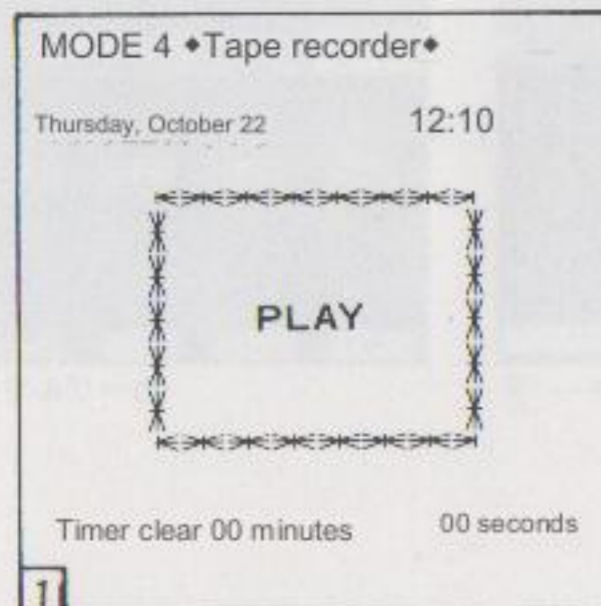
2. CAI Study



5. Information mode



3. Computer Mode



4. Tape Recorder Mode

# MODE 1 operation

## MODE 1

### Study Time Schedule Mode

When the mode selection screen (a) is displayed, pressing a function key and the RETURN key will switch to this study time schedule mode (b). (Pressing the RESET key will return to the mode selection screen.)

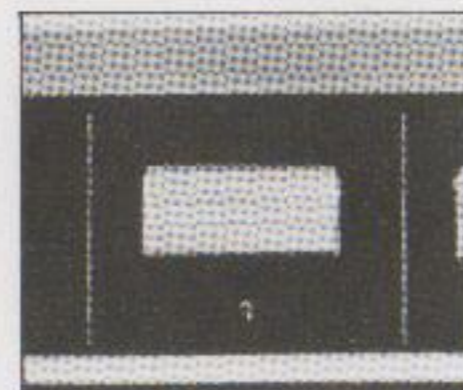
[Procedure for correcting date, day of the week, and time] This clock uses a 24-hour format. First, press function key 2. A blinking cursor will appear on the date at the top of the screen (c). Use the cursor keys (←→) to move the cursor and use the full keys to input the characters to be corrected. To correct the day of the week, press the function keys at the bottom corresponding to SUN through SAT. Once you have confirmed the correction, press the RETURN key to complete the correction and return to the original screen (b). If the message "There is an error in your input. Please correct it." is displayed (d), this means that you have mistakenly entered a number or letter for a non-existent time, so please try again.

◆Mode Selection◆  
Enter the desired mode number or the quit mode number [6] and press RETURN.  
Please press

1. Study Time Schedule
- 2 CAI Study
- 3 computer
4. Tape Recorder
5. Information

1 2 3 4 5 6 OFF RET

a mode selection screen



function keys 1

MODE 1  
◆Study Time Schedule◆ October 22nd  
(Thursday) 08:05  
Alarm 1 Alarm 2 days  
10:10 R 01:01

day	02:02	R	11:11	R
	03:03	Sun	12:12	R
Wed	04:04	Tue	R	13:13 R
Thursday	05:05	R	14:14	R 15:15
Friday	06:06	R	R	
Saturday	07:07	R	16:16	R

When changing, select [2] for date and time and [4] for alarm.  
Please do so.

