

Elite[®] Series

PAYPHONES



Smart Payphone User's Guide

Protel
INTERNATIONAL

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Notices

Before using your *Elite*[®] smart payphone, be sure to read the general safety information on the next page.

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Warranty

PROTEL, INC. (PROTEL) warrants that all products that it manufactures shall operate in accordance with published specifications. Products shall be free from defects in material and workmanship for the warranty period, which begins on the date of shipment.

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Protel, Inc. will repair or replace any product of its manufacture. All requests for such repair should be directed to Protel International's Customer Service Department (863) 644-5558 or e-mailed to inter_crn@protelinc.com. In-warranty repair is free of charge, freight prepaid. Out-of-warranty repair is handled on a labor-plus-parts basis. Please see Appendix H for more information on Protel's CRN procedure for repairs in and out of warranty.

Safety Information

Quality Assurance and Reliability

Product integrity shall be maintained and there shall be no deviations from physical criteria that may or will adversely affect the product with respect to safety, reliability, interchangeability, life, performance and operation, quality, protectants, maintenance or aesthetics.

The manufacturing processes, tests and inspection procedures, and quality program used by a manufacturer shall be adequate to provide that technical requirements and customer endpoint requirements are met. Quality Assurance criteria are met in this area to cover the ability of the factory testing program to provide product operability and functionality. Details of the quality program criteria are documented in the procedures governed by International Standards. Products shall be manufactured in accordance with the following:

ISO 9001 International Standards
Federal Communications Commission (FCC) Requirements
Occupational Safety and Health Standards (OSHA)
All other applicable Federal, State and local requirements consistent with industry standards.

Environmental Requirements

Toxic materials appearing on lists of banned or dangerous materials issued by appropriate government agencies pertaining to devices, components etc., shall not be used in the manufacture of the payphone.

Nickel-Cadmium (Ni-Cd) Battery

Here are some suggestions on Ni-Cd Battery handling:

Hazardous Waste Disposal: - Nickel Cadmium Battery upon replacement should not be opened or incinerated. Recycling of the units are recommended.

Storage: - Store in a cool place. This will prevent condensation on the individual 1.2V cells or battery terminals.

Handling: - Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and cause rupture.

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Introduction

Introducing the *Elite Series*

Protel's revolutionary *Elite* smart payphone boasts that rare feat of combining truly exquisite form with superior function. Rising above the ordinary to reach new heights, *Elite's* clean lines and ergonomic layout make it the perfect payphone to install at any location. City sidewalks, retail stores, malls, hotel chains, airports, restaurants, convention centers, colleges and hospitals are all potential sites that allow you to reap the benefits of installing *Elite*. Its sleek, sophisticated appearance is the ticket to getting into more locations, as well as keeping existing location owners happy.

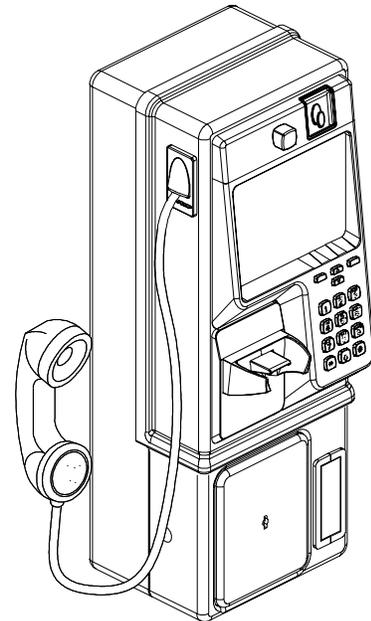
Elite is designed for ultimate flexibility. It can be site specific, location specific, account specific or customer specific. This payphone goes anywhere.

In addition to attracting traditional callers paying with coins, *Elite's* optional state-of-the-art card readers encourage use by callers who demand the benefits of the latest technology.

Intuitive operation is expected from today's payphones and that's what is delivered with *Elite*. Icons gently guide users with a minimum of direct instruction. Strategically placed feature buttons allow language selection, receiver volume control and next-call function through visual instructions. Larger, wider spaced keys make dialing easier for everyone, especially those with vision impairment or a limited range of hand motion.

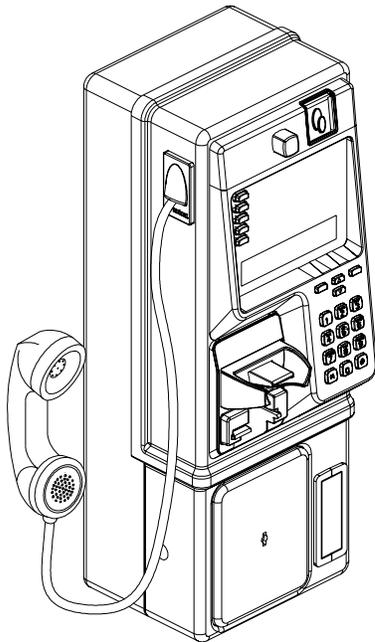
The *Elite's* high strength steel housing provides maximum security and resistance to corrosion, maintaining its good looks through out a lifetime of excellent service. A scratch-resistant, polyester powdercoat finish gives the *Elite* a look to appreciate. O-ring seals resist water to give the *Elite* a long and reliable service life. All of these features translate into more satisfied customers.

The *Elite* payphone is rising to a new level of style, flexibility, durability and user satisfaction.



Basic *Elite*

General Description



Full-Featured *Elite*

The feature package of the *Elite Series* is provided by station-based intelligence that is compatible with all types of central offices. The *Elite* permits basic coin service, as well as the use of magnetic stripe cards with an insertion-type card reader. The same reader accepts a variety of memory and, optionally, smart cards.

Elite payphones are compatible with many of Protel's products with respect to coin scanners, locks, vault doors, coin box switches, and handsets. Re-dial, Up/Down volume control, and Next Call buttons are standard for *Elite* models.

Elite payphones are modular in design. This allows Protel International to offer several payphone models so the customer can choose which one is best for their operation. Features offered include card reading devices, multifunction buttons, and displays. See the following section for more information on the *Elite's* product line.

Elite Series Product Line

Elite Series payphones are flexible when accepting coins. The *Elite Series* standard version payphones will accept coins up to 27 mm in diameter, while the **EXC Models** will accept coins up to 33 mm in diameter. See the brief descriptions below.

EL1000

This is our Voice/Coin only payphone. It features voice prompts for user instructions or advertising.

EL1200

This is our Display/Coin only payphone. The display can be Standard, CARTE, or Vacuum Fluorescent. Each type is described in the sub-sections that follow.

EL1230 Standard Display

This is our full-featured payphone with an LCD display capable of supporting the standard ASCII character set, thus being able to display messages in five basic downloadable languages i. e.: English, Spanish, French, German, Portuguese. It also features a dual card reader, which can read magnetic stripe cards as well as memory cards and chip cards.

EL1230 CARTE Display

The main feature of this model is that its LCD display is capable of supporting ASCII and non-ASCII characters, giving it the ability to display messages in a limited number of languages. **CARTE** is an acronym phrase for **C**hinese, **A**rabic, **R**oman, **T**hai and **E**uropean.

EL1230 VF Display

The main, and most distinguished feature of this model, is its *Vacuum Fluorescent* display. Because it is externally powered, not only off-hook toggling and scrolling messages can be displayed, but also, when it is on-hook.

EXC Models

All the models previously described can be ordered with an ECS V coin scanner, giving them the ability to accept coins up to 33 mm in diameter and up to 3.3 mm in thickness. This is what we call **EX**tended **C**oin capability.

EL1260

This is our card only payphone. It can be equipped with either of the display types described before.

Components

***Elite* Payphone Housing**

The *Elite's* housing components are engineered and manufactured to improve on the longevity and reliability of traditional payphone equipment. The *Elite* is a result of Protel's innovation, technology, and drive to create better products to fulfill your public communication needs.

The *Elite's* housing components are included in the warranty. The housing components are backed by Protel's one-year warranty.

Designed with the use of the latest 3D Computer Aided Design (CAD) software, the *Elite* offers our valued customers benefits that include; increased component reliability, extended life cycles, and greater resistance from vandalism and weather stresses. The *Elite* telephone is designed to mount in panel mount style housings.

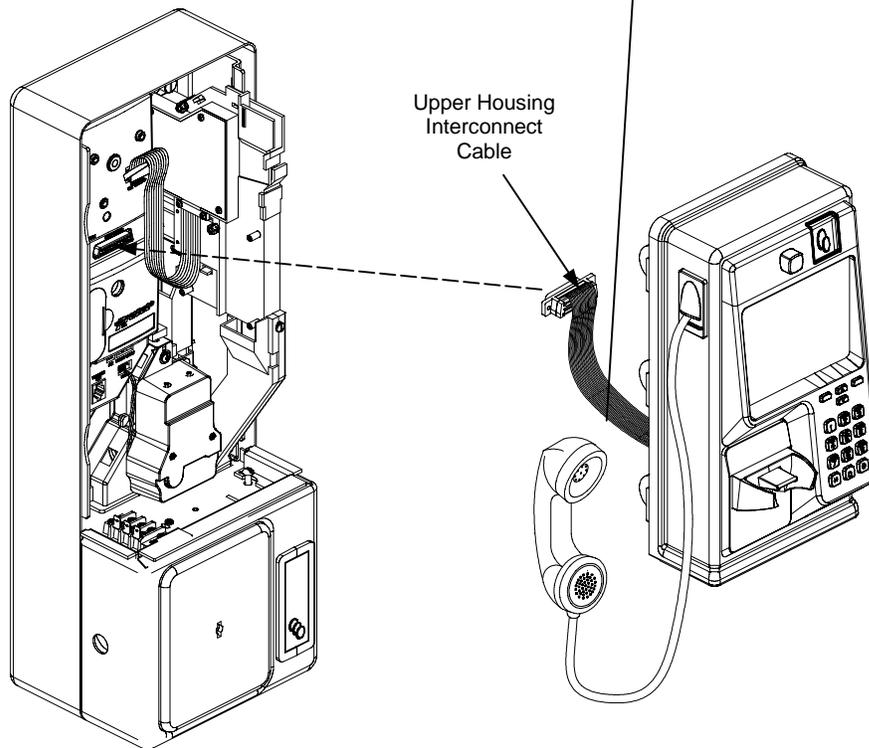
Construction of the *Elite* payphone

Elite housings consist of a two-piece cabinet shell constructed of 15 gauge (1.8 mm) deep drawn 1006-carbon steel that contains welded reinforcing members. The primary metalwork (deep draw) is accomplished on an 800-ton press. Extra-heavy 9-gauge steel is used for the vault door, which also incorporates reinforcing members. In order to reduce unauthorized access to the interior of the payphone, tongue-and-groove type construction is used at the mating surfaces of the upper and lower housings and vault door. Case-hardened inner plates, combat attempts to pry or drill into the housing protecting the lower housing and vault door. An O-Ring type seal around the groove in the Main Bezel and the hookswitch plate prevents water from coming inside the payphone. All *Elite* housing components are 100% tested for proper form, fit, and function as per ISO 9001 International Standards.

Internal Parts of the *Elite*

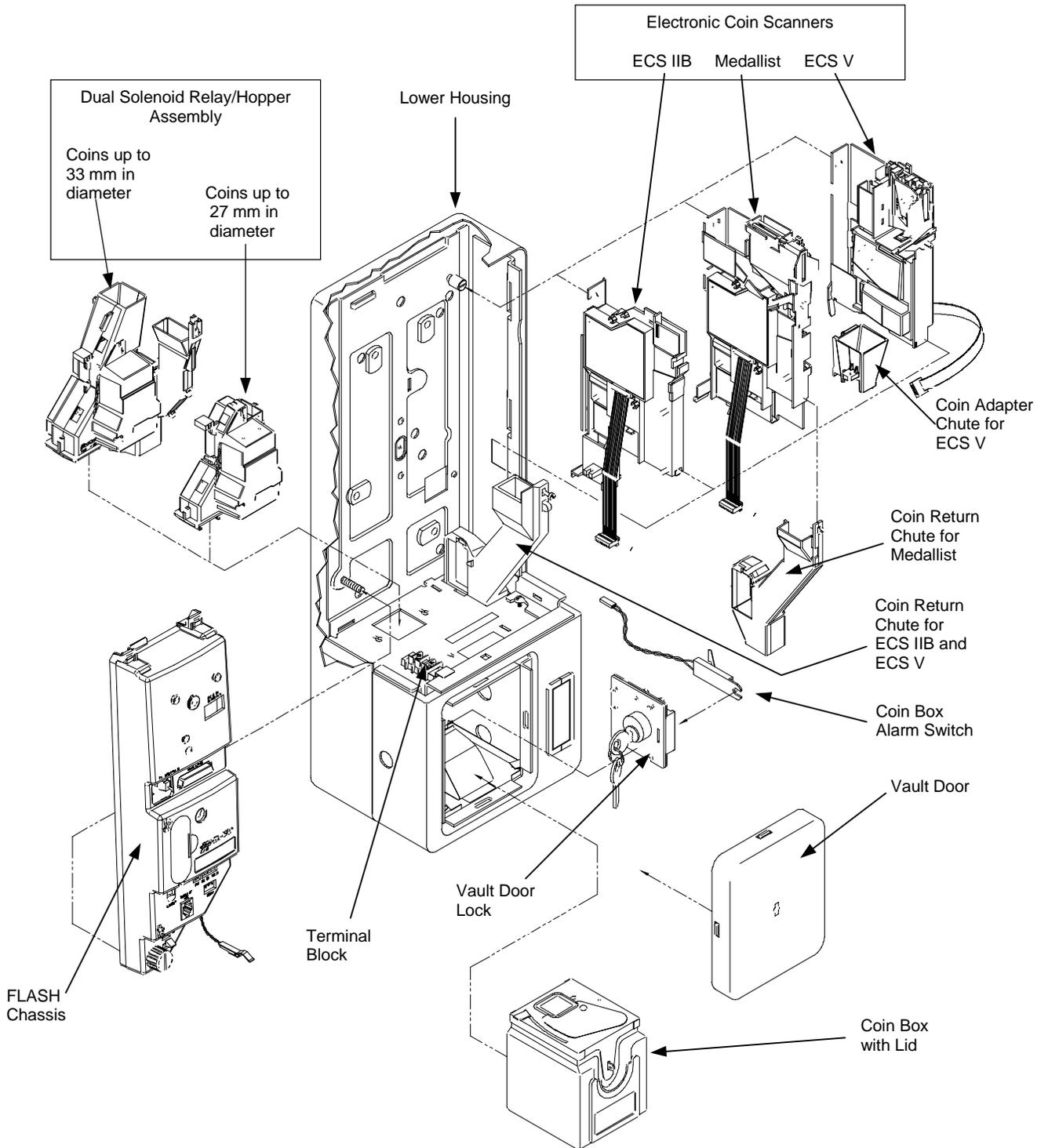
All *Elite* internal parts are also manufactured in accordance with ISO 9001 International Standards. This section describes the components found in both the upper and lower housing of the payphone. The figure below shows these two basic parts of the *Elite* payphone.

