Wireless Local Loop

# Fixed Wireless Termial

HWP130& 230 **User's Guide**

HYUNDAI

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## 1. *Introduction*

The WLL (Wireless Local Loop) terminal is designed to provide users with full range of communication services in CDMA (Code Division Multiple Access) networks. Before using the product, please read carefully this chapter.

HWP -130/230 Main Features

-IS-95B support

Data rate: 64kbps (max)
Backward compatibility
New Soft Handoff Algorithm
Enhanced Hard Handoff
True IMSI (International Mobile Subscriber Identification)

-. IS-707 Data Capability

PC Fax Transmitting/Receiving
Modem Origination/Termination

-. Internet Access
-. Speed Dial
-. Emergency Call Hold
-. Hot Line
-. Alarm Reminder
-. Battery Backup
-. Line Signal Tone

Dial Tone
Warning Tone
Howler Tone

-. Security
-. OTASP(Over-the-Air-Service Provisioning)/OTAPA(Over-the-Air-Parameter Administration)
-. SMS (Short Message Service)

VMS (Voice Message Service)
Page Service
Message Service

-. Vocoder Select

8K QCELP (Qualcomm Code Excited Linear Prediction)
EVRC
13K QCELP

-. Call Waiting *
-. Call Forwarding*
-. Call Transfer *
-. Three-way Calling*

* : System dependant

### 1.1 Notices for Using

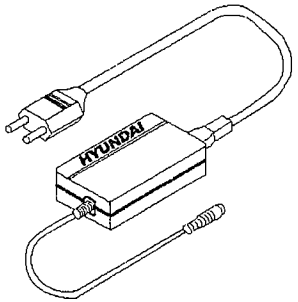
- Do not disassemble or alter the WLL terminal on your own.
- Do not touch antenna during the call.
- Do not hold the WLL terminal in hot or moist places. Be careful not to moisten the terminal or to spill any liquid on it. This may cause irrevocable damage.
- Avoid terminal shocks and vibrations. Store the terminal in a safe place.
- Do not use the terminal near to explosives or in places where combustible liquids are used.
- Do not wipe the WLL terminal with a chemical solution like solvent or thinner.
- Switch off the WLL terminal and remove the SMPS (Switch Mode Power Supply) when you do not use the terminal for long.
- The backup battery can be operated after having being charged long enough (more than 30 hours). Otherwise it can discharge.
- The backup battery can be used only when the power is on.

### 1.2 Checking the Package

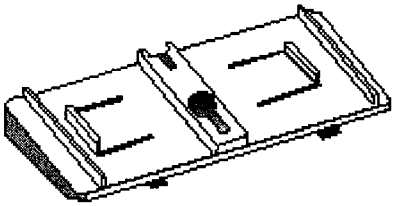
Thank you for buying our product. Please check whether the product package contains the following accessories:

* WLL Phone

* Accessories

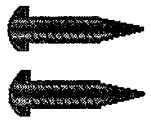



- Switch Mode Power Supply (SMPS) Unit -



- Wall Bracket -

- User's Manual -



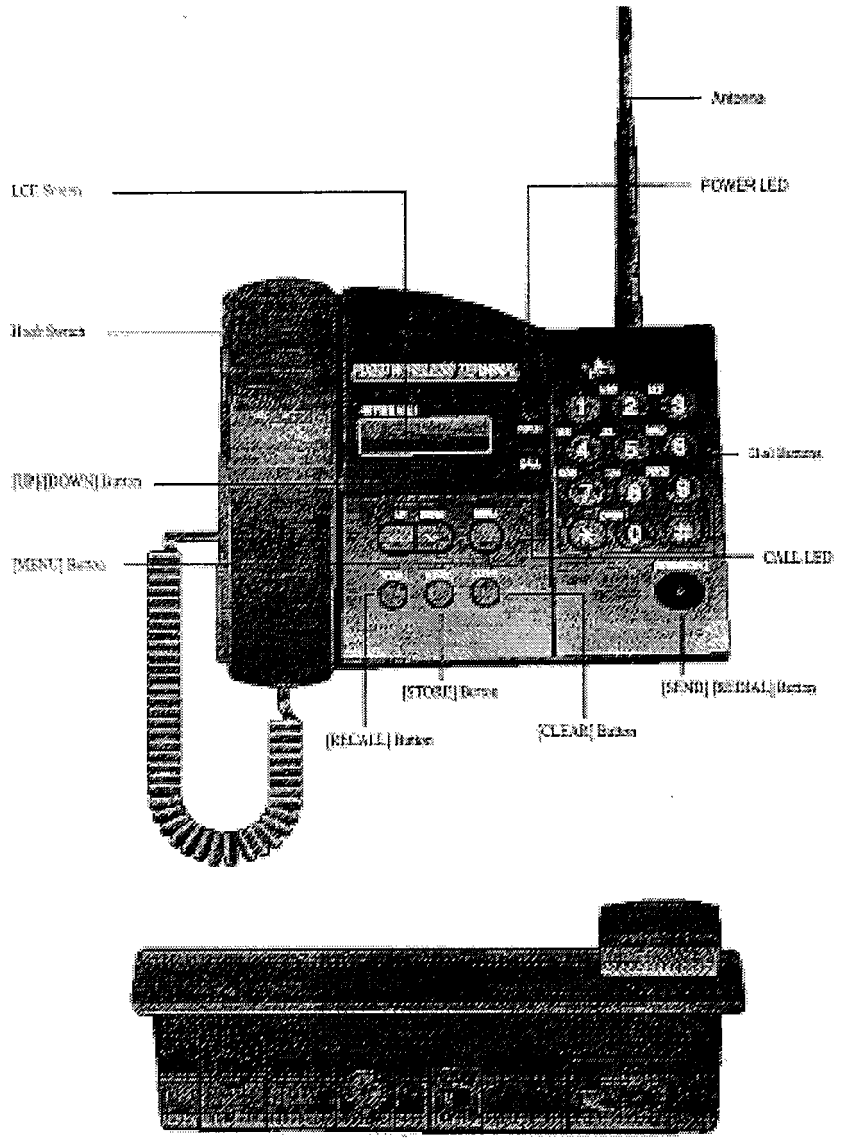
- Screws -

• Optional Accessories





## 1.3 Name and Function of Each Part



**RSSI LED**

RSSI LED goes "ON", when the state of trans-ceiving is "GOOD".

