TALKSWITCH®
TS-550i TELEPHONE

CT.TS005.015601

talkswitch®

A N S W E R S   W I T H   I N T E L L I G E N C E ®

TABLE OF CONTENTS

INTRODUCTION

Congratulations on your purchase of the TS-550i phone! The TS-550i is a sophisticated SIP-based IP phone that can be used with phone systems and service providers. This user guide provides detailed information on configuration via the telephone interface and web interface. It also provides information on how to use the phone with a TalkSwitch phone system.

PHONE FEATURES

- A 3.5" x 1.25" backlit LCD display
- 22 flexible keys with LEDs
- Up to 46 line/extension/queue appearance options with LEDs*
- Message waiting with indicator lamp and tone
- Full duplex speakerphone
- Intercom paging with other TalkSwitch extensions
- Built-in two-port, 10/100 Ethernet switch. Lets you share a connection with your computer.
- Inline PoE support eliminates the need for power adapters.
- Optional *Bluetooth®* module compatible with supported headset models.

* Using two TS-50e expansion modules

REQUIREMENTS

- SIP based phone system such as the TalkSwitch® series of phone systems or a VoIP service provider account.
- Ethernet or fast Ethernet network for connection (10/100 Mbps)
- Power Source

  For Ethernet networks that supply in-line power:

  - The network devices must conform to IEEE 802.3af specifications for PoE (Power over Ethernet). Most PoE switches should be able to power up the phones since they draw less than 6 watts.

  For Ethernet networks that **do not** supply power to the phone:

  - Use only the TS-350i/TS-550i power supply designed for the region you intend to use the product. This adapter is rated with an output of 48v DC at 0.3 A and a positive tip.
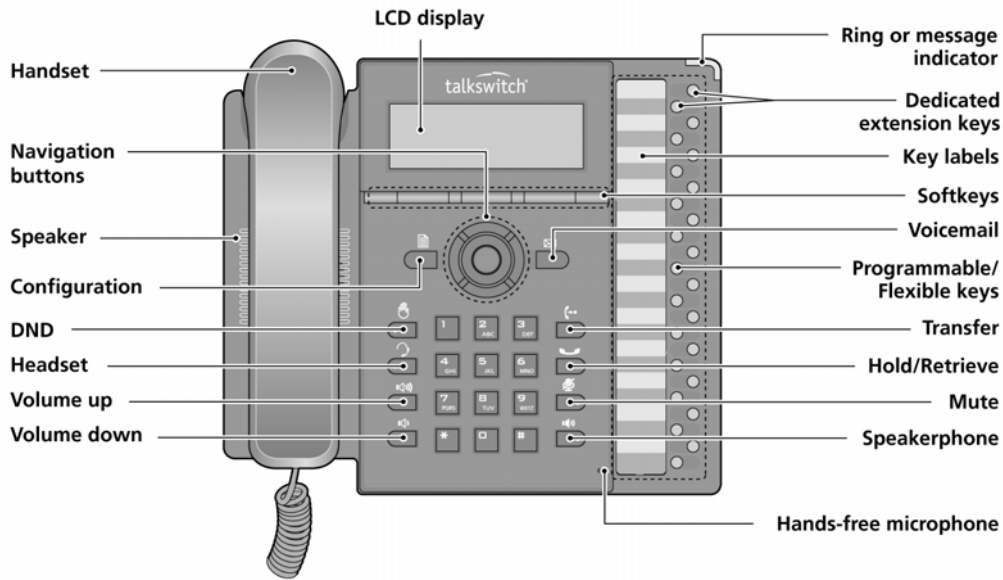
Figure 1: TS-550i Front

Item	Function
	Softkeys — Softkeys are interactive and change function based on the state of the phone.
	Programmable/Flexible keys — Multi-colored LED keys that can be assigned to engage and monitor lines, extensions or queues. They can also be programmed as function and speed dial keys. Keys 1 and 2 are reserved for primary and secondary line appearance for the extension. Keys 3–24 are programmable.
	Navigation buttons **Left** — use to view previous menu when return arrow ⬑ appears in LCD menu. Press to go back to previous menus while in the configuration menus. **Right** — use to see additional menu items when ➔ appears in LCD menu. **Up** — use to view Call Log when phone is idle. **Down** — use to access Phone Book while phone is idle. **OK** — center button, use to select current item or save value in LCD menu.
	Configuration — Pressing this button accesses the menu for making changes to the IP phone configuration.
	Voicemail — Use to access voicemail status and access messages.
	DND (Do Not Disturb) — Use to toggle on/off the DND feature of the phone system.
	Headset — Toggles the headset on and off-hook.
	Volume control — Use to adjust ring, headset, handset, and speaker volume.
	Transfer — Use to transfer an active call.
	Hold/Retrieve — Use to place or retrieve a call on hold.

Item	Function
🔇	**Mute** — Use to mute and unmute the microphone during calls.
🔊	**Speakerphone** — Press to engage the speakerphone and to hangup after the call.
	Dial pad — Use to dial a number, select a menu item, or input a value.

PROGRAMMABLE/FLEXIBLE KEY STATES

The flexible keys access lines, extensions and features based on the IP phone configuration. Flexible keys assigned for line, extension or queue appearances will monitor the state of those resources and allow access to those resources at anytime unless the call is engaged by another user or the system. Keys designated to monitor lines, extensions or queues indicate call status as indicated below.

Status	LED Color	LED Pattern
Incoming call	Green	Flashing approx. once every 1/2 second
Line in use on this phone	Green	On solid
Call on hold at extension	Green	Flashing approx. once every second
Line/Extension/Queue ringing	Green	Flashing approx. once every 1/2 second
Line/Extension/Queue in use	Red	On solid
Line/Extension/Queue on hold	Red	Flashing approx. once every second
Extension/Line not registered	Red/Yellow	Alternating Red and Yellow

Flexible keys not assigned for line access may access features such as Speed dial, Intercom, Park and others.

