Contents

Features of the Product

First, clear voice quality

- 13Kbps & EVRC Vocoder
- Provides the same voice quality as that of the wired telephone service

Second, elegant design and simple installation

- Desktop & wall mounting structure provides simple installation
  at any place

Third, varieties of supplementary services

- System Dependent Feature : Caller ID, OTASP, Authentication,
  Voice mail Notification, Voice Privacy
- Stand Alone Feature : Redial, Speed dialing(up to 99),
  Emergency Call Hold, Hot Line, Alarm Reminder
- POTS (Plain Old Telephone Service), data, etc.

Fourth, varieties of interfaces

- Provides high speed digital data service at 64Kbps.
- Circuit Data Communicate (file send/receive)
- Support PC Fax (HotFax, WinFax)
- Medium Data Rate Packet Data Support
  (Internet & FTP file send/receive)

- Analog G3 Fax (Optional)
- Pay Phone Interface
  (16KHz, 12KHz, Metering Pulse, Polarity Reversal)

Fifty, extended call / waiting time

- Adoption of up-to-date MSM5105 chip and super power-saving circuit
  design provides extended battery lifetime at a lower power
  consumption compared with other products.

**Sixth, varieties of tone / ring generators through simple setup**

- Simple setup of dial / warning tones (4 types) and call receiving alert
  rings (18 types) according to user's needs.

Before Using

This product is the Fixed Wireless Terminal (FWT) designed using the up-to-date communication technology Code Division Multiple Access(CDMA) to fulfill superior communication services of users. Please, review this manual closely before using the product.

Caution : As the *backup battery of the FWT is not connected to the terminal upon delivery,make sure to connect it properly, referring to "General installation" of this manual.*

Precautions in using

NO!
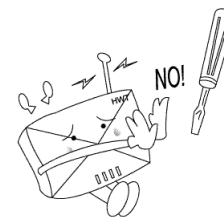
Do not disassemble or revise the FWT terminal at your discretion

Do not touch the antenna during calling
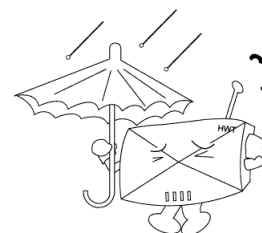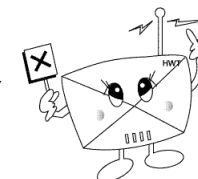
Do not use the FWT terminal at hot and humid places. It may not be repairable if wet by rain or drinks

Avoid vibration or impact and keep the FWT terminal at a safe place to avoid damage while you are not using it

Do not use the FWT terminal at a place where explosives or flammable liquids are present

NO!

LPG

NO!

Solvent

Thinner
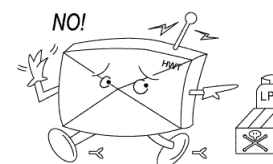
Do not wipe the FWT terminal with chemicals such as solvent

Long Time
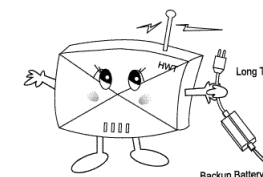
Backup Battery

Remove the SMPS and the backup battery if you do not use the FWT terminal for a long time

Components check

Thank you for purchasing this product. Please check if the components of the product are consistent with the figure below :
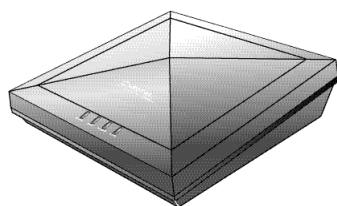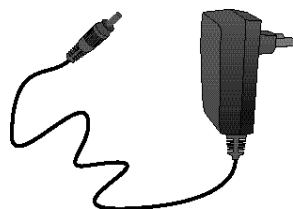
FWT terminal   Power supply (SMPS)

Antenna
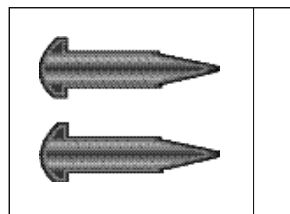
user Guide   Fixation Nuts

Function Description of Each Component

POWER LED   SERVICE LED   MODEL ED

CHGLED   ANT.   Serial RJ-11   DC Jack   Power Button
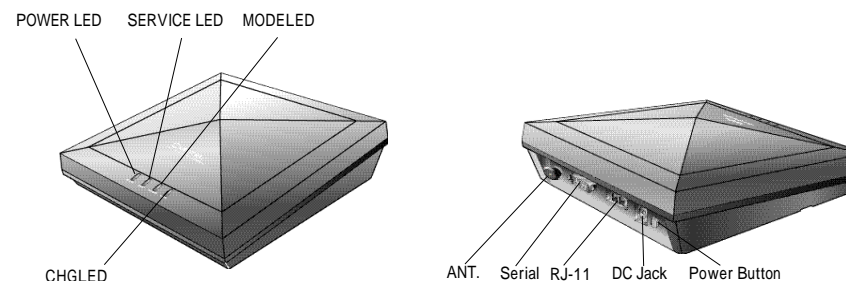
• POWER LED
 Lighted when the external power is applied.
 - When the external power is applied, the LED is red.
 - When the internal power is applied, the LED is green.
 - If the backup battery is connected, you can use the terminal without
   the external power supply.

• SERVICE LED
 Indicates status of the backup battery.
 - LED OFF   : Indicates that the service is not available as the
                 receive power intensity is weak.

 - LED blinking: Indicates that the service available although the
   receive power intensity is weak.
 - LED ON   : Indicates that the receive power intensity is strong
                 and the service is available.

• MODE LED
 - RED : Indicates that the state is Voice Call.
 - Green : indicates that the state is Data Service.
 - Yellow : Indicates that the state is FAX Call.
 - LED OFF : Indicates that the state is stand by.

- CHG LED
  - RED : indicates that the state is in Charging.

- DC JACK
  Feeds power from the SMPS of the FWT terminal.
  - The AC input of the SMPS ranges 90~270V

- SERIAL PORT
  A port for maintenance and data communication of the FWT terminal

- RJ-11 JACK
  Used to connect normal phones.
  - As two jacks are presented, you can concurrently connect two
    telephones without security assured.
  - You may connect one telephone to any of the two jacks.
  - You may connect up to five telephones to RJ-11 jack.