RSSI LED goes "ON and OFF" at the interval of 1 second, when the state of trans-ceiving is "NOT GOOD".

RSSI LED goes "ON and OFF" at the interval of 15 seconds, when the state of trans-ceiving is "NO SERVICE".

**POWER LED**

Indicates whether the power is supplied by external SMPS or by internal battery. The LED goes" ON" when external power is supplied. When the terminal operates on internal backup battery, the LED goes" OFF".

**Hook Switch**

Turns call on and off . This switch starts and ends working with WLL terminal.

**DC Jack**

Connects power supply from the SMPS to the WLL terminal.

**Serial Port**

A port through which data services (Modem, PC Fax, Internet access) are available.

**Power Switch**

Turns the power supply to WLL terminal on and off.

## Buttons

**DIAL**

Input telephone numbers or numeric characters (0-9, *, #), and choose menu items.

**UP/DOWN**

Retrieve stored telephone numbers, adjust beep volume and ringer loudness when the phone is ringing, move across menu items, and adjust handset loudness during the call.

**FUNCTION**

Input menu.

**STORE**

Store the settings and menu.

**REDIAL**

Make a call to the last dialed telephone number.

**RING**

Select ring sound from 10 types of ring.

**SEND**

Make call attempt in the off-hook state.

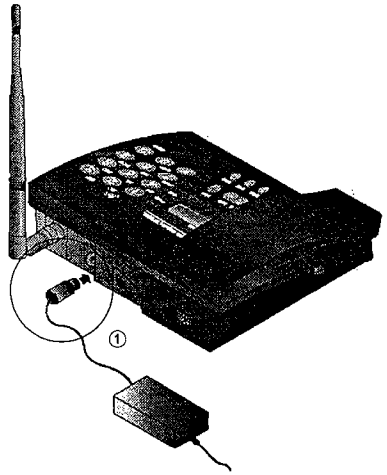




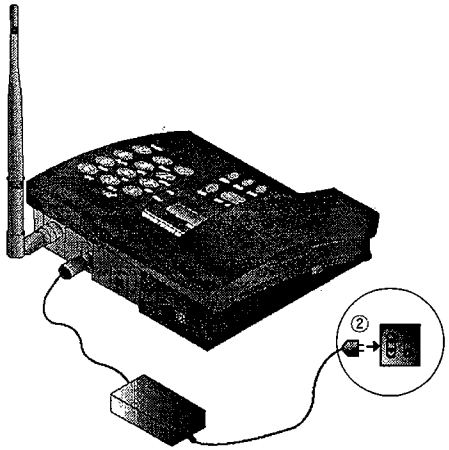
*1.4 Installing WLL Terminal (INSTALLING ANTENNA)*

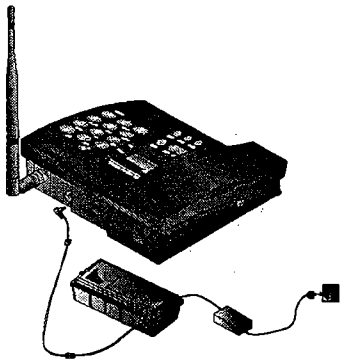
### General Observations

[1] Connect DC jack as shown below.

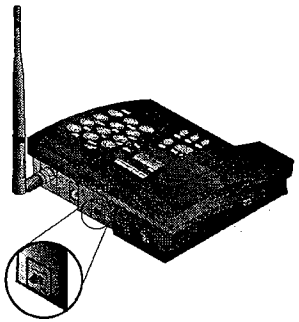



[2] Connect the SMPS plug to the outlet.





3 Turn on the power switch as shown on the picture. The WLL terminal turns on and a beep sound is heard.



4 After initialization, the WLL terminal goes to the waiting mode.

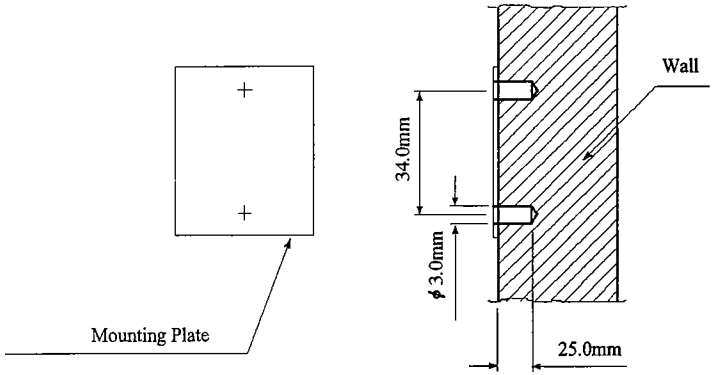
**Note** : RSSI (Received Signal Strength Indicator) refers to the strength of received radio signal. The larger is the value, the better is the quality of speech (indicator values range from 1 to 5)



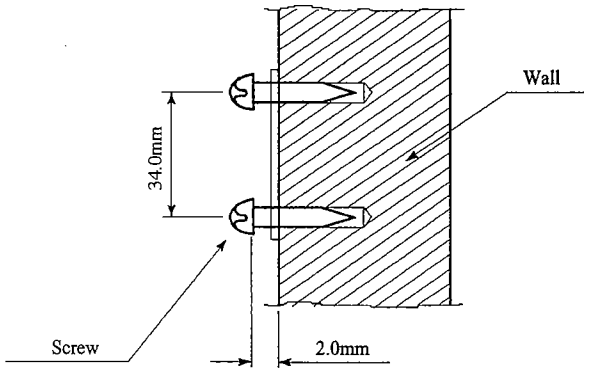


## Wall Bracket Mounting

1 For the concrete wall, place the mounting plate where the WLL terminal should be installed, and drill two according to '+' marks.