LCD LAYOUT

The TS-550i phone has a 240 by 56 dot graphic LCD arranged to show 4-lines of text and is used to display information to the user. The top-bar status line displays icons, date and time. The bottom line shows choices associated with the three (3) context-sensitive softkeys located just below the LCD.

Below is a list of icons and their meaning.

LAN or Network connection icon, indicates the status of the LAN connection to the IP phone. If the icon is blinking, check the LAN connection.

PC port icon, when displayed, indicates a device such as a PC is connected to the PC port of the IP phone.

Bluetooth icon, indicates the optional *Bluetooth* module is properly installed with no headsets paired to the phone. When blinking rapidly, the TS-550i is searching or attempting to pair with a headset.

Bluetooth paired icon, indicates one or more (maximum 5) headsets are paired with the module but none are active. When blinking rapidly, the TS-550i is attempting to pair or connect a headset.

Bluetooth connected icon, indicates a headset is connected to the TS-550i. When blinking rapidly, the TS-550i is searching or attempting to pair or disconnect a headset. When blinking slowly, the *Bluetooth* headset is in use.

INSTALLING THE TS-550i

CONNECTING THE IP PHONE

The figure below shows the cable connections for your IP phone. The LAN and desktop PC connections employ standard Category 5 cables terminated with RJ-45 connectors. The TS-550i supports PoE (Power over Ethernet) in accordance with the IEEE-802.1af Class 2 standard. When connected to a PoE compliant LAN port, the IP Phone derives power from the port. If the LAN port does not support PoE, use the AC/DC adaptor (sold seperately). The handset connects to the base with the coiled handset cord.
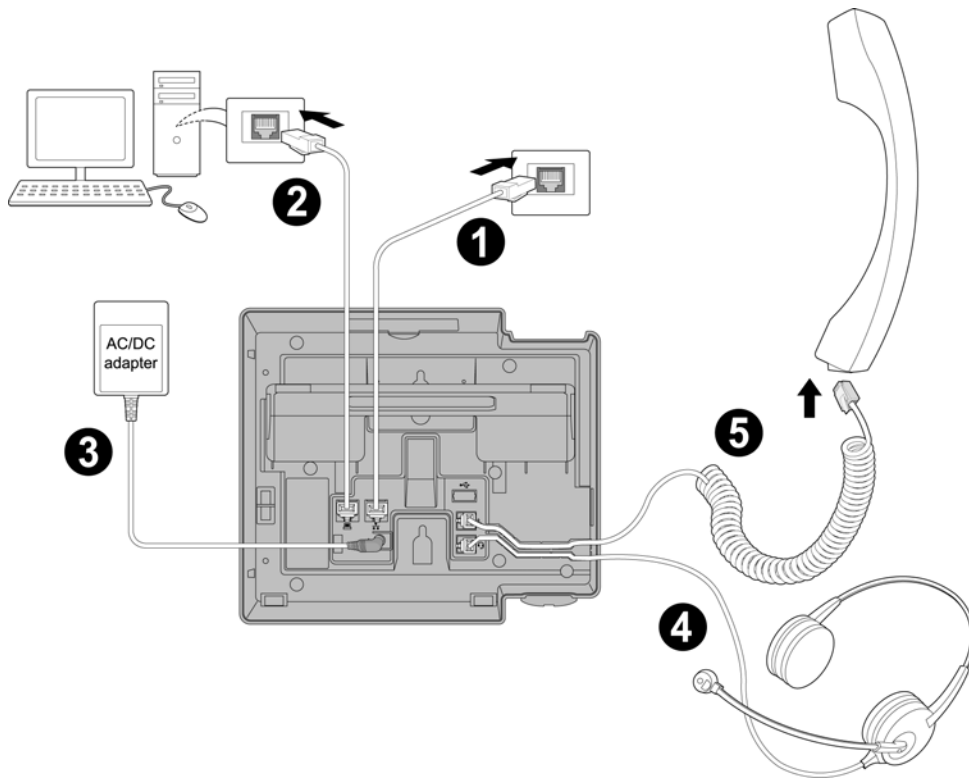
Figure 2: IP Phone Connections

		Wiring Chart
1	LAN	Connect the IP phone LAN port to the LAN wall jack with the provided Ethernet cable.
2	PC	Optionally connect the IP phone PC port to your desktop PC with an Ethernet cable (not supplied).
3	Power	If the LAN port supports PoE then the power adapter is not required. If PoE is not supported on the LAN, connect the power adapter to the power jack on phone.

		Wiring Chart
4	Headset	Optionally connect a headset to the RJ22 headset jack on the phone. We strongly recommend the use of an amplified headset.
5	Handset	Connect the handset cord to the handset and the handset jack on the phone.

ATTACHING THE STAND

The angle of the phone is set by the attachment of the provided stand in one of two positions (30° or 55°).

