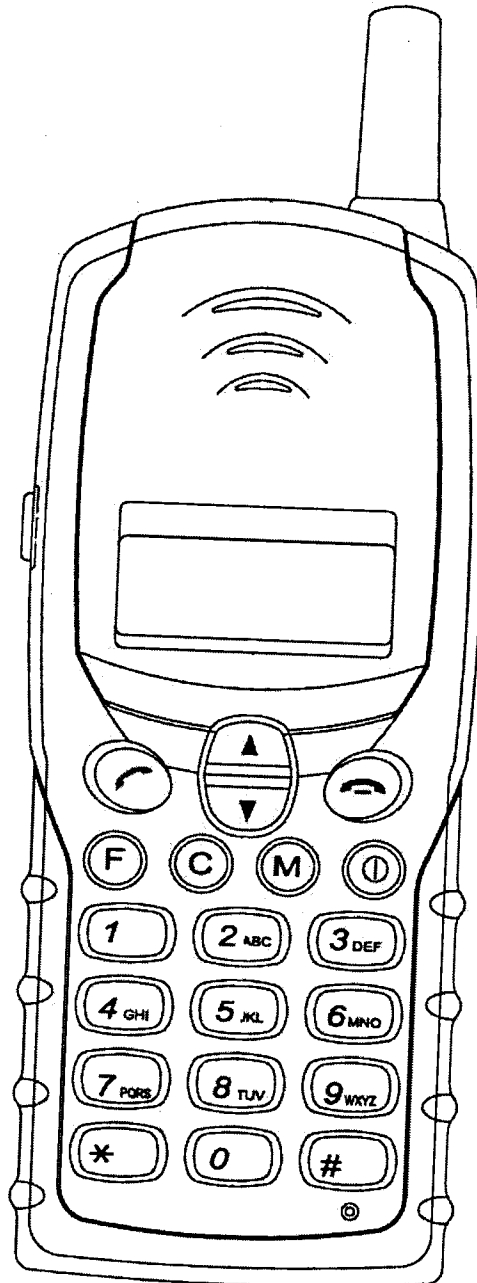
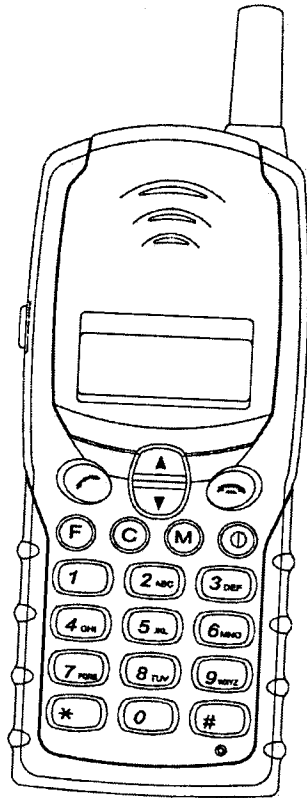


T-2000A



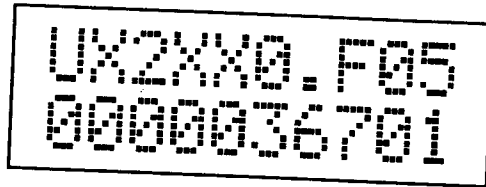
Chapter 1 Introduction

- 1.1 T-2000A is the mobile handset designed for TECOM's TCM-1, a wireless access communication system. T-2000A can be deployed for dispatching and for full-duplex voice communication. T-2000A has super voice quality, is easy to operate, and is designed as full-function communication terminal.
- 1.2 Like other electronic products, T-2000A operates on radio signals, therefore can be interfered by other electronic signals. Therefore users may sometimes have to move the mobile handset around to a position where he can obtain better quality of reception. When using T-2000A indoors, it's best to use it near a window.
- 1.3 Figure 1-1, T-2000A

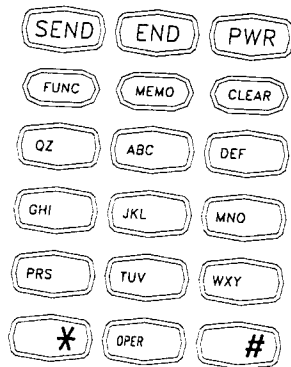
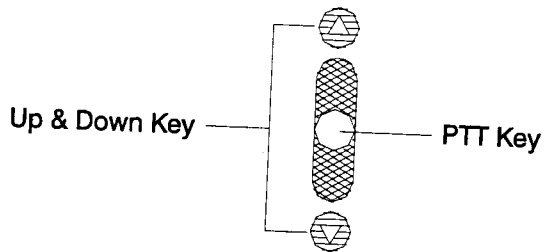


Chapter 2 Face Panel

2.1 LCD



2.2 Featured Keys



A detailed descriptions to each feature key are as follows.

Note: Dialing key mentioned in this manual means any digit of 0 to 9, *, #, in the dial key

pad.

PWR (Power)

Press and hold this key for about 2 seconds until a beep is heard. This key is used to turn the handset on or off.

FUNC (Function)

Press "FUNC" followed by other keys will perform various functions.

SEND (Send)

This key is used to make a call or to answer an incoming call.

END (End)

END is used to terminate a call.

END can also be used to return the handset to regular operation state after desired functions are programmed.

CLEAR (Clear)

Press this key to erase the last digit (or alphabet) of a number just entered. Press and hold CLEAR for over 2 seconds to erase the whole number.

MEMO

Press this key, user can search for desired number in memory.

PTT

Press this key to activate dispatching call.

Up and Down Keys

Used to control volume for ringer or ear-piece. They can also be used to perform special functions.

