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## Introduction to the Unit

This chapter explains how to use your CyberDict□ for the first time, the keys and controls, power sources, default system settings and basic operations of your CyberDict□. We hope it will help you use this device. Please proceed to the following chapters for details of each function under different main menus.

### 1. How to Use CyberDict□ for the First Time

a. Insert two AAA batteries into the battery compartment.

b. Press ON/OFF to turn on your CyberDict□If the screen remains blank after pressing ON/OFF, please follow the instructions below:

- Be sure the batteries pack is securely in place.
- Adjust the contrast control for optimal screen viewing.

c.Press [RESET] and follow the instructions shown on the screen.

- press [Y] to delete data.
- press [Y] twice to reset user memory.

d. The main menu of Dictionaries will be displayed.

e. Press THAI/ENG to switch between Thai and English modes in the main menu.

### 2. Precautions

a. please replace new alkaline battery when the battery low message is indicated.

b. Remove the main battery to avoid leakage and damage to the unit whenever the device will not be used over an extended period of time.

c.All your personal data should be copied onto separate permanent printed records.

d. Resetting the unit will cause permanent personal data loss.

e. To avoid scratching on the screen.

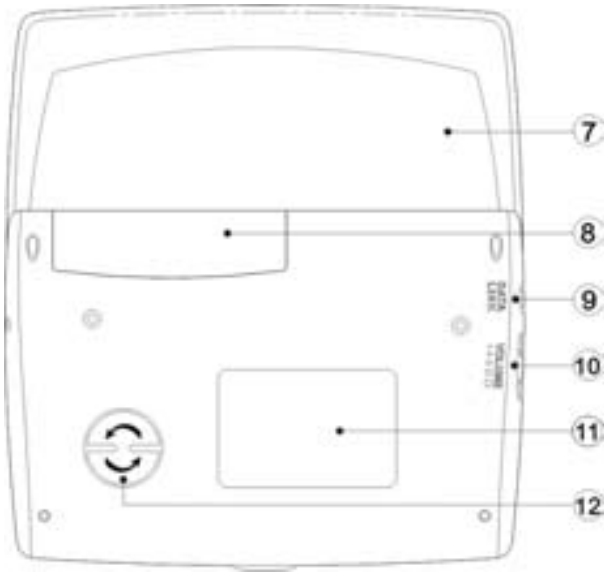
f. When cleaning, rub the screen lightly with a clean, dry and soft cloth. Do not use volatile liquids.

g. The device is not waterproof. Please keep it away from any liquid.

h. The screen may crack if the unit fall to the ground.

i. Any damage caused by the above reasons is not covered by warranty.

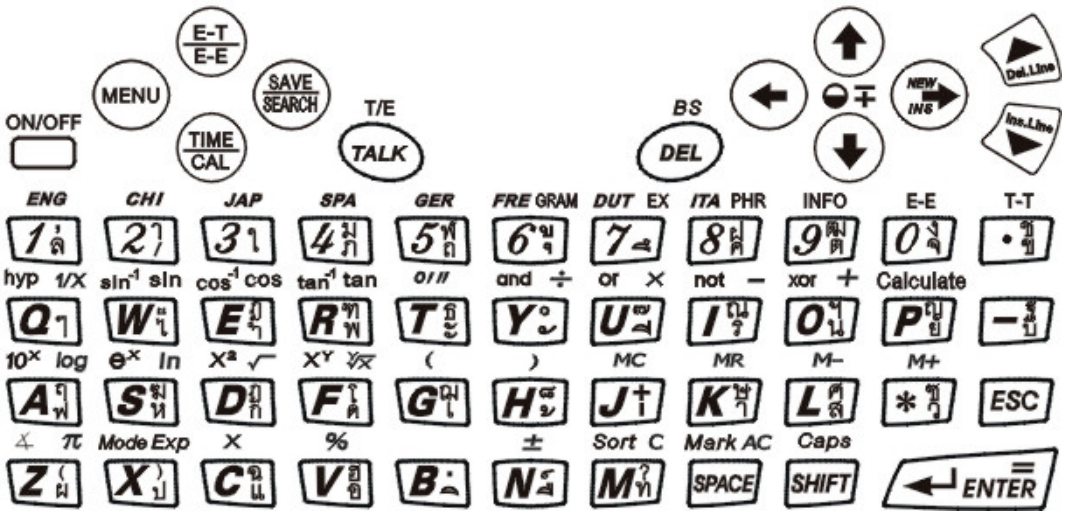
## 3. Product Layout



**Explanation:**

| No | Item | Description |
|---|---|---|
| 1 | Screen | LCD screen, 160*64 pt |
| 2 | Right Indicator | To indicate status of the system |
| 3 | Speaker | For voice and sound effect |
| 4 | Keyboard | Keyboard |
| 5 | Reset | To initialize the system |
| 6 | Left Indicator | To indicate status of the system |
| 7 | Main cover | Main cover |
| 8 | Battery compartment | To insert the rechargeable battery |
| 9 | Data link socket | Data transmission socket |
| 10 | Volume | Volume control |
| 11 | Main Label | Notes about replace battery |
| 12 | Backup battery | Backup for main battery low |

# 4. Keyboard Layout




## 4.1 Keyboard Buttons

| No | Key | Function |
|---|---|---|
| 1 | ON/OFF | Power on / off button |
| 2 | TALK | Listen in English, Chinese and Japanese |
| 3 | E-T / E-E | Switch between English-Thai Dictionary and Longman English dictionary |
| 4 | MENU | Under the main menus, press it to shift from one to another |
| | | Return to the main menu |
| 5 | THAI/ ENG | Switch between Thai and English |
| 6 | SAVE SEARCH | Save data<br>Search data |

| | | |
|---|---|---|
| 7 | DEL | Delete an English letter or Thai character at/in front of the cursor |
| 8 | NEW INS | Shift the cursor to the right |
| | | Highlight a word to be cross-searched in the explanation of a headword |
| | | Shift (right) among the main menus |
| | Shift+ | Insert a letter/character at the cursor<br>Create a new file |
| 9 | ← | Shift the cursor to the left or “Back Space” |
| | | Shift (left) among the main menus |
| 10 | ↑ | Shift the cursor up |
| | | Scroll a line up |
| 11 | ↓ | Shift the cursor down |
| | | Scroll a line down |
| 12 | Del.Line | View the previous entry or page |
| | Sift+ Del.Line | Insert a blank line |
| 13 | Ins.Line | View the next entry or page |
| | Sift+ Ins.Line | Delete a line |
| 14 | 1 ๆ ฤ | Numeric key “1” |
| | | Thai character “?” |
| | | View English in Travel Dialogues |
| | shift+ 1 ๆ ฤ | Comma for the text |

| | | |
|---|---|---|
| 15 | 2 | Numeric key “2” |
| | | Thai character “?” |
| | | View Chinese in Travel Dialogues |
| | shift+ 2 | Thai character “?” |
| 16 | 3 | Numeric key “3” |
| | | Thai character “?” |
| | | View Japanese in Travel Dialogues |
| 17 | 4 | Numeric key “4” |
| | | Thai character “?” |
| | | View Spanish in Travel Dialogues |
| | shift+ 4 | Thai character “?” |
| 18 | 5 | Numeric key “5” |
| | | Thai character “?” |
| | | View German in Travel Dialogues |
| | shift+ 5 | Thai character “?” |
| 19 | 6 | Numeric key “6” |
| | | Thai character “?” |
| | | View French in Travel Dialogues |
| | | View Grammar for English headword |
| | shift+ 6 | Thai character “?” |
| 20 | 7 | Numeric key “7” |
| | | Thai character “?” |
| | | View Dutch in Travel Dialogues |
| | | View example for English headword |
| 21 | | Numeric key “8” |

| | | |
|---|---|---|
| | 8 | Thai character “?” |
| | | View Italian in Travel Dialogues |
| | | View phrase for English headword |
| | shift+8 | Thai character “?” |
| 22 | 9 | Numeric key “9” |
| | | Thai character “?” |
| | | View Information for English headword |
| | shift+9 | Thai character “?” |
| 23 | 0 | Numeric key “0” |
| | | Thai character “?” |
| | | To access Longman English Dictionary |
| | shift+0 | Thai character “?” |
| 24 | . | Full stop for the text |
| | | Decimal point for calculator |
| | | Thai character “?” |
| | | To access Thai-Thai Dictionary |
| | shift+. | Thai character “?” |
| 25 | Q | English letter “Q” |
| | | Thai character “?” |
| | | Mathematic sign “1/X” |
| | shift+Q | Mathematic sign “hyp” |
| 26 | W | English letter “W” |
| | | Thai character “?” |
| | | Mathematic sign “sin” |

| | | |
|---|---|---|
| | shift+ W | Thai character “?” |
| | | Mathematic sign “ $\sin^{-1}$ ” |
| 27 | E | English letter “E” |
| | | Thai character “?” |
| | | Mathematic sign “cos” |
| | shift+ E | Thai character “?” |
| | | Mathematic sign “ $\cos^{-1}$ ” |
| 28 | R | English letter “R” |
| | | Thai character “?” |
| | | Mathematic sign “tan” |
| | shift+ R | Thai character “?” |
| | | Mathematic sign “ $\tan^{-1}$ ” |
| 29 | T | English letter “T” |
| | | Thai character “?” |
| | shift+ T | Thai character “?” |
| | | Mathematic sign “°′″” |
| 30 | Y | English letter “Y” |
| | | Thai character “?” |
| | | Mathematic sign “÷” |
| | shift+ Y | Thai character “?” |
| | | Logical sign “and” |
| 31 | U | English letter “U” |
| | | Thai character “?” |
| | | Mathematic sign “×” |
| | shift+ U | Thai character “?” |
| | | Logical sign “or” |
| 32 | | English letter “I” |

| | | |
|---|---|---|
| | I ณ ร | Thai character “?” |
| | | Mathematic sign “•” |
| | shift+ I ณ ร | Thai character “?” |
| | | Logical sign “not” |
| 33 | O น | English letter “O” |
| | | Thai character “?” |
| | | Mathematic sign “+” |
| | shift+ O น | Thai character “?” |
| | | Logical sign “xor” |
| 34 | P ญ ย | English letter “P” |
| | | Thai character “?” |
| | | Mathematic sign “Calculate” |
| | shift+ P ญ ย | Thai character “?” |
| 35 | − ส ป | Hyphen for the text |
| | | Thai character “?” |
| | shift+ − ส ป | Thai character “?” |
| 36 | A ฤ ฟ | English letter “A” |
| | | Thai character “?” |
| | | Mathematic sign “log” |
| | shift+ A ฤ ฟ | Thai character “?” |
| | | Mathematic sign “$10^x$” |
| 37 | S ม ห | English letter “S” |
| | | Thai character “?” |
| | | Mathematic sign “ln” |
| | shift+ S ม ห | Thai character “?” |
| | | Mathematic sign “ $e^x$ ” |

