ELCOTEL INC.

TELECOMMUNICATIONS SYSTEMS

SOFTWARE PRODUCT MANUAL

SOFTWARE RELEASE 4.2

ELCOTEL INC.

6428 PARKLAND DRIVE
SARASOTA, FL 34243
(813) 758-0389
1-800-ELCOTEL

SOFTWARE RELEASE 4.2

TABLE OF CONTENTS

SOFTWARE RELEASE 4.2

TABLE OF CONTENTS

SOFTWARE RELEASE 4.2

TABLE OF CONTENTS

SOFTWARE RELEASE 4.2

TABLE OF CONTENTS

SOFTWARE RELEASE 4.2

1.0 INTRODUCTION

Software release 4.2 adds major enhancements to the PCM and advantages over the 4.1.x series software. It operates with Series-2, -3, and -4 PCMs., with the exception of downloading, which will not function with a PCM-2.

Feature higlights of Software Release 4.2 include:

- Downloading of rating data, registers, and options from PNM to the payphone.
- Dialing language enhances the ability to support additional AOSs and special dialing requirements.
- Credit card routing at the payphone.
- Additional NPA-555-1212 pricing.
- Service number/service desk.
- Secondary dial tone detect and secondary call blocked.
- Real dial tone option.
- Local, IntraLATA or Intrastate reroute.
- Coin jam alarm.
- 00 call routing.
- Payphone as an extension.
- Ring no answer limit.
- LD*OS completion timer for 0 call counter.
- Repeating "please wait" or ringback.

SOFTWARE RELEASE 4.2

2.0 Product Overview

4.2 series software can work with or without PNM and with or without EEPROM. If using the new EEPROM as a rating chip, it is possible to burn changes into it through voice telemetry; however, you must use PNM and modem telemetry to initialize the EEPROM. Therefore, if you do not intend to use PNM, you will want to use your 4.2 series software with a standard EPROM rating module or chip.

There is a significant advantage to using PNM and EEPROM. If there is an electrical surge causing the RAM to become corrupted, the microprocessor will reload the rating module or chip so that the phone will be fully operational again; however, a reload from a standard EPROM will cause any changes that you programmed into RAM to be lost. You will then have to reprogram those variables into RAM. With the new EEPROM, changes can be made with either voice telemetry or modem telemetry, and these changes can be burned into the EEPROM from RAM. Then, the EEPROM is updated to include the changes you want. When a reload situation occurs, the RAM will reload with an EEPROM containing the most up-to-date data.

Another useful aspect of this software with PNM is that variables, such as options, registers, and band charges, etc., and rate changes can be downloaded from PNM to the RAM, and then burned into the EEPROM through PNM. In addition, variables -- but not rate data -- can be uploaded from the RAM to PNM, as in 4.1.x software.

A further advantage to the EEPROM is that it is reusable. New rate data, sent on a floppy diskette, is loaded into PNM. It may then be downloaded to the payphone's RAM and subsequently burned into EEPROM. Again, any necessary editing of the rate data, options, and registers can be accomplished in the maintenance files of PNM, downloaded to the phone's RAM, and burned into EEPROM.

The most significant change to the software itself is in the creation of macros and dialing language. Creation of the dialing language places program code into functional modules. This modular software facilitates the implementation of changes and enhancements. With a more flexible structure and fewer intercode dependencies, changes occur faster and with less difficulty. Each macro can be viewed as a module that executes a number of dialing language commands to direct the call in the most efficient manner, according to its call type and the service

being accessed. Besides the macros available to ensure proper payphone operation for the particular service being used, there are two other dialing macros, residing in RAM, which can be used for future telephone services or services not yet within the scope of our macros. These other dialing macros, resident in RAM, can then be burned into the EEPROM with the dialing language for the new service.

2.1 System Overview

With 4.2 software, the payphone routes the call over the COCOT line to either the LEC (Local Exchange Carrier) operator, AOS #1 (with AOS access and authorization codes), AOS #2 (access number only) or an OCC (1+ calls only). If the PNM is being used, it receives payphone alarms, maintains NXX and rate data, uploads and downloads variables, and downloads rates. In addition, PNM is used to poll the payphone for status. Without PNM, changes must be accomplished through voice telemetry. Alarm and status reports can still be received at a central or home office from the payphone if you use a 300-BPS auto-answer modem and a serial printer.

2.2 Payphone Overview

With 4.2 software, the payphone monitors on/off-hook status, dialed digits, line signalling, and microphone and keypad control. The microprocessor exams the dialed digits to determine the call type. This storage location contains the macro number. The dialing language commands for that macro are then performed, and the call is sent in the desired manner. If the call is a no charge call, dialing control is used to determine when to go on or off-hook to the telco line, when to dial the destination number, and when to start anti-fraud control. If the call is not free, it is validated for number of digits. If the number of digits are incorrect, the payphone's voice will say "please dial again." If the number of digits are correct, the price per zone is determined. On coin calls, the money will be collected. For credit card calls, credit cards are read and the ID is either accepted or not accepted. The call is then passed through dialing control.

Cashbox total, alarms, and call activity information can be monitored via PNM. Voice telemetry can also be used to monitor cashbox total and inactivity. Alarm and status reports can be received by PNM or by a 300-BPS auto-answer modem and a serial

printer. Alarms and inactivity can also be reported by calls to a designated phone through voice telemetry.

2.3 Floppy Disk Rate Data

If using PNM and EEPROM, the rating chip image is stored on a floppy diskette. It can then be inserted into the IBM-compatible computer's floppy diskette drive, generally but not always labeled the A: drive, and copied into the PNM directory. One floppy can be used to supply the rating chip image for a number of payphones provided that the payphones have the same rate center. PNM, however, does not allow more than one phone to have the same station ID number; consequently, a special procedure, which is described in Section 4, must be followed to change station ID numbers prior to uploading. The floppy can then be a convenient backup of the rating chip image.

2.4 Dialing Language Overview

As already mentioned, 4.2 series software processes calls according to the dialing language programmed into the phone. When digits are dialed, the program determines the call type (for example, an operator-assisted commercial credit card call, abbreviated O+CCC) and then the applicable macro to process the call. The macro contains out-dial control, call progress detection, anti-fraud control, and returned DTMF code control. Note that when the AOS returns DTMF code to the phone, it causes the phone to react in a certain way. For example, the phone may hang up and dial the local operator when receiving a DTMF splash back tone or it may send an authorization code to the AOS after receiving the AOS's acknowledgement, or ready, tone. When the particular macro is selected, the dialing language commands within that macro are executed. During the execution of these commands, returned DTMF tones (*, #, A, B, C, D) are detected where applicable, and the appropriate responses are executed.

SOFTWARE RELEASE 4.2

3.0 Feature/Function Description

3.1 Obtaining Rating Data

Complete the rating package questionnaire. This defines the payphone location for rating purposes as well as the options, registers, and other variables to be preprogrammed into the rating chip or module or, if you are using PNM and EEPROM, onto a floppy diskette. Elcotel's rates department then prepares the EPROM rating module or chip or, if you are a going to use EEPROM and PNM, a floppy diskette containing the rating chip image.

3.2 Rates on a Floppy Diskette

Load the rating chip image from the floppy diskette into your PNM directory. Then it can be transferred to the payphone in approximately 5 minutes.

3.3 Changing Settings of the Variables -- Owner Programming

You may alter the settings of many of the variables. These changes can be made from the home office by using PNM, downloading the changes to the payphone's RAM, and burning the changes into an EEPROM. Changes to the options, registers, and NXX information can be maintained in a separate file in PNM. In addition, changes can be made to the phone's RAM through voice telemetry, but these changes will not be in an EEPROM unless they are burned into the EEPROM by setting Command 975 at 1 to disable the EEPROM's lock and entering 969 to burn RAM to EEPROM.

3.4 Loading More than One Payphone from a Single Rating Chip Image

Loading of more than one phone from a file in PNM is possible. Care must be taken with rating data to ensure that the phone location matches the rating center of the file being loaded.

3.5 PNM Uploading of Variables

Once the payphone's rating chip has been loaded by PNM, PNM can then upload and download the variables (options, registers, etc.) to and from PNM's maintenance files. Uploading speed dial numbers, exception groups, and band charges from the phone prior to reloading the RAM will

update the maintenance files with the latest changes made during installation or prior programming.

3.6 Programming EEPROM

There are three methods of programming EEPROM with 4.2 series software. The standard rating module or chip must be removed, and the new EEPROM installed in sockets U7 on PCM-3 or U5 on PCM-4. Note that EEPROM is not available for PCM-2 models, but a new EPROM rating module must be used with the 4.2 software.

3.6.1 Programming the Entire Rating Data Module

PNM downloads the entire rating data module. The entire download is required to initialize a PCM which is equipped with an EEPROM. PNM downloads the entire rating data image, including options, registers, FCC tables (interstate rates), PTPT (price time tables), NXX tables, copyright statement, and the rating chip module serial number.

3.6.2 Programming NXX Tables into EEPROM

NXX tables are maintained and edited in PNM. After editing the NXX tables, PNM can download the NXX tables and then burn them into EEPROM. Typically, one NXX table is maintained per rate center.

3.6.3 Programming Variables into EEPROM

Registers, options, and price bands can be changed through voice telemetry or by using PNM and modem telemetry. Once changed in RAM, they can be burned into the EEPROM.

Setup for burning changes to registers, options, and price bands into EEPROM:

(1) The EEPROM must have already been burned with the rating chip image.

(2) Using voice telemetry, program the desired changes into RAM.

(3) Enter the telemetry mode and change Maintenance Command 975 to "1". Maintenance Command 975 is a safety lock that prevents accidental burning of the EEPROM. 0 = locked; 1 = unlocked.

SOFTWARE RELEASE 4.2

(4) Enter 969. The payphone's voice will say "please wait" while the EEPROM is being burned with the new data. The process will take about 12 seconds to complete.

(5) On completion of a successful EEPROM burn, the voice will report "969 zero." If any other message is heard, the process failed. Attempt the procedure again.

(6) Maintenance Command 975 (the safety lock) automatically resets to "0" after the completion of the EEPROM burn. After the completion of any EEPROM burn, you must hang up before making any test calls.

3.7 Dialing Language

Creation of the dialing language places program code into functional modules. This modular software facilitates the implementation of changes and enhancements, and, with fewer intercode dependencies, changes occur faster and with less difficulty.

3.7.1 Dialing Language Overview

Digits dialed by the user move to the call typing process, where the call is determined to be one of 28 call types. The call type directs the payphone to perform one of the 18 dialing macros. Each dialing macro contains commands, and each command contains the modules of the program code that:

- Dial out the call.
- Monitor the telco line for call progress signals.
- Monitor the telco line for returned DTMF codes from AOS, etc.
- Control anti-fraud according to call type.

3.7.2 Adding a Dialing Macro

New dialing macros added to RAM support new AOSs or call types. These macros are configured by Elcotel's software engineering and loaded into RAM by Elcotel or by the phone owner. If you, as the phone owner, build a new macro in RAM, the code to do this must be supplied to you by Elcotel. The completed macro contains a series of numbers which cause dialing language commands to be performed. Future models of PNM will provide for the construction of macros at the field level. This will consist of prompts and responses which assemble the dialing language commands into the dialing macro which are then downloaded into RAM. Each RAM dialing macro has an associated RAM returned DTMF code table.

Setup of RAM dialing macros is as follows:

- RAM dialing macro #20 is in Register 370.
- RAM dialing macro #21 is in Register 371.
- RAM DTMF return code table for macro #20 is in Register 380.
- RAM DTMF return code table for macro #21 is in Register 381.

SOFTWARE RELEASE 4.2

For example:

Suppose you want to use NTS with a "please wait" message repeated until NTS answers:

1. Call Elcotel Customer Service with the format or dialing sequence you need and the DTMF code required (DTMF return code = splashback to LEC operator).

2. After receiving the dialing macro, enter the number sequence in Register 370 or, if Register 370 is already being used, enter the number sequence in Register 371.

3. If a new DTMF return code is required to work with the new macro in Register 370, enter the new DTMF return code (provided by Elcotel) in Register 380. If the new macro is in Register 371, this DTMF return code must be in Register 381.

4. To enter the new macros, voice telemetry must be used.

5. Example -- NTS Macro with "please wait" message:

   a. Enter your owner bypass code. Wait 4 seconds and enter 122. The voice should say "122 ON" or "122 OFF."

   b. Enter 975 and press *1*. The voice should say "975 ONE" (975 is the safety lock for EEPROM burn commands. Now you are ready to enter the new Macro string in Register 370.

   c. Enter 370*30,26,73,46,25,35,31,47,74,70,91,33,13*. This is now Macro #20. If we had used Register 371, this would be Macro #21.

   d. If the DTMF return code must be changed (for Register 370/Macro#20), enter it in Register 380 (Macro #98). In this case, the return code is not changed; therefore, Register 380 is not used. If Register 371 (Macro #21) was used, the new DTMF return code would be in Register 381 (Macro #99).

SOFTWARE RELEASE 4.2

e. The call type table should be set as follows for NTS with a "please wait" message:

262 = AOS access number.....
263 = AOS authorization code.....
278 = AOS 2 access number.....10288
128 = Phone equipped with card reader.....OFF
150 = Disable Bong.....ON
867 = 1+ commercial credit cards (restricted)..00
883 = Reroute on busy trunks
(AT&T 10288 access).....08
893 = 0+ no credit card.....20
894 = Splashback (AT&T 10288 access).....08
895 = 0+ restricted to local carrier.....01
896 = 0- calls to NTS.....20
897 = 00- calls to NTS.....20

If an EEPROM is used, enter 969 (Burn RAM Registers and Options to EEPROM). The voice should say "please wait" when the phone completes burning this new macro into the EEPROM, the voice should will say "969, 0." Hang up.

3.7.3 Call Type Look-up Table

Call typing, using the call look-up table, determines the dialing macro to use for that call. Registers 861 to 899 are the registers associated with the call types. The register contains the macro number to perform for that call type. Changing the macro number in the register quickly changes the handling of that call type.

#	Req.	Call Type	Default Macro #
1	861	Free Emergency (911)	01 (Free)
2	862	Miscellaneous Free Calls	01 (Free)
3	863	Information	02 (Direct w/o OCC)
4	864	7 Digit Local	03 (Direct w/ OCC)
5	865	1+ Long Distance Coin	02 (Direct w/o OCC)
6	866	1+ Long Distance Coin Reroute	02 (Direct w/o OCC)
7	867		00 (Restrict)
8	868	Spare	00 (Restrict)
9	869	10-XXX	00 (Restrict)
10	870	800-XXX-XXXX	03 (Direct w/ OCC)
11	871	900-XXX-XXXX	02 (Direct w/o OCC)
12	872	976-XXXX	00 (Restrict)
13	873	950-XXXX	01 (Free)
14	874	01+ International Operator	00 (Restrict)
15	875	Spare	00 (Restrict)
16	876		00 (Restrict)
17	877		00 (Restrict)
18	878	Spare	00 (Restrict)
19	879	Spare	00 (Restrict)
20	880	Manual/Coin AOS	11 (Mexico)
21	881	Call Home	02 (Direct w/o OCC)
22	882	Forward Message to Mailbox	00 (Restrict)
23	883	Reroute for Busy Trunks	00 (Direct w/o OCC)
24	884	Service Trouble	10 (Trouble Call)
25	885	Spare	00 (Restrict)
26	886	Spare	00 (Restrict)
27	887	Spare	00 (Restrict)
28	888	Spare	00 (Restrict)
29	889	00+ Special Routing	00 (Restrict)
30	890	0+ Commercial Credit Card	00 (Restrict)
31	891	0+ Bell Card	01 (Direct w/o OCC)
32	892	0+ AT&T Network Card	01 (Direct w/o OCC)
33	893	0+ No Credit Card	01 (Direct w/o OCC)
34	894	0+ Splashback Direct Dial	01 (Direct w/o OCC)
35	895	0+ IntraLATA Restricted to State	01 (Direct w/o OCC)

#	Reg.	Call Type	Default Macro #	
36	896	0-	01	(Free)
37	897	00-	00	(Restrict)
38	898	Invalid Card Entered at Bong	00	(Restrict)
39	899	Spare	00	(Restrict)

3.7.4 Returned DTMF Code Table

The returned DTMF code table defines the function of DTMF *, #, A, B, C, and D. These DTMF codes received from an AOS or service desk direct the payphone to perform a function. The returned DTMF code table calls dialing language commands to perform the required functions. The function of the DTMF tone may change, depending on the service.

