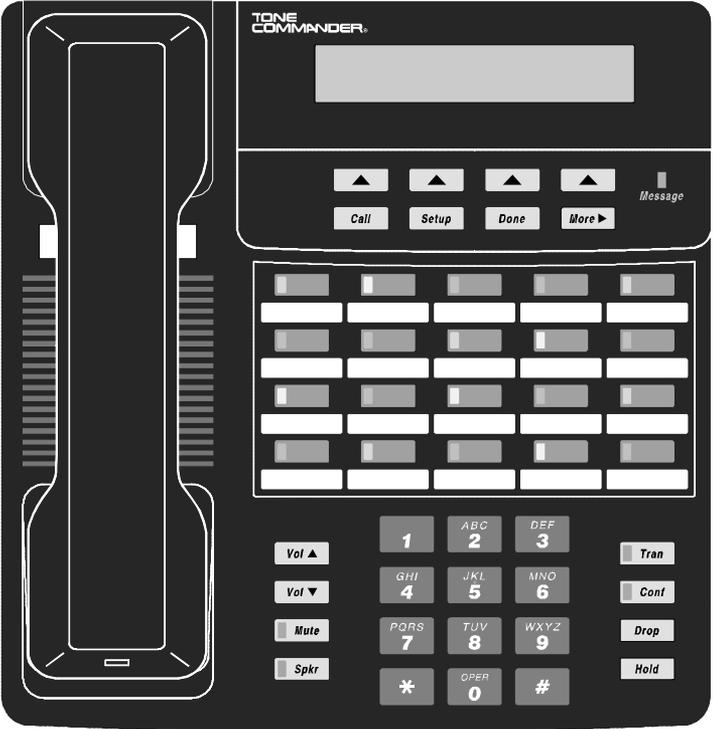


**TONE
COMMANDER®**

6220T-TSG User Manual



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Introduction

General Features

Tone Commander 6220T-TSG ISDN Telephone is an easy to use multiline terminal with advanced automatic setup capabilities. This model meets the requirements for TSG-6 certification, guaranteeing on-hook privacy. In addition, the speakerphone circuitry has been removed and all automatic call origination and answering functions have been disabled.

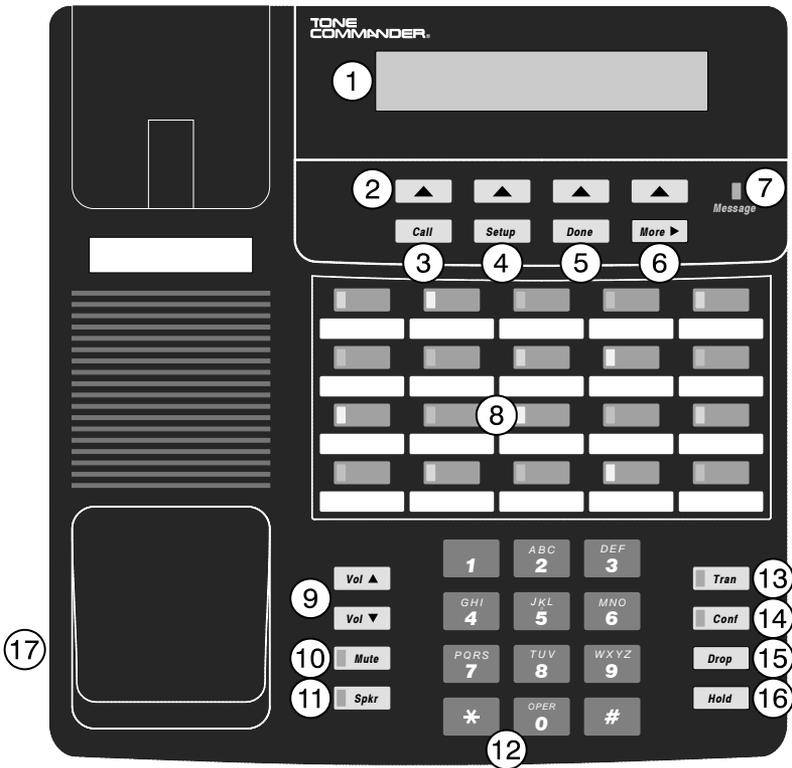
These telephones provide 20 call appearances, and are equipped with an S/T interface. An external NT1 Network Termination, such as Tone Commander's NT1U-220TC, is required. The phones support either National ISDN or Lucent 5ESS Custom ISDN.

Features of the 6220T-TSG include:

- AutoSPID and Parameter Download
- Call Log
- Call Timer
- Last Number Redial
- Speed Dial
- Direct Station Select
- Call Directory
- Automatic Switch Type Detection
- Message Waiting Indication
- Flexible Ringing Options
- Ringing Control for Shared Lines
- Desktop or Wall Mounting
- Tilt Display

TSG-6 Certification Number: TSG-0212B0103

Controls and Indicators



- 1) **Display** – shows the call state, caller ID, dialed digits, network call control messages, and elapsed time during calls. When not on a call, the date, time of day, and softkey options are displayed. The viewing angle can be adjusted by tilting the display, then changing the contrast setting – see page 51.
- 2) **Softkeys** (4) – select the function displayed above the key on the second line of the display.
- 3) **Call Key** – selects the Call Directory, Call Log, and Call Identification Display modes.
- 4) **Setup Key** – enters Setup Mode.
- 5) **Done Key** – exits the current menu, saves any changes made, and returns to the previous menu options.

- 6) **More ▶ Key** – cycles through the menu option groups in Setup Mode.
- 7) **Message Indicator** – a bright red indicator is lit when messages are waiting; controlled by the network.
- 8) **Multifunction Keys** – select call appearances, activate network features, or dial personal speed dial numbers. Red and green indicators on the keys show call appearance and feature status.

Call Appearance State	Indication
Idle	OFF
Call Ringing	Green – flashing
In Use by You	Green – on steady
On Hold by You	Green – winking
In Use at Another Terminal	Red – on steady
On Hold at Another Terminal	Red – winking

- 9) **Volume Keys** – adjust the receiver volume when on a call; adjust the ringer volume when on-hook.
- 10) **Mute Key** – mutes the microphone when using the handset. A red indicator on the key is lit when mute is active.
- 11) **Speaker Key** – *disabled*.
- 12) **Dial Pad** – dials telephone numbers, and sends DTMF tones to external equipment such as voice mail systems. The dial pad is used for alphanumeric entry during setup.
- 13) **Transfer Key** – places the current call on hold, and selects an idle call appearance for transferring the call. A second press completes a transfer.
- 14) **Conference Key** – adds other parties to a conference call.
- 15) **Drop Key** – removes the last party added to a conference call, or disconnects you from a call when not in conference mode.
- 16) **Hold Key** – places a call on hold.
- 17) **Handset Jack** – a jack on the bottom left side of the telephone connects to the handset.

Operation

Placing a Call

Selecting a Call Appearance

If the Call Preference option (page 50) is set to *Idle* or *Ringing*, your telephone will automatically select an idle call appearance when you go off-hook, if the phone is not ringing.

Automatic Call Appearance Selection

Lift the handset to select an idle call appearance.

Manual Call Appearance Selection



Press an idle (unlit) call appearance key when off-hook.

Dialing

Wait for dial tone.



Dial the number with the dial pad.

The dialed number will be displayed briefly, then the network will confirm the dialed digits in the display.

The call duration timer begins when you are connected.

Last Number Redial

The Redial feature dials the last number that was dialed with the dial pad or a Speed Dial key. Digits dialed after a call is connected are not saved.



Go off-hook. Select REDIAL to redial the last number.

Using the Call Log – refer to page 10.

Using the Call Directory – refer to page 13.

Using Speed Dial Keys

Speed Dial keys automatically dial a series of up to 24 digits when off-hook. If you are already on a call, the digits will be dialed using DTMF tones on that call.

Use Speed Dial keys to dial frequently-called numbers, to activate network features that include a directory number, and to speed up dialing of access numbers for voice mail, auto attendant, and similar systems.

Any unused multifunction key can be programmed as a Speed Dial key – see page 30.

 Lift the handset, then press a Speed Dial key to dial a number. The dialed digits will be shown in the display.

Using DSS Keys

DSS keys are a special type of Call Appearance/Directory Number keys that are programmed with speed dial numbers to provide Direct Station Selection. When the call appearance is idle or busy, DSS keys act like Speed Dial keys, to call a station. When ringing, DSS keys act like CA/DN keys, to answer a call.

 Go off-hook. Press an idle DSS key to dial the selected station number. If the station associated with the DSS key is ringing, the call appearance will be answered.

Answering a Call ---

When a call is ringing, the display will show the calling number (if available) and the called number.

Lift the handset to answer the ringing call shown in the display.