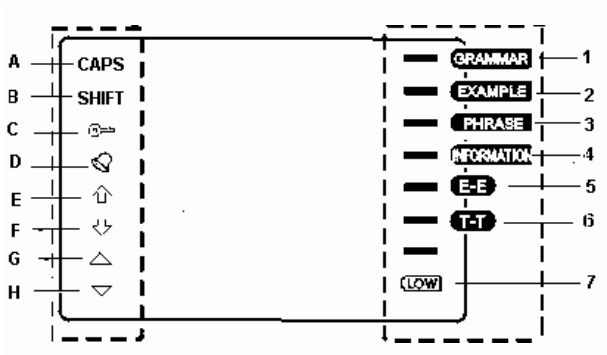
| | | |
|---|---|---|
| 38 | D | English letter “D” |
| | | Thai character “?” |
| | | Mathematic sign “√‾” |
| | shift+ D | Thai character “?” |
| | | Mathematic sign “$x^2$” |
| 39 | F | English letter “F” |
| | | Thai character “?” |
| | | Mathematic sign “∛x” |
| | shift+ F | Thai character “?” |
| | | Mathematic sign “$x^y$” |
| 40 | G | English letter “G” |
| | | Thai character “?” |
| | | Open bracket for text sign “(” |
| | shift+ G | Thai character “?” |
| 41 | H | English letter “H” |
| | | Thai character “?” |
| | | Close bracket for text sign “)” |
| | shift+ H | Thai character “?” |
| 42 | J | English letter “J” |
| | | Thai character “?” |
| | | Mathematic sign “MC” |
| | shift+ J | Thai character “?” |
| 43 | K | English letter “K” |
| | | Thai character “?” |
| | | Mathematic sign “MR” |

| | | |
|---|---|---|
| | shift+ K | Thai character “?” |
| 44 | L | English letter “L” |
| | | Thai character “?” |
| | | Mathematic sign “M-” |
| | shift+ L | Thai character “?” |
| 45 | * | Asterisk “ * ” for the text |
| | | A wildcard search symbol “*” to be used in English-Thai Dictionary<br>Thai character “?” |
| | | Mathematic sign “M+” |
| | shift+ * | Thai character “?” |
| 46 | ESC | To exit current function |
| 47 | Z | English letter “Z” |
| | | Thai character “?” |
| | | Mathematic sign “π” |
| | shift+ Z | Mathematic sign “$\sqrt[x]{\ }$” |
| 48 | X | English letter “X” |
| | | Thai character “?” |
| | | Sign “EXP” Express exponent |
| | shift+ X | Mathematic sign “mode” |
| 49 | C | English letter “C” |
| | | Thai character “?” |
| | | Mathematic sign “X!” |
| | shift+ C | Thai character “?” |

| | | |
|---|---|---|
| 50 | | English letter “V” |
| | | Thai character “?” |
| | | Mathematic sign “•” |
| | shift+ | Thai character “?” |
| 51 | | English letter “B” |
| | | Thai character “?” |
| | shift+ | Thai character “?” |
| 52 | | English letter “N” |
| | | Thai character “?” |
| | | Mathematic sign “±” |
| | shift+ | Thai character “?” |
| 53 | | English letter “M” |
| | | Thai character “?” |
| | | Mathematic sign “C” |
| | shift+ | Thai character “?” |
| 54 | SPACE | Enter a space when editing data |
| | | Mathematic sign “AC” |
| | shift+SPACE | Display special symbols |
| 56 | SHIFT | Press it before inputting an English letter to shift it to upper case / lower case |
| | shift+SHIFT | Lock the keyboard for inputting capital letters in English |
| 57 | | Enter data or begin a search |

| | | |
|---|---|---|
| | ENTER | Move the cursor to the next line or next page during data editing |
| | | Return to the previous screen. A function similar to ESC |
| | | Mathematic sign "=" |

## 5. On-screen Indicator Descriptions




The following indicators are displayed at the right of the screen:

| No | Indicator | What it means |
|---|---|---|
| 1 | Grammar | The status of the grammar display |
| 2 | Example | The status of the Example display |
| 3 | Phrase | The status of the phrase display |
| 4 | Information | The status of the information display |
| 5 | E-E | The status of the longman English |

| | | |
|---|---|---|
| | | Dictionary |
| 6 | T-T | The status of the Thai-Thai Dictionary |
| 7 | LOW | Battery low |

# The following indicators are displayed at the left of the screen:

| No | Indicator | What it means |
|---|---|---|
| A | CAPS | The keyboard is locked for inputting capital letters |
| B | SHIFT | Ready for input a capital or lower case letter |
| C | | The data is protected by a security password |
| D | | The alarm is set |
| E | | To scroll a line up |
| F | | To scroll a line down |
| G | ▲ | More data is available (Press to view it) |
| H | ▼ | More data is available (Press to view it) |

## 6. Power Sources

**Main Power:**

a. Two AAA batteries.

**Backup Power:**

a. A CR220 lithium battery for data backup in Random Access Memory.

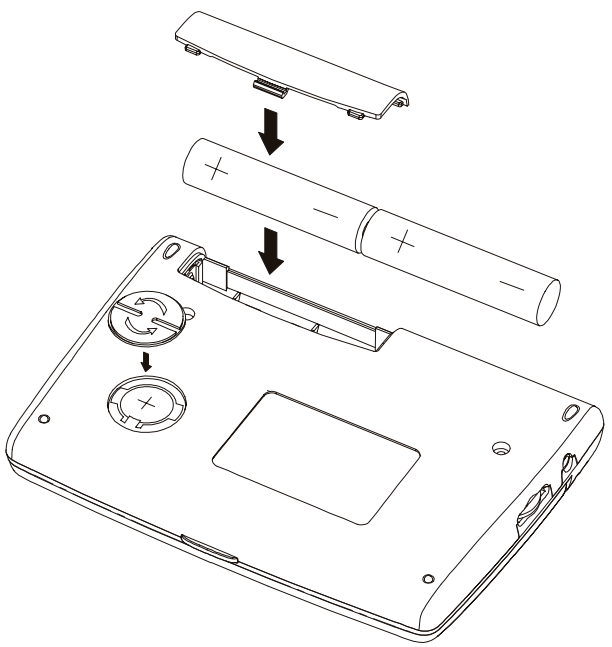
**[Caution]**

a. Remember to switch off the power before replacing the battery.

b. To prevent battery leakage which may damage The unit, do not mixed old and new batteries.

c. Damage caused by a power adaptor of another model is not covered by the warranty.

d. Do not replace the main batteries and the backup battery at the same time or some of the system settings which are kept in RAM will be lost.



## 7. Default System Settings

Local city: Bangkok
Local time setting: 08:00, 2002.01.01
World city: New York
Time system: 24-hours system
Alarm setting: Off
Key Tones: On
DST: None
Display language: Thai
Power Cut-off Interval: 5 minutes
Opening setting: Dictionary Menu
Password setting: None

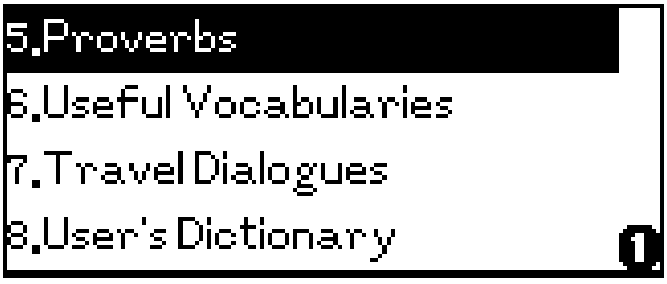
## 8. Main Menus

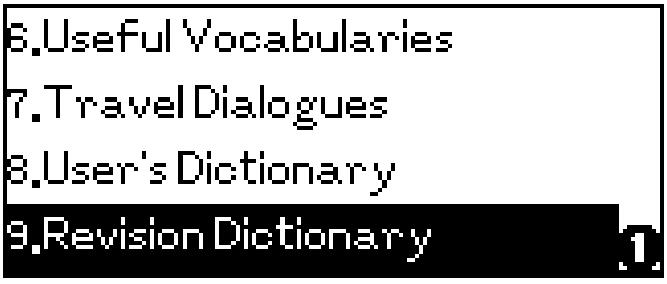
### 8.1 General Operation

1. Press / / MENU to shift among the main menus.
2. Press / for the previous or the next page.
3. Press / for the previous or the next item.
4. If English-Thai Dictionary is highlighted, press any alphabet keys to access the dictionary directly.
5. Choose the desired item and press ENTER for access.
6. Press MENU to return to the main menu.

