*i*2021 Series ISDN Teleset User's Guide

Mandatory Customer Information
Federal Communications Commission (FCC) Requirements

This equipment complies with Part 68 of the FCC Rules. When requesting service, provide the following information to the telephone company.

PORT	FIC	SERVICE ORDER CODE	JACK
144Kbps Subrate	02IS5	6.0Y	

If your telephone equipment causes harm to the network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be informed of your right to file a complaint with the FCC.

Your telephone company may change its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact your telephone equipment distributor for repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected.

Trademark Acknowledgment

5ESS is a registered trademark of Lucent Technologies.
DMS-100 is a registered trademark of NORTEL, Inc.
EWSD and Siemens are registered trademarks of Siemens Information and Communication Networks

IMPORTANT SAFETY INSTRUCTIONS

When using your telephone equipment, basic safety precautions should be followed to reduce the risk of fire, electric shock, and personal injury.

- Read and follow all instructions.
- Follow all warnings and instructions marked on the product.
- Disconnect the telephone from the telephone line before cleaning. Do not use aerosol or liquid cleaners. Use a damp cloth only.
- Do not use this equipment near water, for example, a bathtub, pool, sink or laundry tub.
- Do not use this equipment in a wet basement.
- If this equipment accidentally falls into water, do not retrieve it until you have disconnected it from the telephone line. Disconnect it at the wall jack only.
- This product should not be placed near or over a radiator or heat register.
- Do not place this product in such a way as to cause the cord to be a tripping hazard.
- To avoid the risk of electrical shock, never push objects of any kind through slots or openings in the product.
- Do not disassemble this product. Opening the product can expose hazardous voltage, which may cause an electrical shock.
- Unplug this equipment and refer to a qualified technician if:
  1. The cord is damaged or frayed.
  2. Liquid has been spilled on this equipment.
  3. This equipment has been exposed to water or rain.
  4. If this equipment does not operate properly.
  5. If this equipment has been dropped or appears damaged.
- Avoid using this equipment during an electrical storm.
- Do not use this equipment to report a gas leak if it is in the vicinity of the leak.
- This product should not be placed on an unstable table, stand or cart. The product may fall, causing serious damage to it.
- Do not overload wall outlets and extension cords as this can result in risk of fire and electrical shock.
- This product should only be operated from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.

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INTRODUCTION

ISDN *i*2021 S/T TELESETS

Thank you for purchasing the *i*2021 voice only Integrated Services Digital Network (ISDN) Teleset. This Teleset meets the highest standards of quality to give you years of excellent service. The *i*2021 works with your local service provider to give you advanced, easy-to-use features. It is compliant with National ISDN 1 and 2 standards.

ABOUT THIS MANUAL

This manual contains the following information about your new ISDN Teleset:
- Features
- Installation
- Setup
- Voice User Operations
- Troubleshooting

***i*2021 S/T Teleset**
This Teleset connects to an ISDN Basic Rate S/T interface, which may require an external NT1 (Network Terminator). Your local telephone equipment provider may furnish this device.

FEATURES

The *i*2021 Teleset offers an extensive list of features. They include the following:
- **Cross-Compatibility**
  The Telesets work with several different switches: the Lucent Technologies 5ESS® (National ISDN), the Nortel DMS-100® (National ISDN) and the Siemens® EWSD (National ISDN).
- **Programmable Features and Options**
  An extensive array of options/features may be provisioned via menus.
- **Programmable Hardkeys**
  These keys are used for Call Appearances, access to Speed Dialing lists, and Dial Access Codes. The *i*2021 has 16 programmable hardkeys.
- **Firmware Upgrades**
  Your Teleset can always have the latest software features. The *i*2021 Teleset uses flash memory to download the current firmware. This is done through the S/T interface port, via a remote server.
- **Tilting Display (Backlit)**
  Your Teleset has a Liquid Crystal Display (LCD) with 9 settings for the optimum-viewing angle. It displays Caller ID information, CalLog

entries, and is used to set up and manage Teleset operation.

- **Clock and Alarm**
  The display includes a time-of-day clock, and a timer that shows how long you are on a call. A separate timer is kept for each Call Appearance. You can also program the clock to operate as an alarm clock, with up to eight different alarm times.
- **Password Protection**
  A password can be used to safeguard your programmed options and features.
- **Non-Volatile Memory**
  Any options you program into the Teleset are protected from accidental loss by power failures. This allows you to move the Teleset to another location without worry.
- **Backup Battery**
  An optional battery backup unit is available.

VOICE OPERATION FEATURES

- **Feature Keys**
  Such features as Hold, Transfer, Drop, and Conference, are supported on the Teleset.
- **Call Status Lamps**
  Each hardkey contains a two-state (red/green) lamp to show the status of Call Appearance or Feature Keys.
- **Local Features**
  These keys include: MUTE, MENU, REDIAL, SPEAKER, VOLUME (Down) / VOLUME (Up) .
- **Message Waiting Lamps**
  These indicators flash (red) to alert you to a message (held) at your message center. Contact your service provider for this service.
- **Automatic Hold**
  During a call, you can answer an incoming call or initiate another call by pressing a Call Appearance (CA) key. Your first call is automatically placed on hold.
- **Speakerphone**
  A base-mounted speaker and microphone allow hands-free operation. The speaker is automatically turned off when the far-end party terminates the call.
- **Volume Control**
  This key controls the loudness of the handset, headset, speakerphone, and the ringer intensity.
- **Ringer Controls**
  Up to ten different ringing patterns and five separate alarm patterns may be chosen.
- **Call Record**
  Your Teleset stores the information from the last ten calls you dialed or received.

- **Call Timer**
  On each new call, the timer displays the elapsed time of the call. Placing a new call resets the timer for the new call.
- **Headset Jack**
  Inserting the headset plug into this jack <u>enables</u> the headset, and <u>disables</u> the receiver and speakerphone. The *i*2021 Teleset contains an amplifier controlled by the volume key.
- **Network Features**
  Your Teleset can provide advanced network features. Such features as Call Forwarding, Auto-Callback and Call Pickup, may be available through your service provider.

CHANGING THE LANGUAGE ON KEYCAPS AND DISPLAY

Certain keycaps are available in three languages. These user changeable keycaps are shown below. The Teleset will also allow the user to choose a display language.

English	French	Spanish
MENU	MENU	MENU
MUTE	SOUR	MUTE
HOLD	ATTENT	ESPERA
REDIAL	RECOMP	VOL.LL

Changing the Keycaps
Using a small screwdriver or similar flat blade (unsharpened), carefully pry-up the existing keycap by the indentation on the side. Remove the keycap and gently press the new cap down until it locks in place. You may now change the language displayed.

Changing the Display Language
Press the following keys in order: **MENU**, **MORE**, **MORE**, **Config** (softkey), and **LANG** (softkey). The Teleset will then prompt you to choose the desired language.

TOUCHTONE KEYPAD

A standard telephone keypad is used to enter alpha-numeric characters as well as the "Feature" (Star * and Pound #) keys. These keys are used to dial telephone numbers, and to enter names and numbers into the directory. Certain other features or options may include the use of the two feature keys.
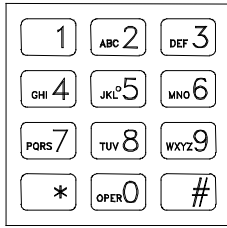
*i*2021 ISDN Teleset

Fig. 1: Touchtone Keypad

INSTALLATION

Before installing your phone, review the Safety Instructions located at the front of this manual. Make sure you have the correct model Teleset and associated parts for your applications. Choose a flat work surface with good lighting and easy access to cords and jacks. Avoid placing the Teleset where it is exposed to sunlight or heat sources.

PARTS LIST

Check the box for the following:
> Teleset
> Handset and Handset Cord
> Mounting Cord (8-pin, round)
> Designation Card and Faceplate
> Wall-Mount /Desk Stand Base
> Handset Holder
> Headset Holder

As you unpack the box, inspect each part carefully for damage. Report any damage to your dealer or shipping company. Keep the box and packing material should a return be necessary.

ISDN INTERFACES

A little background information sometimes helps. Your ISDN service comes to you over ordinary telephone line wiring. That makes it less expensive and simple to install.

An interface is a point where the 2-wire connection (U interface) from the service provider, changes to a 4-wire (S/T interface) connection to your Teleset. Both interfaces connect to the NT1 where the electrical signal is transformed for Teleset use. Thus, the interface designations U and S/T, are really references to the electrical characteristics of the ISDN signal and not actual interfaces at all. It sounds confusing, but think of the NT1 as a common, physical reference point where the signal changes format. Since the signal comes into the NT1 2-wire, and leaves 4-wire, it is called an interface. See Fig. 1.

The S/T interface and power connection cable is connected to the "Line-In" jack located on the bottom of the Teleset. The *i*2021 S Teleset must be connected through a network interface device (NT1). This device presents the 2-wire "U" interface to the line, and to the 4-wire S/T interface to the Teleset. The Teleset is usually powered from the NT1 or separate transformer.
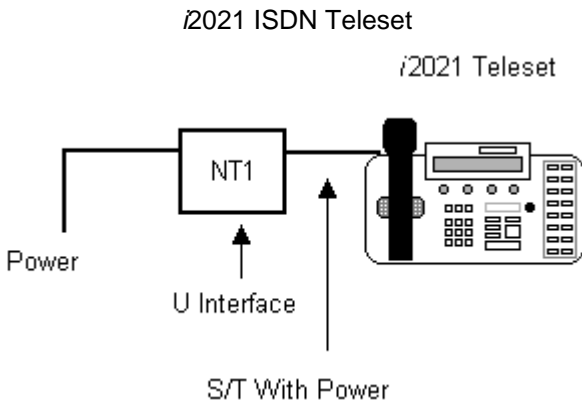
Fig. 2: Line and Power Jacks

LINE AND POWER CONNECTIONS – *i*2021 TELESET

The *i*2021 Teleset must be connected to the line through an NT1 device. This device presents the 2-wire U interface to the line, and the 4-wire S/T interface to the Teleset. The Teleset is powered over the phone line. This method conforms to a standard using one of three different powering methods: PS1, PS2, or PS3. Powering method PS2 is preferred. Check with your equipment provider or system administrator for guidance in setting the PS1/PS2 switch. Your equipment provider should also be asked about using or disabling the Teleset terminating resistors (TR).

Switch Settings:
- **Power Switch**
  The PS1/PS2 power switch is located on the bottom of the *i*2021.

- **TR Switch**
  When the *i*2021 Teleset is connected to the NT1 it acts as Terminal Equipment (TE). Terminal Equipment is any (ISDN) device that terminates directly on the ISDN line without an adaptor.

If your Teleset is the last, or only, piece of TE on the ISDN line, set the TR to <u>ON</u>, otherwise it is set to <u>OFF</u>. This is determined by the local equipment provider's policy. It is suggested that you check with the ISDN provider or your system administrator. Most companies allow up to eight TE units in the loop.
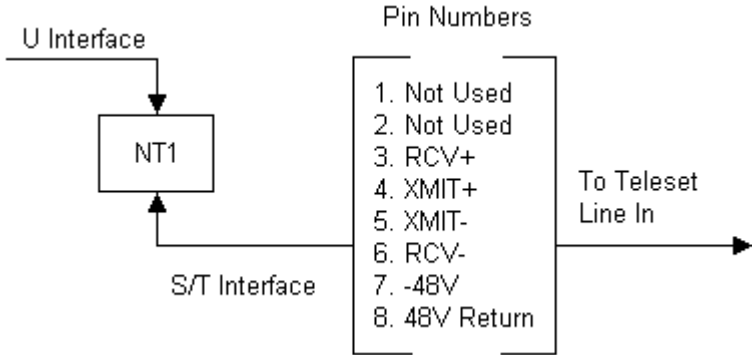
*i*2021 ISDN Teleset

Pin Numbers

Fig. 3: NT1 Leads

PS1/PS2 SWITCH SETTINGS

- If power is supplied on pins 7&8, set the PS1/PS2 switch to PS2.
- If power is supplied on pins 3&6, 4&5 only, set the PS1/PS2 switch to PS1.
- If power is supplied on pins 3&6,4&5,7&8, set PS1/PS2switch to PS2.
- If your NT1 does not supply power, you must use an external 48-volt DC power supply. Contact your service provider or system administrator if an external power supply is required. Connect as follows (Figure 3) and set the PS1/PS2 switch to PS2.
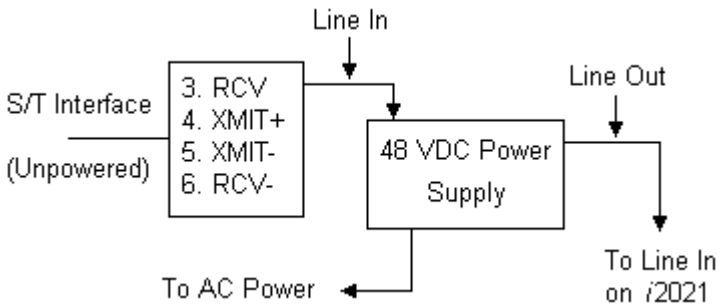

Fig. 4: Powering a Teleset (S/T) with an External Power Supply

TERMINATING RESISTORS

The *i*2021Teleset has built-in Terminating Resistors. The Terminating Resistor switches are located on the bottom of the phone. When the switches are in the **On** position, the Terminating Resistors are installed. The value of the resistors is 100 Ohms.

