

Owner's
Operating
Instructions



150 Marcus Blvd. Hauppauge, NY 11788

PRINTED IN JAPAN 5-89

CTX5000
CELLULAR
TELEPHONE



TABLE OF CONTENTS

SYSTEM CONFIGURATION	6
HANDHELD PORTABLE USAGE.....	7
TO ATTACH / DETACH BATTERY PACK	8
PRECAUTIONS	10
GENERAL SPECIFICATIONS	10
FEATURES AND OPTIONS	11
BASIC OPERATION.....	15
Turning the Unit on	
To Store a Number in Memory	
To Recall a Number from Memory	
If You Want to Review the Prefix	
Last Number Review	
Display Own Telephone Number	
Repertory Memory Scroll	
Automatic Storing into the Vacant Memory Address	
To Lock the Unit	
Automatic Lock(NAM Option)	
To Unlock the Unit	
Backlighting Control	
Volume Control	
MEMORY NAME TAG	18
To Enter Names using Alpha	
To Store Name with Phone Number	
To Recall from Memory with Name	
ALPHA SEARCH	20
PLACING TELEPHONE CALLS.....	21
To Place a Call	
If the Call Fails to Go Through	
Automatic Redial(NAM Option)	
Terminating a Call (Hanging Up)	
To Receive Calls	
To Place a Call with a Number in the Memory	
To Mute Phone Conversation	
Call in Progress Protection	
CALL RESTRICTION(NAM OPTION).....	23
To Set Mode of Call Restriction	
To Exit Call Restriction Programming Mode	
HANDS-FREE OPERATION(NAM OPTION).....	23
END TO END SIGNALING	24
Touch Tone™ from Memory	
Link Dialing	
Continuous DTMF from Keypad	
SCRATCH-PAD DIALING	26
SCRATCH-PAD DIALING	
WITHOUT KEYING TONES.....	26

CALL TIME DISPLAY	26
To Display the Talk Time of the Last Call	
To Display the Cumulative Talk Time	
To Display the Number of Calls	
To Clear the Timer	
One Minute Beep(NAM Option)	
A / B SYSTEM SELECTION	27
SYSTEM INHIBIT(NAM OPTION).....	28
RADIO FREQUENCY (RF)	
CHANNEL INDICATOR	28
CALL IN ABSENCE INDICATOR	29
SAFETY TIMER(NAM OPTION)	30
CHARGING THE BATTERY IN ABSENCE	30
FUNCTION REVIEW	31
IMPORTANT SAFETY INFORMATION.....	31
WARNING	32

Touch Tone™ is a registered trade mark of AT&T.

AUDIOVOX CELLULAR CAR TELEPHONE A NEW GENERATION

AUDIOVOX introduces "Triple Play™", the latest Cellular Car Telephone in the CTX Series. We call the CTX5000 "Triple Play™" because of its incredible three way versatility. You'll call it amazing. It's a Car Phone and a Handheld Portable Phone. Add the optional Transportable Pack 3WB50 and it's a 3 watt Transportable Phone.

The CTX5000 has all of the full function features one could ever want in a Cellular Telephone. With the same high performance and reliability that all AUDIOVOX's Cellular Car Telephones are renowned for. Wherever your travels' take you, you can take "Triple Play™" along. "Triple Play™" can be used as a Handheld Portable Cellular Telephone. The entire Cellular electronics and Transceiver are built right into the trimmed down Handset, allowing "Triple Play™" to be used in just about any location. "Triple Play™" has its own built-in battery system that gives you eight hours of standby time and approximately one hour of "Talk" time, making it ideal for use at home, in the office, dining out, in a taxi, walking down the street ... virtually anywhere you are! "Triple Play™"'s compact, lightweight designs lets you slip it in a Briefcase or Pocketbook, ready to make or receive calls on the go.

On the road, "Triple Play™" is installed in a Car or RV with any standard TNC Vehicle Antenna, making it a complete 3 watt Cellular Car Telephone, drawing its power from the vehicle's own electrical system. The Booster also features a built-in battery recharge system that automatically recharges the Handheld Portable's battery once it is placed in the Booster.

The additional accessory Booster, CRX50, for another Car or boat is also available as an option, allowing "Triple Play™" to be used in multiple locations. All utilizing the same convenient phone number. "Triple Play™" also gives you the option of using small, rechargeable Battery Pack BTR40 (smaller than half a pack of cigarettes) to extend the life of the phone's portable time.

For additional convenience, the Handheld Portable

Battery and a spare Battery Pack can be charged on your optional Desk Top Charger DTC30.

AUDIOVOX loaded "Triple Play™" with full-function features including : Duplex Hands-free Operation, Pre-set and On-Hook Dialing, Last-Number Redial, Easy-to-Read high-tech Graphics on the Keypad and an enlarged Liquid Crystal Display. The Call-in-Absence feature indicates that you missed a call or there is a message in the Call Box.

Should this feature be accidentally left on for an extended period of time, the Safety Timer automatically shuts the phone off.

SYSTEM CONFIGURATION

CTX5000 Cellular Car Telephone is composed of two parts, one is CTX4500 Handset and the other is CRX50 Booster.

The Handset can be used alone as a Handheld Portable Cellular Telephone, and further can become a full output Car Telephone by simply connecting it to CRX50 by the specially designed Curly Cord.

CRX50 is a cradle type booster which amplifies the Handset RF output power up to 3 watts for the normal Car Telephone requirement.

These Operating Instructions describe the feature and how to use CTX5000 Cellular Car Telephone. (System configuration and the equipment list are shown in Figure 1. and Table 1. respectively.)