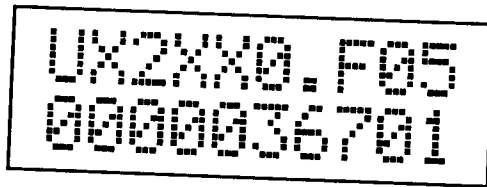
2.3 Audio Signal

1. Ringer: T-2000A will keep ringing when receiving a page until the page is answered or abandoned.
2. Talk-time Reminder: 1 beep, periodically.
3. Low-Battery Warning: 2 beeps.
4. Dial Successful Tone: 1 beep.
5. Key Recognition Tone: A tone is sounded when pressing any dialing key.

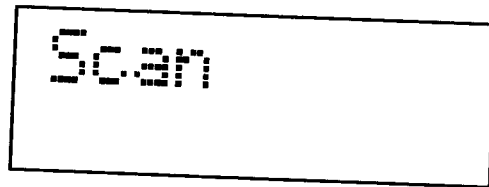
Chapter 3 Operating T-2000A

3.1 Power-on

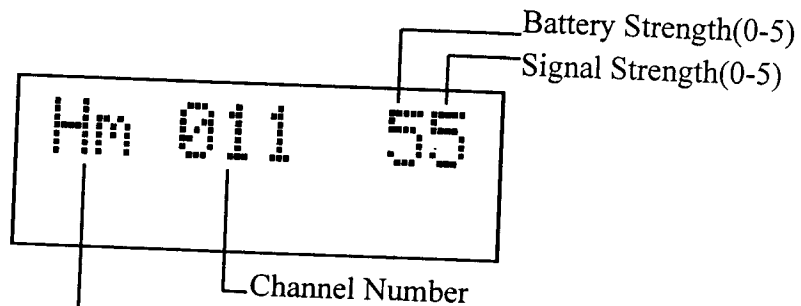
- Press and hold “PWR” key for 2 seconds, the LCD of T-2000A will briefly prompt the handset MIN number and the number of software version equipped in the handset.



- LCD will display “Scan” indicating that the handset is trying to connect to the base station.

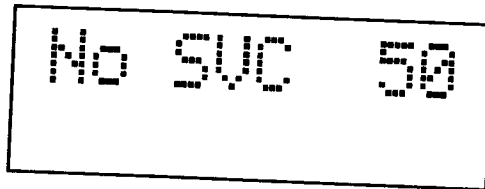


- After the handset is successfully connected to the base station, the LCD will display:



“Rm” will be displayed instead if handset roams to other service area.

- If the connection is not successful, the LCD will display “No SVC”.

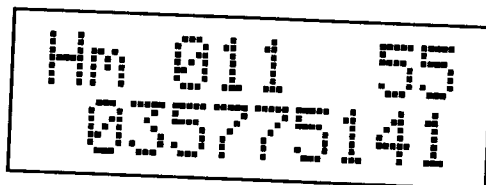


3.2 Power-Off

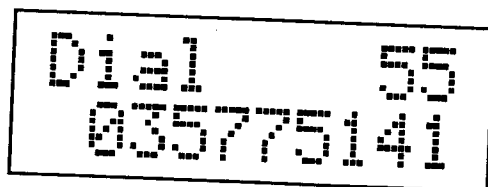
Press and hold “PWR” for around one second until the LCD becomes dark.

3.3 Make a Full-duplex Outgoing Call

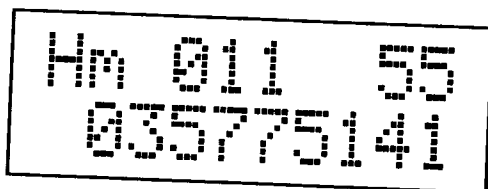
- Enter desired number. (e.g. 03-5775141).



- Press “SEND” after the number, the LCD will show “Dial”, indicating that the handset is dialing the desired number.

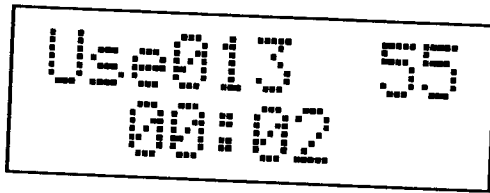


- If the connection is not successful, the handset will go back to idle mode.



- If the connection is successful, the LCD will display “Use”.

Channel Number Selected



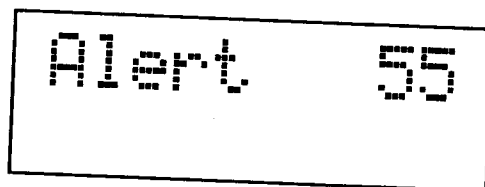
Call Duration

● Automatic Redial

When all channels are busy, the mobile handset will retry up to 10 times. If it is still failed after refrain, the call making will be abandoned.

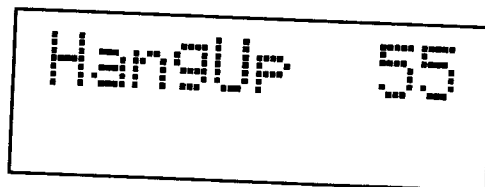
3.4 Answer An Incoming Call

The ringer is activated when responding to an incoming call. The LCD will prompt "Alert". Press "SEND" to start voice communication. If "ANYKEY To ANSWER" is "ON" (refer to chapter 4), user can press any key to answer an incoming call.



3.5 Terminate A Call

Press "END", the LCD will prompt "HangUp" indicating the end of a call.



3.6 Dispatching

Dispatching can be canned out by making sub-group page, group page or all page.

+ Sub-group Paging

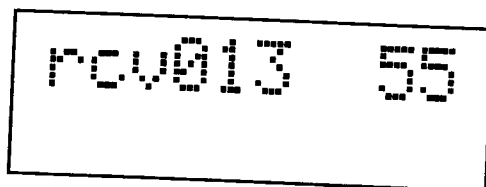
● Press "PTT", the LCD will display "Dial", indicating that the mobile handset is paging other handset users with same sub-group number in the same base

station.