To attach the stand,

1. Choose the desired angle for the phone.

2. Align the tabs on the stand with the notches in the base of the phone.

3. Push the stand upward in the slot as far as it can go until properly attached.

55° angle   **30° angle**
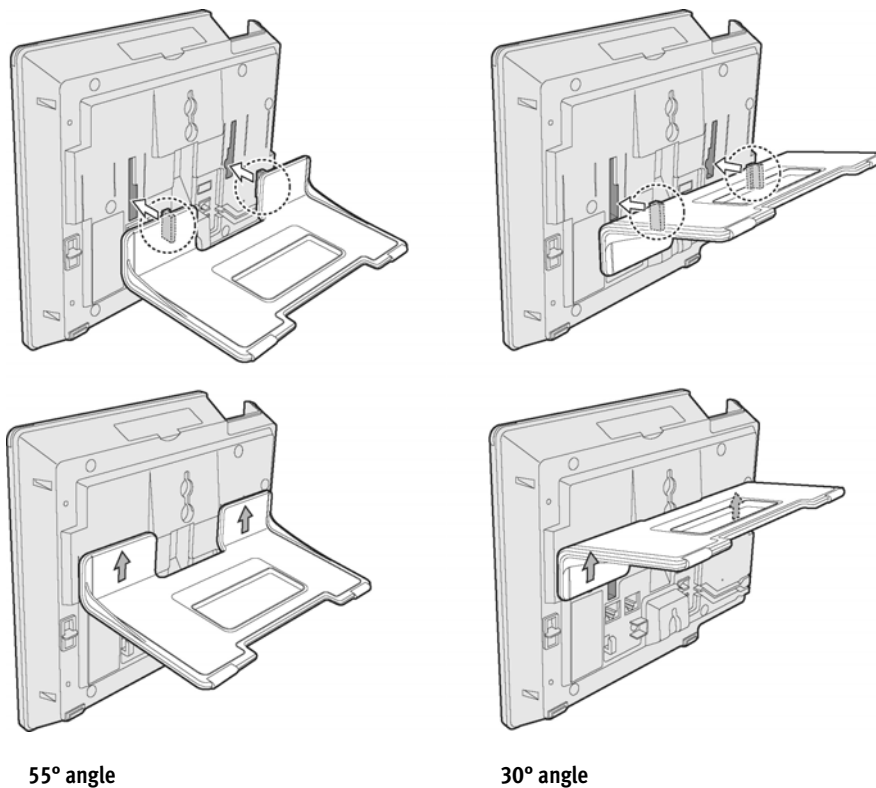
Figure 3: Installing the Foot Stand

WALL MOUNTING

The TS-550i phone supports wall mounting via the base of the phone housing. Wall mount the TS-550i using the instructions below in Figure 4.

- Mark and drill two 7 mm (5/16") holes for plastic wall anchors (not included) with a vertical separation of 10 cm (4").
- Insert two (2) anchors into the holes, then insert and tighten the two (2) screws (not included) leaving about 2.5 mm (1/8") exposed.
- Attach all wiring to the phone.
- Slide the phone over the screws and ensure the phone is secure. Note it may be necessary to remove the phone and tighten or loosen the screws for secure mounting. Also note, the stand must not be attached to the phone when mounting on a wall.
- Remove the handset hook from the phone as shown in the figure below. Reverse the hook and re-install in the phone so that the hook catches the groove in the handset receiver.
- Complete all wiring.
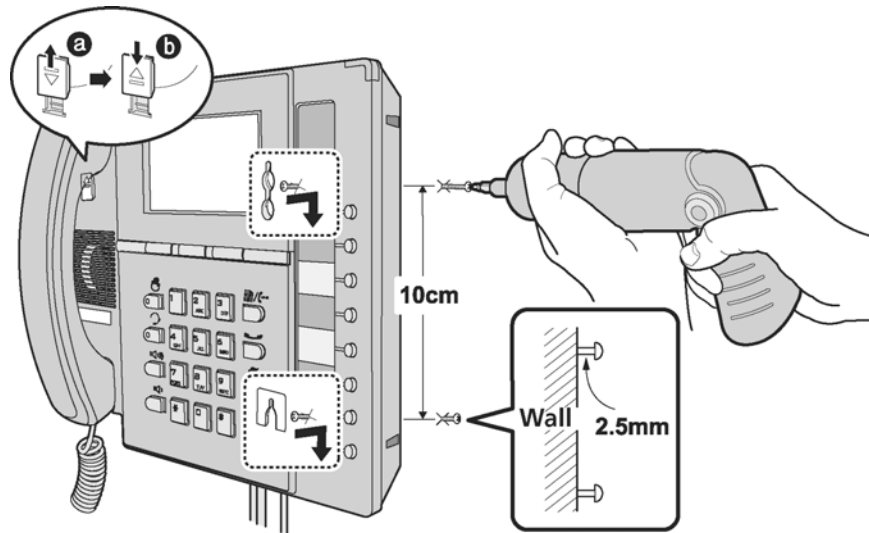
Figure 4: TS-350i/TS-550i Wall Mount Installation

PROVISIONING THE TS-550i WITH TALKSWITCH

If using the phone with TalkSwitch, please refer to *Adding IP Phones to TalkSwitch* included in the **Start Menu** for configuring the extensions in the TalkSwitch software.

PROVISIONING THE TS-550i FOR USE WITH AN ALTERNATE SYSTEM

The TS-550i phone supports manual configuration when the automated process is not available. As a minimum, the TS-550i requires the information below for proper operation.

Line 1 SIP parameters including:

- Line 1 SIP call server IP address
- Line 1 Name (SIP user id)
- Line 1 Authentication user name
- Line 1 Authentication password

In addition, using static IP addressing requires manual entry of the following IP network configuration data.

- IP address of the phone
- Default gateway address
- Subnet mask

Two methods are available for manual configuration. The **LCD Configuration Menu** permits local configuration using the dial pad and softkeys. The second method employs the **TS-550i Web Manager**, which allows access to the IP phone configuration using a Web browser. If configuring the phone for the first time, it is recommended that you use the Web browser as it will save considerable time for the setup process.

PERSONALIZING YOUR PHONE

HOW TO NAVIGATE THROUGH MENUS

To access the configuration menu:

- Press the 📄 button.

To select an item:

- Dial the digit associated with the menu item; or
- Use the **Down** softkey to move the cursor to the next item or alternatively use the navigation up and down keys, then press the **Select** softkey or center navigation key to select an option.

The bottom line of the display shows three (3) softkey functions at a time. Additional softkey functions are available when the ➔ appears right of the softkey options on the LCD. Use the **Right** navigation button to scroll through additional options.

To return to a previous branch in the menu, press the **Back** softkey, or left navigation button.

To exit the configuration menu, press the 📄 button.

ENTERING VALUES WITH THE DIAL PAD AND SOFTKEYS

Use the dial pad to input numbers, letters, special characters, and a period. The **Mode** softkey displays to indicate a parameter can accept an alphanumeric entry. Selecting the **Mode** softkey switches the dial pad mode. The dial pad mode displays in the right of the LCD above the softkeys as 123 for numeric, ABC for upper case characters, abc for lower case characters and ✳ for special characters.