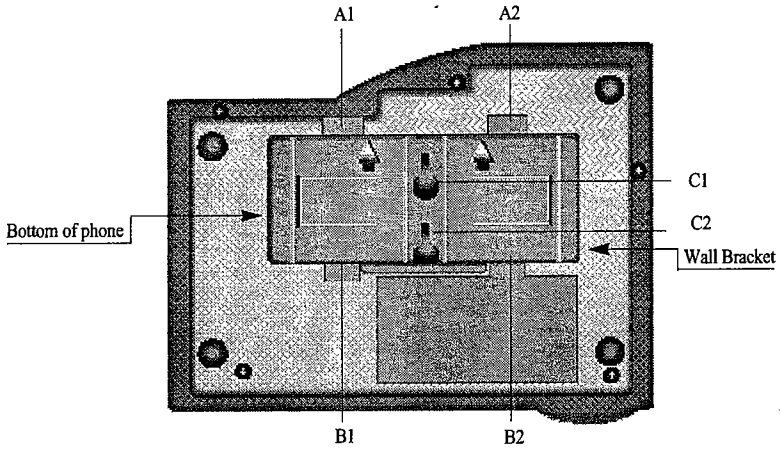

2 Screw up as shown in the figure below.



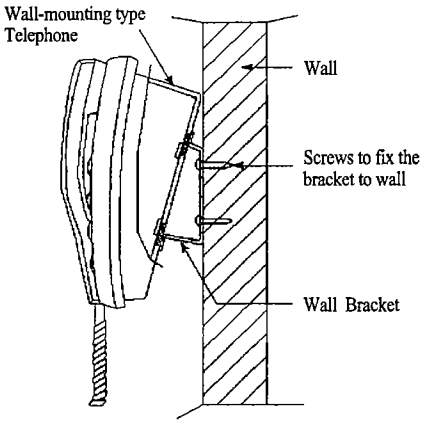

● For the wooden wall, screw up the plate directly to the wall.

The distance between the screw head and the wall is to be 2.0mm as shown on the figure above.

③ Insert the parts A1, A2 of the wall bracket into the WLL terminal body, and gently push in the parts B1, B2.




④ Insert screws into the C1, C2 notches, and pull the body downward. As this takes place, make sure about the distance between the screw head and the wall, lest the body hangs askew.




**Note** : If you need better speech quality, you can install optional external panel antenna.
(For inquires please contact your local distributor.)

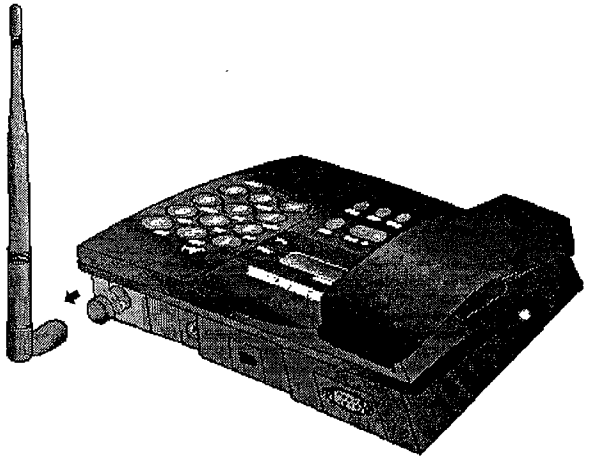




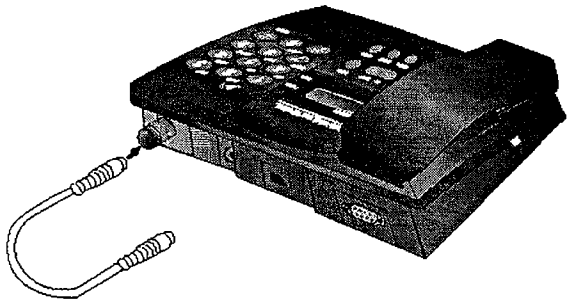
**Note** : The WLL terminal is fitted with a backup battery, which enables terminal operation in the absence external power supply.
If the external power supply through the SMPS fails, the WLL terminal can operate from the backup battery for about 70 hours in the waiting mode and for 2 hours in the call forwarding mode.

## External Antenna

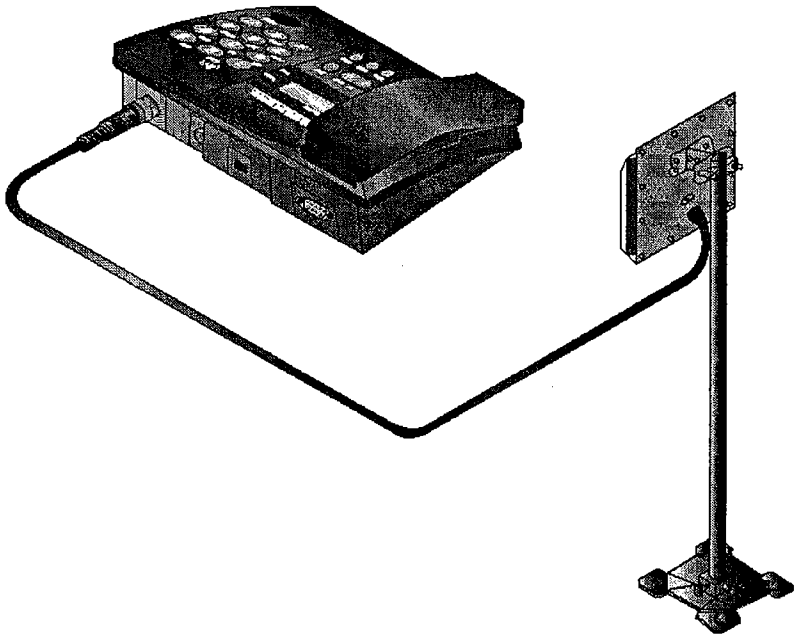
① Disconnect antenna from the phone



② Plug the external antenna cable into the same slot as shown below.