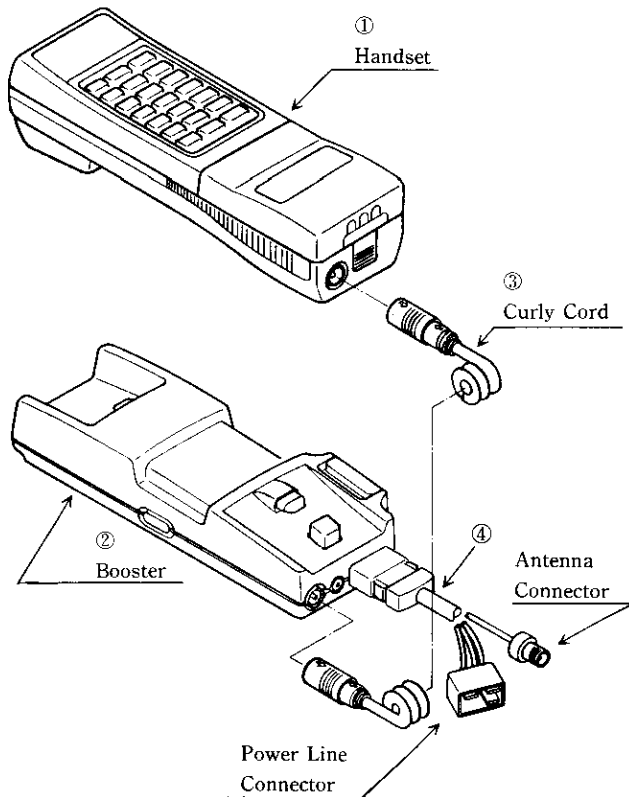


Figure 1. System Configuration

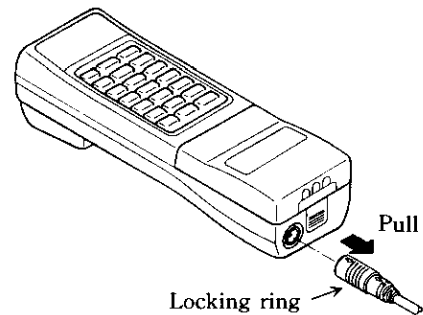
Table 1. List of Equipment

No.	Name of the Equipment	Remarks
1	CTX4500 Handset	
1-1	Handheld Portable Unit with Battery Pack (BTR40)	①
1-2	Battery Charger (Desk Top, DTC30)	Page 9
1-3	AC Adaptor (AC120V-DC12V)	-do-
2	CRX50 Booster	
2-1	Booster Unit	②
2-2	Curly Cord	③
2-3	Antenna and Power Cables	④

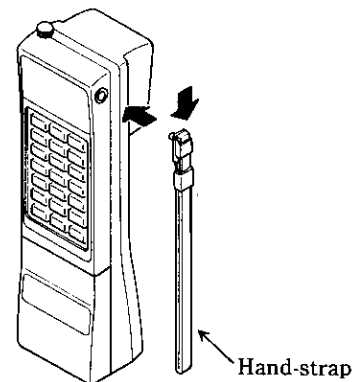
HANDHELD PORTABLE USAGE

When you use the CTX4500 Handset as a Stand - alone Handheld Portable Cellular, follow these procedures:

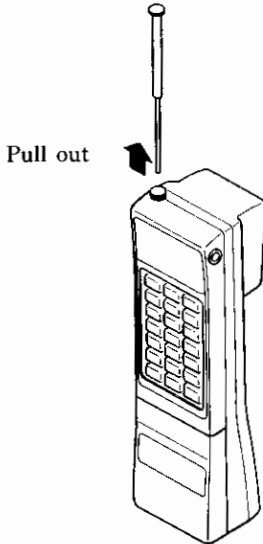
- (1) Unplug the Curly Cord from the Handset by sliding the Locking Ring away from unit to release the connector.



- (2) Attach the Hand-strap as shown in figure.



- (3) Pull out the Retractable Whip Antenna to its full length. (Antenna should be restored after using.)



- (4) Press the **PWR** key of the Keypad for about one second to turn the unit on. To turn the unit off, press the **PWR** key again for about one second.

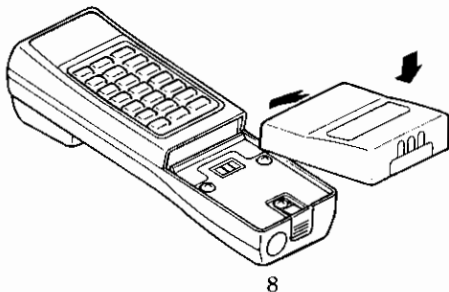
TO ATTACH / DETACH BATTERY PACK

CTX4500 contains a Detachable Battery Pack (BTR40). Fully charged Battery Pack offers approximately 60 minutes Talk Time or 8 hours standby.

Carry a fully charged spare Battery Pack for longer operation.

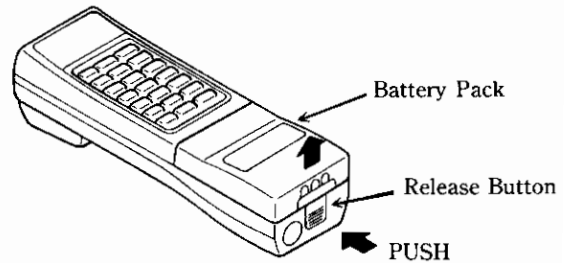
To attach Battery Pack

- (1) Slide the Battery Pack in the unit along the guide.
- (2) Push the lower end of the Battery Pack until it is locked.