2 4

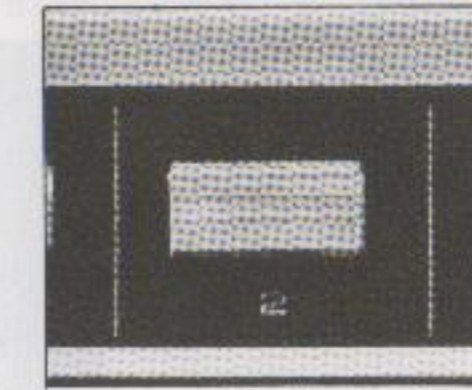
b Study Time Schedule Mode

MODE 1  
◆Study Time Schedule◆ Time Schedule: Sunday  
22 (Thursday) 8:05am

Alarm 1	Alarm 2
day 01:00 R	11:11 R
02:02 R	12:12 R
fire 03:03 R	13:13 R 14:14
water 04:04 R	R
tree 05:05 R	15:15 R
Friday 06:06 R	16:16 R
Saturday 07:07 R	17:17 R

Sun Mon Tue Wed Thu Fri Sat RET

c



function key 2

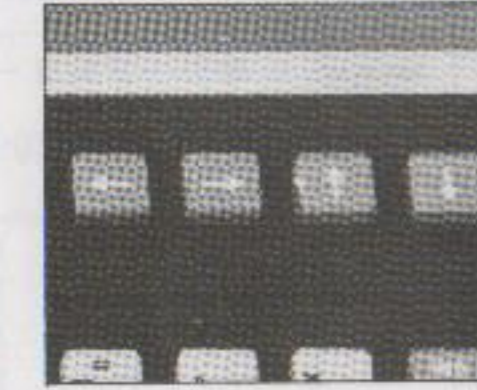
MODE 1  
◆Study time schedule◆  
October 22 (Thursday) 08:05  
Alarm 1 Alarm 2 01:01 Day

day	02:02 R	10:10 R
03:03 Sun Wed	12:12 R	11:11 R
04:04 Sun	13:13 R	
Thursday 05:05 Sunday	14:14 R	
gold 06:06 R	15:15 R 16:16 R	
Saturday 07:07 Sunday		

There is a mistake in the input. Please fix it.  
Sat.

RET

d



cursor key



return key

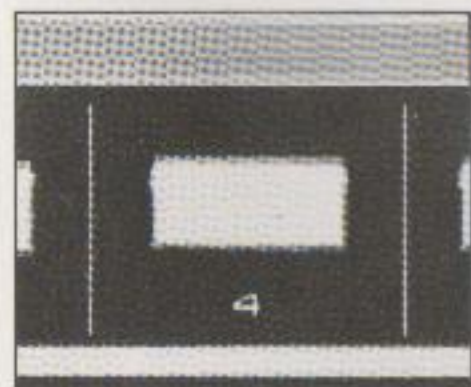
Weekly Schedule You can set alarms for a week's worth of study schedule on the CRT screen. You can set two alarms per day as Alarm 1 and Alarm 2.

[Procedure for setting and correcting alarms] First, press function key 1. Then a blinking cursor will appear on the screen on the first Sunday of Alarm 1 (e). Use the cursor keys (←→↑↓) to move the blinking cursor, and use the full keys to enter the hours and minutes. To have the alarm sound at the set time, move the cursor to the R on the right and change it to S. (S means SET alarm, and R means RESET.) Once you have finished setting all the alarms, check that there are no mistakes on the screen and press the RETURN key. This completes the setting, and the screen will return to the first screen (b). Note)

1. Make sure to set ALARM-1 to a time earlier than ALARM-2.
2. If the message "Input is incorrect. Please correct it" is displayed, it means that a non-existent number or character has been entered for the time. Please correct it. (The numbers 0, 8,

MODE 1	
◆Study time schedule◆	
October 22 (Thursday) 08:05	
Alarm 1	Alarm 2
Sun 01:01 R	10:10 R
Monday 02:02 R	11:11 R 12:12
Tuesday 03:03 R	R
Wednesday 04:04 R	13:13 R 14:14 R
05:05 R	
Friday 06:06 R	15:15 R
Sat 07:07 R	16:16 R
RET	