- POWER SWITCH
  Connects power to the FWT terminal.

Installation

General installation

1. Set the battery switch located at the bottom of the terminal to Off.
2. As shown in the figure below, open the cover on the rear side of
   the terminal by pushing it along the arrow.
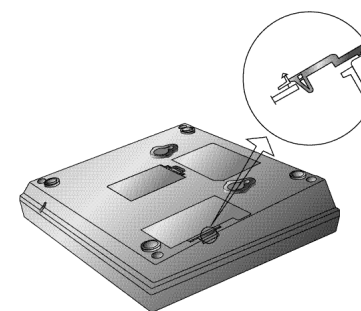
3. After the cover is open, you can see the backup battery and its
   connector. As shown in the figure below, grip the connector to let
   the flat side look downward. Then, push the connector along
   the arrow to connect it to the circuit board.

backup battery connector
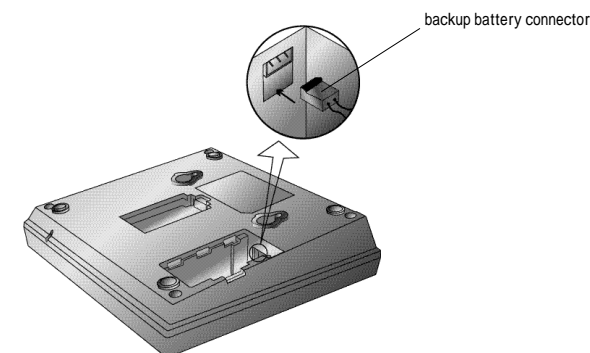
Note: The terminal may be damaged if you attach the connector opposite to the direction shown above. Please double-check the direction and proceed to step 4

4. After connecting the battery connector to the circuit board, insert the cover as shown in the figure below. Then, fix the cover with the screws.
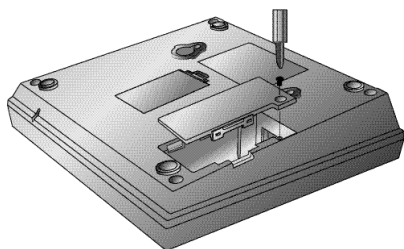
5. As shown in the figure below, insert the antenna along the arrow and rotate it clock-wise.

6. As shown in the figure below, connect the telephone (normal phone) to the jack RJ-11. You may use any of the two RJ-11 jacks provided by the terminal.
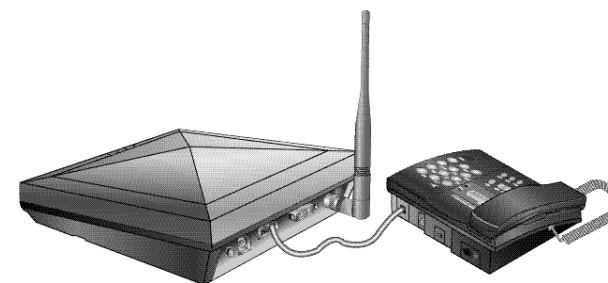
7. Connect the SMPS for FWT terminal to the DC-jack located on the left side of the terminal. Insert the power jack properly until it does not move further.
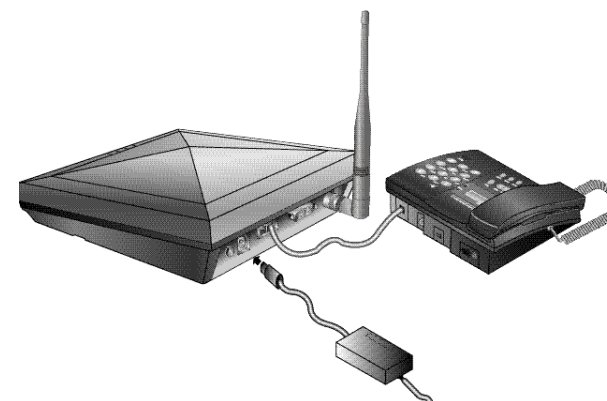
8. Connect the power plug of the SMPS to the power receptacle.

AC plug
(110V or 220V)
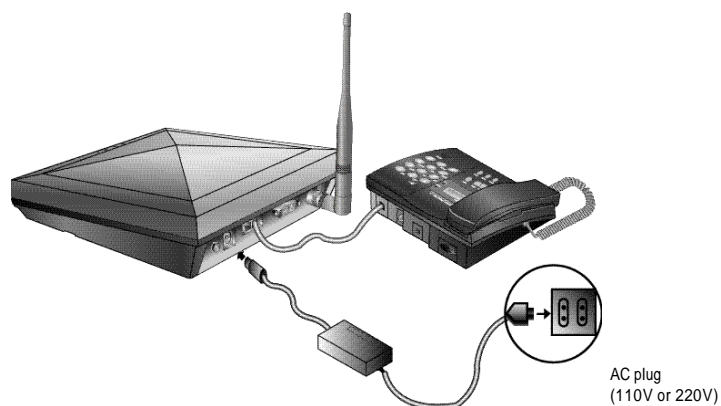
9. Set the power switch located at the back of the terminal to ON.

The following actions occur :
 • All of the four LEDs are lighted, and then the LED corresponding
   to the power currently applied is lighted.
 • If the service available, the SERVICE LED is lighted.

Wall bracket Installation

1. In case of concrete wall, attach the Installation Sheet to the place
   that you want and make holes with a drill.

Wall

76.8mm

ϕ 3.0mm

Installation Sheet

25.0mm
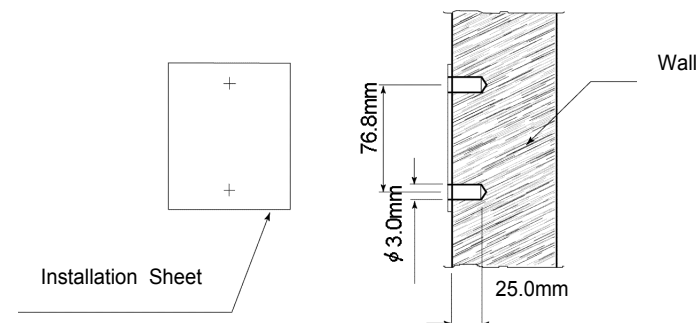
2. As shown in the figure below, fix the screws into the holes.