To enter characters with the dial pad, use the digit with the desired character. Press the same digit repeatedly until the desired character appears in the LCD. After entering a character, pause to allow the cursor to move to next character position. Other special entries include:

- To enter a period or dot (for example, to input an IP address), press ***** on the dial pad.
- To delete a letter in front of the cursor, press the ← softkey.
- To clear an entire string, press the **Clear** softkey.
- To enter a space, press **#** on the dial pad.

Prior to saving an entry, you may discard changes by pressing the left navigation button to move to the previous menu, or press the 📄 button to exit the **Settings** menu.

SETTING A HUNT GROUP AS AN ACCESS CODE PREFIX

If you need to dial **9** or **81–88** to access an outside line, then you will want to program your phone to automatically insert a hunt group number before all calls placed from the Missed and Received call logs as well as from the Phone Book. To set an Access Code:

- Press the 📄/☎ button, select **4**. **Call Preferences**, then **8**. **Access Code Prefix**.
- Enter the hunt group you normally use to place outgoing calls (example: 9), then press the **OK** softkey.

CONFIGURATION OVERVIEW

The TS-550i supports the access and configuration of many parameters directly from the Telephone User Interface. To access the **Configuration** menu, press the 📄 button while the phone is not in use.

The configuration menu consists of several sub menus as listed below:

1. Network Configuration

2. SIP Configuration

3. Phone Settings

4. Call Preferences

5. Directory

6. Set to Defaults

7. Lock/Unlock Config

8. Information

9. Reboot Phone

NETWORK CONFIGURATION

The **Network Configuration** menu allows the access and configuration of the network parameters for the phone.

> After any network configuration changes, you will receive a reboot notice. Changing network parameters requires a reboot of the phone before the new values can be used. Networking parameters can only be changed when the mode is set to **Static**.

Network Mode

The phone is capable of obtaining all of its IP configuration data from a DHCP server. When a DHCP server is not available, static address parameters can be used. Selecting **Static** requires the manual entry of other several network parameters including:

• IP address of the phone

• Default gateway IP address

• Subnet mask

• DNS address

To set the Network Mode:

• Press the 📄 button, then select **1. Network Configuration**, then **1. Network Mode**.

• Scroll the Network Mode options using the **Down** softkey and press **Select** to select a Mode.
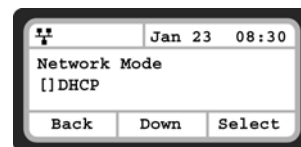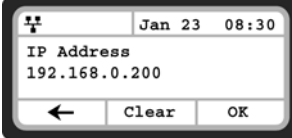
IP Address

By default the phone is configured to use DHCP to automatically assign an IP address and other LAN parameters. Assigning a static address for the Network Mode requires manual entry of an IP address and other parameters stated in the previous section. The phone **requires** a valid available IP address for proper operation.

To set the IP Address:

- Press the 📄 button, then select **1. Network Configuration**, then **2. IP Address**.
- Input the IP Address using the dial pad and press the **OK** softkey to save the changes.
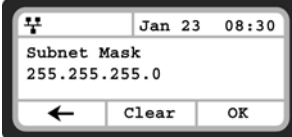
```
┌──────────────────────────┐
│ ⊹⊹           Jan 23  08:30│
│ IP Address               │
│ 192.168.0.200            │
│ ┌─────┬───────┬──────┐   │
│ │  ←  │ Clear │  OK  │   │
│ └─────┴───────┴──────┘   │
└──────────────────────────┘
```

Subnet Mask

Selecting static addressing for the Network Mode requires manual entry of a subnet mask. The IP phone requires a valid subnet for proper operation.

To enter the Subnet Mask:

- Press the 📄 button, then select **1. Network Configuration**, then **3. Subnet**.
- Input the Subnet Mask using the dial pad and press the **OK** softkey to save the changes.
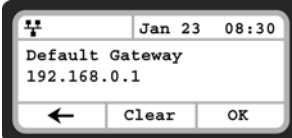
```
┌──────────────────────────┐
│ ⊹⊹           Jan 23  08:30│
│ Subnet Mask              │
│ 255.255.255.0            │
│ ┌─────┬───────┬──────┐   │
│ │  ←  │ Clear │  OK  │   │
│ └─────┴───────┴──────┘   │
└──────────────────────────┘
```

Default Gateway

Selecting static addressing for the Network Mode requires manual entry of a default gateway address. The IP Phone requires a valid default gateway address for proper operation.

To assign the Default Gateway address:

- Press the 📄 button, then select **1. Network Configuration**, then **4. Default Gateway**.
- Input the Default Gateway IP address using the dial pad and press the **OK** softkey to save the changes.
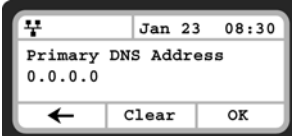
```
┌──────────────────────────┐
│ ⊹⊹           Jan 23  08:30│
│ Default Gateway          │
│ 192.168.0.1              │
│ ┌─────┬───────┬──────┐   │
│ │  ←  │ Clear │  OK  │   │
│ └─────┴───────┴──────┘   │
└──────────────────────────┘
```

Primary DNS Address

The phone uses the primary DNS server to resolve any FQDN entries to an IP address.

To assign the Primary DNS Address:

- Press the 📄 button, then select **1. Network Configuration**, then **5. Primary DNS Address.**
- Input the Primary DNS Address using the dial pad and press the **OK** softkey to save the changes.

```
┌──────────────────────────┐
│ ⊹⊹           Jan 23  08:30│
│ Primary DNS Address      │
│ 0.0.0.0                  │
│ ┌─────┬───────┬──────┐   │
│ │  ←  │ Clear │  OK  │   │
│ └─────┴───────┴──────┘   │
└──────────────────────────┘
```

Secondary DNS Address

Should the primary not respond, the phone will use the secondary DNS for FQDN resolution. This is an optional but recommended setting.