e



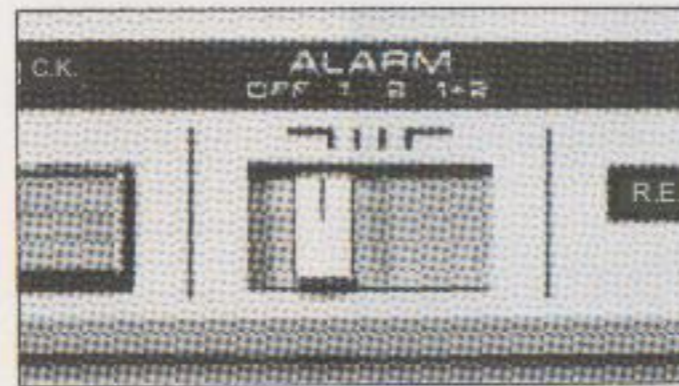
function key 4



cursor key

(Please pay special attention to the alphabet o, the number 1, and the letters l and L, as they are similar.)

3. If the time is not set to at least 5 minutes ahead of the current time, the alarm may not go off.
4. If the CEFUCOM-21 is switched on (in use) at the time the alarm is set, the alarm will not go off.
5. Alarm switch  
OFF: The alarm will not sound.  
1 → The alarm will sound only at the time set in Alarm 1.  
2 → The alarm will sound only at the time set for Alarm 2.  
1+2 → Both alarms 1 and 2 will sound.



alarm switch

# MODE 2 operation

## MODE 2

### CAI Learning Mode

On the mode selection screen, press function key 2 and then the RETURN key. A chart like the one in figure (a) will be displayed, so select any number from 1 to 6. When you study, the computer will automatically read the study subject and register it in the chart, so the second time you use it, the study subject will appear in the chart number you selected. From the second time onwards, be sure to use your own chart number. If you make a mistake, you will study based on someone else's study history. In addition, as the product is distributed for a long time, the backup battery may run out and strange characters may appear in the chart. In that case, clear the battery using the method in d) below before using it again. When 1 to 6 is selected using the function key, the chart history for the selected number will be displayed (b). Here, you can do the following four things using the function keys and RETURN.

a) To start learning:

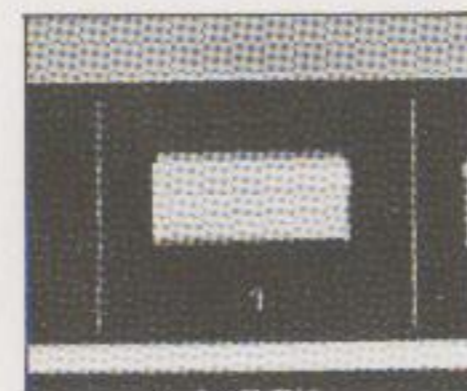
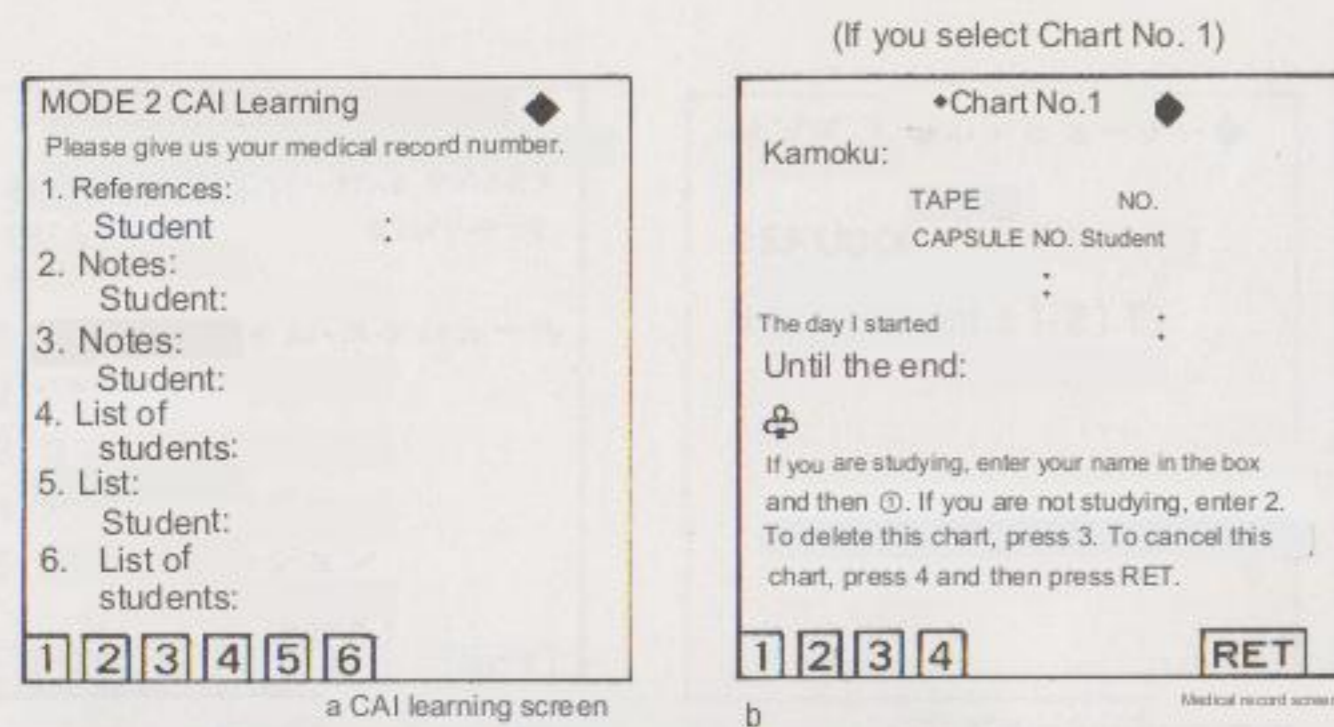
For each subject, select and insert the cassette tape LESSON 1 (1-A) and the capsule appropriate for the subject, then press 1 RETURN.