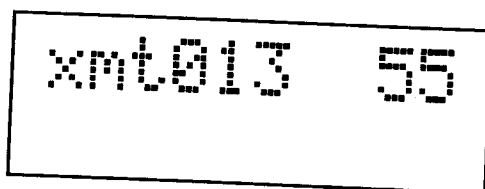
Dial 55

●If the page is successful, the handset will sound a “beep” while the LCD prompts “rcv”, indicating that the handset is ready to receive voice announcement.



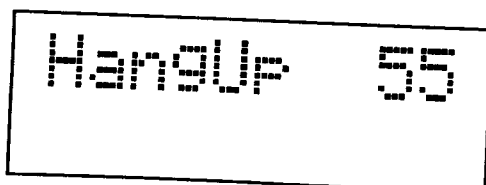
rcv013 55

●If user wants to speak out, press and hold “PTT”.When the LCD prompts “xmt”, user can start voice paging.When “PTT” is released, the handset will return to voice reception mode again.



xmt013 55

●During a sub-group paging, if user wants to proceed with other paging or individual telephone communication, press “END” to leave the on-going paging. The LCD will prompt “HangUp” and then return to the display of “Hm”. When the user finishes the latter, he will automatically be switched to the previous paging.



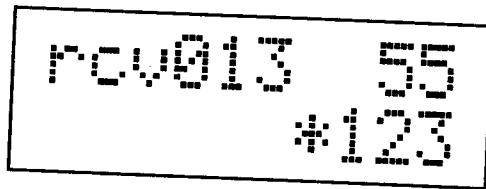
HangUp 55



Hn 011 55

✦ Page Handsets of Different Sub-groups

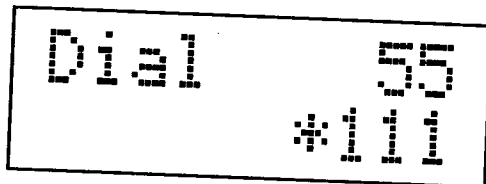
Press “*” followed by desired sub-group number (e.g. 123), then press “PTT”, user can page handset users in other sub-groups within the same base station.



rcv013 55
*123

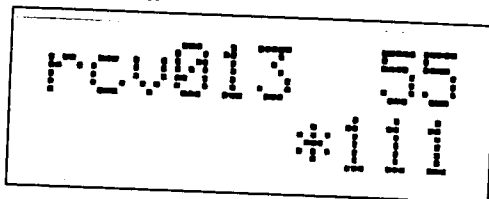
✦ Group Paging

● Up to 5 sub-groups can be organized in a group. Press “*” followed by group number (e.g. 111), and then press “PTT”, the LCD will prompt “Dial”, indicating that the handset is initiating a group page in the same base station.



Dial 55
*111

● If the paging is successful, the handset will sound a “beep” while the LCD prompts “rcv”, indicating that the handset is ready to receive voice announcement.



rcv013 55
*111

● If user wants to speak out, press and hold “PTT”. When the LCD prompts “xmt”, user can start voice paging. The handset will return to voice reception mode again after “PTT” is released.

- Group paging takes precedence over sub-group paging. When a group paging is activated, all handsets being in a sub-group paging will be interrupted and invited to join the group paging.

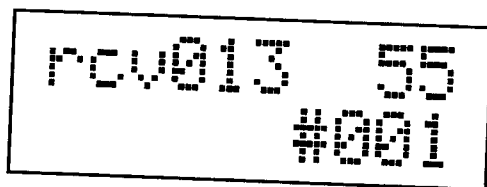
+ All Paging

- Press “**” followed by “PTT”, user can page all mobile handsets in the same base station.

- When all paging is activated, all handsets being in any sub-group paging or group paging will be interrupted and invited to join the all paging.

+ Dispatching Across Network

Press “#” followed by sub-group number (e.g. 001) and “PTT”, user can page the same sub-group of handsets located in different base stations.



+ Automatic Switching to Sub-group Paging/ Group Paging/ All Paging

- A voice conversation will not be interrupted by sub-group paging, group paging or all paging. However, when voice conversation is finished, the handset will be automatically switched to either one of the above ongoing paging.

- During sub-group paging, group paging or all paging, user can press “END” to exit from the paging and proceed with other new paging or voice conversation. However, when the new call is finished the handset will be switched to the previous ongoing paging.

+ Paged

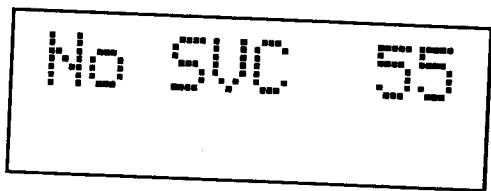
- A beep will be sounded upon being paged. Before paging is finished, no more beep is sounded when “PTT” is pressed and held to request voice communication switching. Normally, user can push “PTT” to answer, then release “PTT” and return to voice reception mode.

✦ Sub-group paging, group paging and all paging activated by PSTN subscribers:

After auto-attendant answers the incoming call, PSTN subscribers can press “*”, followed by Sub-group number, to activate sub-group paging or group paging or enter “***” to activate all paging.

✦ “Out-of-Service” Warning

Out-of-Service warning tone can be heard when a mobile handset is out of service area and “PTT” is pressed. In this case, user will hear three beeps as a reminder.

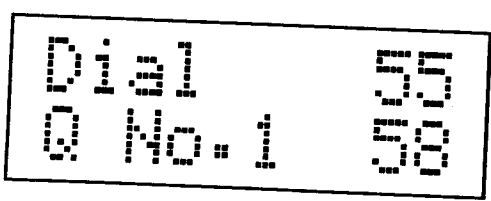


✦ Automatic Registration

Automatic registration will be executed automatically as handset is powered up, or returns to its original service area from out of service mode, or directly roams into another service area.