To assign the Secondary DNS Address:

- Press the 📄 button, then select **1. Network Configuration**, then **6. Secondary DNS Address**.

- Input the Secondary DNS Address using the dial pad and press the **OK** softkey to save changes.

```
┌─────────────────────────────┐
│ ⊞        Jan 23   08:30     │
│ Secondary DNS Address       │
│ 0.0.0.0                     │
│                             │
│    ←    │  Clear  │   OK    │
└─────────────────────────────┘
```
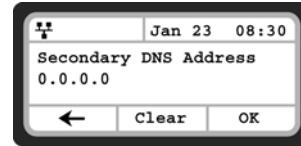
MAC Address

To view the MAC address assigned and used by the phone:

- Press the 📄 button, then select **1. Network Configuration**, then **7. MAC Address**.

- The MAC address of the phone will be visible and should match the one listed on the label on the bottom of the phone.

```
┌─────────────────────────────┐
│ ⊞        Jan 23   08:30     │
│ MAC Address                 │
│ 00:40:5A:00:00:00           │
│                             │
│         │         │         │
└─────────────────────────────┘
```
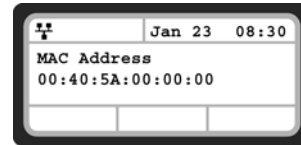
VLAN Settings

VLAN settings define the Ethernet frame priority and VLAN identification in accordance with IEEE 802.1p/Q standards. Separate VLAN tags are assigned for the IP phone PC port and the LAN (voice) port. With a VLAN ID assigned, only frames with the assigned ID are accepted, and all SIP and voice frames sent by the TS-550i include the VLAN ID assigned to the LAN port. TalkSwitch phone systems do not support VLAN tagging so this should not be used with TalkSwitch phone system deployments.

> For proper operation, other network elements (LAN switches and default gateway) must support and be configured with proper VLAN parameters.
>
> VLAN settings are overwritten if CDP is enabled.
>
> Changing the VLAN parameters requires a reboot of the IP phone. When you exit the menu, you will receive a reboot notice. The phone must be rebooted to use the new values.

VLAN Priority (LAN)

The VLAN Priority (LAN) establishes the priority for Ethernet frames from the LAN port including signaling and voice packets. Setting the VLAN ID to zero (0) disables VLAN framing and the IP phone uses only standard Ethernet frames.

To assign VLAN Priority for the LAN (voice) port:

- Press the 📄 button, then select **1. Network Configuration**, then **8. VLAN Settings**.
- Select **1. VLAN Priority (LAN)**.
- Input the VLAN Priority for the LAN port using the dial pad and press the **OK** softkey to save your entry.

```
┌─────────────────────────────┐
│ ⊞        Jan 23   08:30     │
│ VLAN Priority (LAN)[0-7]    │
│ 0                           │
│                             │
│    ←    │  Clear  │   OK    │
└─────────────────────────────┘
```
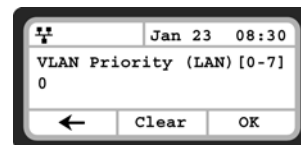
Changing the VLAN Priority requires a reboot of the IP phone. When you leave the menu, you will receive a reboot notice.

The recommended value for VLAN Priority (LAN) port is 5.

To disable VLANs, assign the VLAN ID as zero (0).

VLAN ID (LAN)

The VLAN ID (LAN) assigns the identification for Ethernet frames for the phone LAN port including signaling and voice payloads. Setting the VLAN ID to zero (0) disables the VLAN framing and the IP phone and uses only standard Ethernet frames.

To assign the VLAN ID for the LAN (voice) port:

- Press the 🗎 button, then select **1. Network Configuration**, then **8. VLAN Settings**.
- Select **2. VLAN ID (LAN)**.
- Input the VLAN ID for the LAN port using the dial pad and press the **OK** softkey to save your entry.

```
                    Jan 23  08:30
VLAN ID (LAN)[0-4094]
0

       ←     Clear     OK
```
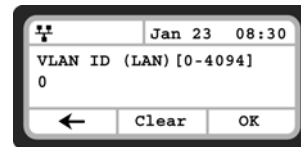
Changing the VLAN ID requires a reboot of the phone. When you exit the menu, you will receive a reboot notice.

To disable VLANs, assign the VLAN ID as zero (0).

VLAN Priority (PC)

The VLAN Priority (PC) establishes the priority for Ethernet frames for the phone PC port. Setting the VLAN ID to zero (0) disables VLAN framing and the phone will use only standard Ethernet frames.

To assign the VLAN Priority for the PC port:

- Press the 🗎 button, then select **1. Network Configuration**, then **8. VLAN**.
- Select **3. VLAN Priority (PC)**.
- Input the VLAN Priority for the PC port using the dial pad and press the **OK** softkey to save your entry.
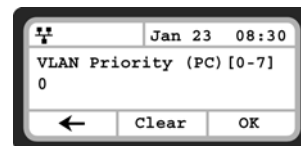
```
                    Jan 23  08:30
VLAN Priority (PC)[0-7]
0

       ←     Clear     OK
```

Changing the VLAN Priority requires a reboot of the phone. When you exit the menu, you will receive a reboot notice.

To disable VLANs, assign the VLAN ID as zero (0).

The recommended value for the VLAN Priority for the PC port is 3.

VLAN ID (PC)

The VLAN ID (PC) assigns the identification for Ethernet frames for the phone PC port. Setting the VLAN ID to zero (0) disables VLAN framing and the phone will only use standard Ethernet frames.

To assign the VLAN ID (PC) port:

• Press the 📄 button, then select **1. Network Configuration**, **8. VLAN Settings**.

• Select **4. VLAN ID (PC)**.