From the second time onwards, select your own chart number and the subject name, cassette number and capsule number will be shown on the chart, so please set them in.

Note) When selecting the chart, please make sure to enter your name according to the following C) so that you do not make any mistakes later. Even if you enter your name, it will be automatically deleted unless you start studying because there is no study history. Press the capsule fully and when you hear a click, it is locked. Then press the cover firmly and make sure that the cover is also locked before starting.

b) If you don't want to continue:

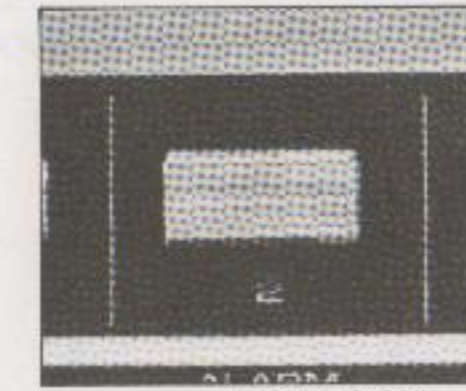
2 Press RETURN. The screen will return to the CAI screen for selecting the chart (a).



function keys 1 2



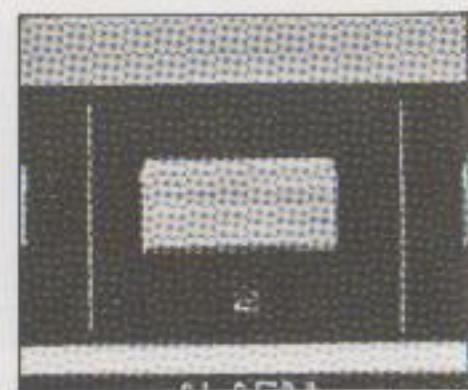
return key



function key 2



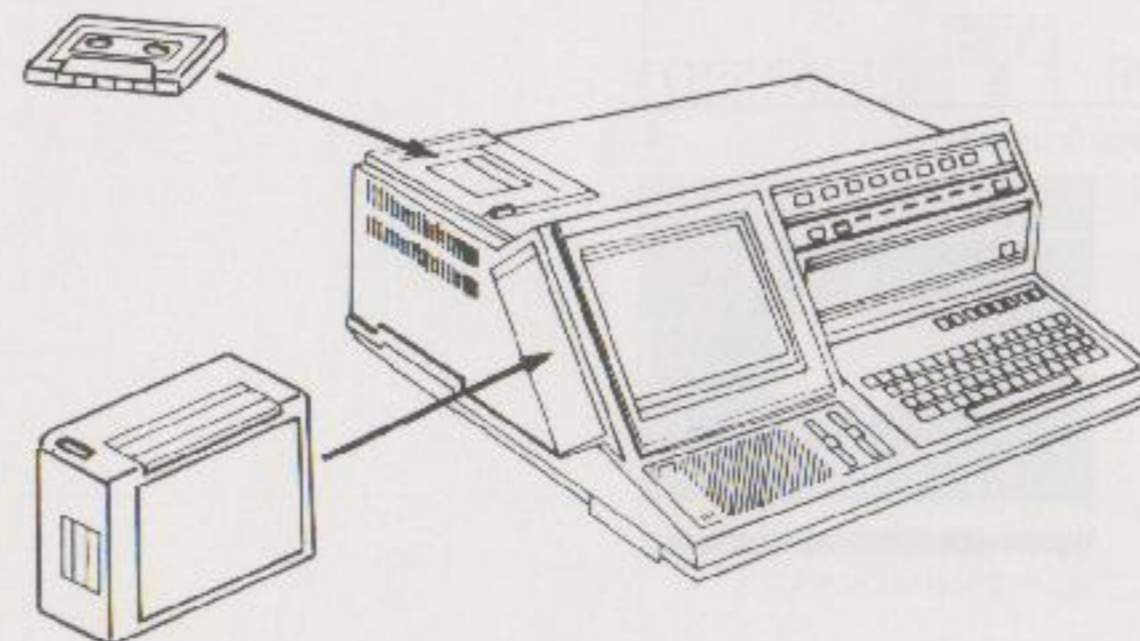
return key



function key 2



return key



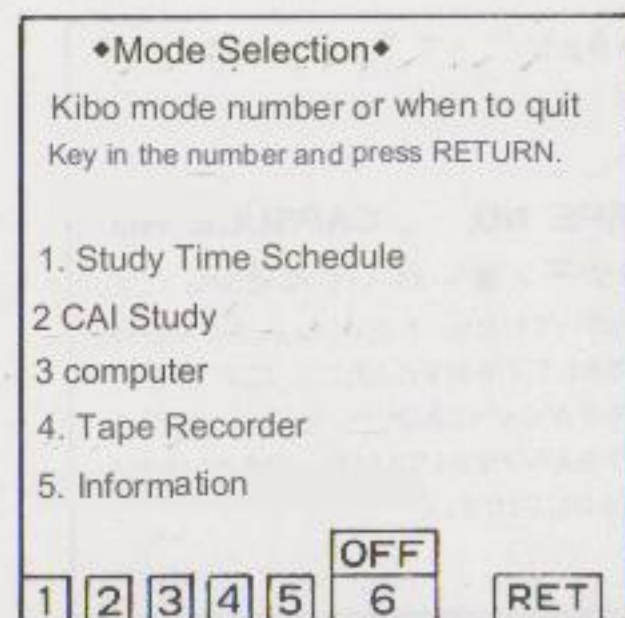


# MODE 3 Operation

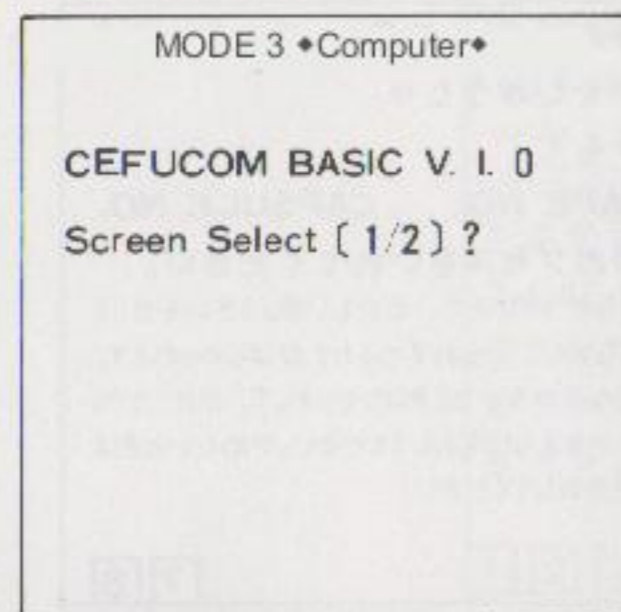
## MODE 3

### computer mode

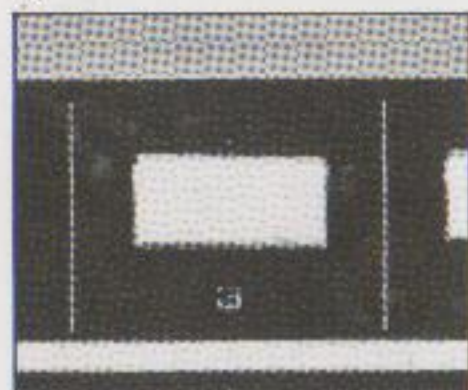
Pressing function key 3 and the RETURN key on the mode selection screen (a) allows you to use the CEFUCOM-21 as a computer. For details, please study PC-1 "USING PERSONAL COMPUTERS". When you C-LOAD a program or game made on a commercially available device or on a device other than the CEFUCOM-21, a digital signal sound will be emitted. (No signal sound will be emitted when you C-LOAD something that has been CSAVE'd on the CEFUCOM-21.)



