Owner's Operating Instructions

832 Plus
CELLULAR
CAR TELEPHONE

NYNEX
Mobile Communications (2)



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NYNEX CELLULAR CAR TELEPHONE FOR BUSINESS ON THE MOVE

NYNEX is a leader in the cellular telephone industry. The NYNEX line features state-of-the-art technology throughout. The newest entry into the market is NYNEX's 832 Plus. This 3rd generation phone features exciting technological advances and the sleekest, slimmest styling to date.

The 832 Plus can be made into a transportable phone with the addition of the optional accessory TCT-200. In the transportable mode the 832 Plus provides more standby time than previous models, making cellular communications even more convenient.

The styling of the 832 Plus is sleek and trim, and features a mini transceiver. In addition, the 832 Plus cellular car telephone offers an outstanding array of features such as push button on-hook dialing that enables you to dial while the handset is in the cradle: repertory dialing that lets you store and recall up to 50 of your most frequently called numbers; and last number redial that permits you to redial the last number you called at the touch of a single button (a great help when calling frequently busy phones). An electronic "scratch pad" allows you to enter a number into the unit while you are engaged in a conversation: the number can be recalled later using the repertory dialing or last number redial features. The 832 Plus also has a call time display feature that automatically counts the time that your phone is in operation, and Touch Tone™ from memory that allows you to access alternate long distance services, signal pagers or bank by phone.

NYNEX has made the installation and maintenance of the cellular car telephone simple. A flexible mounting system allows the phone to be mounted wherever you want.

For all its high-tech sophistication, the NYNEX 832 Plus cellular car telephone is surprisingly easy to use; you simply dial, no codes, no operators, no waiting, no hassle.

And the NYNEX cellular car telephone is a no-nonsense, high quality instrument, rugged enough for off-road use as well as high speed freeway vibration.

The following pages, which describe the unit's functions, will help you to make the easiest and most efficient use of your NYNEX 832 Plus Cellular Car Telephone.

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

Receiving Signal Strength Indicator

- Pre-set Dialing up to 16 Digits (32 Digits: NAM OPTION)
- •16-Digit Extended Readability
- •Last Digit Clear
- •Digit Display Clear
- On-Hook Dialing
- •Repertory Dialing: 16 Digit 50 Memories shared with Scratch pad Memory
- •Repertory Memory Scroll
- · Automatic Storing into the Vacant Memory Address
- ·Link Dialing
- •Last Number Redial
- Automatic Redial (NAM OPTION)
- •Last Number Review
- •Call Restriction (NAM OPTION)
- •Electronic Scratch Pad
- •End-to-End Signaling
- •Touch ToneTM from Memory
- •Call in Progress Protection
- •Five Function Call Time Display
- •Handsfree Operation (NAM OPTION)
- •Horn Alert (NAM OPTION)
- •Call in Absence Indicator
- ·Safety Timer
- Display Own Telephone Number
- •Multiple A/B System Selection
- System Inhibit (NAM OPTION)
- •RF Channel Indicator
- •Electronic Lock
- Automatic Lock (NAM OPTION)
- •Function Review
- Rear Seat Extension (OPTION)
- •Flexible Mounting

Touch Tone™ is the registered trademark of AT&T.

GENERAL SPECIFICATIONS

(subject to change without notice)

Frequency Range:

824 to 849 MHz Transmit

869 to 894 MHz Receive

Number of RF Channels:

832 Full Duplex

Channel Spacing:

30 kHz

Duplex Spacing:

45 MHz

Frequency Stability:

 ± 2.5 PPM

Operating Temperature:

-30° to +60°C

Supply Voltage: Current Drain: 13.7V DC, ±20%, Negative Ground approx. 1.5A in use, 0.2A standby

Size:

Transceiver:

30Hx200Wx160D[mm]

1.18Hx7.87Wx6.30D(inches)

Telephone Unit:

61Hx60Wx200D(mm) 2.40Hx2.36Wx7.87D(inches)

Weight:

Transceiver:

approx. 1.2 kg (2.64 lbs)

Telephone unit:

approx. 0.4 kg (0.88 lbs)