Macro #	Service	*	#	A	B	C	D
90	Central	XX	00	00	XX	00	00
91	ITI, NTS, NYCOM	00	00	00	XX	00	00
92	Bong	00	XX	00	00	00	00
93	Manual/Coin AOS	XX	XX	00	00	00	00
94	Service Desk	XX	XX	XX	XX	XX	XX
95	LD*OS	00	00	XX	XX	XX	XX
96	Spare	00	00	00	00	00	00
97	Spare	00	00	00	00	00	00
98	Register 380	00	00	00	00	00	00
99	Register 381	00	00	00	00	00	00

Note: XX indicates codes used.

3.7.5 Dialing Macros

The dialing macros contain a series of dialing commands. In each dialing macro, two digit numbers represent those commands. Listed below are the current macros.

Macro #	Macro Name
0	Restricted Calls (gives busy signal)
1	Direct Dial Open Immediately
2	Direct Dial without Manual OCC Allowed
3	Direct Dial with Manual OCC Access Allowed
4	Central
5	LD*OS
6	MCI/Microtel 1+
7	ITI-MACE
8	10-XXX Access to AT&T
9	Call Mailbox
10	Service Desk Operator
11	Manual/Coin AOS
12	NYCOM
13	Sprint
14	NTS 0+ (Note that Option 150 should be off when using Macro #14)
15	ITI-Voice Operator
16	NTS - Equal Access
17-19	Not Used
20	User-defined RAM Call Macro #1 (Register 370)
21	User-defined RAM Call Macro #2 (Register 371)

3.7.6 Dialing Language Commands

The dialing language commands consist of modules of program code. Each of the modules performs specific functions. Combinations of the functions perform the desired dialing and control.

3.8 Handling 00+ and 00- Calls

With 00 calling, the local exchange carrier (LEC) will route these calls to assigned primary interexchange carrier (PIC). If 00 dialing is available, the 0+ and 0- calls will access the LEC's operator service. The PIC could be MCI, Sprint, or the telco. The assigned primary carriers that do not provide operator service may provide a recorded message, but may not provide SIT (Special Information Tones). If you use an OCC as a PIC, ensure that your 0+ and 1+ traffic are separated.

3.8.1 Implementation of 00+ and 00-

With 00+ calls, the phone can be programmed either to output calls as dialed or to strip one 0 and route the calls to a selected AOS. When an AOS is selected, Option 169 can be used to treat 00+ calls like 0+ calls, and it is used to route 00+ calls to an AOS.

3.8.2 Charges

The phone will charge the same for 00- calls as for 0- calls. The phone will charge the same for 00+ calls as for 0+ calls.

3.8.3 Emergency Calls

Emergency calls can be rerouted at the phone. This is controlled by a DTMF tone sent by an AOS operator. When the phone receives the DTMF tone, it will hang up. Then, it will go back on line and dial the number dialed by the user, and the LEC will receive the call.

3.9 High Security/Low Security

Option 135 is the option for High Security. When it is ON, and Alarm 1 (Upper Housing Access) is ON (Option 131), on-site telemetry access will not work; however, if the upper housing is unlocked, this will trigger Alarm 1, and if you enter your owner bypass code within 30 seconds, this will permit on-site telemetry access. If the phone is not equipped with an upper housing alarm, the phone will not report the alarm upon entry into the cabinet; however, the alarm condition can be simulated by momentarily shorting the bottom two pins of the alarm switch option jack. You will have one chance to enter the owner bypass code correctly.

If Option 135 is ON or OFF, the software will allow five access attempts by remote voice telemetry and three attempts by modem telemetry. Entering the bypass code five times unsuccessfully through remote voice telemetry activates a five minute period during which additional attempts are ignored. Modem access to the payphone is under the control of the PCM and PNM. Three unsuccessful attempts at accessing the payphone via modem telemetry causes the phone to disconnect regardless of the setting of Option 135.

If Option 135 is OFF, key access to the upper housing and tripping of the upper housing alarm, or simulating the tripping of that alarm, will place the phone in the telemetry mode. No owner bypass code would then be necessary to access the registers, options, etc., in the PCM.

3.10 Credit Card Identification and Routing at the Phone

Credit card calls are accepted by two methods: By manual entry or by card reader.

- Bell card numbers are entered manually through the keypad immediately after the Bong. In a future release, Bell credit cards will be able to be swiped through a card reader after the Bong.

- With a credit card reader, 0+ calls are accepted when an acceptable commercial credit card is swiped through the reader. 1+ calls can be made with coins or an acceptable commercial credit card swiped through the reader can be used.

3.10.1 Credit Card Routing

Credit card calls are routed to the appropriate service. All AT&T cards, Bell cards, Visa, Master Card, and American Express can be routed to a service of your choice. The payphone's voice responds with "invalid number" to all other cards.

3.11 Coin Jam Detection and Inactivity Timer

The coin jam detection looks for calls requiring coins (7 digit and 1+ with no credit card). When the coin is not detected, it is either jammed or the user has walked away. If the payphone's voice asks for money and the user abandons the call, it is considered a walkaway. You may set the number of consecutive

walkaways (0-99) that you consider reasonable before the payphone calls home and reports the alarm status. In voice telemetry, the message "NO DOLLARS" is reported. Each time a coin is detected, the walkaway counter is reset at 0, and the consecutive walkaway count begins again.

The Inactivity Timer alarm is tripped when no calls are made during the time period set in Register 280 (set in hours).

Setup for Coin Jam:

(1) Set the walkaway count you desire in Register 287 (Walkaway Alarm Maximum Count).
(2) Set the time in hours for the inactivity timer in Register 280.

Whenever this feature is used, ensure that the following variables are set correctly:

- Option 130 (modem telemetry)
- Option 129 (voice telemetry)
- Register 243 (primary home number)
- Register 244 (secondary home number)
- Register 245 (station ID number)

Alarm Status Registers:

- Register 927 (ON = no activity; OFF = normal)
- Register 928 (ON = no coins; OFF = normal)

3.12 Monitoring of Operations

During the monitoring of payphone operations in the field, alarms are transmitted to a central "call home" number stored in each payphone.

Setup of Alarms:

(1) Place the primary call home number in Register 243.
(2) Place the secondary call home number in Register 244.
(3) Place the station ID number in Register 245.
(4) Turn Option 131 ON to enable Alarm 1 (Upper Housing).
(5) Turn Option 132 ON to enable Alarm 2 (Handset).
(6) Turn Option 133 ON to enable Alarm 3 (Cashbox).
(7) Turn Option 134 ON to enable Alarm 4 (External).

SOFTWARE RELEASE 4.2

NOTE: Alarms 1 and 3 will not work without an alarm kit. Without an alarm kit, Alarm 1 can be simulated by crossing pins 1 and 2 on the alarm jack of the PCM. Alarm 4 is part of a separate alarm kit. Alarm 2 requires no alarm kit.

Alarms	Alarm Status Registers
o Alarm 1 (Upper Housing)	920
o Alarm 2 (Handset)	921
o Alarm 3 (Cashbox)	922
o Alarm 4 (External)	923
o Alarm 5 (Battery RAM)	924
o Alarm 6 (Cashbox 80%)	925
o Alarm 7 (Cashbox 95%)	926
o No Calls	927
o No Coin (no dollars)	928
o Bad EEPROM Burn	929

NOTE: The above alarm status registers are normally OFF; however, when they are tripped, they trip to ON.

Whenever these features are used, ensure that the following variables are set correctly:

- Option 130 (modem telemetry)
- Option 129 (voice telemetry)
- Register 243 (primary home number)
- Register 244 (secondary home number)
- Register 245 (station ID number)

3.13 **Status Reports/SMDR**

When a payphone is optioned for modem telemetry (Option 130 ON), it can send alarm reports, status reports, and SMDR (Station Message Detail Records) to a serial printer or to a computer equipped with PNM. If you are not using PNM, you will need a serial printer and a 300-BPS, Bell-compatible auto-answer modem. The payphone's modem will transmit the data to the auto-answer modem.

3.13.1 Alarm and Status Reports

The serial printer will print out a report similar to the one described below:

The sample below reveals that Payphone 7213 called home to report that cashbox crossed the $150.00 threshold.

```
                7213 05/20 09:45 $150.50 350 027 027 018 012 0000 010
cr lf bell NNNN MM/dd HH:mm $DDD.cc LLL SSS TTT MMM UUU XXXX YZE
```

The meanings of the transmitted ASCII characters are as follows:

cr = Carriage Return

lf = Line Feed

bell = Bell

NNNN = Four-digit station identification code (Register 245)

MM/dd = Date in month/day format where MM = month and dd = day. This is the month and day that the phone called home.

HH/mm = Time in hour/minute format where HH = hour and mm = minute.

$DDD.cc = Current cashbox total where DDD = dollars and cc = cents. If Alarm 3 (Option 133) is tripped, the phone will call home, report the current cashbox total, and, then, clear the cashbox total. It will not clear any of the call counters.

LLL = Three-digit number of local calls since the last service call.

SSS = Three-digit number of long distance calls since the last service call.

TTT = Three-digit number 0+ calls since the last service call.

MMM = Three-digit number 0- calls since the last service call.

SOFTWARE RELEASE 4.2

UUU = Three digit number of miscellaneous calls since the last service call (eg., 1-800, 1-900, 911, etc.).

XXXX = Four-digits for the status of each of the active alarm inputs. 0 = not tripped, 1 = tripped and reporting now, 2 = tripped and has reported or attempted to report. XXXX = 1234 = Alarm 1, Alarm 2, Alarm 3, Alarm 4.

YZE = Y represents the status of the battery-backed RAM. 0 = normal. 1 = RAM has default values from the rate module/chip/EEPROM and all changes and additions in RAM are lost and must be re-entered; however, if an EEPROM was used, changes other than speed dial numbers and exceptions would be saved if they were burned into EEPROM.

Z represents the status of the cashbox: 0 = normal, 1 = 80% full trigger level has been exceeded. This value is set in Register 233 (Cash Vault Trigger Level). The default value is set at $150.00. If set at another value, the trigger level will be exceeded at 80% of the value. 2 = 95% full trigger level has been exceeded. This value is not adjustable by any register. The set value is $170.00.

E = Bad EEPROM alarm. This is tripped when the EEPROM has failed or burned incorrectly. 1 = failure or incorrect burn.

NOTE: If inactivity is being reported (Inactivity Timer -- Register 280 -- must be turned ON), NO CALLS$ or NO DOLLARS$ will be inserted after HH:mm.

3.13.2 SMDR (Station Message Detail Records)

If Register 157 (Enable SMDR) is ON and the phone calls home, you will receive a record like the following:

72313 05/20 09:45 $151.50 350 027 027 018 012 0000 010

```
8137580000 ......                    555-1212 05/20 09:32 001 $  .00 02
8137580000 ......                  900-123-4567 05/20 09:31 001 $  .50 02
8137580000 ......                1-800-123-4567 05/20 09:31 001 $  .00 03
8137580000 ......                1-813-953-2900 05/20 09:30 001 $ 1.30 05
8137580000 ......                1-813-953-2900 05/20 09:28 001 $ 1.30 02
8137580000 ......                     953-2900 05/20 09:27 001 $  .25 03
8137580000 123456789123456      0-813-953-2900 05/20 09:27 001 $ 1.30 05
8137580000 ......                0-813-953-2900 05/20 09:22 001 $ 1.30 05
8137580000 ......                0-813-953-2900 05/20 09:19 001 $ 1.30 05
8137580000 ......                             0 05/20 09:18 001 $  .00 05
```

Up to 150 call records can be stored. If you would like to have the phone call home when the SMDR buffer is 80% full, turn on Option 180 (Call Home When SMDR is 80% Full).

All of the call records are listed from last to first. If the SMDR buffer reaches 150 records and another call is made, the first record will be deleted.

NOTE: When the phone calls home and successfully dumps a status line and SMDR records, the call records will be cleared.

An example of an SMDR record and a description of the items in the record follows:

```
8137580000 123456789123456      0-813-953-2900 05/20 09:27 001 $1.30 05
NPANXX0000 CC#                  DEST#          MM/dd HH:mm TD  PT    MM
```

The meanings of the characters are as follows:

NPANXX0000 = Area code, exchange, and extension of phone (stored Register 284)

CC# Credit Card Number entered after Bong, or Credit Card Number of card swiped through card reader after Bong. In both cases, Option 150 (Enable Bong) must be ON.

DEST#	Destination Number dialed.
MM/dd	Month and day call was completed.
HH:mm	The time the call was initiated.
TD	Duration of call in increments of a minute.
PT	Price of call. Additional time prices will be added to the total amount.
MM	Macro used to complete the call. In the example, 05 was used. 05 = LD*05 call.

3.14 Service Number/Service Desk Option (Option 175)

When the service number posted on the payphone is dialed, the payphone will auto-dial any number stored in Register 266. The service operator can take the information and issue credit to allow the call to be made again without another deposit of coins. After this free call, the phone will charge calls normally.

Note: A four column keypad phone is required to do this.

Setup for Service Number/Service Desk

(1) Turn Register 175 ON. This will enable credit from service desk.
(2) Set Register 884 (service desk call type) at "10."
(3) Place the user dialed access number for the service desk in Register 265.
(4) Place the phone dialed access number for the service desk in Register 266.

Service Desk Tones:

(1) To request SMDR for the last call, including the amount deposited, press "*" on the service desk phone. The payphone's voice should say:

- Payphone
- Station ID number
- Number called
- Duration of call
- Amount collected

Note: The user will also hear this message.

(2) To close the receiver's earpiece and collect coins, press "A". This should fire the relay and turn the earpiece off.

(3) To issue credit to the payphone, press "C." This informs the phone that the next digit will be a credit amount. Each number = $.25 (for example: C-2 = $.50; C-3 = $.75; C-4 = $1.00, C-5 = $1.25; etc.).

(4) After credit has been issued, the end user will hear "please dial again. Thank you." Then, the user will receive dial tone.

NOTE: LD*OS operators can splash back the phone to the service desk with a DTMF "D."

Summary of Service Desk Tones:

* = The voice will say "payphone," station ID number, number called, duration of call, and amount collected.

A = Closes receiver's earpiece and collects coins.

C = Next digit will be credit amount.
2 = $ .50
3 = $ .75
4 = $1.00 etc.

D = Used by LD*OS for splashback to service desk.

3.15 Automatic OCC Routing Option

The automatic OCC routing option directs all 1+ calls to the OCC of your choice. This option is used where equal access is not available. Using an OCC provides the payphone owner with the least cost routing to maximize his profits. For example, the cost of sending 1+ calls on the AT&T network may be reduced by routing 1+ calls to MCI.

3.15.1 1+ Accessing OCC

The telephone number of the OCC (OCC Access Number) and the owner's OCC authorization code are stored in the payphone. Accessing the OCC will require one of the following:

3.15.1.1 Setup for MCI:

- Register 865 = 1+ Long Distance Coin - Set at "06."
- Register 866 = 1+ Long Distance Coin Reroute - Set at 02 to reroute to LEC.
- Register 260 = OCC Access Number.
- Register 261 = OCC Authorization Code (up to 11 digits).
- If your OCC Authorization Code is larger than 11 digits, place the remainder of the digits in Register 283.

3.15.1.2 MCI Call Sequence:

- The payphone sends the OCC Authorization Code followed by the destination number.

  (1) The payphone detects a 1+ call and dials the OCC Access Number.
  (2) The acknowledgement tone is received from the OCC.
  (3) The payphone outputs the authorization code.
  (4) The payphone receives the tone or message from the OCC to send the destination number.
  (5) The payphone outputs the destination number.

3.15.1.3 Setup for Sprint:

- Register 865 = 1+ Long Distance Coin - Set at "13."
- Register 866 = 1+ Long Distance Coin Reroute - Set at 02 to reroute to the LEC.
- Register 260 = OCC Access Number.
- Register 261 = OCC Authorization Code (up to 11 digits).
- If your OCC Authorization Code is larger than 11 digits, place the remainder of the digits in Register 283.