a Mode Selection Screen



computer mode screen



function key 3



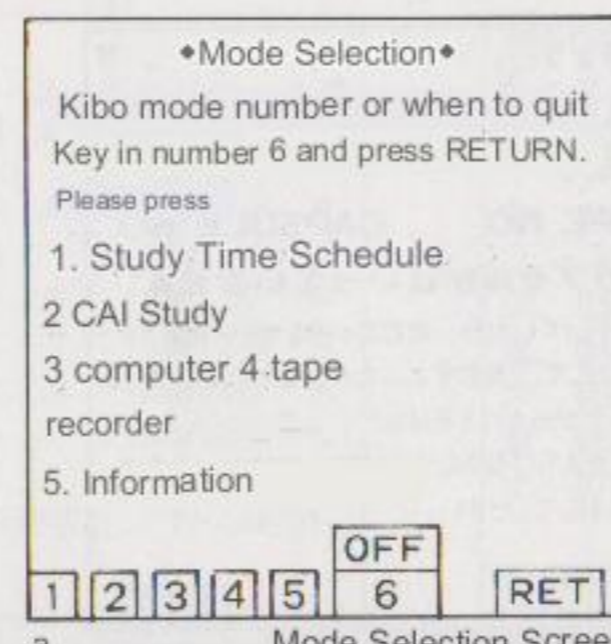
return key

# MODE 4 operation

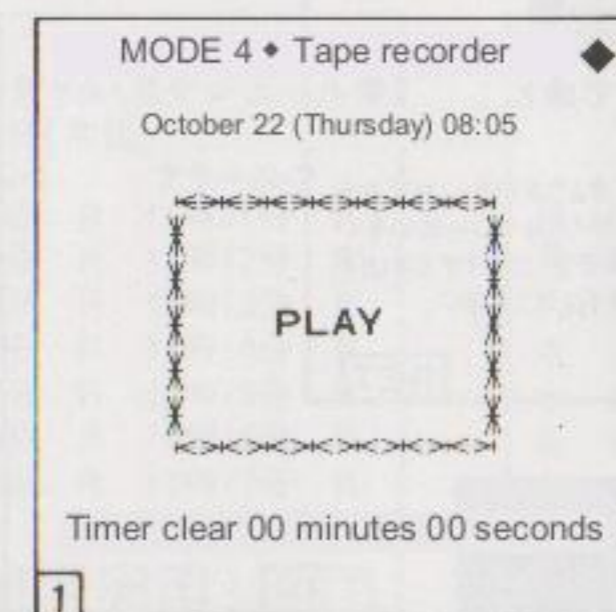
## MODE 4

### Tape Recorder Mode

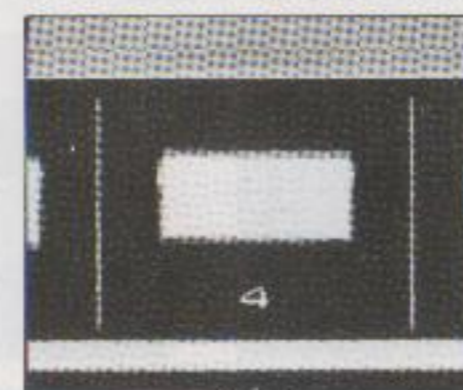
By pressing the function key and the RETURN key on the mode selection screen (a), the CEFUCOM-21 can be used as a tape recorder. In this case, the function keys are used to control the tape. In that case, the tape recorder's function and the time since the start of operation can be プレ displayed on screen (b) as shown below. However, this only applies during PLAY/REC. To clear the timer, press function key 1. Note: When you press the RECORD key (function key 3), the unit will automatically enter recording mode, so there is no need to press the PLAY key (function key 4) at the same time.



a Mode Selection Screen



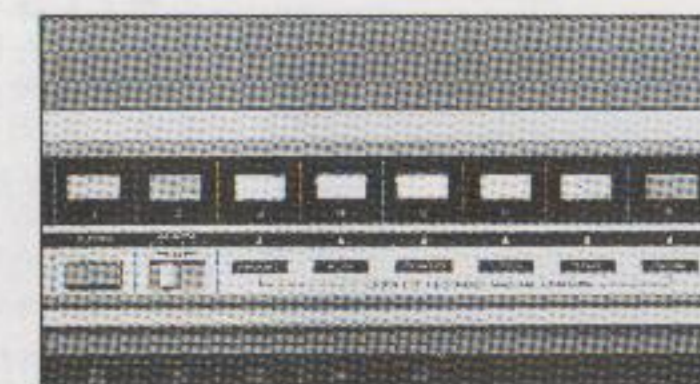
b Tape recorder mode screen



function key 4



return key



Tape Recorder Control Display

Main body

Dimensions: ..... 210(H) x 520(W) x 485(D)

Weight: ..... 10kg

Power consumption/ ..... 80VA

**CPU** ..... Z80 x 2

ROM: ..... 58K bytes