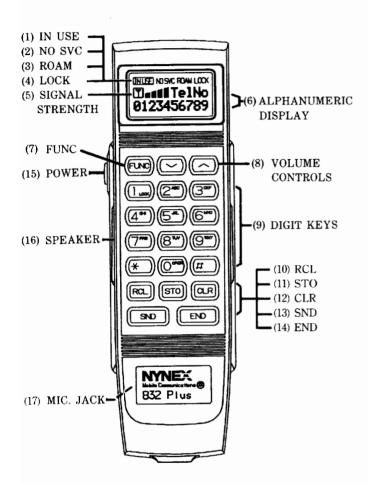
RF Power Output:

3 watts (50 ohms)

Conducted Spurious:

60 dB Below Carrier

TELEPHONE UNIT FUNCTIONS



- (1) **IN USE** indicator lights when a call is in
- (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 Receiving Signal Strength.

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 indicate current function and status conditions.
 - The remaining 10 characters show the last 10 digits of the dialed number.
- (7) FUNC (function key) shifts the digit keys to functional keys.
- (8) \overline{\mathbb{V}}, \overline{\Lambda}\) keys control Loudspeaker and Earpiece audio level as well as Alert tone.
 \overline{\mathbb{V}}\): Lower. \overline{\Lambda}\): Louder
- (9) DIGIT KEYS to enter a telephone number.
- (10) RCL (recall key) recall telephone numbers from memory; also used as the FUNCTION KEY.
- (11) STO (store key) stores number on the repertory dialing list in memory.
- (12) CLR (clear key) clears the digit(s) from the display.
- (13) SND (send key) for originating or receiving a call.
- (14) **END** (key) terminates a call.
- (15) **POWER** switch controls power to the unit.
- (16) Built-in Loudspeaker.
- (17) MICROPHONE JACK for HANDS-FREE.

BASIC OPERATION

Turning the Unit On

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

Signal Strength Indicator

The number of the shaded blocks indicates the Signal Strength in your area. Four blocks is the maximum level. The display will vary as your car moves. If the signal is not strong enough to originate a call, **NO SVC** indicator will appear on the readout.

To Store a Number in Memory

- 1. Press **CLR**, then enter the telephone number.
- 2. Press STO, then enter the memory address (01 through 50).

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

ТΛ	Docall	•	Number	from	Memory
10	Kecan	а.	Number	irom	Memory

Press **RCL**, then enter the memory address (01 through 50).

Example:

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

To Review the Prefix

(Number Longer than 10 digits)
After pressing RCL, hold down the second digit of the memory address.

Last number Review

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

Display Own Telephone Number

You can see your own telephone number on the readout.

Press RCL, key *, then * again.

Repertory Memory Scroll

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

Press RCL, designated key see "X" below X then X is the digit to assign the starting address as follows.

X	Starting address
0	01
1	11
2	21
3	31
4	41

2. Press # or *.

: Scroll upward (with roll back to 01)

: Scroll downward (with roll to 50)

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

For example: 31-1234567

Address No. Tel. No.

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

Automatic Storing into a Vacant Memory Address

This feature allows automatic storing into a vacant repertory memory address. This solves the problem of writing over previously stored numbers.

- 1. Enter a telephone number.
- 2. Press STO
- Enter the memory area which you want to store number.

0: From 01 to 10

1: From 11 to 20

2: From 21 to 30

3: From 31 to 40

4: From 41 to 50

: From 01 to 50

4. Press

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

For example: 31-1234567

If there is not vacant address in the assigned area, the 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, even if the ignition switch is turned off.

Automatic Lock (NAM Option)

If you request it, your NAM can be programmed so that your unit will automatically lock 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 "lock" indicator will go out.

Backlighting Control

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

If needed, backlighting will be turned off by pressing RCL, * then 5.

In the backlighting "off" mode, backlighting will be turned on automatically, 10 seconds after a call is received or any key is operated.

To return to the backlighting-on mode, press RCL, then 5 again.

Volume Control

The audio level of the loudspeaker, earpiece and the alert tone can be adjusted by the Volume Control Buttons ($\overline{\Lambda}$) and \overline{V}).

Loud Speaker: Leave the handset in cradle:
 To increase — Keep pressing Button until you get the desired sound level.

To decrease − Keep pressing **V** Button 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 if you are not engaged in a telephone conversation.

Display format is as follows:

SPK [(1 to 10)

•Handset: Lift the handset and perform the same procedures as above.