③ Connect the opposite end of the cable to the panel antenna as shown in the figure.







*1.5 LCD Display*

The LCD display shows the terminal operating mode, RSSI (Received Signal Strength Indicator), the state of power.

### 1.5.1 Display for Power On

Indicate power LED ON, when the power is supplied by externel SMPS.
(Indicate power LED OFF, when the power is supplied by internel battery. If the voltage of battery is low (below 4.75V), the warning tone will be heard at the interval of 15 seconds).

### 1.5.2 Display for Weak RSSI (Received Signal Strength Indicator)

RSSI LED goes "ON", when the state of trans-ceiving is 'GOOD".
RSSI LED goes "ON and OFF" at the interval of 1 second, when the state of trans-ceiving is "NOT GOOD".
RSSI LED goes "ON and OFF" at the interval of 15 seconds, when the state of trans-ceiving is "NO SERVICE".

## 2. Using Basic Functions

### 2.1 Call Process & Call Process by Special Function

#### 2.1.1 Call press

- Pick up the handset. You will hear the dial tone. (In the" No Service" state however, the warning tone is heard at the interval of 0.5 second.)
- In the" No Service" state, you cannot make calls.
- Pick up the handset and press [REDIAL] button. The call will be made to the last dialed number.
- Dial the telephone number and press [SEND] button to make a call.
- If you do not [SEND] button after dialing the number, the call will be made automatically 6 seconds later.
- Speak on the telephone.
- Place the handset on-hook to terminate the call.

#### 2.1.2 Call process by special function

- You can make a phone call by special function.(Special Dial, Emergency Dial, Hot Line Dial)

**Note** : You can adjust the handset volume using [UP]/[DOWN] buttons during the call.
If you are trying to make a call in "Outgoing Lock" state, error tone(beep tone) will be heard and you can't make a call.





### 2.2 To Receiving an Incoming Call

#### 2.2.1 In on-hook state

- If the telephone starts ringing, Pick up the handset.
- Speak on the telephone.
- Place the handset on-hook to terminate the call.

#### 2.2.2 In off-hook state

- If a call comes when you dial the number, the telephone starts ringing.
- Press [SEND] button to accept the call.
- Speak on the telephone.
- Place the handset on-hook to terminate the call.

**Note** : 1) The ringer has operation priority. Hence, if there is an incoming call when you work with [REDIAL] or [FUNCTION] in the on-hook state, the current operation is interrupted by the ringing singal.
2) If the ringer comes into action in the off-hook state, you can pass [SEND] button to speak on the telephone.
3) During a call, you can adjust the handset volume using [UP]/[DOWN] button.

### 2.3 To Last Number Redial (Redial Function)

- You can easily make a call to the last dialed telephone number.
  1. Pick up the handset and press [REDIAL] button.
  2. When the call is connected, you can speak on the telephone.
  3. Place the handset on-hook to terminate the call.

## 3. Using Memory Functions

### 3.1 To Store Telephone Numbers

- You can store up to 99 telephone numbers using 2-digit addresses from 01 to 99. To make a call to the stored telephone number, you have simply dial its address.

**How to store a phonenumber**

[FUNCTION] Button → [3] → [Input Number] → [STORE] → [01~99](Address Number) → [STORE].

### 3.2 To Make a Phone Call to the Stored Telephone Number.

#### 3.2.1 Speed Dial

(Before you can use Speed Dialing, you must enable this option. To learn how this option is enabled, refer to 4.1.3.)

① 1-Digit Address

Using Speed Dialing you can quickly make a call to 9 telephone numbers stored under addresses 01 through 09:

- Pick up the handset, press a digit from 1 to 9, and then press [SEND].

or

- Pick up the handset, press and hold a digit from 1 to 9.

- The telephone number will be dialed automatically.





② 2-Digit Address

You can to easily make a call to the telephone numbers stored under addresses from 10 to 99:

- Pick up the handset, press 2 digits of the stored address (10~99), and then press [SEND].

or

- Pick up the handset, press the first digit of the stored address, and then press and hold the second digit .
  - For example, if you want to dial to the number stored under the address" 16", press [1] and then press and hold [6].
- The telephone number will be dialed automatically.

#### 3.2.2 Emergency Dialing

- You can quickly make a one-touch call to emergency numbers stored under addresses 01/ 02/ 03 (you have also to enable emergency dialing). Once the call is originated, it is kept connected until the called party goes off-hook. Refer to the Chapter 4.1.4 for more details.
- To make an emergency call in the off-hook state, you can press and hold the last digit of the address, or press two address digits one after other, and press [SEND].

**Note**

1) If both Emergency Dialing and Speed Dialing options are enabled, addresses from 01 to 03 are used for the emergency call mode.
2) If Emergency Dialing is disabled, addresses from 01 to 03 are used for the Speed Dialing mode.
3) When Emergency Dialing is enabled, emergency calls to the addresses from 01 to 03 are available whether or not outgoing calls are locked.

### 3.2.3 Hot-Line Dial

Hot-line dialing lets you make a automatic calls to the phone number under the address 99 by simply picking up your handset.
(Address 99 is supposed to be used for most frequently called number)
Two hot-line wait modes are available. If you set the hot-line mode to Immediate", the call is dialed as soon as you go off hook. If the hot-line mode is set to" Timed", the call is connected after a specified timeout (from 04 to 08 sec).
The default hot-line state is" Off", and the default timeout is preset to 6 sec.
Refer to the chapter 4.1.5 for how to set up hot-line.