Wall

76.8mm

Screw 3.5mm
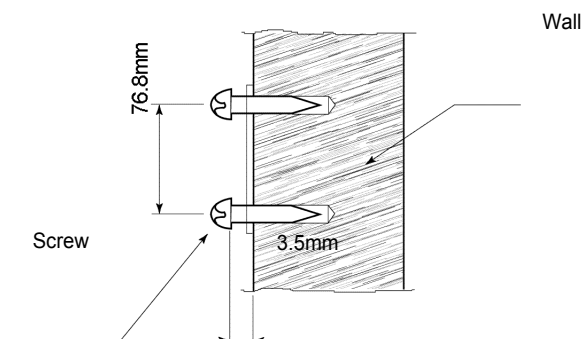
In case of wooden wall, skip drilling and directly fix the screws to the
Installation Sheet. The distance from the wall to the head of the
screw is the same as the figure in step 2.

3. As shown in the figure below, insert A1 and A2 of the terminal to the head of the screw and press the terminal downward to fix it.

A1   A2
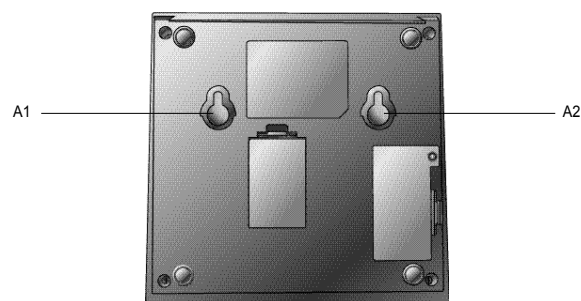
4.The following figure shows the shape after completion of Installation.

Wall

Screw required to
tighten the terminal
to the wall.
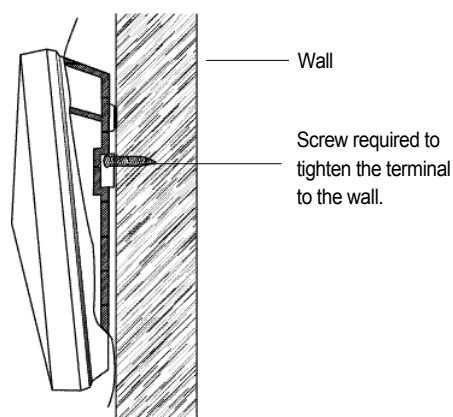
You can get a batter call quality by installing the external panel antenna
(Please contact the distributor of the product for the antenna).

The FWT terminal has a backup battery to run without the external power
supply. If the SMPS for the FWT terminal is down, the terminal can run for
about 15 hours in waiting state and for about 2 hours in call state with
the backup battery.

Installation for data service

Computer

RS-232 Cable

Telephone

WLL
Terminal

<FWT-PC connection for data service>
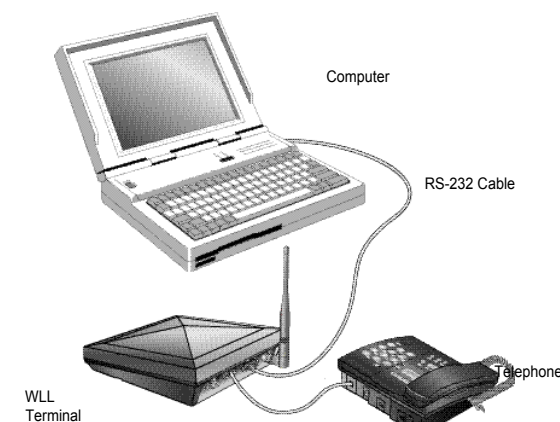
As shown in the figure above, connect the serial port of the FWT terminal
to the PC COM1(COM2) with the RS232 cable. Data service subscribers
can purchase the RS232 cable from the service provider.

Operation

Power On
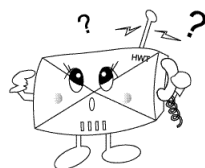
- Using the external power

Connect the SMPS to the DC-Jack located on the left side of the terminal and insert the power plug of the SMPS to the receptacle. Insert the power jack properly until it does not move further. If power is applied to the terminal, all of the four LEDs are lighted. Then, the power LED is lighted and the service LED is lighted if the service available.

- Using the backup battery

To use the backup battery of the terminal, set the battery switch at the bottom to On. If you want to use the backup battery, it has to be charged enough to operate the terminal. The battery is automatically charged when the external power is applied. If power is applied to the terminal, all of the three LEDs are lighted. Then, the battery LED located at the center is lighted and the service LED located at the bottom is lighted if the service available.

Power Off

Turn off the power switch located at the back of the terminal.

Call Send

- Normal Procedure

Pick up the handset in on-hook status. You will hear the dial tone (In case of No Service, you will hear the warning tone with 0.5Sec interval).

You can not send calls in No Service status (Service LED off). Press the phone number of the called party and click the hook switch (Hook-Flash).

Speak to the called party when the line is connected.

Hang up the handset after conversation.

- Redialing

Used to call to the phone number called latest.

Pick up the handset and click the hook switch. The line is connected to the number called latest. This function would not work if you tried no call after power on

Pick up the handset and click the hook switch. Refer to section 4.7 for the click time.

Hang up the handset after conversation.

- Speed Dialing

Before using this service, you have to set the speed dial function. Refer to Section 4.1 for the setting method.

In case of one digit

If the speed dial is 01_09, pick up the handset, press the number (1_9), and then click the hook switch or press the latter digit long. Speak to the called party when the line is connected. Hang up the handset after conversation.

In case of two digits

If the speed dial is 10_99, pick up the handset, press the number (10_99), and then click the hook switch or press the first digit short and second digit long.

Speak to the called party when the line is connected. Hang up the handset after conversation.

Call Receive

- When the Normal Phone is On-hook State

Pick up the handset when the normal phone rings.