3.15.1.4 Sprint Call Sequence:

- The payphone sends the destination number followed by the OCC Authorization Code.

  (1) The payphone detects a 1+ call and dials the OCC Access Number.
  (2) The payphone receives the acknowledgement tone from the OCC.
  (3) The payphone outputs the destination number.

(4) The payphone receives a tone or message to send the OCC Authorization Code.
(5) The payphone outputs the OCC Authorization Code.

3.16 Manual OCC Option

The manual OCC option allows the user to access an OCC by entering authorization and destination numbers at the acknowledgement tone. This option helps to control fraud while allowing additional dialing. To help prevent fraud when using this option, Option 126 (Wink Detect) should be ON.

Manual OCC setup: Set Register 864 (7 digit local) at "3," and use one of the following setups:

123 ON = OCC access through local calls.
127 ON = OCC keypad "ON" at first ringback.

Or, to help against fraudulent dialing:

123 ON = OCC access through local calls.
127 ON = OCC keypad "ON" at first ringback.
126 ON = Wink Detect

Or, if the keypad is cutting off too soon:

123 OFF = OCC access through local calls.
127 OFF = OCC keypad "ON" at first ringback.
145 ON = Keypad "always ON" after dialing.
126 ON = Wink Detect

Note: Whenever Option 145 is used, Option 126 should be used to help prevent fraudulent calls.

Call Sequence for Manual OCC Option:

(1) Dial 7-digit local access.
(2) The payphone's voice requests $.25.
(3) The microphone is turned OFF, the keypad is turned ON, the anti-fraud control is enabled, and the Wink detect is enabled.
(4) When the acknowledgement tone is received, the payphone interprets this as (answer detect), and it will be ready to collect the coins upon call completion.
(5) The payphone then turns the microphone and the keypad ON. The anti-fraud control is disabled.
(6) The user enters the Authorization Code and the

destination number.

(7) The call is then processed.

(8) After call termination, the payphone detects Wink; then, the keypad is immediately turned OFF and the anti-fraud control is enabled.

NOTE: If 950-XXXX access is used, the price of the call will be controlled by Register 286 (charge for 950-XXXX). This is also controlled by Register 873.

3.17 Forward Message to Mailbox/Limit Number of Rings

Setup for forwarding message to a mailbox is as follows:

(1) Place the number to call the mailbox service in Register 268.

(2) Place the number for the number of times the phone will ring before calling the mailbox service in Register 274.

(3) Set the Register 882 (Forward Message to Mailbox) at 09 so that the call will be directed by Macro 9.

If a phone is allowed to ring for an indefinite period of time, there is a greater chance that answer detect can be tripped by noise and cadence drift, resulting in the payphone taking the deposited money. Limiting the number of rings helps to prevent such occurrences.

Setup to Limit Rings:

(1) Set Register 268 (Voice Mailbox Phone Number) at 5 to turn on this feature.

(2) Set Register 274 (Number of Rings for Mailbox) at the number of rings desired. This has a maximum value of 9. For example, if Register 274 has a value of 7, the phone will ring 7 times; and, at the end of 7 rings, the payphone's voice will say "please dial again," and the phone will then hang up.

(3) Place a 0 in Register 882 so that Forward Message to Mailbox will not occur.

3.18 The Payphone as an Extension Phone

The payphone may be used as an extension phone on incoming calls. In the example below, the call is answered, and the payphone is picked up as an extension.

Setup:

(1) Turn Option 176 ON to allow payphone to be used as an extension.
(2) Turn Option 170 ON to allow real (CO) dial tone.

Upon not detecting dial tone, the payphone will:

(1) Open the receiver's earphone.
(2) Open the microphone.
(3) Disable the keypad.
(4) Enable the anti-fraud control.

3.19 Reroute Calls

When using an AOS (Alternative Operator Service), reroute is for call types O+, O-, and credit card (using a card reader) 1+ calls.

3.19.1 Reroute Possibilities

There are three possible reroute destinations. Two of the possibilities are reroute to an AOS and the third is the number as dialed being sent to the LEC.

3.19.2 Reroute Causes

The are three causes of reroute. They are:

- O+ intraLATA restricted to State (Register 895). Restricted reroute for intraLATA or intrastate calls.
- Reroute for busy trunks (Register 883). Reroute to LEC when connection cannot be made to the primary service due to:
  - Busy, fast busy
  - One minute has passed and the call does not connect.
  - O+ splashback direct dial (Register 894). Splashback at the phone controlled by the AOS

sending a DTMF B or reroute tone.

NOTE: All of the above can be rerouted to the LEC or, with Register 278 (AOS 2 Access #), to a 10XXX service of your choice.

There are four causes of reroute. They are:

- Primary reroute to the AOS of choice.
- Restricted reroute for intraLATA or an optional reroute of intrastate calls to a second AOS.
- Reroute to a second AOS when connection cannot be made to the primary service due to:
  - Busy, Fast Busy
  - One minute has passed and the call does not connect.
- Splashback at the phone controlled by the AOS sending DTMF "B".

3.19.3 Configuration

Any of the possible destinations can be accessed by any of the causes. Additionally, each of the following call types can select its primary routing:

- 0-
- 0+ operating company credit card (Bell Card)
- 0+ CCC (Commercial Credit Card)
- 0+ no card
- 0+ credit card not identifiable
- 1+ credit card swipe

3.19.4 Setup

(1) Turn Option 162 (RESTRICT INTRALATA 0+ TO STATE) ON. This will send all intraLATA calls to the local exchange carrier (LEC) and all other calls to the AOS.
(2) Turn Option 171 (RESTRICT INTRASTATE 0+ TO STATE) ON. This will send all intrastate calls to the LEC and all other calls to the AOS.
(3) Place the AOS 1 Access Number in Register 262.
(4) Place the AOS Authorization Code in Register 281.
(5) Place the AOS 2 Access Number in Register 278.

3.20 LD*OS Completion Timer for 0 Call Counters

0+ and 0- calls through LD*OS will advance the 0 counters when call duration exceeds 1 minute.

- The total of 0+ calls are counted in Register 224.
- The total of 0- calls are counted in Register 288.
- When desired, reset Registers 224 and 288 through Maintenance Command 962.

NOTE: The 1 minute minimum is for LD*OS only. If applied to non-LD*OS calls, the counters would advance on 0+ and 0- calls regardless of the length of the call.

3.21 Repeating "Please Wait" or Ringback

Delays may occur when connecting to an AOS. To prevent users from being discouraged by this possibility, these delays can be filled with repeating "Please Wait" messages or ringbacks. In this way, the user will know that his or her call is in process. When the "Please Wait" message is used, it is repeated every 5 seconds until the AOS answers.

NOTE: This option is to be used for LD*OS and ITI only; however, if you would like to use this option for another AOS, refer to Section 3.7.2.

Setup:

- Option 174 OFF = "Please Wait."
- Option 174 ON = Simulated Ringback.

3.22 Additional 1-NPA-555-1212 Pricing

A special pricing register will override normal payphone pricing. The pricing applied is a non-time sensitive, flat rate. It is designed for use as the additional 1-NPA-555-1212 pricing required in some areas.

3.22.1 Setup for Special Pricing

(1) Set the telephone number in Register 289.
(2) Set the special price (one time charge) in Register 290.

3.22.2 Information Call Pricing and Counting

(1) Set the local information charge for 411, 1411, 311, 555-1212 in Register 250. These calls add to the local information count in Register 273.
(2) Set the 1-555-1212 information charge in Register 251.
(3) Set the 1-NPA-555-1212 information charge in Register 252.

3.23 Secondary Dial Tone Detect and Secondary Call Blocked (Series-4)

The presence of secondary dial tone makes certain types of fraud possible. When Wink is present, Wink detection is used to signal the payphone to shut off the keypad, not allowing additional calls to be made with the secondary dial tone. There are, however, lines where Wink is not present. In such cases, Secondary Dial Tone Detect can be used to deny additional calls with secondary dial tone; however, this method of detection is available only on PCM-4 assemblies, and only if the board assemblies contain a Teltone 981 chip at Position U16 of the PCM assembly. The Teltone 981 chip is available from Elcotel.

Setup for Secondary Dial Tone Detect:

o Ensure that Option 173 is OFF. If Option 173 is OFF, secondary dial tone detect is working.

Call Sequence Upon Detecting Secondary Dial Tone:

(1) The PCM shuts off the keypad.
(2) The PCM enables the anti-fraud control.

3.24 Real Dial Tone Option (Option 170)

The real dial tone option presents CO dial tone to the user. The first key pressed places the payphone on-hook. The digits dialed by the user are then buffered and processed by the phone.

Setup for Real Dial Tone:

o Turn Option 170 ON to allow CO dial tone.

Call Sequence:

(1) The user lifts the handset off-hook.
(2) The payphone goes off-hook to the CO.

(3) The PCM closes the microphone.
(4) The PCM opens the earphone in the receiver.
(5) The PCM turns the keypad on.
(6) The user enters the first digit by pressing the first key.
(7) The payphone goes on-hook.
(8) The digits dialed by the user are buffered and, then, processed.

SOFTWARE RELEASE 4.2

4.0 Setup

4.1 Installation of Software and Rates

4.1.1 With EEPROM and PNM

CAUTION: Wear a static ground wrist strap when handling a board assembly and when installing software chips and EEPROM rating chips. Ground the wrist strap to the case of the phone. If no ground strap is available, be sure to touch the housing before handling the board assembly.

(1) Remove the upper housing and disconnect the power cable first; then, disconnect all other connectors from the board assembly.

(2) Remove the board assembly from the lower housing and place it on a table or flat work surface.

(3) Using a small, flat blade screwdriver, gently pry the outdated Part I chip from its socket. See the attached illustration.

(4) Insert the new or updated Part I software chip into the socket. Ensure that the notch on the chip faces outward, away from the center of the board. Ensure that no pins are bent in the process of installing the chip.

CAUTION: If any chip is installed with the notch facing the wrong direction, the software will be destroyed when the power is applied.

(5) Remove the outdated Part II chip from its socket and insert the new or updated Part II chip in its place. Again, observe the same chip orientation and precautions as in step (4).

(6) Remove the outdated rating chip or module.

(7) a. If the assembly is a Series 3, insert the new EEPROM rating chip into socket U7. Ensure that the notch is facing outward and that no pins are bent.

b. If the assembly is a Series 4, insert the new EEPROM rating chip into socket U5. Ensure that the notch is facing outward and that no pins are bent. Ensure that you have removed the old rating module from Position J1.

CAUTION: Regardless of the assembly, if the EEPROM rating chip is mounted in the wrong direction, it is possible that the software will be destroyed when the power is applied.

(8) Reinstall the board assembly.

(9) Plug in all cables except the power cable. DO NOT CONNECT the power cable until all other connectors are plugged into the board assembly.

(10) Plug the power cable into the board assembly.

(11) Reinstall the upper housing.

(12) Load the rating chip image as described in Section 4.2.

4.1.2 With Standard EPROM

CAUTION: Wear a static groud wrist strap when handling a board assembly and when installing software chips, rating chips, and rating modules. Ground the wrist strap to the case of the phone. If no ground strap is available, be sure to touch the housing before handling the board assembly.

(1) Remove the upper housing and disconnect the power cable first; then, disconnect all other connectors from the board assembly.

(2) Remove the board assembly from the lower housing and place it on a table or flat work surface.

(3) If the assembly is a Series 2, remove the auxiliary, or piggyback board.

(4) Using a small, flat blade screwdriver, gently pry the outdated Part I chip from its socket. See the attached illustration.

SOFTWARE RELEASE 4.2

(5) Insert the new or updated Part I software chip into the socket.

a. If the assembly is a Series 2, ensure that the notch on the chip faces inward, towards the center of the board.

b. If the assembly is a Series 3 or Series 4, ensure that the notch on the chip faces outward, away from the center of the board.

c. Regardless of the series, ensure that no pins are bent in the process of installing the chip.

CAUTION: If any chip is installed with the notch facing in the wrong direction, the software will be destroyed when the power is applied.

(6) Remove the outdated Part II chip from its socket and insert the new or updated Part II chip in its place. Again, observe the same chip orientation and precautions as in step (5).

(7) Remove the outdated rating chip or module.

(8) Verify that the phone number on the new or updated rating chip or module corresponds with the number of the payphone.

(9) If the assembly is a Series 2, install the auxiliary board back in position on the mainboard.

(10) a. If the assembly is a Series 2 or 4, insert the new rating module into its place on the mainboard. Note that the cutout area at the upper end of the auxiliary board is directly above the 26-pin jack that seats the rating module, and the rating module fits neatly through the cutout area of the auxiliary board. Note that the screw end of the module must face outward, away from the board, or upward if the board is mounted in the housing. The label should face inward, towards the board, or downward if the board is mounted in the housing.

b. If the assembly is a Series 3, insert the new or updated rating chip into the socket. Ensure that the notch is facing outward and that no pins are bent.

CAUTION: If the rating module or chip is mounted in the wrong direction, it is possible that the software will be destroyed when the power is applied.

(11) Reinstall the board assembly.

(12) Plug in all cables except the power cable. DO NOT CONNECT the power cable until all other connectors are plugged into the board assembly.

(13) Plug the power cable into the board assembly.

(14) Reinstall the upper housing.

(15) Load the rating chip or module. See Section 4.2.

(16) Program any changes you want to add.

4.2 Loading Rates

4.2.1 With PNM and EEPROM

4.2.1.1 PNM Setup Procedure

(1) Turn on your computer and change the directory to PNM. Type **cd\pnm**.

(2) Place the floppy diskette containing the rating chip image into the diskette drive of your computer (usually drive A:).

(3) Copy the rating chip image to PNM. If your diskette is in the A: drive, at the C: prompt, type **copy A:*.*** and press the carriage return.

(4) Type **PNM** and hit the carriage return. The Main Menu will come up on the screen.

(5) Press **1** (Payphone Network Manager), and hit the carriage return to get to the Main Screen.

(6) Press Function Key **F3** (MENU) to get to the Option Menu.

(7) Before you go any further, check to see if the computer is configured properly. If it is, continue. If it is not, do the following:

a. Enter **1** (MODEM). This should display the modem menu.
b. Tone/Pulse Dial -- Make selection and hit the carriage return.
c. Speaker OFF/ON -- Usually **2** (speaker on until connection made) is used. After making selection, hit the carriage return.
d. Speaker Volume -- Usually **1** (no speaker volume control) is used. After making selection, hit the carriage return.
e. Communications Port -- This setting depends upon the computer used. After making selection, hit the carriage return.
f. Time to Wait for Answer -- Usually this should be set at "60." After making selection, hit the carriage return.
g. Incoming Calls ON/OFF -- Make selection. After making selection, hit the carriage return.
h. Number of Retries/Poll -- Determines the number of times to repoll phones that do not respond when the dialing list is polled. The default setting is 0, but this can be set to any value from 0 through 10. After making selection, hit the carriage return.
i. Enter carriage return. This should bring you back to the Option Menu.

(8) If you made any changes to step (7)e, above, these changes will not be set until you return to the Main Menu. Press ESC to return to the Main Screen. Then, press **F7** to EXIT to the Main Menu. The changes are now set.

4.2.1.2 **Editing Rate Module File**

Before creating database files, check to see if the rate module files are set correctly. Some changes can be made in the database file through the overlay function. Everything else in the rate module file can be be changed here, prior to initial downloading. For example, if you want the call type table to be set to handle a particular service that you

will be using, you would now check the rate module file, and change it if necessary. To check the file, do the following:

(1) From Main Menu, type **11** (Edit Module File) and hit the carriage return.

(2) Press **F1** (LOAD).

(3) Highlight the rate module file number that you wish to edit, and hit the carriage return.

(4) Highlight the functional area (eg. Telemetry, Alarms, Answer Supervision) to edit, and hit the carriage return. The options and registers of that functional area will appear on the screen.

(5) Move the cursor (with cursor keys or carriage return) to highlight the option or register to change. Enter the new value, and hit the carriage return. Repeat this step for all options and registers in this group which are to be changed.

(6) Use the carriage return or down arrow to move the cursor to EXIT TO MENU, and hit the carriage return.