In this case, the display format is as follows:

H.S [(1 to 10)

•Alert Tone: Press RCL, key * then 6.

Adjust the alert tone level in the manner as above. Your telephone will sound the alert tone level by ringing.

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

ALT [(1 to 5)

PLACING TELEPHONE CALLS

To Place a Call

- Enter the telephone number with the handset on-hook or off-hook. The last 15 digits of the dialed number are displayed on the digital readout.
 Note: After 2 mins., 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 only the last digit.
- 3. Press SND. Then the IN USE indicator will light. You may lift the handset from the cradle either before or after the called party answers to proceed with your conversation.

Note: There is a NAM program change available if you need to call numbers longer than 16 digits. Before arranging a NAM program change, call your service carrier to see if they offer 32-digit cellular service.

If the Call Fails to Go Through

- 1. If you hear the "reorder" signal, press END.

 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, and 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 signal out of the speaker. If you wish to terminate the automatic redial, press END.

Terminating a Call (Hanging Up)

Press **END**, or replace the handset in the cradle. 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

- When the telephone rings, lift the handset to answer. The IN USE indicator will light.
- 2. If the handset is out of the cradle when ringing starts, press [SND] to answer a call.

To Place a Call to a Number in the Memory

- Press RCL, then enter the memory address (01 through 50). 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.
 - Also see Last Number Review Option.
- 2. Press SND. The IN USE indicator will light as a call is placed. You may lift the handset from the cradle either before or after the called party answers to proceed with your conversation.

To Mute a Phone Conversation

- Press FUNC, then 8. The Mute will appear on the readout. Then 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".
- To return to normal conversation:
 When not in the Hands-free Mode,
 if "off-hook", press FUNC, then again.
 if "on-hook", lift the handset from the cradle.
 When in the Hands-free Mode,
 Press FUNC, then again, or lift the handset
- 3. Mute is reset when call is terminated.

Call in Progress Protection

from the cradle.

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

(NAM OPTION)

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

To Set Call Restriction Mode

Enter the three-digit Security Code (assigned by NAM), 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 are accepted.
- 2 : Only telephone numbers having 7 digits or less are accepted.
- 3: Operator assisted dialing (0 Origination) is prohibited.
- No phone calls can be placed except from repertory memory address 01 to 09.
- 0 : No restriction.

To Exit Call Restriction Programming Mode

Press FUNC, then CLR.

Note.

- (1) When in restriction mode 4, number storage into the memory will not be permitted.

HANDS-FREE OPERATION (NAM OPTION)

This feature permits you to engage in a conversation without lifting the handset.

- After receiving a call (press SND to answer), conduct the conversation via the hands-free external microphone with the loudspeaker in the cradle. To converse more naturally:
 - a. Speak in a normal tone.
 - Turn off the radio or stereo and close the car windows.
- To originate a call, enter the telephone number, then press SND. The microphone will be turned on, ready for conversation when your party answers.
- After a call is completed, press END to terminate the call.

Note: If 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 additional services, such as accessing an alternate long distance network, signal a pager, bank by phone, etc.

For these services the signaling should be in DTMF (Touch ToneTM). The following features will make it easier to send DTMF codes.

Touch ToneTM from Memory

DTMF signaling by repertory dialing is available while engaged in a telephone conversation.

- Press RCL RCL, then enter the repertory memory address (01 through 50).
 The last ten digits of the number will appear on the readout.
- Press SND. Then DTMF signal will be sent and monitored through the loud speaker.

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 signaling by simply pressing SND for each additional number.

Notes. (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 numbers can be stored in the memory. However, the total number of digits must be less than 16 digits.

Example: To access an alternate long distance service. To access an alternate long distance service, you should call your long distance service office first, and enter your ID number, then the telephone number to be placed.

 Recall the telephone number of the long distance service office.

7463479

2. Press FUNC, then *.

Linking mark " = " will be added at the end of the number, and Link 1 will appear in the display.

7463479 =

3. Recall your ID number.

6714852

4. Press **FUNC**, then *****. **67114852=** and **Link 2**

- 5. Recall the telephone number to be called. 1234567890
- Press SND. The INUSE indicator will light as the call is placed. Link 1 will appear in display.
- After you receive the signal from the long distance service office, press SND again. The DTMF signal will be sent and your ID number will be heard through the loudspeaker. Link 2 will appear in display.
- If your ID number is accepted, the long distance service office will signal again, so press SND again.