Call Preference

If the Call Preference option (page 50) is set to *Ring*, your telephone will automatically answer the ringing call shown in the display when you lift the handset.

Ring Control

The Ring Control option (page 49) determines how calls ring at your telephone. Individual call appearances can be set to always ring, never ring, or ring after a delay.

Bridging a Shared Call Appearance ---

You can bridge (connect to) an active call on a call appearance that is shared with other terminals, unless call privacy is enabled at the network.



Go off-hook. Press the busy Call Appearance key for the call you want to bridge.

The call duration timer begins when you are connected to the call.

To disconnect from the call, replace the handset. The other parties will remain connected.

Displaying Call Appearance Information ---

-  Press the **Call** key.
-  Select ID (*Shortcut – you can skip this step and immediately press Call Appearance keys*).
-  Press Call Appearance keys.
Network call information will be displayed for currently active keys.
"NO CALL INFORMATION" and the assigned directory number, if available, will be displayed for idle keys.
-  Press the **Call** or **Done** key when finished.

Holding Calls ---

-  Press the **Hold** key or another Call Appearance key to place the currently connected call on hold.
The held call appearance indicator will wink with a green light.
-  Lift the handset, then press the held Call Appearance key to return to the call.

Transferring Calls

Use this feature to transfer an active call to another party.



Press the **Tran** key while in an active call.

The current call is placed on hold, and an idle call appearance is automatically selected. The *Tran* indicator flashes (on some network switch types, the *Conf* indicator may light instead of the *Tran* indicator).



Dial the party you want to transfer the call to with the dial pad or a Speed Dial key.

Wait until the called party answers to announce the call, or transfer it immediately before the called party answers.



Press the **Tran** key again to transfer the call.

DSS Transfer



While on an active call, press the **Tran** key.



Press the idle DSS key for the destination party.



Press the **Tran** key to transfer the call.

Conferencing Calls

You can initiate multi-party conference calls. Conferences are limited to 3 or 6 parties, depending on your network configuration.

Conferencing a New Call



Press the **Conf** key while on an active call.

The current call is placed on hold and an idle call appearance is automatically selected. The *Conf* indicator lights.



Dial the party you wish to add to the conference.



After the added party answers, press the **Conf** key to conference all parties together.

Repeat the above steps to add another party.

Conferencing a Held Call



Press the **Conf** key while you are on an active call with another call on hold.

The current call is placed on hold and an idle call appearance is automatically selected. The *Conf* indicator lights.



Press the Call Appearance key for the held call you wish to add to the conference.



Press the **Conf** key to conference all parties together.

Repeat the above steps to add another party.

Dropping the Last Party



Press the **Drop** key to remove the last party added to a conference.

Terminating a Conference

Replace the handset to terminate a conference, removing yourself and all other parties.

Depending on your network configuration, other parties in the conference may remain connected or be disconnected.

Using Network Features ---

Feature Activator keys access features provided by the telephone network. A feature is active when the key's red indicator is on.

Some commonly available features are listed below. Consult your service provider for more information.

Call Forwarding

Forwards ringing calls to another number. When the Call Forward key indicator is lit, incoming calls will be forwarded.

Privacy

Prevents other users from bridging on your active call.

Group Call Pickup

Answers a call ringing at another telephone in your workgroup.

Directed Call Pickup

Answers a call ringing at a specified telephone.

Automatic Callback (Recall)

Calls you when a dialed busy station becomes idle, then redials the station when you answer.

Message Waiting

Lights the Message Indicator on your telephone when you have a voice mail message.

Using the Call Log

What does the Call Log Do?

The call log maintains a running list of the last 100 incoming or outgoing calls from your telephone. You can view the caller ID number (if available), the date and time of the call, and elapsed time for connected calls.

Types of Calls in the Call Log

Unanswered Incoming Calls – calls that rang at your telephone, and were not answered. Forwarded calls are not logged.

Answered Incoming Calls – calls that were answered at your telephone.

Outgoing Calls – calls originating from your telephone.

Viewing the Call Log

Call Press the **Call** key.

```
          CALL MENU
DIR      LOG      ID
```

▲ Select LOG.

A password may be set to prevent unauthorized entry into your call log. When prompted for a password, enter your 4-digit password with the dial pad. Press the **Done** key after entering the password. To change or remove the password, please refer to page 53.

```
SELECT CALL LOG TYPE
UNANS  ANSWD  OUT
```

▲ Select the type of call you want to view – UNANS (unanswered), ANSWD (answered), or OUT (outgoing).

A key indicator will alternately flash red and green to identify the call appearance that was used for the logged call.

To view a previous (older) call in the log, select ←BACK.

To return to the last displayed (newer) call in the log, press the **More ▶** key.

To delete a call from the log, select DELETE.

```
9:42a 4/15 425-349-1234
DELETE          TIME  +BACK
```

▲ To view the elapsed call time for answered calls, select TIME.

```
00:25:12      425-349-1234
DELETE          DATE  +BACK
```

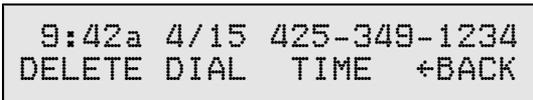
▲ To return to the time and date display, select DATE.

Shortcut to the Unanswered Call Log

-  If any calls ringing at your telephone were unanswered, UNANS will appear in the display. You can select UNANS to enter directly into the Unanswered call log. After you have viewed the unanswered call log, the UNANS display indication will clear until new calls are received.

Dialing a Call Log Entry (Does not work when on-hook)

The DIAL option is displayed when viewing the call log while off-hook.



```
9:42a 4/15 425-349-1234
DELETE DIAL TIME +BACK
```



-  With the call you want to dial showing in the call log display, select DIAL.

An idle call appearance will be automatically selected. The directory number from the log will be shown in the second line of the display. For outgoing calls, all digits that were dialed to complete the original call are shown.



```
3=Dial:
4253491234
```



WXYZ
9

Add any required prefixes, then press the softkey under the directory number to dial the digits displayed.

1



```
3=91
4253491234
```



Using the Call Directory

What is the Call Directory?

The Call Directory is a softkey-based speed dialing system that can store up to 36 entries. A name display identifies each entry. Use the directory to store frequently-dialed numbers when additional Speed Dial keys are not available.

Directory entries are displayed on nine screen pages, with four entries per page. The current directory page number (1-9) will be shown at the upper right of the display.

Dialing from the Call Directory (Does not work when on-hook)

Call Press the **Call** key.

```
CALL MENU
DIR LOG ID
```

▲ Select DIR (*Shortcut – you can skip this step and press a dial pad key to select a directory page*).

```
DIRECTORY PAGE1→
Jim G Home
```

▲

JKL
5 To see a different directory page, select a page by pressing a dial pad key (1-9), or press the **More ▶** key to cycle through the nine pages until the desired page is displayed.

More ▶

▲ Press the softkey that is under the number you want to dial.

Call To exit the Call Directory, press the **Call** key again.

To add or change directory entries, see page 46.

Adjusting the Receive Volume ---

The **Vol▲** and **Vol▼** keys adjust the receive volume level for the handset while you are on a call.

The telephone stores individual preset volume settings for the handset. Volume settings return to the programmed preset levels after a call is completed. See page 51 to change the preset values.

Adjusting the Ringer Volume ---

The **Vol▲** and **Vol▼** keys adjust the ringer volume while you are not on a call.

The telephone will ring once with the new ringer volume setting, and the new setting will be shown briefly in the display.

When the volume is at the lowest setting, the phone will display "RINGER OFF" instead of the date and time when idle. Press the **Vol▲** key while you are not on a call to enable the ringer.



Installation

Ordering ISDN Service

ISDN ordering forms may be supplied by your service provider. You can also print forms using the PC-based Configuration Wizard. Please refer to Appendix A in this manual.

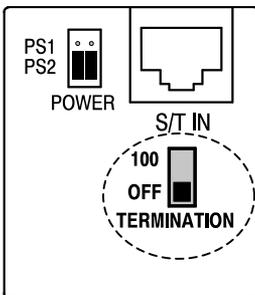
Consult your service provider to plan your service installation. Allow adequate time after cutover for testing of all call appearances and programmed features. Ask your service provider for your SPID numbers, and confirm the installation date.

6220T-TSG Installation

An external NT1 is required.

Set the Termination Switches on the Telephone and NT1

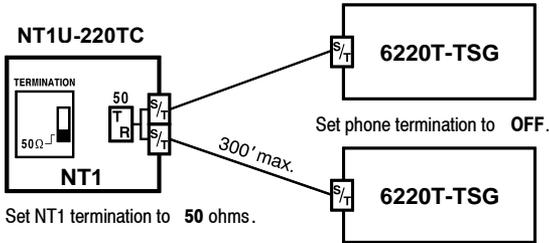
Set the termination switches on the bottom of the telephone and on the NT1 to match the termination impedance to your premises wiring configuration. Several typical wiring configurations are shown below, with the appropriate switch setting.