Make sure that the end of the cable that is plugged into the upper housing is positioned such that the red edge of the ribbon cable is plugged into **Pin 1 on connector P4**.



Lower Housing Components

The following figure shows the main parts of the lower housing of the *Elite* payphone. Then, a short description for each component follows.



Coin Box w/Lid

This is a standard coin box that is compatible with coins up to 27 mm in diameter. The coin box is used to store the coins that are deposited into the payphone. Models with **EXtended Coin** capability would require the lid with the wider top opening to accept coins up to 33 mm in diameter.

Vault Door

The vault door is used to enclose the coin box in the telephone and is secured in place by a four-point latching cam mechanism. The vault door latches (bolts) are hardened in order to resist vandalism. The vault door mechanism is nickel-plated for maximum corrosion protection. Vault doors are available in stainless steel matte finish or black.

Vault Door Lock

The vault door lock is used to lock the vault door in place. Medeco and Abloy are the preferred manufacturers for these locks.

Coin Box Alarm Switch

A coin box alarm switch is installed to monitor removal of the coin box. Once the coin box is removed, the payphone will prompt the collector to enter an ID code. Once entered, the payphone will call ProNet and report the collector's ID and the amount it had when collected.

Terminal Block

The terminal block located inside the lower housing of the phone is used to provide tip & ring connection to the electronic chassis assembly. It is also useful to measure line voltage and current.

Flash Electronic Chassis

The Flash electronic chassis assembly contains the transmission network, coin-control components and logic circuitry. A battery pack and a piezo-electric ringer are also installed on the board. The payphone's basic program is stored in a Flash memory device. With Flash memory, the payphone can be reprogrammed when an update to the basic program is needed. A program button is also provided which allows service personnel to initialize and program the payphone for local operation, if necessary.

Coin Scanners

Electronic coin Scanner - ECS IIB

This kit consists of a simple molded plastic track and an option board for the chassis which provides electronic coin identification and validation functions. The electronic coin scanner, by default, will recognize only U.S. coins.

Medallist Coin Scanner

This coin scanner is an enhancement of the ECS IIB, with the addition of a metal coin entrance.

Electronic Coin Scanner - ECS V

This coin scanner is capable of accepting up to twelve different coin types of, almost, any denomination. It can accept coin sizes up to 33 mm in diameter and up to 3.3 mm in thickness. The coin data set can be remotely downloaded from ProNet to the coin scanner via the coin option board.

Dual Solenoid Relay/Hopper and coin Return Chute Assembly

The dual solenoid relay/hopper and coin return chute assembly serve to relocate coins that are held in the hopper as a result of a coin deposit. Each solenoid has a paddle attached to it. The solenoid that receives the proper voltage polarity from the Flash chassis will activate and open the paddle, making the payphone collect or refund the coins.

Upper Housing Components

Locking Bars

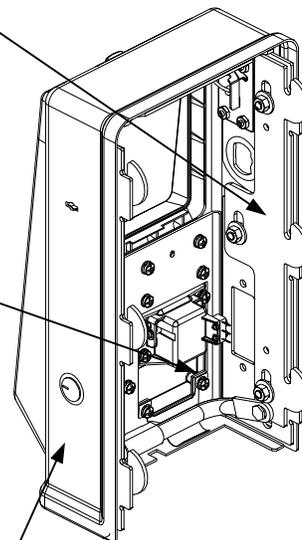
Retention of the upper housing to the lower is effected by two latching steel slide bars called Locking Bars that secure at six points which are actuated by the T-wrench. The T-wrench is a one-piece unit of hardened stamped steel.

Hookswitch Assembly

The *Elite* incorporates a sealed hookswitch and an external micro switch assembly that resists corrosion and increases reliability. The micro switch also increases the overall performance of the assembly by having only the spring mechanism inside the hookswitch, being the micro switch responsible of sending the appropriate off-hook/on-hook signaling to the chassis.

Upper Housing Lock

The upper housing lock secures the latch assembly in place, preventing its separation from the lower housing.



Coin Entrance

The coin entrance comes in two sizes, depending on the payphone model. Standard size for coins up to 27 mm in diameter, or the **EXC** (Extended Coin capability) type, which accepts larger coins up to 33mm in diameter.

Coin Release Push Button

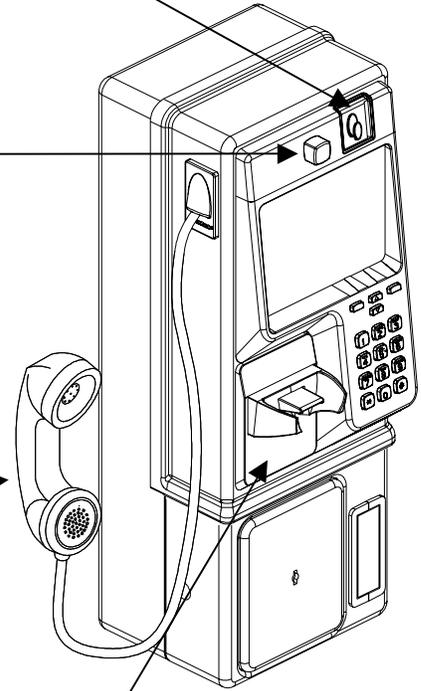
The coin release push button, when pushed, causes the payphone to release a jammed deposited coin. Only those coins that have not yet been sent into the hopper will be returned to the customer. Coins already sent to the hopper will be returned when the handset is returned to the cradle. The coin return linkage is a stainless steel assembly that is compatible with industry standard coin scanners.

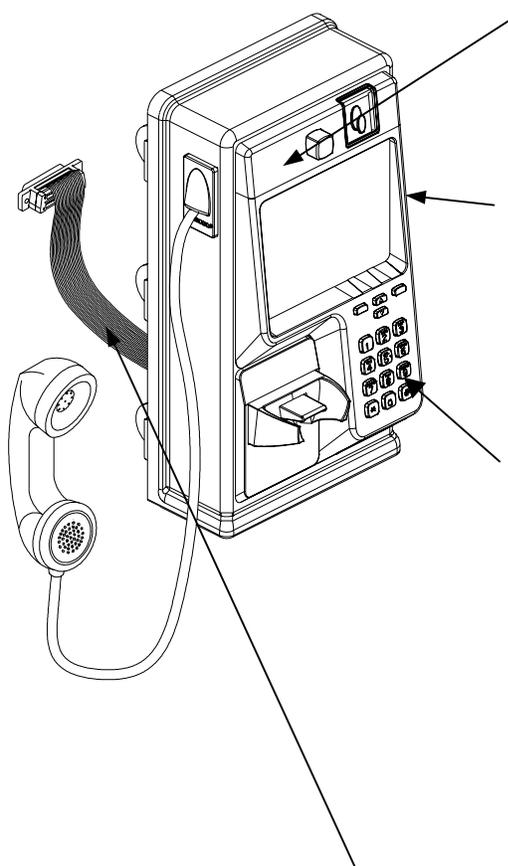
Handset

Only Protel approved modular handsets should be used in the *Elite* telephone. Do not assume that any general handset will be compatible with the *Elite* Telephone. Jumper settings for carbon or dynamic handset operation can be found in Appendix F of this document.

Hookswitch Plate

This cast aluminum cover provides mounting for the hookswitch cradle and hookswitch assembly. This applies only to voice only models.





Top Piece

The top piece is located above the main bezel and contains the coin entrance and coin return push button. Custom logos can be designed and silk screened on the top piece.

Main Bezel

The main bezel of the telephone is a chromed, matte finish, cast aluminum with a minimal wall thickness of 0.140". The main bezel is securely fastened to the upper housing at six points to provide strength against vandalism. Impact test performed rated well above industry standards.

Dial Key Components

One of the main bezel components is the dial keypad. This is an XY matrix printed circuit board that is securely fastened to the back of the main bezel. Additionally, there is a stainless steel push-button retainer plate behind the dial keys to prevent over-travels and reduces vandalism. The dial keys are ergonomically designed for greater customer convenience. The push buttons are cast aluminum, and are also designed to prevent moisture from entering the housing. The '5' key has a raised pip to provide assistance to vision-impaired persons.

Upper Housing Interconnect Cable

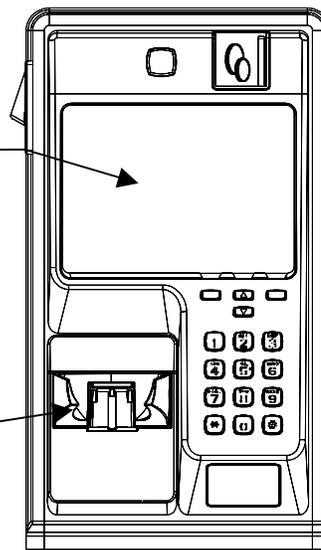
This ribbon cable connects the upper housing electronics of the phone to the chassis in the lower housing.

Information Card

The large information card (4.84" x 6.28", approximately 30.4 sq. in.), which can contain printed instructions determined by the customer, is protected with a clear polycarbonate plastic cover and is reinforced within the telephone by a cast aluminum backing plate. Specifications and installation instructions for the Information Card can be found in Appendix E of this document.

Hookswitch Cradle

Standard GTE style. Easily replaced with four (4) screws.



Cast Aluminum Backing Plate

The backing plate, which mounts inside the upper housing of the phone, provides support to the information card and protects the phone against vandalism.

Function Key Components

The function keys consist of push-buttons, a push-button retainer plate, and a circuit board. The function buttons enhance the use of the full-featured payphone by providing redial, language selection and speed dial.

Redial Button

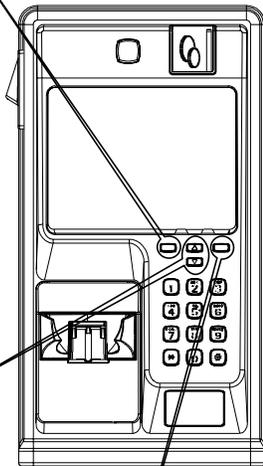
When pressing this button, the payphone will dial the last number the user entered. This function will only be available when the **New Call** button is pressed.

Up/Down Volume Control

The volume control is active any time the phone is off hook. The payphone has three audio levels that can be controlled with these buttons. Pressing the up button will increase the volume by one level. Pressing the down button will decrease the volume by one level. Pressing the up volume button will have no effect if the volume level is already at maximum. Pressing the down volume button will have no effect if the volume level is already at minimum.

New Call Button

Any time the New Call button is pressed, the payphone will relinquish the line and re-seize it back again according the delay programmed in ProNet, offering dial tone again, thus allowing the user to dial another call without hanging up and picking up the handset. At this point, the user can, if necessary, make use of the **Redial** button. Keep in mind that the payphone will retain the remaining credit from the previous call, if any.



Multi-function Buttons

Elite models EL1200, 1230 and 1260 include a set of five multi-function buttons. In order, from top to bottom, they are Language Select, Change Card and Speed Dial buttons 1, 2, and 3.

Language Select button

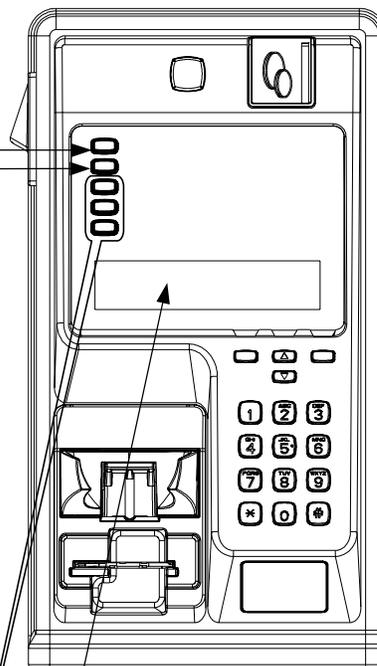
The language select button is always active. Pressing this button will make the display toggle between the programmed languages (i. e. English, Spanish, French, German and Portuguese). ProNet sends information to the payphone that will determine which language will be used when the phone is taken off-hook. Voice prompts (if used) and display messages should be in the same language (i. e. English and Spanish only). The language will change whenever the button is pressed. If it is pressed during a voice prompt, the prompt in progress will be terminated and replayed from the beginning in the new language, and the current message in the display will be redisplayed in the new language.

Change Card button

This button, when pressed, will allow the user to exchange debit cards within the duration of one call.

Speed Dial buttons

These three buttons will work only if specific speed dial numbers are programmed in ProNet as part of the Call Handling file. When a speed dial button is pressed the corresponding speed dial number is shown on the top line of the display.



Displays

All *Elite* displays have two lines of twenty characters, and are available in either Liquid Crystal or Vacuum Fluorescent. LC and VF displays use a combination of block mode (toggling) and scrolling messaging.

There are two modes of display operation: on-hook and off-hook. On-hook messages are not available for LC. To achieve on-hook messaging, the *Elite* requires a VF display with external power. Messages are conveniently programmed in ProNet.