• Input the VLAN ID (PC) port using the dial pad and press the **OK** softkey to save your entry.

```
┌─────────────────────────────┐
│ ⊹          Jan 23  08:30    │
│ VLAN ID (PC)[0-4094]        │
│ 0                           │
│                             │
│    ←    │  Clear  │   OK    │
└─────────────────────────────┘
```
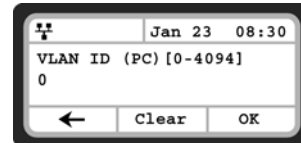
> Changing the VLAN ID (PC) requires a reboot of the phone. When you exit the menu, you will receive a reboot notice.
>
> To disable VLANs, assign the VLAN ID as zero (0).

CDP

The TS-550i can be assigned to employ the Cisco® Discovery Protocol to determine if VLANs are to be used and the associated VLAN ID. The CDP selection displays only if **function_cdp** is enabled in the configuration file. As a default, the CDP parameter is disabled since TalkSwitch does not use VLAN tagging.

To set the CDP status:

• Press the 📄 button, then select **1. Network Configuration**, then **9. CDP**.

• Select the desired softkey (**Yes** or **No**) to enable or disable CDP.

```
┌─────────────────────────────┐
│ ⊹          Jan 23  08:30    │
│ Enable CDP?                 │
│ Current setting is 'No'     │
│                             │
│   Yes   │         │   No    │
└─────────────────────────────┘
```
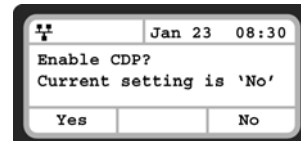
> Changing the CDP status requires a reboot of the phone. When you leave the menu, you will receive a reboot notice.
>
> When CDP is enabled, VLAN settings are overwritten.

SIP CONFIGURATION

The **SIP Configuration** section contains parameters related to SIP accounts, line appearance, and other paramters that allow the phone to register and, if required, subscribe for the line appearance with the appropriate SIP server or PBX.

Lines are assigned to the phone's flexible buttons in consecutive order from the first button. For each line, the following parameters are available:

- Call Server IP address
- Authorization ID and password
- Line type
- Special line attributes

As a default, the maximum number of lines is two. When the IP phone requires more than two (2) lines, use the Web Manager or configuration file to change the number of lines and line parameters.

> At a minimum, assign the first line button as an appearance of the user's line. For features where the IP phone uses one-button line access such as Speed Dial, the IP phone uses the first line button for the call.

SIP Configuration, Line Parameters

Assign parameters in this section for each SIP line.

SIP Server Address

The SIP Server Address is the IP address or FQDN of the SIP server or PBX. Different SIP servers can be defined for each line.

To assign the Call Server address:

- Press the 📄 button, then select **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **1. SIP Server Address**.
- Input the SIP Server Address or FQDN using the dial pad and press the **OK** softkey to save your entry.
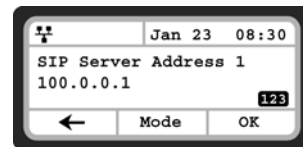
> Changing the SIP Server Address requires a reboot of the phone. When you exit the menu, you will receive a reboot notice.
>
> To enter alphanumeric characters select the **Mode** softkey.

Proxy Port

The Proxy Port defines the UDP port number employed for SIP signaling transport. In common practice, the port number *5060* is used.

To change the Proxy Port number:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **2. Proxy Port**.
- Input the Proxy Port number using the dial pad and press the **OK** softkey to save your entry.

```
┌─────────────────────────┐
│ ⁑          Jan 23  08:30│
│ Proxy Port              │
│ 5060                    │
│                         │
│    ←     Clear     OK   │
└─────────────────────────┘
```
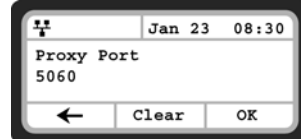
Changing the Proxy Port requires a reboot of the phone. When you exit the menu, you will receive a reboot notice.

Display Name

When assigned, the Display Name is used in SIP calls as the Caller ID name.

To enter the Display Name:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **3. Display Name**.
- Input the Display Name using the dial pad and press the **OK** softkey to save your entry.

```
┌─────────────────────────┐
│ ⁑          Jan 23  08:30│
│ Enter Display Name      │
│ Joe Sm                  │
│                    abc  │
│    ←     Mode      OK   │
└─────────────────────────┘
```

To enter alphanumeric characters, select the **Mode** softkey.

User Name

A User Name (extension or phone number) is required for proper operation and must match the user ID or account assigned in the SIP server. This is usually the number dialed to reach this line on the phone.

To enter the User Name:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **4. User Name**.

- Input the Name using the dial pad and press the **OK** softkey to save your entry.

```
[icon]              Jan 23   08:30
User Name
114
                              abc
     ←        Mode        OK
```
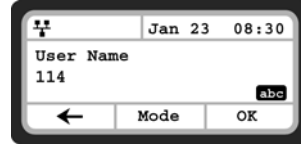
To enter alphanumeric characters, select the **Mode** softkey.

Authentication User Name

Authentication of the line with the SIP call server requires an Authentication User Name.

To assign the Authentication User Name:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **5. Auth. Username**.
- Input the Authentication User Name, as is specifed in the SIP server, using the dial pad and press the **OK** softkey to save your entry.

```
[icon]              Jan 23   08:30
Auth. Username
001a7e114
                              123
     ←        Mode        OK
```
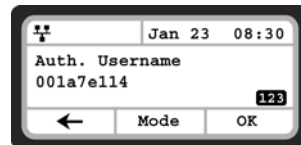
To enter alphanumeric characters, select the **Mode** softkey.
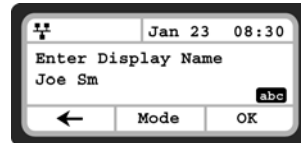
Authentication Password

Authentication of the line with the SIP call server requires an Authentication Password in conjunction with the User Name.