POINT-TO-POINT CIRCUITS

A point-to-point application typically has the Terminating Resistors "On" at both ends of the interface.
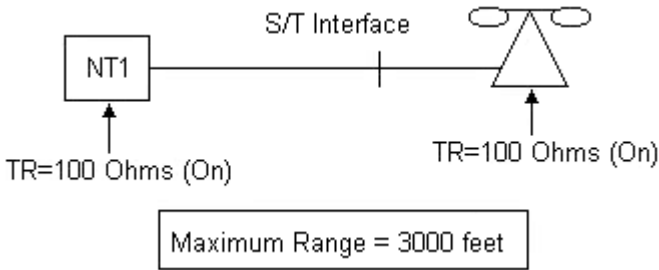

Fig. 5: Terminating Resistor Range

PASSIVE-BUS OR MULTIPOINT

These may be new terms to you, so we will define them so you can better understand their meaning. Passive Bus means that you can connect several devices to the same Basic Rate Interface (ISDN line). Improperly set Terminating Resistors account for many of the problems with ISDN service. The "short version" of this explanation is that the terminating resistance at both ends of a circuit should be identical. This is called impedance matching.

Your choices of terminating resistance are two: none or 100 Ohms. The idea is to terminate both ends of the bus.

The best advice is to follow the instructions given by the NT1 manufacturer and those of your terminating devices.

In the following configuration, the Terminating Resistors are "On" at both ends of the interface. The resistors are on at the NT1 and "On" at the farthest *i*2021 from the NT1.
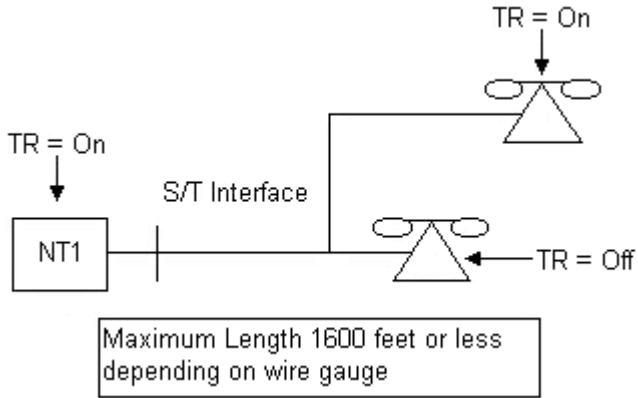
Fig. 6: Terminating Resistor Settings for Farthest Teleset

In the following application, the NT1 is equal in distance to both *i*2021 phones. The Terminating Resistors are set to "On" at one of the phones and at the NT1.
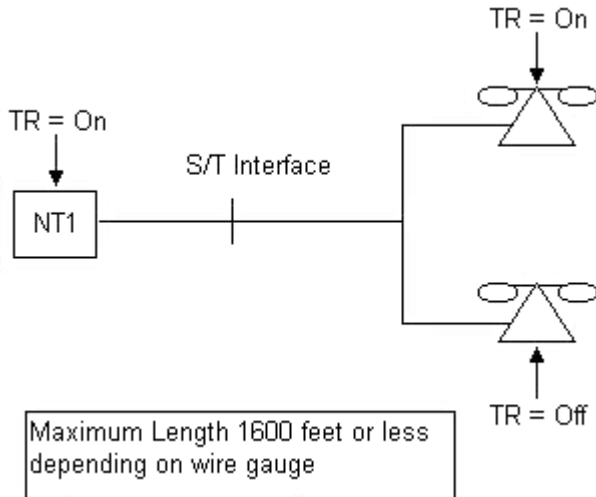
Fig. 7: Terminating Resistor Settings for Equal Distance Telesets

LINE CONFIGURATION

To ensure the proper operation of your Teleset, several operating parameters must be met. This information can be provided by your system administrator or service provider.

■ **Service Profile IDentifier (SPID)**
   A service profile for your Teleset that is recognized by the switch. Check with your service provider or system administrator for the

correct information. The default setting is Auto-Switch detect and Auto-SPID.

- **Directory Number**
  The telephone numbers for your line.
- **Call Appearance keys**
  These are configured at the switch and at your phone. You may have more than one Call Appearance of a Directory Number. Check with the system administrator or service provider for information and multiple Directory Numbers. With National 2 ISDN, many of the required settings can be automatically downloaded from the switch – see your system administrator or service provider for details.
- **Switch Type**
  The type of switch used by the service provider. The *i*2021 will operate with the Lucent Technologies 5ESS® (National ISDN), Nortel DMS-100® and the Siemens® EWSD-NI.

AUTO-Install

The *i*2021 is equipped with an Auto-Install feature. See the Quick Start Guide for details on this feature. The purpose of Auto-INSTALL is to ensure a complete and painless installation. The *i*2021 will step through each of its programming choices and give you the opportunity to make a selection.

AUTO-Switch

With Auto-Switch detection, the *i*2021 determines the type of switch to which you are connected. Should you decide to manually program the switch type, Auto-Switch detect will tell you if a different type of switch is found. You will then be given the opportunity to correct the switch type.

AUTO-SPID

Auto-SPID is a National 2 ISDN feature. Not all switch types and not all service providers support the Auto-SPID feature. If Auto-SPID is supported, follow the procedure shown below.

AUTO-SPID PROCEDURES

When the countdown timer stops, or is aborted, the Teleset automatically sends the Auto-SPID code to the switch. The switch then downloads all of the SPID's that are supported to the phone.

> NOTE: If the SPID is not accepted for any reason - including the SPID being used at another location - the phone displays: "Invalid SPID," and allows correction of the SPID.

SYSTEM CONFIGURATIONS

The following check sheet lists the items that are important to ensure that

the Teleset and switch are similarly configured – necessary for correct operation of the phone:
- Switch Type
- SPID
- Call Appearance activated
- Directory Number activated
- Customer features activated
- "Class" services: Caller ID, Message Waiting, etc.
- Conference Drop and Transfer features enabled.

AUTO-INSTALL

The *i*2021 Teleset is equipped with an Auto-Install feature that can step the user through the installation and configuration of the Teleset.

Auto-Install will only run the first time the Teleset is installed. First, the phone's features must be set to "default". Auto-Install starts by instructing the user to adjust the display's contrast, clock, ring patterns, etc. Auto-Install prompts the user during initialization as required.

> NOTE: To default the *i*2021 press **MENU** and enter 91 from the dial keypad. Press the "**YES**" softkey to complete the default.
>
> **WARNING: DEFAULTING THE *i*2021 WILL ERASE ALL OF THE MEMORY.**

At each step of this process, Auto-Install gives the user the opportunity to bypass that step. For example, if the prompts says: "Set the Clock," you may press the "no" softkey to bypass that step.

Auto-Install may be aborted by pressing the MENU key.

MANUALLY CHOOSING THE SWITCH

> NOTE: Your Teleset has a factory default setting of "AUTO" which adjusts for the switch type. An incorrect switch type results in a warning message from the Teleset. The correct switch, as detected by the Teleset, is displayed as a prompt to change your switch selection.

MANUALLY ENTERING THE SPID

1. Press **MENU**, **MORE**, **MORE**, **Config** (See Softkeys), **MORE**, **MORE**, **SPID**.
2. Press **Change** if you want to edit the SPID. Pressing Change will not erase the displayed SPID until the new SPID is entered from the

keypad. Press **Clear** if you want to erase the existing SPID.
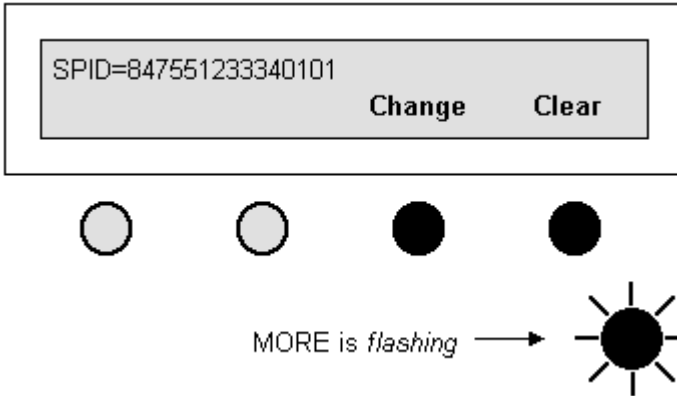
3. Up to twenty digits can be entered as the SPID. After entering the
    digits, press **Save** to enter into non-volatile memory. If an error is
    made use the **Bkspc** (backspace) key to edit. Enter the corrected
    digits and press **Save**. Press **MENU** to return to the idle screen.
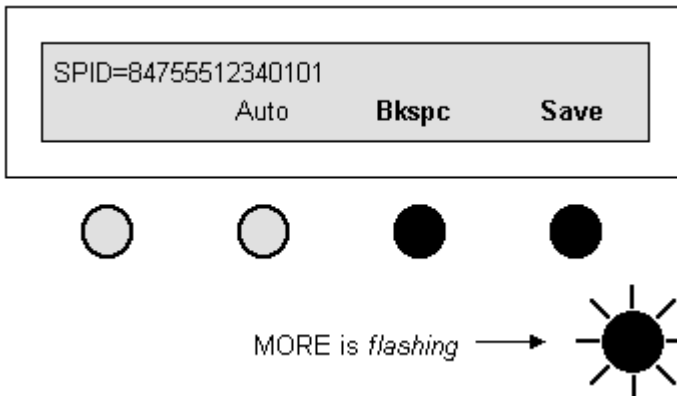
When the SPID entry is complete, the Teleset must be programmed.
The *i*2021Teleset can download the switch parameters, and/or can be
manually programmed. In **Auto-SPID** mode, the Teleset will download
automatically.

MANUAL SWITCH DOWNLOADING

Switch parameters may be downloaded from the switch to the Teleset over
the ISDN line. A download can be requested up to three times in a five-
minute period. To download proceed as follows:
1. Press **MENU**, **MORE**, **MORE**, **Config, MORE**, **MORE**, and
    ReqParam/RunSPM (depending on the switch) in order. A message

indicates a successful or failed download. If the switch is in the Auto-SPID/Auto-Switch mode, the download is automatic upon initialization. If successful, the remainder of the setup parameters need not be entered. These setup characteristics include conference, drop, transfer and Call Appearances. You must enter these parameters manually if the download fails. Press **MENU** to return to the idle (power-up) screen.

NOTE: If the Teleset detects a DMS-100® or the switch is programmed as a DMS-100®, the ReqParam softkey will be displayed as RunSPM.

2. Press **ReqParam**. A message tells you if the download was or was not successful. If the Teleset has not linked with the switch, the display will show "Layer 3 Not Initialized Yet." If this happens, press **MENU** to exit. The Teleset will request a download after the communication with the switch has been completed. If the phone has successfully downloaded, you can omit manually programming the remaining parameters. If the download was not successful, you must continue with the listed parameters.

When you are finished, press **MENU** to return to the idle screen.

SETTING UP THE TELESET

Setting up the *i*2021 Teleset is accomplished through menus appearing on the display. Some of the changeable options/features include:
- Switch types
- Service Profile IDentifiers (SPID)
- Line configuring
- Conference Drop and Transfer features
- Call Appearance keys
- Speed Dialing
- Ringing Patterns and Idle Line Preferences
- Clock functions
- Handset and Headset options
- Passwords

Some of these options and features were discussed earlier in the manual. Others will be discussed later in this and the following chapter.

LIQUID CRYSTAL DISPLAY (LCD)

The *i*2021 Teleset incorporates a two-line, 24 character, adjustable backlit display. There are three settings for the backlight feature: off, on, and dynamic.

OFF – When the backlight feature is set to off, no backlighting is present.

ON –When the backlight feature is on, the backlighting is continuous.