(7) Repeat steps (4) through (6) for each functional area to be changed.

(8) Press **F2** and hit the carriage return to SAVE the changes.

(9) Press **F7** (EXIT).

4.2.1.3 Payphone Records

(1) From the Main Menu, type **1** (Payphone Network Manager) and hit the carriage return to get to the Main Screen.

(2) Press **F3** (MENU).

(3) Type **3** (DATABASE).

(4) To do auto-downloading or auto-uploading to a group of phones and to autopoll a group of phones, all of those phones should be grouped together according to the automatic features they will share in common. Such a

group of phones should be given a dialing list name, and commands made for the dialing list will apply to all of the phones assigned to that list. For example, if you wish to download and burn general registers to a number of phones, but not reload the RAM of each phone, they should be grouped together on one dialing list that will include a RAM reload. If you have not already added your dialing list names, do so now, as follows:

a. Type **1** (Assign Dialing List Names).

b. Enter the selection number of the dialing list (for example, 1 if there are no dialing lists, the next available number if there is a new dialing list), and hit the carriage return.

c. Enter the name of the dialing list, and hit the carriage return.

d. Repeat steps b and c for each entry.

e. When you have entered all the dialing lists, hit the carriage return to return to the Option Menu.

(5) If you already have a record for each phone to be loaded, select EDIT/DELETE MASTER LIST by typing **4**. When prompted for entry number, enter the dialing list's entry number for that phone and hit the carriage return. Type E for edit. Then go to step (8).

(6) If you do not already have a record for the phone, select **3** (ADD PHONES TO MASTER LIST) and create that record now. Note that each phone's rate center, which is based upon the location of the phone, must be the same as the rate center of the rating chip image file.

(7) Follow prompts. Press the carriage return for each correct entry. If an entry, such as phone location, is not correct, change it, and press the carriage return.

(8) Make the changes you wish and hit the carriage return for each change. When prompted for the rate module file name, type in the desired rate module file number, and hit the carriage return.

(9) Note the item "Use Overlays Y/N." The default setting is N (for No). When set at N, only the ID number will be overlayed. This is indicated by the fact that only the ID number is highlighted. If for any reason, you want phones sharing the same rate module file to have different owner bypass codes, AOS access numbers, and AOS authorization codes, selecting Y (for Yes) will highlight those fields. Any values set in the highlighted fields will overlay, or write over, the values in the corresponding registers of the rate module file you have selected. Enter your choice, and hit the carriage return.

(10) If this is a new phone record and you intend to add it to a dialing list, press **F2** (PICK). The Dialing List window will appear on the screen. If you wish to enter the phone on an existing dialing list, move the cursor to the name of the dialing list. Hit the carriage return to enter the record on the dialing list. This will highlight the dialing list. Then, press **F2** again to remove the window.

(11) Press Function Key **F9** to SAVE the record for that phone.

(12) Repeat steps (5) through (11) for each phone record.

(13) After all the records have been edited, press ESC twice to return to the Main Screen.

4.2.1.4 Manual Downloading to Phones with an Overlayed Rate Module File

If you wish to download to phones one-at-a-time, follow this manual downloading procedure; however, if you wish to automatically download the rate module file to all the phones on a dialing list, refer to Section 4.2.1.5.

(1) Press **F4** (SCAN).

(2) Use Down Arrow key to select the phone to call.

(3) Press **F6** (DIAL).

(4) When connection is made, press **F4** (MORE).

(5) Highlight DOWNLOAD WHOLE RATE MODULE and hit the carriage return. This will download the rate file to each of the phones assigned to that rate image; however, the values in certain registers will be overlayed by the corresponding overlay selections chosen on the database record for the individual phone.

(6) If you have previously downloaded to the phone and have created speed dial numbers, exceptions, and/or band charges that have not yet been uploaded to the phone's computer file, upload them now. Move the cursor to SPEED DIAL NUMBERS UP, and press the carriage return to highlight this selection. Type **F9** (SAVE). Type **F4** (MORE). Highlight EXCEPTIONS GROUP UP, type **F9** and then **F4**. Highlight BAND CHARGES UP, type **F9** and then **F4**.

(7) After downloading and uploading, highlight RELOAD PHONE RAM, and hit the carriage return. This will load the RAM with the information that is stored in EEPROM. You will become disconnected from the phone. This will eliminate all speed dial numbers and exceptions. Band charge tables will be replaced by changes from the selected rate module file. If you saved speed dial numbers, exceptions, and band charges before reloading the phone's RAM, your changes will be stored in that particular phone's database for future editing and future downloading, if required.

(8) Repeat steps (1) through (7) for each phone to be manually downloaded from the overlayed rate module file.

4.2.1.5 Auto-Downloading to Phones with an Overlayed Rate Module File

(1) Press **F4** (SCAN).

(2) New phone records have already been added to the database and added to a dialing list as described in Section 4.2.1.3. If the phone's record is not a new record, highlight the number of the phone in the list and press **F2** (PICK). The Dialing List window will appear on the screen. Move the cursor to the name of the dialing list. Ensure that the dialing list is highlighted to ensure that the phone is entered on the dialing list you desire. Then, press **F2** again to

remove the window. Repeat this step for each phone to be auto-downloaded.

(3) Press ESC to return to the Main Screen.

(4) Press **F8** (AUTO).

(5) Enter the selection number of the dialing list name for the phones that were were PICKED in step (2) of this section or in Section 4.2.1.3. Hit the carriage return.

(6) Press **F1** (LOAD). A window will appear on the screen. Decide what you want to do to all of the phones PICKED for that dialing list. The following is an example. It contains a complete download, burn, upload, and reload procedure. Move the cursor to MODULE FILE. Press the carriage return to highlight this selection. When the phone is loaded, you will have a file of the values in the general registers, but the file will not include owner-programmed values such as speed dial numbers. Move the cursor to SPEED DIAL NUMBERS UP, and hit the carriage return to highlight this selection. Do the same for EXCEPTIONS GROUP UP and BAND CHARGES UP. These values will be uploaded to your phone database file. Lastly, move the cursor to RELOAD PHONE RAM, and hit the carriage return to highlight this selection. After making all of your selections, press **F1** again. Repeat steps (5) and (6) for each dialing list to be loaded.

(7) To call certain dialing lists and to initiate everything you selected in step (6), enter the desired dialing list number and press the carriage return; then, press **F6** to DIAL that dialing list. When connection is "established," the rating chip image including any overlays will be downloaded and burned into the EEPROM of each phone that you PICKED with that dialing list name. In addition, each phone's speed dial numbers, exceptions groups, and band charges will be uploaded to each phone's database record, and the RAM for each of the phones will be reloaded. After approximately 5 minutes, the status should read "Burn Successful," and you will become disconnected from the phone or phones.

(8) Repeat steps (3) through (7) for each dialing list.

SOFTWARE RELEASE 4.2

4.2.2 With Voice Telemetry and Standard EPROM Rating Module or Chip

NOTE: If the initial loading sequence cannot be performed as follows. it is possible that the rating module or chip has loaded upon power-up. In that case, go to step (7) of this loading sequence.

(1) Lift the handset off-hook. Note that the handset is already off-hook; therefore, it may be necessary to press the hookswitch and release it to reset the phone and return dial tone.

(2) Enter #999 through the keypad. This is the bypass code on every phone shipped from Elcotel. When the rating module or chip is loaded, the owner bypass code in the rating module or chip will replace this code.

(3) Wait four seconds.

(5) Listen through the handset for the payphone's voice to say "122 ON" or "122 OFF." It takes approximately 3 seconds for this response. If the voice says "please dial again," repeat the sequence, beginning with step 1. If the voice continues to say "please dial again," go to step (7).

"122 ON" indicates that the ringer (Incoming Calls) is on, whereas "122 OFF" indicates that the ringer is off.

(6) Load the battery-backed RAM with the rating module's data by entering 964. The keypad should become inactive (no DTMF tones) and the payphone's voice may continue to indicate "122 ON" or "122 OFF." The payphone's voice will repeat the message for 12 seconds. Then, it will say "please dial again, thank you" before the PCM allows dial tone to the receiver. At this point, the new owner bypass code is loaded. This code is printed on the rating module's label, and it is used whenever you wish to program or verify the status of any of the variables in the PCM. The use of a

private, confidential owner bypass code protects your investment by preventing unauthorized access to your payphone's software.

(7) Press the hookswitch and release.

(8) Perform steps (8) through (11) to verify that the loading of the rating module or chip has been successfully accomplished. Enter # and your 3-digit owner bypass code. If the payphone's voice gives a "please dial again" message or if the PCM exits the programming mode at any time during the verification, return to step (7).

(9) Wait four seconds.

(10) Enter 122. Again, another option or register may be substituted.

(11) Listen for the payphone's voice to say "122 ON" or "122 OFF."

(12) After the above sequence is completed, user-programmed changes can be made as required.

5.0 Voice Telemetry

To program change through voice telemetry, the payphone must be in the programming mode. If the payphone is not already in the programming mode, place it in the programming mode as follows:

(1) Press the hookswitch, and release.

(2) Enter # and your 3-digit owner bypass code.

(3) Wait 4 seconds. If programming locally, the payphone will exit the programming mode if you do not press any key within 20 seconds. If programming remotely, the payphone will hang up if you do not press any key within 20 seconds. This is the case throughout the programming operation.

(4) Enter 122.

(5) Listen through the handset for the payphone's voice to say "122 on" or "122 off." It takes approximately 3 seconds for this response. The response ("122 on" or "122 off") verifies that you are now in the programming mode. NOTE: A variable other than Option 122 may be used for this purpose. It is the voice report of the value or status of the variable that indicates that you are in the programming mode.

5.1 Programming the Options Group

(1) If the payphone is not already in the programming mode, place it in the programming mode according to the procedure described in 2.0.

(2) Enter the number of the option to be changed. The payphone's voice will report enabled as "on" and disabled as "off."

(3) Enter *. This flips the status from on to off or vice versa. The payphone's voice reports the status within 3 seconds. If you press * twice, the voice will report the change without delay; however, if you press * after the voice has begun to report the new status, the status will flip back to its previous setting.

NOTE: Several options require that a value be set in the registers group; for example, if operator only calls (Option 120) are enabled. Register 248 must contain a 0 for no charge or an amount in cents if the call is to be charged.

5.1.1 The Options Group

The following is a list of the three-digit variables stored by the PCM as options. The default setting of each is indicated in parentheses. These default values are the settings prior to loading the rating module or chip, which should contain the settings you ordered. A functional list of options and registers follows, in Section 6.

121 ALLOW OPERATOR ASSISTED (0+). If on, set value in Register 249, which contains the price. (ON)

122 INCOMING CALLS. Allows incoming calls. If off, it does not prevent incoming telemetry calls. See Options 129 and 130. When OFF, it will turn the ringer OFF. To set number of times to ring, refer to Register 272. If 9 rings are not enough, use Option 154 to double the number in Register 272. (ON)

123 OCC ACCESS THROUGH LOCAL CALL. Keeps keypad alive long enough to allow the customer to use his own account number with an OCC. If the keypad is left on after dialing and Wink is not present, you can be exposed to fraudulent "chain dialing" in locations where the central office returns dial tone when the called party terminates the call. If Wink is not available, but you have to access an OCC through keypad entry of digits, set Options 123 and 127 ON. If Wink is present, set Options 126 ON. (ON)

124 OPERATION THROUGH PBX. If on, set PBX access value in Register 229. (OFF)

125 PULSE DIALING. If ON, phone is set for pulse dialing. If OFF, phone is set for tone dialing. (OFF)

126 WINK DETECT. Wink is the momentary loss of voltage resulting from Central Office switching between call termination and the return of dial tone. If Option 126 is set ON, the PCM will begin to look for Wink. When the call is terminated -- that is, when the called party hangs up --

and the Wink occurs, the PCM detects the Wink and shuts off the keypad so that fraudulent calls cannot be made with the returned dial tone. Wink detect is available with boards marked Revision C or later and boards upgraded to include the Revision C Wink modification. A call can be terminated at the Wink by using Option 179. If Wink is not available, Option 173 should be used. (OFF)

127 OCC KEYPAD "ON" AT FIRST RINGBACK. Opens keypad for 30 seconds. For DTMF signalling. If keypad is left on after dialing and Wink is not present, you can be exposed to fraudulent "chain dialing" in locations where the central office returns dial tone when the called party terminates the call. If Wink is not present, but you have to access an OCC through DTMF entry of digits, set Options 123 and 127 ON. If Wink is present, set Options 126 ON. (ON)

128 PHONE EQUIPPED WITH CREDIT CARD READER. (OFF)

129 VOICE TELEMETRY. Allows DTMF programming with voice responses. (ON)

130 MODEM TELEMETRY. Used with PNM and other modem telemetry such as sending a status report to a to an auto-answer modem for a hard copy printout from a serial printer. (OFF)

131 ENABLE ALARM 1. Sets Upper Housing Alarm. Alarms Group Variable 920 will indicate the current status of the alarm. (OFF)

132 ENABLE ALARM 2. Sets Handset Monitor Alarm. Alarms Group Variable 921 will indicate the current status of the alarm. (OFF)

133 ENABLE ALARM 3. Sets Vault Access Alarm. Alarms Group Variable 922 will indicate the current status of the alarm. (OFF)

134 ENABLE ALARM 4. Sets External Contact Alarm. Alarms Group Variable 923 will indicate the current status of the alarm. (OFF)

135 HIGH SECURITY FOR OWNER BYPASS CODE. When ON, Option 131 must be ON. Entering the owner bypass on-site will not work. If the upper housing is unlocked and Alarm 1 is tripped, the owner bypass will be accepted. (OFF)

SOFTWARE RELEASE 4.2

136 TIME OF DAY DISCOUNTS. To be used in areas where your payphone must give discounts depending upon the time of day. Set values in Registers 234 through 242. (OFF)

137 DISABLE UNLISTED NXX TIMER. If ON, this disables the call completion timer for exchanges that are not in the rates database. If off, the call completion timer is working. (OFF)

145 KEYPAD "ALWAYS ON" AFTER DIALING. For DTMF signalling. If the keypad is left on after dialing, you may be exposed to fraudulent "chain dialing" in locations where the central office returns dial tone when the called party terminates the call. If there is secondary dial tone, this Option is to be used in conjunction with Option 126 -- Wink Detect -- to allow manual keypad entry of digits to send to an OCC. Wink, in this case, must be present; however, if Wink is not present, do not use this option unless there is no secondary dial tone. If Wink is not present and there is secondary dial tone, use Option 173. When Option 145 is ON, Options 123 and 127 should be OFF. (OFF)

146 INSERT A "1" BEFORE 10 DIGITS DIALED. If a 10-digit number is dialed, the payphone will insert a 1 before the digit string. (OFF)

147 A factory option, for use by Elcotel Customer Service personnel. (OFF)

149 INCREASE ANSWER DETECT SENSITIVITY. ON = Increases Sensitivity, OFF = Decreases Sensitivity. When using this option, Registers 226 and 227 should be used for further adjustments. Register 228 should be adjusted in extreme cases **only**. (OFF)

150 DISABLE BONG ON 0+ CALLS. If the AOS service is not equipped to handle credit card numbers transmitted by DTMF, an AOS operator will answer and verbally ask the caller for the number. In such cases, it is necessary to disable the BONG so that the digits of the credit card number will not be stored and transmitted by the microprocessor. This BONG tone, which is sent to the handset receiver after the destination number has been entered at the keypad, signals the caller to enter the credit card number. The number is then stored by the payphone and sent to the AOS after

receiving the acknowledgement tone from the AOS. If an AOS service is not equipped to accept these digits, they should not be sent, and this feature should be disabled. (OFF)

154 DOUBLE INCOMING RING COUNT IN REGISTER 272. Doubles the number of incoming rings set in Register 272 to a maximum of 18 rings. These two registers are used for Option 122 (Incoming Calls). (OFF)

157 ENABLE SMDR. If ON, the phone will store SMDR data that will be transmitted along with the payphone status report. To receive the SMDR, the home phone office must be equipped with a printer and a 300-BPS auto-answer modem. 4.2 software is capable of storing 150 call records. If you would like the phone to call home when the SMDR buffer is 80% full, turn Option 180 ON. Ensure that there are call home numbers in Registers 243 and 244 and a station ID in Register 245, and ensure that Option 130 (Modem Telemetry) is ON. (OFF)