## *3.3 To Erase the Stored Telephone Number*

### 3.3.1 To delete the one address to delete the one telephone number

**How to delete the one telephone number**

**[FUNCTION] Button → [5](Security) → [Password] → [3](Clear One dial) → [01~99](Address Number) → [STORE].**

### 3.3.2 To delete the all address to delete the all telephone numbers

**How to delete the all telephone numbers**

**[FUNCTION] Button → [5](Security) → [Password] → [4](Clear dials) → [STORE].**

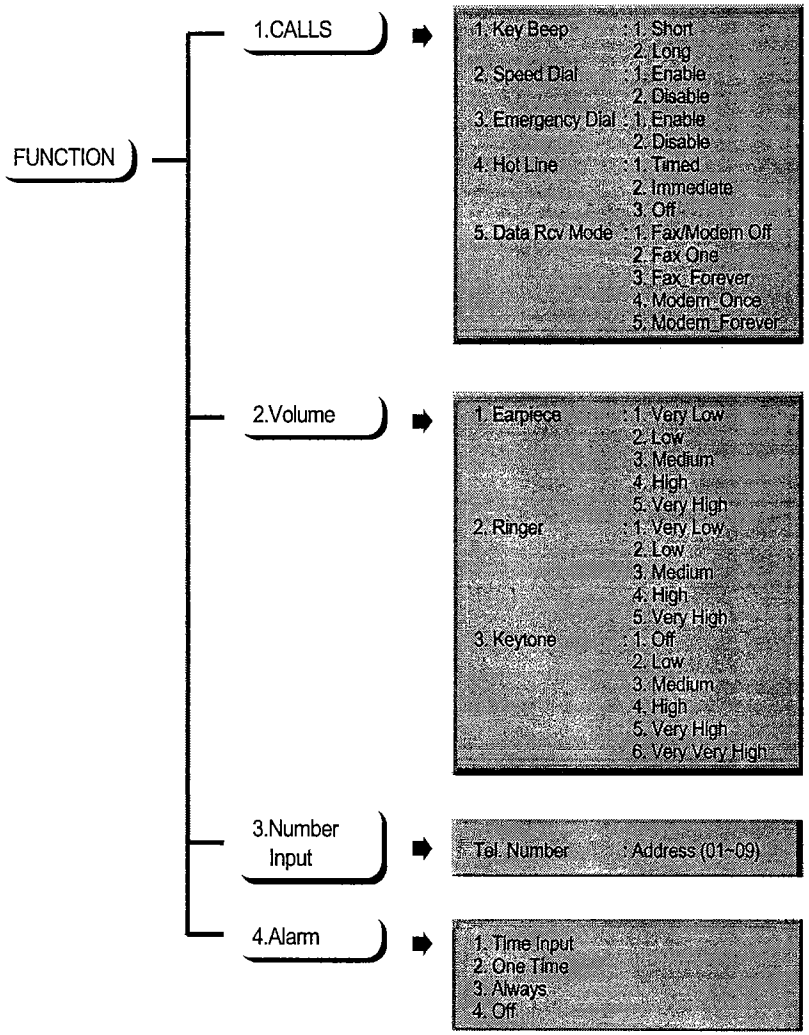
**Note** : Press [FUNCTION] to return to the Waiting Mode without making changes.





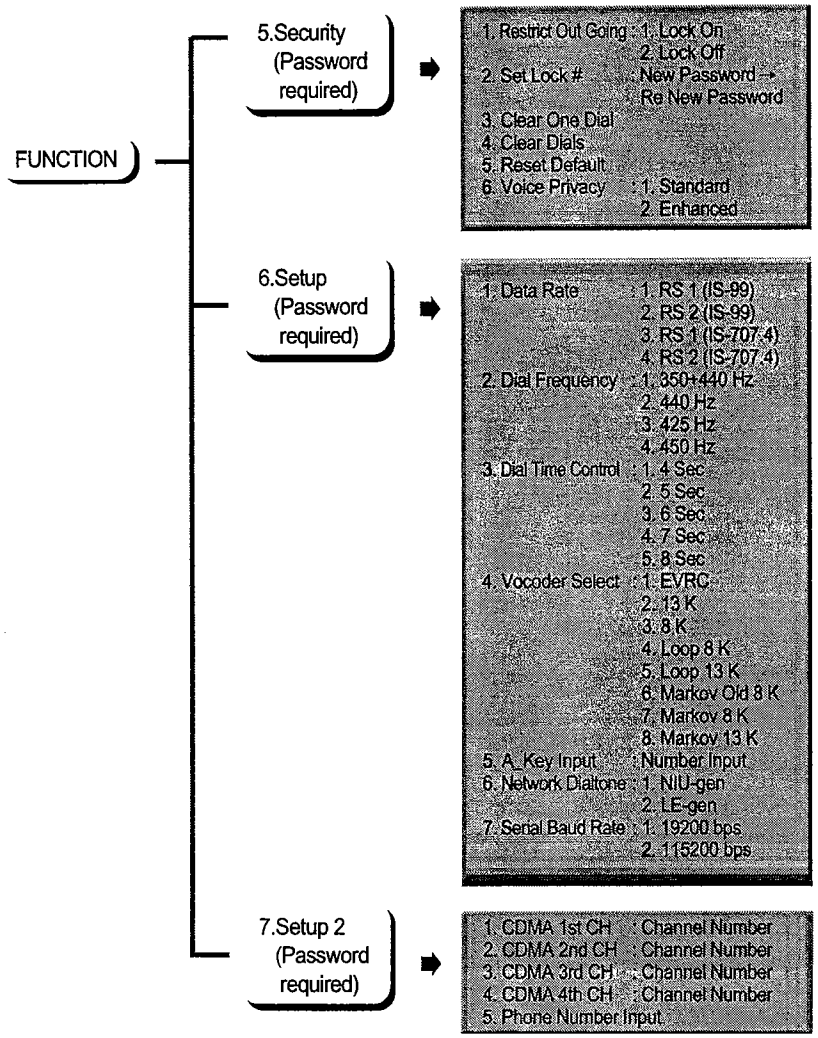
## *4. Using Menu Mode*

- Flow-Chart of Menu Operation



## 4. Using Menu Mode

- Flow-Chart of Menu Operation








*4.1 Calls*

### 4.1.1 Key Beep Length Adjust Function (Key Beep)

This function is allows you to change the duration of WLL terminal beep tone.