## 8.2 Main Menus

### a. [Dictionaries]



**b. [Data ]**

1.Name Card Manager
2.Memorandum
3.Personal Information
4.Telephone Information
2

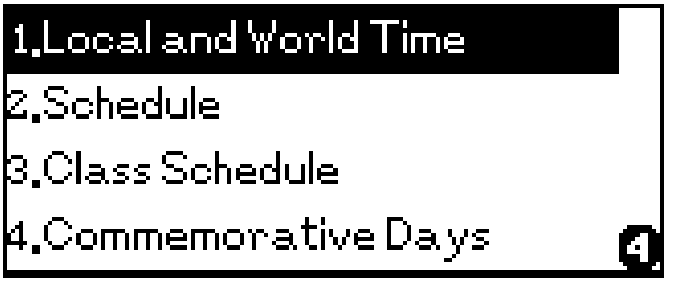
5.Travel Guide
6.Thai Embassy Overseas
7.Police Stations in Thailand
8.Hospitals in Thailand
2

**c. [Calculator]**

1.Calculator
2.Scientific Calculator
3.Statistical Calculator
4.Formula Calculator
3

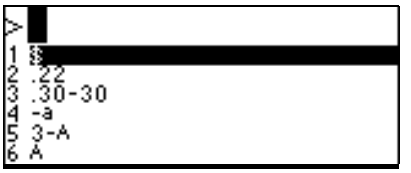
5.Unit Conversion
6.Currency Conversion
7.Size Conversion
8.Personal Finance
3

**D. [Time]**


1.Local and World Time
2.Schedule
3.Class Schedule
4.Commemorative Days

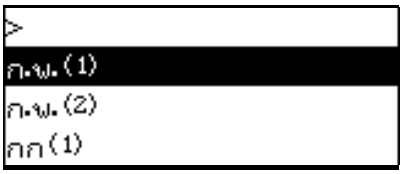
5.Lunar and Solar Calendar
6.Games World
7.Information Communication
8.System

## 1. English-Thai Dictionary



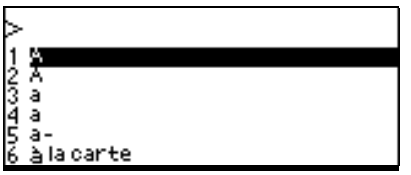

* General vocabulary with clear Thai definitions.
* **Input type:** smart input
* **Search method:**
  Wildcard search -- replace the unknown letter(s) with "?" or "•".
  Secondary searches --Spelling check, nearest word and user's dictionary.
* Provides grammar, example, phrases and information.
* Allows cross-searching among Eng -Thai Dictionary, Thai-Eng Dictionary and Longman Dictionary.
* Save word explain for Revision Dictionary.
* English pronunciation for headword.

## 2. Thai-English Dictionary




* General vocabulary with clear English definitions.
* Allows cross-searching among Eng–Thai Dictionary, Thai-Eng Dictionary and Longman Dictionary.
* English pronunciation for highlighted words.

## 3. Longman English Dictionary

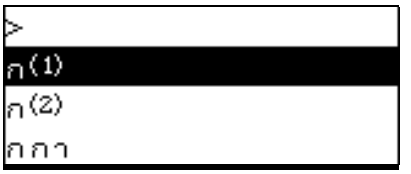



* General vocabulary with English definitions.
* Smart input.
* Wildcard search – replace the unknown letter(s) with "?" or "•".
* Secondary searches -- Spelling check, nearest word and user's dictionary.
* Provides grammar, example, phrases and information.

* Pronunciation for English headword and highlighted word.
* Save word explain for Revision Dictionary.

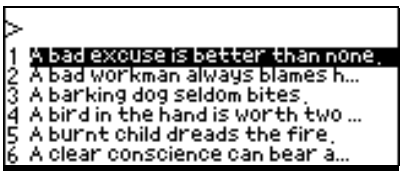
**4. Thai-Thai Dictionary**

* General vocabulary with clear Thai definitions.
* Smart input.




**5. Proverbs**

* English proverb with Thai definitions.
* Allows cross-searching among Thai-English Dictionary, Eng -Thai Dictionary and Longman Dictionary.




* English pronunciation for the whole proverbs.
* Thai proverbs with English definitions.
* Allows cross-searching among Thai-Eng Dictionary, Eng -Thai Dictionary and Longman Dictionary.
* English pronunciation.

**6. Useful Vocabularies**

* Contains 10 categories and 74 subcategories.
* Useful vocabularies in both English and Thai.

* English pronunciation for highlighted word.
* Allows cross-searching among Eng -Thai Dictionary, Thai-Eng Dictionary and Longman Dictionary.

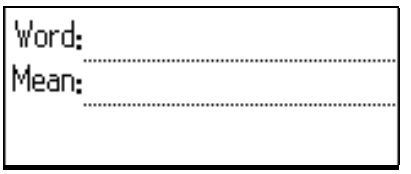
**7. Travel Dialogues**

* Contains 10 main themes and 46 situations; sentence in nine languages
* Allows cross-searching among

Thai-Eng Dictionary, Eng-Thai Dictionary Longman Dictionary and Tai-Tai Dictionary.
* English, Chinese and Japanese pronunciation.

**8. User's Dictionary**

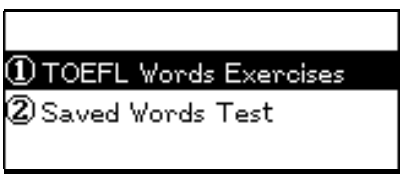
* Creates personal dictionary for searching.




* Allows to create, edit, delete and save data.
* Allows cross-searching among Thai-Eng Dictionary, Eng -Thai Dictionary and Longman Dictionary.
* English pronunciations for highlighted word.
* The create words can be looked up in the Eng– Thai dictionary and longman dictionary through secondary searches.

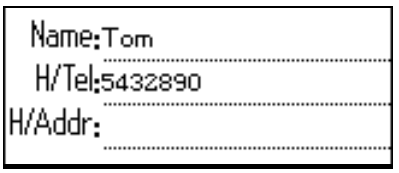
**9. Revision Dictionary**

* TOEFL words Exercises



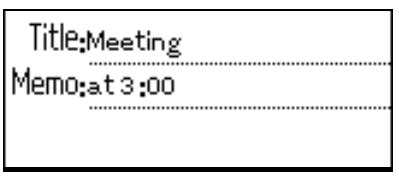

Provides four exercises: learning, review & test, recalling and practice.
* Test based on vocabulary already stored in Eng–Thai Dictionary and Longman Dictionary.
* When you have finished the Practice session, The result of the test will be display.

## 1. Name Card Manager



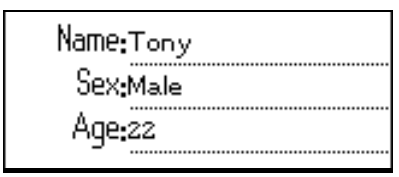

* Input data in Thai, English, numbers and special symbol
* Searches name cards by means of keyword and tel. number.
* Inputs, saves, modifies, deletes and creates new data.
* Stores portraits for name card
* Name index function: includes English, Thai index.

## 2. Memorandum




* Inputs data in Thai, English, numbers and special symbol
* Searches Memorandum by means of keyword and title.
* Inputs, saves, modifies, deletes and creates new data.
* Memorandum index function: includes English, Thai index.

## 3. Personal Information




* Inputs data in Thai, English, numbers and special symbol.
* Inputs, saves, modifies, deletes and creates new data.
* Searches name card by means of keyword.

## 4. Telephone Information

* Provides the guide to making international phone calls, country telephone codes, area codes of major cites.
* Provides Thai area postal code.

## 5. Travel Guide

* Provides detailed information about 188 countries and their major cities. including GMT, Capital, Cit, Language, Abbreviation, C/Cod, Idd/A, Volt, Currency, Religion information etc.

C'try: Afghanistan อัฟกานิสถาน
GMT: +4:00
(1 city)

## 6. Thai Embassy Overseas

* Provides detailed information about country, state, address, telephone, fax and web of Thai embassies overseas.

C'try: Canada
State: Ontario
Addr.: Royal Thai Embassy, 180 Island Park Drive,

## 7. Police Stations in Thailand

* Provides detailed information about province, state, address, zip, telephone, and fax of the police stations in different areas.

Prov: กรุงเทพฯ
Sta: สน.พญาไท
Addr.: 320 ถนนศรีอยุธยา แขวงทุ่งพญาไท เขต

## 8. Hospitals in Thailand

* Provides detailed information about province, hospital name, address, zip, telephone and fax of the hospitals in different areas.

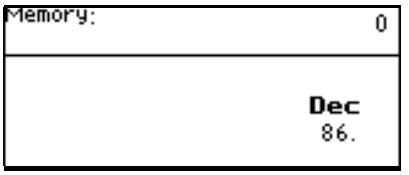
Prov: เพชรบุรี
Hosp: ร.พ. เขาย้อย
Addr.: อ. เขาย้อย
Zip: 76140

## The definition of mathematical symbols:

[MC] : Key [J], deletes the total amount in memory.
[MR] : Key [K],displays total amount in memory.
[M+] : Key [L],calculates in memory plus.