158 LOW SPEED ROTARY DIALING. If the option is turned ON, the payphone will dial at 7.5 pulses per second, or at 10 pulses per second if OFF. (OFF)

159 RETURN COIN FOR UNDERPAID CALLS. If ON, the payphone will return the original deposit prior to quoting the cost of the call. (OFF)

162 RESTRICT INTRALATA 0+ TO STATE. IntraLATA 0+ calls are normally routed to Elcotel's LD*OS; however, in some areas, intraLATA 0+ calls are not allowed to go to an AOS. When turned on, this option routes those calls to the local central office operator. (OFF)

164 PROPER DIALING FOR 7 AND 1 + 7-DIGIT CALLS. Corrects user dialing when the user enters only 7 digits for a 1 = 7 digit call. Setting this options will cause the PCM to look at the NXX numbers and determine if the call is a 7 digit or a 1 + 7 digit call. It will then insert or delete the leading 1 where required. For California, Massachusetts, New Jersey, New York, and Pennsylvania. For rates made before May 6, 1988. The answer to the 1 + 7 digit calls question on the rating module questionnaire must be ON to enable this option. (OFF)

SOFTWARE RELEASE 4.2

165 A factory option, for use by Elcotel Customer Service personnel.

166 A factory option, for use by Elcotel Customer Service personnel.

168 DOUBLE # OF TIMES SAYING "NOT A BILLABLE NUMBER". Doubles number set in Register 271. (OFF)

169 TREAT 00 LIKE 0 CALLS. All 00+ calls will be dialed as 0+ calls and all 00- calls will be dialed as 0- calls. (OFF)

170 USE DIAL TONE FROM CO. This option is to be used in areas where dial tone from the central office has a sound that is different from a normal 350-440 Hz dial tone. (OFF)

171 RESTRICT INTRA-STATE 0+ TO STATE. Restricts in-state calls to the LEC and sends all out of state calls to the AOS. (OFF)

172 OCC OPEN KEYPAD AT READY TONE (981). Used with Series-4 boards only. A Teltone 981 chip must be present in socket U16. Will open keypad when real dial tone is detected. (OFF)

173 DISABLE SECONDARY DIAL TONE DETECT (981). Used with Series-4 boards only. A Teltone 981 chip must be present in socket U16. If this option is set OFF and secondary dial tone is detected, it will shut the keypad off. If Option 179 is ON and Option 173 if OFF, the call will be terminated upon detection of secondary dial tone. (OFF)

174 SIMULATED RINGBACK ELSE PLEASE WAIT (AOS). If OFF and LD*OS or ITI is used, the phone will say "please wait" five seconds after the access number is dialed, and it will continue to repeat that message one every five seconds until the AOS switch answers. If ON, simulated ringback will be used in place of "please wait." (OFF)

175 RECEIVE CREDIT FROM SERVICE DESK. Used with Registers 265 and 266. (OFF)

176 PAYPHONE AS EXTENSION. Option 170 (USE DIAL TONE FROM CO) must be used with this option. (OFF)

177 REMOVE "1" FROM 1+7 AND 1+10 CALLS. (OFF)

178 RESTRICT INTERSTATE CALLS. This will stop all out of state 1+ and 0+ calls. (OFF)

179 TERMINATE CALL AT WINK/SECONDARY DIAL TONE. When ON and used with Option 126, this option will terminate the call when Wink is detected. When ON and used with Option 173, this option will terminate the call when secondary dial tone is detected. (OFF)

180 CALL HOME WHEN SMDR BUFFER IS 80% FULL. When ON and SMDR buffer reaches 80% full, it will cause the phone to call home. Used with Options 130 and 157 and Registers 243, 244, and 245. (OFF)

181 A factory option, for use by Elcotel Customer Service personnel.

182 A factory option, for use by Elcotel Customer Service personnel.

183 CREDIT ONLY PHONE. This option is for a phone that is equipped with card reader and keypad and does not use coins. When ON, this option will turn off voice telemetry and allow only PNM and modem telemetry. When this Option is ON, pins 1 and 2 of the alarm connection must be shorted in order to enter voice telemetry. For future release. (OFF)

5.2 Programming the Registers Group

(1) If the phone is not already in the programming mode, place the phone in the programming mode according to the procedure described in 5.0.

(2) Enter the number of the register. The payphone's voice will respond with the value currently stored in the register.

(3) Enter *.

(4) Enter the new value. If you delay 3 seconds or longer in entering the digits, the PCM will accept whatever you have already entered as the new value. For example, if in the process of entering 345678, you paused for three seconds after entering 5, the PCM will

place the value 345 in the register. If this occurs, it is then necessary to reprogram the register.

(5) Enter * again. The payphone's voice will report the new value within 3 seconds.

NOTE: Registers 221 through 225 can be reset by using Maintenance Command 962. It is recommended that your maintenance person reset these registers whenever the cashbox is serviced.

5.2.1 The Registers Group

The following is a list of the 3-digit variables stored by the PCM as registers. When applicable, the default value of each is indicated in parentheses. A functional list registers and options follows in Section 6.

220 CASH VAULT TOTALIZER. Amount collected by the payphone since the day of shipment. Amount is in five cent increments; for example, 2000 = $100.00. (Non-resettable)

221 CASH VAULT TOTAL. Amount collected since last service call. Reset by Maintenance Command 962.

222 TOTAL OF LOCAL CALLS. Total number of local calls since the last service call. Reset by Maintenance Command 962.

223 TOTAL OF LONG DISTANCE CALLS. Total number of long distance calls (excluding 800 and 900 calls) since the payphone was last serviced. Reset by Maintenance Command 962.

224 TOTAL OF ALL 0+ CALLS. Total number of operator-assisted calls since the last service call. Reset by Maintenance Command 962.

225 TOTAL NUMBER OF CALLS. The sum total of the contents of Registers 222-224, 259, 273, and 288 since the last service call. Reset by Maintenance Command 962.

226 VOICE FILTER 1. Integration factor for the leading edge of the voice filter. 0=minimum; 3=maximum. Usually used with Option 149 (Answer Detect Sensitivity). Stored in RAM only. (0)

SOFTWARE RELEASE 4.2

227 VOICE FILTER 2. Integration factor for the trailing edge of the voice filter. 0=minimum; 3=maximum. Usually used with Option 149 (Answer Detect Sensitivity). Stored in RAM only. (0)

228 FIRST RING DETECT. Integration factor affecting only the first ringback detected. Needed when there is excessive central office switching noise after dialing and before the first ringback is heard. This register is rarely adjusted. Try using Registers 226 and 227 before using this option. 0 = minimum; 8 = maximum. Stored in RAM only. (2)

229 PBX ACCESS CODE. Single digit required to access "outside line." Used with Option 124. (9)

230 OWNER BYPASS CODE. Three-digit number. (999)

231 Spare register.

232 HOLD OFF. Determines when the call is considered to be completed. Used in areas where SIT tones are not provided. It is a two-digit time delay (in seconds) following the actual detection of call completion by the payphone. Usually set at 07 or 12. (00)

233 CASH VAULT TRIGGER LEVEL. Three-digit amount in dollars that will cause the phone to call home. Used with Options 129 and 130 and Registers 243, 244, and 245. (150)

234 START PREMIUM PERIOD. Hours and minutes in 24 hour format (HH:mm). All four digits must be entered. Used with Option 136. (0800)

235 START FIRST DISCOUNT PERIOD. Hours and minutes in 24 hour format (HH:mm). All four digits must be entered. Used with Option 136. (1700)

236 START SECOND DISCOUNT PERIOD. Hours and minutes in 24 hour format (HH:mm). All four digits must be entered. Used with Option 136. (2300)

237 FIRST DISCOUNT. Amount of first discount in percent. When applicable, it is usually 30%. Used with Option 136. (30)

SOFTWARE RELEASE 4.2

238 SECOND DISCOUNT. Amount of second discount in percent. When applicable, it is usually 60 percent. Used with Option 136. (60)

239 READ/SET DAY OF WEEK. Single-digit number: Sunday = 1, Monday = 2, Tuesday = 3, Wednesday = 3, Thursday = 5, Friday = 6, Saturday = 7.

240 READ/SET TIME. Hours and minutes in 24 hour format (HH:mm). All four digits must be entered (for example; 1445 = 2:45 pm).

241 READ/SET DATE. Month and Day (MM/dd). All four digits must be entered (for example; 0620 = June 20).

242 READ/SET YEAR. Two-digit number (for example; 88 = 1988).

243 HOME PRIMARY NUMBER. Phone number for Home that is dialed from the remote phone location. Used for reporting alarm status and cashbox total. Maximum of eleven digits. A number must be in Register 245 and Option 129 and/or Option 130 must be ON to use this Register. (0)

244 HOME SECONDARY NUMBER. Alternate phone number for Home that is dialed from the remote phone location. Used as a back-up number for reporting alarm status and cashbox total, etc. The phone will dial the home primary number first. If there is no answer after four rings, the phone will hang up, wait five minutes, and dial the home secondary number. If there is no answer after four rings, the phone will hang up, wait five minutes, and dial the home primary number. The phone will continue this procedure, alternating between the two numbers, until there is an answer. Maximum of eleven digits. A number must be in Register 245 and Option 129 and/or Option 130 must be ON to use this register. (0)

245 STATION ID NUMBER. Four-digit number assigned to this specific phone/location for purposes of identification. Must be used with PNM, alarms and status reports. A number must be in this register when Registers 243 and 244 are used. (9999)

246 800 CHARGE. Three-digit number for amount in cents. Enter 995 to restrict 800 calls. (0)

247 900 CHARGE. Three-digit number for amount in cents. Enter 995 to restrict 900 calls. This will change the initial price in the initial time only. The default is $0.50 for unlimited time. (050)

248 OPERATOR-ONLY CHARGE. Three-digit number for amount in cents. Enter 995 to restrict 0- calls. Refer to Registers 896 and 897, and ensure that the correct macro is used for your application. (0)

249 0+PLUS CHARGE. Three-digit number for amount in cents. Enter 995 to restrict 0+ calls. Refer to Registers 889 through 895, and ensure that the correct macro is used for your application. (0)

250 LOCAL INFORMATION CHARGE. Three-digit number for amount in cents. Used in conjunction with Register 253. Enter 995 to restrict local information number. Register 863 should be set to Macro 2. (0)

251 INTRA NPA INFORMATION CHARGE (1+555-1212). Three-digit number for amount in cents. Enter 995 to restrict intra NPA information number. Register 263 should be set to Macro 2. (50)

252 INTER NPA INFORMATION CHARGE (1+NPA-555-1212). Three-digit number for amount in cents. Enter 995 to restrict inter NPA information number. Register 863 should be set to Macro 2. (50)

253 LOCAL INFORMATION NUMBER. Used to ensure proper charge for local information calls. Register 273 counts these calls. Maximum of eleven digits. (411)

258 ACCESS ATTEMPTS. Number of times someone has tried unsuccessfully to enter the programming mode by attempting to find the owner bypass code. A total since the last service call. Two digits, resettable through 962.

259 MISCELLANEOUS CALLS. Total number of miscellaneous calls (800, 900, free calls, etc.) since the last service call. Resettable through 962, this total is added to Register 225.

260 OCC ACCESS NUMBER. Maximum of twelve digits. (10XXX, 950-XXXX, etc.). (0)

SOFTWARE RELEASE 4.2

261 OCC AUTHORIZATION CODE. Maximum of eleven digits. (0)

262 AOS ACCESS NUMBER. Maximum of eleven digits. (0)

263 AOS AUTHORIZATION CODE. Identification number for AOS calls. Maximum of twelve digits. (0)

264 Spare Register.

265 USER DIALED ACCESS NUMBER FOR SERVICE DESK. Used with Register 266 and Option 175. User dials this number. The phone dials the number in Register 266. (0)

266 PHONE DIALED ACCESS NUMBER FOR SERVICE DESK. Used with Register 265 and Option 175. The phone dials this number after the user dials the number in Register 265. (0)

267 DELAY RINGBACK DETECT. Delays payphone's recognition of ringback tones until register times out. Can be set from 0 through 9 seconds. Used to overcome switch noise before call is completed. Stored in RAM only. (0)

268 VOICE MAILBOX PHONE NUMBER. Maximum of eleven digits. 0 disables the feature. Refer to Section 3.16. Ensure that the macro selected in Register 882 is correct for your application. (0)

269 MANUAL/COIN AOS ACCESS. Phone number for manually-operated phone system with operator. Dialing #99 dials the number in this register to access the manual/coin AOS operator. When the operator dials *, the phone will tell the operator the amount deposited. When the operator dials #, the phone will collect the deposit. Maximum of eleven digits. 0 disables this feature. Ensure that the macro selected in Register 880 is correct for your application. (0)

270 AMOUNT ADDED TO NORMAL 976 CALL. The price to add to normal charge. 976 exchange is restricted when the charge is 9.95. Ensure that the macro selected in Register 872 is correct for your application. (995)

271 TIMES TO REPEAT "NOT A BILLABLE NUMBER." Message is delivered to the operator. Use of this register helps in areas where there is no call screening. Used for all outgoing 0- calls and all incoming calls. If sending 0- call to LD*OS, the message will not be announced to the

LD*OS operator; however, when the LD*OS operator sends (splash back) the call to the telco, the message will be announced to the telco operator. One-digit number. If 9 times is not enough, use Option 168. (0)

272 NUMBER OF TIMES PHONE WILL RING BEFORE TELEMETRY ANSWERS. Can be set from 0 through 9. If more than 9 rings are needed, refer to Option 154. (5)

273 TOTAL NUMBER OF LOCAL INFORMATION CALLS. Counts and stores the number of local information calls since the last service call. Can be reset with Maintenance Command 962. This total is added to Register 225. (1)

274 NUMBER OF TIMES PHONE WILL LET RING FOR MAILBOX. Determines the number of rings allowed before calling the Voice Mailbox (Register 268) system. This is specifically for using MPI (Messenger Phone Inc.). (5)

275 CASH VAULT ALARM BYPASS NUMBER. Disables the cashbox vault alarm for 15 minutes, thereby permitting removal of the cashbox without having to use the owner bypass code. To use this register, enter a pound sign (#) and the three digits that you set for this register. (000)

276 TIME TO REDUCE # OF RINGS BEFORE ANSWER. When several phones need to be polled in a short period of time, using Register 276 you can set the starting time you want the phone to answer on one ring. This register is used with Register 277. (HH) (23)

277 DURATION OF REDUCED RINGS BEFORE ANSWER. With Register 276, you can set the start time you would like the phone to start answering on one ring, and with this register -- Register 277 -- you can set the number of hours you would like the phone to do this. (HH) (0)

278 AOS 2 ACCESS NUMBER. This register contains the number to be dialed to reach the LEC or to use a 10XXX number to reach the service of your choice. (0)

279 SOFTWARE LEVEL NUMBER. This 3-digit number indicates the software level of the software installed in the PCM assembly. It cannot be changed by the owner. New software chips must be installed to change the software level number.

SOFTWARE RELEASE 4.2

280 INACTIVITY TIMER. If this register is set and times out, it will cause the payphone to call home and report that no completed calls have been made and/or no coins have been collected over a specified period. The 2 digits of the register signify the number of hours for the timer to time out. (00)

281 LD*OS AUTHORIZATION CODE. The authorization code for all LD*OS calls. 7 digits. (0)

282 A factory register, for use by Elcotel Customer Service personnel.

283 MISCELLANEOUS USAGE REGISTER FOR EXTRA DIGITS WHEN USING ITI OR SPRINT. Used for extra digits when using ITI or Sprint. (0)

284 NPA-NXX - AREA CODE AND EXCHANGE OF RATING MODULE. This a read only register, programmable only through the rating module. (NPANXX)

285 SERIAL NUMBER OF RATING CHIP/MODULE. This is a read only register, programmable only through the rating chip or module. (0000000)

286 CHARGE FOR 950-XXXX CALLS. Enter 995 to restrict 950-XXXX calls. Ensure that the macro selected in Register 873 is correct for your application. (0)

287 WALKAWAY ALARM MAXIMUM COUNT. This register sets the maximum number of times calls can be attempted without depositing coins before the phone will call home and report "No Dollars." Status is displayed in Register 928. (0)

288 TOTAL 0- CALLS. Reset with 962. This Register will be added to Register 225. (0)

289 SPECIAL 555 PRICING - NUMBER. When a special 1-NPA-555-1212 number is dialed it will be priced by Register 290. (0)

290 SPECIAL 555 PRICING - PRICE. Used to price special 1-NPA-555-1212 numbers. The telephone number is in Register 289. (0)

370 USER PROGRAMMABLE DIALING LANGUAGE MACRO #1. Register 975 must first be set at "1." Contact Elcotel Customer Service before using.