To assign the Authentication Password:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **6. Auth. Password**.
- Input the Authentication Password using the dial pad and press the **OK** softkey to save your entry.

```
[icon]              Jan 23   08:30
Auth. Password
******
                              123
     ←        Mode        OK
```
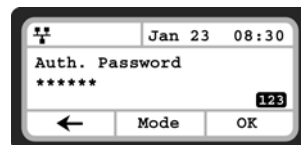
To enter alphanumeric characters, select the **Mode** softkey.

Registration Status

The status of the line registration with the SIP call server can be viewed from this menu. The status is displayed as **OK**, **NOK** (Not registered) or **undefined** (not assigned).

To view the Registration status for a line:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **7. Reg. Status** to view the status.
- The status is actually shown next to the menu title.

```
                   Jan 23  08:30
7.Reg Status: OK
8.Line Type

  Back      Down     Select
```
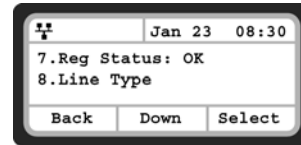
Line Type

Each line represents a SIP account in the SIP server. A line must have a Line Type assignment. The three line types available are private, shared or BLA (Bridged Line Appearance) and DSS (Direct Station Selection). A private line generally appears on line buttons of one phone but may appear at multiple phones as a Multiple Line Appearance (MLA). While incoming calls on a private line ring at all phones with an appearance, an active or held private line call is accessible only to the associated phone. In addition, the status of an active or held private line call displays only at the associated phone. Only the active user may transfer or conference calls on a private line.

A BLA appears at line buttons of more than one phone. All phones with an appearance can access incoming and held calls on the BLA and receive status information for the call. Note for proper operation, assign the line as a BLA in the call server as well as the IP Phone.

A DSS line incorporates three functions associated with the needs of an answering position:

- DSS — while the line is idle, the button calls the associated extension.
- BLF — the Busy Lamp Field LEDs of the line button display the line status.
- Call Coverage — incoming calls on the line are answered using the button.

To assign the Line Type:

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **8. Line Type**.
- Select the type for the line using the **Down** softkey and press the **Select** softkey to save the selection.

```
                   Jan 23  08:30
Line Type
[]Private
  Shared
  Back      Down     Select
```
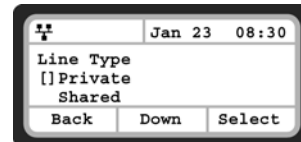
> Changing the Line Type requires a reboot of the IP phone. When you exit the menu, you will be prompted to reboot the phone.

Extension for DSS Line

A DSS Line requires entry of the associated extension number. Note do not assign a DSS extension number for a private or shared line type.

To assign an extension number for a DSS line,

- Press the 📄 button, then **2. SIP Configuration**, then **1. Line Configuration**.
- Enter the line button number or move the cursor using the **Down** softkey and press the **Select** softkey to select a line.
- Select **9. Extension for key**.
- Input the extension number for the DSS line using the dial pad and press the **OK** softkey to save your entry.

```
                      Jan 23  08:30
Enter Extension for PFK
1234
                              123
        ←      Mode      OK
```
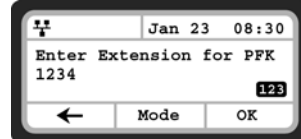
> Extension numbers cannot be assigned for a private or shared lines.

SIP Configuration, General Parameters

Parameters in this section are required for the overall SIP operation of the phone.

Outbound Proxy Address

If required, an Outbound Proxy Address can be defined so that the phone sends all SIP requests to the proxy instead of the SIP server configured in the section *SIP Server Address* on page 14. The address can be an IP address or FQDN.

To assign an Outbound Proxy Address

- Press the 📄 button, then select **2. SIP Configuration**, then **2. Outbound Proxy Addr.**
- Input the Outbound Proxy Address using the dial pad and press the **OK** softkey to save your entry.

```
                      Jan 23  08:30
Outbound Proxy Addr.
100.1.1.1
                              123
        ←      Mode      OK
```
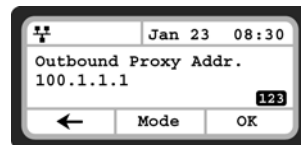
> To enter alphanumeric characters select the **Mode** softkey.
>
> Changing the Outbound Proxy Address requires a reboot of the IP phone.

Outbound Proxy Port

With the Outbound Proxy Server defined, the associated port must be defined as the Outbound Proxy Port. All SIP requests are sent to the assigned port instead of the proxy port configured in the section *Proxy Port* on page 15.

To assign the Outbound Proxy Port:

- Press the 📄 button, then select **2. SIP Configuration**, then **3. Outbound Proxy Port**.

- Input the Outbound Proxy Port using the dial pad and press the **OK** softkey to save your entry.
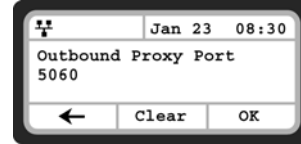
> Changing the Outbound Proxy Port requires a reboot of the IP phone.

Backup Proxy Address

When using an outbound proxy, a backup proxy can be defined for use should the primary proxy fail to respond. The Backup Proxy Address can be an IP address or FQDN.

To assign a Backup Proxy Address:

- Press the 🖹 button, then select **2. SIP Configuration**, then **4. Backup Proxy Address**.
- Input the Backup Proxy Address using the dial pad and press the **OK** softkey to save your entry.

> Changing the Backup Proxy Address requires a reboot of the IP phone.
>
> To enter alphanumeric characters select the **Mode** softkey.

Backup Proxy Port

The Backup Proxy Port defines the port used when sending SIP messages to the backup proxy defined in the section *Backup Proxy Address* on page 19.

To assign the Backup Proxy Port:

- Press the 🖹 button, then select **2. SIP Configuration**, then **5. Backup Proxy Port**.
- Input the Backup Proxy Port using the dial pad and press the **OK** softkey to save your entry.
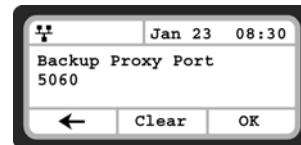
> Changing the Backup Proxy Port requires a reboot of the IP phone.