To detach Battery Pack

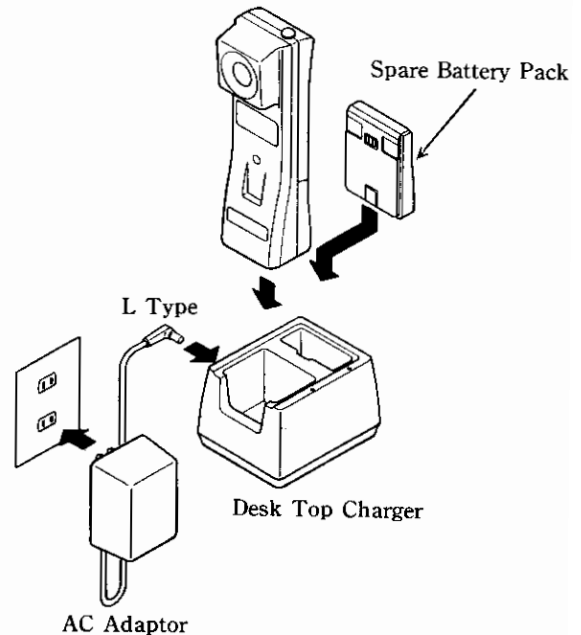
- (1) Push Release Button on the bottom of the unit.
- (2) The bottom end of the Battery Pack will come off from the body.
- (3) Remove the Battery Pack from the body.



To recharge Battery Pack and Handheld Portable Unit

Desk Top Battery Charger (DTC30) can recharge spare Battery Pack and the Handheld Portable Unit at the same time. DC Voltage is supplied by the separate AC Adaptor, and it takes approximately eight hours for full charge.

LED(Light Emitting Diode) indicates the charging conditions. (Lights Green when DC Voltage is supplied and changes to Red while Battery or the Unit is being recharged, upon completion returns to Green again.)



PRECAUTIONS

Your Handheld Portable Telephone is a high quality piece of equipment you should take the following operation precaution:

1. Don't use this equipment in an extreme environment where high temperature or high humidity exist.
2. Don't abuse the equipment. Avoid striking, shaking or shocking. When not using the unit, lay down the unit to avoid possible damage due to instability.
3. Don't expose this equipment to rain or spilled beverages.
4. Charge the battery fully before your first use of the unit.
5. When the battery becomes discharged, two beep tones will be heard every 10 seconds, and the display will show **Discharged**. Replace the discharged battery with a fully charged one, and recharge the discharged battery.
6. To ensure long battery life, don't discharge completely. Remove Battery Pack from the unit when it is not expected to be used for a long period. Recharging at least once every month is recommended.

GENERAL SPECIFICATIONS

(subject to change without notice)

Frequency Range : 824 to 849MHz, Transmit
869 to 894MHz, Receive

Number of RF Channels : 832, Full Duplex

Channel Spacing : 30KHz

Duplex Spacing : 45MHz

Frequency Stability : ± 2.5 PPM

RF Output Power : 0.6W ERP With Power Control
(Handheld Unit only)
3W With Power Control
(With Booster Unit)

Receiver Sensitivity : - 116dBm (12dB SINAD)

Modulation / Demodulation : Voice PM(With Compander)
Data FM

Conducted Spurious : Max. - 60dBc

Operating Temperature :

Telephone Use : - 30 °C to + 60 °C
(Without Battery)
- 20 °C to + 60 °C
(Handheld Unit)

Battery Charge : 0 °C to + 45 °C

Supply Voltage : 7.2V

(Handheld, NiCd Battery

1.2V \times 6, 600mAH)

13.7V \pm 20%

(Booster, Negative Ground)

Current Drain : In Use

Approx. 600mA

(Handheld)

Approx. 2A

(With Booster)

Standby

Approx. 60mA

(Handheld)

Approx. 0.3A

(With Booster)

Operating Time : Talk Approx. 60min. or

(Handheld) Standby Approx. 8 Hours

Size : Handheld Unit

Approx.

27(H) \times 56(W) \times 200(D)mm

1.1(H) \times 2.2(W) \times 7.9(D)inch

With Booster

Approx.

78(H) \times 60(W) \times 200(D)mm

311(H) \times 2.4(W) \times 7.9(D)inch

Weight : Handheld Unit

Approx. 500gr(17.7oz)

With Booster Unit

Approx. 1kg (2.2lb)

FEATURES AND OPTIONS

- Push Button Dialing
- Backlit Keypad and Display with ON / OFF Control
- Large Size Dot-matrix LCD Display
Status / Function Indicator
15 Digit Dial Number
Received Signal Strength Indicator
- (Electronic) Volume Control
- Pre-set Dialing up to 16 Digits (32 Digits: NAM OPTION)
- Extended Readability (Prefix Review)
- Last Digit Clear
- Digit Display Clear

- On-Hook Dialing
- Repertory Dialing: 16 / 80 Digit 99 Memories
- Repertory Memory Scroll
- Automatic Storing into the Vacant Memory Address
- Memory Name Tag
- Alpha Search
- Link Dialing
- Last Number Redial
- Automatic Redial(NAM OPTION)
- Last Number Review
- Mute or Hold Button
- Scratch-pad Dialing (with / without Keying Tone)

- End to End Signaling
- Touch Tone™ from Memory
- Continuous DTMF from Keypad
- * ● Call in Progress Protection
- Call Restriction (NAM OPTION)
- Call Time Display (Five Functions)
- * ● Hands-free Operation (NAM OPTION)
- * ● Call in Absence Indicator
- * ● Safety Timer (NAM OPTION)
- Display Own Telephone Number
- Multiple A / B System Selection
- System Inhibit(NAM OPTION)
- RF Channel Indicator
- Electronic Lock
- Automatic Lock (NAM OPTION)
- Function Review

Notes 1. * = Only when Handset is using the Booster.