371 USER PROGRAMMABLE DIALING LANGUAGE MACRO #2. Register 975 must first be set at "1." Contact Elcotel Customer Service before using.

380 USER PROGRAMMABLE DTMF RETURN CODE TABLE #1. Register 975 must first be set at "1." Contact Elcotel Customer Service before using.

381 USER PROGRAMMABLE DTMF RETURN CODE TABLE #2. Register 975 must first be set at "1." Contact Elcotel Customer Service before using.

861-899 Macro number to use for Call Types 1-39. For example, Register 865 is used for Call Type 5, Register 880 is used for Call Type 20, etc.

5.3 Programming the Automatic Dialer Group

The owner of the payphone may provide a directory of auto dialed and free numbers so that the customer can take advantage of this feature. The list must contain the name of the party to be automatically dialed, the charge, and the auto dial number (#20 through #69 are available). For example:

Acme Cab Co. ($.65 charge).....Dial #25

A maximum of fifty phone numbers may be stored in the PCM automatic dialer. Note that the auto dial number which the customer enters on the keypad corresponds to the two least significant digits of the applicable variable. For example: When the customer enters #25 (pound sign plus 25), the number stored in variable 325 is dialed automatically. Program auto dial numbers as follows:

(1) If the payphone is not in the programming mode, place it the programming mode according the procedure described in 2.0.

(2) Enter the variable number.

(3) Enter *.

(4) Enter the phone number, including long distance direct dial code and area code if applicable (for example; 18137564583 = 1-813-7564583). NOTE: If you wish to delete the number in the auto dial variable, enter 0. If, however, you wish to replace the number existing in the auto dial variable, enter the new number.

(5) If the number is to be charged normally, enter #. If the number is to be dialed free of charge, enter *.

(6) If a number dialed and you have entered this as free in a speed dial group, the number will then be free.

5.3.1 The Automatic Dialer Group

320 FIRST PHONE NUMBER IN AUTOMATIC DIALER. Maximum of eleven digits. (0)

-through-

369 LAST PHONE NUMBER IN AUTOMATIC DIALER. Maximum of eleven digits. (0)

5.4 Programming the Band Charges Groups

The PCM provides several "bands" for pricing local, intra lata, inter lata, special NPA, and interstate calls. Each band contains four variables: Initial rate (IR), initial period (IP), subsequent rate (SR), and subsequent period (SP). Rates are stored in cents (three digits) and period is stored in minutes (two digits). 00 indicates unlimited time. Prior to adding new information, be sure that you will be storing it in an empty band. Program the band as follows:

(1) If the payphone is not already in the programming mode, place the payphone in the programming mode according to the procedure described in 2.0.

(2) Enter the variable number.

(3) Enter *.

(4) Enter the value in cents (for rate) or minutes (for period).

(5) Enter *.

NOTE: Remember that the band consists of 4 consecutive variables; therefore, the above procedure must be performed four times, once for each variable.

5.5 Programming the Exceptions Group

All known local, intraLATA, interLATA, and special NPA exchanges and rates associated with the exchange where the payphone is located are stored in the rating module or chip at the time of manufacture; however, new exhanges are created all the time, and the rates associated with some exchanges may change. In addition, it is possible to restrict an entire exchange. The exceptions groups have priority over the data stored in the rating module or chip. Program exceptions as follows:

(1) If the payphone is not already in the programming mode, place it in the programming mode according to the procedure described in 2.0.

(2) Enter the variable number.

(3) Enter *.

(4) Enter the 3-digit exchange number.

(5) Enter the 2-digit band number (for example: Enter band 4 as 04.). NOTE: 00 in place of band number restricts the exchange. 0 alone, instead of the five digits entered in steps 3 and 4, cancels the entire exception.

(6) Enter *.

5.6 Band Charges and Exceptions Charts

Use the charts on the following pages as a convenient way to keep track of band rates and periods and exceptions.

SOFTWARE RELEASE 4.2

5.6.1 LOCAL BAND CHARGES GROUP

NOTE: Local Rates are not discounted.

BAND 1		BAND 6		BAND 11	
420 IR	__ __ __	440 IR	__ __ __	460 IR	__ __ __
421 IP	__ __	441 IP	__ __	461 IP	__ __
422 SR	__ __ __	442 SR	__ __ __	462 SR	__ __ __
423 SP	__ __	443 SP	__ __	463 SP	__ __
BAND 2		**BAND 7**		**BAND 12**	
424 IR	__ __ __	444 IR	__ __ __	464 IR	__ __ __
425 IP	__ __	445 IP	__ __	465 IP	__ __
426 SR	__ __ __	446 SR	__ __ __	466 SR	__ __ __
427 SP	__ __	447 SP	__ __	467 SP	__ __
BAND 3		**BAND 8**		**BAND 13**	
428 IR	__ __ __	448 IR	__ __ __	468 IR	__ __ __
429 IP	__ __	449 IP	__ __	469 IP	__ __
430 SR	__ __ __	450 SR	__ __ __	470 SR	__ __ __
431 SP	__ __	451 SP	__ __	471 SP	__ __
BAND 4		**BAND 9**		**BAND 14**	
432 IR	__ __ __	452 IR	__ __ __	472 IR	__ __ __
433 IP	__ __	453 IP	__ __	473 IP	__ __
434 SR	__ ____	454 SR	__ __ __	474 SR	__ __ __
435 SP	__ __	455 SP	__ __	475 SP	__ __
BAND 5		**BAND 10**		**BAND 15**	
436 IR	__ __ __	456 IR	__ __ __	476 IR	__ __ __
437 IP	__ __	457 IP	__ __	477 IP	__ __
438 SR	__ __ __	458 SR	__ __ __	478 SR	__ __ __
439 SP	__ __	459 SP	__ __	479 SP	__ __

5.6.2 LOCAL BAND EXCEPTIONS GROUP

Examples: (1) Exchange 377 must be added and rated in accordance with Band 5 and you want to store it in Variable No.483 (Exception 4): Enter 483*37705*.

(2) Exchange 956 is to be restricted and you want to store it in Variable No. 487 (Exception 9): Enter 487*95600*.

(3) Exception 14 must be deleted: Enter 493*0*.

480 Exception 1. __ __ __ __ __		490 Exception 11. __ __ __ __ __	
481 Exception 2. __ __ __ __ __		491 Exception 12. __ __ __ __ __	
482 Exception 3. __ __ __ __ __		492 Exception 13. __ __ __ __ __	
483 Exception 4. __ __ __ __ __		493 Exception 14. __ __ __ __ __	
484 Exception 5. __ __ __ __ __		494 Exception 15. __ __ __ __ __	
485 Exception 6. __ __ __ __ __		495 Exception 16. __ __ __ __ __	
486 Exception 7. __ __ __ __ __		496 Exception 17. __ __ __ __ __	
487 Exception 8. __ __ __ __ __		497 Exception 18. __ __ __ __ __	
488 Exception 9. __ __ __ __ __		498 Exception 19. __ __ __ __ __	
489 Exception 10. __ __ __ __ __		499 Exception 20. __ __ __ __ __	

5.6.3 INTRALATA BAND CHARGES GROUP

NOTE: IntraLATA call prices include all surcharges and may be subject to discounts.

BAND 16	BAND 21	BAND 26
520 IR __ __ __	540 IR __ __ __	560 IR __ __ __
521 IP __ __	541 IP __ __	561 IP __ __
522 SR __ __ __	542 SR __ __ __	562 SR __ __ __
523 SP __ __	543 SP __ __	563 SP __ __
BAND 17	BAND 22	BAND 27
524 IR __ __ __	544 IR __ __ __	564 IR __ __ __
525 IP __ __	545 IP __ __	565 IP __ __
526 SR __ __ __	546 SR __ __ __	566 SR __ __ __
527 SP __ __	547 SP __ __	567 SP __ __
BAND 18	BAND 23	BAND 28
528 IR __ __ __	548 IR __ __ __	568 IR __ __ __
529 IP __ __	549 IP __ __	569 IP __ __
530 SR __ __ __	550 SR __ __ __	570 SR __ __ __
531 SP __ __	551 SP __ __ __	571 SP __ __
BAND 19	BAND 24	BAND 29
532 IR __ __ __	552 IR __ __ __	572 IR __ __ __
533 IP __ __	553 IP __ __	573 IP __ __
534 SR __ __ __	554 SR __ __ __	574 SR __ __ __
535 SP __ __	555 SP __ __	575 SP __ __
BAND 20	BAND 25	BAND 30
536 IR __ __ __	556 IR __ __ __	576 IR __ __ __
537 IP __ __	557 IP __ __	577 IP __ __
538 SR __ __ __	558 SR __ __ __	578 SR __ __ __
539 SP __ __	559 SP __ __	579 SP __ __

5.6.4 INTRALATA EXCEPTIONS GROUP

Examples: (1) Exchange 377 in area code 215 must be added, rated in accordance with Band 25 and stored in Variable 586 (Exception 7): Enter 586*21537725*.

(2) Exchange 956 in area code 914 is to be restricted and you want to store it in Variable 597 (Exception 18): Enter 597*91495600*.

(3) Exception 7 must be deleted: Enter 586*0*.

580 Exception 1. _ _ _ _ _ _ _ _ _	590 Exception 11. _ _ _ _ _ _ _ _ _
581 Exception 2. _ _ _ _ _ _ _ _ _	591 Exception 12. _ _ _ _ _ _ _ _ _
582 Exception 3. _ _ _ _ _ _ _ _ _	592 Exception 13. _ _ _ _ _ _ _ _ _
583 Exception 4. _ _ _ _ _ _ _ _ _	593 Exception 14. _ _ _ _ _ _ _ _ _
584 Exception 5. _ _ _ _ _ _ _ _ _	594 Exception 15. _ _ _ _ _ _ _ _ _
585 Exception 6. _ _ _ _ _ _ _ _ _	595 Exception 16. _ _ _ _ _ _ _ _ _
586 Exception 7. _ _ _ _ _ _ _ _ _	596 Exception 17. _ _ _ _ _ _ _ _ _
587 Exception 8. _ _ _ _ _ _ _ _ _	597 Exception 18. _ _ _ _ _ _ _ _ _
588 Exception 9. _ _ _ _ _ _ _ _ _	598 Exception 19. _ _ _ _ _ _ _ _ _
589 Exception 10._ _ _ _ _ _ _ _ _	599 Exception 20. _ _ _ _ _ _ _ _ _

5.6.5 INTERLATA BAND CHARGES GROUP

NOTE: InterLATA Band Charges include all surcharges, and may be subject to discount.

BAND 31
620 IR __ __ __
621 IP __ __
622 SR __ __ __
623 SP __ __

BAND 32
624 IR __ __ __
625 IP __ __
626 SR __ __ __
627 SP __ __

BAND 33
628 IR __ __ __
629 IP __ __
630 SR __ __ __
631 SP __ __

BAND 34
632 IR __ __ __
633 IP __ __
634 SR __ __ __
635 SP __ __

BAND 35
636 IR __ __ __
637 IP __ __
638 SR __ __ __
639 SP __ __

BAND 36
640 IR __ __ __
641 IP __ __
642 SR __ __ __
643 SP __ __

BAND 37
644 IR __ __ __
645 IP __ __
646 SR __ __ __
647 SP __ __

BAND 38
648 IR __ __ __
649 IP __ __
650 SR __ __ __
651 SP __ __

BAND 39
652 IR __ __ __
653 IP __ __
654 SR __ __ __
655 SP __ __

BAND 40
656 IR __ __ __
657 IP __ __
658 SR __ __ __
659 SP __ __

BAND 41
660 IR __ __ __
661 IP __ __
662 SR __ __ __
663 SP __ __

BAND 42
664 IR __ __ __
665 IP __ __
666 SR __ __ __
667 SP __ __

BAND 43
668 IR __ __ __
669 IP __ __
670 SR __ __ __
671 SP __ __

BAND 44
672 IR __ __ __
673 IP __ __
674 SR __ __ __
675 SP __ __

BAND 45
676 IR __ __ __
677 IP __ __
678 SR __ __ __
679 SP __ __

5.6.6 INTERLATA EXCEPTIONS GROUP

Examples: (1) Exchange 756 in area code 301 must be added, rated in accordance with Band 32, and you want to store it in Variable 685 (Exception 6): Enter 685*30175632*.

(2) Exchange 975 in area code 203 must be restricted, and you want to store it in Variable 693 (Exception 14): Enter 693*20397500*.

(3) Exception 9 must be deleted: Enter 688*0*.

680 Exception 1. _ _ _ _ _ _ _ _ _

681 Exception 2. _ _ _ _ _ _ _ _ _

682 Exception 3. _ _ _ _ _ _ _ _ _

683 Exception 4. _ _ _ _ _ _ _ _ _

684 Exception 5. _ _ _ _ _ _ _ _ _

685 Exception 6. _ _ _ _ _ _ _ _ _

686 Exception 7. _ _ _ _ _ _ _ _ _

687 Exception 8. _ _ _ _ _ _ _ _ _

688 Exception 9. _ _ _ _ _ _ _ _ _

689 Exception 10. _ _ _ _ _ _ _ _ _

690 Exception 11. _ _ _ _ _ _ _ _ _

691 Exception 12. _ _ _ _ _ _ _ _ _

692 Exception 13. _ _ _ _ _ _ _ _ _

693 Exception 14. _ _ _ _ _ _ _ _ _

694 Exception 15. _ _ _ _ _ _ _ _ _

695 Exception 16. _ _ _ _ _ _ _ _ _

696 Exception 17. _ _ _ _ _ _ _ _ _

697 Exception 18. _ _ _ _ _ _ _ _ _

698 Exception 19. _ _ _ _ _ _ _ _ _

699 Exception 20. _ _ _ _ _ _ _ _ _

5.6.7 SPECIAL NPA BAND CHARGES GROUP

NOTE: Special NPA Band Chargee include all surcharges and may be subject to discount.

BAND 46	BAND 51	BAND 56
720 IR __ __ __	740 IR __ __ __	760 IR __ __ __
721 IP __ __	741 IP __ __	761 IP __ __
722 SR __ __ __	742 SR __ __ __	762 SR __ __ __
723 SP __ __	743 SP __ __	763 SP __ __
BAND 47	BAND 52	BAND 57
724 IR __ __ __	744 IR __ __ __	764 IR __ __ __
725 IP __ __	745 IP __ __	765 IP __ __
726 SR __ __ __	746 SR __ __ __	766 SR __ __ __
727 SP __ __	747 SP __ __	767 SP __ __
BAND 48	BAND 53	BAND 58
728 IR __ __ __	748 IR __ __ __	768 IR __ __ __
729 IP __ __	749 IP __ __	769 IP __ __
730 SR __ __ __	750 SR __ __ __	770 SR __ __ __
731 SP __ __	751 SP __ __	771 SP __ __
BAND 49	BAND 54	BAND 59
732 IR __ __ __	752 IR __ __ __	772 IR __ __ __
733 IP __ __	753 IP __ __	773 IP __ __
734 SR __ __ __	754 SR __ __ __	774 SR __ __ __
735 SP __ __	755 SP __ __	775 SP __ __
BAND 50	BAND 55	BAND 60
736 IR __ __ __	756 IR __ __ __	776 IR __ __ __
737 IP __ __	757 IP __ __	777 IP __ __
738 SR __ __ __	758 SR __ __ __	778 SR __ __ __
739 SP __ __	759 SP __ __	779 SP __ __

5.6.8 SPECIAL NPA EXCEPTIONS GROUP

Examples: (1) Area code 503 must be added, rated in accordance with Band 47, and you want to store it in Variable No. 782 (Exception 3): Enter 782*50347*.