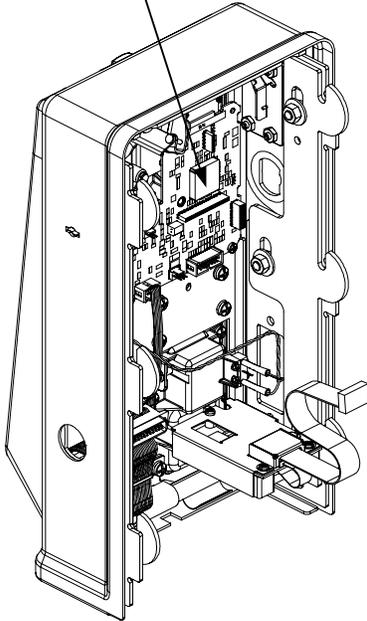
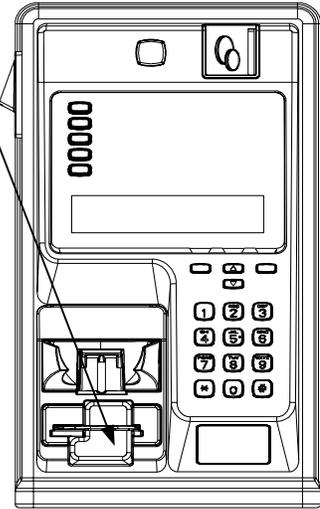
** See Appendix D for programming of messages for the displays.

Card Reader (EL1200, 1230 & 1260 only)

The card reader of the *Elite* is capable of reading both magnetic stripe cards and chipcards. Credit cards, memory cards, smart cards and calling cards can be used, but dependent on the user's card type and firmware implementation.

Display Controller Board

The Display Controller Board is a microprocessor controlled circuit board that acts as the main interface between the Flash chassis and the different devices found in the upper housing (display, keypad, card reader, multi-function buttons, hookswitch, redial, volume and new call buttons).



Mounting the Payphone

Mounting Location

This section of the manual details the steps necessary to mount the payphone. The information below should be used as a guideline when considering a suitable location for the installation of the payphone. After the payphone is mounted, initialization and testing procedures should be performed to ensure that the unit is in proper working order before leaving the phone site. Consider the options outlined below when installing the unit:

- Location should have sufficient lighting.
- Location should be free from excessive noise, vibration and dirt.
- There should be at least a 6-inch clearance from fluorescent lights, transformers and similar devices to avoid the possibility of inductive interference.

CAUTION!

This telephone comes equipped with a standard 32" armored handset cord. Be advised that the design of the telephone firmly attaches this or any handset cord to the inside of the telephone. It is not designed to break away. If this telephone is installed in a "Drive-up" location, the following notice should be placed in a conspicuous location on the telephone.

**"REMOVE HANDSET AND CORD FROM VEHICLE BEFORE MOVING OR
SERIOUS INJURY COULD RESULT!"**

Leveling the Mounting Surface

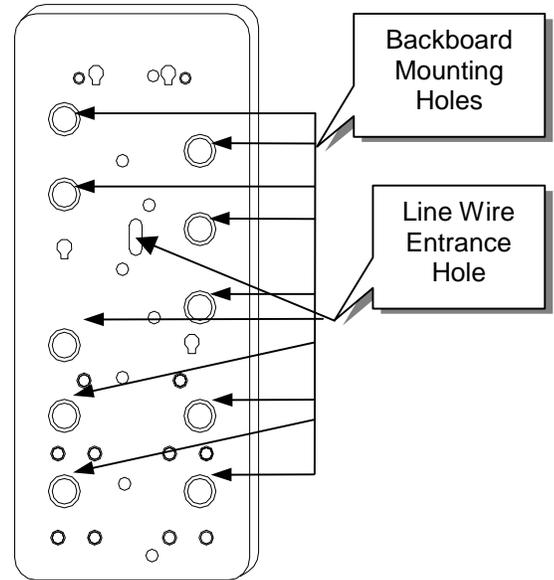
The surface on which the payphone is to be mounted will either be a predrilled mounting surface or a backboard specifically designed for it. (If a backboard is to be used, it will be mounted to the location where the phone is being installed.) In either case, it is essential that the payphone be mounted on a surface that is vertically level with a deviation no greater than 1.5 degrees (especially for coin only payphones). If the payphone is tilted greater than 1.5 degrees in any direction, there is a great possibility for the unit to fail in its operation. Use the information below to measure/adjust the position of the mounting surface. (If the phone is to be mounted in a booth, refer to the booth manufacturer's specifications to determine mounting requirements.)

- Using a level, place the level against either side of the mounting surface (left or right side).
- Move the top or bottom end of the level away from the mounting surface as required to achieve a perfectly vertical reading. (A deviation of zero degrees is desirable but if necessary, up to 1.5 degrees is acceptable.)
- Adjust the mounting surface as required to achieve a perfectly vertical position.

NOTE: If the payphone is to be mounted to a predrilled mounting surface, skip the next section and proceed to the section – **Separating the Upper and Lower Housings.**

Mounting the Backboard

The mounting surface for the payphone backboard must be flat and free of any peaks or valleys, which would cause gaps large enough to allow the unit to be pried loose. The table on the next page shows the backboard mounting height requirements **measured from the floor to the top of the backboard**.



Top of backboard	Mounting Conditions
63" (1.60 m) from floor	Without a seat installed
52" (1.32 m) from floor	With a seat installed
54" (1.37 m) from floor	If a paystation is to be accessed from a wheelchair

- Route the incoming central office wire such that the end of the wire is positioned through the line wire entrance hole in the backboard. Be sure that the wire does not become pinched when the backboard is secured to the mounting surface.
- Mount the backboard to the mounting surface through the ten mounting holes. (See diagram above.) Be sure to use the appropriate hardware for the type of surface that the backboard is being mounted to.

Separating the Upper and Lower Housings

- Insert the key into the upper housing lock and turn it 1/4 turn counter clockwise to the unlock position.
- Insert the T-wrench into the opening in the upper right side of the upper housing and turn it 1/8 turn clockwise.
- Slide the upper housing away from the lower housing far enough to reach inside the left side and then disconnect (if connected) the upper housing interconnect cable from the chassis assembly.
- Disconnect the display power (if equipped).
- Move the upper housing aside.

Removing the Coin Scanner

- Disconnect the coin scanner connector (if installed) from the point labeled “ELECTRONIC COIN VALIDATOR” on the chassis assembly.
- Remove the screw securing the coin return chute to the coin scanner.
- Remove the coin return chute from the lower housing.
- Loosen the captive nut at the top rear of the coin scanner.
- Remove the coin scanner from the lower housing.

Removing the Chassis Assembly

- Refer to Appendix A for connector locations on the chassis assembly.
- Disconnect the dual solenoid relay assembly connector from the point labeled “RELAY” on the chassis.
- Remove the RJ11 connector from the point labeled “TELEPHONE LINE” on the chassis assembly.
- Disconnect the ground wire from the quick disconnect terminal at the bottom of the chassis.
- Disconnect the coinbox alarm switch connector (if installed).
- Loosen the captive nut at the bottom left of the chassis assembly.
- Remove the chassis assembly from the lower housing by lifting it upward and then pulling out on the lower edge of the chassis assembly.

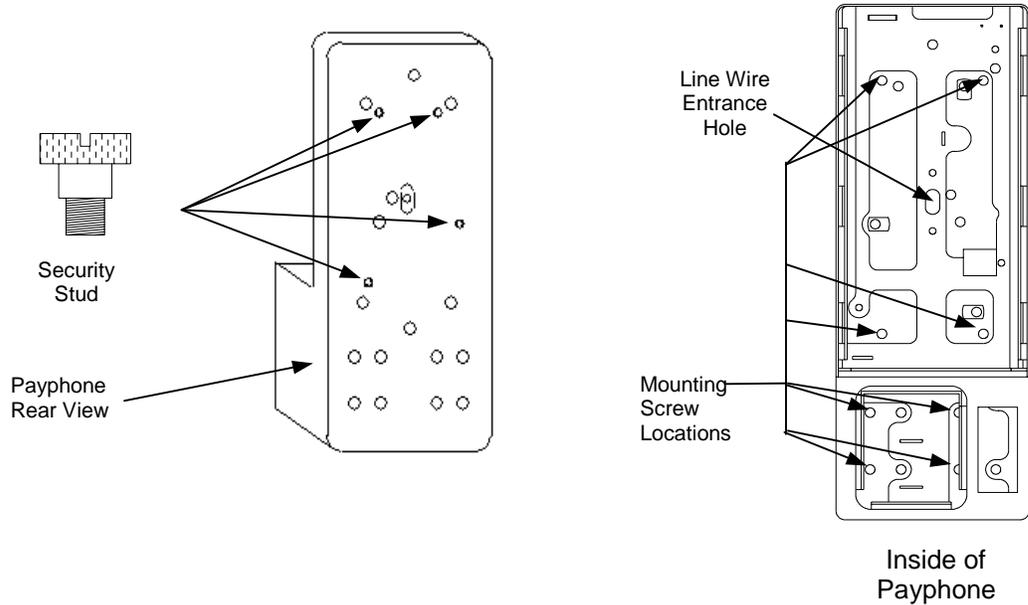


Removing the Coin Box

- Insert the vault door key into the lock at the left side of the lower housing and turning the key 1/4 turn clockwise to the unlock position.
- Insert the T-wrench into the front of the vault door and turn it 1/8 turn clockwise.
- Remove the vault door away from the lower housing.
- Remove the coin box from the lower housing.

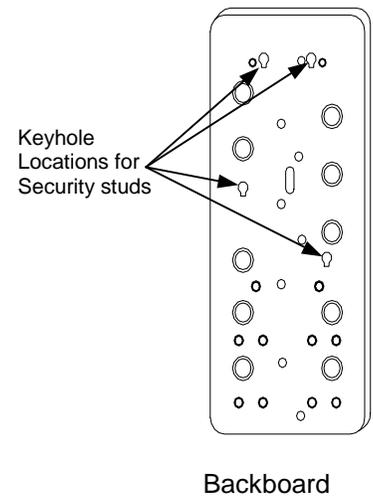
Installing the Security Studs

- Install the four security studs (not provided with the phone) through the four threaded holes at the rear of the phone. (See diagram for Security stud locations.)
- Tighten each stud until it is threaded approximately halfway into the hole.



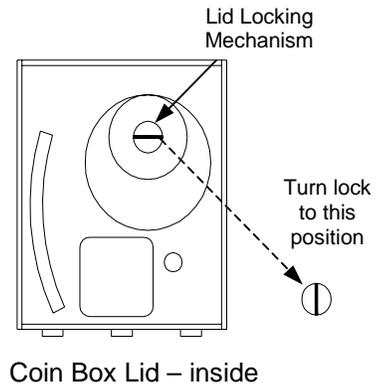
Securing the Payphone to the Mounting Surface

- Route the incoming central office wire such that the end of the wire is positioned through the line wire entrance hole at the rear of the payphone. Be sure that the wire is positioned such that it does not become pinched when the unit is secured to the mounting surface.
- Position the unit on to the mounting surface/backboard such that the four security studs (secured to the unit) are aligned with the four keyhole openings in the mounting surface/backboard.
- Guide the payphone downward until the security studs are firmly seated inside the keyholes.
- Tighten the Security studs from the inside of the housing by turning them in a counter clockwise direction.
- Secure the payphone to the mounting surface/backboard using eight mounting screws ($\frac{1}{4}$ X 20 X $\frac{1}{2}$ not supplied.) Mounting screw locations are as shown above.



Reinstalling the Coin Box

- Reset the coin box lid locking mechanism by opening the lid of the coin box and then turning the lock in a clockwise direction until you hear it click in place.
- Install the coin box into the coin box vault.
- Secure the vault door to the lower housing.



Reinstalling the Chassis Assembly

- Refer to Appendix A for connector locations on the chassis assembly.
- Connect the Ni-Cd battery to the point labeled “BATTERY” on the chassis assembly.
- Install the chassis assembly into the lower housing by guiding the tab at the top rear of the chassis assembly into the slot located at the top left corner inside the lower housing. Then, slide the chassis assembly upward until the captive nut at the bottom left of the chassis assembly is aligned with the mounting stud. **Make sure the Captive Nut is HAND TIGHTENED ONLY.**
- Connect the ground wire attached to the quick disconnect spade terminal at the bottom of the chassis assembly, to the middle terminal of the terminal block on the lower housing.
- Connect the RJ11 plug from the terminal block to the point labeled “TELEPHONE LINE” on the chassis assembly.
- Connect the dual solenoid relay assembly connector to the point labeled “RELAY” on the chassis assembly. The connector goes in one position only, but for safety reasons, make sure that the **green** wire is toward the **left** of the connector when plugged in.
- Connect the coin box alarm switch connector.

Reinstalling the Coin Scanner

- Position the coin scanner into the lower housing by guiding the tab located at the bottom of the scanner into the slot just behind the hopper in the lower housing.
- Guide the top of the coin scanner into the housing until the notch at the top rear of the scanner's mounting bracket fits behind the captive nut.
- Make sure that the coin return chute is mated properly with the hopper and then secure the coin return chute to the coin scanner.
- Tighten the captive nut to secure the coin scanner in place. **NOTE: The captive nut used to hold the coin scanner in place has a lip at the rear of the nut. When tightening the nut, make sure that the lip is seated inside the small curve of the opening at the top of the coin scanner's mounting bracket. If the lip is not seated properly, there will be a space between the back surface of the nut and the front surface of the bracket when the nut is tightened, which might cause the coin scanner to malfunction.**
- Connect the electronic coin scanner's connector to the point labeled “ELECTRONIC COIN VALIDATOR” on the chassis assembly.