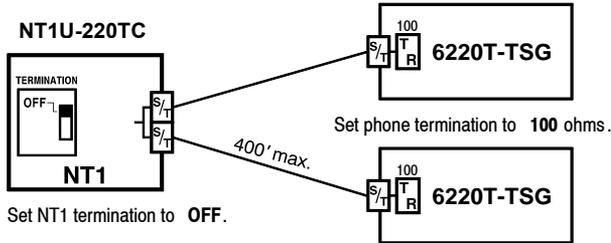
Available switch settings are *OFF* and *100* ohms.

We recommend the use of Category 3 or better unshielded twisted pair cable with T568A or T568B connector wiring. Distances shown are the maximums for 24-gauge cable, and may vary for other cable types.

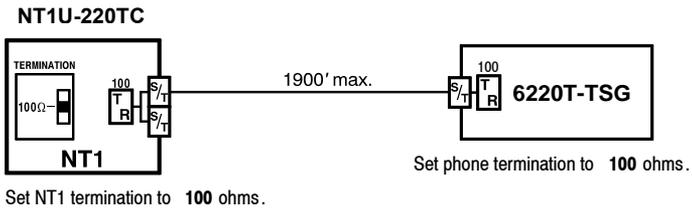
Basic Multipoint:
(recommended for most applications)



Short Multipoint:



Extended Point-to-Point:

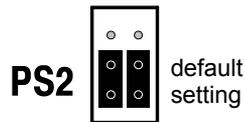
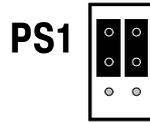
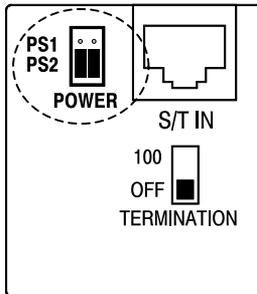


Line and Power Connections

Power for the telephone may be provided on PS1 (phantom power on the transmit and receive pairs from the NT1) or PS2 (power on pins 7 and 8). Tone Commander NT1U-220TC standalone NT1s and NT1U-223TC rack-mount NT1 cards provide both PS1 and PS2 power without additional connections.

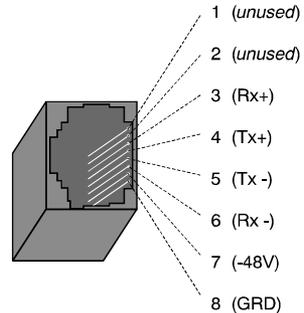
WARNING: If a separate power supply is used to provide PS2 power to the telephone, make sure that the output ground of the NT1 power supply and the PS2 power supply are connected (with the correct polarity) to a common ground reference point or electrical damage to the telephone may occur.

- If your phone is equipped with jumpers next to the **S/T IN** jack, set both jumpers to PS1 or PS2 as required.



- Using an 8-conductor line cord, connect the **S/T IN** jack on the telephone to the **TERMINAL** jack on the NT1. Route the cord under the guide tabs in the phone base.

Pin #	Signal	Wire Color	
		T568 A	T568 B * (AT&T 258A)
5	Tx-	WHT-BLU	WHT-BLU
4	Tx+	BLU	BLU
1	unused	WHT-GRN	WHT-ORN
2	unused	GRN	ORN
3	Rx+	WHT-ORN	WHT-GRN
6	Rx-	ORN	GRN
7	-48V	WHT-BRN	WHT-BRN
8	GRD	BRN	BRN



Modular Jack Pinout

* **T568 B jacks are recommended;** they allow conventional station pair ordering when connecting to S/T punchdown blocks on NT1 racks.

Handset

- Plug the supplied handset into the jack on the left side of the telephone. Refer to page 2, item 17.

Wall Mounting

Robust handset retainer clips for wall mount use are available on request from Tone Commander.

Rotating the Base

The phone base must be rotated for wall mounting.

- Disconnect the line cord.
- Remove the retaining screw in the center of the base.
- Press the top of the tall edge of the base to disengage the snap tabs, then lift the base from the telephone body.
Do not touch the expansion connector.
- Turn the base 180°, insert the tabs on the short edge of the base into the holes near the display end of the telephone, and then snap the tall side of the base onto the telephone.
- Replace the retaining screw (required for UL compliance).

Attaching to a wall mount jack

- Plug an 8", 8-pin line cord into the **S/T IN** jack on the telephone. Route the cord under the guide tabs on the base. If you do not have one, you can obtain an 8" line cord by calling Tone Commander Technical Support at (800) 524-0024.
- Hold the telephone next to the wall mount jack. Plug the line cord into the jack.
- Hang the telephone on the wall plate mounting studs. Press down firmly to lock in place.
- Push any excess line cord into the base.

Configure the Set

ISDN configuration is performed automatically in many cases. The telephone set will detect the switch type, set the SPID number, and download other setup parameters when these features are available from the central office.

You will be prompted for any required setup information that cannot be set automatically.

Initialization

A self-test is performed upon power up. Press any key to begin initialization with the network. Unattended initialization begins automatically after a short random time interval. This delay prevents multiple terminals at a site from initializing simultaneously after a power outage.

The display will show progress while establishing the communication layers. When all three communication layers are established, the TEI (Terminal Equipment Identifier) and switch type will be shown for two seconds.

```
L1:OK      L2:OK TEI:123
L3:OK      SWITCH=5ESS NI-X
```

SPID Entry

The SPID number will be assigned automatically if the network supports AutoSPID. If there is more than one SPID available for your terminal, you will be prompted to select your primary telephone number.

If AutoSPID is not supported, you will be prompted to enter the phone's primary telephone number, which is used by the phone to generate a SPID number. Enter the number with the dial pad, then press the **Done** key. BKSP (backspace) deletes the previous digit.

- National ISDN* – enter your full 10-digit telephone number (including area code)
- 5ESS Custom ISDN* – enter your 7-digit telephone number

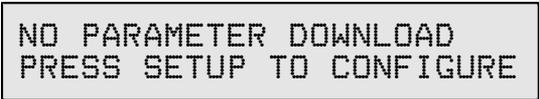
```
ENTER PRIMARY PHONE #
785-1243                +BKSP
```

Parameter Download *(National ISDN only)*

Parameter Download is a network feature that Identifies Call Appearance and Feature Activator keys that are assigned to your line so that your phone may be configured automatically.

Note: Speed Dial and DSS keys are not configured by Parameter Download, as well as other features listed on page 21 (Customize your Phone).

If Parameter Download is not supported, the following screen may appear momentarily, prompting you to manually configure the telephone at a later time (see page 23).



NO PARAMETER DOWNLOAD
PRESS SETUP TO CONFIGURE

Automatic Button Detection *(5ESS Custom ISDN only)*

Lift the handset. Press each multifunction key; the phone will discover the key's network assignment. Keys that have no network assignment may be used for speed dialing – please refer to page 30.

Using Local Inspect to Verify Keys

Local Inspect allows you to identify the call appearance or feature assignment of each configured key, directory number bearer capabilities, and the feature indicator assignment for the Message Indicator. Please refer to page 36.

Customize your Phone

You can set the following options on your phone.

DSS – converts Call Appearance keys to Direct Station Selection keys with busy lamp indication for one-button speed dialing of stations that are monitored by your phone (page 29).

Clock – sets the time-of-day clock. The clock is used for the time and date display, and for time stamping calls in the call log (page 44).

Speed Dial – sets up spare keys for one-button speed dialing of frequently-called numbers (page 30).

Feature Activators with Speed Dial – sets up spare keys for one-button dialing of features such as Call Forward or Directed Call Pickup, with a preselected destination (page 30).

Call Directory – sets up the display-based speed dialing directory (page 46).

Personal Ringing

Ring Tone – selects a distinct ringing tone for your telephone, to distinguish it from other nearby ringing telephones (page 48).

Off-hook Ringing – selects single burst or normal ringing when you are on a call (page 48).

Ring Control – controls audible ringing for individual call appearances (page 49).

Call Preference – controls automatic call appearance selection and automatic call answering when you go off-hook (page 50).

Voice Mode

Preset Volume Levels – sets handset volume levels (page 51).

Display Contrast – adjusts the contrast of the display for best visibility (page 51).

Call Log Password – sets or removes a password to control entry into the call log (page 53).

Label the Set

Label the multifunction keys with the telephone number, feature name, speed dial party name, or other appropriate designation. A perforated label sheet is provided with the telephone.

An ISDN Telephone Setup Wizard for Windows can be downloaded from Tone Commander's web site. This program prints key labels and service ordering forms. A Microsoft Word template for key labels only is also available. Please refer to Appendix A on page 58. Label text is on 1" centers, with 0.9" text space for each key.