FUNCTIONS

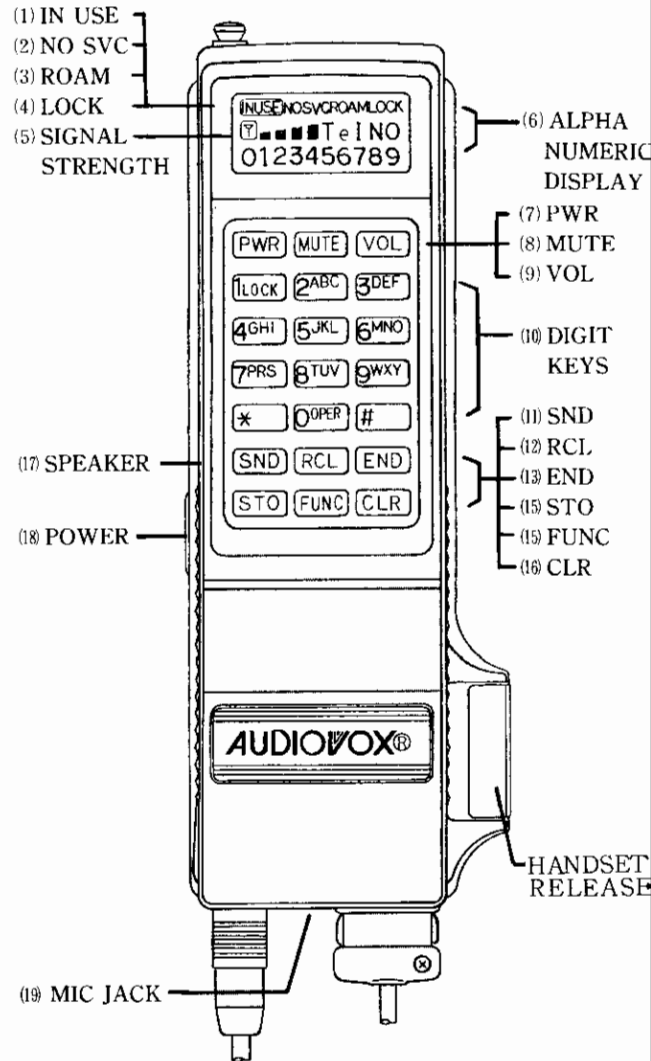


Figure 2. CTX5000 Functions

- (1) **IN USE** indicator lights when a call is in progress.
- (2) **NO SVC** (no service) indicator lights when the unit is in a non-coverage area.
- (3) **ROAM** indicator lights when the unit is out of the home area.
- (4) **LOCK** indicator lights when the unit is locked.
- (5) **SIGNAL STRENGTH INDICATOR**: The number of shaded blocks indicates the Received Signal Strength. **Y** is also used as a **POWER ON** indicator which lights when the unit is turned on.
- (6) **15 CHARACTER FUNCTIONAL ALPHA-NUMERIC DISPLAY**:
First 5 characters usually indicate current function and status conditions.
The remaining 10 characters usually show the last 10 digits of the dialed number.
- (7) **PWR** key is used to turn on / off the unit, only when the unit is used as a Handheld Portable.
- (8) **MUTE** key mutes the transmit audio and, in case of CTX5000, changes the receive audio from the handset to the speaker – also functions as a Hold key.
- (9) **VOL** key is used to control Loudspeaker and Earpiece audio level as well as that of the Alert Tone electrically.
- (10) **DIGIT KEYS** to enter a telephone number.
- (11) **SND** (send) key for originating or receiving a call.
- (12) **RCL** (recall) key recall telephone numbers from memory.
- (13) **END** key terminates a call.
- (14) **STO** (store) key stores number on the repertory dialing list in memory.
- (15) **FUNC** (function) key shifts the digit keys to the functional key.
- (16) **CLR** (clear) key clears the digit(s) from the memory.
- (17) Built-in Loudspeaker of the Booster Unit
- (18) **POWER** switch of the Booster Unit is used to turn on / off the Car Telephone.
- (19) Mic Jack for the Hands – free Microphone

BASIC OPERATION

Turning the Unit On

With the ignition key at “ON” or “ACCESSORY”, press the **POWER** switch. The indicator **Y** will light (all indicators will light momentarily and will show your telephone number, and a tone will be heard).

● Signal Strength Indicator

This enables you to know the Signal Strength in your area. The number of shaded blocks indicates it with four blocks the maximum level. The display will vary as your car moves. If the signal is not strong enough to originate a call, **NO SVC** sign will appear on the readout.

To Store a Number in Memory

1. Press **CLR**, then enter telephone number.
2. Press **STO**, then enter the memory address (01 through 99)

Example:

Press **STO**, key **1** then **5**, the displayed number is stored into memory address 15.

Note: A Number of more than 16 digits can be stored only into memory address 91 through 99.

To Recall a Number from Memory

Press **RCL**, then enter the memory address (01 through 99).

Example:

Press **RCL**, key **1** then **5**, the number stored in memory address 15 will be displayed.

If You Want to Review the Prefix

(Number longer than 10 digits)

After pressing **RCL**, hold down the second digit of the memory address.

Note: When a set of linked numbers is recalled, you can review only the last linked number by this feature.

To review Link 1 to Link 5, use **FUNC**, **RCL** then **X** (X is 1 to 5.)

Last Number Review

Press **RCL**, key **0** then **0** again, the last number in the display returns.

Display Own Telephone Number

You can see your own telephone number on the readout. Press **RCL**, key **X** then **X** again.

Repertory Memory Scroll

This feature will be useful in finding a certain telephone number by scrolling the repertory memory from one of the designated starting addresses.