Connecting the Line Wire to the Terminal Block

- Connect the incoming C.O. **tip** wire to the terminal block inside the lower housing. This wire should be connected to the same point at the **green** wire of the pigtail cable.
- Connect the incoming C.O. **ring** wire to the terminal block inside the lower housing. This wire should be connected to the same point at the **red** wire of the pigtail cable.
- Connect the incoming ground wire to the center terminal of the terminal block inside the lower housing. (**Note: Use standard grounding procedures to ensure that the ground wire is at earth ground potential.**)

Connecting the External DC Power (VFD models only)

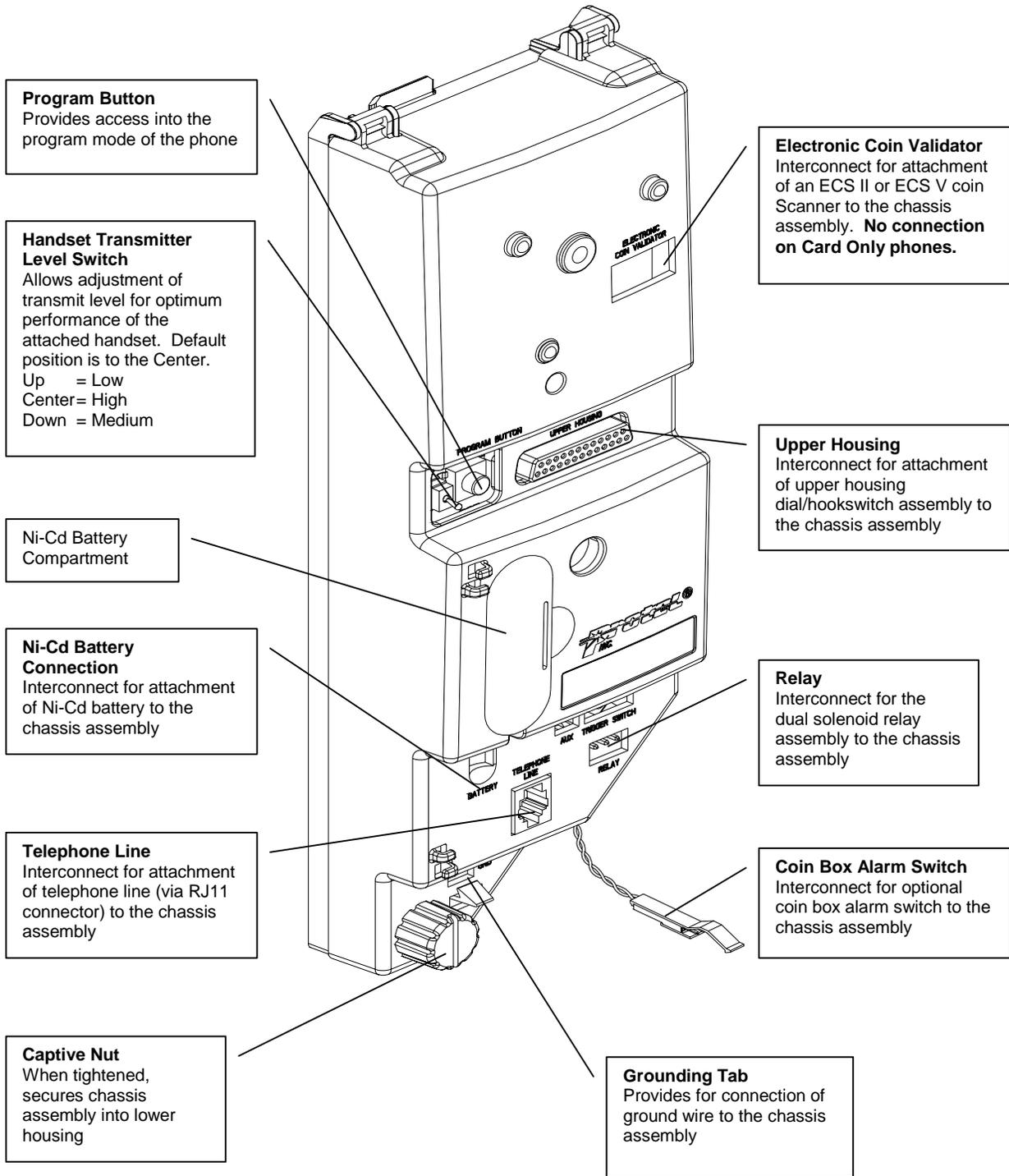
- External power is used to power the VF display. Although a transformer is provided with each *Elite* a centrally located 24VDC regulated power supply may be used to power several telephones. Please note that 250 mA is required for each *Elite* with VF display. Additionally, the maximum cable lengths for providing this power are as follows: up to 350' (106.68 m) - 26 AWG, up to 550' (167.64 m) – 24 AWG, and up to 880' (268.22 m) - 22 AWG.
- Make sure that no external power is connected. The wall transformer (Protel PN: XRP0000009) should not be connected to any 120 VAC power source. Also, if a common 24VDC-power supply is used, it should not be powered up.
- Route the wires for the external power through the rear panel of the telephone. Position the wires toward the voltage regulator PCB (Protel PN: ASYPWA0238) located at the rear of the terminal block.
- The 24VDC input to the voltage regulator PCB is insensitive to the polarity of the input. Plug the female connector on the end of the wall transformer assembly into J1 on the voltage regulator PCB or connect the wires from the customer provided 24VDC power supply to J2 by lifting both tabs on the connector, inserting the two wires, and pressing the tabs back down.
- Connect one end of the three-wire cable (WICA000080) to P1 on the voltage regulator PCB and the other end to the controller board located on the back plate in the upper housing.
- Set the Power On/Off switch on the voltage regulator PCB to the off position.
- Apply 120VAC to the wall transformer or power supply, and position the power on/off switch on the voltage regulator PCB so that Power Good and +5V Good LEDs are illuminated.
- Make sure that the wires are routed properly to insure that they don't get pinched when the upper housing of the payphone is connected to the lower housing.
- This completes the steps necessary to mount the payphone. Refer to Appendix B or C for information on initializing and testing the payphone.

Caution: Always connect and disconnect the power cable to the upper housing with the Power On/Off Switch set to the OFF position.

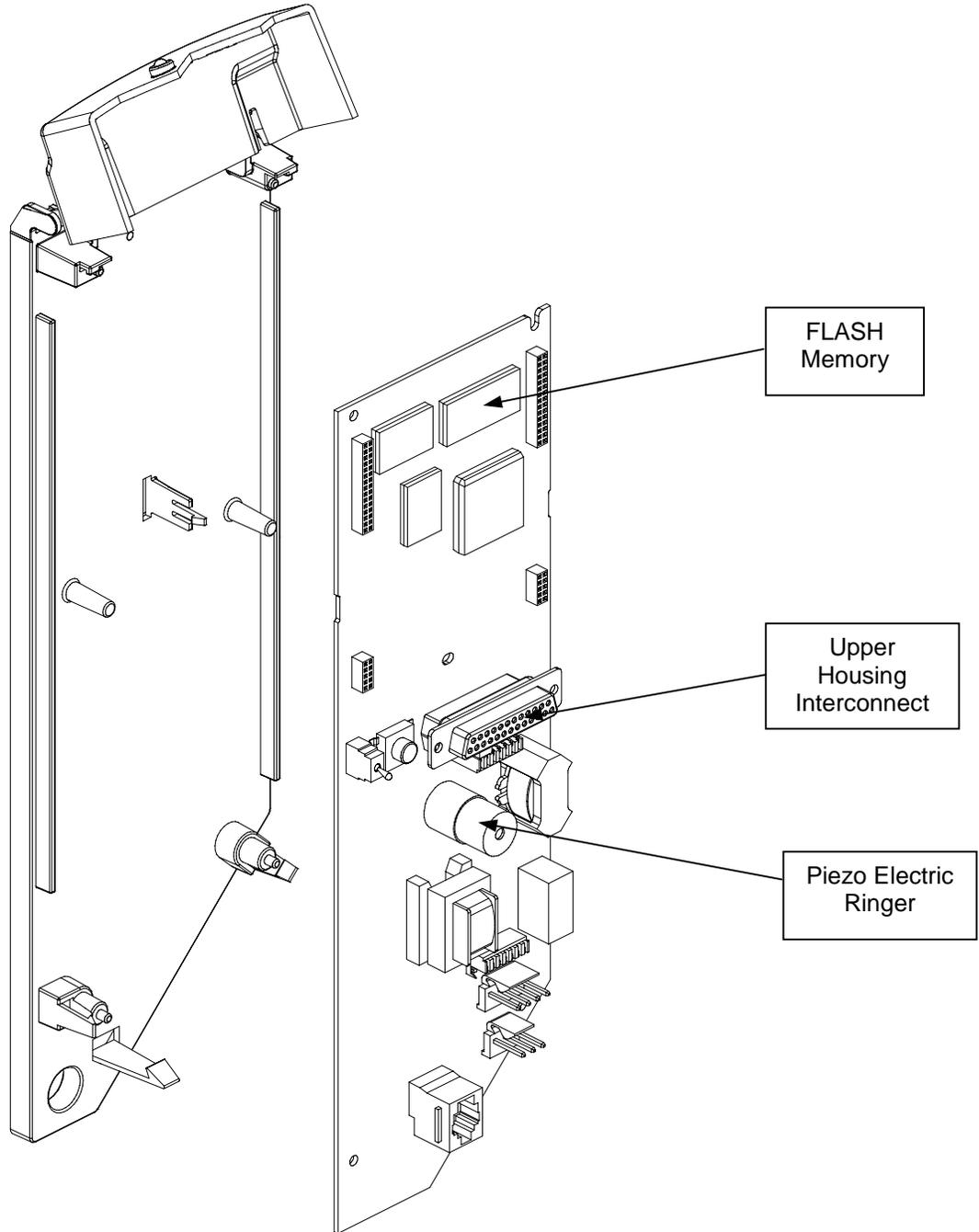
Connecting the Upper and Lower Housings Together

- If available, use Protel's upper housing parking tool (Protel PN# HDS0000004A) to position the upper housing of the unit onto the side of the lower housing. This provides easy access to the unit's internal components. If a parking tool is not available, use the procedure outlined below to connect the dial assembly to the chassis assembly. If a parking tool is available, begin with item "b" in the procedure shown below to connect the dial assembly to the chassis assembly.
 - a. Disconnect the VF display wall transformer or DC power supply (if installed).
 - b. Rest the upper housing on the edge of the lower housing.
 - c. Connect the 25-pin connector from the interface board at the rear of the dial assembly, to the 25-pin connector labeled "**UPPER HOUSING**" on the chassis assembly.
 - d. **Do not** secure the upper and lower housings of the phone together at this time. Access to the program button is needed during the initialization procedure.

Appendix A – FLASH Chassis



FLASH Chassis Exploded View



Appendix B – EL1000 Initialization and Programming

Introduction

The initialization procedure of the *Elite Series* payphones is used to bring the unit to a known operating condition. All new installations need to be, of course, initialized. Also it is necessary to initialize the unit when the chassis assembly has been replaced. The procedure consists of four basic steps that will bring the unit to a fully operational state, when they are followed in the correct order. Before we outline these steps, the technician must understand some key terms mentioned in the procedure.

Basic Key Terms:

- **Phone:** the number used in ProNet to identify the unit.
- **Telephone number:** the number used to identify the facilities the unit will be connected to.
- **MS Number:** this is the Management System's (ProNet) phone number.
- **Dial Script:** this is a string that contains the series of commands that the unit will follow when dialing a number.
- **Configuration Files:** these files contain all the necessary information to make the unit operational.
- **Application File:** this file is the unit's operating system.

Initialization Procedure Basic Steps:

- Enter into the local programming mode of the unit
- Specify the **Phone**, the **Telephone Number**, the **MS Number** and the **Dial Script** to be used (Protel recommends using **TP1000D**)
- Download the unit's **Configuration** and **Application** file
- Confirm that the download is complete and correct

There are two different methods of initializing and programming the unit. One is for the voice-only units, in which the technician is guided through the different programming selections, by a series of tones, high pitched tones and voice prompts, heard through the handset. The other method is for units equipped with a User Console, in which the technician is given a series of prompts and feedback through the LC or VF Display. This Appendix will describe the detailed procedures to program the **EL1000**, voice only phone. In the next Appendix, you will find the procedures to program a unit equipped with LCD or VFD.

Initialization and Local Programming for the EL1000

As mentioned before, programming the **EL1000** is done by listening to a series of tones, high pitched or soft-tone and voice prompts through the handset. Following the steps outlined below will lead you to a successful initialization of the unit.

Entering the programming mode

- Locate the **Program Button** on the chassis assembly.
- With the phone on hook, press and hold the **Program Button**.
- While still pressing the button, lift the handset from the cradle and bring it close to your ear.
- Wait for two soft tones and then release the **Program Button**.
- At this point, you have reached the **Local Programming's** Main Menu.
- Refer to the block diagram on page 24 for details on the steps to properly program the payphone.
- Whenever you return to the Main Menu, you will hear two soft-tone beeps.

Once you are in programming mode, you can enter the programming code that corresponds to the desired menu option, followed by the data. After entering certain programming codes, a voice prompt will be heard telling you the current settings for that option. You may first listen to the voice prompt and then enter the data, or you may enter the data immediately after the code. This way the voice prompt will be interrupted.

In the following sub-section you will find information about the **Programming Rules** that applies to all programming items, with the exception of the Dialing Script programming. Refer to the Dialing Script section later in this Appendix for more information.

Programming Rules

You should always enter programming codes starting at the Main Menu. To ensure that you are at the Main Menu, press the **[*]** key as needed until you hear the two soft-tone beeps that indicate that you have reached the top level. You can then enter the appropriate programming code and the data. After entering the data through the keypad, press the **[#]** key to accept the programming. If the data is valid, you will hear one high-pitched tone, indicating that the data was accepted, immediately followed by the two soft-tones, indicating that you are back at the Main Menu. If the programming code or the data being entered through the keypad is invalid, you will hear two high-pitched tones. Once these are heard, you can reenter the valid code or data string and continue on. You don't need to return to the Main Menu to re-select the programming item before you can reenter the valid data.

There will be certain occasions, i.e.: when programming **Time-Out Periods**, that when incorrect data is entered, the payphone will send three high-pitched tones. This actually means that the information entered is not accepted by the payphone. You will then hear the two soft-tones indicating that you are at the Main Menu and that you should enter the data correctly.

At any time, you can abort the current programming session and return to the Main Menu by pressing the **[*]** key.

The diagram in the next page shows the codes used to program the payphone. Then, detailed, step-by-step instructions will be outlined. Again, following these steps, in the end you should have a fully functional payphone. Be successful...!!!!

MAIN MENU

FEATURES

DIALING MODE
141 – Tone
142 – Pulse
11– Dialing Script
TP1000D

5– Callback
Number

12– Phone number

61– Answer Detect
Type

66-69- Poll Hours

TIME-OUT PERIODS

62- call Progress

63- Connect

64- Computer

Flags

- Allow Prorate
- Callback upon coin box collect
- Enable Regular Call

DEFAULT FACTORY PROGRAMMING

44

mMrateTIME

- minimum and Maximum Digits
- **rate in Cents**
- **TIME in seconds**
- **Patterns**
2, 3, 4, 5, 6, 7, 8, 9

CHASSIS RESET

(SET TO ERROR #7)

- 1- Press 43
- 2- Press Program Button and hold
- 3- Press 4
- 4- Payphone shuts down
- 5- Release Program Button
- 6- Payphone will show ERROR #07 after lifting the handset once again.