To install the labels, remove the plastic overlay surrounding the multifunction keys. Peel off the protective strips from the adhesive in the grooves beneath the keys. Insert the label strips in the grooves, then replace the overlay.

Installation Options

Options in this section are typically set at the time of installation. Many options can be set automatically by the AutoSPID, Automatic Switch Detect, and Parameter Download features, if supported on the network.

The following options can be changed from the Installation Options menu:

- SPID
- Parameter Download
- Terminal Mode
- Key Configuration
- Installation Password
- Reset to Default Settings

Installation Options Menu

You can enter the Installation Options menu when the phone is idle.

Setup

Press the **Setup** key.

```
          SETUP MENU
INSTL ADMIN  USER
```

▲

Select INSTL.

```
INSTALLATION OPTIONS →
SPID  PARAM  KEYS
```

More ▶

When → appears in the top line of the display, you can press the **More ▶** key to see additional menu selections.

```
INSTALLATION OPTIONS →
MODE  PASSWD  RESET
```

Note: The PARAM and MODE options are only available with National ISDN.

A password may be set to prevent unauthorized entry into the Installation Options menu.

When prompted for a password, enter your 4-digit password with the dial pad. Press the **Done** key after entering the password.

To change or remove the password, please refer to page 32.

SPID Entry

A unique SPID (Service Profile Identifier) is required for operation of the 6220T-TSG. If the network supports AutoSPID, a SPID that is assigned to your ISDN line can be automatically selected. If National ISDN generic SPID assignments are used by your service provider, your SPID will consist of your primary telephone number followed by "0101" (e.g., 42534910000101). Contact your network service provider for your telephone's SPID.



From the Installation Options menu, select SPID.
(**Setup** → INSTL → SPID)

```
ID=42534910000101
+BKSP          CLEAR
```

JKL
5

Using the dial pad, enter the SPID number supplied by your network service provider.

If you need to make corrections, select ←BKSP (backspace) to delete the previous digit.

CLEAR removes all digits, allowing you to start over.

Done

When digits have been entered, press the **Done** key to return to the Installation Options menu or the **Setup** key to exit Setup Mode.

Parameter Download ---

(National ISDN only)

ISDN Parameter Download is an automated feature for configuring Call Appearance and Feature Activator keys. If configured for auto download, a Parameter Download is executed when the phone initializes with a new SPID, or when requested by the network, due to a line configuration change.

Note: Speed Dial and DSS keys are not configured by Parameter Download.

- ▲ From the Installation Options menu, select PARAM.
(**Setup** → INSTL → PARAM)

```
PARAMETER DOWNLOAD
START  AUTO
```

Starting a Download

- ▲ Select START to manually initiate a Parameter Download.

Enabling/Disabling Automatic Download

- ▲ Select AUTO.

```
AUTO DOWNLOAD=ENABLED
ENABLE  DISABLE
```

- ▲ Select ENABLE or DISABLE.

Configuring Keys ---

If the network does not support Parameter Download, you can assign call appearances, directory numbers and feature activators using this option.



From the Installation Options menu, select KEYS.
(**Setup** → INSTL → KEYS)

The status indicator for each key will indicate the current setting.

Green – Call Appearance or DSS.

Red – Feature Activator.

Off – Unused or Speed Dial.



Press the multifunction key to be programmed.

The selected key's indicator will alternately flash red and green.

```

12=CA/DN      →
CA/DN   FA   DSS  SPDIAL
  
```

```

12=CA/DN      →
UNUSED
  
```



Select CA/DN (Call Appearance /Directory Number), FA (Feature Activator), DSS (Direct Station Select), SPDIAL (Speed Dial), or UNUSED from the menu.

Programming procedures for each key type are described below.

Call Appearance / Directory Number Keys

These “line” keys are used to place and answer calls. If you have BASIC service, each **directory number** key is assigned a unique directory number. If you have CACH EKTS service, one directory number may be assigned to multiple **Call Appearance** keys; multiple calls can be handled on one directory number.



Enter the assigned directory number with the dial pad.

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit.

*You can press the **Done** key to return to key selection.*

```

12=CA/DN# 555-789-4251
←BKSP      ORIG  RESERV
  
```

Automatic Call Appearance Selection

A call appearance is automatically selected when originating a new call, answering an incoming call, or conferencing or transferring a call. Three configuration options determine how call appearances are selected:

Call Preference (page 50) – determines whether a new call is originated when you lift the handset. If set to NONE, you must manually press a Call Appearance key to originate a call.

Originating DN – only call appearances with this option set to YES will be automatically selected for call origination.

CA Reservation – within the group of originating DNs, call appearances set for NOT RESERVED are selected first, followed by OUTGOING ONLY, followed by OUT/PRIORITY call appearances (OUTGOING ONLY call appearances are selected first for conferencing and transferring). Within each subgroup, call appearances are selected in ascending order. INCOMING ONLY call appearances are never selected for an outgoing call. If an idle CA is not found, “SELECT AN IDLE LINE” is displayed.

To change the Originating DN assignment:

- Select ORIG.
- Select YES or NO from the Originating DN menu.
- Press the **Done** key to return to the CA/DN menu.

To change call appearance reservation:

- Select RESERV.
- Select the call appearance reservation for this CA/DN.
 - OUT** – Originate (outgoing calls) only.
 - IN** – Terminate (incoming calls) only.
 - PRI** – Outgoing or priority incoming calls only.
 - NOT** – Not Reserved - *default value for all keys*.
- Press the **Done** key to return to the CA/DN menu.

Feature Activator Keys

Feature Activator keys must be configured to match network feature activator codes that have been assigned to your line.



Using the dial pad, enter the feature activator code assigned by your network service provider.

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit.

```
10=NETWORK FA#59  
←BKSP
```



Press the **Done** key twice to return to the key selection menu or the **Setup** key to exit Setup Mode.

DSS Keys

DSS keys are a special type of Call Appearance/Directory Number keys that are programmed with speed dial numbers to provide Direct Station Selection. When the call appearance is idle or busy, DSS keys act like Speed Dial keys, to call a station. When ringing, DSS keys act like CA/DN keys, to answer a call. The LED indicator on the key shows the status of the station's call appearance (idle, ringing, hold, busy).

Shared call appearances for stations you wish to monitor must be configured on your ISDN line. You must program the DSS number to dial the monitored station on your phone (even if Parameter Download is provided).

JKL
5

If the Call Appearance/Directory Number is not shown in the top line of the display, you can enter a reference directory number for the monitored station with the dial pad. This number is not required for operation.

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit.

```
08=DSS/DN# 425-349-1001
←BKSP DSS#
```

▲

Select DSS#.

```
1001
←BKSP CLEAR PAUSE
```

JKL
5

Using the dial pad, enter the number you would dial to call the monitored station.

CLEAR removes all digits, allowing you to start over.

Done

Press the **Done** key three times to return to the key selection menu or the **Setup** key to exit Setup Mode.

Speed Dial Keys

Keys not assigned for call appearances or feature activators may be used as Speed Dial keys. Dial strings can include network feature activator codes, to simplify the use of features such as Directed Call Pickup and Call Forwarding. Speed Dial keys may also be programmed from the User Options menu.

```
5553452341
+BKSP CLEAR PAUSE FA
```

The currently programmed dial string, if any, will be shown in the display.



Enter digits (24 maximum) with the dial pad.



Pauses are entered with the PAUSE softkey, and are shown in the display as a **P** character. The first pause in a dial string will wait until the call is answered; additional pauses delay dialing for one second. Enter multiple pauses to increase the delay time.

```
+BKSP PAUSE FA
```



```
5551234P1P12
+BKSP CLEAR PAUSE
```



Feature Activator (FA) numbers are entered with the FA softkey, and are shown in the display as an **F** character. *It must be the first character in the dialing string; the two numeric digits immediately following the F indicate the network feature activator code. The FA softkey is only available when no digits have been entered.* In the example above, the Speed Dial key sends feature code '57' (Call Forward) followed by the directory number '987-1234'.

```
F579871234
+BKSP CLEAR PAUSE FA
```

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit. CLEAR removes all digits, allowing you to start over. A Speed Dial key will revert to 'Unused' if saved with a cleared dial string.

Done

When digits have been entered, press the **Done** key twice to return to the key selection menu or the **Setup** key to exit Setup Mode.

Terminal Mode ---

(National ISDN only)

If the network does not support Parameter Download, you must manually select the terminal mode.



From the Installation Options menu, select MODE.
(**Setup** → INSTL → **More** ▶ → MODE)

```
TERMINAL MODE=CACH EKTS
CACH BASIC
```



Select the terminal mode based upon the type of service that was ordered from your network service provider.

CACH – CACH EKTS.

BASIC – Voice or Basic EKTS.