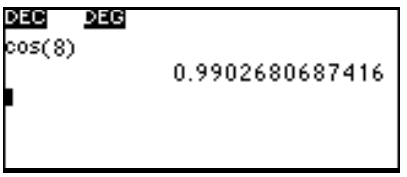
[M-] : Key [*],calculates in memory minus.
[C] : Key [M],deletes the current entry
[AC] : Key [Space],deletes the calculation result.
[Mode] : Key shift+[X],shifts amount the base system.
[%] : Key [V],calculates percent.
[+/-] : Key [N],enters plus or minus signs.
[Hyp] : Key shift+[Q],shift among hyperbolic sine, cosine, tangent functions.
[1/X] : Key [Q],reciprocal signs.
[sin] : Key [W],sine function.
[$\sin^{-1}$] : Key shift+[W], arc sine function.
[cos] : Key [E],cosine function
[$\cos^{-1}$] : Key shift+[E], arc cosine function.
[tan] : Key [R],tangent function .
[$\tan^{-1}$] : Key shift+[R], arc tangent function.
[° ' "] : Key [T],angel and radian signs.
[Xor] : Key shift+[O],Boolean calculation signs.
[$10^x$] : Key shift+[A],common exponent.
[log ] : Key [A],common logarithm.
[$e^x$ ] : Key shift+[S],natural exponent .
[ln ] : Key [S],natural logarithm.
[$x^2$] : Key shift+[D],calculates square .
[$\sqrt{\ }$ ] : Key [D],calculates square root.
[$x^y$ ] : Key shift+[F],power signs.
[$\sqrt[y]{x}$] : Key [F], extract signs.
[π] : Key [Z],circumference ratio.
[$\frac{x}{+}$] : Key shift+[Z],shift between angle and radian.
[Exp] : Key [X],common exponent.
[X!] : Key [C],calculates factorial
[Sort] : Key shift+[M],sorts in statistic calculator.

## 1. Calculator



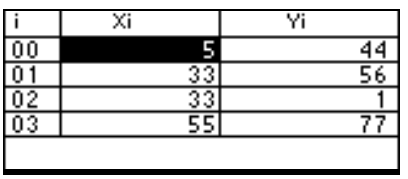

* 12-digit number calculation for four basic arithmetical operations.
* Storage functions: [MR], [MC], [M+], [M-]
* Number conversion among binary, octonary, decimal and hexadecimal systems

## 2. Scientific Calculator




* Four basic arithmetical operations.
* Function, Boolean calculation and conversion for angle, radian.
* Number conversion among binary, octonary, decimal and hexadecimal systems

## 3. Statistical Calculator



| i | Xi | Yi |
|---|---|---|
| 00 | 5 | 44 |
| 01 | 33 | 56 |
| 02 | 33 | 1 |
| 03 | 55 | 77 |

* Four basic arithmetical operations, calculate functions and integrals.
* Statistically calculates uniform, linear regression, logarithmic regression, exponential regression and power regression based on the values entered.
* Sorts, analyzes for data up to 99 entries.

## 4. Formula Calculator

* Provides mathematic formula, physical formula and fundamental equations used in

calculation of area volume, series, probability, geometry and triangle.
* Calculates formula depending on the entered variables.

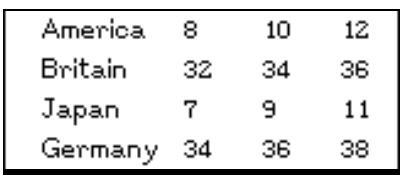
## 5. Unit Conversion

* Converts various units of measure (length, area, volume, weight, temperature, etc.)
* Displays conversion unit and ratio and equivalent.

## 6. Currency Conversion

* 17 popular currencies for conversion
* Computation among the exchange rate and quantity.
* Displays conversion unit and ratio and equivalent.

## 7. Size Conversion



| | | | |
|---|---|---|---|
| America | 8 | 10 | 12 |
| Britain | 32 | 34 | 36 |
| Japan | 7 | 9 | 11 |
| Germany | 34 | 36 | 38 |

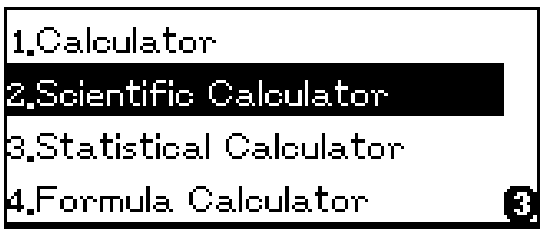
* Tables of corresponding size of clothing and shoes in different countries.

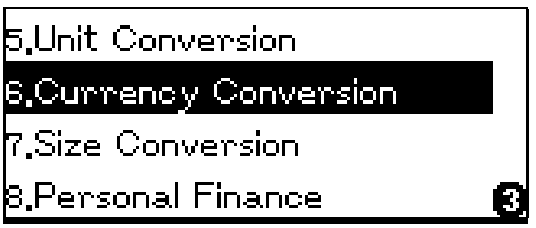
## A. 8. Personal Finance

* Manage 12 types of daily expense, includes: Food, Clothes, Furniture, Traffic, Amusement, Education, Postage, Taxi, Drawing and 3 others.
* Manage deposit and draw sum.

**Calculation**

There are 8 useful calculators listed as below.




**Fundamental mathematic symbols:**

[+] : addition (O)

[-] : subtraction (I)

[x] : multiplication (U)

[÷] : division (Y)

[MC] : memory clear (J)

[MR] : memory replay (K)

[M-] : minus from memory value (L)

[M+] : plus into memory value (*)

[C] : clear / clear error (M)

[AC] : all clear (SPACE)

[Mode] : shift among counting systems (SHIFT + X)

DEC -- decimal system

HEX – hexadecimal system

BIN – binary system

OCT – octonary system

[%] : percentage (V)

[+/-] : plus or minus (N)

**B. Scientific mathematic symbols**

[Hyp] : hyperbolic (SHIFT + Q)

[1/X] : inverse (Q)

[sin] : sine (W)

[$\sin^{-1}$] : arc sine ( SHIFT + W)

[cos] : cosine (E)

[$\cos^{-1}$] : arc cosine (SHIFT + E)

[tan] : tangent (R)

[$\tan^{-1}$] : arc tangent (SHIFT + R)

[°'"] : degree/minute/second (T)

[log ] : logarithm (A)

[$10^x$] : power of 10 (SHIFT + A)

[ln ] : natural logarithm (S)

[$e^x$] : exponential (SHIFT + S)

[$\sqrt{\ }$] : square root (D)

[$x^2$] : square (SHIFT + D)

[$\sqrt[y]{x}$] : yth root (F)

[$x^y$] : yth power (SHIFT + F)

[π ] : pi (Z)

[°'"] : shift among degree / radian / gradient (SHIFT+Z)

[Exp] :exponential (constant) (X)

[X!] : factorial (C)

**C. Boolean operation symbols**

[and] : and (SHIFT + Y)

[or] : or (SHIFT + U)

[not] : not (SHIFT + I)

[xor] : exclusive or (SHIFT + O)

**D. Operation symbols for Statistical Calculator**

[Sort] : sorting (SHIFT + M)

[Calculate] : calculation (P)

**E. Operation symbols for Expenses Manager**

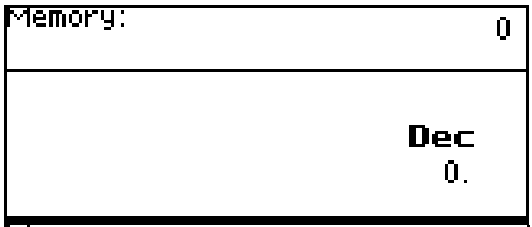
[Type] : change type of expenses (SHIFT+B)

**1. Calculator**

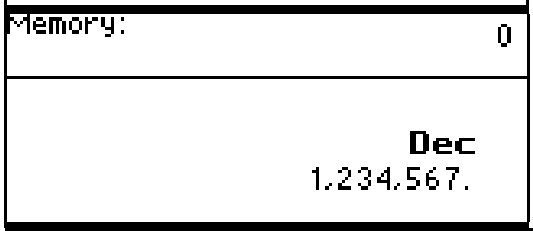
Fundamental mathematic symbols and boolean operation symbols can be used in Calculator.

Example: 1234567+987=?

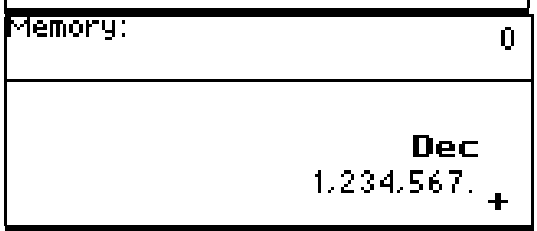
Initial screen of calculator



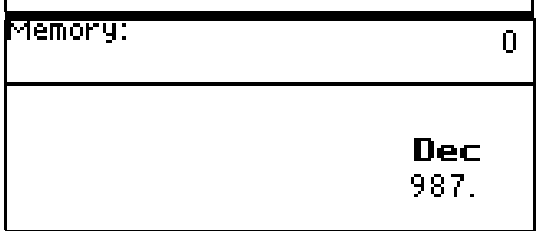

Press 1234567



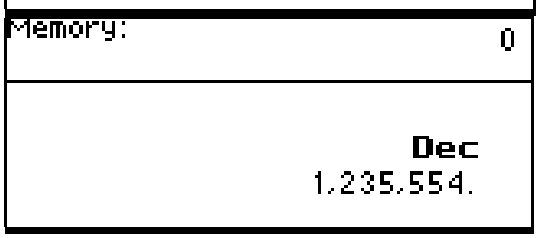

Press [+]




Press 987

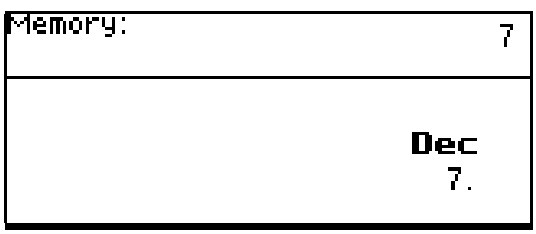



Press [ENTER]

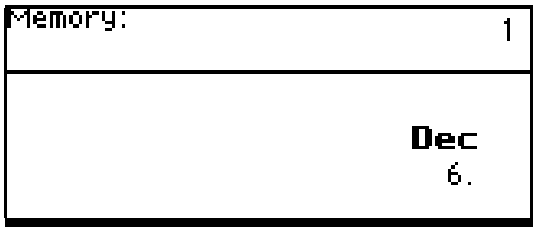



Example: (1*7)-(2*3)=?