DYNAMIC – When the dynamic backlighting feature is enabled, the display is backlit whenever the handset is off-hook or the Teleset is ringing. In the dynamic setting, the display is backlit for a period of 30 seconds after the ringing ceases or the handset goes on-hook.

SOFTKEYS

Directly below the display are four softkeys, vertically-oriented to the display. The location of these keys corresponds to menu choices that appear directly above them in the LCD window. For example, pressing the softkey below the "clock" menu reveals the options for setting the time of day and date. They are called softkeys because their function changes according to the menu. In one menu a key may set the time, while in another menu the same key is used to choose a feature. This will become clearer as you begin using the softkeys.   See the following example.
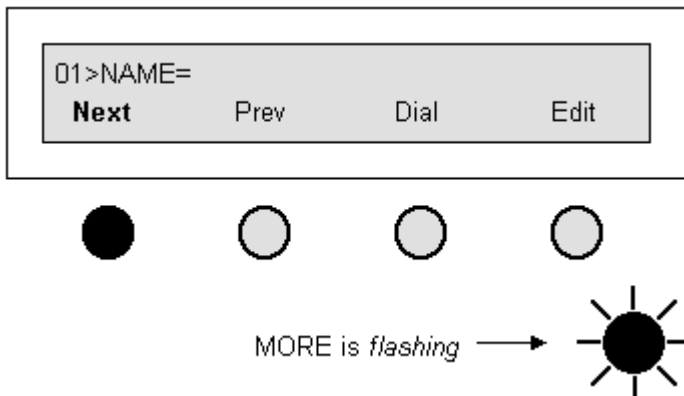
Example:
Press the softkey under Directory - shown below by highlighting (**bold type)** the word "**DIR**" and highlighting the softkey below that menu item.

CalLog	**DIR**		

○ ● ○ ○
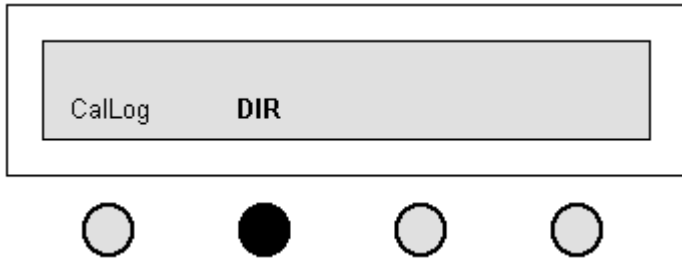
Pressing the Directory softkey brings up the second menu with additional choices. In our example we chose **Search** next - shown in **bold** type. The selected menu items are shown in **bold** type for emphasis. The softkey under **Search** is highlighted to indicate the chosen softkey.

Search	Add	Del	

● ○ ○ ○

MORE is *flashing* ⟶ ☀
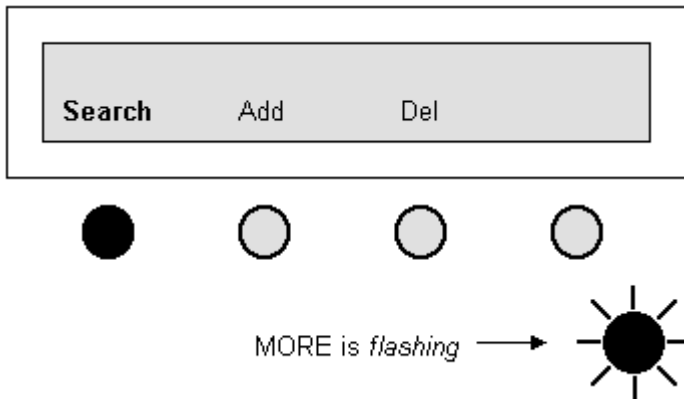
Choosing Search returns the next screen.

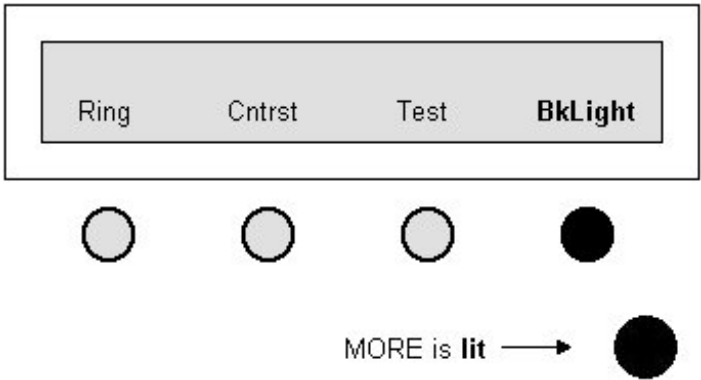| 01>NAME=			
Next	Prev	Dial	Edit

● ○ ○ ○

MORE is *flashing* ⟶ ☀

To return to the main menu at any time, press the MENU hardkey.

SETTING THE BACKLIGHTING OPTIONS

To set these options, first press the **MENU** key and then the **MORE** key. The display appears as shown below.

Ring	Cntrst	Test	**BkLight**

MORE is **lit** ⟶

Press the BkLight "softkey". The display will show the current setting on the top line. To change the option, press the appropriate softkey. Press **MENU** to exit.

Backlight:Always Off
   On   Dynamic

MORE is *flashing* ⟶
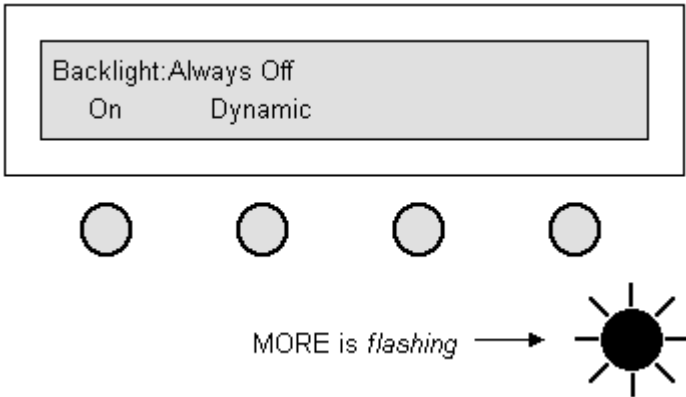
NOTE: An explanation of the options provided by the MORE key is found in the Basic Operation section found in Chapter 2.

SETTING THE CONTRAST

The display contrast is adjusted by pressing **MENU**, then **MORE**. The following display appears.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │                                       │  │
│  │   Ring      Cntrst     Test   BkLight │  │
│  │                                       │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```
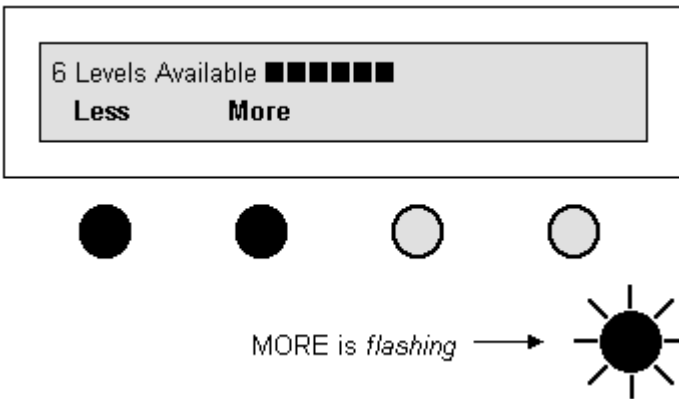
○   ●   ○   ○

MORE is **lit** ──▶ ●
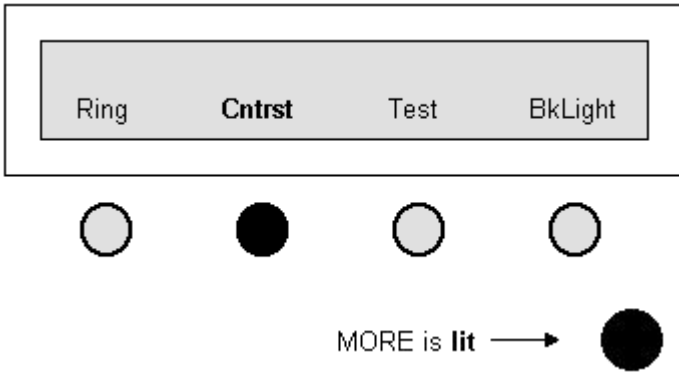
Press the **Cntrst** softkey.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │  6 Levels Available ■■■■■■             │  │
│  │    Less        More                   │  │
│  │                                       │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

●   ●   ○   ○

MORE is *flashing* ──▶ ☀

Adjust the contrast by pressing the **Less** and **More** softkeys. If the display characters appear faded, pressing the **More** softkey will darken the characters by increasing the contrast. Similarly, pressing the **Less** softkey decreases contrast (lightens the characters) for comfortable viewing and better clarity. Exit by pressing the **MENU** key.

ADJUSTING THE DISPLAY VIEWING ANGLE

The display module on the *i*2021 Teleset tilts for ease of viewing. This is a handy feature when reflections from room lighting or instrument placement make the display less readable. Select any of nine angle settings by lifting the display from the rear with your finger. Return the display to a lower position by pressing down on the top of the display case, not the display window.

OPERATIONS

VOICE OPERATION

Most of the operations described to this point are switch related or controlled. Voice Operation consists of features/options controlled by the Teleset.

TERMS AND NOMENCLATURE

Of all the terms used in basic telephony, none is more widely used than "On-Hook and Off-Hook." They refer to placing or removing the handset, or receiver, in the cradle (usually on the top or in the front) of the instrument. The button protruding up from the cradle is the "On and Off" switch, or switch hook, of the phone. Pressing the Speaker key and requesting dial tone is also considered going "Off-Hook". This background is helpful in understanding the instructions that follow.

CALL APPEARANCE LED'S

The various states of the Call Appearance indicators (hardkeys) are described in the following table.

LED State	Meaning
Off	Idle State
Red - Flashing	Incoming Call
Green - Flashing	Call on Hold
Green - Steady	Call in Progress

NON-PROGRAMMABLE HARDKEYS AND INDICATORS

Non-programmable Hardkeys and Indicators are found to the right of the touchtone keypad. Some of the keys in this group perform important calling and answering functions.

- **MSG**
  If your line service includes the Message Waiting feature, the MSG1 (and MSG2, when available) indicator will flash (red) when someone has left a call at your message center.
- **MENU**
  The MENU key provides additional menu items and is used to exit from the menus. A steady light (red) lights the key when active.
- **MORE**
  The MORE key lights to indicate that there are choices available for current menus. If the MORE key is lit continuously, it indicates there are additional menu items available by pressing the key. When the MORE key flashes, you can press the key to return to the previous

menu.

- **MUTE**
  The MUTE button toggles the microphone - on and off - for the handset, headset, and speakerphone. A steady light (red) lights the key when active.
- **REDIAL**
  This key is handy for calling frequently busy numbers. Press this key to redial the last (manually dialed, or Speed Dialed) number.
- **VOLUME / RINGER**
  Press the right side of this key to incrementally raise the volume/ringer intensity. You incrementally lower the volume, or ringer intensity, by pressing on the left side of the volume key. A bar graph displays as the level increases or decreases. This setting (volume or ringer) is saved until changed again.
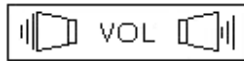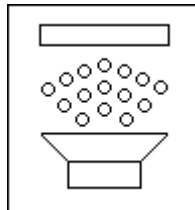

- **HOLD**
  The HOLD key lets you answer or place a second call without losing the original connection. This is not the key used when transferring or making conference calls – other keys are used.
- **SPEAKER**
  The SPEAKER hardkey turns the speakerphone, or the headset if used, On and Off. A steady light (red) lights the key when active.
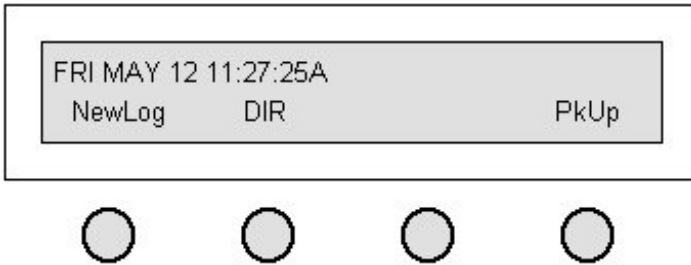

(Speaker Hardkey)

THE DISPLAY WINDOW AND MENUS

The display window contains information used to configure the Teleset's options and features. The liquid crystal display (LCD) also shows the Caller ID information, call timer, current time /date and the menus for phone setup. Throughout this manual you will be prompted to make decisions and choose features that are displayed in the LCD window.