In most cases, your phone service should be configured for CACH EKTS.

Done

Press the **Done** key to return to the Installation Options menu or the **Setup** key to exit Setup Mode.

Installation Password

You can set a password to prohibit unauthorized entry into the Installation Options menu.

If a password is currently set, the display will prompt you to enter your password prior to making changes.

- ▲ From the Installation Options menu, select PASSWD.
(**Setup** → INSTL → **More** ▶ → PASSWD)

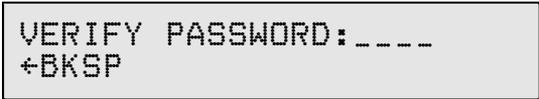


- ▲ Select SET.



- JKL**
5 Enter a new 4-digit password with the dial pad.
If you need to change a password digit after entering it, select ←BKSP (backspace) to delete the previous digit.

- Done** Press the **Done** key.



- JKL**
5 Repeat the password when prompted to verify the new entry.

- Done** Press the **Done** key.

“NEW PASSWORD SET” will be displayed to confirm the new password.



Record your password for future reference.

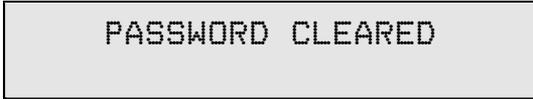
- Done** Press the **Done** key to return to the Installation Options menu or the **Setup** key to exit Setup Mode.

Removing the Password



Select CLEAR.

“PASSWORD CLEARED” will be displayed to confirm that the password has been removed.



Press the **Done** key to return to Installation Options menu or the **Setup** key to exit Setup Mode.

What to do if you lose your password

Ask your system administrator to call Tone Commander technical support at (800) 524-0024 in the event you misplace your password. You will need to report the serial number of your telephone to receive a new password.

You can use the RESET option described below to remove all passwords. *This option will clear all programmed numbers and settings in your phone.*

Reset to Factory Default Settings

Reset returns all settings to the factory defaults, and clears all speed dial numbers, logs, and passwords. This option is useful when moving the telephone to a new user or location.

Default values are listed in the table on page 65.

- ▲ From the Installation Options menu, select RESET.
(**Setup** → INSTL → **More** ▶ → RESET)



```
RESET ALL SETUP OPTIONS?  
YES    NO
```

- ▲ Select YES to confirm the reset operation.



```
ALL SETTINGS CLEARED
```

- Done** Press the **Done** key to return to Installation Options menu or the **Setup** key to exit Setup Mode. The phone will restart.

Administration Options

The following test and diagnostic options are available from the Administration Options menu:

- Local Inspect
- Hardware Version
- Software Version
- Serial Number
- Test Functions
- Diagnostics
- Terminal Restart
- Error Log

Administration Options Menu

You can enter from the Administration Options menu when the phone is idle or during an active call.

Setup

Press the **Setup** key.

```
      SETUP MENU
INSTL ADMIN  USER
```

▲

Select ADMIN.

```
ADMINISTRATION OPTIONS →
INSPECT VERS  TEST  DIAG
```

More ▶

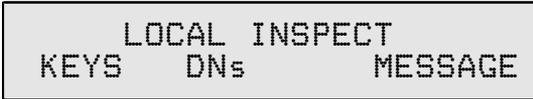
When → appears in the top line of the display, you can press the **More ▶** key to see additional menu selections.

```
ADMINISTRATION OPTIONS →
RESTART LOG
```

Local Inspect

Local Inspect allows you to identify the call appearance/directory number or feature assignment of each configured key, directory numbers, and the feature indicator assignment for the Message Indicator. You can use Local Inspect after a Parameter Download to verify call appearance and feature assignments.

- ▲ From the Administration Options menu, select INSPCT. (**Setup** → ADMIN → INSPCT)



- ▲ Select KEYS, DN's (Directory Numbers), or MESSAGE (Message Indicator). Each option is described below.

Keys

- ▲ Select KEYS.

- Press the key that you want to inspect. The key's indicator will alternately flash red and green.

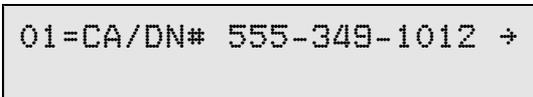
Displays will vary depending upon the key type, as shown below.

- Done When you are finished inspecting keys, press the **Done** key to return to the Local Inspect menu or the **Setup** key to exit Setup Mode.

Call Appearance/Directory Number Key

The display will show for the selected key:

- Key number, directory number (if programmed)



More ▶

Press the **More ▶** key to view:

- Originate usage
- Call appearance reservation

```
ORIGINATING DN? YES    →  
RESERVED=OUT/PRIORITY IN
```

DSS Key

The display will show for the selected key:

- Key number, directory number
- DSS number

```
05=DSS/DN# 555-789-4251+  
4251
```

More ▶

Press the **More ▶** key to view:

- Originate usage
- Call appearance reservation

```
ORIGINATING DN? NO    →  
RESERVED=NOT RESERVED
```

Feature Activator, Conference, Transfer, or Drop Key

The display will show the key number, network feature activator number, and service description for the selected key.

```
07=NETWORK FA#56  
Call Pickup
```

Speed Dial Key

The display will show the key number and programmed autodial string for the selected key.

```
08=SPEED DIAL
5553452341
```

Directory Numbers



Select DNs to view the list of directory numbers on this phone. The first line on the display will show the directory number (if programmed), and 'ORIG' if this is an originating DN.

```
DN#555-345-8952    ORIG →
```



Press the **More** key to view additional directory numbers.



Press the **Done** key to return to the Local Inspect menu or the **Setup** key to exit Setup Mode.

Message Waiting Indicator



Select MESSAGE.

The Message indicator will light.

The display will show the feature indicator number and the service description, if available. If the service description on line 2 is blank after a Parameter Download, this feature has not been provisioned on your line.

```
MESSAGE=NETWORK FI#63
Message Waiting
```



Press the **Done** key to return to the Local Inspect menu or the **Setup** key to exit Setup Mode.

Version

Use this option to view the telephone's hardware version, software version, and serial number.

-  From the Administration Options menu, select **VERS**.
(**Setup** → ADMIN → VERS)

```
VERSION
SERIAL H/W  S/W
```

Serial Number

-  Select **SERIAL**.

```
SERIAL# 90108307001
```

Hardware Version

-  Select **H/W**.

```
MODEL: 6220T TSG
TOP: -01A      PCB: -02B
```

Software Version

-  Select **S/W**.

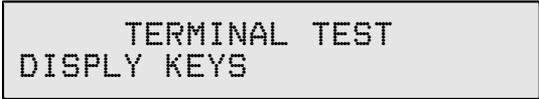
```
S/W VERSION: 01.04.01
```

-  Press the **Done** key to return to the Administration Options menu or the **Setup** key to exit Setup Mode.

Test

Select this option to test the LCD display, LED indicators, and keys.

- ▲ From the Administration Options menu, select TEST.
(**Setup** → ADMIN → TEST)



Display and LED Indicators

- ▲ Select DISPLY.



LCD Display

- ▲ Select LCD.
All pixels (picture elements, or dots) on the display should turn dark.



- Press any key to return the display to normal operation.

LED Indicators

- ▲ Select RED to turn on all red indicators, and turn all others off.
- ▲ Select GREEN to turn on all green indicators, and turn all others off.
- ▲ Select OFF to turn off all indicators, or wait 5 seconds for automatic off.
- Done** Press the **Done** key to return to the Test menu or the **Setup** key to exit Setup Mode.

Keys



Select KEYS.

```
PRESS EACH KEY TO TEST
OR GO OFF-HOOK TO EXIT
```



Press each key on the telephone, including the dial pad keys, one at a time.



A letter should appear in the display for each pressed key.



```
ABCDEFGHIJKLMNOPQRSTUVWX
abcdefghijklmnopqrstuvw
```

If all keys are operational, the following display will be shown. Press key to return to the Test menu.

```
KEY TEST PASSED
PRESS ANY KEY TO EXIT
```

If any key fails, or to exit before testing all keys, go off-hook with the handset or unplug the phone.

Diagnostic Display



From the Administration Options menu, select.
(**Setup** → ADMIN → DIAG)

The display will show the states of layers 1, 2, and 3, the Terminal Endpoint Identifier, and the network switch type.

```
L1:OK      L2:OK      TEI=64
L3:OK      SWITCH=5ESS NI-X
```



Press the **Done** key to return to the Administration Options menu or the **Setup** key to exit Setup Mode.

Restart

Select Restart to reset the phone. If you are on an active call you will be disconnected. The call log will be cleared. No configuration parameters will be altered.

- ▲ From the Administration Options menu, select RESTART.
(**Setup** → ADMIN → **More** ▶ → RESTART)

```
RESTART/CLEAR CALL LOG?  
YES      NO
```

- ▲ Select YES to restart the phone.