**Key Beep Length Adjust Function**

**[FUNCTION] Button → [1](Calls) → [1] → [1~5] → [STORE].**

Press [FUNCTION] to return to the Waiting Mode without making changes.

**Note** : 1) SHORT : KEY TONE sound is played once.
2) LONG : KEY TONE sound is played as long as the key is pressed.

### 4.1.2 Ring Type Function

You can select between 10 ring types to inform about incoming call:

1. When you press [RING] in the waiting mode, you can choose 10 ring types (Ring Type 1 ~ Ring type 10).

2. If you press [RING], you can hear sample melody for 2 seconds and this sample melody will be selected as "RING TYPE".

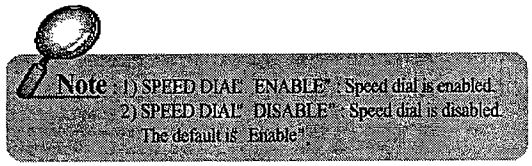
**Note** : There are 10 types of the rings (Ring Type 1 ~ Ring Type 10).
The default value is "Bell Type 1".

### 4.1.3 Speed Dialing Function (Speed Dial)

This menu is used to turn the speed dialing on and off.

**Speed Dialing Function**
[FUNCTION] Button → [1](Calls) → [2](Speed dial) → [1~2] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.

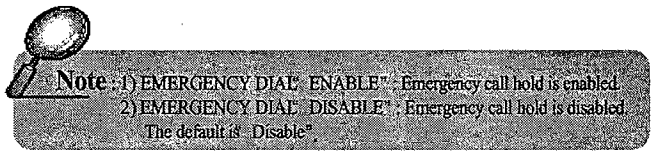



### 4.1.4 Emergency Call Hold Function (Emergency)

You can store up to three numbers (addresses 01 to 03) to quickly make a call in case of emergency. The main feature of emergency calling is that the call is kept connected until the called party picks up the handset. In other words, until the call is answered. By default, Emergency Call Hold is disabled. To enable this function:

**Emergency Call Hold Function**
[FUNCTION] Button → [1](Calls) → [3](Emergency dial) → [1~2] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.





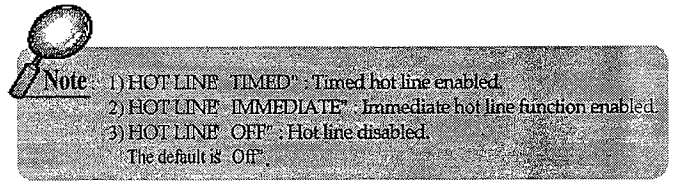



### 4.1.5 Hot Line Function (Hot Line)

You can make a call automatically without entering the phone number. In other words, if you store a frequently used number at the address 99 and the hot line function is enabled (timed or immediate), you can automatically make a call to that number :
For immediate call, you simply pick up the handset and the call will be connected. For timed call, you pick up the handset and wait for a few seconds until the call is connected.

**Hot Line Function**
[FUNCTION] Button → [1](Calls) → [4](Hot Line) → [1~3] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.




### 4.1.6 Data Receive Mode

- This service enables you to access the Internet and PC communication and to receive/send fax messages by connecting your PC to the WLL terminal. The wireless data communication service may not be available from your service provider. Please check whether or not the service provider supports data communication services.
- You will also need RS-232 cable.
- For more details about settings up the computer environment and other related issues, refer to the correspondent technical documentation.

4.1.6.1 Data Receiving Mode Setup

Method ① Setup using other method

**Data Receiving Mode Setup**

**[FUNCTION] Button → [1](Calls) → [5](Data Receive Mode) → [1~5] → [STORE].**

Press [FUNCTION] to return to the Waiting Mode without making changes.

**Note** 1) FAX/MODEM Mode "OFF" : Data service is disabled.
2) FAX Mode "ONE TIME" : Fax mode is enabled for 10 minutes following which it is disabled again.
3) FAX Mode "ALWAYS" : Fax mode is kept enabled as long as the power is on.
4) MODEM Mode "ONE TIME" : Modem mode is enabled for 10 minutes following which it is disabled again.
5) MODEM Mode "ALWAYS" : Modem mode is kept enabled as long as the power is on.

The default is FAX/MODEM Mode "OFF" at power up.

Method ② Setup using AT command

You can setup receiving mode you want using AT commands from your computer connected to the WLL terminal.

- Enter [AT+HDVAD=0] and press Enter.
  This command disables data receiving mode.
- Enter [AT+HDVAD=1] and then press Enter.
  This command enables PC fax receiving mode for one time.
- Enter [AT+HDVAD=2] and then press Enter.
  This command enables PC fax receiving mode for always.
- Enter [AT+HDVAD=3] and press Enter key.
  This command enables modem mode for one time.
- Enter [AT+HDVAD=4] and press Enter.
  This command enables modem mode for always.
- Default is [AT+HDVAD=0].





*4.2 To Adjust Volume*

4.2.1 To adjust the handset volume

Method ①

**To adjust the handset volume**

**[FUNCTION] Button → [2](Volume) → [1](Earpiece) → [1~5] → [STORE].**

- Use [UP]/[DOWN] buttons to adjust the volume, and press [STORE] to save the changes you have made.
- Press [FUNCTION] to return to the Waiting Mode without making changes.

**Note** 1) Volume Min.
2) Volume Average.
3) Volume Max.
Enable to adjust 5 level of handset volume.
The default is "Level 3".

Method ② • Use [UP]/[DOWN] button to adjust the volume during the call.