The menu system allows you to program all of the features/options of your Teleset easily and accurately. The "On-Hook" idle screen is shown below. The time/date entry flashes until it is set. The menus for the CallLog and Directory are accessed by pressing the softkey directly below the word.

```
┌─────────────────────────────────────────┐
│  FRI MAY 12 11:27:25A                     │
│    NewLog      DIR              PkUp       │
└─────────────────────────────────────────┘
```

   ◯   ◯   ◯   ◯

PLACING CALLS

The two methods of placing calls are On-Hook and Off-Hook dialing. This may differ somewhat from what you consider to be traditional usage, but ISDN is not yet considered, by some, a traditional service.

Dialing Off-Hook
1. Lift the handset (go Off-Hook), listen for dial tone and note the steady, green Call Appearance key.
2. Using the touchtone keypad, dial the number and observe the call timing feature. When the called party answers the call timer begins operation.
3. Return the handset to the switch hook cradle (go On-Hook) to disconnect.

Dialing On-Hook
1. The handset remains On-Hook while you dial the number. Note that the dialed digits appear on the screen as they are dialed.
2. Press **Cancel** to abort the dialing process, or use **Bkspc** to correct the dialed number – one digit at a time.
3. When you are sure that your dialed number is correct, go Off-Hook. The number is dialed and the call timer begins as the call is answered.
4. When the call is over, go On-Hook.

ANSWERING INCOMING CALLS

Line Preference
There are four options for answering incoming calls: **Ringing Line Preference, Idle Line Preference, Key 1 Preference, and No Preference.** (see Advanced Features). In all cases the Call Appearance hardkey flashes (red) and the Caller ID data, if sent by the switch, is displayed on the screen.
1. **Idle Line Preference**, the user goes Off-Hook and presses the ringing Call Appearance key to answer the call. Idle Line Preference seeks the first available idle line and returns dial tone.
2. **Ringing Line Preference,** the user goes Off-Hook to answer the call.

Pressing the ringing key is not required. In the case of multiple ringing calls the oldest ringing call is answered. This is the most common operation.

3. **Key 1 Preference**, the Teleset will always go off-hook on Key 1 regardless if the Call Appearance is ringing or idle.
4. **No Preference**, the user must select a Call Appearance key every time it is ringing or dial tone is requested. The phone will not automatically select a Call Appearance.

To set the Line Preference press **MENU**, **MORE**, **MORE**, **LnPrf**.

```
Line Prefer: Ring
    NoPrf         Idle         KeyOne
```

MORE is *flashing* →
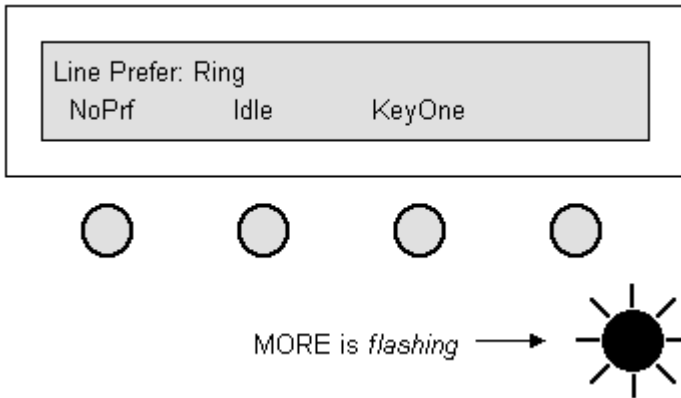
NOTE: The complete top line of the display (Calling Line ID) can be viewed on any "Off-Hook" Call Appearance by pressing the Call Appearance key. Pressing an Off-Hook Call Appearance key will cause the display to scroll.

HOLD KEY

During a call, you can answer an incoming call or initiate another call by pressing the **Hold** key. The original call is held until you return to it. Automatic Hold is a standard feature of National ISDN. This operates by pressing another Call Appearance key while on a call. Your call is automatically placed on hold and a green LED flashes to indicate the held conversation.

1. During a call, press **Hold** or a new Call Appearance key.
2. If you selected **Hold**, press a Call Appearance key and complete the call.
3. Return to the original call by pressing the flashing hardkey.
4. Go On-Hook after the call is complete.

FEATURES

SETTING THE DATE AND TIME CLOCK

Setting the time and date are important to the accuracy of your Teleset. This is important because the alarm feature is dependent on setting the correct time and date. The graphic flowchart may be useful in setting the time. Set the time as follows:

1. Press the **MENU** hardkey.

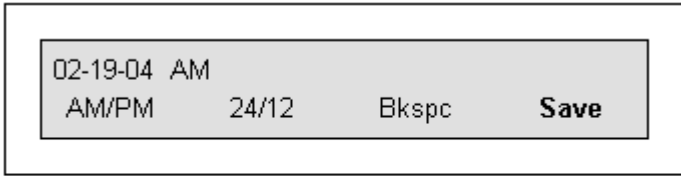| View | SpDial | **Clock** | Alarm |

MORE is **lit** ➝
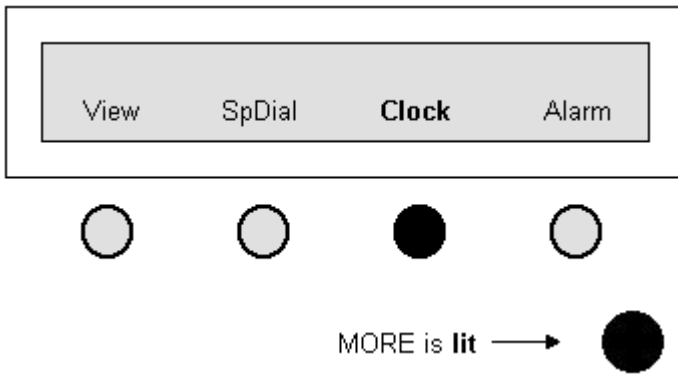
2. Pressing **Clock** returns the next screen. The digit set is two characters long (hour-minute-second). Use the touchtone keypad to enter the digits, using a zero for numbers below 10 as in the example. Then press **Save**.
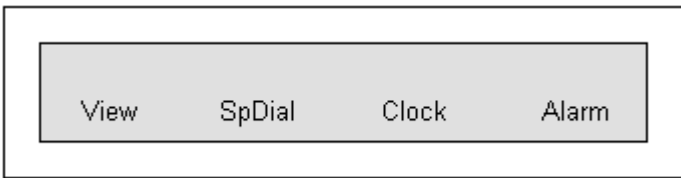
02-28-00 (Enter Date)

| Bkspc | **Save** |

MORE is *flashing* ➝
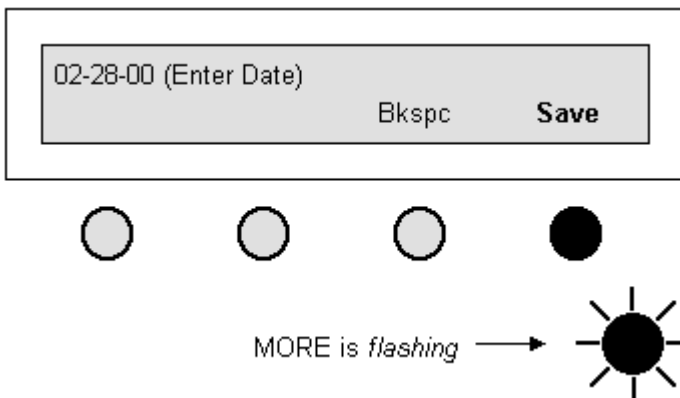
3. The next screen is used to edit the clock functions.

Example:

```
02-19-04  AM
  AM/PM      24/12      Bkspc      Save
```

○   ○   ○   ●

4. Enter the clock digits (see example) and press **Save**. Pressing **Save** returns the following screen.

```
  View      SpDial      Clock      Alarm
```
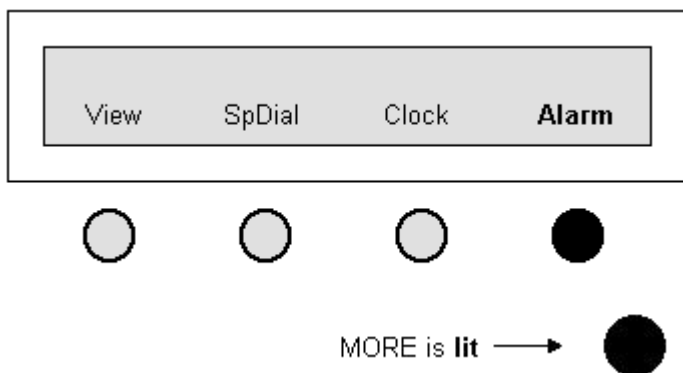
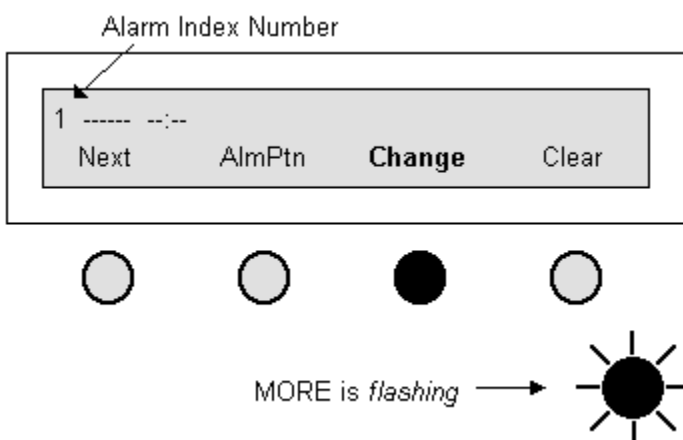○   ○   ○   ○

MORE is **lit** ⟶ ●

SETTING THE ALARM TIME

Five different alarm clock ring patterns can be set. Setting the alarm is done as shown below. You may also wish to look at the flowchart for a graphic representation of the programming sequence. You can set an alarm to sound at a specific time, or at the same time every day. A maximum of eight alarms may be set.
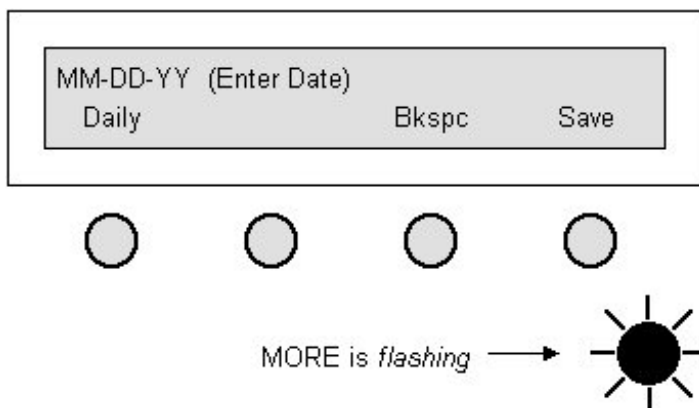

1. Press **MENU**, **Alarm**

| View | SpDial | Clock | **Alarm** |

○   ○   ○   ●

MORE is **lit** ⟶ ●

2. Press **Change**.

Alarm Index Number

1 ------ --:--

| Next | AlmPtn | **Change** | Clear |

○   ○   ●   ○

MORE is *flashing* ⟶ ☀

3. Enter the date you want the alarm to sound, or press **Daily**, then press
Save.

MM-DD-YY (Enter Date)

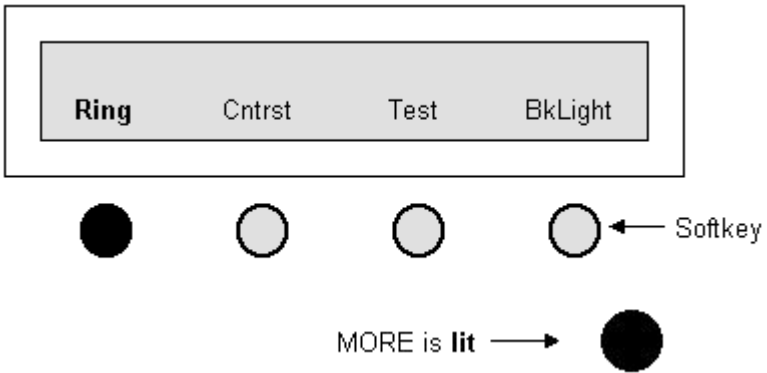| Daily | | Bkspc | Save |

○   ○   ○   ○

MORE is *flashing* ⟶ ☀

24

4. Enter the time (hour, minute), then press **Save**. If you wish to enter additional alarms press **Next** and repeat the above.
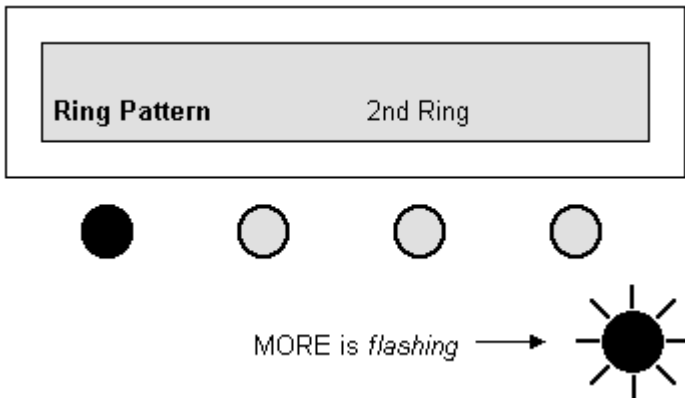
RINGING PATTERNS

Your Teleset has up to ten different ringing patterns to signal incoming calls. Set the pattern as shown below.
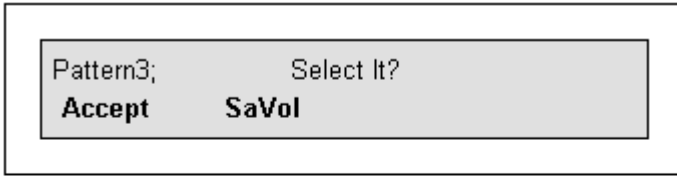
1. Press **MENU**, then **MORE**. When the screen below is returned, press **Ring**.