(2) Area code 809 must be restricted, and you want to store it in Variable No. 792 (Exception 13): Enter 792*80900*.

(3) Exception 12 must be deleted: Enter 791*0*.

780 Exception 1. __ __ __ __ __

781 Exception 2. __ __ __ __ __

782 Exception 3. __ __ __ __ __

783 Exception 4. __ __ __ __ __

784 Exception 5. __ __ __ __ __

785 Exception 6. __ __ __ __ __

786 Exception 7. __ __ __ __ __

787 Exception 8. __ __ __ __ __

787 Exception 9. __ __ __ __ __

789 Exception 10. __ __ __ __ __

790 Exception 11. __ __ __ __ __

791 Exception 12. __ __ __ __ __

792 Exception 13. __ __ __ __ __

793 Exception 14. __ __ __ __ __

794 Exception 15. __ __ __ __ __

795 Exception 16. __ __ __ __ __

796 Exception 17. __ __ __ __ __

797 Exception 18. __ __ __ __ __

798 Exception 19. __ __ __ __ __

799 Exception 20. __ __ __ __ __

5.6.9 INTERSTATE BAND CHARGES GROUP

All known area codes (NPAs) which are outside of the state where the payphone is located are stored in the rating module or at the time of manufacture; however, new NPAs are created all the time and the rates between some NPAs may change. When a new NPA is created, you must add the new NPA to the special NPA exceptions group. When rates change or if you desire to initiate a change (for example; changing initial period from 1 minute to 3 minutes), you must use the interstate band charges group.

NOTE: Interstate Band Charges include all surcharges, and can be subject to discounts.

BAND 1		BAND 5		BAND 8	
820 IR	__ __ __	836 IR	__ __ __	848 IR	__ __ __
821 IP	__ __	837 IP	__ __	849 IP	__ __
822 SR	__ __ __	838 SR	__ __ __	850 SR	__ __ __
823 SP	__ __	839 SP	__ __	851 SP	__ __
BAND 2		**BAND 6**		**BAND 9**	
824 IR	__ __ __	840 IR	__ __ __	852 IR	__ __ __
825 IP	__ __	841 IP	__ __	853 IP	__ __
826 SR	__ __ __	842 SR	__ __ __	854 SR	__ __ __
827 SP	__ __	843 SP	__ __	855 SP	__ __
BAND 3		**BAND 7**		**BAND 10**	
828 IR	__ __ __	844 IR	__ __ __	856 IR	__ __ __
829 IP	__ __	845 IP	__ __	857 IP	__ __
830 SR	__ __ __	846 SR	__ __ __	858 SR	__ __ __
831 SP	__ __	847 SP	__ __	859 SP	__ __
BAND 4					
832 IR	__ __ __				
833 IP	__ __				
834 SR	__ __ __				
835 SP	__ __				

5.7 ALARMS GROUP

The Alarms group consists of a series of registers containing the status of the various alarms in the system. Since the contents of variables 920 through 923 are a function of external events, they cannot be changed; however, their status can be monitored. To obtain the status of any alarm input, dial the valid owner bypass code, wait four seconds, and dial the three-digit variable. Tripped alarms are reset automatically, but only after reporting their status to the home phone.

920 ALARM NO. 1. Always associated with upper housing access. When Option 131 is ON, this status register will be OFF until the upper housing is opened. An alarm kit must be used to effectively use this option. (OFF)

921 ALARM NO. 2. Always associated with handset monitor. When Option 132 is ON, this status register will be OFF until the handset is removed. This alarm is built into Series 3 and Series 4 boards. It will not work with Series 2 boards. (OFF)

922 ALARM NO. 3. Always associated with vault access. When Option 133 is ON, this status register will be OFF until the cash vault is removed. An alarm kit must be used to effectively use this alarm. (OFF)

923 ALARM NO. 4. Always associated with an external contact such as may be found in vending machines (empty indicators), or in intrusion detectors. When Option 134 is ON, this status register will be OFF until the external contact, which is normally open, is closed. A special alarm harness is required to use this alarm. (OFF)

924 ALARM NO. 5. Battery-backed RAM status. If the RAM has been reloaded with the values from the rating module or chip, all changes and additions made on-site or remotely will be lost. If an EEPROM is used, most changes made on-site or remotely will be saved, providing they were burned into the EEPROM; however, speed dial numbers (auto dial) and exceptions groups will always be lost. If the RAM reloads, the alarm switches to ON. (OFF)

925 ALARM NO. 6. Cashbox 80% full level has been exceeded. This alarm is set by adjusting Register 233 (Cash Vault Trigger Level). (OFF)

SOFTWARE RELEASE 4.2

926 ALARM NO. 7. Cashbox 95% full level has been exceeded. This alarm is based on 95% of a full cashbox. (OFF)

927 NO ACTIVITY ALARM. When a value is placed in Register 280 (Inactivity Timer), the phone will monitor all calls. If any call is made before the time set in Register 280, the alarm will be reset. If no calls are made before time set in Register 280, the phone will call home and report "no calls." (OFF)

928 NO COIN ALARM. When a value is placed in Register 280 (Inactivity Timer), the phone will monitor all calls. If a coin call is made before the time set in Register 280, the alarm will be reset. If no coin call is made before the time set in Register 280, the phone will call home and report "no dollars." Also, when the number of walkaways set in Register 287 is reached, the phone will call home and report "no dollars." A walkaway occurs when the phone asks for coins, but does not receive them. (OFF)

929 BAD EEPROM BURN ALARM. When an EEPROM burn has failed, Register 929 will be turned ON. In voice telemetry, the payphone's voice will say "alarm 1." (OFF)

5.8 MAINTENANCE GROUP

The Maintenance Group consists of commands used by the maintenance person locally or remotely to initiate specific actions in the payphone. To initiate the command, do the following:

(1) Enter the telemetry, or programming, mode by entering the owner bypass code, which is located in Register 230.

(2) Enter 122 to verify that you are in the telemetry mode. If you are in the telemetry mode, the payphone's voice will say "122 ON" or "122 OFF."

(3) Once you are certain that you have placed the phone in the telemetry mode, dial the 3-digit variable number.

960 TRANSPARENT MODE. Causes the payphone to be connected directly to the telco line without payphone intervention, such as a request for money. Since the payphone's keypad will be connected directly to the telco line, it requires that the telco line be a tone dialing line. This mode of operation is terminated when the payphone is returned on-hook. This cannot be done remotely.

961 CALL HOME. If Option 129 is on, it causes the payphone to initiate a call to the "Home" base and report the status through voice telemetry. If Option 130 is on and the unit is equipped with the optional modem, the payphone calls home and delivers a status report via modem telemetry. There must be a home primary number in Register 243 and an ID number in Register 245. This command should be used by the maintenance person upon arrival at the payphone site if the cashbox is to be serviced.

962 RESET ALL COUNTERS. This command is to be used by the maintenance person after the cashbox is serviced. It will clear Registers 221, 222, 223, 224, 225, 258, 259, 273, and 288.

963 TERMINATE TELEMETRY MODE. Causes the payphone to go back on-hook to terminate a telemetry link. This is used in remote voice telemetry.

964 RELOAD BATTERY-BACKED RAM. Clears the RAM of all changes and additions and loads default values from the rating modu-

le or chip. This command is normally used when a new rating module or chip is installed. Changes and additions that have not been added to the new rating module or chip must be reprogrammed. This register also applies to EEPROMs.

965 FLIP COIN RELAY TO RETURN COIN. Provides remote control of the coin relay to return coins when operating in the voice telemetry mode.

966 FLIP COIN RELAY TO COLLECT COIN. Provides remote control of the coin relay to collect coins when operating in the voice telemetry mode.

967 TEST EEPROM CHECKSUM 0=OK. Register 975 must be set a "1".

968 A factory register.

969 BURN RAM REGISTERS AND OPTIONS TO EEPROM. This command is to be used in voice telemetry. When changes in the RAM are made, they should be burned into EEPROM. Register 975 must be set at "1".

970 A factory register.

971 A factory register.

972 A factory register.

973 A factory register.

974 CLEAR NON-RESETTING COUNTERS.

975 SAFETY LOCK FOR EEPROM BURN COMMANDS. 1=Lock Disabled, 0=Lock Enabled. This command is to be used in voice telemetry. Before the EEPROM can be burned, this register must be set at 1. After burning changes, the lock will be automatically set to 0 to lock.

SOFTWARE RELEASE 4.2

6.0 FUNCTIONAL LISTING OF VARIABLES

The following is a list of variables, such as options and registers, grouped together functionally. In addition, the list is arranged such that the groups are presented in a logical sequence, indicating which functions should be addressed first when programming the PCM.

6.1 Telemetry Mode

129	Voice telemetry	ON
130	Modem telemetry	ON
135	High security for owner bypass code	OFF
230	Owner bypass code	---
275	Cash vault alarm bypass number	---
245	Station ID number	----
272	Number of times phone will ring before telemetry answers	5
154	Double incoming rings in Register 272	OFF
276	Time to reduce # of rings before answer (HH)	23
277	Duration of reduced rings before answer (HH)	0

6.2 Special Call and Pricing

248	Operator only charge (0-)	$0.00
249	0+plus charge	$0.00
246	800 - charge ($9.95 = restricted)	$0.50
247	900 - charge ($9.95 = restricted)	$0.00
270	Amount added to a normal 976 call (9.95 = restricted..	$9.95
286	Charge for 950-XXXX calls ($9.95 = restricted)	$0.00

6.3 Information Calls and Pricing

250	Local information charge	$0.00
251	IntraNPA information charge (1-555-1212)	$0.50
252	InterNPA information charge (1-NPA-555-1212)	$0.50
253	Local information number	411
289	Special 555 pricing - number	----------
290	Special 555 pricing - price	$0.00

SOFTWARE RELEASE 4.2

6.4 Time of Day Discounts

136	Time of day discounts	OFF
234	Start premium period (HH:MM)	0800
235	Start first discount period (HH:MM)	1700
236	Start second discount period (HH:MM)	2300
237	First discount	40%
238	Second discount	60%
239	Day of week - (Sun=1, Mon=2, Tue=3, Wed=4, Thur=5, Fri=6, Sat=7)	
240	Read/Set clock (14445 for 2.45)	
241	Read/Set calendar (0620 for June 20)	
242	Read/Set year (88 for 1988)	

6.5 Special Dialing Patterns

124	Operation through PBX	OFF
229	PBX access code	9
146	Insert a "1" before 10 digits dialed	OFF
125	Pulse dialing	OFF
158	Low speed pulse dial	OFF
164	Proper dialing for 7 and 1+7 calls	OFF
169	Treat 00+ like 0+ calls	OFF
177	Remove "1" from 1+7 and 1+10 calls	OFF
183	Credit only phone	OFF

6.6 Alarms

131	Enable alarm 1 (upper housing)	OFF
132	Enable alarm 2 (handset)	OFF
133	Enable alarm 3 (cashbox)	OFF
134	Enable alarm 4 (external)	OFF
157	Enable SMDR	OFF
233	Cash vault trigger level	$150
243	Home primary number (call home number)	_____
244	Home secondary number (call home number)	_____
245	Station ID number	
280	Inactivity timer (in hours)	__
287	Walkaway alarm maximum count	__

6.7 Alarm Status Registers

920	Alarm No.1	OFF
921	Alarm No.2	OFF

922	Alarm No.3	OFF
923	Alarm No.4	OFF
924	Alarm No.5 (battery-backed RAM status)	OFF
925	Alarm No.6 (Cashbox 80% full)	OFF
926	Alarm No.7 (Cashbox 95% full)	OFF
927	No activity alarm	OFF
928	No coin alarm	OFF
929	Bad EEPROM burn alarm	OFF

6.8 Anti-fraud

122	Incoming calls	ON
126	Wink detect	OFF
137	Disable unlisted NXX timer	OFF
168	Double # of saying "NOT A BILLABLE NUMBER"	OFF
173	Disable secondary dial tone detect (981)	OFF
178	Restrict interstate calls	OFF
179	Terminate call at Wink/secondary dial tone	OFF
232	Hold-off (call completion timer in seconds)	__
271	Times to repeat "NOT A BILLABLE NUMBER"	_

6.9 Keypad Operation

123	OCC access through local call	ON
127	OCC keypad on at first ringback (30 seconds)	ON
145	Keypad always on after dialing	OFF
172	OCC open keypad at ready tone (981)	OFF

6.10 Answer Supervision

149	Increase answer detect sensitivity	OFF
226	Voice filter 1 (leading edge)	
227	Voice filter 2 (trailing edge)	
228	First king ring detect	
267	Delay ringback detect	

6.11 Manual/Coin AOS

269	Manual/coin AOS access (dial #99)	_____
880	Coin-operated AOS	11

6.12 Service Number/Service Desk

175 Receive credit from service desk..... OFF
265 User-dialed access number for service desk..... _____
266 Phone-dialed access number for service desk..... _____
884 Service desk..... 10

6.13 Message Forwarding

245 Station ID number
268 Voice mailbox phone number (number to call MPI)..
..... _____
274 Number of times phone will let ring for mailbox..... 5
882 Forward message to mailbox..... 09

6.14 Miscellaneous Registers

159 Return coin for underpaid calls..... OFF
170 Use dial tone from CO..... OFF
176 Payphone as extension..... OFF

6.15 Maintenance Group

960 Transparent mode
961 Call home
962 Reset all counters
963 Terminate telemetry mode
964 Reload battery-backed RAM
965 Flip coin relay to return coin
966 Flip coin relay to collect coin
967 Test EEPROM checksum 0=OK
969 Burn RAM registers and options to EEPROM (975 must=1)
974 Clear non-resetting counters
975 Safety lock for EEPROM burn commands (1 = lock disabled)

6.16 Macros

861-899 are reserved for macros. Each macro number corresponds with a particular call type for call type 1 through 39. For example, Register 861 is used for call type 1, 865 is used for call type 5, 880 is used for call type 20, etc.