REAL TIME CLOCK

- 131 – Year
- 132 – Month
- 133 – Day
- 134 – Weekday
- 135 – Hours
- 136 – Minutes

DIAGNOSTICS

309 – 331

- 41 – RAM Version
- 42 – ROM Version

CALL MANAGEMENT SYSTEM

Press 2

Programming Steps Outlined

Features Programming

Dialing Mode programming

From the Main Menu press the following keys. No voice prompt is heard.

141 for tone dialing

142 for pulse dialing

Dialing Script programming

The Dialing Script is a series of commands that will determine how the payphone will dial out to the line. During this session, the technician can enter alpha characters preceded by the ***** key. It will be during this session when pressing the ***** only once will not take you back to the Main Menu. You will need to press it twice if you want to abort the session. From the Main Menu, press **11**, then enter the Dialing Script. No voice prompt is heard. The following illustrates how to enter the Dial Script characters 'D', 'I', 'P', 'T', 'W' and 'Escape'. Then, there is a table that defines the basic Dial Script commands.

***1** for character '*' (Asterisk)

***2** for character '#' (Pound)

***3** for character 'D' (Dial)

***4** for character 'I' (Instant Digits)

***7** for character 'P' (Pause)

***8** for character 'T' (Trickle Dial)

***9** for character 'W' (Wait for dial tone)

****** to go to the Main Menu (Escape)

to Save and return to the Main Menu

W	Wait for "W" type dial tone. Default = 350 + 440 Hz.
P	Pause n ms. Adds an n ms Pause to the script.
I	Dial Instant digits.
D	Dial Destination number. This command will dial out the complete destination number.
T	Activate Trickle Dial

Numbers are entered directly. For example, to program the Dialing Script TP1000D, do as follows:

***8**(T) ***7**(P) **1000**(1000) ***3**(D) then **#** to save and return to the Main Menu.

Call Back Number

To listen to the current Call Back Number press **5**. To change this number, do the following:

Press **5**, enter the Management System number, and then press **#** to save and return to the Main Menu.

Phone Number

Entering **12** will give the current **Phone** number. To change this number, do the following:

Enter **12**, enter the new Phone number, and then press **#** to save and return to the Main Menu.

Answer Detect Type (AA)

The *Elite* payphone is capable of recognizing various types of answer detect signaling programmed at the Central Office. When selecting this programming code, a voice prompt will indicate the current value programmed. Two digits must be entered to change the Answer Detect. Press the following keys:

61, enter the **AA** valid code then **#** to save and return to the Main Menu. The following table shows the Answer Detect valid codes.

AA = Answer Detect Programming Codes

Programming Code	Answer Detection Type
01	Reverse Polarity
02	12 KHz
06	16 KHz
08	50 Hz detection
16	Automated (Voice Only)
32	Push-to-Talk
47	Push-to-Talk and Reverse Polarity
64	DTMF Type 0
92	DTMF Type 1 (CC Tones)

Note: The Programming Codes can be added, for example, if you want to combine **Reverse Polarity** with **12 KHz**, you would then enter **03** (add code **01** and **02**).

Time-Out Periods

Inactivity Time-out period (Call Progress (II))

For the duration of this time (in seconds), the payphone will wait for activity on the keypad. Once it expires and no activity is detected, the payphone will hang up. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change this timer, i. e.: 19 for 19 seconds. The range is from 10 to 99. Press the following keys:

62, enter **II** then **#** to save and return to the Main Menu.

Connect Time-out period (NN)

For the duration of this timer (in seconds), the payphone will wait for an answer from the called party. Once it expires and no answer is received, the payphone will hang up. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change this timer, i. e.: 45 for forty-five seconds. The range is from 10 to 99. Press the following keys:

63, enter **NN** then **#** to save and return to the Main Menu.

Computer connect Time-out (CC)

When a service call to ProNet is made, the payphone will wait, for the duration of this timer, for the computer to answer the call. If the call is not answered during this timer, the payphone will hang up. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change this timer, i. e.: 25 for twenty-five seconds. The range is from 10 to 90. Press the following keys:

64, enter **CC** then **#** to save and return to the Main Menu.

Programming Flags (BB)

There are three options that can be programmed with this code. They are *Allow Prorate*, *Collect Call In* and *Enable Regular Call In*. The table that follows shows the values to enable them. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change the Flags value.

Byte BB	Enable Prorate	Call In upon coin Box collect	Enable Regular Call In
01	No	No	No
09	No	No	Yes
17	No	Yes	No
25	No	Yes	Yes
33	Yes	No	No
41	Yes	No	Yes
49	Yes	Yes	No
57	Yes	Yes	Yes

Press the following keys:

65, enter **BB** then **#** to save and return to the Main Menu.

Polling period start hour (PP)

During certain hours the payphone will be polled by ProNet. Use this code and the ones that follow to program the hour when the payphone is polled by ProNet and how many times the payphone will ring before the modem answers the call. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change the hour, i. e.: 22 for Ten o'clock PM. The range, in 24 HR format, is from 00 to 23. Press the following keys:

66, enter **PP** then **#** to save and return to the Main Menu.

Polling period Number of rings (r)

This code is used to specify how many times the payphone will ring before the modem answers, during polling hours. A voice prompt will be heard indicating the current value programmed. One digit must be used to change the number of rings, i. e.: 3 for three rings. The suggested value for this code is 1. The range is from 1 to 8. Press the following keys:

69, enter **r** then **#** to save and return to the Main Menu.

Incoming call period start hour (SS)

Starting at this hour, the payphone is to be said “available to the public” because the polling should be over. A voice prompt will be heard indicating the current value programmed. Two digits must be used to change this hour, i. e.: 04 for Four o'clock AM. The range, in 24 HR format, is from 00 to 23. Press the following keys:

67, enter **SS** then **#** to save and return to the Main Menu.

Incoming call period Number of rings (R)

This code is used to specify how many times the payphone will ring before the modem answers, during non-polling hours. A voice will be heard indicating the current value programmed. One digit must be used to change the number of rings, i. e.: 4 for four rings, meaning that the payphone will ring up to four times before the modem picks up the call. The suggested value for this code is 4. The range is from 1 to 8. Press the following keys:

68, enter **R** then **#** to save and return to the Main Menu.

Default programming

Default rating plan programming

This option, when used, will alter the Rates files and the Call Handling file stored in the payphone's memory. The programming string **mMRateTIME**, when used locally, will rule how the payphone will work when making a phone call. No voice prompt will be heard for this code. Ten digits must be used to be able to change the programming string. Below is the definition of this string.

m is a one key entry for minimum number of digits
M is a one key entry for Maximum number of digits
Rate is a four key entry to specify the rate for each period
TIME is a four key entry to specify the periods

Press the following keys:

44, enter **mMRateTIME** then **#** to save and return to the Main Menu.

Once the plan is programmed, the payphone is able to make calls to any number that starts from 2 to 9 with a minimum number of digits equal to “**m**” and a maximum number of digits equal to “**M**”. Calls to 0 and/or 1 (Operator and/or Long Distance)

are not allowed (invalid). **NOTE:** Using this option will override any information contained in the 'Call Handling File' stored in the payphone's memory.

EXAMPLE: **7700250060** will charge 25 cents every minute to every call made.

Resetting the Chassis to Error #7

Using this option will clear the payphone's memory. This includes CDR, Transactions, coin Box information, etc. To reset the payphone's memory, please contact your Management System Administrator prior to doing so, THEN, follow the steps outlined below.

1. From the Main Menu, enter **43**
2. Press and hold the Programming Button
3. Press **4**; the payphone will shut down
4. Release the Programming button
5. Next time the payphone is taken off-hook, it will prompt 'Error Number 7', meaning that the data has been lost.

Program the Real Time Clock

The Date/Time format in the payphone is YYMMDDWhhmm

Year (YY)

A voice prompt will be heard indicating the current year programmed. Two digits must be entered to change the year, i. e.: 01 for 2001. The range is from 00 to 99. Press the following keys:

131 enter the YY, then **#** to save and return to the Main Menu.

Month (MM)

A voice prompt will be heard indicating the current month programmed. Two digits must be entered to change the month, i. e.: 04 for April. The range is from 01 to 12. Press the following keys:

132 enter the MM, then **#** to save and return to the Main Menu.

Day (DD)

A voice prompt will be heard indicating the current day programmed. Two digits must be entered to change the day, i. e.: 14 for the 14th. The range is from 01 to 31. Press the following keys:

133 enter the DD, then **#** to save and return to the Main Menu.

Weekday (W)

A voice prompt will be heard indicating the current day of the week programmed. One digit must be entered to change the weekday, i. e.: 4 for Wednesday. The range is from 1 for Sunday to 7 for Saturday. Press the following keys:

134 enter the W, then **#** to save and return to the Main Menu.

Hour (hh)

A voice will be heard indicating the current hour programmed. Two digits must be entered to change the hour, i. e.: 14 for 2 o'clock PM. The range, in 24 HR format, is 00 to 23. Press the following keys:

1 3 5 enter the HH, then **#** to save and return to the Main Menu.

Minutes (mm)

A voice will be heard indicating the current minutes programmed. Two digits must be entered to change the minutes, i. e.: 43 for forty-three minutes. The range is 00 to 59. Press the following keys:

1 3 6 enter the MM, then **#** to save and return to the Main Menu.

Diagnostics Codes

The payphone has several diagnostics codes the technician can enter to aid when troubleshooting the payphone. Once the code is entered, a voice prompt will respond with "Zero" or "Error", then returns to the Main Menu. A table describing the most important codes follows.

Diagnostic Code	Function	Prompt "Zero"	Prompt "Error"
3 0 9	Collection File missing	No	Yes
3 1 0	Call Handling File missing	No	Yes
3 1 1	Features File missing	No	Yes
3 1 4	Relay Fire	Ok	Failed
3 1 5	ECS II Gate Error	Ok	Failed
3 1 8	Low Ni-Cd Battery	No	Yes
3 2 0	Jammed Relay	No	Yes
3 2 2	CDR Memory % full exceeded	No	Yes
3 2 3	CDR Memory full	No	Yes
3 2 5	Coin box % full exceeded	No	Yes
3 2 6	Coin box full	No	Yes
3 2 8	Keypad test	Ok	Failed
3 3 0	Application File missing (OS RAM)	No	Yes
3 3 1	Handset test	Ok	Failed

Call the Management System (ProNet)

Press **2** to make the payphone call the ProNet. Once the communication is established, the payphone will receive all the necessary files from ProNet, if, in the *Phone, Edit* screen, the *Auto Download* option is selected.

Appendix C – EL1200, 1230 or 1260 Initialization and Programming

Introduction

This Appendix will guide you through the steps on how to initialize the payphone using the user console, available in all *EL 1200, 1230 or 1260* payphones. A constant visual feedback is given throughout the session and context help is provided through toggling messages such as “*Press # to go to previous menu*”. There is also an internal timer to monitor keypad inactivity. If no activity is detected in 60 seconds, the payphone will shut down. The procedure consists of four basic steps that will bring the unit to a fully operational state, when they are followed in the correct order. Before we outline these steps, the technician must understand some key terms mentioned in the procedure.

Basic Key Terms:

- **Phone:** the number used in ProNet to identify the unit.
- **Telephone number:** the number used to identify the facilities the unit will be connected to.
- **MS Number:** this is the Management System’s (ProNet) phone number.
- **Dial Script:** this is a string that contains the series of commands that the unit will follow when dialing a number.
- **Configuration Files:** these files contain all the necessary information to make the unit operational.
- **Application File:** this is the unit’s operating system.

Initialization Procedure Basic Steps:

- Enter into the local programming mode of the unit
- Specify the **Phone**, the **Telephone Number**, the **MS Number** and the **Dial Script** to be used (Protel recommends using **TP1000D**)
- Download the unit’s **Configuration** and **Application** files
- Confirm that the download is complete and correct

Initialization and Local Programming for the EL1200, 1230 or 1260 payphones

As mentioned before, programming of the *EL 1200, 1230 or 1260* Series payphone is done through the user console. Following the steps outlined below will lead you to a successful initialization of the unit.

Entering the programming mode

- Locate the program button on the chassis assembly
- With the phone on-hook, press and hold the program button
- While still pressing the button, lift the handset off-hook
- Wait for the display to show the Main Menu. When it appears, release the button.

- Operations within the service mode are guided by menus. Refer to the diagram on page --- for details on the steps to properly program the payphone

Once you are in programming mode, a Main Menu is shown on the display with the following numbered selections:

1. Programming
2. Call Management System
3. Diagnostics
4. Utilities

Following is a detail of every step that needs to be followed in order to bring a unit to a fully operational state. Some Main Menu selections have various sub-sections.

Selection #1 – Programming

1.1 Dialing Script and Callback Number

The Dialing Script will determine how the payphone will dial out to the line. Refer to the table on page 24 in Appendix B for a definition of the commands used. The data is entered in the same fashion, by using the to enter alpha characters. The numeric characters are entered directly. Here are some common scripts:

TP1000D: Use **T**rickle Dial, do a **P**ause for 1 second (1000 ms) after the line is seized, then dial the **D**estination number.

TP600D: Same as above with a 600 ms **P**ause.

TWD: Use **T**rickle Dial, waits for type **W** dial tone, then dials the **D**estination number.

To accept the data, press to save or to abort. As in the EL1000 programming, to 'Escape' from the session, you enter .

Once the script is programmed, and is pressed, the payphone will prompt you to enter the Management System's telephone number. You will enter the number directly. Press to accept or to quit.