2. On this screen you choose the ringing pattern (**RingPattern**).

This selection returns a screen prompting you to select a ringing pattern (0-9). As an example, we press the digit **3** on the keypad. We confirm **3** on the following screen and press **Accept** to enter your choice.

```
┌─────────────────────────────────────────┐
│  ┌────────────────────────────────────┐ │
│  │ Pattern3;          Select It?      │ │
│  │   Accept      SaVol                │ │
│  └────────────────────────────────────┘ │
└─────────────────────────────────────────┘
```

● ● ○ ○

MORE is *flashing* ⟶ ☀

NOTE: Before accepting, the ring volume can be adjusted by
   using the volume key and saved by pressing **SaVol**.

Press **MENU** to return to the startup screen. The **SaVol** key sets the
default level of the ringing pattern. The Ring Pattern level returns to this
volume setting if the Teleset power is reset. The Ringing Pattern volume
may be adjusted at any time by pressing the volume keys while the
Teleset is ringing. The Teleset will remember the volume setting until
power is reset.

ıl◁⊐ VOL ⊏▷ıl
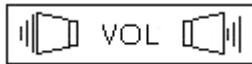
SPEED DIAL KEY ASSIGNMENT

You can assign Speed Dial numbers to individual hardkeys. Hardkeys
may only be assigned to a single function/feature. If a hardkey is already
assigned, it cannot also be used for a Speed Dial key. This activity should
be coordinated with your system administrator or service provider.

1. Press **MENU** to bring up the menu shown next. When it appears
    press the **SpDial** key.

| View | **SpDial** | Clock | Alarm |

○ ● ○ ○

MORE is **lit** ⟶ ●
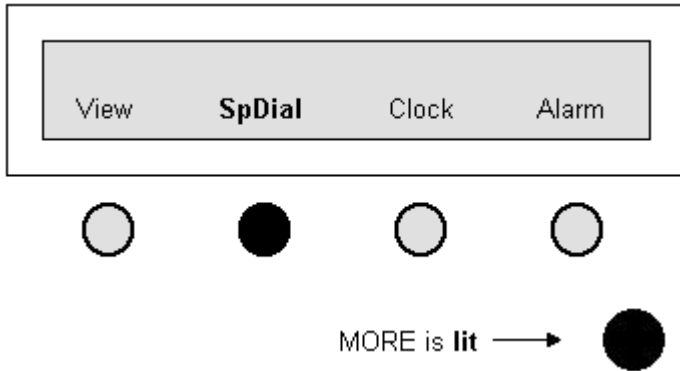
2. If a hardkey lights, it means that key is already assigned a Speed Dial number. Press the hardkey you wish to program as a Speed Dial key. Each Speed Dial key will store 32 digits. The display will only show 20 digits of the number. The complete number can be viewed by using the volume control key.

No=9,18475551212
| Pause | Clear | Bkspc | **Save** |

○ ○ ○ ○

MORE is *flashing* ⟶ ☀
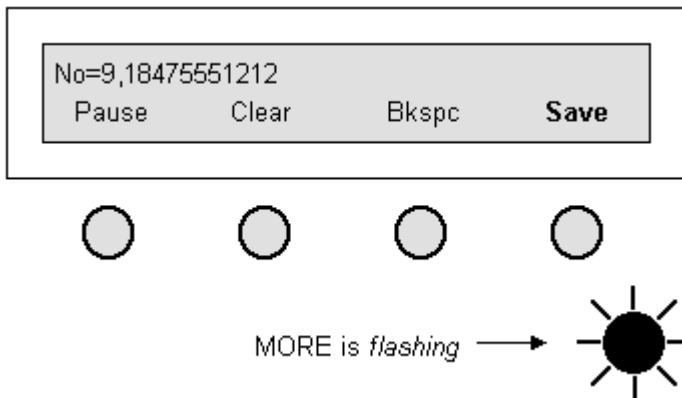
NOTE: If you select an unlit key that is not available, a Call Appearance for example, the display will show "<Try Another Key>". After a few seconds the phone will select the first available key automatically. If this key is satisfactory, proceed with the programming. If this key is not satisfactory, press the **MORE** key to abort the selection. You will then be given the opportunity to select another key.

If a number is entered that exceeds the 20 digits displayed, the display scrolls to the left and show the last 20 digits entered. The first of the digits will be scrolled off of the display.

For example, if the number 9,1010xxx,011,88x,0,1234567890 is entered as a speed dial the number would be shown as:

```
No<011,88x,0,1234567890
  Pause        Clear        Bkspc        Save
```


MORE is *flashing*
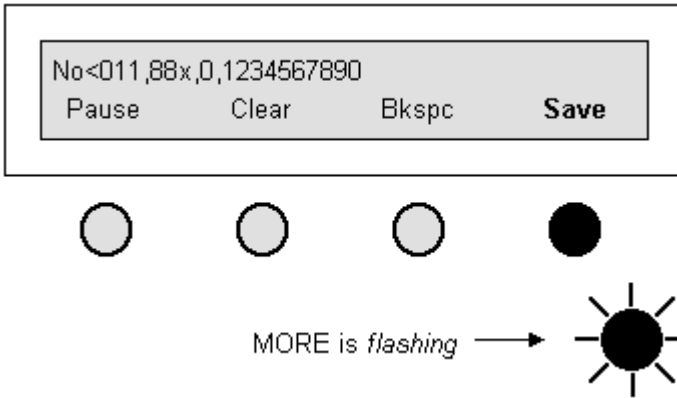
In this display:

"No"	Means the number being entered
"<"	Means there is hidden digits to the left of the number
","	Is a pause entered in the dialing string

The first few digits displayed are 011,88. This means that the 9,1010xxx, have scrolled off of the screen. The VOL key can be used to view the complete number. Pressing the LEFT side of the VOL key will cause the display to shift to the FRONT or left most digit of the telephone number. Pressing the RIGHT side of the VOL key will cause the display to shift to the END or the right most digit of the telephone number.

The character < will change to > depending on where the hidden digits are located.

> < = Digits are hidden at the front of the number
> > = Digits are hidden at the end of the number

3. After entering the number press **Save**.

Editing a Speed Dial Number

To edit an existing Speed Dial number, press **MENU**, **SpDial**, then select a key to edit. Use the **Bkspc** key to edit the number.

```
No=95554736
   Pause      Clear      Bkspc      Save
```

○   ○   ●   ○

MORE is *flashing* ───▶ ☀
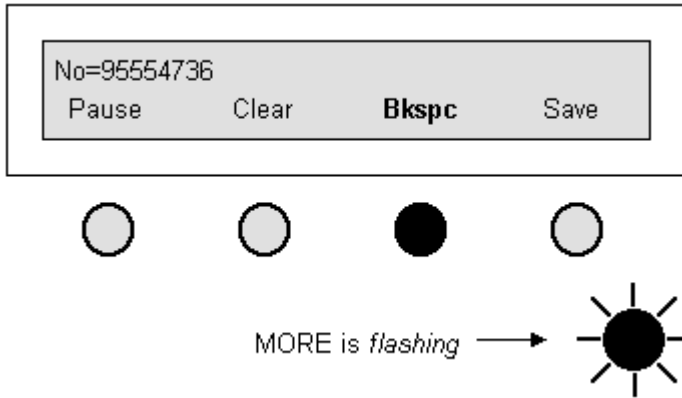
If the telephone number to be edited is longer than 20 digits there will be arrows to allow you to view the entire number before editing.

```
No=011,88x,0,1234567890
                    <--- --->          Edit
```

○   ○   ○   ●

MORE is *flashing* ───▶ ☀
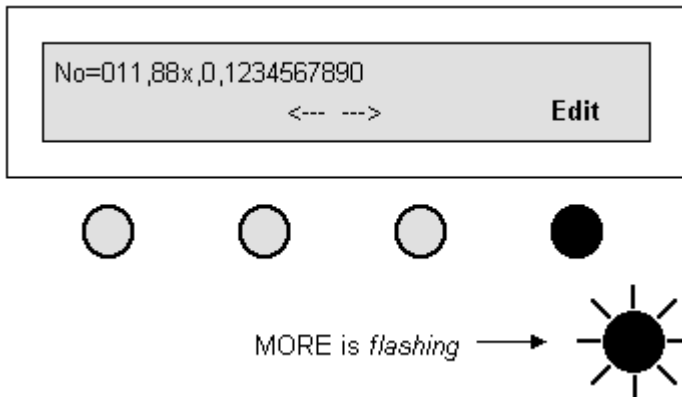
After the entire number is viewed, press the edit key and edit the number as above.

> NOTE: If you dial "9" for a Centrex or PBX outside line, or a "1" to access long distance, include that digit. Pauses, if needed, are entered between digits by the **Pause** key. They are shown as commas in the display (see example above).

To originate a call using the Speed Dial key, press the button that has been programmed with the number to be dialed. The Teleset will automatically select a line and dial the number. An alternate operation is to go off-hook on the handset and then press the Speed Dial key.

> NOTE: Speed Dial keys can be programmed to send touchtones after a call has been connected. This is useful for programming voice mail passwords or pager numbers.

REDIAL

Press this key to automatically dial the last <u>manually dialed</u>, or Speed Dialed number. This is especially handy when trying to connect to a frequently busy number.
1. Go Off-Hook.
2. When dial tone is received, press the **REDIAL** key. Pressing this key without going Off-Hook enables the speakerphone. The last manually dialed number is dialed for you.
3. Go On-Hook when the call is completed.