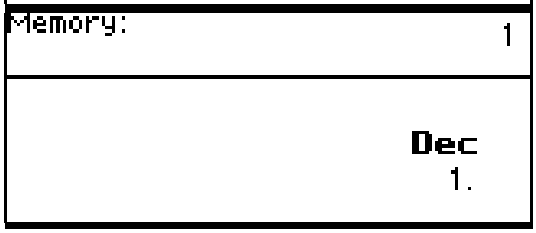
Press 1 [*] 7[M+]



Press 2 [*] 3[M-]




Press [MR]

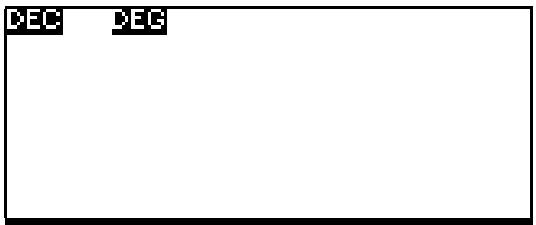



**2. Scientific Calculator**

[+][-][x][÷][AC][Mode][+/-], scientific mathematic symbols and boolean operation symbols can be used. Note: Haxadecimal, octonary and binary mode do not support scientific mathematic symbols.

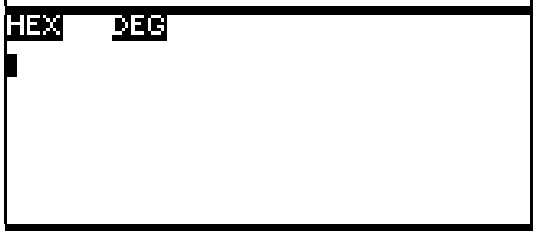
Example: How to change counting system and angular unit?

Initial screen of scientific calculator




Press [SHIFT] [Z], change to ‘Radian’.

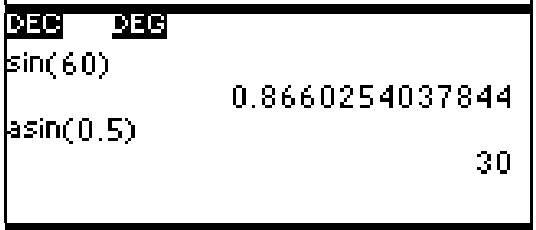
From initial screen, press [SHIFT] [X] change to hexadecimal.



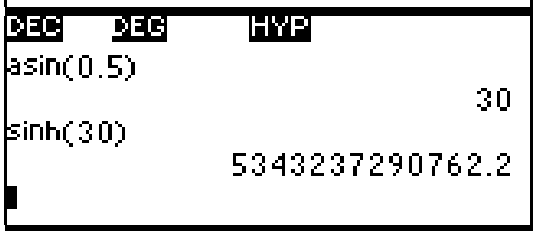
More examples:

Example: sin(60)=?
Press [W] 60 [ENTER]

Example:asin(0.5)=?
Press [SHIFT][W] 0.5 [ENTER]




Example: sinh(30)=?
Press [SHIFT][Q][W]30[ENTER]

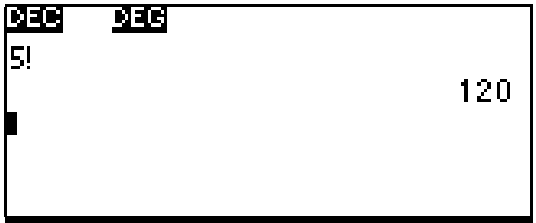



Example: 25 AND 60 =?
Press 25 [SHIFT][Y]60[ENTER]
(011001 AND 111100 = 011000)

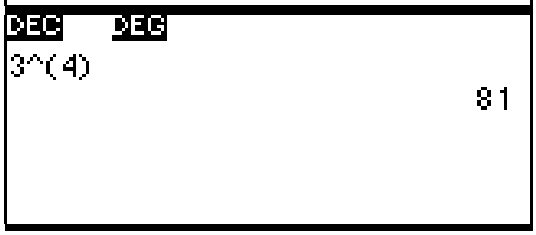
Example: How to convert minutes and seconds to degrees?
Press 15[T]30[T]20[T][ENTER]

Example:Calculate
20log(1/√2)=?
Press
20[A]1[Y][D]2[ENTER]

Example: 5!=?
Press 5[C][ENTER]




Example: 3^4=?
Press
3[SHIFT][F]4[ENTER]

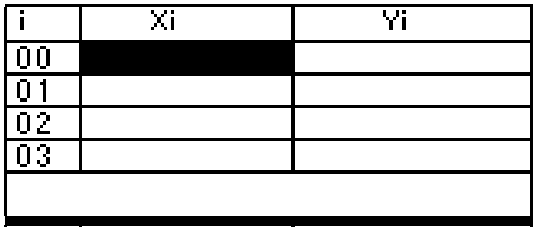



**3. Statistical Calculator**

For uniform statistic calculation, Yi is the total number (q'ty) of Xi. For example, 10 person got 60 points, means that (Xi, Yi) is (60,10). For the regressions, (Xi, Yi) will be treazted as a paired data.

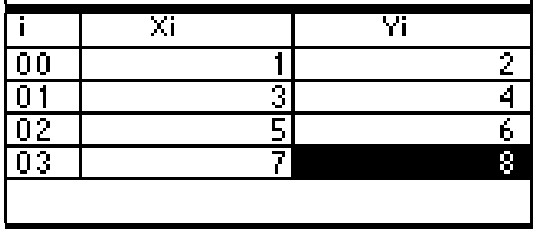
Example:

Initial screen of Statistical Calculator



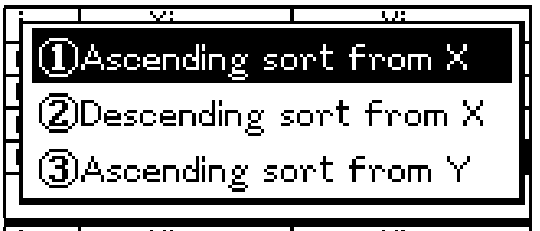
| i | Xi | Yi |
|---|---|---|
| 00 | | |
| 01 | | |
| 02 | | |
| 03 | | |

Press 1 [ENTER] 2 [ENTER] 3 [ENTER] 4 [ENTER] 5 [ENTER] 6 [ENTER] 7 [ENTER] 8 [ENTER]

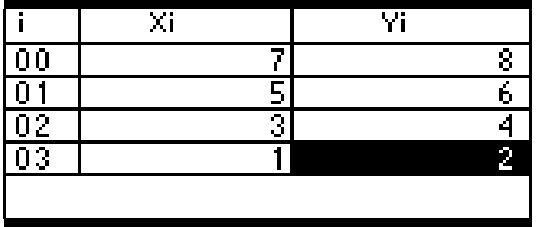


| i | Xi | Yi |
|---|---|---|
| 00 | 1 | 2 |
| 01 | 3 | 4 |
| 02 | 5 | 6 |
| 03 | 7 | 8 |

Press [SHIFT][M]

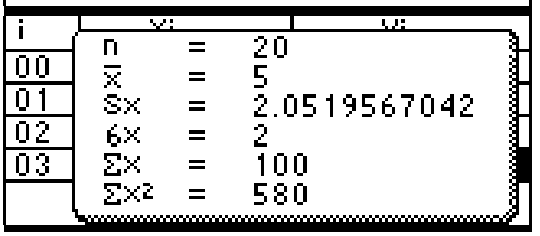



Select 2.Descending sort from X




Press [P]

Select 1.Uniform statistic




Note:

n=8+6+4+2=20

sum=7*8+5*6+3*4+1*2=100

mean=100/20=5

$$Sx=\sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(xi-\bar{x})^2}$$

$$\sigma x=\sqrt{\frac{1}{n}\sum_{i=1}^{n}(xi-\bar{x})^2}$$

Sorting Type:

1.Ascending sort from X – Sorts X in ascending order
2.Descending sort from X – Sorts X in descending order
3.Ascending sort from Y – Sorts Y in ascending order
4.Descending sort from Y – Sorts Y in desceding order

Calculations:

1. Uniform statistic – Calculate statistical variables of Xi (number of data point, mean of X values, sample standard deviation of X, population standard deviation of X, sum of X values, sum of $x^2$ values)
2. Linear regression – Fits a linear model to data $y=a+bx$
3. Logarithm regression – Fits a logarithmic model to data $y=a+b\ln x$ x>0
4. Index (Exponential) regression – Fits an exponential model to data $y=ab^x$ y>0
5. Power regression – Fits a power regression to data $y=ax^b$ x>0, y>0