1. Press **RCL**, key **X** then **#**

X is the digit to assign the starting address as follows.

X	Starting address
0	01
1	11
2	21
.	.
.	.
.	.
8	81
9	91

2. Press **#** or **X**

#: Scroll upward (with roll back to 01)

X: Scroll downward (with roll up to 99)

Memory address and the last seven digits of the stored number will be displayed on the readout as follows.

Example: **3 1 - 1 2 3 4 5 6 7**

Address No. Tel. No.

Note: In this scroll feature, any vacant memory address will be skipped.

Automatic Storing into A Vacant Memory Address

This feature allows automatic storing into a vacant repertory memory address. This eliminates the possibility problem of writing over a previously stored number.

1. Enter a telephone number.
2. Press **STO**
3. Enter the memory address in which you want to store a number.

0: From 01 to 10

1: From 11 to 20

2: From 21 to 30

.

.

.

8: From 81 to 90

9: From 91 to 99

#: From 01 to 99

4. Press **#**

The the memory address and the last seven digits of the stored telephone number will be displayed on the readout as follows.

Example: **3 1 - 1 2 3 4 5 6 7**

If there is no vacant address in the assigned area, telephone number will not be stored in the memory.

To Lock the Unit

Press **FUNC**, then the numeral **1** (LOCK).

The **LOCK** indicator lights. The unit will remain locked until unlocked.

Automatic Lock(NAM OPTION)

If you request it, your NAM can be changed and your unit will automatically go into lock condition when your ignition is turned "off". When the key is turned "on", the unlock code is required to operate the phone.

To Unlock the Unit

Enter the three digit unlock code. The indicator will go out when three digits are the same as the registered code in NAM.

Backlighting Control

LCD display and the keypad will be backlit automatically after the Switch-On.

If needed, backlighting can be turned off pressing **RCL**, key **X** then **5**.

Even if the unit is in the Backlighting-OFF mode, for the duration of 10 seconds after any key operation and when a call is received, backlighting will be turned on again automatically.

To return to the Backlighting-ON mode, press

RCL, key ***** then **5** again.

Volume Control

The audio level of the loudspeaker, earpiece and the alert tone can be adjusted by the Volume Control Button **VOL**.

- **Loudspeaker:** Leave the Handheld in the Booster.
To increase-Keep pressing **VOL** until you get the desired sound level.
To decrease-Keep pressing **VOL** until you get the desired sound level.

Sound level will be displayed on the readout digitally during the level adjustment and the sample tone will indicate the sound level when you are not engaged in a telephone conversation. Display format is as follows.

SPK (1 to 10)

- **Earpiece:** Lift the Handheld Portable Unit or Handheld only, perform the same procedure as above.

In this case, the display format is as follows.

H.S (1 to 9)

- **Ring Tone:** Press **RCL**, key ***** then **6**.

Then adjust the ringing tone level in the same manner as above. Your telephone will ring at the new levels.

In this case, the display format of the readout is as follows.

ALT (1 to 5)

MEMORY NAME TAG

This feature permits you to tag an identifying name (in 5 letters) to each telephone number in the memory address. The name will be displayed each time you recall a number from memory address.

To Enter Names using Alpha

1. Press **FUNC**, then **VOL**. **Alpha** will appear in the display to show Alpha Mode is active.
2. Press digit keys repeatedly until the letter you wish appears. The following table shows which character is assigned with each digit key.

KEY	ASSIGNED ALPHA CHARACTERS				
1	(Blank)	.	-	1	
2 (ABC)	A	B	C	2	
3 (DEF)	D	E	F	3	
4 (GHI)	G	H	I	4	
5 (JKL)	J	K	L	5	
6 (MNO)	M	N	O	6	
7 (PRS)	P	Q	R	S	7
8 (TUV)	T	U	V	8	
9 (WXY)	W	X	Y	Z	9
0	0				
*	*				
#	#				

3. When the letter you wish is displayed, press **VOL** to move to the next space.
4. Go back to step 2, and repeat the same procedures until the complete five character name is displayed.
5. When an entry error is made, press **CLR** momentarily to erase the last character. If you press **CLR** more than a second, all characters in the display will be erased.
6. To exit Alpha Mode, press **FUNC**, then **VOL**.

To Store Name with Phone Number

1. Enter the phone number.
2. Press **FUNC**, then **VOL** to set Alpha Mode.
3. Enter the name you wish. (Refer to "To Enter Alpha Letters")
4. Press **STO**, then enter the memory address (01 through 99), to store the number with the name into memory.
Note: If you enter the phone number after entering the name, the name will be erased.

Example: To store the phone number 123 - 4567 with the name JOHN, into memory address 15.

1. Enter the phone number; 1234567
2. Set Alpha Mode; **FUNC** **VOL**
3. Enter the Name; **5** **VOL** **6** **VOL** **6** **VOL** **6** **VOL**
(J) (O)
4 **VOL** **4** **VOL** **6** **VOL** **6** **VOL**
(H)
4. Store the Number; **STO** 15

To Recall from Memory with Name

Recalling from the repertory memory is identical to standard repertory recall. When the number is recalled, the display will show the Alpha Name Tag as well as the stored phone number.

ALPHA SEARCH

This feature permits you to find a phone number stored in the memory by the first character of the Alpha Name Tag. This search can retrieve all entries beginning with the assigned initial letter.

1. Press **[FUNC]**, then **[VOL]** to set the Alpha Mode.
2. Enter the initial letter, by which you wish to search the phone number. Then press **[VOL]**.
3. Press **[RCL]**, then **[VOL]**. The display will show the first entry whose Name Tag begins with the assigned initial letter, and which is stored in the lowest memory address. Display shows Name Tag, Memory Address and Phone Number.
4. Press **[#]** or **[X]**.