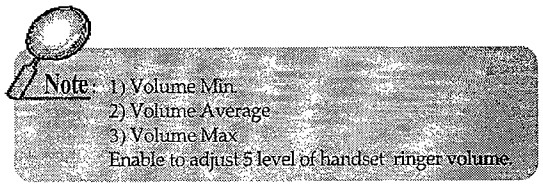
### 4.2.2 To adjust the ringer volume

Method ①

To adjust the ringer volume

[FUNCTION] Button → [2](Volume) → [2](Ringer) → [1~5] → [STORE].

- Use [UP]/[DOWN] buttons to adjust the volume, and press [STORE] to save the changes you have made.
- Press [FUNCTION] to return to the Waiting Mode without making changes.




Method ② • Adjust the volume using [UP]/[DOWN] Button while the ringer works.





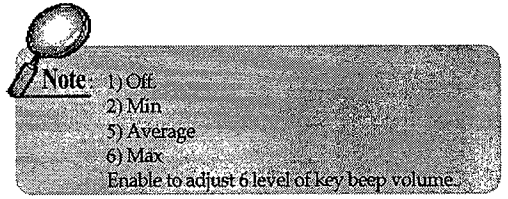
### 4.2.3 To adjust the key beep volume

Method ①

To adjust the key beep volume

[FUNCTION] Button → [2](Volume) → [3](Keytone) → [1~6] → [STORE].

- Use [UP]/[DOWN] buttons to adjust the volume, and press [STORE] to save the changes you have made.
- Press [FUNCTION] to return to the Waiting Mode without making changes.




Method ② • Adjust the volume using [UP]/[DOWN] Button in on-hook the Waiting Mode.

*4.3 Alarm Reminder Function (ALARM REMINDER)*

Alarm reminder enables the alarm ring when the specified time is reached. The ring discontinues when you pick up the handset. The default is disabled.

**Alarm Reminder Function**
[FUNCTION] Button → [4](Alarm) → [1~4] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.

Note : 1) ALARM MODE "TIME INPUT" : After entering the alarm time you want, this alarm time is automatically set up for one time.
2) ALARM MODE "ONE TIME" : Alarm reminder enabled for one time.
3) ALARM MODE "ALWAYS" : Alarm reminder enabled for always.
4) ALARM MODE "OFF" : Alarm reminder disabled.

*4.4 Security*

4.4.1 Outgoing Call Restrict Function (RESTRICT. OUTGOING)

**Outgoing Call Restrict Function**
[FUNCTION] Button → [5](Security) → [Password] → [1](Ristrict Outgoing) → [1~2] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.

Note : 1) Lock Off
2) Lock On
The default is" Allow".





4.4.2 Lock NO. SET Function (SET LOCK#)

**Lock NO. SET Function**
[FUNCTION] Button → [5](Security) → [Password] → [2](SET LOCK#) → [New Password] → [STORE] → [Re New Password] → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.

Note : The default of password is "0000"

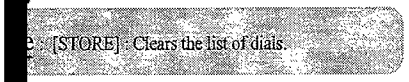
4.4.3 To Delete One Address in Memory

**To Delete One Address in Memory**
[FUNCTION] Button → [5](Security) → [Password] → [3](Clear On Dial) → [00~99](Address Number) → [STORE].

Press [FUNCTION] to return to the Waiting Mode without making changes.

Clear Function (CLEAR MEMORY)

NCTION] to return to the Waiting Mode without making changes.




efault Function

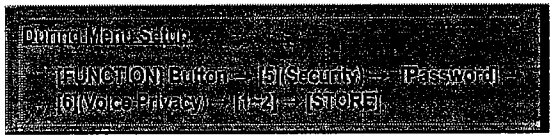
easily restore all options of your WLL terminal to their default values. You are mmended however, to use this command too often.

| Reset menus | Default values |
|---|---|
| Speed dial | Enable |
| Emergency call hold | Disable |
| Hot line | off |
| Alarm | off |
| Rest. Outgoing | Allow |
| Earpiece volume | Level 3 |

NCTION] to return to the Waiting Mode without making changes.

4.4.6 Voice Privacy

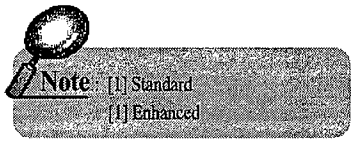
4.4.6.1 During Menu Setup




Press [FUNCTION] to return to the Waiting Mode without making changes.

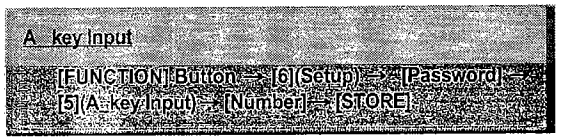
4.4.6.2 In on-hook state, menu set up

Press [FUNCTION] to return to the Waiting Mode without making changes.



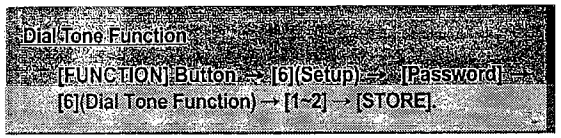
### 4.5.5 A_key Input

Enables you to input authentication key.

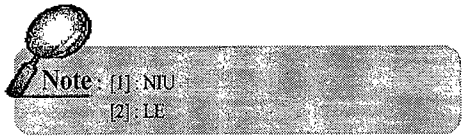



### 4.5.6 Dial Tone Function

Dial Tone feature is available in HWP-130/230 depending upon system configuration. For the Network Dial Tone support, HWP-130/230 must provide "LE-Generated dial tone". Otherwise, HWP-130/230 supports "NIU-Generated dial tone".

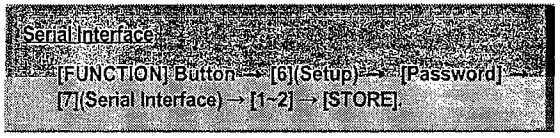



Press [FUNCTION] to return to the Waiting Mode without making changes.