Speak to the called party when the line is connected.

Hang up the handset after conversation.

- When the Normal Phone is Off-hook State

Click the hook switch(hook-flash) if the normal phone receives the ring signal (Call receive in off-hook is allowed only if the dial tone & warning tone are being sent and the bell rings through the buzzer).

Speak to the called party when the line is connected.

Hang up the handset after conversation

Analog G3 Fax Service

To use the analog G3 fax service from the terminal equipped with the analog G3 fax board, you have to send/receive documents according to the following procedure:

- Sending Documents

Press [* 00] and then press the number of destination. The other procedure is the same as that for general faxes.

- Receiving Documents

To receive documents from the analog G3 fax, set the terminal to the Analog G3 fax receive mode first. Pick up the handset of the fax and press [* * * * 15*]. The fax is set to the Analog G3 fax receive mode(Set to Analog G3 fax receive mode until power off).

You can not receive voices unless you reset the Analog G3 fax receive mode. To reset the Analog G3 fax receive mode, pick up the

handset of the fax and press [* * * * 10*]

Data Service

When a PC is connected to the WLL terminal, the data service can provide Internet and PC communication and fax send/receive. As wireless data communication service may not be provided depending on service providers, please check if the service provider provides this service. This service is available after purchasing data communication cable from the service provider.

For computer environment setup and other details, refer to the User Manual provided when you purchase the data communication cable.

- Data Service Receive Mode Setting

・ Setting with a normal phone

This function is used to set the receive mode according to data service type, using the normal phone connected to the WLL terminal

Pick up the handset of the normal phone and press [* * * * 10*] to reset the data service receive mode.

Pick up the handset of the normal phone and press [* * * * 11*] to set fax receive mode(one time).

The fax receive mode is released automatically 10 minutes after setting.

Pick up the handset of the normal phone and press [* * * * 12*] to set fax receive mode (Set to fax receive mode until power off).

Pick up the handset of the normal phone and press [* * * * 13*] to set modem receive mode(one time).

The modem receive mode is released automatically 10 minutes after setting.

Pick up the handset of the normal phone and press [* * * * 14*] to set modem receive mode

(Set to modem receive mode until power off).
Default setting is [* * * * 10*].

· Setting with AT commands

This function is used to set the receiving mode according to data service type,using the communication emulator program of PC connected to the WLL terminal.

Enter [AT+QCVAD=0] in the communication emulator program and press the Enter key.
After the setting is completed, OK is indicated and the data service receive mode is released.
Enter [AT+QCVAD=1] in the communication emulator program and press the Enter key.
After the setting is completed, OK is indicated and the fax receive mode (one time) is set. The fax receive mode is released automatically 10 minutes after setting.
Enter [AT+QCVAD=2] in the communication emulator program and press the Enter key.
After the setting is completed, OK is indicated and the fax receive mode is set (Set to fax receive mode until power off).
Enter [AT+QCVAD=3] in the communication emulator program and press the Enter key.
After the setting is completed, OK is indicated and the modem receive mode is set (one time). The modem receive mode is released automatically 10 minutes after setting.
Enter [AT+QCVAD=4] in the communication emulator program and press the Enter key.
After the setting is completed, OK is indicated and the modem receive mode is set (Set to modem receive mode until power off).
Default setting is [AT+QCVAD=0].

Supplement Service

Speed dial

This function is used to save frequently used phone numbers in advance and make a phone call quickly with the abbreviated code. You can save up to 99 phone numbers. Default setting is off.

- Save phone number
Enter [##3233 1 1], enter a two-digit numbers(01~99) for the address to save the phone number and press the [*] button(save).

##3233 1 1 address(2 digits) phone numbers *

: save phone numbers

- Delete phone number
Enter [##3233 1 2], enter the address(01~99) to delete and press [*] button. To delete all phone numbers saved, enter [##3233 1 3] and press the [*] button.

##3233 1 2 address(2 digits) *	: delete one address

##3233 1 3 *	: delete all address

- Speed dial on and off
Enter [##3233 1 4] and then press the [*] button(on). The speed dial mode is enabled only if the speed dial function is on although phone numbers are saved in the memory.
To disable the function(off), enter [##3233 1 5] and then press the [*] button.

| ##3233 1 4 * | : speed dial on |

| ##3233 1 5 * | : speed dial off |

- Speed Dialing

If the phone number is saved in the address and the speed dial function is enabled(on), you can make a phone call by entering just the address.
If the saved address is one digit(01~09), press the latter digit long or press it short and click the hook switch to make a phone call to the saved number.
If the saved address is two digits(10~99), press the first digit short and the second digit long or press the two digits short and click the hook switch to make a phone call to the saved number.
If you attempt a call while the speed dial function is off, you will hear the reject tone and fail to make a phone call.

Emergency call hold

This function is used to register up to three phone numbers(Address 01~03) in advance to prepare for emergencies and quickly make a phone call with the speed dial. The line connected is held on as long as the called party does not release. Default setting is off.

- Emergency call hold on and off

Enter [##3233 1 6] and press [*] button(on). The emergency call hold function is activated when phone numbers are saved in address 01~03 and the emergency call is on. You can save phone numbers in address 01~03 in the same way as "4.1.1" .
To deactivate the emergency call hold function(off), enter [##3233 1 7] and press the [*] button.

| ##3233 1 6 * | : emergency call hold on |

| ##3233 1 7 * | : emergency call hold off |

- Emergency call

When phone numbers are stored in address 01~03 and the emergency call is on, if you press the latter digits of the address long or two digits short and click the hook switch, the call is connected to the stored number and is held on as long as the called party does not release.
If you attempt speed dialing when emergency call hold and speed dial are enabled concurrently, the address 01~03 are operated in emergency call hold mode.
If you attempt speed dialing when emergency call hold is off and speed dial is on, the address 01~03 are operated in speed dial mode.