DIRECTORY

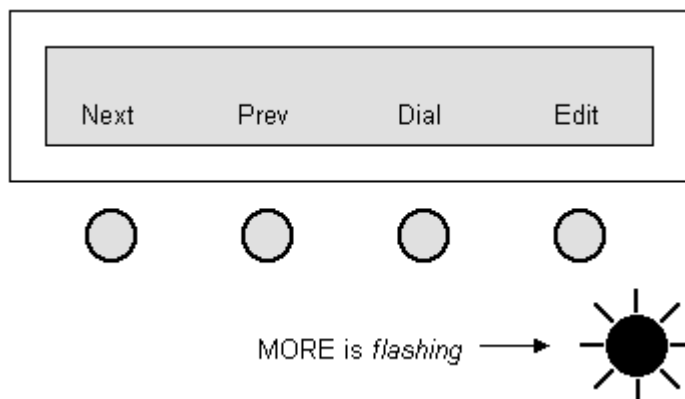The following characteristics apply to entries placed in the Directory:
- A name may be up to 16 characters in length.
- A Directory Number (DN) can be 18 digits long.
- The directory capacity is 100 entries - stored in alphabetical order.
- Search hint: If you forget the name you are looking for, press "Find/Next" and you can scroll through the entries.
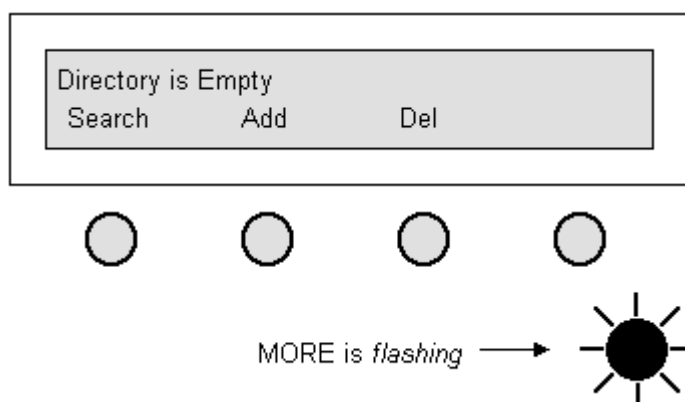
Directory Changes

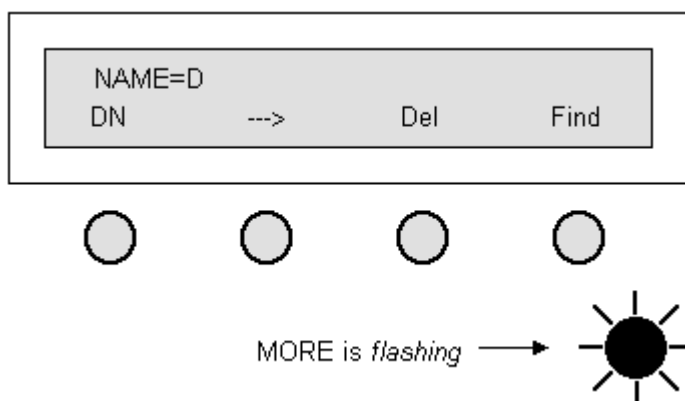When Directory (**DIR**) is pressed, the following is displayed.
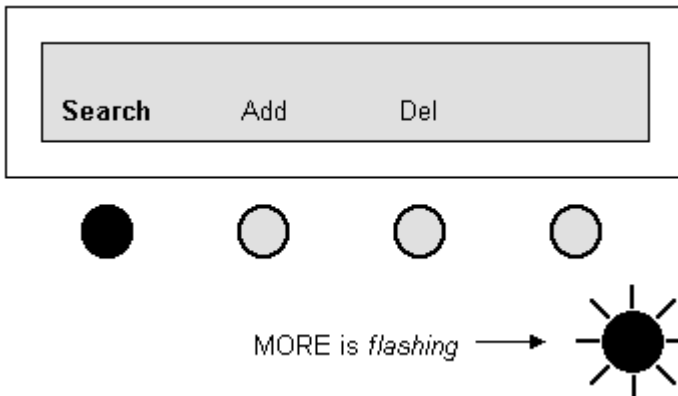
Press **Search** to display the following screen.

```
┌──────────────────────────────────────────┐
│  ┌────────────────────────────────────┐  │
│  │                                    │  │
│  │   Next      Prev      Dial    Edit │  │
│  │                                    │  │
│  └────────────────────────────────────┘  │
└──────────────────────────────────────────┘
```

◯   ◯   ◯   ◯

MORE is *flashing* ──────▶ ☀

If the directory is empty, the next screen appears.

```
┌──────────────────────────────────────────┐
│  ┌────────────────────────────────────┐  │
│  │ Directory is Empty                 │  │
│  │   Search      Add      Del         │  │
│  └────────────────────────────────────┘  │
└──────────────────────────────────────────┘
```

◯   ◯   ◯   ◯

MORE is *flashing* ──────▶ ☀

At this point, the user may either press **Next** or **Prev** to scroll through the entries or enter a name from the keypad. When the keypad is pressed, the display will change as shown below.

```
┌──────────────────────────────────────────┐
│  ┌────────────────────────────────────┐  │
│  │   NAME=D                           │  │
│  │   DN        --->      Del    Find  │  │
│  └────────────────────────────────────┘  │
└──────────────────────────────────────────┘
```

◯   ◯   ◯   ◯

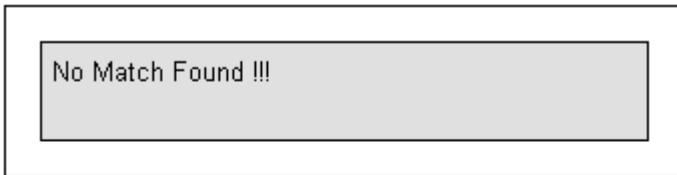MORE is *flashing* ──────▶ ☀

To enter the name, press the same keys that are used to dial numbers on the touchtone keypad.

(Keypad - Numeric Key)

For example: the name <u>ED</u> is entered by pressing the letters **E** and **D** which are found, along with **F**, on the numeric key (**3**)on the keypad. Press the key once and <u>D</u> is entered. Press it twice for <u>E</u>, three times for <u>F</u> and a fourth time for the number <u>3</u> . After entering <u>E</u>, press the softkeyunder the right hand arrow. This indexes the cursor one space to the right of <u>E</u> to accept the next digit; in this case <u>D</u>.

Use the same method to enter subsequent letters – then press **Find**. The directory will be empty until you add names to it. To return to the previous screen where Directory was chosen, press the flashing **MORE** key. The arrow key will move the cursor two spaces to the right and then "wrap." The **Del** softkey deletes the character over the cursor. **Find** will search for the entry. If no matches are found, the display shown will be as shown below.

No Match Found !!!

MORE is *flashing* ➡

PASSWORD SELECTION

A password (numeric) can safeguard your directory entries and programming. Forgetting your password means resetting the Teleset to the manufacturer's initial settings. *You will lose* all of your call records, directory entries and programmed features/functions. If you are still interested in a password, read on. But first, choose a password that you won't forget. Don't write it down in an obvious place and **<u>NEVER</u>** share it!

The flowchart can show you a graphic view of programming.

There are three levels of password protection:

1. LEVEL 1 – No password protection (default). All menus are available to anyone - without a password.
2. LEVEL 2 – User information, such as directory and call logs, and user settings (clock and alarm) are available without a password. Access to configuration options require a password before access is allowed.
3. LEVEL 3 – The third (highest) level of protection gives total menu protection.

Setting Protection Levels

1. LEVEL 1 – has no password protection
2. LEVEL 2 – password protection is set by pressing the following keys: **MENU**, **MORE**, **MORE**, and **Pswrd** (softkey). The display is shown below.
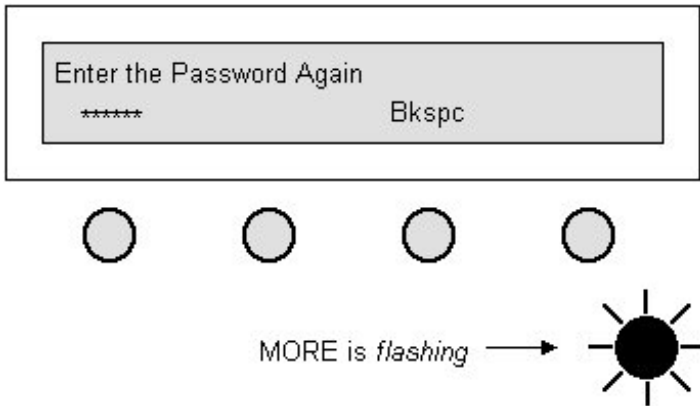
NO Password Programmed
   Set
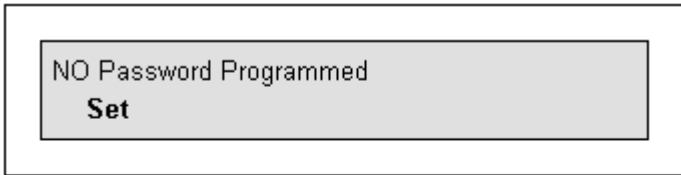
MORE is *flashing*

3. Press **Set**.

4. Enter your six-digit password number using the keypad.

Enter the Password
   ******   Bkspc
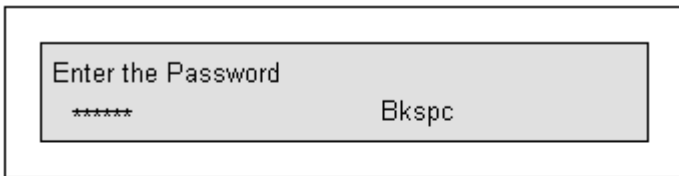
MORE is **lit**

5. This number is your password. Write it down. You are prompted to confirm the password.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │ Enter the Password Again              │  │
│  │    ******                    Bkspc    │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

    ◯   ◯   ◯   ◯

MORE is *flashing* ──▶ ☀

6. If you wish to exit, press the **MENU** key now.

7. To begin <u>Level 3</u> protection, press the **LockAll** softkey. Level 3 protects the Teleset's entire menu system.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │ Lock All Menus?                       │  │
│  │   ChngPW    CLRPW      LockAll        │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

    ◯   ◯   ●   ◯
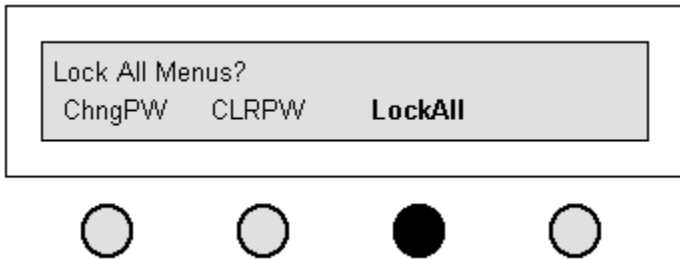
8. Press **LockAll**.

9. Press **MENU** to exit.

CALL RECORDS

Your Teleset stores call activity records in electronic memory. The softkey **CalLog** will change to **NewLog** upon receipt of an unanswered incoming call. To access the call records, press the **CalLog** or **NewLog** softkey on the startup screen. Among the calls stored are:
- Incoming calls.
- Outgoing calls.
- Unanswered calls.

Forty call records are saved in the Unanswered log, and thirty call records are saved in the Answered and Outgoing logs.

To access the call records observe the following directions. From the startup screen press the **CalLog**, or **NewLog** softkey.

SAVING A CALLOG ENTRY TO THE DIRECTORY

1. Press the **CalLog** or **NewLog** softkey.
2. Press the **Unans**, **Answer**, or **Outgoing** softkey.
3. Locate the record you wish to save in the Directory.
4. Press the **Edit** softkey.
5. Edit the number as required.
6. Press **Save**, see the display below.

```
NAME=
   DN          --->        Del        Save
```

⬤ ⬤ ⬤ ⚫
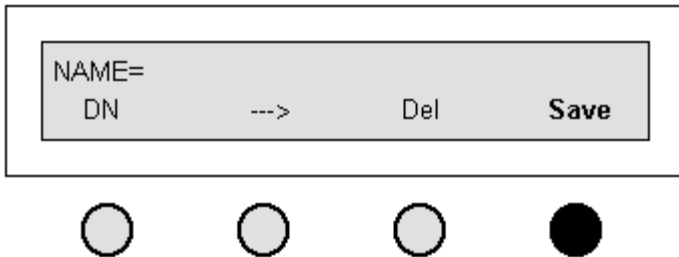
When the number is transferred to the Directory, you have an opportunity to edit the name.

■ Use the ∗ key to enter an asterisk or a hyphen.
■ Use the # key to enter a pound sign or apostrophe.
■ Use the **DN** softkey to toggle between the Name and the telephone number.

TRANSFER, CONFERENCE AND DROP FEATURES

These very useful features are available on your Teleset. You may assign them manually, but they are auto-configured as shown below.

■ National ISDN1 requires you to program the features to individual key appearances. Your service provider can advise you on which keys to use, as the switch and Teleset assignments must agree. Once assignments are made, the features appear as menu items above the softkeys.
■ With National ISDN2 service, the switch auto-configures both the hardkeys and softkeys. The single exception is when the switch download fails. In this case you must program the keys manually.
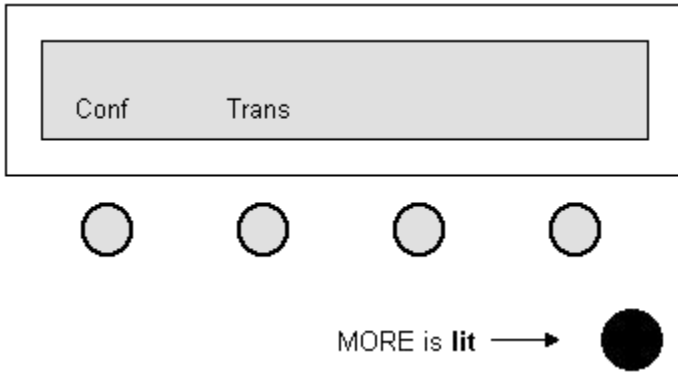
The Conference key can give you access to 3-way and/or 6-way conferencing, depending upon which features are administered by your service provider.