1.2 Programming *Phone* number

Enter the unit's *Phone* number and press . **Note: technicians are required to make a service call to ProNet in order to upload the payphone's information (CDR's, Transactions, etc.) before replacing the chassis. Failure to do so will result in a loss of CDR's, coin box information, etc.**

1.3 Real Time Clock

When programming the clock, the payphone displays the string YYmmDDwHHmm in the upper line of the LCD. You will enter the information accordingly. For example: to enter the date Wednesday Oct. 10, 2001 and the time is 2:30 PM, press the following keys:

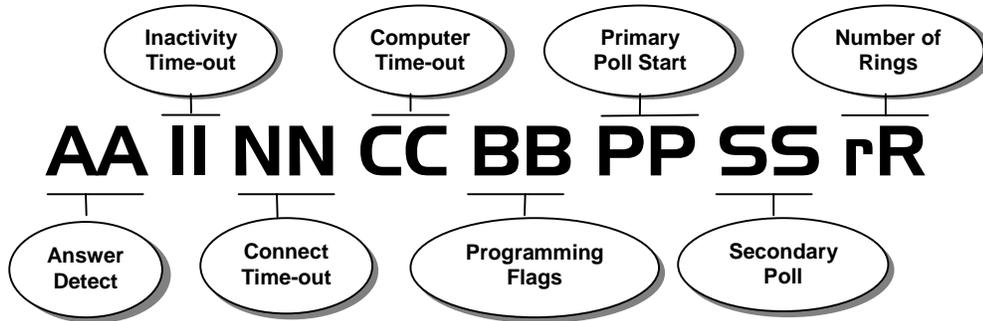
for 2001, for October, for date 10, for day 4 (Wed), for 2:30 PM.

As you enter the data, you will see your input in the lower line of the display. Press to save.

1.4 Dial Mode and Features

Select Tone or Pulse dial by pressing **1** or **2** respectively. The ">" symbol will toggle to reflect the current selection. Pressing **#** to save or ***** to abort will take you to the Features section.

At this point the Features string will be displayed as **AAIINNCCBBPPSSrR**. Here you will program all the operational features of the payphone. This string is shown in the upper line of the display. As with the *EL1000* programming, each byte corresponds to certain features and timers of the payphone. See the information on the next page.



This is how the Features string will display in your payphone. What follows is the description for each byte in the Features string.

AA = Answer Detection

This is the signal that the payphone will wait to open the microphone and collect the coins held in the hopper. The table on the next page shows the most commonly used types of answer detection.

AA = Answer Detect Programming Codes

Programming Code	Answer Detection Type
01	Reverse Polarity
02	12 KHz
06	16 KHz
08	50 Hz detection
16	Automated (Voice Only)
32	Push-to-Talk
47	Push-to-Talk and Reverse Polarity
64	DTMF Type 0
92	DTMF Type 1 (CC Tones)

Note: The Programming Codes can be added, for example, if you want to combine **Reverse Polarity** with **12 KHz**, you would then enter **03** (add code **01** and **02**).

II = Inactivity Time-out

The payphone will hang up if no activity is detected during this period of time. The range is from 10 to 99.

NN = Connect Time-out

This is the amount of time the payphone will wait for Answer Detection. The payphone will hang up if the called party does not answer during this period of time. Coins will be returned upon hang up.

CC = Computer Time-out

This is the amount of time the payphone will wait when a call to ProNet is made. The payphone will hang up if no answer is received from ProNet during this period of time. The range is from 10 to 99 (seconds).

BB = Programming Flags

This byte is used to control three option flags in the payphone. They are **Allow Prorate**, **Collect Call In** and **Enable Regular Call In**. The table on the next page shows the most commonly used flags.

BB Programming Flags

Byte BB	Enable Prorate	Call In upon coin Box collect	Enable Regular Call In
01	No	No	No
09	No	No	Yes
17	No	Yes	No
25	No	Yes	Yes
33	Yes	No	No
41	Yes	No	Yes
49	Yes	Yes	No
57	Yes	Yes	Yes

PP = Polling period Start

This is the time that determines when the poll to the payphone will start. The range, in 24 HR format, is from 00 to 23.

SS = Incoming call period Start

This is the time that determines when the payphone will be "available" for incoming calls. The range, in 24 HR format, is 00 to 23.

r = Polling period number of rings

This value indicates the number of times the payphone will ring before the modem answers the call. The range is from 0 to 9. The recommended value is **1**.

R = Incoming call period number of rings

This value indicates the number of times the payphone will ring for an incoming call. After this number of rings, the modem will answer the call. The range is from 0 to 9.

Selection #2 – Call Management System

This selection will cause the payphone to dial out to ProNet at the programmed number. The payphone should have programmed a valid dialing script, a *Phone* already programmed in ProNet and the Management System number, before being able to call.

Selection # 3 – Diagnostics

Sub menu selections are displayed as follows:

3.1 Auto

This selection directs the payphone to execute a self-diagnostic. If any alarms are detected, they will show on the display. You can use the **#** key to advance to the next message, if any. **Note:** If there is no change in the display, this indicates that the payphone has no alarms or previous alarms to clear.

3.2 Manual

This selection allows the technician to manually select specific tests:

3.2.1 Coin Box

This selection indicates if the coin box is installed on the payphone. (1-CB: in).

3.2.2 Refund

This selection causes a manual 'relay fire' to the refund solenoid.

3.2.3 Collect

This selection causes a manual 'relay fire' to the collect solenoid.

3.2.4 Coin box status

This selection indicates the current coin box value and volume.

3.3 Test

This selection is reserved.

Selection #4 – Utilities

Sub menu selections are prompted as follows:

4.1 RAM Version

Using this selection you can see the current operating system (Application File) loaded in the payphone.

4.2 ROM Version

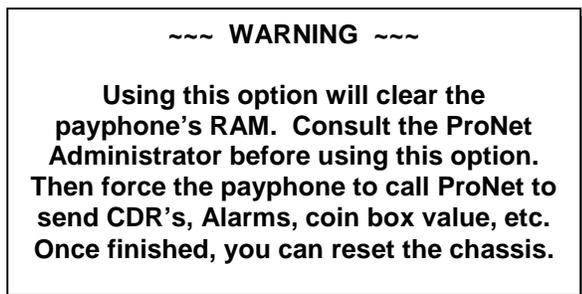
Using this selection you can see the current ROM version of the EPROM installed in the chassis.

4.3 Options

The only option that is actually available from this selection is #4 (Default ROM). The other three are reserved.

4.3.4 Default ROM

This option, when selected, will cause the payphone to lose all the information stored in RAM. This includes CDR's, transactions, coin box value, etc. This action is called: **Resetting the chassis to Error 7.**



To reset the chassis, go into Program Mode. Enter **43**. At this point, locate the Program button, press it and hold it in until you press **4**. The payphone will shut down, indicating that the operation has been completed. To verify that the payphone is totally clear, lift the handset and watch the display show you a message that says **Error # 07**.

4.4 Default Programming

This selection is used to make the payphone operational for testing purposes only, if ProNet is not available. This is normally used when the technician needs to perform an operational test to a payphone that will be downloaded at a later time. This payphone will not be available for public use until such download is done. The payphone can be locally programmed to dial out any number between 2 and 9 at a determined fixed rate. **NOTE: The default programming will force the payphone to accept ONLY US coins.**

The LCD upper line displays **mMrateTIME**. This prompts the technician to enter the **minimum / Maximum** length of the dialed number, the cost (**rate**), in cents, for the call and the charging interval (**TIME**) in seconds. There is an additional confirmation that prompts the technician to accept the newly programmed rate over the existing values programmed. Press the **#** key to confirm your entry.

As an example: if the payphone is going to dial any seven digit number at a 35 cents per minute rate, you should enter: **7700350060** then press **#** to confirm and save.

Payphone reporting modes

The payphone has the capability to report its status to ProNet in the following situations:

1. Service call – when the technician forces the call to ProNet by pressing **2** from the Main Menu.
2. Alarm – when an alarm enabled in the Report Mask downloaded by ProNet, is detected.
3. Regular Call – when the payphone calls back to ProNet at the specified date and time. This mode will also be shown when the payphone is polled (Batch Polling)
4. Coin box collect – the payphone will call ProNet once it has gone through the collection procedure.

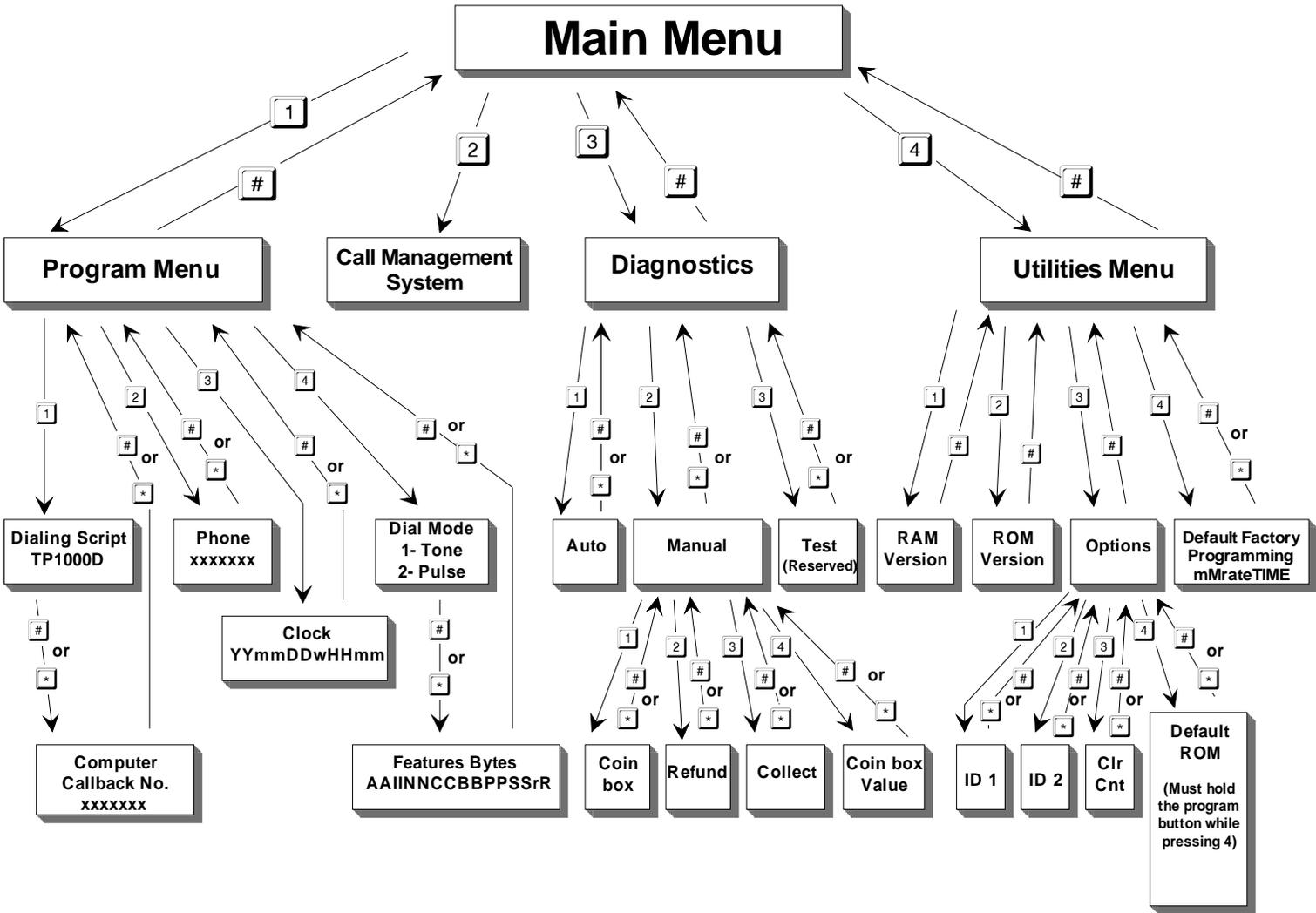
Another way of making the payphone send a report is by making an MS Initiated Call, which is a call made by either the ProNet administrator or by a Batch Polling routine.

ProNet downloads a 32 bit Report Mask that establishes the alarms the payphone will call upon. This means that when the payphone detects a condition defined in the Mask, it will call ProNet immediately. The payphone will remember its previous alarm call and if the same alarm is not cleared in the next diagnostic check, it will not report it to avoid repeated calls on the same condition.

A retry strategy, downloaded from ProNet, will determine how many times the payphone will call in and at what interval. As an example, a strategy could be, call-in 5 times, at a 5 minutes interval and repeat the cycle another three times at a 45 minutes interval. Uploaded statistics will indicate how many times the payphone made call-in attempts. The payphone can also be polled by ProNet if no callback strategy is programmed.

Coin box Collect

Upon removal of the coin box from the vault, the payphone goes into the coin box collect mode. At this point, the payphone prompts “**Enter Id**” on the display. A four-digit code needs to be entered within 20 seconds. If no code is entered within that time, the payphone, then, will initiate a call to ProNet and report a collection of the coin box with the code 0000. On the other hand, if the code is entered within the 20 seconds, then the payphone has two options. One is to call immediately to ProNet, and the other is to delay the call until Callback time. This is due to a flag in ProNet called “*Collect Call In*”. When reporting, the payphone sends the date and time of the collection, the coin box value, its volume and the Collector’s ID.



Appendix D - Programming of Messages for a Standard, CARTE and VF displays

All EL1200, 1230 and 1260 models can have one of three types of display available, being those Standard, CARTE or Vacuum Fluorescent (VF). These displays will show messages about a call in progress when off-hook. While the messages themselves are programmed in ProNet (Files, LCD Messages), it is within the payphone's firmware where the control will be taken. On Standard and CARTE displays, only off-hook messages will be shown. The Vacuum Fluorescent display has the ability to show toggling and scrolling messages while on-hook, for advertising purposes.

This feature is accomplished by utilizing four blocks of twenty characters (keep in mind that the display is comprised of two lines of twenty characters) for the toggling messages and four blocks of twenty characters for the scrolling messages. When the payphone is on-hook, the display will show the toggling messages in the upper line, while the lower line will display a scrolling message. Once the payphone goes off-hook, the payphone will prompt the user to dial a number and make a deposit, either by making a coin deposit or by inserting a debit card (if equipped). Once the call is in progress, the lower line can display a scrolling message, while the upper line will show the cost and the duration of the call.