Reference: Warning Tone/Howler(ROH:Receiver Off-Hook) Tone
If you pick up the handset (Off-Hook) and do not press buttons for the given time, the dial tone changes to the warning tone. At this time, you can receive calls but can not send calls as number input is not allowed. In this case, you have to put back the handset (On-Hook) and pick it up again (Off-Hook) to attempt a call. If you hold the handset after the dial tone has changed to the warning tone, the warning tone changes to the Howler (ROH) Tone after the given time. You can hear the Howler Tone through the buzzer. From that time on, you can not send or receive calls until you hang up (On-Hook) the handset.

Reference: Confirmation Tone/Reject Tone
If you press the [*] button(save) after all key operation for supplementary service setting is normally accomplished, the telephone returns to the initial status after hook-off and the Confirmation Tone is sent to notify that the setting has been accomplished normally. If an incorrect key is entered, a short reject tone is sent to notify the error. Then, you can continue the operation from that step.

Hot Line Service

This function is used to register one frequently used number (address 99) in advance and automatically make a phone call to the number after hook-off. Default setting is Off.
Hot line is operated in 2 modes; timed hot line mode to connect the line after the specified time (4sec~8sec) and immediate hot line mode to connect the line just after off-hook.

- Hot line on and off

Enter [##3233 1 8 1].and press the [*] button to set timed hot line(On).
If a phone number is saved in addess 99 and the hot line function is set to timed hot line mode, the line is connected the dial send time (4sec~8sec) after hook-off.
Also, enter [##3233 1 8 2].and press the [*] button to set immediate hot line(On).
If a phone number is saved in address 99 and the hot line function is set to immediate hot line mode, the line is connected just after hook- off.

##3233	1	8	1	*	: Timed hot line on
##3233	1	8	2	*	: Immediate hot line on
##3233	1	8	3	*	: Hot line off

- Hot line calling

If a phone number is saved in address 99 and the hot line function is set to timed hot line mode, the line is connected the

dial send time(4sec~8sec) after hook-off. Also, if a phone number is saved in address 99 and the hot line function is set to immediate hot line mode, the line is connected just after hook-off.

Reference:
When immediate hot line is on, you can not send calls to other numbers.
To make a phone call to other number, enter the setup mode by pressing the [#] button within one second after hook-off and change the hot line mode.

Alarm reminder

If you set a time in advance, the alarm rings on the specified time and stops when you pick up the handset. Default setting is off.

- Alarm reminder on and off

Enter [##3233 2 1] and four digits for a desired time(24 hours) and press the [*] button(on).
The alarm reminder function is automatically set to one time. The alarm rings on the specified time and then the alarm reminder is released (off).
If you want to activate the alarm at the same time everyday, enter [##3233 2 3 *] to activate the alarm reminder and enter [##3233 2 4 *] to deactivate it.

##3233	2	1	Hour(4 digits, 24 hours) *

: Alarm time input and setting (one time)

##3233	2	2	*

: Alarm reminder on (one time)

##3233	2	3	*

: Alarm reminder on (always)

##3233	2	4	*

: Alarm reminder off

Lock
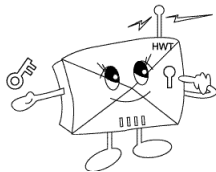
This function is used to enter a password into the terminal to reject calls from users who are not aware of the password.
If you attempt a call when the lock function is on, the warning tone is heard and the call is not connected (Call receive is allowed).
However, if the emergency call function is on, origination of emergency calls (address 01~03) is allowed. Default setting is off.

- Lock on and off

Enter [##3233   3] and a password of four digits. If you enter an incorrect password, you will hear the reject tone. If the correct password is entered, press [1] and then the [*] button(lock on). To release the lock function, enter [##3233   3   password   2   *].

| ##3233   3   password   1   * | : Locking on |

| ##3233   3   password   2   * | : Locking off |

- Password change

To change the password, press [##3233   3] and then enter the password. Press[3], enter a new password and press the [*]button. Enter the new password again and press the [*] button to change the password to the new one.

| ##3233   3   password   3   new password   *   new password   * |

: change password

Reference: The default password for lock is "0000".

Ear-piece volume control

Used to control the volume of ear-piece. Default setting is Level3 [#### 03].

- Ear-piece volume control method

Enter [##3233   4   1], enter a desired button out of 1(level 1), 2(level 2), 3(level 3), 4(level 4), 5(level 5), and then press the [*] button to save.
"1" is the smallest volume. The bigger the number is, the larger the volume is.

| ##3233   4   1   1~5   * | : Ear-piece volume(Method 1) |

Pick up the handset of the normal phone and press [####]. Enter a desired number out of 01~05, and then press the [*] button to save. You will hear the dial tone after the volume control is completed.

| ####   01~05   * | : Ear-piece volume control (method 2) |

Reset

Used to reset the terminal setup.

- Reset method

Enter [##3233   4   0] and the lock code or the maintenance code and then press [*] button.

| ##3233   4   0   * | : Reset |

Reset items and their status are listed below:

Items	Status
Speed dial	off
Emergency call hold	off
Hot line call	off
Alarm	off
Lock	off
Ear-piece volume	level 3

CLIP Setting

As the terminal type FWT has no display, the calling party's number can be indicated by connecting a specific module or a display type telephone. This function is used to set communication method of the module.

- CLIP Setting Method

Enter [##3233　5　Maintenance　Code　1　1(DTMF mode) or 2 (FSK mode)] and press the [*] button to save.

##3233　5　Maintenance Code　1　1 or 2　*

: CLIP setting

Reference: The Maintenance Code "2733" is used only for maintenance.

Analog G3 Fax Standard Setting

The terminal can provide fax service using two types of Analog G3 Fax standards.
This function is used to set the standard.

- Analog G3 Fax Standard Setting

Analog G3 Fax service is provided using the IS-99/IS-707.4 based PC Fax standard or the IS-707A.7 Analog G3 Fax standard. When IS-99/IS-707.4 based PC Fax standard is used, you have to select the default Fax receiving mode.

IS-99/707.4 PC Fax setting
Enter [##3233　5　Maintenance Code　2　1], select "1" (PC fax) or "2" (Analog G3 Fax), and then press the [*] button to save.