Viewing the Error and Download Logs

- ▲ From the Administration Options menu, select LOG.
(**Setup** → ADMIN → **More** ▶ → LOG)

```
VIEW LOG ENTRIES  
ERROR PARAM      CLEAR
```

- ▲ Select ERROR to view the error log or PARAM (*National ISDN only*) to view the Parameter Download log.

The most recent log entry will be shown.

- More** ▶ Press the **More** ▶ key to view previous entries.

- Done** Press the **Done** key to return to the View Log Entries menu or the **Setup** key to exit Setup Mode.

Clearing Logs

- ▲ Select CLEAR to remove all entries from the error log.

- Done** Press the **Done** key to return to the Administration Options menu or the **Setup** key to exit Setup Mode.

The Parameter Download log is re-written each time a new download is performed.

User Options

The following personal preference options can be changed from the User Options menu:

- Time and Date
- Speed Dial Keys
- Call Directory
- Personal Ringing
- Call Preference
- Preset Volume Levels
- Display Contrast
- Call Log Password

User Options Menu

You can enter the User Options menu when the phone is idle or during an active call.

Setup

Press the **Setup** key.

```
      SETUP MENU
INSTL ADMIN  USER
```



Select USER.

```
USER OPTIONS      →
CLOCK SPDIAL  DIR  RING
```

More ▶

When → appears in the top line of the display, you can press the **More** ▶ key to see additional menu selections.

```
USER OPTIONS      →
PREF VOICE DISPLY PASSWD
```

Note: The PREF option is only available with National ISDN.

Setting the Time and Date



From the User Options menu, select CLOCK.
(**Setup** → USER → CLOCK)

The current time and date will be displayed, with the cursor flashing on the first digit.

```
04-27-99 11:16AM
←BKSP                AM/PM
```



Enter new digits for the date and time with the dial pad. The cursor will advance automatically as each digit is entered. Time must be entered in 12-hour format. AM/PM is changed with a softkey.

If you need to make corrections, select ←BKSP (backspace) to move the cursor to the left.

*The **More** ▶ key moves the cursor to the right.*



When all changes have been made, press the **Done** key to return to the User Options menu or the **Setup** key to exit Setup Mode.

Setting Up Speed Dial Keys

Speed Dial keys facilitate dialing for voice mail, auto attendant and similar applications. If a Speed Dial key is pressed while connected on an active call, the speed dial number is dialed on that call. Speed dialing can be used in conjunction with manual dialing. Any unused multifunction key can be designated as a Speed Dial key. Speed Dial keys can also include network feature activator codes – this feature is explained on page 30.

Speed Dial keys can be programmed with up to 24 digits including 0-9, #, * and "Pause". The keys must be programmed at the terminal; they are not set by a Parameter Download.

To add or change DSS keys, use the KEYS option in the Installation Options menu (see page 29).

Speed Dial Programming



From the User Options menu, select SPDIAL.
(**Setup** → USER → SPDIAL)

The current state of each multifunction key is shown by the its status indicator.

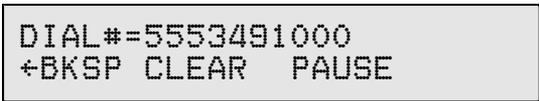
- Green** – unused key, available for speed dial use.
- Red** – Speed Dial key that has already been programmed.
- Off** – key set up for a call appearance, feature activator, or DSS.



Press a lit key to program it for speed dialing.

The selected key's indicator will alternately flash red and green.

The currently programmed dial string, if any, will be shown in the display.



Enter digits (24 maximum) with the dial pad.



When all digits have been entered, press the **Done** key to return to key selection or the **Setup** key to exit Setup Mode.

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit.

CLEAR removes all digits, allowing you to start over. A Speed Dial key will revert to 'Unused' if saved with a cleared dial string.

“Smart” Pauses

The first pause in a dial string will delay dialing until the call is answered; additional pauses delay dialing for one second. Enter multiple pauses to increase the delay time. Pauses are entered with the PAUSE softkey, and are shown in the display as a **P** character.

Setting Up the Call Directory _____

Up to 36 numbers can be stored in the Call Directory. Directory entries are similar to Speed Dial keys, but are accessed from a display menu. Place your most frequently-dialed numbers on Speed Dial keys, if available, and put other numbers in the directory.

Directory entries are displayed on nine screen pages, with four entries per page. The current directory page number (1-9) will be shown at the upper right corner of the display.

 From the User Options menu, select DIR.
(**Setup** → USER → DIR)

 Select a directory page by pressing a dial pad key (1-9), or press the **More ▶** key to cycle through the nine pages until the desired page is displayed.

 Select a directory entry by pressing the softkey below the name display.
You can edit an existing entry, or add a new one by pressing a softkey below a blank entry.



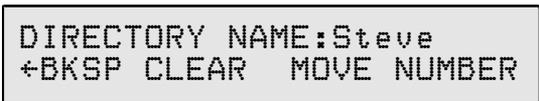
```
SELECT A SOFTKEY  PAGE1→  
Jim G  Home
```



 Using the dial pad, enter a name (5 characters max.) to identify the directory entry. Press the dial pad key repeatedly until the desired upper case letter, lower case letter, or number appears in the display. For example, to enter the letter 'L', press the **5** key 3 times. Spaces and punctuation can be entered with the **#** and ***** keys.

Press the **More ▶** key to move to the next character.

If you need to make corrections while entering the name, select ←BKSP (backspace) to delete the current character and move back to the previous one.



```
DIRECTORY NAME:Steve  
+BKSP CLEAR  MOVE NUMBER
```



Select NUMBER.



Enter the number to dial with the dial pad. Dialing pauses are entered with the PAUSE softkey – see page 45.

If you need to make corrections while entering numbers, select ←BKSP (backspace) to delete the previous digit.

CLEAR removes all digits, allowing you to start over.

```
DIAL#=3491212
←BKSP CLEAR PAUSE NAME
```



When all digits have been entered, press the **Done** key to return to the Select A Softkey menu or the **Setup** key to exit Setup Mode.

```
SELECT A SOFTKEY PAGE1→
Jim G Home Steve
```

Moving a Directory Entry



Select MOVE from the Name screen if you want to move a directory entry to a new location.

```
PICK NEW SOFTKEY PAGE1→
Jim G Home Steve
```



Press the softkey for the new location; select a new page first with the dial pad or the **More ▶** key if moving to a different directory page.

Deleting a Directory Entry



Select CLEAR from the Name screen to delete a directory entry. The entry's name and number will be deleted immediately.

Personal Ringing Options

Ringing Tone

Your telephone has eight distinct ringing tones available. In environments with multiple terminals, unique ringing tones can help identify ringing stations. The selected ringing tone is used for all call appearances.

 From the User Options menu, select RING.
(**Setup** → USER → RING)

 Select the TONE option.

```
RINGING TONE=5
USE KEYPAD KEYS 1-8
```

 Press a dial pad key (1-8) to select a ringing tone and hear a sample of the tone.

 When you have chosen a ringing tone, press the **Done** key to return to the Personal Ringing menu or the **Setup** key to exit Setup Mode.

Off-Hook Ringing Options

Incoming calls ring at a muted volume level when you are off-hook on another call. You can select normal ringing or a single burst of the ringing pattern.

 From the User Options menu, select RING.
(**Setup** → USER → RING)

 Select the OFFHK option.
The current off-hook ringing setting will be displayed.

```
OFFHOOK RING=SINGLE
NORMAL SINGLE
```

 Select NORMAL or SINGLE to change the setting.

 Press the **Done** key to return to the Personal Ringing menu or the **Setup** key to exit Setup Mode.

Ringing Control for Individual Call Appearances

You can control the audible ringing at your telephone for each call appearance.

Call appearances set to **Always** will ring immediately. Use this setting for your primary call appearances.

Never completely disables ringing on the call appearance. Use this selection for monitored call appearances that are normally answered elsewhere.

Wait delays ringing at your telephone for 2 to 7 ringing cycles (6 seconds per cycle). Use this option for backup answering on call appearances that are primarily answered on other terminals.

Calls that do not ring, due to the ringing control selection, do not display call information and are not recorded in the call log.

 From the User Options menu, select RING.
(**Setup** → USER → RING)

 Select CONTROL.
All multifunction keys that are programmed for call appearances or DSS will have a steady green indication.

 Press a lit key to view its current ring control setting.

```
KEY01=ALWAYS RING      →  
ALWAYS NEVER WAIT2 WAIT3
```

```
KEY01=ALWAYS RING      →  
WAIT4 WAIT5 WAIT6 WAIT7
```

 If you want to change the setting for the selected key, select ALWAYS, NEVER, or WAIT2-WAIT7.