Transferring Incoming Calls
1. Answer the incoming call.
2. Press the **Conf/TR**, or the **Transfer** key, which ever key applies to your service.
3. Place an outgoing call. When you hear ringing – press **Transfer**.

Assigning the Conference/Transfer Features Manually
The following sections describe how you assign these features.
1. Press **MENU**, **MORE**, **MORE**, **Config**, **SetKey**, **SetFA**. The display shows as follows:
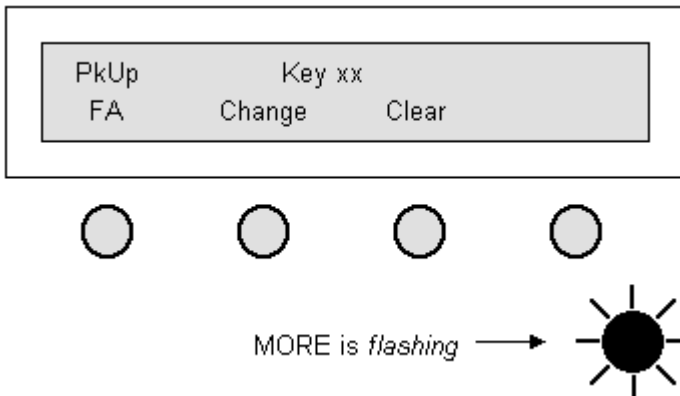
2. Press **FA** to scroll the features on the display.

3. The following features: **PkUp** (Call Pickup), **FwdOn** (Call Forwarding), **RingAgn** (Ring Again or Auto Callback), **Privacy** (Exclusion), **Confr**

(Conference), **Transfer**, **Drop**, and **MsgWait** (Message Waiting 1) are enabled as you scroll though them. If the switch is set for EWSD® the **Transfer** key may not be present.

4. To change or set the **Conf** key, scroll to the conference key, press **Change** and enter the feature number using the touchtone keypad.

```
PkUp          Key xx
 FA        Change      Clear
```

MORE is *flashing* ➝
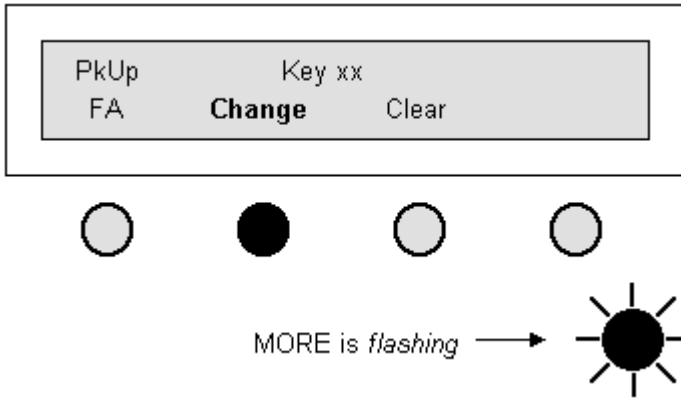
5. Press **Save**. Repeat this procedure for Transfer and Drop and other features.

3–Way Conferencing

```
X=Connected
 Conf      Transf                    00:55
```

MORE is *flashing* ➝
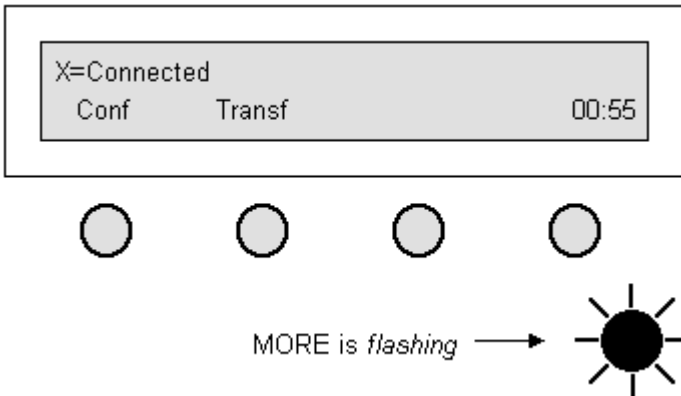
NOTE: On the Nortel DMS-100® and Siemens EWSD® switches, the **Conf** key is displayed as **Conf/Tr**. On the Lucent Technologies 5ESS® switch it is displayed as **Conf** and **Trans** keys.

Conferencing Two Outgoing Calls
1. Place the first call.
2. Press the **Conf** or the **Conf/Tr** softkey, the phone automatically provides dial tone from another Call Appearance (see Advanced Features).

This display is shown after the second call is ringing.
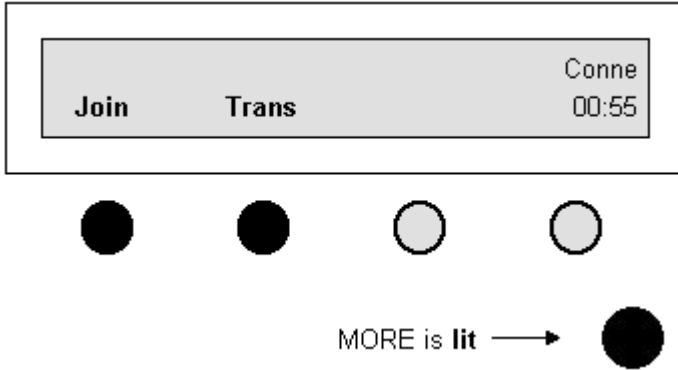
3. Dial the number of the second party.
4. Press the **Join** key to complete the conference.

> NOTE: You may press the **Join** key after the second party answers or while it is ringing.

The **Conf** key will always change to **AdNext**. If you only subscribe to 3-Way Conferencing, you cannot add any more to the conference.

> NOTE: When you attempt to join a 4th party, you will receive a "Service Option Violated" message.

Conferencing an Incoming Call to an Outgoing Call
1. Answer the incoming call.
2. Press **Conf** and proceed as explained above.

Conferencing an Outgoing Call to an Incoming Call
1. Place the outgoing call on Hold by using the Hold key.
2. The outgoing Call Appearance will flash green.
3. Answer the incoming call.
4. Press the **Conf** (conference) softkey and the phone adds dial tone from another Call Appearance. Ignore the dial tone!
5. Press the first (outgoing) Call Appearance and the dial tone stops.
6. Press the **Join** key and the conference is completed.

2021 ISDN Teleset

Conferencing Two Incoming Calls
1. Place the first incoming call on Hold – the first Call Appearance flashes green.
2. Answer the second incoming call.
3. Press the **Conf** softkey. As above, <u>ignore the dial tone</u> you hear from another Call Appearance.
4. Press the first Call Appearance, then press **Join** - the conference completed.

ADVANCED FEATURES

CALL APPEARANCE

PrimCA (Primary Call Appearance)

Primary Call Appearances are Call Appearance locations you consider to be your own. Do <u>not</u> confuse PrimCA locations with Primary Directory Numbers (PDN) which are used by your service provider to identify a particular phone. Some other attributes of PrimCA:

- Executive/secretarial applications.
- Conjunction with RLP (Ringing Line Preference).
- User line identification.

The Primary Line feature works in conjunction with Ringing Line Preference. Ringing Line Preference allows the Teleset to automatically go off-hook on the oldest ringing Call Appearance when the handset is lifted. This may be a problem if the Teleset is sharing telephone numbers with another phone, such as in a manager/assistant application. In this arrangement, the secretary receives an incoming call and the phone starts to ring. A fraction of a second later, the manager receives an incoming call. If the manager and secretary both have each other's telephone number appearing on their phone, the oldest call will be answered first. This is no problem if the secretary answers first. But if the manager answers first, the manager will get the secretary's call.

This problem is easily avoided if the manager and the secretary set their respective Call Appearances as Primary.

> NOTE: PrimCA gives the phone Ringing Line Preference only on the Primary keys.

To set Primary Call Appearances:
1. Press **MENU**, **MORE**, **MORE**, **Config**, **MORE**, **PrimCA**. The Teleset will display the following message and a number of Call Appearances will light.

```
┌─────────────────────────────────────┐
│  Select a CA to Program              │
│  Green:Prim CA   Red:Other           │
└─────────────────────────────────────┘
```

○   ○   ○   ○

MORE is *flashing* ────→ ☀
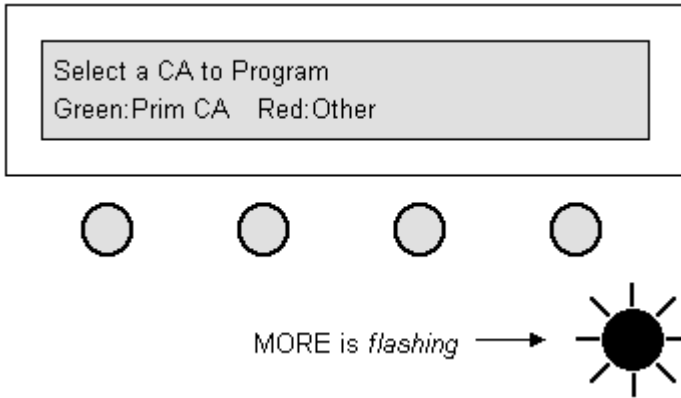
2. The Teleset defaults to all Call Appearances are Primary. Therefore, all of the Call Appearances will light green.
3. One at a time, select the Call Appearances that are not Primary to your Teleset. The Teleset will prompt you to press the key twice to confirm your selection.
4. If you encounter a red Call Appearance key, the Teleset will display the message, "Invalid-Not a General CA". This means the Call Appearance has previously been programmed as a Conference Call Appearance, a Priority Call Appearance, or a Terminate Only Call Appearance. If this is the case, you must first go to the Priority Call Appearance, or a Terminate Only Call Appearance screen and change the key back to a General Call Appearance.

CONFCA (Conference Call Appearance)
To perform a conference or transfer a call, you need a second Call Appearance. Your Teleset automatically selects the next available Call Appearance when the **Conf/TR** or **Confr** key is pressed.

A word of caution is appropriate here. The next available Call Appearance may be someone else's (Shared) Primary Call Appearance. To avoid this problem, press **MENU**, **MORE**, **MORE**, **Config**, **MORE**, **ConfCA** in order. Select the Call Appearance to be used for conference – it will light green.

> NOTE: Only Non-PrimCA keys can be programmed as a ConfCA. You must first change a PrimCA key to a General CA key.

It is also recommended that the service provider option this Call Appearance for outgoing calls only. Only one Call Appearance can be designated as ConfCA.

PriortCA (Priority Call Appearance)
Priority Call Appearance is a feature offered by some switches. Priority Call Appearances are not widely available today. To set a Priority Call

Appearance, press **MENU**, **MORE**, **MORE**, **Config**, **MORE**, **PriortCA** in order. Select the Call Appearance to be used for Priority – it will light green.

> NOTE: Only Non-PrimCA keys can be programmed as a PriortCA. You must first change a PrimCA key to a General CA key.

TermOnlyCA (Terminate Only Call Appearance)
Terminate Only Call Appearance is a feature offered by some switches. Terminate Only Call Appearances are not widely available today. To set a Terminate Only Call Appearance, press **MENU**, **MORE**, **MORE**, **Config**, **MORE**, **TermOnlyCA** in order. Select the Call Appearance to be used for Terminate Only – it will light green.

> NOTE: Only Non-PrimCA keys can be programmed as a Terminate Only CA. You must first change a PrimCA key to a General CA key.

MANUALLY ASSIGNING A DIRECTORY NUMBER TO A KEY

Take a look at the layout of the Line and Call Appearance keys. These (16) keys are located on the far-right hand side of the phone. The upper-left-hand key is the default or primary key.   This is the key that is selected when you lift the handset or press the SPKR (speakerphone) hardkey.

It is important to check with your system administrator to see how your Teleset is provisioned at the switch. You will have at least one Directory Number and at least one, or more, Call Appearances. Both the Directory Numbers and the Call Appearances must mirror the provisioning at the switch.

DSS/BLF (DIRECT STATION SELECT, BUSY LAMP FIELD)

DSS – This feature allows calls to be transferred to a station without dialing the station on the keypad.

BLF – For use by attendant consoles - When an incoming call rings the main number, an attendant can use this feature to check the status of a line for a busy condition. If inactive, a call may then be transferred by using the DSS key.

> NOTE: Only Non-PrimCA keys can be programmed as a ConfCA. You must first change a PrimCA key to a General CA key.