6.17 Direct Dialing (No AOS)

128	Phone equipped with card reader	OFF
150	Disable bong	OFF
162	Restrict intraLATA 0+ traffic	OFF
169	Treat 00+/00- like 0+/0-	ON
171	Restrict intraSTATE 0+ traffic	OFF
867	1+ commercial credit cards (restricted)	00
883	Reroute on busy trunks (restricted)	00
891	0+ Bell cards (direct dial)	02
892	AT&T network cards (direct dial)	02
893	0+ no credit card (direct dial)	01
894	Splash-back (restricted)	00
896	0- (direct dial)	01
897	00- (direct dial)	01
898	0+ invalid Bell card (restricted)	00

6.18 Alternative Operator Services

6.18.1 **LD*OS:** Set the following:

128	Phone equipped with card reader	OFF
174	Simulated ringback else "please wait"	OFF

If this is an original LD*OS order, please attach the LD*OS application form. Otherwise, if reordering, set the following:

150	Disable bong	OFF
169	Treat 00+/00- like 0+/0-	ON
262	AOS access number	_____
281	LD*OS authorization code	_____
867	1+ commercial credit cards	05
883	Reroute on busy trunks	01
890	0+ commercial credit cards	05
891	0+ Bell cards	05
892	AT&T network cards	01
893	0+ no credit card	05
894	Splash back	01
895	0+ intraLATA restricted to State	01
896	0- calls to LD*OS	05
897	00- calls to LD*OS	05
898	0+ invalid Bell cards	00

6.18.2 **NTS:** Set the following:

128	Phone equipped with card reader	OFF
150	Disable bong	ON
262	AOS access number	_____
263	AOS authorization code	_____
278	AOS 2 access number	10288
867	1+ commercial credit cards (restricted)	00
883	Reroute on busy trunks (AT&T 10288 access)	08
893	0+ no credit card	14
894	Splash back (AT&T 10288 access)	08
895	0+ intraLATA restricted to State	01
896	0- calls to NTS	14
897	00- calls to NTS	14

6.18.3 **NTS Equal Access Without Card Reader:** Set the following:

128	Phone equipped with card reader	OFF
150	Disable BONG	OFF
262	AOS access number	0
263	AOS authorization code	0
278	AOS 2 access number	10288
867	1+ commercial credit card	00
883	Reroute on busy trunks	08
890	0+ commercial credit card	16
891	0+ Bell card	16
892	0+ AT&T network card	08
893	0+ No credit card	16
894	0+ Splashback direct dial	08
895	0+ intraLATA restricted to State	08
896	0- calls to NTS	16
897	00- calls to NTS	16

6.18.4 **NTS Equal Access With Card Reader:** Set the following:

128	Phone equipped with card reader	ON
150	Disable BONG	OFF
262	AOS access number	01
263	AOS authorization code	0
278	AOS 2 access number	10288
867	1+ commercial credit card	00
883	Reroute on busy trunks	08
890	0+ commercial credit card	16
891	0+ Bell card	16

892	0+ AT&T network card	08
893	0+ No credit card	16
894	0+ Splashback direct dial	08
895	0+ intraLATA restricted to State	08
896	0- calls to NTS	16
897	00- calls to NTS	16

6.18.5 **NYCOM:** Set the following:

128	Phone equipped with card reader	OFF
150	Disable bong	OFF
169	Treat 00+/00- like 0+/0-	ON
262	AOS access number	_____
263	AOS authorization code	_____
	(Note: At phone you must enter "03" = authorization code)	
867	1+ commercial credit card	12
883	Reroute on busy trunks	01
890	Commercial credit cards	12
891	0+ Bell cards	12
892	AT&T network cards	01
893	0+ no credit card	12
894	Splash back	01
895	0+ intraLATA restricted to State	01
896	0- to NYCOM	12
897	00- to NYCOM	12
898	0+ invalid Bell card	12

6.18.6 **COMM Systems (10XXX access):** Set the following:

128	Card reader option	OFF
150	Disable bong	ON
162	Restrict intraLATA 0+ traffic	OFF
169	Treat 00-/00+ like 0-/0+	ON
171	Restrict intraSTATE 0+ traffic	OFF
278	10XXX access number	10266
867	1+ commercial credit card	00
883	Reroute on busy trunks	01
893	0+ no credit card	08
894	Splash back	01
896	0- to COMM Systems	08
897	00- to COMM Systems	08

6.18.7 **COMM Systems (Equal Access):** Set the following:

128	Card reader option	OFF
150	Disable bong	ON
162	Restrict intraLATA 0+ traffic	OFF
169	Treat 00-/00+ like 0-/0+	ON
171	Restrict intraSTATE 0+ traffic	OFF
278	10XXX access number	10288
867	1+ commercial credit card	00
883	Reroute on busy trunks	01
893	0+ no credit card	01
894	Splash back	01
896	0- to COMM Systems	01
897	00- to COMM Systems	01

6.18.8 **ITI-MACE:** Set the following:

128	Phone equipped with card reader	OFF
150	Disable bong	ON
169	Treat 00+/00- like 0+/0-	ON
174	Simulated ringback else "please wait"	OFF
262	AOS access number	_____
263	AOS authorization code	_____
283	Miscellaneous usage register	0
883	Reroute on busy trunks	01
893	0+ no credit card	07
894	Splash back	01
895	0+ intraLATA restricted to State	01
896	0- to ITI	07
897	1+ commercial credit cards	00

6.18.9 **ITI-Voice Operator:** Set the following:

128	Card reader option	OFF
150	Disable bong	ON
169	Treat 00+/00- like 0+/0-	ON
262	AOS access number	_____
263	AOS authorization code	_____
867	1+ commercial credit cards	00
883	Reroute on busy trunks	01
893	0+ no credit card	15
894	Splash back	01
895	0+ intraLATA restricted to State	01
896	0- to ITI	15
897	00- to ITI	15

6.18.10 **Central Corporation:** Set the following:

128	Phone equipped with card reader	OFF
150	Disable bong	OFF
169	Treat 00+/00- like 0+/0-	ON
262	AOS access number	_____
263	AOS authorization code	_____
867	1+ commercial credit cards	04
883	Reroute on busy trunks	01
890	0+ commercial credit cards	04
891	0+ Bell cards	04
892	AT&T network cards	01
893	0+ no credit card	04
894	Splash back	01
895	0+ intraLATA restricted to State	01
896	0- to Central	04
897	00- to Central	04
898	Invalid Bell card	00

6.18.11 **General Information -- AOS**

To restrict intraLATA or intrastate traffic to the LEC (Local Exchange Carrier) while sending all other calls to an AOS, set the following options:

162	Restrict intraLATA 0 to state (directs to AOS #2)	OFF
171	Restrict intrastate 0 to state (directs to AOS #2)	OFF

If restricted traffic is to be routed to a secondary AOS that is accessible via 10XXX, indicate that number in AOS #2 below.

278 AOS #2: Access number (10XXX) _____

If you entered a 10-XXX number in Register 278 (AOS #2), change the value in Register 895 to 08.

895 0+ intraLATA restricted to State 08

6.19 OCC (Other Common Carriers)

260	OCC access number	_____
261	OCC authorization code	_____

SOFTWARE RELEASE 4.2

If Sprint is your OCC and the authorization code is more than 11 digits in 261 above, please enter the remaining digits below in 283:

283 Miscellaneous Usage Register for ITI and Sprint _____

6.19.1 **MCI:** Set the following:

260 OCC access number..... _____
261 OCC authorization code..... _____
265 1+ long distance coin..... 06
866 1+ long distance coin reroute..... 02

6.19.2 **Microtel:** Set the following:

260 OCC access number..... _____
261 OCC authorization code..... _____
865 1+ long distance coin..... 06
866 1+ long distance coin reroute..... 02

6.19.3 **Sprint:** Set the following:

260 OCC access number..... _____
261 OCC authorization code..... _____
283 Miscellaneous usage register for ITI and Sprint _____
865 1+ long distance coin..... 13
866 1+ long distance coin reroute..... 02

SOFTWARE RELEASE 4.2

ATTACHMENT

Installation of Software and Rates

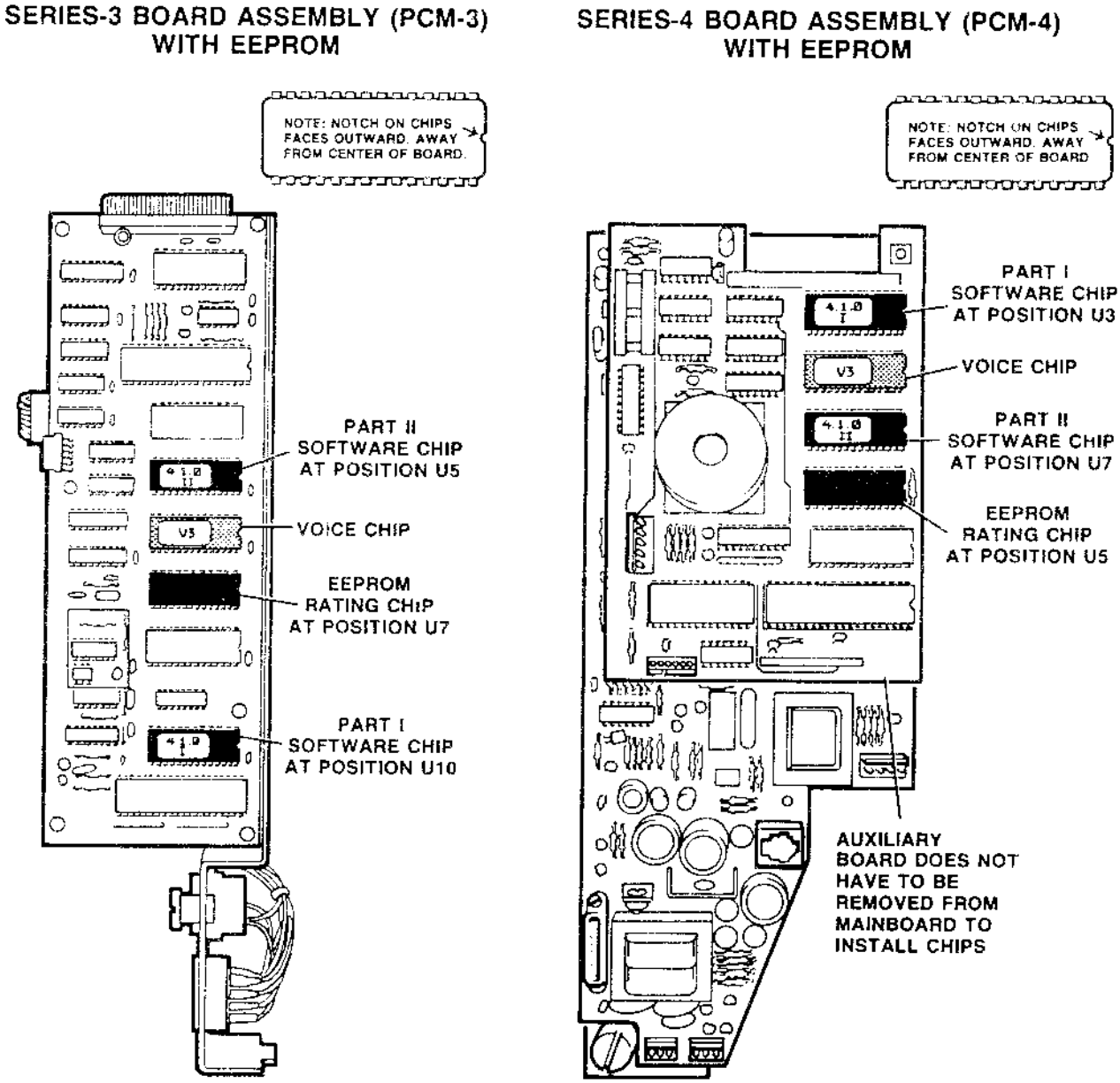

Figure 1: With EEPROM and PNM

SOFTWARE RELEASE 4.2

ATTACHMENT

Installation of Software and Rates

SERIES-2 BOARD ASSEMBLY (PCM-2)
(SERIES-1 ASSEMBLIES ARE SIMILAR TO SERIES-2 ASSEMBLIES, BUT POSITIONS ARE NOT MARKED ON SERIES-1 BOARDS.)

SERIES-4 BOARD ASSEMBLY (PCM-4)

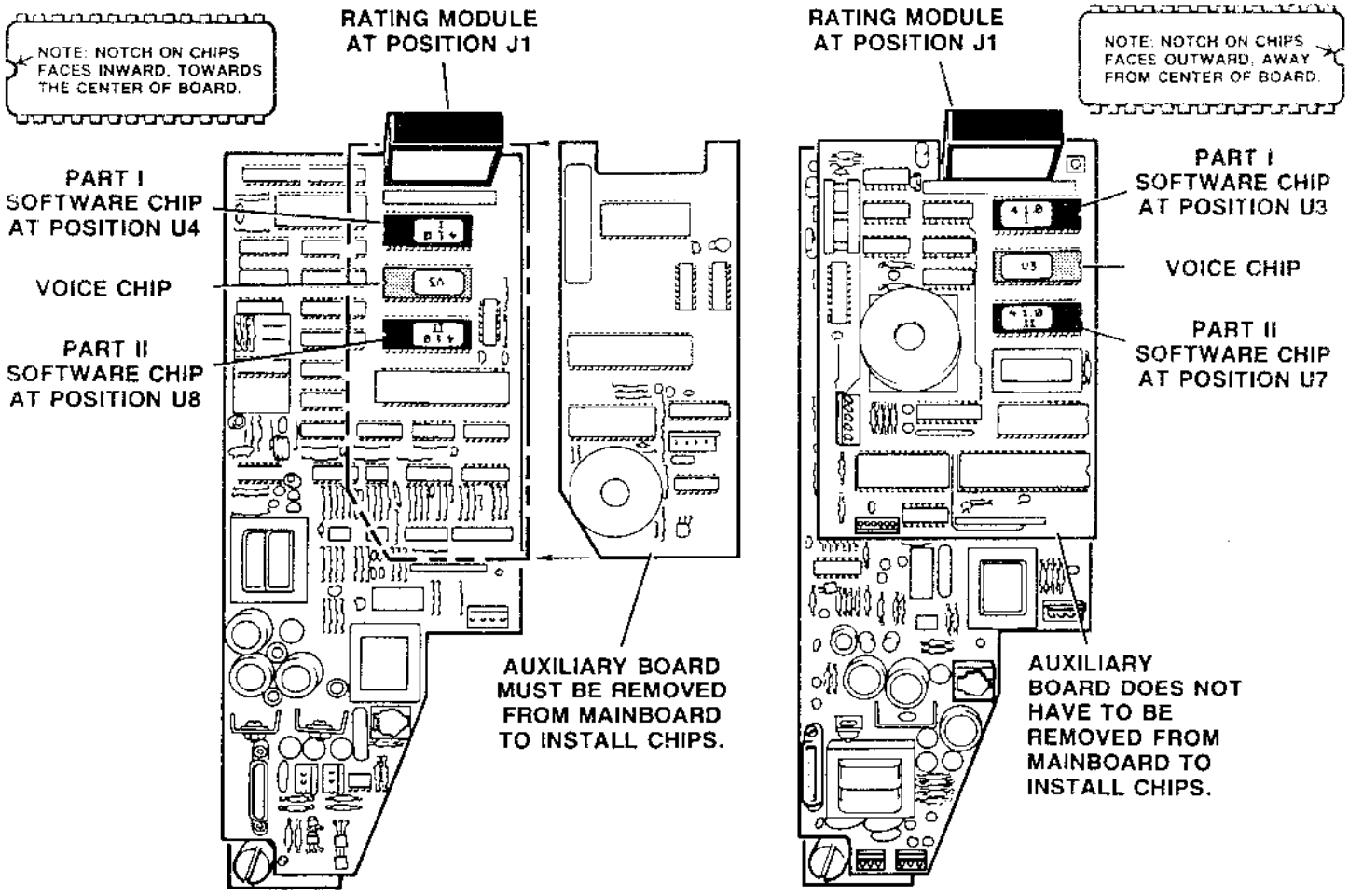

Figure 2A: With Standard EPROM

SOFTWARE RELEASE 4.2

ATTACHMENT

Installation of Software and Rates

SERIES-3 BOARD ASSEMBLY (PCM-3)

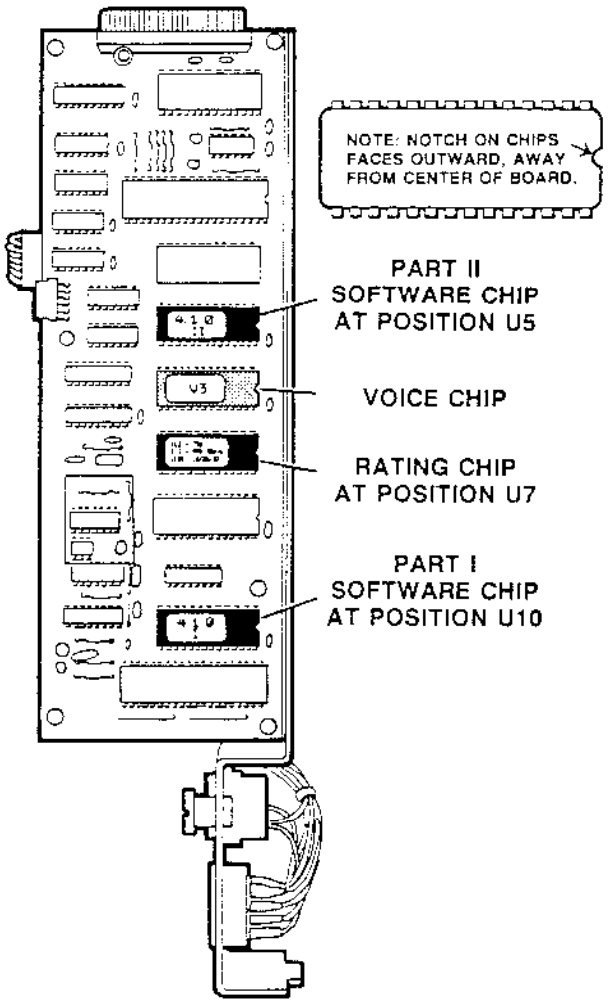

Figure 28: With Standard EPROM