 Press the **Done** key to return to the Personal Ringing menu or the **Setup** key to exit Setup Mode.

Call Preference Options

(National ISDN only)

Call Preference determines what happens when you lift the handset. For Lucent 5ESS Custom ISDN service, Call Preference is controlled by the network.

RING preference will automatically select the oldest audibly ringing call appearance; if there is no ringing call appearance, an idle one is automatically selected. Call appearances that are in an alerting state, but are not audibly ringing (refer to the Ringing Control setting above) are not selected.

IDLE preference always automatically selects an idle call appearance, even if another one is ringing.

NONE disables automatic call appearance selection; you must manually press a Call Appearance key to originate a call.

Idle call appearances are always automatically selected for transfer and conference operations.

Call Preference must be programmed at the terminal; it is not set by a Parameter Download.

- ▲ From the User Options menu, select PREF.
(**Setup** → USER → **More** ▶ → PREF)

```
CALL PREFERENCE=RINGING
RING  IDLE  NONE
```

- ▲ Select RING, IDLE, or NONE.
- Done** Press the **Done** key to return to the User Options menu or the **Setup** key to exit Setup Mode.

Handset Configuration

Preset Volume Levels

The preset handset receive volume level may be set to provide higher preset levels for hearing impaired users. The telephone is reset to preset volume levels whenever a call is originated or answered. Receiver volume levels set with the **Vol** keys are used only for the duration of a call.

- ▲ From the User Options menu, select VOICE.
(**Setup** → USER → **More** ▶ → VOICE)

```
VOICE MODE=HANDSET
          VOLUME
```

- ▲ Select VOLUME.
The display will show the current preset volume settings.

```
VOLUME:RCV=04
RCV+  RCV-
```

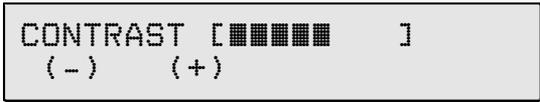
- ▲ Select RCV- or RCV+ to adjust the receiver volume level.
The new setting will be shown in the display.

Adjusting the Display Contrast

This setting adjusts the contrast of the display to compensate for viewing position and lighting conditions. You can also tilt the display for best visibility.

- ▲ From the User Options menu, select DISPLY.
(**Setup** → USER → **More** ▶ → DISPLY)

- ▲ Select (-) to lighten the display (less contrast), or (+) to darken the display (more contrast).
The display contrast will change, and a bar graph will show the new contrast setting.



Done

Press the **Done** key to return to the User Options menu or the **Setup** key to exit Setup Mode.

Setting a Call Log Password

You can set a password to prohibit unauthorized entry into your Call Log.

- ▲ From the User Options menu, select PASSWD.
(**Setup** → USER → **More** ▶ → PASSWD)
If a password is currently set, the display will prompt you to enter your password prior to making changes.

```
CALL LOG PASSWORD
SET CLEAR
```

Creating/Changing Your Password

- ▲ Select SET.

```
NEW PASSWORD:_____
←BKSP
```

- JKL**
5 Enter a new 4-digit password with the dial pad.
If you need to make corrections, select ←BKSP (backspace) to delete the previous digit.

- Done** Press the **Done** key.

```
VERIFY NEW PASSWORD:_____
←BKSP
```

- JKL**
5 Repeat the password when prompted to verify the new entry.

- Done** Press the **Done** key.

“NEW PASSWORD SET” will be displayed to confirm the new password.

```
NEW PASSWORD SET
```

Record your password for future reference.

Done

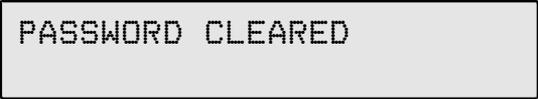
Press the **Done** key to return to the User Options menu or the **Setup** key to exit Setup Mode.

Removing the Password



Select CLEAR.

“PASSWORD CLEARED” will be displayed to confirm that the password has been removed.

A rectangular box with a light gray background and a black border, containing the text "PASSWORD CLEARED" in a monospaced, uppercase font.

Done

Press the **Done** key to return to User Options menu or the **Setup** key to exit Setup Mode.

What to do if you lose your password

Contact your system administrator or call Tone Commander technical support at (800) 524-0024 in the event you misplace your password. You will need to report the serial number of your telephone to receive a new password.

You can use the RESET option (page 34) to remove all passwords. *This option will also clear all programmed numbers and settings in your phone.*

Troubleshooting

Inoperable Telephone Recovery Procedures

Whenever a telephone is unable to operate normally or remains in a particular state with no escape, accomplish the following:

1. Press SETUP, the SETUP Menu should be displayed. This response indicates that there is power to the telephone, and its microprocessor is operating. Proceed to Step 5. If there is no display, proceed to Step 2.
2. Reseat the eight pin connectors of the telephone mounting cord at the telephone and at either the wall jack or the associated NT1 device.
3. Verify that the power indicator of the associated NT1 device is illuminated.
4. Replace the ISDN telephone with another and repeat the steps in this section.
5. Select ADMIN, then MORE, then RESTART, then YES. This will cause the telephone to reinitialize on Layers 1 through 3. If full initialization is attained, proceed to "Verify operation" on page 56, otherwise proceed to Step 6.
6. Determine which Layer is not initializing by observing the startup display.

Layer 1 does not initialize:

- Locate the NT1 device ahead of the telephone, and press its reset button. If the NT1 device does not have a reset button, recycle power by temporarily pulling it out of its rack, or unplug it from its stand-alone power supply.
- Verify all connections between the NT1 and the registered jack interface.
- Replace the NT1 device.

Layer 2 does not initialize:

- Repeat Step 2.

Layer 3 does not initialize:

- Verify that the correct SPID number is programmed.
- Verify with the serving telco that they have not changed from a customized to a universal SPID format.
- Verify with the serving telco that they have not changed their office to a new area code (some SPID formats include the area code).
- Enter the correct SPID or SPID format.

With full initialization, proceed to the following steps.

Verify operation of the telephone by accomplishing the following:

1. Access an idle line.
 - Does the line LED indicate active status?
 - Is dial tone heard?
2. Dial any directory number for a test call.
 - Did the call go through?

Telephone Configuration Troubleshooting

CA/DN trouble	Check	Fix
Inbound calls to a specific line cause the LED to flash, but there is no audible ringing.	>SETUP >USER >RING >CONTROL >Select line	>ALWAYS
A specific line is selected that is supposed to have dial tone, but there isn't any.	>SETUP >INSTL >KEYS >Select line key	>CA/DN

General usage	Check	Fix
All inbound calls appear on CA1. Outbound calls cannot be made.	>SETUP >INSTL >MORE >MODE	>CACH
Ringing calls are not answered when going off-hook.	>SETUP >USER >MORE >PREF	>RING
"SELECT AN IDLE LINE" is displayed when going off-hook or pressing the speaker key.	Originating DN and Call Appearance Reservation settings	See page 27.

Appendix A

Ordering ISDN Service

Setup Wizard

The ISDN Telephone Setup Wizard simplifies ordering ISDN service. This Windows 95/98/NT program prompts you for all required information, and prints the service order forms and key designation labels. You can download the Setup Wizard from Tone Commander's Web site at www.tonecommander.com or call Tone Commander at **(800) 524-0024** to order the program on floppy disks.

Ordering Manually

Your service provider may have their own process and forms for ordering ISDN service. Contact them for instructions before you create your order.

Key Assignments

The 6220T-TSG is compatible with all NIUF terminal packages and many other standard line configurations. If Parameter Downloading is available, the phone will automatically assign Feature Activator keys and codes to match almost any line configuration. Call appearances are always assigned in ascending order, starting with button #1. Feature activators are assigned in descending order, starting with button #20.

Use the table on the following page as a guide when assigning custom feature activators and indicators.

Where to Go for Help

If you need assistance ordering service, call Tone Commander Customer Technical Support at **(800) 524-0024**.

Recommended Button Assignments

Network Button #	Assignment
1	Call Appearance (PDN)
2	<div style="text-align: center;">  </div>
3	
.	
.	
.	
.	<div style="text-align: center;">  </div>
.	
58	
59	
60	Conference *
61	Transfer *
62	Drop *
63	Message Waiting Indicator

* National ISDN only; DO NOT assign these keys for 5ESS Custom ISDN.

With Parameter Downloading, the phone will automatically remap feature activators (other than Conference, Transfer, Drop, and Message Waiting) in descending order, starting with key 20. For example, network feature key #59 will be assigned to key 20, #58 to key 19, etc.