Example:

Input data

| i | Xi | Yi |
|---|---|---|
| 00 | 30 | 15 |
| 01 | 30.5 | 14.9 |
| 02 | 29 | 15.2 |
| 03 | 30.2 | 14.7 |

Press [P]

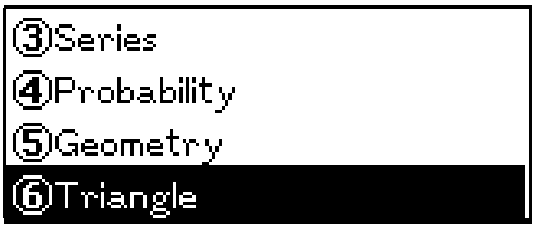
Select 2.Linear regression.

| i | Xi | Yi |
|---|---|---|
| 00 | 30 | 15 |
| 01 | | |
| 02 | | |
| 03 | | |

Linear regression
a = 22.623076923
b = -0.256410256
r = -0.800640769

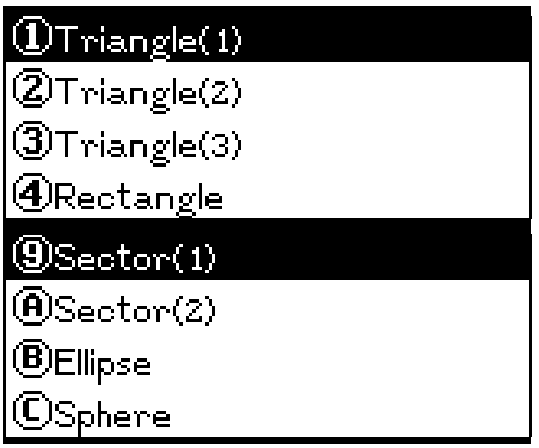
**4. Formula Calculator**

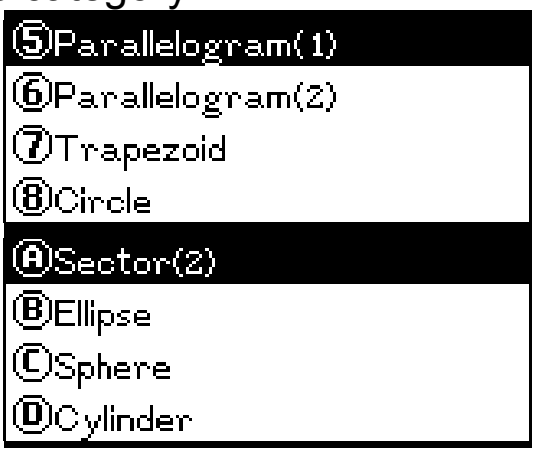
There are 6 categories in Formula Calculator.




## 4.1. Area

There are 13 formulas in this category.

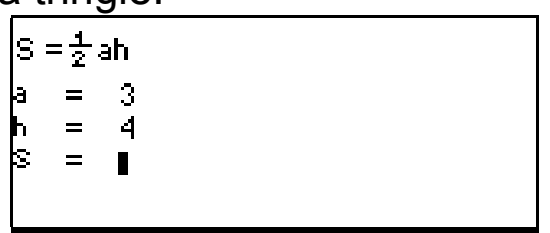



Example: Calculate area of a tringle.

Select 1.Triangle (1)

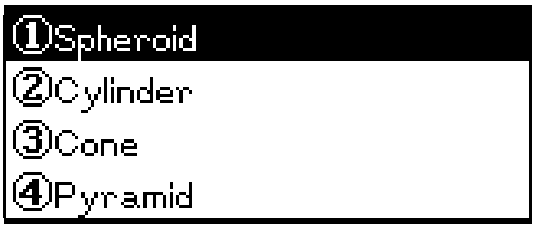
Press 3 [⬇] 4 [⬇]




Press [ENTER], the result is 6.

## 4.2. Volume

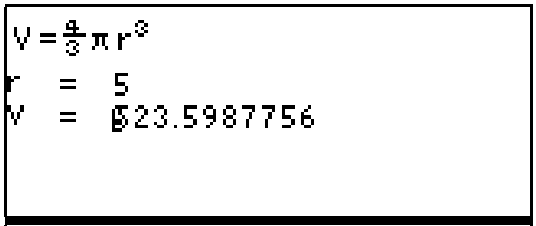
There are 4 formulas in this category.




Examples:

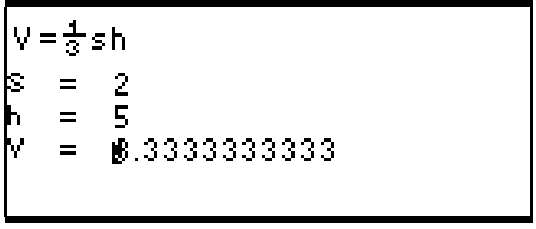
Select 1. Spheroid

Press 5 [⬇] [ENTER]



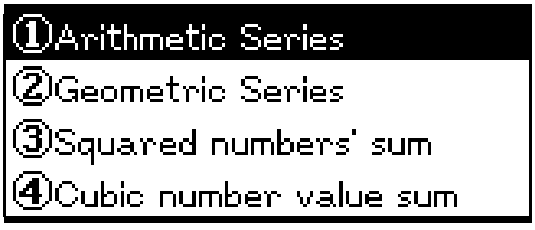

Select 4. Pyramid

Press 2 [⬇] 5 [⬇] [ENTER]




**4.3. Series**

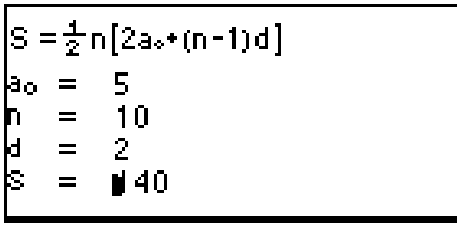
There are 4 formulas in this category.




Examples:

Select 1. Arithmetic Series

Press 5 [⬇] 10 [⬇] 2 [⬇] [ENTER]




Note:

5+7+9+11+13+15+17+19+21+2
3=140

Select 3. Squared numbers' sum

Press 5 [↓] [ENTER]

```
S = 1/6 n(n+1)(2n+1)
n  =  5
S  =  55
```

Note:

1+4+9+16+25=55

### 4.4. Probability

There are 9 formulas in this category.

```
①Binomial distri prob fnt
②Poisson distri prob fnt
③Geometry distri prob fnt
④Non-Euclid geom prob fnt
⑤Exponent distri prob fnt
⑥Uniform distri prob fnt
⑦Normal distri prob fnt
⑧Stand-normal dist fnt
```

```
⑥Uniform distri prob fnt
⑦Normal distri prob fnt
⑧Stand-normal dist fnt
⑨Recombinable
```

Example:

Select 1. Binomial distri prob fnf

Press 2 [↓] 5 [↓] 0.8 [↓] [ENTER]

```
P(x)=C(n,x)p^x(1-p)^(n-x)  0<p<1 x=0,1,…,n
x  =  2
n  =  5
p  =  0.8
P  =  0.0512
```

### 4.5. Geometry

There are 5 formulas in this category.

①Vector dot product
②Vector angle
③Two dots' distance
④Dot & line's distance

②Vector angle
③Two dots' distance
④Dot & line's distance
⑤Intersection angle

Example:

Select 1. Vector dot product

Press 5 [↓] 6 [↓] [7] [↓] 9[↓]

Press [ENTER]

$I=\vec{A}\cdot\vec{B}=a_1b_1+a_2b_2$
$a_1$ = 5
$b_1$ = 6
$a_2$ = 7
$b_2$ = 9

$I=\vec{A}\cdot\vec{B}=a_1b_1+a_2b_2$
$b_1$ = 6
$a_2$ = 7
$b_2$ = 9
I = 93

## 4.6. Triangle

There are 4 formulas in this category.

①Cosine
②Fahrenheit
③Sine(1)
④Sine(2)

Example:

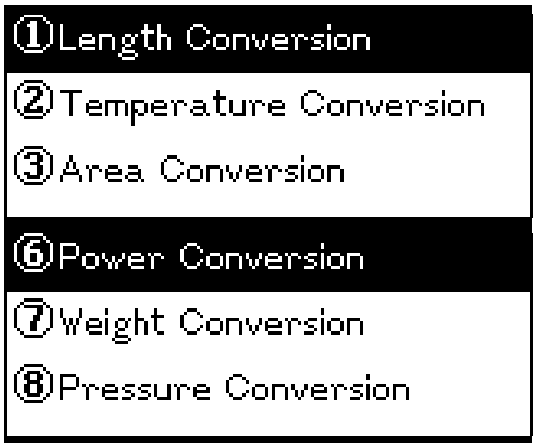
Select 1 Cosine.

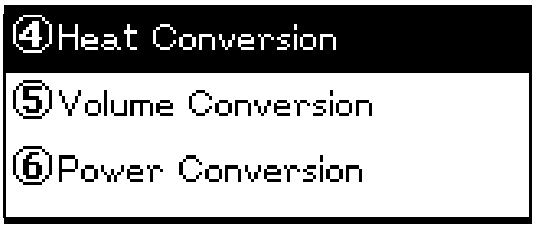
Press 2 [↓] 3 [↓] 1.5 [↓] [ENTER]

$a^2=b^2+c^2-2bcCosA \quad 0<A<\pi$
b = 2
c = 3
A = 1.5
a = 3.4858504816

## 5. Unit Conversion

There are 8 kinds of conversion.