RAM: ..... 52K bytes

Video RAM: ... 6K bytes

Display dot count: ..... Maximum 256 x 192

Display color/ ..... Up to 9 colors

Character types that can be handled: English letters A-Z, az, numbers  
0-9, hiragana, katakana, kanji 18,  
symbol 49

Statement ..... 38

Command... 11

Built-in functions: ..... 32

Keyboard: 65 keys

array ..... JIS array

Tape recorder functions: REC/PLAY/REW/FF/STOP  
/PAUSE

output..... Distortion-free 800mW

Recording level/ ..... ALC (Automatic Recording Adjustment)

Recording method ..... AC Bias AC Erase

track ..... 2 tracks, 4 channels

Peripheral equipment

Monitor (CRT) Composite color monitor or  
Green monitor (home TV  
(can be input via RF)

Acoustic coupler ..... Tamura Electric, ALTAM C300

Power consumption/ ..... 4VA

Dimensions: ..... 66(H) x 100(W) x 250(D)

Weight ..... 0.8kg

Printer ..... Seikosha GP-80P

Printing speed/ ..... 80 characters/minute

Printing method: ..... Dot impact printer

size..... 127 (H) x 328 (W) x 170 (D)

weight..... 2.5kg

Power consumption: 15W (continuous character printing)



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