✦ Waiting As All Channels Are Busy

When there are no available channels, the system will place the new paging request in a queue. As soon as a channel is available, system will assign the available channel to the first handset waiting in the queue. Handsets with higher priority will be able to snatch first available channel. When waiting in the queue, the handset will indicate its privilege priority (from “1” to “3”) and the remained time it needs to wait (countdown from 60 seconds).

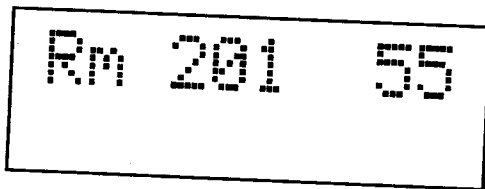


✚Emergency Paging

Class "0" is set as the highest priority. Only mobile handsets with priority "0" can initiate emergency paging. If all channels are busy when an emergency paging is activated, the system will forcibly release one of the occupied channels for paging need.

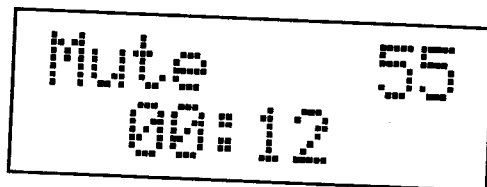
3.7 Change Service Area

User can press "FUNC" and "▲" or "▼", to force handset to tune to a desired service area. The LCD will then display the corresponding control channel number.



3.8 Mute

● During a conversation, user can press "FUNC" and "2" to shut off microphone so that the other conversation party can not hear his / her voice. Meanwhile, LCD will prompt "Mute".



● Press "FUNC" and "2" again to resume conversation, then "Mute" disappears on the LCD.

3.9 Back Light

Backlight is supported by LCD Module. Any key depression will activate backlight illumination for 5 seconds. If no key is pressed again within 5 seconds, the backlight will turn off automatically. Backlight will turn on automatically too for 5 seconds when "PTT" is pressed.

3.10 Talk Time

During a conversation, the handset will show the duration of the talk time on

the LCD. The talk time includes the time required for establishing connection to base station.

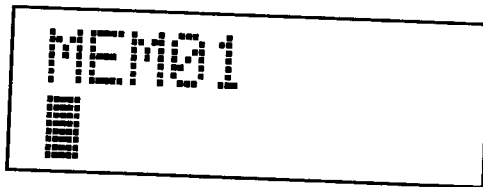
3.11 Last Number Redial (LNR)

- A. If there is no phone number on LCD, pressing “SEND” will send the last number dialed.
- B. If a paging call is desired, pressing “PTT” will page the pre-programmed sub-group number.

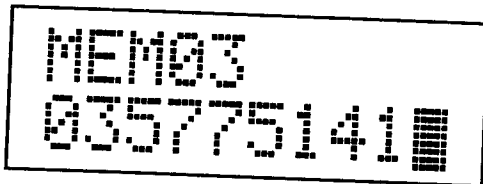
3.12 Store Speed Dial Numbers

The handset can store maximum of 10 phone numbers in memory.

- (1) Press “MEMO”, the LCD will display “MEMO1”.



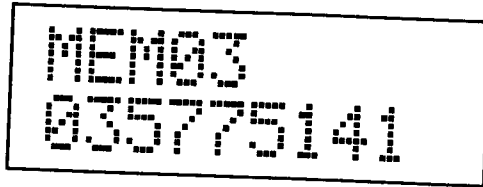
- (2) Press “▲” or “▼” to locate a desired position in memory, then enter the phone number. (Up to 16 digits in a number can be stored.)



- (3) Press “▲”, “▼” or “END” to store the number into.
- (4) Press “▲” or “▼” to locate the desired number, then press “CLEAR” to delete or to start updating the number.
- (5) If no key is pressed within 10 seconds, the LCD will go back to idle mode. That is, any programming, which is not stored by following step-3 will be abandoned without any change to the memory.

3.13 Speed Dialing

- Press “MEMO” followed by “▲” or “▼” until the desired number is displayed.



- Press “SEND” to dial the number out.

3.14 Edit A Phone Number

Press “CLEAR” once to erase a digit in the backward direction. Press and hold “CLEAR” for 2 seconds to erase the whole number.

3.15 Send DTMF Signals Using The Keypad

Press dialing keys (0-9, *, #) during call, the corresponding DTMF signal will be conversation transmitted. for adaptation to Auto Attendant or Voice Mail System.

3.16 Do Not Disturb (DND)

A. Press “FUNC” and “4” to activate DND, user will not be disturbed by incoming calls. But the handset will still sound a “beep” to indicate an incoming call waiting for answer, along with the illumination of backlight for notification.



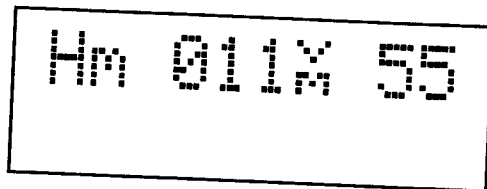
- B. Press “FUNC” and “4” again, DND is deactivated.

3.17 Last Number Display

Press “FUNC” and “*”, the LCD will display the last number dialed. Press “SEND” to resend the number.

3.18 Voice Mail Notification

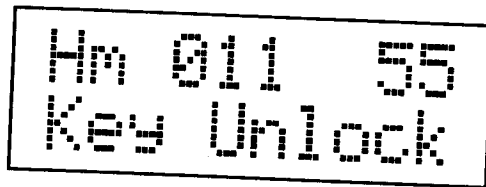
If there's voice mail left for the handset and stored in the base station, the LCD will prompt "VM" for notification.