The on-hook toggling messages (VF models only) will be programmed in ProNet in lines 24 and 25, while the on-hook scrolling messages are programmed in lines 32 and 33. The off-hook scrolling messages are programmed in ProNet in lines 37 and 38. See the table below

Layout for Toggling and Scrolling Message Locations							
Message Lines							
MSG	Line	Language 1	Language 2	Language 3	Language 4	Language 5	
MSG 24	On-Hook Toggling 1	Line 1	On-Hook	On-Hook	On-Hook	On-Hook	On-Hook
		Line 2	Toggling	Toggling	Toggling	Toggling	Toggling
MSG 25	On-Hook Toggling 2	Line 1	On-Hook	On-Hook	On-Hook	On-Hook	On-Hook
		Line 2	Toggling	Toggling	Toggling	Toggling	Toggling
MSG 32	On-Hook Scrolling 1	Line 1	On-Hook	On-Hook	On-Hook	On-Hook	On-Hook
		Line 2	Scrolling	Scrolling	Scrolling	Scrolling	Scrolling
MSG 33	On-Hook Scrolling 2	Line 1	On-Hook	On-Hook	On-Hook	On-Hook	On-Hook
		Line 2	Scrolling	Scrolling	Scrolling	Scrolling	Scrolling
MSG 37	Off-Hook Scrolling 1	Line 1	Off-Hook	Off-Hook	Off-Hook	Off-Hook	Off-Hook
		Line 2	Scrolling	Scrolling	Scrolling	Scrolling	Scrolling
MSG 38	Off-Hook Scrolling 2	Line 1	Off-Hook	Off-Hook	Off-Hook	Off-Hook	Off-Hook
		Line 2	Scrolling	Scrolling	Scrolling	Scrolling	Scrolling

Appendix E – Operational Test Procedure

The following test procedure checks for the correct operation of the components of the payphone. Always follow this procedure to ensure that the payphone is working properly before leaving the site. The following tests should be done with the coin box removed to allow for easy removal of the coins during the tests. We recommend disconnecting the coin box alarm switch during these tests.

Operational Tests

- Take the handset off-hook and listen for dial tone in the receiver.
- Locate the Volume control buttons. Press the UP volume button two times and verify that the volume level increases. Press the DOWN volume button and verify that the volume level decreases accordingly.
- Place the handset on-hook.
- Go off-hook and dial a local number. Deposit less than the required amount of money. The call should not be completed. Instead, the payphone should prompt you, either with a voice prompt or a displayed message, for the remaining of the initial deposit. Deposit the remaining amount. Wait for the call to be answered. Upon answer, verify for collection and transmitter/keypad opening.
- Go off-hook and dial a local number. Deposit the required amount of money. Before the call is answered, hang up and verify for proper refund of the deposited money.
- Dial a series of calls to check that the payphone is charging the correct rates for the type of call. For example, dial a local call, a long distance call, an international call, and a free call.
- Repeat the test using a 'chip' card, if the payphone is equipped with card reader.
- From another telephone, call the payphone and verify that the modem tone is heard after a specified number of rings (check with the ProNet operator)
- Verify the change language button operation (if equipped)
- Verify the New call and Redial buttons operation.

Once the payphone passes these tests, reconnect the coin box alarm switch, clean up the unit and the area before leaving the site.

Appendix F – Error Messages

In the event that the Call Handling File, the Collection File, or the Features File is invalid, missing or corrupted, the payphone will display a message “**Error #n**”, where **n** is the error number. This would happen every time the payphone’s handset is lifted.

If the payphone is not equipped with a user console, then the payphone will prompt the voice messages through the handset to inform the error number every time the payphone goes off-hook

The following table shows a list of the different errors and their meaning.

Error 1	Call Handling File error
Error 2	Collection File error
Error 3	Call Handling File and Collection File error
Error 4	Features File error
Error 5	Call Handling File and Features File error
Error 6	Collection File and Features File error
Error 7	Call Handling, Collection and Features file error

Appendix G – Spare Parts List

Part Description	Protel Part Number
Handset - Protel Modular Dynamic Handset, 32"	PRN00910GA
Assy Hookswitch Matte - Hookswitch assy w/ wiring	ASYHKS0004
O-Ring Material – requires 2 meters per phone	HDS0000217
25 POS cable (upper / lower interconnect cable)	WICA000091
Extreme environment gasket console	HDM0113010
Extreme environment gasket faceplate	HDM0113110
Keypad Kit - 232 PCB, membrane, and four mounting screws.	KIT0000283
Button Dial set (0 – 9, * & #)	HDM0102600
Function buttons set (Volume, New Call & Redial)	HDM0104000
Keypad Membrane for Button Dial set & Function buttons set	HDM0104600
Function keys (Language, Push-to-Talk, Speed Dial) requires 5	HDM0104200
Keypad Membrane for function keys	HDM0117000
Top Piece Assembly -Top piece, and coin return mechanism.	PRN00050AA
Top Piece Coin (w/o coin return mechanism)	ASY0000096
Blank Top Piece Assembly(Card-only phone)	ASY0000111
Coin Entrance (27mm)	HDM0121200
Coin Entrance (33mm)	HDM0121300
Polycarbonate Lens (Basic)	HDM0105800
Polycarbonate Lens (Full Feature)	HDM0117300
Backplate Assembly, basic Elite Back plate with coin release linkage mounted.	ASY0000119
Backplate Assembly, Full Feature Elite VFD Back plate with coin release linkage mounted.	ASY0000073
Backplate Assembly, Full Feature Elite LCD Back plate with coin release linkage mounted.	
Display LCD	ASY0000110
Display VFD	ASY0000056
Card Reader Assembly	ASY0000071

Continues on next page

Spare Parts List (cont'd.)

Handset Plate Kit – no card reader	ASY0000121
Handset Plate Kit – with card reader	ASY0000113
Chassis Assembly	CTRMNT0156 – xxxx *
Modem Option Board	KIT0000238
ECSIIB / Medallist Coin Option Board	KIT0000255
ECSV Coin Option Board	KIT0000291
MS-16 Coin Option Board	KIT0000253
Pulse Meter Board	KIT0000233
Coin Mechanism ECSIIB	ECM-02-00-0B
Coin Mechanism ECSV	HDM0000179
Coin Mechanism Medallist	ECM-02-00-RM
Reject Chute ECSIIB	PR780032GA
Reject Chute Medallist	PR780032GM
Vault Door SS Matte finish	PR490413GJ
Coin Box 27mm	PR480019GA
Coin Box 33mm	ASY0000043
Coin Box lid 27mm	HDM0057700
Coin Box lid 33mm X 3.3	HDS0000178
Coin Box Switch	KIT0000241
Anti-Stuffing Device 3 coin icon Matte finish	PRN00143EA
Dual Solenoid Relay/Hopper Assy 27mm	ASYRLY0006
Dual Solenoid Relay/Hopper Assy 33mm	ASYRLY0007
Mounting plate standard Kit	KIT0000199
Mounting plate card-only Kit	KIT0000205
Security Studs (requires 4)	HDF0000215
Mounting Screws (requires 6)	HDF0000128

* Indicate option boards – see Protel Customer Service for additional information

Note: Changes in this list will be notified by the Technical Support Department.

Appendix H – Return Procedures for Parts in and/or out of Warranty

This appendix describes the procedures to return parts in and/or out of warranty. Remember that the Protel's warranty period is one year.

CRN – Customer Return Number – External Procedure

In order to expedite repairs on our product, when returning parts or equipment to Protel, Inc., a **CRN** (Customer Return Number) needs to be issued to authorize the return.

Read carefully the following procedure.

When requesting a **CRN** you must follow these steps:

Part I- Requesting the return for repair of parts or equipment

Step 1: Request the return of parts to Protel International, Customer Service Department via telephone at **+1 863-644 5558 ext. 3983**, fax **+1 863-647-3927** or if you prefer, e-mail at **inter_crn@protelinc.com**

Step 2: International Department will send a complete package of forms to be completed in order to issue a **CRN** number for your return parts which includes:

- Return of Warranty or Non-Warranty Material Letter
- Repair Policy /Repair Price List
- **CRN** Request Form with Sample Form
- Trouble Identification Tag

Step 3: The customer will return via fax the completed Request for **CRN** form including the three basic sections explained in the Sample Form.

- **Company Information** – Full name. Please do not abbreviate
- **List of items sent for repair** – Please use Price list for correct part number and description to list the items being returned. Serial numbers are not recommended.
- **Shipping Instructions** – A shipping method along with freight carrier and return address is required. Not completing this section could delay the return of goods.

Step 4: International Department will issue and confirm via fax a **CRN** number. This number must to be written on **all** boxes or cartons being returned to Protel as mentioned in the Repair Policy.

Step 5: In the event parts are not received, follow-ups will be sent periodically.

Step 6: After 90 days the **CRN** will be canceled, and a new number will need to be issued.

Upon receipt of parts at Protel, the following will take place:

Part II – Receipt of Material at Protel

Step 7: Upon receipt of material, International department will acknowledge receipt via fax to the customer, and will notify of any deviations or discrepancies, or no discrepancies on the **CRN**

Step 8: A minimum of two weeks must be allowed for repair of parts or equipment.

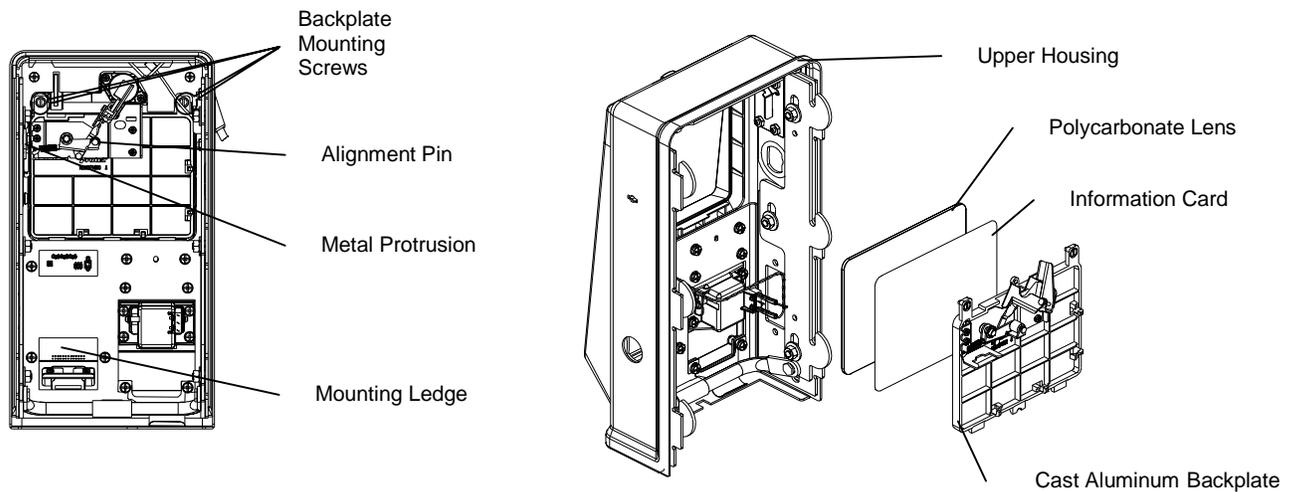
When **CRN** is ready to be shipped back to the customer, the following will take place:

Part III – Shipping

Step 9: When parts are ready for shipment, International Department will try to use customer's preferred carrier or best way of shipment. Confirmations of shipment will be faxed to the customer with shipping documents including the AWB number.

Appendix I – Information Card Removal, Installation, and Specifications

The large information card (4.84" x 6.28" x 0.030" (30 mil), approximately 30.4 sq. in.), which can contain printed instructions for the telephone, is protected with a clear polycarbonate plastic cover and is reinforced within the telephone by a cast aluminum backing plate. **(Instructions are determined and printed by customer.)**



Note: These instructions and diagrams do not show the differences in the backplate assemblies between the basic and full-featured *Elite*, however the procedures are the same for both. It is recommended that on full-featured *Elite*, the cable connections to the backplate assembly be removed, and reinstalled after the procedure is finished.

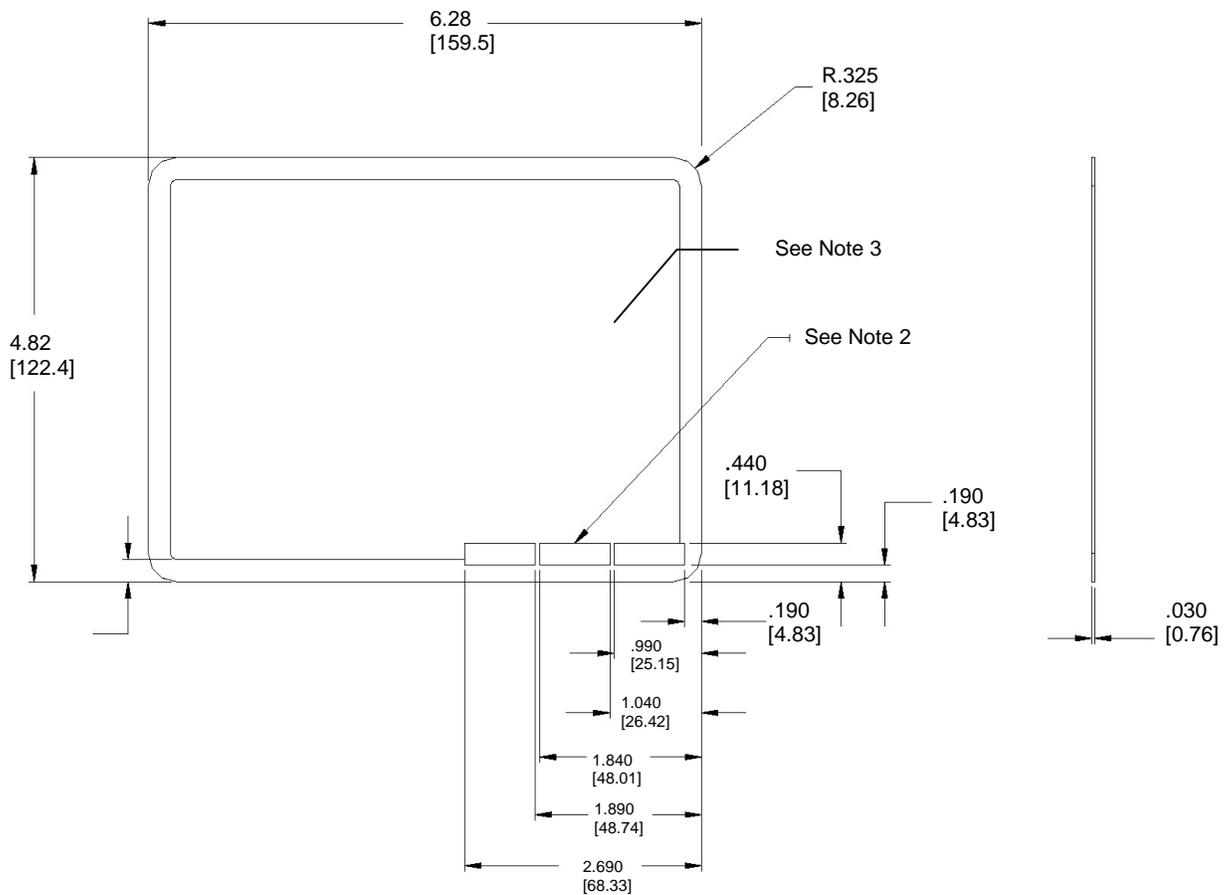
Removal of the Information Card

- Using a flat blade screwdriver loosen the backplate mounting screws while applying a small amount of pressure on the front of the polycarbonate lens until the screws are fully clear of the top piece. Using this method will insure that the captive, backplate mounting screws don't become cross-threaded in the backplate.
- Gently tilt the backplate towards the rear to expose the information card (if present) and the polycarbonate lens.
- Remove the information card.