##3233　5　Maintenance Code　2　1　1 or 2　*

: IS-99/707.4 PC Fax based mode setting

Reference: Default receiving mode is system-dependent (Unnecessary depending on system configuration.). If the system is configured with single DN, the default receiving mode is not applied as Fax receiving depends on user's receive mode setting (Data receiving through the analog G3 Fax in case of ****15* and through the PC in case of ****12*). Also, if the system is configured with two DNs (if fax calls are received according to the service option determined by the system), the terminal receives calls according to the default receiving mode setting.

IS-707A.7 Analog G3 Fax standard setting.
Enter [##3233   5   Maintenance Code   2   2] and press
the [*]button to save.

##3233   5   Maintenance Code   2   2   *

: IS-707A.7 Analog G3 Fax standard setting

Default Data Rate Setting

The terminal supports two types of data rates according to the
standards.
This function is used to set the default rate for data calls.

- Default Data Rate Setting

Setting IS-99 Rate Set 1 : Enter [##3233   5   Maintenance
Code   3], select "1", and then press the [*] button to save.

##3233   5   Maintenance Code   3   1   *

: Setting default data rate (8K) to RS1 (IS99)

Setting IS-99 Rate Set 2: Enter [##3233   5   Maintenance
Code   3], select "2", and then press the [*] button to save.

##3233   5   Maintenance Code   3   2   *

: Setting default data rate to RS2 (IS-99 based)

Setting IS-707.4 Rate Set 1 : Enter [##3233   5   Maintenance
Code   3], select "3", and then press the [*] button to save.

##3233   5   Maintenance Code   3   3   *

: Setting default data rate to RS1(IS-707.4 based)

Setting IS-707.4 Rate Set 2 : Enter [##3233   5   Maintenance
Code   4], select "4", and then press the [*] button to save.

##3233   5   Maintenance Code   3   4   *

: Setting default data rate to RS2(IS-707.4 based)

Ringer Frequency & Cadence Control

This function is used to control the ringer frequency and cadence.
Select the frequency first and then select the cadence. Default
setting is 20Hz, 1 sec On – 2sec Off.

- Ringer Frequency Setting

Enter [##3233   5   Maintenance Code   4]. Select a desired
number from 1 (16Hz) , 2 (20Hz) and 3 (25Hz).

- Ringer Cadence Setting

After selecting the frequency, select the cadence. Select a
desired number from 1~ 6 and press the * button to terminate
ringer frequency and ringer cadence setting.
    No. 1: 1Sec On – 2 Sec Off
    No. 2: 0.4 Sec On – 0.2 Sec Off - 0.4 Sec On – 2 Sec Off
    No. 3: 1 Sec On – 4.5 Sec Off
    No. 4: 1 Sec On – 4 Sec Off

No. 5: 0.25 Sec On – 0.25 Sec Off - 0.25 Sec On – 1.25 Sec Off

No. 6: 2 Sec On – 4 Sec Off

##3233   4   3   1~3(frequency)   1~6(cadence)   *

: Ringer frequency & cadence setting

Dial Tone Frequency Control

This function is used to select the dial sent from the handset. Default setting is 350 + 440Hz dual tone.

- Dial Tone Frequency Control Method

Enter [##3233   5   Maintenance Code   5].

Select a desired number from 1 (350+440Hz) , 2 (400Hz) ,

3 (425Hz) and 4 (450Hz) and press the [*] button.

##3233   5   Maintenance Code   5   1~4   *

: Dial Tone Frequency Control (Method 1)

Pick up the handset of the normal phone, press [####], and enter

a desired number out of 51 (350+440Hz) , 52(400Hz) , 53(425Hz)

and 54(450Hz).

51~54   : Dial Tone Frequency Control (Method 2)

Default Vocoder Selection

The terminal provides service with three Vocorder types.

This function is used to select the Vocorder type.

- Vocoder Selection Method

Enter [##3233   5   Maintenance Code   6], select one of "1"

(8K EVRC) or "2" (13K QCELP) and then press the [*] button to

save.

##3233   5   Maintenance Code   6   1 or 2   *

: Vocoder selection

Timed Hot Line Dial Send Waiting Time Control

This function is used to control the hot line number send time when the Timed Hot Line is On. The Hot Line number send time is adjustable from 4 sec to 8 sec and default setting is 6 sec.

- Timed Hot Line Dial Send Waiting Time Setting

Enter [##3233   5   Maintenance Code   7].

Select a desired number from 4 , 5 , 6 , 7 and 8 and press the [*]

button.

For example, to set 7 sec, press 7 and the [*] button.

##3233   5   Maintenance Code   7   4~8   *

: Timed Hot Line Dial send time setting (Method 1)

Pick up the handset of the normal phone, press [####], and then select a desired number from 04~08. '04' indicates automatic call send after 4 seconds and '08' indicates automatic call send after eight seconds.

> #### 　 04~08

> : Timed Hot Line Dial send time setting (Method 2)

Hook Flash Time (Click Time) Control

This function is used to set the time required to recognize click of the hook switch for redial and speed dial. Default setting is 100-700ms.

- Hook Flash Time Control Method

Enter [##3233 　 5 　 Maintenance Code 　 8 　 1], enter two digits (05~98) for the minimum time by the 10msec, and then press the [*] button to save.

> ##3233 　 5 　 Maintenance Code 　 8 　 1 　 05~98 　 *

> : Hook Flash minimum time setting

Enter [##3233 　 5 　 Maintenance Code 　 8 　 2], enter two digits (06~99) for the maximum time by the 10msec, and then press the [*] button to save.

> ##3233 　 5 　 Maintenance Code 　 8 　 2 　 06~99 　 *

> : Hook Flash maximum time setting

Reference: If the minimum time is set to 50 ~ 90 msec, it is not available for dial pulse type telephones.

Voice Privacy Setting

The terminal supports voice privacy.

- Voice Privacy On

Enter [##3233 　 5 　 Maintenance Code 　 9 　 1] and press the [*] button to save.

- Voice Privacy Off

Enter [##3233 　 5 　 Maintenance Code 　 9 　 2] and press the [*] button to save.