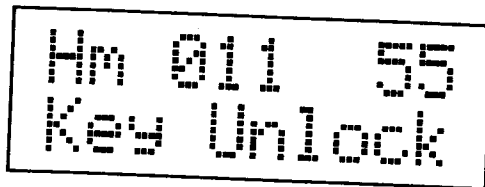
3.19 Key Lock/Unlock

User can lock the keypad to avoid unintentional activities. The keypad remains locked until an incoming call is answered or an unlocking procedure is performed.

- Press "FUNC" followed by "3" to lock the keypad. The LCD will display "Key Locked" when any key is pressed.



- Press "FUNC" followed by "3" again to unlock keypad, the LCD will display "Key Unlock".



3.20 Flexible Talk Time Reminder

When talk time exceeds the pre-programmed limits, the system will sound a "beep" as reminding.

3.21 Any Key To Answer

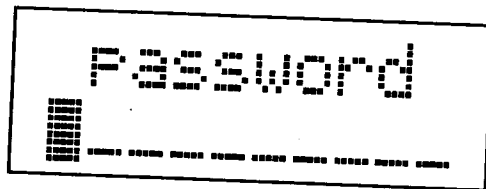
When "Any Key to Answer" is activated in database, user can answer incoming

call by pressing any key (except "PWR" key).

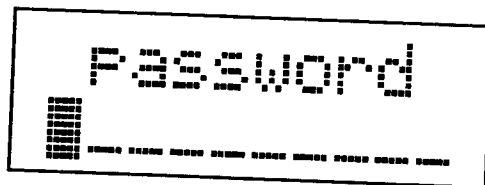
3.22 Call Lock/Unlock

To prevent unauthorized outgoing call making, user can set the handset to CALL LOCK mode.

- Press "FUNC" followed by "7", the LCD will prompt "password".

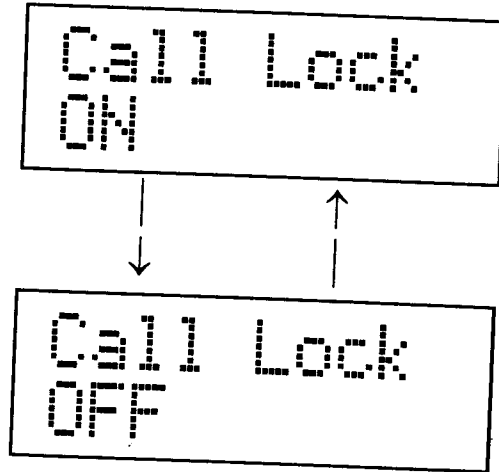


- Enter password.



- If the password is correct, "CALL LOCK" is activated.

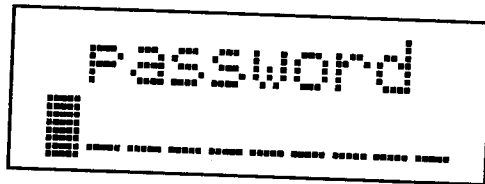
User can then press "*" or "#" to toggle change setting between "CALL LOCK" and "CALL UNLOCK".



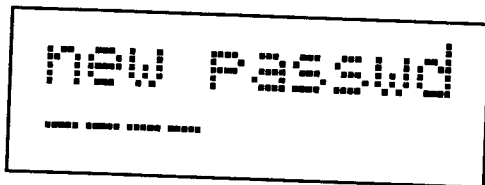
3.23 Change Password

The default password used in all related features is set to "0000". User can change this password, but it has to be 4 digits.

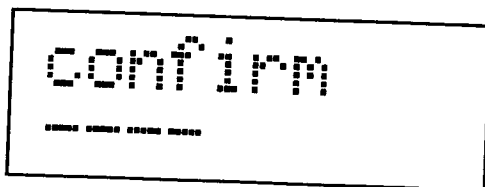
- Press "FUNC" followed by "0", the LCD will prompt "password", user should enter the old password.



- The LCD prompts "new password", user should enter new password.

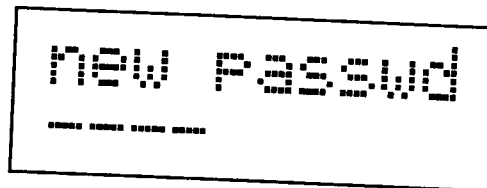


- The LCD prompts "confirm", user should enter the new password again.



- If the double check of new password is correct, the LCD will go back to idle

(standby) mode. It indicates that the password change is handset success. If the new password check is wrong confirmed, the handset will double beep as warning, and the LCD will also prompt “new password” again, asking user to reenter new password.



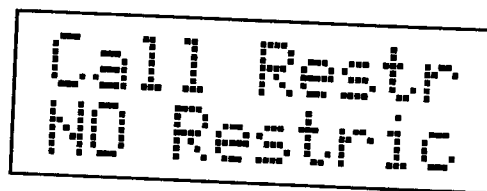
new Paswd

3.24 Call Restriction

- a. Enter Call Restriction programming mode.
 - Press “FUNC” followed by “8”.
 - Enter 4-digit password. (Default value is set to “0000”).
- b. Exit the programming mode.

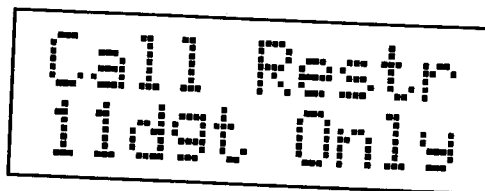
Press “END” to exit.
- c. The handset has 5 levels of call restriction. Shown below. User can use “*” or “#” to choose the desired level.

(1) No restriction



Call Restr
NO Restrict

(2) Up to 11-digit phone numbers (to prevent international calls) are allowed.



Call Restr
11digit Only

(3) Only toll-free numbers (with 080, 081 prefix digits) are allowed.