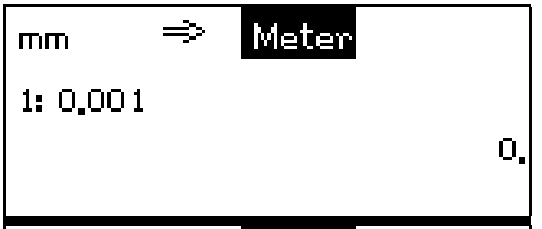



Examples:

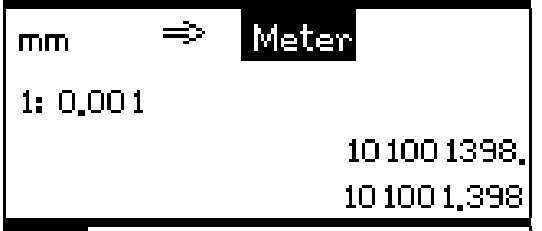
Select 1.Length Conversion

Press [⊕] once to select Meter.



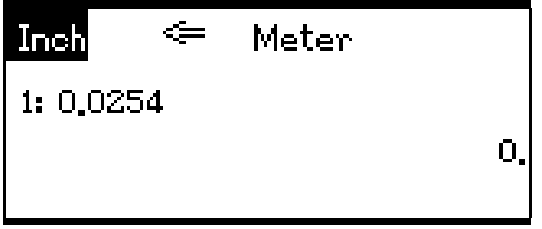

Press 101001398 [ENTER]

101001398mm=101001.398 Meter



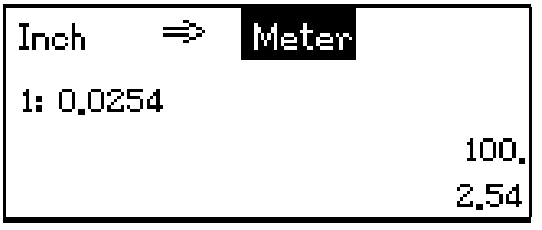

Press [⊖] to shift the cursor.

Press [⊕] a few time to select ‘Inch’



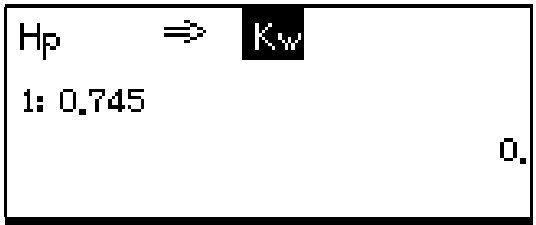

Press 100 [ENTER]

100 inches=2.54 Meter



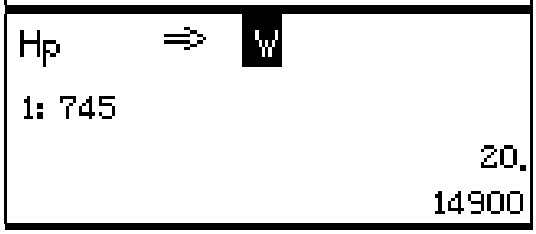
Example: 20 horse power = ? Watt

Select 6. Power Conversion



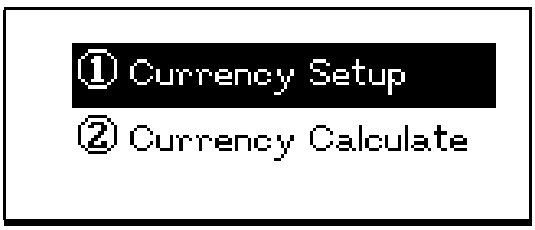

Press [⬇] once

Press 20 [ENTER]




**6. Currency Conversion**

To ensure your result is are correct, please review and check the exchange rates among the currencies in 1. Currency Setup before proceed to 2. Currency Calculation.

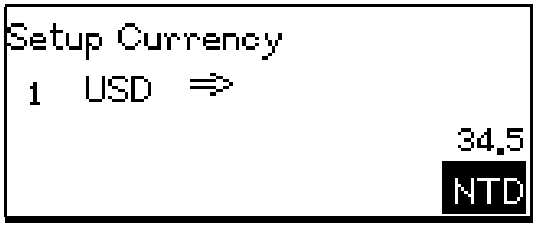



**6.1. Currency Setup**

The initial screen of 1. Currency Setup.

Setting exchange rate of the currency.
Example, press 45.6 [ENTER].

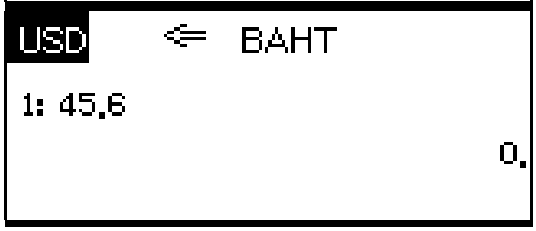
Press [⬇] or [⬆]to choose other currencies.
Example: press [⬇] to choose NTD, press 34.5 [ENTER]



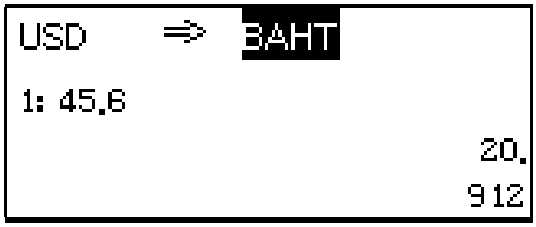

## 6.2. Currency Calculation

Initial screen of 2. Currency Calculation

Press [⬅] and [➡] to shift the cursor.
Press [⬇] and [⬆] to select currencies




Example: USD20=BAHT ?
Press 20 [ENTER]



Example:

BAHT4900=NTD?

Press [↓][←][↓][↓][→]

Press 4900 [ENTER]

```
BAHT  ⇒  NTD
1: 0.7565789474
                    4900.
          3707.23684211
```

## 7. Size Conversion

```
①Women Clothes
②Women Shoes
③Women Hats
④Men Shirts
```

```
②Women Shoes
③Women Hats
④Men Shirts
⑤Men Shoes
```

Select 1. Women Clothes

| | | | |
|---|---|---|---|
| America | 8 | 10 | 12 |
| Britain | 32 | 34 | 36 |
| Japan | 7 | 9 | 11 |
| Germany | 34 | 36 | 38 |

| | | | |
|---|---|---|---|
| Britain | 38 | 40 | 42 |
| Japan | 13 | 15 | 17 |
| Germany | 40 | 42 | __ |
| Europe | 42 | 44 | 46 |

Press [↑][↓][→][←][▲][▼] to view more data.

## 8. Personal Finance

```
① Expenses Manager
② Saving Manager
```

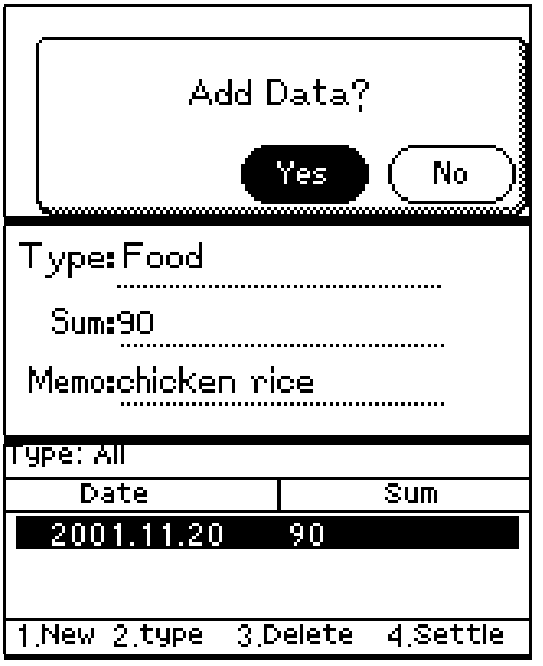
## 8.1. Expenses Manager

### 8.1.1. Create new data

Select 1. Expenses Manager
Press Y

Input data.
Example: Press 90 [ENTER] chicken rice

Press [SAVE]
List screen will be displayed.



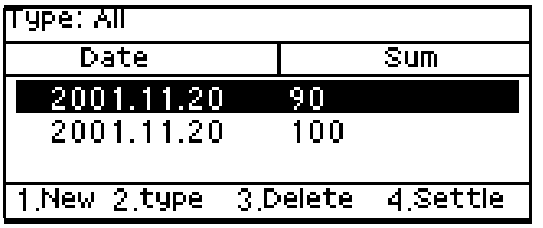

### 8.1.2. Add new data

Press 1.New under list screen.
Press [⬆] and input date.

Press [SHIFT][B] to set the type of expenses.

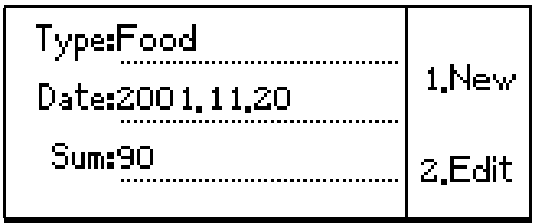
Example: Select 'Clothes'
Input all other data
Press [ENTER]

Press [SAVE] and return to list screen.