> ##3233 　 5 　 Maintenance Code 　 9 　 1 or 2 　 *

> : Voice Privacy on/off

Serial Interface Setting (None for HWP-2150)

The terminal supports data serve when it is connected to the PC through RS-232 serial interface. The HWT-2150 terminal provides two data rates for PC interface. It provides 115200 bps for high-speed packet data service and 19200 bps for modem, PC Fax and low speed packet data service.

- Setting serial interface to 19200 bps

Enter [##3233 　 5 　 Maintenance Code 　 0, select "1"], and then press the [*] button to save.

> ##3233 　 5 　 Maintenance Code 　 0 　 1 　 *

> : Setting the serial data baudrate to 19200 bps

- Setting Serial Interface to 115200 bps

Enter [##3233   5   Maintenance Code   0, select "2"], and then
press the [*] button to save.

```
##3233    5    Maintenance Code    0    2    *
```
: Setting the serial data baudrate to 115200 bps

A Key Value Input

The terminal supports OTASP service that requires authentication.
This function is used to enter A key value required for the
authentication procedure.

- A Key Input

Enter [##3233   6   Maintenance Code   1], enter a number
corresponding to the A Key value up to 26 digits, and then press the
[*]button to save.

```
##3233    6    Maintenance Code    1
A Key No.(26 digits)    *
```

: A Key input

Network Dial Tone Setting

The terminal provides the network dial tone depending on
configuration of the system (system dependent). The terminal
connected to a system that provides the network dial tone provides
"LE-Generated dial tone". Other systems provide "NIU-generated
dial tone".

- Network Dial Tone Off

Enter [##3233   6   Maintenance Code   2, select "1"], and then
press the [*] button to save.

```
##3233    6    Maintenance Code    2    1    *
```
: NIU-generated dial tone setting

- Network Dial Tone On

Enter [##3233   6   Maintenance Code   2, select "2"], and then
press the [*] button to save.

```
##3233    6    Maintenance Code    2    2    *
```
: LE-Generated dial tone setting

System Parameter Input

You can enter/change channel number and MIN number of the
system parameters with the handset.

- Channel Number Input

Enter ##3233   9   Maintenance Code   1~4, enter three digits
of the channel number, and then press the [*] button to save.

1 : Primary System A channel
2 : Secondary System A channel
3 : Primary System B channel
4 : Secondary System B channel

```
##3233    9    Maintenance Code    1~4    Channel No.    *
```
: Channel number input

- MIN Number Input

Enter ##3233   9   Maintenance Code   5, enter up to ten digits

for the MIN number, and then press the [*] button to save.

##3233   9   Maintenance Code   5   MIN No.   *

: MIN number input

Appendix

Summary table

Save/delete phone number	Save	##3233 1 1 address phone number
	Delete one address	##3233 1 2 address *
	Delete all addresses	##3233 1 3 *
Speed dialing	On	##3233 1 4 *
	Off	##3233 1 5 *
Emergency call hold	On	##3233 1 6 *
	Off	##3233 1 7 *
Hot line	Time hot line on	##3233 1 8 1 *
	Immediate hot line	##3233 1 8 2 *
	Off	##3233 1 8 3 *
Alarm reminder	Time input(one time)	##3233 2 1 hour(4 digits, 24 hours) *
	One time mode	##3233 2 2 *
	Always mode	##3233 2 3 *
	Alarm off	##3233 2 4 *
Lock	On	##3233 3 password 1 *
	Off	##3233 3 password 2 *
	Change password	##3233 3 password 3 New password * new password *
Ear-piece volume adjusting (5 steps)	#### 01/02/03/04/05 * (01:Min 03:Middle 05:Max) ##3233 4 1 1~5 * (1~5:step1~step5)	
Reset	##3233 4 0 password *	
Clip setting	##3233 5 Maintenance Code 1 1/2 *	
	(1 : DTMF(BINA) Mode, 2 : FSK Bellcore Mode)	
Analog G3 Fax Standard Setting	IS-99/707.4 PC Fax Mode	##3233 5 Maintenance Code 2 1 1/2 *
		(1 : PC Fax receiving default , 2 : Analog G3 receiving default)
	IS-707A.7 Mode	##3233 5 Maintenance Code 2 2 *
Default Rate Set	##3233 5 Maintenance Code 3 1 / 2 / 3 / 4 *	
	(1 : RS 1 (IS99) , 2 : RS 2(IS99) , 3 : RS 1(IS707.4) , 2 : Rate Set 2 (IS707.4))	
Ringer Frequency & Cadence Control	##3233 5 Maintenance Code 4 1 / 2 / 3 (frequency) 1 / 2 / 3 / 4 / 5 / 6 (cadence) *	
	(Frequency 1: 16Hz 2: 20Hz 3: 25Hz / Cadence 1,2,3,4,5, 6 : Refer to 4.8.2)	
Dial Tone Frequency Control	##3233 5 Maintenance Code 5 1 / 2 / 3 / 4 *	
	(1: 350+440Hz 2: 400Hz 3: 425Hz 4: 450Hz)	