Call Restr
080/1 Only

(4) Only 3-digit numbers (except 100, 108) are allowed.

Call Restr
3 dgt Only

(5) Only allowed to receive incoming calls. Outgoing calls are prohibited.

Call Restr
Recv Only

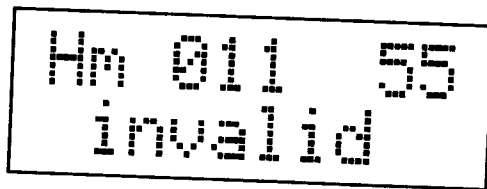
3.25 "No Number" Display

After power-on, if no number was ever dialed before, press "SEND", the LCD will prompt "No Number", along with double beep warning tone listening.

Hn 011 55
No Number

3.26 Undefined Feature Access Codes

Press "FUNC" followed by a digit key to activate a function. If the function is not permitted .e.not defined, has not been set up, the LCD will prompt "invalid".



Chapter 4 Database Programming (By User)

4.1 Default values

Default values for the following functions have been set at factory.

- ▶ Normal receiving volume : 8
- ▶ PTT volume : 8
- ▶ Ringer volume : 3
- ▶ Type of ring tone: 0
- ▶ Talk Time Reminder: OFF
- ▶ Talk Time Reminder Interval : 060s (60 seconds)
- ▶ Any Key to Answer : ON
- ▶ Display of Control Channel : ON
- ▶ Reject Paging : OFF

4.2 How to enter/exit database programming mode:

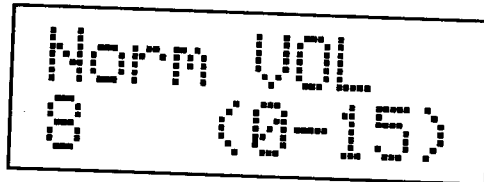
- a. To enter database programming mode
Press "**FUNC**" followed by "**5**".
- b. To exit database programming mode
Press "**END**".

4.3 Descriptions function keys in usage database programming

- a. Press "**▲**" or "**▼**" to select functions listed from section 4.4 to 4.12.
below
- b. During function programming
 - (1) If digits are desired, user can enter digit keys from "**0**" to "**9**".
 - (2) If more than one alternative value is allowed to be programmed, press "*****" or "**#**" to select any one desired.
- c. After entering or selecting desired data, user can press "**▲**", "**▼**" or "**END**" to update the old setting data in database with the new one.

4.4 Normal Receiving Volume

- a. Default value is "8". User can enter desired value (0 - 15).

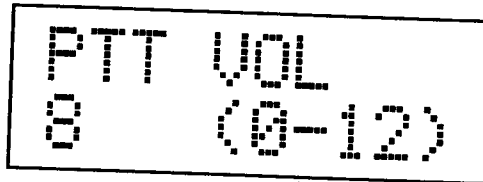


A rectangular LCD display showing the text "Norm VOL" on the top line and "8 (0-15)" on the bottom line. The text is in a pixelated font.

- b. During conversation, user can press "ρ" or "σ" key to paging adjust volume level, but the adjusted level is not permanently stored in the memory

4.5 PTT Volume

- a. Default value is "8". User can enter desired value (0 - 12).

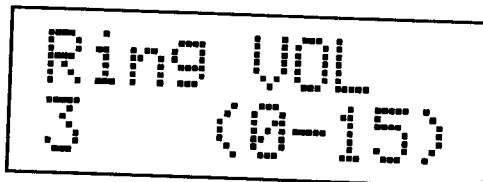


A rectangular LCD display showing the text "PTT VOL" on the top line and "8 (0-12)" on the bottom line. The text is in a pixelated font.

- b. Default value is "8". User can enter desired value (0 - 15).

4.6 Ringer Volume

- a. Default value is "3". User can enter desired value (0 - 15),



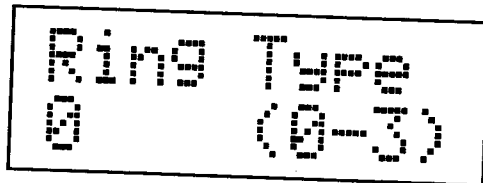
A rectangular LCD display showing the text "Ring VOL" on the top line and "3 (0-15)" on the bottom line. The text is in a pixelated font.

- b. Default value is "8". User can enter desired value (0 - 15).

4.7 Type of Ring Tone

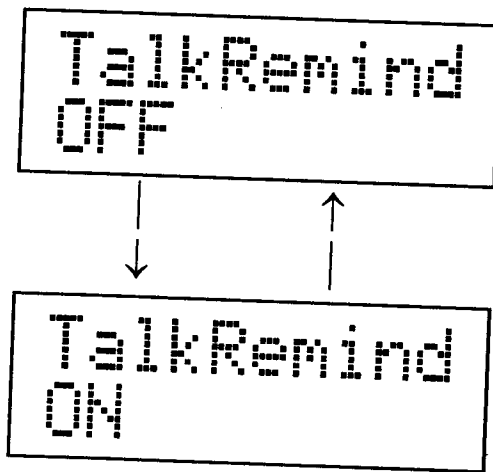
Default value is "0". User can enter desired number (0 - 3).

Note : The most recently adjusted volume will be in effect until it's adjusted again. If the handset is recycled, the default volume will be in effect until it's adjusted again.



4.8 Talk Time Reminder ON/OFF

Default value is OFF.



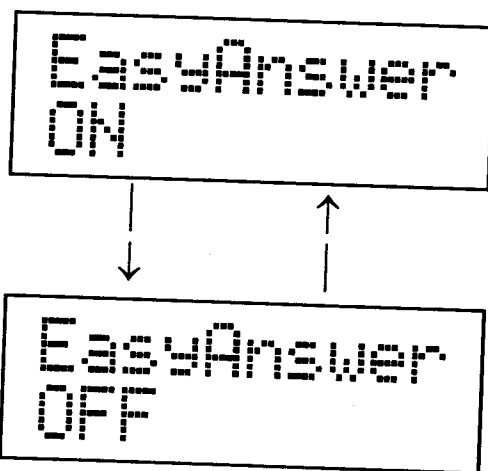
User can press "*" or "#" key to toggle select "ON" or "OFF".