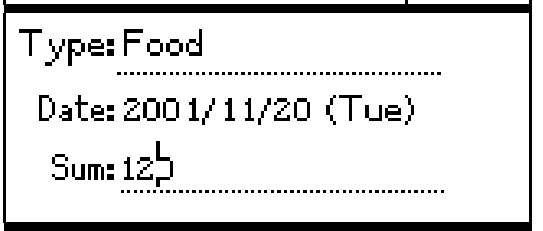



### 8.1.3. View and modify data

Select a data under list screen.
Press [ENTER]

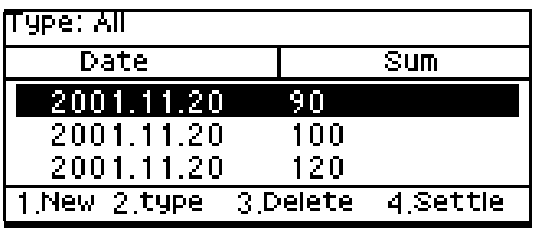



Press 2 to edit data.
Example: Change sum into 120.




Press [SAVE],
'Save as new file?' will appear.
Y: Save as new file, the original data will be retained.
N:The original data will be overwrited by modified data.

Press Y. Return to list screen

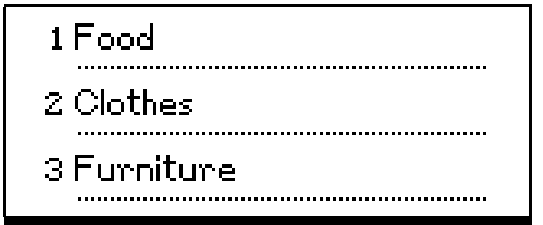



### 8.1.4. Delete Data

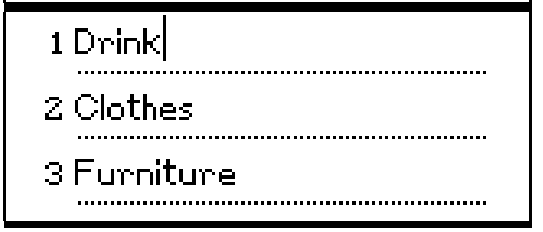
Select a data under list screen.
Press 3 to delete the data.
Press Y to confirm.

### 8.1.5. Change category name

Press 2 under list screen.

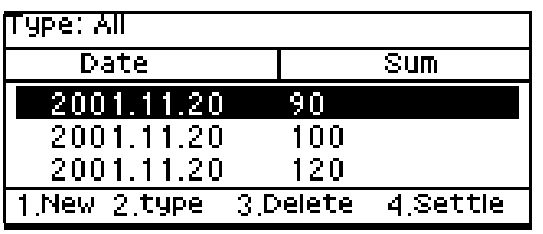



Modify the category nameand press [SAVE]
Example: Change ‘Food’ to ‘Drink’
then press [SAVE]
The type names with ‘Food’ in all related records were changed to ‘Drink’.



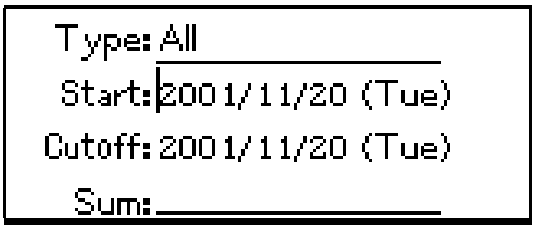
### 8.1.6. Settle

Under list screen.



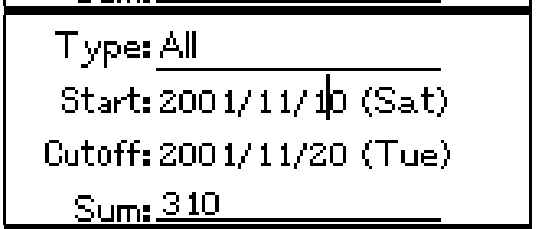
Press 4

Set start and cutoff date.



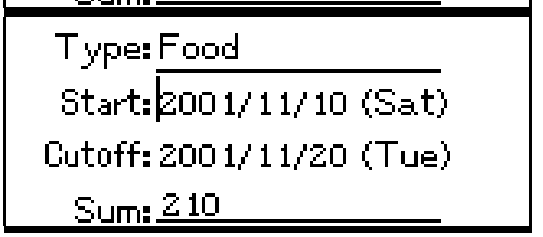

Press [ENTER]

Note: Sum of all expenses during this period is 310.




Press [SHIFT][B], select 'Food', press [ENTER].

Note: Sum of expense in 'Food' category during this period is 210.



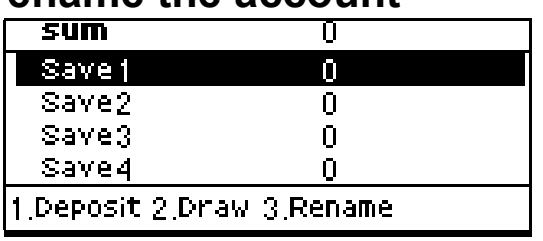

### 8.1.7. Data protection by password

If you had set a password, whenever you enter Expenses Manager, you need to input the original password.

## 8.2. Saving Manager

### 8.2.1. Deposit money and rename the account

Initial screen of Saving Manager



Press 1 to deposit money.
Example: Press 900 [ENTER]

Press [ESC]

```
Save1

Current Sum:     900

Deposit:         0
```

```
sum          900
Save1        900
Save2        0
Save3        0
Save4        0
1.Deposit 2.Draw 3.Rename
```

Press 3 under list screen to rename the account.
Example: Press Bank1

Press [ENTER]

```
Prev.Name:Save1

Curr.Name:bank1
```

```
Prev.Name:bank1

Curr.Name:
```

Press [ESC]
So, you have saved 900 in Bank1 account.

```
sum          900
bank1        900
Save2        0
Save3        0
Save4        0
1.Deposit 2.Draw 3.Rename
```

### 8.2.2. Withdraw money

Select a appropriate account under list screen, press 2 to withdraw money. Input the money to be withdrawn.

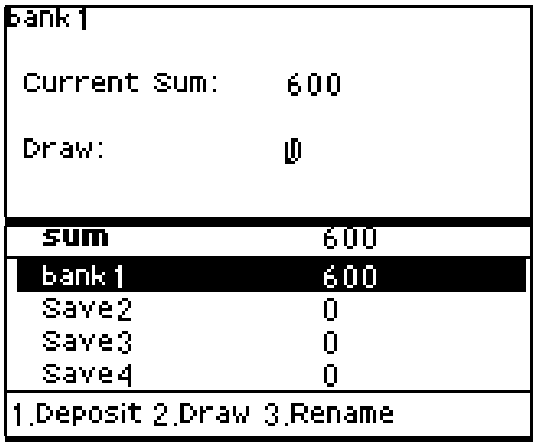
```
bank1

Current Sum:     900

Draw:            300
```

Example: Press 300

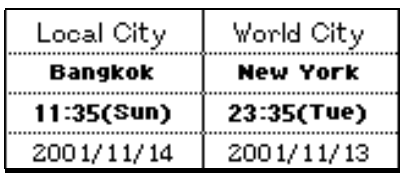
Press [ENTER]




Press [ESC]

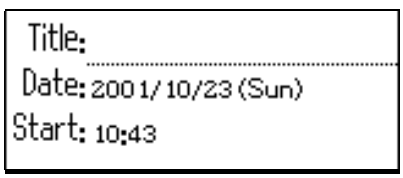
Note: Now you have 600 in bank1 account.

## 1. Local and World Time



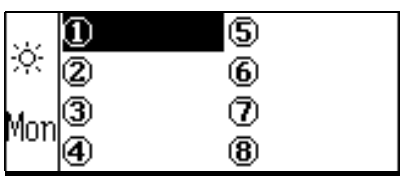

* Displays time and date of the local city and other cities simultaneously.
* Provides 228 world cities for selection.
* Time adjustable.
* Provides daylight saving setting. ( Summer time )
* Alarm clock.

## 2. Schedule




* Displays weekly schedule.
* Allows to create, modify, save and delete schedule.
* Sets the alarm for important scheduled activities.

## 3. Class Schedule

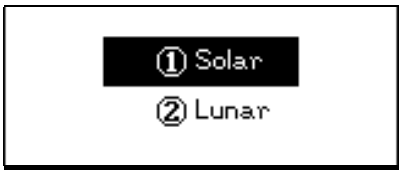



* Allows to create, modify and

delete curriculum.
* Stores class curriculum, including subjects, teachers and places from Monday to Sunday.

**4. Commemorative Days**

* Stores solar and lunar commemorative days.
* Allows to set a password for the security of saved data.
* Allows to create, modify and delete data.




**5. Lunar and Solar Calendar**

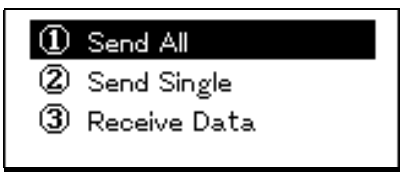
* Allows to search any date of Solar & Lunar calendar from year 1881 to 2099.
* Allows to create schedule and commemorative day directly.

**6. Games World**

* Eight games: 24 points, Square World, Dworld, Othello, Kongming Chess, Land Mines, Puzzles and Straight move.

**7. Information Communication**

* Allows to Send and Receive data.
* Allows to send single or all data from class schedule, name card manage, memorandum, etc.




**8. System**

**System Setting**

* Sets menu in Thai or English.
* Speech and tone adjustment.
* Sets key sound on or off.

* Sets start-up screen.
* Password set up and deletion.
* Sets the automatic power-off period.
* 12 or 24 hours for selection
* Hot line service for customer contact.

**System Status**

* Displays memory status and saved data groups.
* Deletes the whole group of personal data