Default Vocoder S.O	##3233 5 Maintenance Code 6 1/ 2 *	
	(1 : 8K EVRC , 2 : 13K QCELP)	
Timed Hot Line Dial Send Waiting Tim	##3233 5 Maintenance Code 7 4 / 5 / 6 / 7 / 8 *	
	(4: 4 Sec 5: 5 Sec 6: 6 Sec 7: 7 Sec 8: 8 Sec)	
Hook Flash Time Control	##3233 5 Maintenance Code 8 1 (Min time) 05~98 *	
	##3233 5 Maintenance Code 8 2 (Max time) 06~99 *	
	(05 ~ 99 : 50 msec ~ 990 msec)	
Voice Privacy	On	##3233 5 Maintenance Code 9 1 *
	Off	##3233 5 Maintenance Code 9 2 *
Serial Interface Setting	19200 bps	##3233 5 Maintenance Code 0 1 *
	115200 bps	##3233 5 Maintenance Code 0 2 *
A Key Value Input	##3233 6 Maintenance Code 1 "AKEY" (26 digits) *	
	(AKEY : 26-digit A Key value)	
Network Dial Tone	NIU-generated Dial Tone	##3233 6 Maintenance Code 1 1 *
	LE-generated Dial Tone	##3233 6 Maintenance Code 1 2 *
Channel Number Input	##3233 9 Maintenance Code 1(Primary A CH No.) www (3digits) *	
	(www : Primary System A Channel No.)	
	##3233 9 Maintenance Code 2(Secondary A CH No.) xxx (3digits) *	
	(xxx : Secondary System A Channel No.)	
	##3233 9 Maintenance Code 3(Primary B CH No.) yyy (3digits) *	
	(yyy : Primary System B Channel No.)	
	##3233 9 Maintenance Code 4(Secondary B CH No.) zzz (3digits) *	
	(zzz : Secondary System B Channel No.)	
MIN Number Input	##3233 9 Maintenance Code 5 xxxxxxxxxx (10digits) *	
	(xxxxxxxxxx : MIN No.)	
Analog G3 fax receive	On (fax receive)	* * * * 15*
	Off (voice receive)	* * * * 10*
Data service receive mode release	Using the normal phone	* * * * 10*
	Using the emulator	[AT+QCVAD=0] Enter key
Fax receive mode setting (one time)	Using the normal phone	* * * * 11*
	Using the emulator	[AT+QCVAD=1] Enter key
Fax receive mode setting(until power off)	Using the normal phone	* * * * 12*
	Using the emulator	[AT+QCVAD=2] Enter key
Modem receive mode (one time)	Using the normal phone	* * * * 13*
	Using the emulator	[AT+QCVAD=3] Enter key
Modem receive mode(until power off)	Using the normal phone	* * * * 14*
	Using the emulator	[AT+QCVAD=4] Enter key

Technical Specification

- 800MHz

Air Interface	Common air interface standard IS-2000 FREQUENCY TX : 824 – 849MHz RX : 869 – 894MHz TX Output Power 200mW RX Sensitivity - 104dBm Vocoder 8K/13K QCELP, 8K EVRC Channel Bandwidth CDMA 1.25Mhz Spurious TX : -61dBm below RX : -81dBm below MOD/DEMOD O QPSK/QPSK Frequency Accuracy Fo° ±300Hz
Battery Back-up	Type Ni-MH Capacity 3.6V @ 1.8A Talk Time 2 Hours Standby Time 20Hours
Connectors for various Service support	RJ-11 Standard wire-line telephone Analog G3 Fax (Optional) Serial port Maintenance Purpose Data Service Purpose (Internet, PC Fax)
Physical	Dimension(D x W x H) 180 x 180 x 57mm Weight (including Backup battery) 546g
Environmental	Operating Temperature -10°C ~ +50°C Storage Temperature -20°C ~ +70°C
Power Supply	Input Power 100 ~ 240V±10% , 48~62Hz Output Power 5.5V 1.2A
Accessories	Internal Antenna Di-Pole Antenna Power supply External Antenna (Optional) 10dbi Gain Directional Panel Antenna

Troubleshooting

Trouble	Actions
When you hear no sound after hook-off?	• Check if the power LED or battery LED of the terminal is on. If off, check if the SMPS power plug is properly connected to the terminal. • Check the RJ-11 Jack of the terminal connected to the telephone.
When the service LED blinks or goes off?	• Check if the antenna is connected correctly, or move the location of the terminal and check if the service LED is on.
When you hear the warning tone instead of the dial tone after hook-off?	• Check if the antenna is connected correctly, or move the location of the terminal and check if the service LED is on.
When the warning tone sounds"beep beep" when you attempts a call?	• No call channel available or communication failure with the base station. check if the service LED is on and try again.
When calls are not connected with the warning tone but you can receive calls?	• The lock function is on. Refer to section 'Ear-piece Volume control' of the user guide. • If you are not aware of the password, please contact the distributor or the service center.
When voice resounds during conversation?	• The resound removing function of the base station is set improperly. Refer to section 'Ear-piece Volume control' of the user guide for volume control.
When voice of the other party is not clear?	• Refer to section 'Ear-piece Volume control' of the user guide.
When the battery LED blinks or goes off while you are operating the terminal with the battery?	• Charge the backup battery with the SMPS as the battery is discharged.

Safety Information

1. SAFETY INFORMATION FOR FIXED WIRELESS TERMINALS

• POTENTIALLY EXPLOSIVE ATMOSPHERES
  Turn your phone OFF when in any area with a potentially explosive atmosphere and obey all signs and instructions.Sparks in such areas could caus e an explosion or fire resulting in bodily injury or even death.

• INTERFERENCE TO MEDICAL DIVICES
  Certain electronic equipment may be shielded against RF signal from you wireless phone.(pacemakers,Hearing Aids,and so on)
  Turn your phone OFF in health care facilities when any regulations posted in these areas instruct you to do so.
  RF signals may affect improperly installed or inadequately shielded electronic system in motor vehicles.

• EXPOSURE TO RF ENERGY
  Use only the supplied or an approved replacement antenna.
 Do not touch the antenna unnecessarily when the phone is in use.
  Do not move the antenna close to, or touching any exposed part of the body when making a call.

2. SAR INFORMATION

THIS MODEL PHONE MEETS THE GOVERNMENT 'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your wireless phone is a radio transmitter and receiver.It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF)energy set by the Federal Communications Commission of the U.S.Government.These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population.The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons,regardless of age and health.
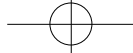
The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate,or SAR.The SAR limit set by the FCC is 1.6 W/kg.*Tests for SAR are conducted with the phone transmitting at its highest certified power level in all tested frequency bands.Although the SAR is determined at the highest certified power level,the actual SAR level of the phone while operating can be well below the maximum value.This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network.In general,the closer you are to a wireless base station antenna,the lower the power output.

Before a phone model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model phone when worn on the body with 2.5 cm separation distance as described in this user guide, is 0.808 W/kg. (Body worn measurements differ among phone models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement for safe exposure.

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines.SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID PP4HWT-2150.

Additional information on Specific Absorption Rates (SAR)can be found on the Cellular Telecommunications &Internet Association (CTIA)web-site at http://phonefacts.net.*In the United States and Canada,the SAR limit for mobile phones used by the public is 1.6 watts/kg (W/kg)averaged over one gram of tissue.The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.