[#]: Scroll memory address upward.

[X]: Scroll memory address downward.

Example:

Operation

[FUNC] **[VOL]**

[5] **[VOL]**

[RCL] **[VOL]**

[#]

[#]

[#]

[#]

[X]

Display													
									A	l	p	h	a
									J	-			
									J	O	H	N	
0	1	-	4	5	6	7	8	9	0				
									J	A	C	K	
0	5	-	7	6	5	4	3	2	1				
									J	A	M	E	S
1	5	-	9	8	7	6	5	4	3				
									J	I	M		
9	9	-	8	7	6	5	4	3	2				
									J	O	H	N	
0	1	-	4	5	6	7	8	9	0				
									J	I	M		
9	9	-	8	7	6	5	4	3	2				

PLACING TELEPHONE CALLS

To Place a Call

1. Enter the telephone number with the Handheld on or off the Booster. The last 15 digits of the dialed number are displayed on the readout. Note: After 120 sec., display will return to the 10 digit display mode.
2. If a dialing error is made, press **[CLR]**, then enter the telephone number again. Pressing **[CLR]** momentarily (less than approx. 0.5 sec.) clears the last digit.
3. Press **[SND]**. The **[IN USE]** indicator will light. You may lift the Handheld from the Booster before or after called party answers to proceed with your conversation. Note: If assigned in NAM, the telephone number can be pre-set up to 32 digits. However, in this case, it is necessary to confirm with system operator whether such service is available or not.

If the Call Fails to Go Through

1. If you hear the "reorder" signal, press **[END]**, then if there were no dialing errors, press **[SND]** for redial. (Digit key re-dialing is not necessary.)
2. If the "intercept" signal is heard, hang up, then redial the correct number.

Automatic Redial(NAM OPTION)

If selected, your unit will automatically make five attempts to reach the cell site when the first try is not successful. The **[IN USE]** indicator will stay on, but the speaker will be muted for twenty seconds. This is done so you do not hear the reorder signals out of the speaker. If you wish to terminate the automatic redial, press **[END]**.

Terminating a Call (Hanging Up)

Press **[END]**, or replace the Handheld in the Booster. The **[IN USE]** indicator will go out. If Hands-free is activated in NAM, you have to press **[END]** key to terminate a call.

To Receive Calls

1. When the telephone rings, lift the Handheld to answer. **[IN USE]** indicator will light.
2. If the Handheld is out of the Booster when ringing starts, press **[SND]** to answer a call.

To Place a Call with a Number in the Memory

1. Press **[RCL]**, then enter the memory address (01 through 99). The last ten digits of the number will appear on the readout. If the number is longer than 10 digits, hold down the second digit of the memory address (after pressing **[RCL]**) to see the prefix.

Note: See Recall a Number from Memory and Want to Review the Prefix for more details.

2. Press **[SND]**. The **[IN USE]** indicator will light as a call is placed. You may lift the Handheld from the Booster either before or after the called party answers to proceed with your conversation.

To Mute Phone Conversation

1. Press **[MUTE]**. The **[Mute]** will appear on the readout. The transmit audio will be muted and the receive audio will be heard from the loudspeaker. You may converse privately with a passenger during a call with the handset either "on-hook" or "off-hook".
2. To return to normal conversation:
When not in the Hands-free Mode.
if "off-hook", press the **[MUTE]** key.
if "on-hook", lift the Handheld from the Booster.
When in the Hands-free Mode,
Press the **[MUTE]** key, or lift the Handheld from the Booster.
3. Mute is reset when call is terminated.

Call in Progress Protection (when handset is using Booster)

Phone conversation will continue after ignition is turned off until call is terminated.

CALL RESTRICTION (NAM OPTION)

This feature permits you to impose various kinds of restrictions on Outgoing Calls.

To Set Mode of Call Restriction

Enter three digit Security Code (assigned by NAM), then press **[FUNC]**, key **[#]** then **[7]**.

The following key operation is needed to activate one of the restriction modes;

- [1]**: Only telephone numbers having 11 digits or less accepted. Operator assisted dialing is prohibited.
- [2]**: Only telephone numbers having 7 digits or less is accepted. Operator assisted dialing is prohibited.
- [3]**: Operator assisted dialing (0 Origination) is prohibited.
- [4]**: No phone calls can be placed except for repertory dialing from memory address 01 to 09.
- [0]**: No restriction.

To Exit Call Restriction Programming Mode

Press **[FUNC]**, then **[CLR]**.

- Note: (1) When in mode 4, number storage into the memory will not be permitted.
(2) In the restriction mode, a short beep tone will be heard to inform you of the wrong operation, and the word **[Restricted]** will be shown on the readout.

HANDS-FREE OPERATION (NAM OPTION)

(when Handset is Using Booster)

This feature permits you to engage in conversation without lifting the Handheld Portable Unit.

- (1) After receiving a call (press **[SND]** to answer), conduct the conversation via the hands-free external microphone and the loudspeaker in the Booster Unit.

Speak a little louder than you would when using the handset.

It is preferable to turn-off the radio or stereo and close the car windows.

- (2) To originate a call, enter the telephone number, then press **[SND]**. The microphone will be turned on, ready for conversation when your party answers.
- (3) After a call is completed. Press **[END]** to terminate a call.

Note: (1) When this option is activated, as the unit always operates in Hands-free Mode, you should press **[END]** to terminate a call.

(2) Even if this option is installed, you can of course engage the conversation via the Handheld, but you have to press **[END]** to terminate a call.

(3) When you hear feedback on a bad RF Channel, adjust the hands-free loop attenuation as follows.