Appendix B

Setup Menu Tree

INSTL (*Installation Options*)

SPID (*Service Profile Identifier*) page 24

PARAM (*Parameter Download – National ISDN only*)..... page 25

START (*Start Download*)

AUTO (*Automatic Download Enable/Disable*)

KEYS

CA/DN (*Call Appearance/Directory Number*) page 25

ORIG (*Originating DN*)

RESERV (*Call Appearance Reservation*)

OUT (*Outgoing Only*)

IN (*Incoming Only*)

PRI (*Outgoing/Priority Incoming*)

NOT (*Not Reserved*)

FA (*Feature Activator*)

DSS (*Direct Station Select*)

DSS#

SPDIAL (*Speed Dial*)

PAUSE (*Dialing Pause*)

FA (*Feature Activator*)

UNUSED

MODE (*Terminal Mode – National ISDN only*) page 31

CACH (*Call Appearance Call Handling EKTS*)

BASIC (*Basic EKTS – National ISDN only*)

PASSWD (*Installation Options Password*) page 32

SET

CLEAR

RESET (*Reset to Default Settings*) page 34

ADMIN (Administration Options)

INSPCT (<i>Local Inspect</i>)	page 36
KEYS (<i>Call Appearance and Feature Activator Keys</i>)	
DNs (<i>Directory Numbers</i>)	
MESSAGE (<i>Message Waiting Indicator</i>)	
VERS (<i>Version</i>)	page 39
SERIAL (<i>Serial Number</i>)	
H/W (<i>Hardware Versions</i>)	
S/W (<i>Software Version</i>)	
TEST	page 40
DISPLY (<i>Display and Indicators</i>)	
LCD (<i>Test LCD Display</i>)	
RED (<i>Test Red Indicators</i>)	
GREEN (<i>Test Green Indicators</i>)	
OFF (<i>Turn All Indicators Off</i>)	
KEYS (<i>Test Phone Keys</i>)	
DIAG (<i>Diagnostic Display</i>)	page 41
RESTART (<i>Restart/Clear Call Log</i>)	page 42
LOG (<i>Error & Parameter Download Logs</i>)	page 42
ERROR (<i>Error Log</i>)	
PARAM (<i>Parameter Download Log – Nat. ISDN only</i>)	
CLEAR (<i>Clear Error Log</i>)	

USER (User Options)

CLOCK (<i>Set Time and Date</i>)	page 44
SPDIAL (<i>Speed Dial</i>)	page 44
PAUSE (<i>Dialing Pause</i>)	
DIR (<i>Call Directory</i>).....	page 46
RING (<i>Personal Ringing</i>)	page 48
tone (<i>Ring Tone</i>)	
OFFHK (<i>Off-Hook Ringing</i>)	
NORMAL	
SINGLE (<i>Single Burst</i>)	
CONTROL (<i>Ring Control</i>)	
ALWAYS (<i>Ring Immediately</i>)	
NEVER (<i>Never Ring</i>)	
WAIT2 (<i>Wait 2 Ring Cycles / 12 seconds</i>)	
WAIT3 (<i>Wait 3 Ring Cycles / 18 seconds</i>)	
WAIT4 (<i>Wait 4 Ring Cycles / 24 seconds</i>)	
WAIT5 (<i>Wait 5 Ring Cycles / 30 seconds</i>)	
WAIT6 (<i>Wait 6 Ring Cycles / 36 seconds</i>)	
WAIT7 (<i>Wait 7 Ring Cycles / 42 seconds</i>)	
PREF (<i>Off-hook Call Preference – National ISDN only</i>) .	page 50
RING (<i>Answer Ringing Call</i>)	
IDLE (<i>Select Idle Call Appearance</i>)	
NONE (<i>Manual Call Appearance Selection</i>)	
VOICE (<i>Voice Mode</i>)	page 51
VOLUME	
RCV+/- (<i>Handset Receive Volume Up/Down</i>)	
DISPLY (<i>Display Contrast</i>)	page 51
+ (<i>Increase Contrast</i>)	
- (<i>Decrease Contrast</i>)	
PASSWD (<i>Call Log Password</i>)	page 53
SET, CLEAR	

Appendix C

Warranty and Service

Tone Commander Product Warranty

For a period of one year from date of dealer purchase, but not to exceed 16 months from date of manufacture, Tone Commander Systems, Inc. (Tone Commander) warrants its products to be free from defects in material and workmanship under conditions of normal use and service. Tone Commander shall, at its option, repair or replace any defective product which, in its opinion, has not been misused, damaged, or improperly installed.

Repair or replacement under this warranty will be performed at Tone Commander's factory. Authorization must be obtained from Tone Commander prior to returning a product for repair. Freight must be prepaid for all units returned to Tone Commander. Units repaired under warranty will be shipped UPS Ground (or equivalent), freight prepaid by Tone Commander.

Products that are older than the warranty period, but less than 7 years old, or still manufactured by Tone Commander may be repaired at the factory for a flat rate charge. Repaired out-of-warranty units are warranted for 90 days from the date of repair.

The repair or replacement of a product under this warranty represents the entire obligation of Tone Commander; Tone Commander shall not be liable for any special or consequential damages resulting from or caused by any defect, failure, incapacity or malfunction of any of its products.

The foregoing express warranty is in lieu of all other warranties, express or implied, including but not limited to any implied warranty of merchantability, fitness, or adequacy for any purpose or use, quality, productiveness or capacity; Tone Commander, to the extent permitted by law, hereby disclaims all such other warranties.

Appendix D

Specifications

Contents of Shipping Container

Modular handset coil-cord
Modular line cord
Label Sheet
Handset
Manual
Quick Reference Card

Standards Compliance

ANSI T1.601-1992 and T1.605-1991
National ISDN, Lucent 5ESS Custom ISDN
FCC Part 15
FCC Part 68
Hearing Aid Compatible
FCC Part 68 Volume Control Requirements
UL, cUL Listed
TSG-6 Certification Number: TSG-0212B0103

Network Switch Compatibility

Lucent 5ESS National ISDN, Custom ISDN, Definity PABX
Nortel DMS-100 National ISDN
Siemens EWSD National ISDN
AG Communication Systems GTD-5 National ISDN

Power Requirements

PS1 (phantom) or PS2 (pins 7 and 8)
24 to 56.5 VDC @ 2 W max. per terminal (excluding wiring losses)

Physical Dimensions

8.25" W x 8.5" D x 4.75" H, including handset

Weight

2.5 lbs.

Environmental

Operating temperature: 32° to 104° F (0° to 40° C)
Storage temperature: 32° to 122° F (0° to 50° C)
Humidity: 5% to 95% non-condensing

Factory Default Settings

Parameter	Default Value (National ISDN)	Default Value (5ESS Custom ISDN)
Auto Param. Download	Enabled	N/A
CA Reservation	Not Reserved	Not Reserved
Call Log Password	None	None
Call Preference	Ring	(Network Controlled) *
Clock	Time of the last error log entry	Time of the last error log entry
Conference	FA/FI=60	N/A
Display Contrast	Level 5	Level 5
Drop	FA/FI=62	N/A
Handset Volume	Level 3	Level 3
Install Menu Password	None	None
Message Waiting	FI=63	FI=63
Multifunction Keys 1-3	CA/DN	CA/DN
Multifunction Keys 4+	Unused	Unused
Off-hook Ring	Single	Single
Originating DN	Yes, PDN	Yes, Keys 1-3
Ringer Volume	Level 3	Level 3
Ringing Control	Always	Always
Ringing Tone	#5 (of 8)	#5 (of 8)
Terminal Mode	CACH	N/A
Transfer	FA/FI=61	N/A
Voice Mode	Handset	Handset

* fixed setting for 5ESS Custom ISDN

Appendix E

UL/FCC Statements

Important Safety Instructions

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

5. Read and understand all instructions.
6. Follow all warnings and instructions marked on the product.
7. Unplug the line cord before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
8. Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
9. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
10. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
11. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
12. Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.
13. Never push objects of any kind into this product through any openings as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on this product.

14. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the appliance is subsequently used.
15. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power supply cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the case has been damaged.
 - F. If the product exhibits a distinct change in performance.
16. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
17. Do not use the telephone to report a gas leak in the vicinity of the leak.

SAVE THESE INSTRUCTIONS

FCC Requirements

The Tone Commander Model 6220T-TSG complies with Part 68 of the FCC Rules. The label affixed to this equipment contains, among other information, the FCC Registration for this equipment. You must, upon request, provide this information to your telephone company.

The following jacks must be ordered from the telephone company in order to interconnect this product with the public communication network: RJ49C.

If your 6220T-TSG causes harm to the telephone 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 notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in 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.

The 6220T-TSG is hearing-aid compatible (HAC) per Section 68.316, FCC Rules and Regulations.

If you have trouble with the 6220T-TSG, please refer to the Troubleshooting section in this manual, or contact us at the address listed on the back of this manual for information on obtaining service or repairs. The telephone company may ask that you disconnect the telephone from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

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.

**TONE
COMMANDER®**

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