The long distance number you are calling will be sent and the DTMF tone will be heard through the loudspeaker. Link 3 will appear in the display.

SCRATCH-PAD DIALING

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

SCRATCH-PAD DIALING WITH KEYING TONES OFF

This feature permits you to turn off DTMF so the keypad can be used without tones.

- Press FUNC, 9 then use the keypad.
 TONE will be displayed for 5 seconds. The Microphone circuit will remain active, but the tones will not be heard, or sent when the keys are pressed.
- If necessary, press STO, then enter the memory address (01 through 50), to store numbers in memory.
- 3. To exit the TONE OFF mode, press **FUNC** then **9** again, or turn the phone off.

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 $\boxed{\textbf{RCL}}$, key $\boxed{*}$ then $\boxed{\textbf{1}}$.

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. This display format is as follows:

1m25	1	min	and	25	sec
------	---	-----	-----	----	-----

To Display the Cumulative Talk Time

1. Press RCL, key * 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

Press RCL, key * 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

from zero.

- Press CLR, then enter the three-digit code specially assigned.
- Press STO, key * then 1.
 The timers will be cleared, and the count for the cumulative talk time and the number of calls will start

One Minute Beep (NAM Option)

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

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, 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.

- 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 nonpreferred system only.
- 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 is in the preferred system in

another city.

Flashes

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

Note 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 inhibit (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 then 4. The RF channel number in which your unit is operating will be displayed on the readout. The display format is as follows:

C 1 2 3 1 2 3 Channel

- When on a call, the display will update when a handoff occurs.
- 3. The control channel is displayed for 5 seconds.

HORN ALERT (NAM OPTION)

- 1. Press **FUNC**, then key **2**. The **Horn** will appear on the readout. Turn off the ignition switch, but leave the car telephone power switch ON. If necessary, lock the unit.
- When a call is received, the unit will either sound the horn or flash the lights five times, depending on how the horn alert has been connected to the car.
- This mode is automatically deactivated when the ignition switch is turned to "on" or "accessory" positions, or after 8 hours to prevent battery discharge.

CALL IN ABSENCE INDICATOR

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

- Before leaving the car, with the ignition switch on. Press <u>FUNC</u>, then <u>3</u>. The display shows <u>Call</u>. Turn off the ignition switch, but leave the car telephone Power Switch ON. If necessary, lock the unit.
- When a call is received, the unit indicates it by flashing the CALL display on the readout.
- This mode is deactivated, but display remembers if a call has been received:
 - 1) "ON" or "ACCESSORY" is turned on,
 - 2) After 8 hours, or
 - 3) By pressing **FUNC**, then 3
- The flashing CALL indication will remain in the display until you manually reset it by pressing any key in the handset or by lifting the handset.

FUNCTION REVIEW

This feature shows 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 key respectively.

The display information will appear as follows.

DI	SPLAY	FUNCTION
[Lock]	[FUNC 1]	Lock
[Horn]	[FUNC 2]	Horn
[Call]	[FUNC 3]	Call in Absence Indicator
[HF]	[FUNC 7 1-2]	Hands-free Adjustment
[Mute]	[FUNC 8]	Mute
[Tone]	[FUNC 9]	DTMF Tone Mute
[ABsys]	[FUNC 0 0-4]	A/B System Selection
[Timer]	[RCL * 1-3]	Call Timer
[RF CH]	[RCL * 4]	RF Channel Indication
[Light]	[RCL * 5]	Backlighting Control
[Alert]	[RCL * 6]	Alert Volume Control
[Restr]	[XYZ FUNC #7]	Call Restriction
		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 meter) of your antenna.

DO NOT dial when your vehicle is moving in 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.

WARNING

The following offenses can be punished by fine, imprisonment, or both:

- $\bullet Using obscene indecent or profane language.$
- •Using the unit to give off false distress calls.
- Wiretapping or otherwise intercepting a telephone call unless that person has first obtained the consent of the parties participating in the call.
- Making anonymous calls to annoy, harass or molest other people.
- Charging to an account without authorization to avoid payment for service.
- Refusing to yield a party line when informed that it is needed for an emergency call. (It is also unlawful to take over a party line by stating falsely that it is needed for an emergency).