1) Press **[FUNC]**, key **[7]** then **[2]**.

Hands-free loop attenuation will be increased by 6 dB.

2) To return to the normal condition, press **[FUNC]**, key **[7]** then **[1]**.

END TO END SIGNALING

This feature permits you to utilize some attractive ways of using the phone, such as accessing discounted long distance network, signal pager, or banking by phone etc..

For these purpose the signalling should be in DTMF (Touch Tone™). The following two features will make in more easier to place call in DTMF.

Touch Tone™ from Memory

DTMF signalling by repertory dialer is available even while engaged in a telephone conversation.

1. Press **[RCL]** **[RCL]**, then enter the repertory memory address.

The last ten digits of the number will appear on the readout.

2. Press **[SND]**. Then DTMF signalling will be placed and the DTMF tone can be monitored through the loudspeaker.

Note: Continuous DTMF from keypad can be manually dialed as well to access answering machines when engaged in a telephone call.

Link Dialing

This feature permits you to pre-set from repertory memory or key pad up to five numbers before originating a call. With this feature, the first number is sent in digital form to the cell site. Then up to four other numbers can be sent with DTMF signalling by simply pressing **[SND]** for each additional number.

Note: (1) Each number to be linked may be recalled from memory or entered by key pad.

(2) Each number to be linked should be within 16 digits including linking mark "=" at the end.

(3) Linked number can be stored in the memory. However, numbers of more than 16 digits should be stored into memory address 91 through 99.

Example: To access the Discounted Long Distance Call, you should call Long Distance Service Office first, and enter your ID number, then the telephone number to be placed.

1. Recall the Telephone Number of the Long Distance Service Office.

[] [] [] [] [] [] [] [] [] []
[] [] [] [] [] [] [] [] [] []

2. Press **[FUNC]**, then **[*]**.

Linking Mark "=" will be added after the number placed before.

[] [] [] [] [] [] [] [] [] []
[] [] [] [] [] [] [] [] [] []

3. Recall you ID number.

[] [] [] [] [] [] [] [] [] []
[] [] [] [] [] [] [] [] [] []

4. Press **[FUNC]**, then **[*]**.

[] [] [] [] [] [] [] [] [] []
[] [] [] [] [] [] [] [] [] []

5. Recall the telephone number to be called.

[] [] [] [] [] [] [] [] [] []
[] [] [] [] [] [] [] [] [] []

6. Press **[SND]**. The **[IN USE]** indicator will light as the call is placed. **[Link 1]** will appear in display.

7. After you received an answer from the Long Distance Service Office, press **[SND]** again. The DTMF signal will be placed and the DTMF tone of your ID number can be monitored through the loudspeaker. **[Link 2]** will appear in display.

8. If your ID number is accepted, the Long Distance Service Office will answer again, so press **[SND]**. Then the long distance call will be placed and the DTMF tone can be monitored through the loudspeaker.

Link 3 will appear in display.

Note: If a set of linked numbers has been stored in memory address 91 through 99, press

RCL then memory address (91 through 99), then **SND** .

Link 1 will appear in display, and the first linked number will be called.

Following procedures are the same as step 7 and onward of the example above.

SCRATCH-PAD DIALING

This feature permits you, while engaged in a conversation, to enter a number to be re-dialed (or store a number in memory).

SCRATCH-PAD DIALING WITHOUT KEYING TONES

This feature permits you to activate scratch-pad memory without annoying key tones over the circuit.

1. Press **FUNC** , **MUTE** then enter a telephone number. The Microphone circuit will remain active, but the tones will not be heard.
2. If necessary, press **STO** , then enter the memory address.
3. To exit the Scratch-pad Mode, press **FUNC** , **MUTE** again.

CALL TIME DISPLAY

This feature automatically records the elapsed time per conversation.

The talk time of the last call, cumulative talk time, and the number of calls can be displayed on the readout.

The timers can also be cleared if necessary.

With beep tones you can be notified of the approximate talk time (NAM Option).

To Display the Talk Time of the Last Call

1. Press **RCL** , key **X** then **1** .

The talk time of the last call will be displayed on the readout for 5 seconds.

While in a conversation, the talk time of a call in progress will be displayed, and updated each second.

The display format is as follows.

1m25 ... 1 min and 25 sec

To Display the Cumulative Talk Time

1. Press **RCL** , key **X** then **2** .

The cumulative talk time will be displayed on the readout in minute format for 5 seconds.

18m ... 18 min

To Display the Number of Calls

1. Press **RCL** , key **X** then **3** .

The number of calls will be displayed on the readout for 5 seconds.

The display format is as follows.

86c ... Received or placed 86 calls.

To Clear the Timer

1. Press **CLR** , then enter the three digit code specially assigned.(NAM Option)
2. Press **STO** , key **X** then **1** .

The timers will be cleared, and the count for the cumulative talk time and the number of calls will start from zero.

One Minute Beep (NAM OPTION)

During conversation, you can be notified of talk time roughly by tones for the first five minutes.(every one minute you can hear a short monotone signal).

A / B SYSTEM SELECTION

This feature permits you to select the system you wish to use. The system that you are registered with is the preferred system, and your home system.

1. Standard Mode

When you turn the unit on, the unit remembers the last position of the A / B selector, and will start to scan the radio frequency channel of that selection.

If you want to confirm the current mode, press **FUNC**, key **0** then **4**. Status indicator shows the current mode. To return the unit to the standard mode, press **FUNC**, key **0** then **0** again. Status indicator shows **STD**. The unit will scan the preferred system channels. If unable to find an acceptable preferred channel, the unit switches to scan the non-preferred channels.