Installation of the Information Card

- Assuming the backplate has been loosened, insure that the polycarbonate lens is properly located in the main bezel and resting on the mounting ledge at the lower edge of the cutout.
- Insert the information card so that it is located just behind the polycarbonate lens. **Using this method to install the information card provides the easiest method for clearing the metal protrusion located below the coin entrance when positioning the polycarbonate lens and the information card.**
- Position the backplate assembly so that the backplate mounting screws and the alignment pin are properly positioned and tighten the screws.

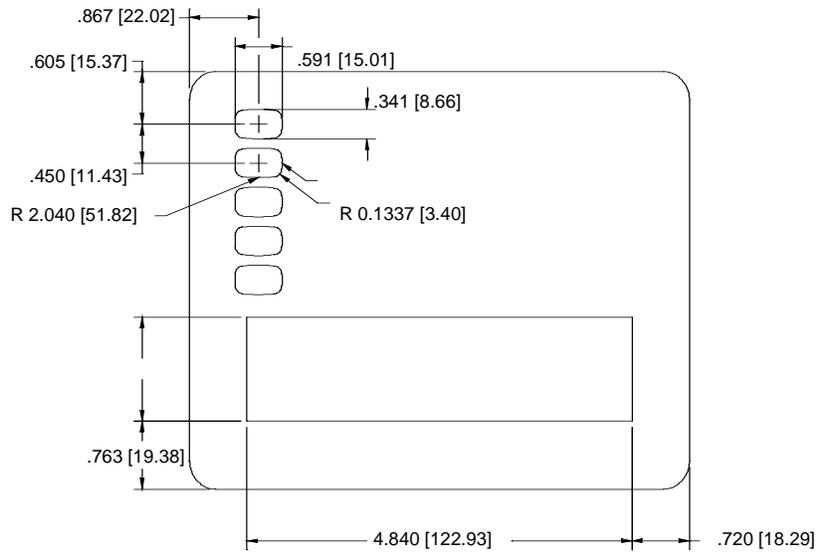
EL1000 Information Card Dimensions



NOTES:

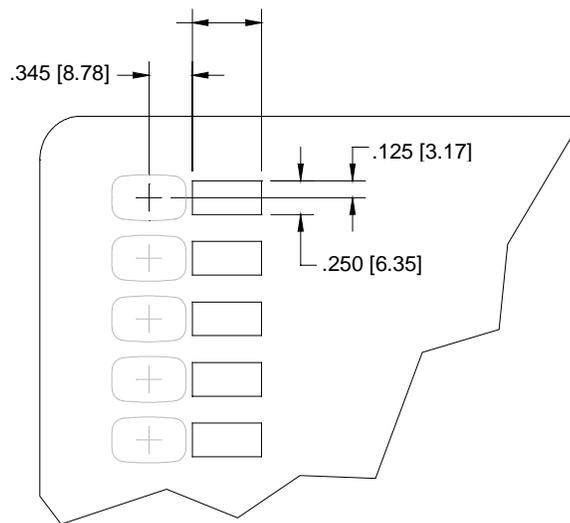
1. Except for "REDIAL", "VOLUME", and "NEW CALL", nothing closer than .250" from edge.
2. For "REDIAL", "VOLUME", and "NEW CALL", use black Arial text 6pt (.083") on Yellow Rectangular background Pantone 116.
3. This area of the information card is to be printed to the customer's requirements.

Multi-function Buttons and Display Dimensions



Part Number	Description	Display Height
HDM119600	Information Card LCD	0.953 [24.2]
HDM119700	Information Card VFD	1.17 [29.7]

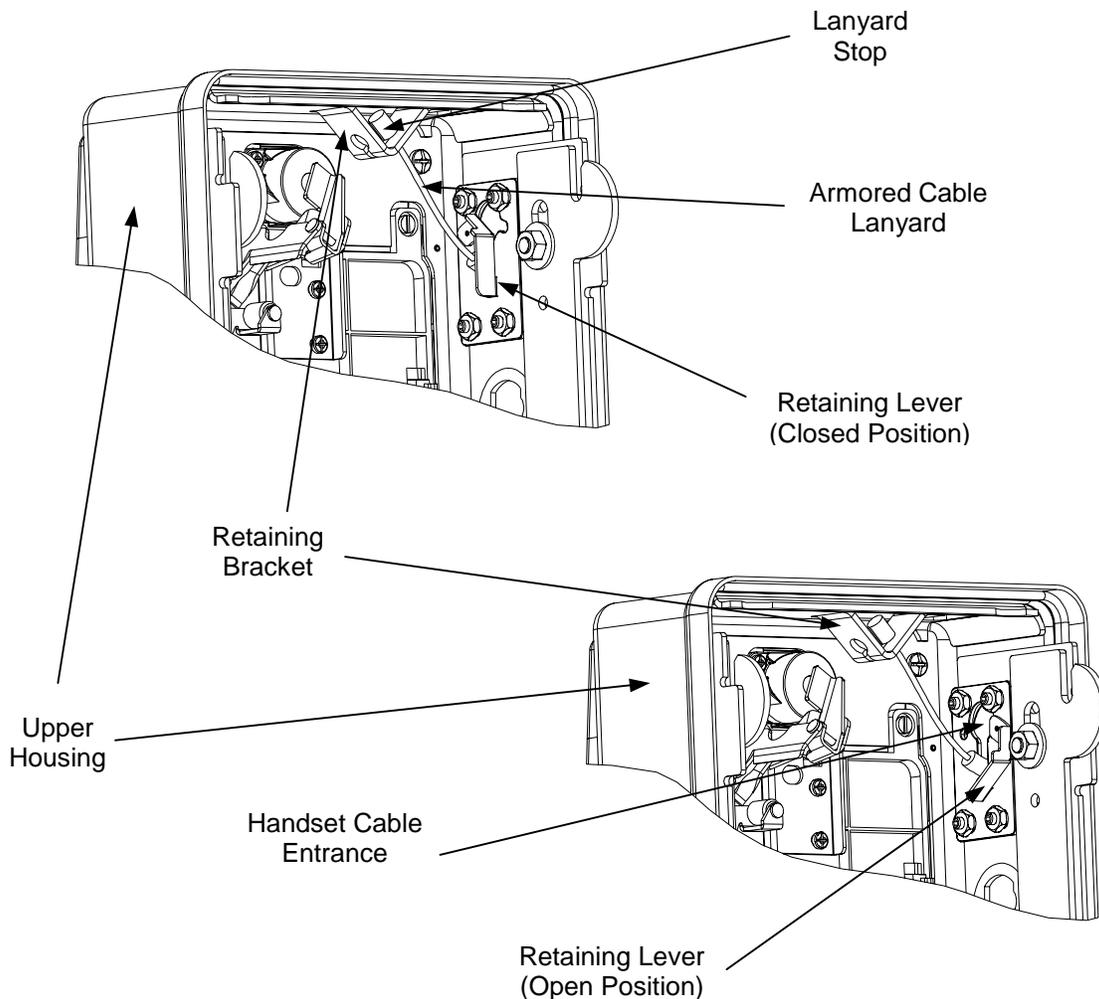
Multi-function buttons Label Dimensions



Appendix J – Handset Replacement and Jumper Settings

Replacing the Handset

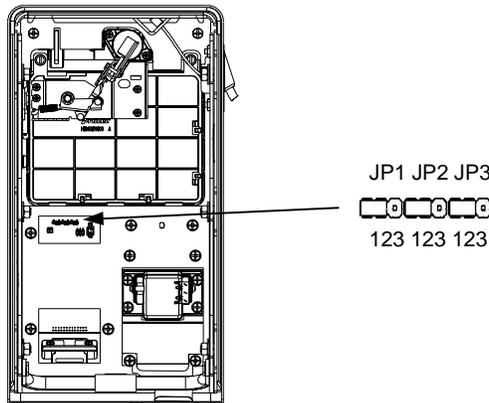
- Unhook the handset cable from connector P1 on the inside of the upper housing.
- Move back the retention lever inside the cable entrance to relieve tension on the armored cable.
- Push the armored cable from the outside to remove the lanyard stop from the retaining bracket.
- Route carefully the lanyard and the handset connection cables through the cable entrance until it's completely removed.
- Route the new armor cable lanyard and the handset connection cables through the handset entrance and continue routing the cable until the lanyard stop is positioned through the retaining bracket hole and secured within the retaining bracket.
- Move the retention lever back to its original position until it snaps in place to secure the armored cable.
- Reconnect the handset plug to connector P1 on the inside of the upper housing.



Handset Jumper Settings

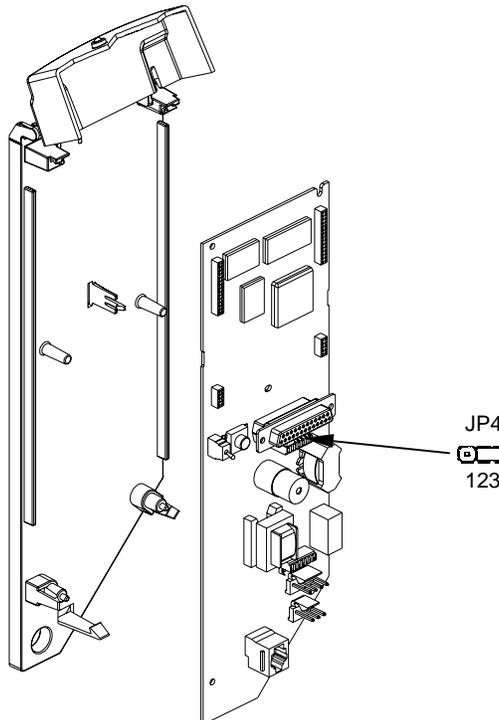
Two locations of jumper blocks need to be set for the desired type of handset operation (Carbon or Dynamic). Jumper settings for handset operation are on the chassis assembly as well as inside the upper housing of the phone. Reference the jumper settings below for desired settings. The jumper settings must agree on both the chassis and inside the upper housing.

Handset Jumpers inside the Upper Housing



Carbon	Dynamic
JP1 = 2-3	JP1 = 1-2
JP2 = 2-3	JP2 = 1-2
JP3 = 2-3	JP3 = 1-2

Handset Jumper on Chassis Assembly



Carbon	Dynamic
JP4 = 1-2	JP4 = 2-3

Appendix K – Specifications

Electrical

Input Power - Line powered, loop start
Minimum Loop - 20mA
Dialing - Dial pulse or touch tone
DTMF Power Level (LOW Group) -10.5 dBm (min) into 600 ohms
DTMF Power Level (HIGH Group) -8.5 dBm (min) into 600 ohms
DTMF Power Level (per pair) +1.0 dBm (max) into 600 ohms
DTMF Frequency Tolerance $\pm 0.5\%$ per frequency
DTMF Twist ≤ 4 dB
Modem - 1200 bit/s DPSK generator, 8 data bits, 2 stop bits and no parity 1200 bit/s
 Transmit Level -11dBm ± 2 dB (per frequency)
 Receive Level 0 to -40 dBm (per frequency)
Volume Adjust 13.5 dB range in 4.5 dB increments

Hardware

Weight - Approx. 50 lbs.
Housing Compatibility - Protel Housings, Palco/Quadrum Housings
Coin Scanners - Protel ECS II, Medallist and ECS V. **All coin scanners require a Protel designed option interface circuit board.**
Handset Compatibility – Protel modular handsets only. PRN00909GB (Carbon) & PRN00910GA (Dynamic)

WARNING

General handset compatibility must NOT be assumed.
Protel approves only handsets listed above.

Dial/Hookswitch Compatibility - Protel *Elite Series*
Coin Relay Compatibility - Industry standard (48V, 3-wire relay)
Operating Temperature - Basic: -40°C to +65° C, Full Featured LCD: 0°C to 50°C, Full Featured CARTE: -10°C to +65°C, Full Featured VFD: -40°C to +65°C
Storage Temperature -20°C to +65°C (on LCD and CARTE); -40°C to +65°C (on Basic and VF)
Humidity - 0 to 95% relative, non-condensing
Computer Software - ProNet software required for communications between the phone and a computer.

Appendix L – Regulatory Information

FCC Registration

This equipment complies with Part 68 of the FCC rules. On the chassis bracket of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of the devices, which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's, contact the telephone company to determine the maximum REN for the calling area.

If the terminal equipment (*Elite*) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the Customer as soon as possible. You will also be advised of your right to file a complaint with the FCC if you believe it is necessary.

Direct connection of the equipment to the telephone line may be made only through the use of the furnished standard plug ended cord, to the proper modular jack (i.e. USOC RJ11C).

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment (*Elite*). In this case, the telephone company will provide advance notification in order for you to make the necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment (*Elite*), please contact Protel directly or your authorized Protel Value Added Reseller or Dealer for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is corrected.

This equipment is hearing-aid compatible (HAC) per section 68.316, FCC Rules and Regulations.

FCC Registration No. F2LUSA-20852-CX-E
Ringer Equivalency No. 1.4B
This device complies with Part 15 of the FCC Rules.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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