4.9 Interval of Talk Time Reminder

Default value is 60 seconds. User can set up the interval among 001 - 999 seconds.

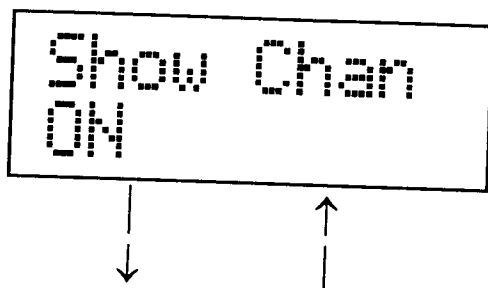
TalkRemind
60 sec

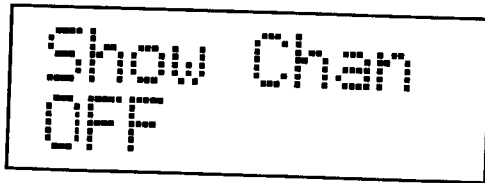
4.10 NAny Key to Answer
Default value is "O".



User can press "*" or "#" key to toggle select "ON" or "OFF".

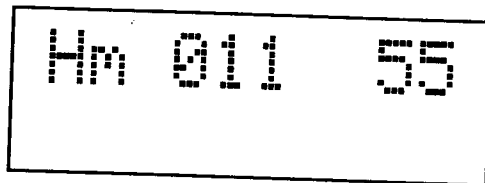
4.11 "Show Chan" Display ON/OFF



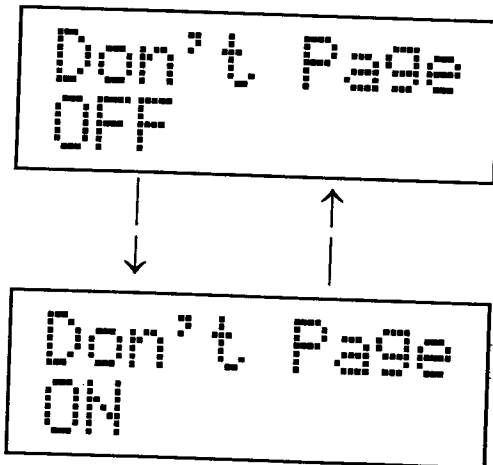


User can press "*" or "#" key to toggle select "ON" or "OFF".

When this function is set to "ON", the LCD will display the channel number in use.



4.12 "Don't Page" ON/OFF



User can press "*" or "#" key to toggle select "ON" or "OFF".

When this function is on, "F" shown on the LCD indicates that the handset rejects to be paged.

Hm 011 #55

Chapter 5 Database Programming (By Vendor)

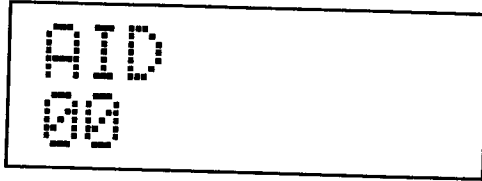
5.1 Default Values

Following default values are set at factory.

- Mode : Customer
- MIN: 0000000000
- ESN-H : 000da512
- ESN-D : 01000013
- AID : 00
- CH 01 ~ CH24 : 000

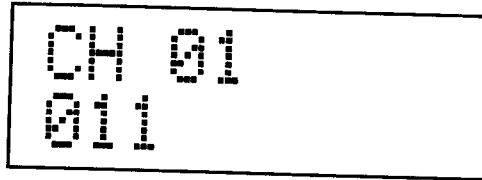
5.2 How to enter/exit Database Programming Mode

- a. To enter database programming mode



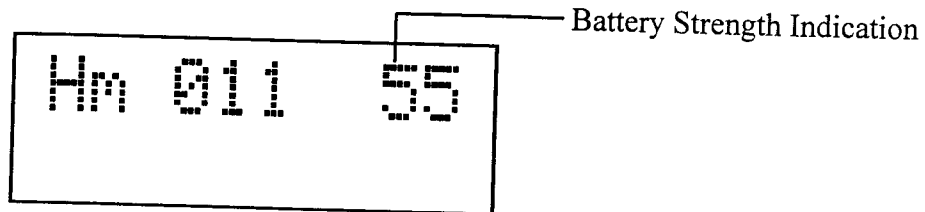
5.9 Channel Number Setting

Default value is “000” for all 24 channels. User can press “▲” or “▼” to select the desired channel number in order, or to directly enter the desired channel number for update.



Chapter 6 Battery and charger

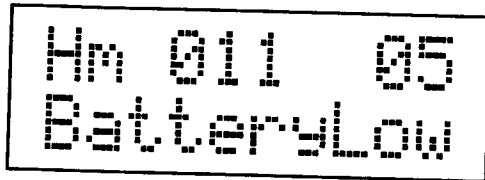
6.1 Display of Battery Strength



The number at the upper right corner indicates battery strength from 0 (the lowest) to 5 (the highest).

6.2 Battery Low Warning

- The LCD will prompt “**BatteryLow**” and burst one beep as warning when battery strength is down to 0.



- During conversation , if the battery is going to run out with “**Battery Low**” indication , finish the call as soon as possible, Otherwise the call will be abandoned as the battery is exhausted completely.

6.3 Battery Safety and Maintenance

When used normally, the NiMH rechargeable battery can last a long time without extra maintenance. User should read the following instructions carefully.