2. Preferred System Only Mode

Press **FUNC**, key **0** then **1**. Status indicator shows **PRF**. The unit will scan the preferred system only and prevents switching over to the non-preferred system.

3. Non-preferred System Only Mode

Press **FUNC**, key **0** then **3**. Status indicator shows **N-PRF**. The unit will scan the non-preferred system only.

4. Home Only Mode

Press **FUNC**, key **0** then **2**. Status indicator shows **Home**. You can place or receive calls only within your home area.

Note: (1) The **ROAM** indicator lights as follows.

Lights continuously;

When the unit in the preferred system in another city.

Flashes; When the unit is in the non-preferred system.

(2) The **NO SVC** indicator flashes when the mobile unit is requesting service but not in the requested service area.

SYSTEM INHIBIT (NAM OPTION)

This feature permits you to select (by NAM Option), any interfering system, or Roam System you do not want to use, even when in that service area.

NO SVC indicator flashes, if your A / B switch is selected to any system that is inhibited.

RADIO FREQUENCY (RF) CHANNEL INDICATOR

If necessary, you can see the RF channel number in which your unit is operating.

1. Press **RCL**, key **X** then **4**. The RF channel number in which your unit is operating will be displayed on the top line of the readout. RSSI (decimal format) and SAT frequency will be displayed on the bottom line. The display format is as follows:

						C	1	2	3
R	1	8	7			S	6	0	3
								0	

C123 RF channel Number

R187 RSSI value

S6030 SAT Frequency

2. When on a call, the display will update when a handoff occurs.
3. The display will remain in the display until you manually reset it by pressing any key.

CALL IN ABSENCE INDICATOR

(when Handset is using Booster)

This feature indicates to you that a call came in while you were out of your car.

1. Before leaving the car, with the ignition switch on, press **FUNC**, then **3**. The display shows **Call**. Turn off the ignition switch, but leave the car telephone power switch ON. If necessary, lock the unit.
2. When a call is received, the unit indicates it by flashing the **CALL** display on the readout.
3. This mode is deactivated:
 - 1) When the ignition switch is again turned to "on" or "accessory".
 - 2) After 8 hours, or
 - 3) By pressing **FUNC**, then **3** again.
4. The **CALL** indication will remain in the display until you manually reset it by pressing any key in the Handheld Portable Unit or by lifting it from the Booster Unit.

Note: The 8 hour timer can be changed with the Safety Timer feature.

SAFETY TIMER

(NAM OPTION)

(when Handset is Using Booster)

Call in Absence Indicator feature will be disabled at the preset time by NAM. The programmable time range is from 1 to 31 hours. (Originally set to 8 hours.)

CHARGING THE BATTERY IN ABSENCE

With this feature you can charge the battery equipped with your Handheld Portable Unit, even if you turn off the ignition switch.

1. Before leaving the car, with the ignition switch on. Press **[FUNC]**, then **[5]**. (The display shows

[Charg].)

Turn off the ignition switch, but leave the telephone power switch ON. The display changes to **[Charging]**, then your unit works only for charging the battery.

2. To prevent discharging the car battery, this mode will be automatically deactivated when the charging is completed or when the ignition switch is turned to ON or Accessory position.
3. To deactivate the Charging Mode manually, press **[FUNC]** then **[5]** again.

FUNCTION REVIEW

This feature tells you which numbered keys to use for different FUNC / RCL key functions.

To review the function menu:

Press **[FUNC]** for about one second.

Scroll the menu up or down, using the **[#]** or **[X]** key respectively.

The display information will appear as follows.

DISPLAY	FUNCTION
[Lock] [FUNC 1]	Lock
* [Call] [FUNC 3]	Call in Absence Indicator
* [Charg] [FUNC 5]	Battery Charge in Absence
[ABsys] [FUNC 0 0-4]	A / B System Selection
* [HF] [FUNC 7 1-2]	Hands-free Adjustment
[Timer] [RCL * 1-3]	Call Timer
[RF CH] [RCL * 4]	RF Channel Indication
[Light] [RCL * 5]	Backlighting Control
[Alert] [RCL * 6]	Alert Volume Control
[Tone] [FUNC MUTE]	DTMF Tone Mute
[Alpha] [FUNC VOL]	Alpha Mode
[Restr] [XYZ FUNC#7]	Call Restriction Mode

Note: (1) * = Only when Handset is using
Booster.

(2) XYZ = security code

IMPORTANT SAFETY INFORMATION

Please read and follow these cautions carefully:

TURN OFF your unit in an explosive atmosphere (near a fuel pump, blasting area, etc.).

DO NOT operate your unit when someone is within two feet (0.6 meters) of your antenna when using Booster.

DO NOT dial when your vehicle is moving in those states where this action is illegal (this is not a prudent practice, even where it is legal).

DO NOT permit untrained personnel to operate the unit.

Special Registration Feature Kit

MULTIPLE CITY REGISTRATION

Some cellular users find it beneficial to register their phone in multiple cities, rather than rely on "roam". The multiple city registration feature permits you to reprogram from the handset, the different phone numbers for the cities in which you are registered. Each programmed telephone number will be designated as your home system.

Press **CLR**, and enter the new system ID number (5 digits) followed by the corresponding telephone number (10 digits). You must register your phone with the carrier in order to get both the ID # and your phone # .

Press **FUNC** then **6**. Your new telephone number will be displayed on the readout. (Holding down **6**, to display your new system ID number.)

- Note:
1. System ID number and telephone number can not be programmed during a call.
 2. Calls are placed or received using only the programmed telephone number, in use at the time of call.

FUNCTION REVIEW (ADDITIONAL)

DISPLAY	FUNCTION
[ID]	[(ID) FUNC 6] Multiple City Registration