PROGRAMMING A DSS/BLF (DIRECT STATION SELECT / BUSY LAMP FIELD) FEATURE

To program a DSS/BLF
1. Ensure the Call Appearances to be used for the BLF are set to General Call Appearances.
2. press MENU, MORE, MORE, MORE, DSS/BLF
3. Select a Call Appearance. Press it a second time to confim your selection.
4. Press the SetAddr softkey.   If your line is a Centrex line, the DN must be edited. For convenience, 4-digit, 5-digit, and 7-digit dialing options are provided. Use the edit key to effect the changes.

DSS/BLF Operation
After you answer the incoming call, press the Transfer Key. You will receive dial tone. Press the appropriate DSS key and then Transfer. The call will be transferred.

TSMS Not Available in this Release

KEY MAPPING

The *i*2021supports a local feature called Key Mapping. The purpose of the Key Mapping feature is to allow features that have Feature Activators higher than Key 16 to appear on a hardkey.

For example, the North American ISDN Users Forum (NIUF) recommends using Key 57 as a Call Forward key. Key 57 defaults as a softkey on the *i*2021 Teleset. Key Mapping will allow Feature Key 57 to be "mapped" to a hardkey on the *i*2021. This may be useful, since the Teleset would now light the hardkey's adjacent LED when Call Forward Feature Key is active.

To remap a hardkey press **MENU**, **MORE**, **MORE**, **Config, SetKey**. The display will now be:
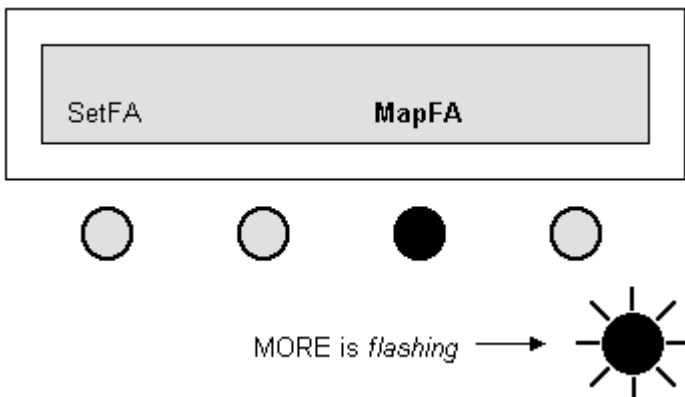
Press **MapFA** and the display will be as shown below.
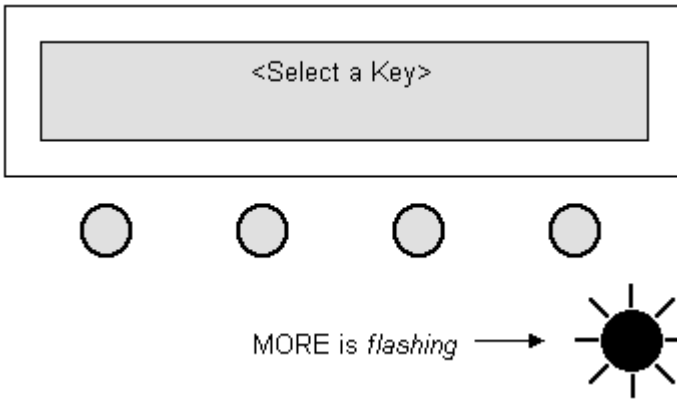
Press the hardkey that you would like to remap. If you select a key that is not available you will be prompted to "Try Another Key." When you select an available key the display will show:
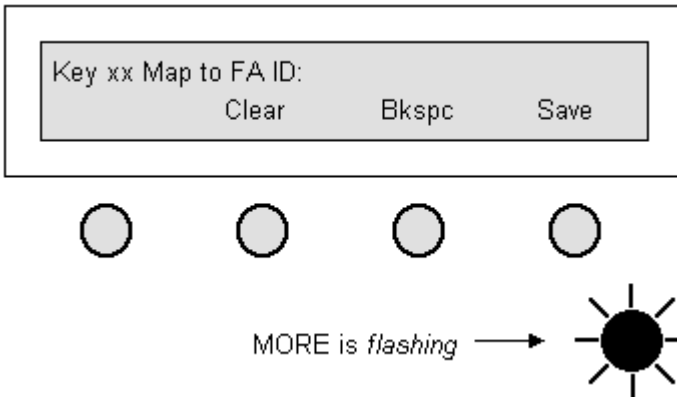
> NOTE: Key (xx) will be the number of the hardkey you select. At this point, use the dial keypad to enter the Feature Number (Activator/Identifier) that you want to appear on the key you selected. In our example, we entered 57. Press **Save** to remap the key.

Press **MENU** to exit the idle menu. At this point the hardkey you selected will be the Feature you entered. Pressing that key will activate or deactivate (toggles) the feature. For a complete list of the NIUF recommended Feature Keys contact your service provider.

INSPECT

Inspect is a National ISDN feature. Check with your local service provider regarding the availability of the Inspect feature. If available, your service provider will assign this feature to one of the keys on your Teleset.

> NOTE: In order for the Inspect feature to work, it must be
> assigned to one of the hardkeys (designated 1 through
> 16). Choose a key after your Call Appearance keys are
> designated. For example, if we designate keys 1 through
> 5 as Call Appearance keys, we can then select any key
> between 6 and 16 as our Inspect key.

The purpose of the Inspect key is to allow the user to query the serving switch as to what features or Call Appearances are assigned to which keys on the Teleset.

The *i*2021 Teleset contains feature keys up to key 96. Feature keys above key 16 are automatically assigned to softkeys. However, all keys may be mapped to hardkeys if desired. For further information, refer to the paragraph that explains "key mapping."

To Use the Inspect feature, press the Inspect Feature key.

```
Inspect is on
Enter Digits; # to End
```
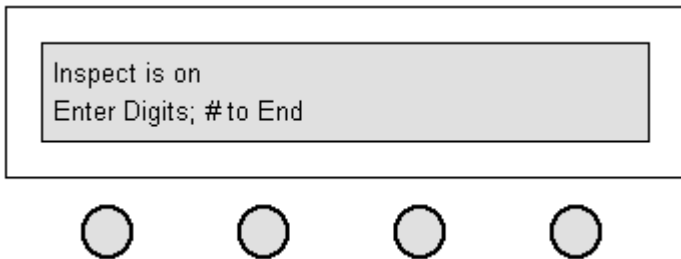
You can then either press one of the hardkeys (1-16), or enter a number on the dial keypad. For example, suppose you wish to inspect key 2. First press the Inspect key, then press key 2. The switch then displays the Call Appearance, or feature, assigned to key 2. Perhaps you wonder what is assigned to key 60? To find out we must remember that keys over 16 are automatically assigned to a softkey. Since key 60 is a softkey, you must enter 60 followed by a # sign, on the keypad. The switch then displays the Call Appearance or feature assigned to key 60.

> NOTE: Inspect is a timed feature in the switch. After pressing the
> Inspect key, you are given about ten seconds to enter the
> key number that you wish to inspect.

Inspect or View?
The *i*2021 Teleset has a "local inspect" feature built into the Teleset. The
local inspect feature is called "View." Refer to the paragraph that explains
View for additional information. What is the difference between Inspect
and View? *View* shows the user the Teleset information about a specific
key. *Inspect* displays what the switch has actually assigned to that key.

VIEW

View is a feature that is local to the phone. It will only reflect the current
programming of the phone. To ensure accuracy, **ReqParam/RunSPM**
before using **View**.

Key assignments should be checked if features/options do not seem to
work correctly. Often the Teleset is blamed for incorrect or missing key
assignments. This results in returned instruments, unnecessary expense
and loss of use. The following steps will help to verify your Teleset
operation.

TESTING

You can test the operation of your Teleset by using a simple, built-in
diagnostic procedure. To begin, follow these steps.e
1. Press **MENU**, **MORE**, **Test**
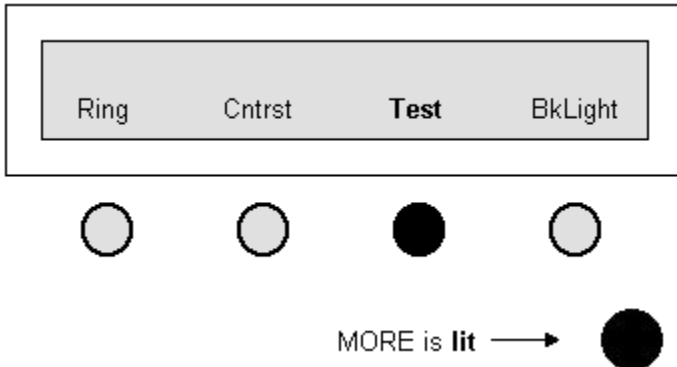
2. Select the test you wish to run.
3. Press the **MENU** key to exit.

MAINTAINING THE TELESET

TROUBLINGSHOOTING PROBLEMS

Clock Flashes
- The Teleset lost power and the clock flashes when power is restored.
- Resetting the flashing clock:

No Display
- Contrast control is improperly adjusted.
- The Teleset has no power.
    1. Check the power source.
    2. Check the position of the PS1/PS2 switch.

Speakerphone Does Not Work/No Sound From Speaker
- Volume control set too low.
- Teleset in headset mode.
- Line not initialized.
- Headset plugged into headset jack.

Missing Feature Keys
- Teleset improperly programmed.
    1. ReqParam/RunSPM download not performed.
    2. Manual programming not performed.

Missing Call Appearances Same as "Missing Feature Keys."

No Transmit from Headset, Receives OK
- Mute Key - ON.

Line Not Ready
- No S/T synchronization from NT1.

Can't Set DSS/BLF, ConfCA, or Other CA Types
- The Teleset defaults all Call Appearances to PrimCA types. Only General Call Appearances can be changed.
    1. Go to PrimCA and set the desired Call Appearances to General Call Appearances.
    2. Set the new CA Type.

Can't Set Call Appearances back to PrimCA
- The Call Appearance is probably not a General CA.
    1. Check ConfCA.
    2. DSS/BLF.
    3. Term OnlyCA.

4. Priort CA.
5. Set them to General as required.

GLOSSARY

The definitions in this Glossary refer to the *i*2021 Teleset only.

Call Appearance (CA) - A hardkey on the Teleset that is programmed for voice communication. A CA may have a unique Directory Number, or it may be the same telephone number that appears on other keys or other Telesets.

Call Appearance Call Handling (CACH) - Pronounced "cash"- Refers to a translation in the Central Office switch. CACH is the recommended setting for the i2021.

Customer Premises Equipment (CPE) - Devices residing at or on the customers' premises. The *i*2021 Teleset is CPE.

CENTREX - A business telephone service offered by the local telephone company. CENTREX offers many Electronic Key Telephone features to enhance the operation of the *i*2021.

Directory Number (DN) - Also known as a telephone number.

Electronic Key Telephone Service (EKTS) - A feature that allows the Teleset to have Multiple Call Appearances (MCA) and Shared Call Appearances (SCA).

ISDN Ordering Code (IOC) - This is a code supplied by a terminal manufacturer to be used by the telephone company in provisioning the ISDN service. (See TP Packages)

Multiple Call Appearance (MCA) - Additional Call Appearances of the same Directory Number.

Network Termination 1 (NT1) - A piece of CPE required to interface "S" interface devices with the "U" interface from the telephone company.

Non-Volatile (memory) - Information that is stored in the telephone that will not be lost if memory power is removed from the telephone.

On/Off-Hook - When a Call Appearance LED is lit and the user is listening to dial tone, is communicating, or has an active call on hold. A handset removed from the cradle does not necessarily mean the Teleset is off-hook. The *i*2021 can be on-hook with the handset removed from the cradle.

Primary Directory Number (PDN) - The telephone number of a particular telephone. Some telephone companies require the PDN to be Key 1. It is recommended that key 1 be the PDN.

"S" Interface - The 4-wire interface between the ISDN telephone and the NT1. In the *i*2021 it is the same point as the "T" interface.

Shared Call Appearance (SCA) - A Call Appearance that appears on more than one ISDN telephone. Similar to an extension phone in an analog telephone application.

Service Profile IDentifier (SPID) - A code programmed into the telephone and used by the switch to identify the configuration used by the telephone. The SPID is usually the PDN plus 0101.

"T" Interface -See "S" interface.

TP Packages - A set of translations that the telephone company may offer. The TP packages offer a variety of commonly used features in an easy order package.

Terminal Endpoint Identifier (TEI)- A code used by the telephone to identify it to the switch. The *i*2021 uses Automatic (Dynamic) TEIs.

"U" Interface - The 2-Wire interface between the NT1 and the telephone company line.

Volatile (memory) - Information which is stored in the telephone which will be lost when power is removed from the Teleset.

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