- If you suspect that the battery may have trouble, take it to the local vendor company for check-up.
- To avoid short circuit, battery should be kept away from any metal objects, such as keys, etc.
- Never disassemble a battery, or cast it into fire. It may cause explosion.

6.4 Battery Specifications

- 271-900006 NiMH Battery with capacity 550 mAh (optional).
- 271-900005 NiMH Battery with capacity 1050 mAh.

6.5 Charging the Battery

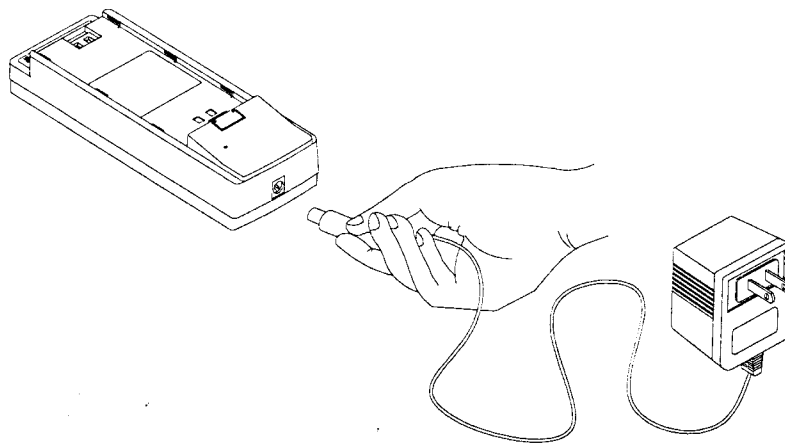


Figure 6-1

- Plug the power cord into the charger (Figure 6-1). All LEDs will be turned on. After a short “beep”, only the red PWR lamp will remain lit and then charging is started
- The charger will automatically check the specification of the battery and adjust a proper charging current for the battery.
- Slide the battery into the charger (Figure 6-2). The red CHAR will come on and then the battery starts fast-charging. The charge capacity of the battery being charged can be indicated by the green LEDs, from 20% up to 100% (20, 40, 60, 80, 100).

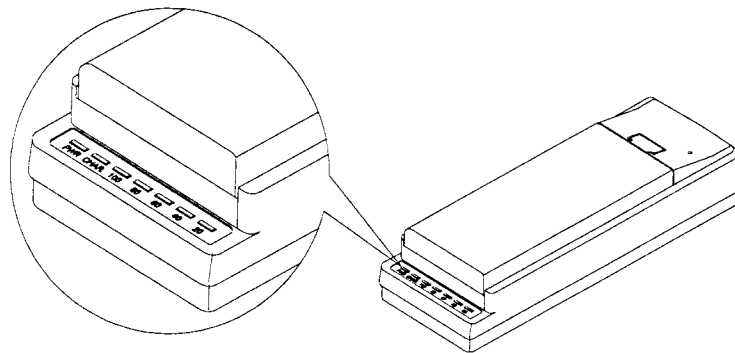


Figure 6-2

- In about 90 minutes, all green lamps will become lit. and the CHAR lamp goes

off. One beep warning will be sounded (On and off at 0.5 second interval). This indicates that the battery has entered into the stage of supplemental charging.

- After 30 minutes of supplemental charging, the same one beep warning will be sounded. It indicates that the battery has been fully charged and entered into the stage of trivial charging.

- For new battery or battery that has not been used over 6 months, it may not last as long as ordinary battery after charging. However, after 2 times of charge and discharge, the battery should be as efficient as regular battery.

- After the battery slides into the charger, the red CHAR (red) will flash, indicating that the battery is short circuit. There will also be warning tone, 3 beeps each time until the battery is taken off the charger.

Appendix 1: Summary of Function Access Code Pefinition

- FUNC 2 : Mute ON/OFF
- FUNC 3 : KEY Lock/ Unlock
- FUNC 4 : DND ON/OFF
- FUNC 5 : Database Programming (by User)
- FUNC 7 : Call Lock ON/OFF
- FUNC 8 : Call Restriction Setting
- FUNC 0 : Change Password
- FUNC * : Display of Last Number Dialed
- FUNC # : Database Programming (by Vendor)

Appendix 2: Memory Capacity

Memory capacity for dialed numbers is

- a. Speed Dial : 10 numbers.
- b. Display of Last Number Dialed: 1 set

Appendix 3: Trouble-Shooting

1. General Faults

a. Power Failure

If there is no response upon pressing the power key, try to replace the battery with a newly charged battery.

b. Standby Indication “Hm” Does Not Appear

This indicates that the mobile handset is not in service area of the base station. User may try moving to another location. If there’s no improvement, the mobile handset may have failed or user may have roamed out of the service area.

2. RSSI Indication Is Too Low (0 or 1)

- Check if the antenna is properly installed and tightly screwed.
- Move the mobile handset to check the RSSI logical level readings. The reading value of 0 is the lowest, 5 the highest.

(1) Sometimes switching to a different angle or moving to a slightly different location would make great difference in RSSI reading.

(2) Obstacles of larger scale such as buildings and hills will affect the signal reception tremendously. Therefore, user must move around to find a best location for reception.

(3) When indoor, the best location for receiving signals is usually near the windows.

3. When the mobile handset is working weirdly

- a. Turn off the power. Wait 10 seconds before turning it back on.
 - b. Refer to section 3.19 and check if the keypad is locked. If yes, press “FUNC” followed by “3” to change it to “Key Unlock”.
 - c. Refer to section 3.16 and check if DND is enabled. If yes, disable DND.
 - d. Refer to section 3.22 (Call Lock) and check if the “call lock” is enabled. If yes, press “FUNC” followed by “7” to change it to “Call Unlock”.
4. If battery strength is too low, recycle the handset to check the strength reading

of battery.