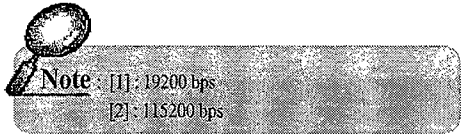



### 4.5.7 Serial Interface (Serial Data Rate)

Your WLL terminal supports RS-232 serial interface for data communication. Two baud rates are available: 19200bps for modem, PC Fax and QNC services; and 115200bps for High-Speed Packet service.




Press [FUNCTION] to return to the Waiting Mode without making changes.








## *4.6 Setup 2*

### 4.6.1 CDMA Chanel Setting

Press [FUNCTION] to return to the Waiting Mode without making changes.

### 4.6.2 Input telephone number

Input telephone number.

## <Appendix>

### 1. Summary Table

| | | |
|---|---|---|
| Save / Delete Phone Number | SAVE | FNC_K → 3 → Number → STO_K → Address → STO_K |
| | Delete One Address | FNC_K → 5 → Password → 3 → Address → STO_K |
| | Delete All Address | FNC_K → 5 → Password → 4 → STO_K |
| Speed Dial | On | FNC_K → 1 → 2 → 1 → STO_K |
| | Off | FNC_K → 1 → 2 → 2 → STO_K |
| Emergency Call Hold | On | FNC_K → 1 → 3 → 1 → STO_K |
| | Off | FNC_K → 1 → 3 → 2 → STO_K |
| Hot Line | Time Hot Line On | FNC_K → 1 → 4 → 1 → STO_K |
| | Immediate Hot Line | FNC_K → 1 → 4 → 2 → STO_K |
| | Off | FNC_K → 1 → 4 → 3 → STO_K |
| Alarm Reminder | Time Input (One Time) | FNC_K → 4 → 1 → TIME → STO_K |
| | One Time mode | FNC_K → 4 → 2 → STO_K |
| | Always Mode | FNC_K → 4 → 3 → STO_K |
| | Alarm Off | FNC_K → 4 → 4 → STO_K |
| Lock | On | FNC_K → 5 → Password → 1 → 1 → STO_K |
| | Off | FNC_K → 5 → Password → 1 → 2 → STO_K |
| | Change Password | FNC_K → 5 → Password → 2 → New Password → STO_K → Re New Password → STO_K |
| Ear-Piece Volume Adjusting (5steps) | FNC_K → 2 → 1 → 1/2/3/4/5 → STO_K (1:Very Low...5:Very High) Press Up or Down Key (Off Hook) | |
| Reset | FNC_K → 5 → Password → 5 → STO_K | |
| Data Service Receive Mode Release | Using The Normal Phone | FNC_K → 1 → 5 → 1 → STO_K |
| | Using The Emulator | [AT+HDVAD=0] → Enter |
| Fax Receive Mode Setting (One Time) | Using The Normal Phone | FNC_K → 1 → 5 → 2 → STO_K |
| | Using The Emulator | [AT+HDVAD=1] → Enter |
| Fax Receive Mode Setting (Until Power Off) | Using The Normal Phone | FNC_K → 1 → 5 → 3 → STO_K |
| | Using The Emulator | [AT+HDVAD=2] → Enter |
| Modem Receive Mode (One Time) | Using The Normal Phone | FNC_K → 1 → 5 → 4 → STO_K |
| | Using The Emulator | [AT+HDVAD=3] → Enter |
| Modem Receive Mode (Until Power Off) | Using The Normal Phone | FNC_K → 1 → 5 → 5 → STO_K |
| | Using The Emulator | [AT+HDVAD=4] → Enter |





### 2. Troubleshooting

| Problem | What To Do |
|---|---|
| ● There is no indication on the POWER LED. | ● Make sure the terminal is turned on. If the switch is on, turn off the terminal and then turn it on again. |
| ● RSSI LED goes on and off at the interval of 15 seconds. | ● The WLL terminal must be placed in the location where service coverage is available. If necessary, move the terminal to the serviced location. |
| ● Your terminal beeps or you can hear nothing in the handset. | ● Your handset is not properly placed. Place the handset normally. |
| ● There is no ring when a call comes. | ● The ringer is switched off. Press [UP] button several times to adjust the ringer volume |

In case that simple remedy steps does not help, contact the local agency from where you have purchased the product, a service center or a qualified technician to solve the trouble.

HYUNDAI

*3. FWT Technical Specifications*

| Classification | | HWP-130 | HWP-230 |
|---|---|---|---|
| Air interface | Common air interface standard | IS-95B(IS-95A, TSB-74) | IS-95B(IS-95A, J-STD-008) |
| | Frequency | TX: 824 ~ 849MHz | TX: 1850 ~ 1910MHz |
| | | RX: 869 ~ 894MHz | RX: 1930 ~ 1990MHz |
| | Frequency accuracy | Fo± 300Hz | Fo± 150Hz |
| | TX output power | 200mW | |
| | RX sensitivity | - 104dBm | |
| | Vocoder | 8K/13K QCELP<br>8K EVRC | |
| | Channel bandwidth | CDMA 1.25Mhz | |
| | MOD/DEMOD | O QPSK/QPSK | |
| Battery backup | Type | Ni-Cd | |
| | Capacity | 4.8V @ 1.7A | |
| | Conversation time | 2 ~ 3 hours | |
| | Standby time | 50 hours | |
| | Serial port | · Data service purpose (Internet, Modem , PC fax)<br>· Maintenance purpose | |
| Physical | Dimension (D× W× H) | 181× 232× 66(mm) | |
| | Weight (including backup battery) | 986g | |
| Environmental | Operating temperature | -10℃ ~ +50℃ | |
| Power supply | Input power | 110 ~ 240V(± 20V), 50/60Hz | |
| | Output power | DC 12V @ 1.3A | |
| Etc | Accessories | · Internal antenna: Dipole antenna<br>· Power supply (SMPS)<br>· Antenna | |