Local UDP Port

The Local UDP Port defines the port, normally 5060, that the phone uses to send and receive SIP signaling packets. In some instances, particularly when behind a firewall, port 5060 may already be in use or problematic with SIP aware routers.

To change the Local UDP Port:

- Press the 🖹 button, then select **2. SIP Configuration**, then **6. Local UDP Port**.

- Input the Local UDP Port using the dial pad and press the **OK** softkey to save your entry.

```
┌──────────────────────────┐
│ ⁝⁝           Jan 23  08:30│
│ Local UDP Port           │
│ 5060                     │
│                          │
│    ←   │  Clear  │   OK   │
└──────────────────────────┘
```

Changing the Local UDP Port requires a reboot of the IP phone.

RTP Start Port

When a SIP call is established, Real-Time Transport Protocol (RTP) packets transport media (voice). The default port used for RTP packets is 23000.

To change an RTP Start Port:

- Press the 🗐 button, then select **2. SIP Configuration**, then **7. RTP Start Port**.
- Input the RTP Start Port using the dial pad and press the **OK** softkey to save your entry.

```
┌──────────────────────────┐
│ ⁝⁝           Jan 23  08:30│
│ RTP Start Port           │
│ 23000                    │
│                          │
│    ←   │  Clear  │   OK   │
└──────────────────────────┘
```

Changing the RTP Start Port requires a reboot of the IP phone.

Proxy Registration

If Proxy Registration is set to **Yes**, the phone will register with the appropriate SIP or proxy server upon initial power-up, during a reboot and at periodic intervals based on the timer defined by the server.

To enable Proxy Registration:

- Press the 🗐 button, then select **2. SIP Configuration**, then **8. Proxy Registration**.
- To enable registration, press the **Yes** softkey. To disable SIP registration, press the **No** softkey.

```
┌──────────────────────────┐
│ ⁝⁝           Jan 23  08:30│
│ Proxy Registration       │
│ Current setting is 'Yes' │
│                          │
│   Yes  │         │   No   │
└──────────────────────────┘
```

Registration Expiry

To ensure a regular connection, the phone periodically re-registers with the proxy or SIP server. Unless defined by the host server during registration, the Register Expires timer determines the interval between registration attempts and can be set from 0 to 86400 seconds. The default is 3600 seconds (1 hour).

To modify the Registration Expires timer:

- Press the 🗐 button, then select **2. SIP Configuration**, then **9. Register Expires**.
- Input the registration expiration time using the dial pad and press the **OK** softkey to save your entry.

```
┌──────────────────────────┐
│ ⁝⁝           Jan 23  08:30│
│ Registration Expiry (s)  │
│ 3600                     │
│                          │
│    ←   │  Clear  │   OK   │
└──────────────────────────┘
```
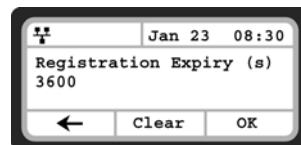
Voicemail URL

The Voicemail URL is used to access the voicemail of a host service or PBX. If not configured by the host service or PBX, then it should be configured accordingly.

To assign the Voicemail URL:

- Press the 🗎 button, then select **2. SIP Configuration**, then **10. Voicemail URL**.
- Input the Voicemail URL using the dial pad and press the **OK** softkey to save your entry.
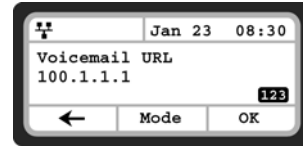
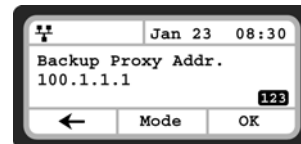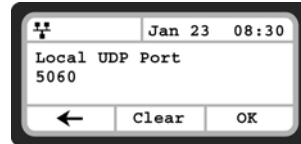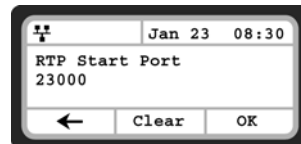> To enter alphanumeric characters, select the **Mode** softkey.

Domain

The Domain specifies the domain for SIP service when the provider desires to use a specific SIP domain for the phone.

To assign the Domain:

- Press the 🗎 button, then select **2. SIP Configuration**, then **11. Domain**.
- Input the Domain name using the dial pad and press the **OK** softkey to save your entry.

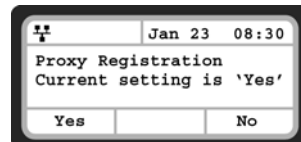> To enter alphanumeric characters, select the **Mode** softkey.

STUN Server

When the phone is located behind NAT and a STUN server is required, enter a STUN server IP address or FQDN to enable this feature that helps traverse firewalls in limited conditions.

- To assign a STUN server:
- Press the 🗎 button, then select **2. SIP Configuration**, then **12. Stun Server**.
- Input the Stun Server using the dial pad and press the **OK** softkey to save your entry.

> To enter alphanumeric characters, select the **Mode** softkey.
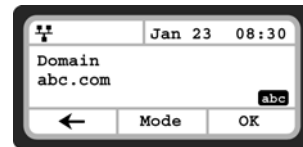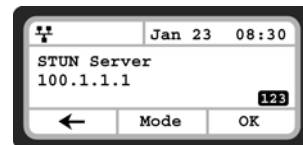
PHONE SETTINGS

Under the **Phone Settings** menu item, the user parameters listed below can be changed.

— LCD Contrast
— Ring Settings
— Disable Ringer
— Headset Auto Mode
— Programmable/Flexible Key Settings
— Time Configuration
— Firmware Update
— Speed Dial Number
— Key Tone
— Language
— Backlight
— *Bluetooth* (Optional)

LCD Contrast

The contrast of the LCD is adjustable for best viewing angle.

To adjust the LCD contrast:

- Press the 📄 button, select **3. Phone Settings** then **1. LCD Contrast**.

- Press the **Down** softkey to decrease the contrast, or press the **Up** softkey to increase the contrast.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.
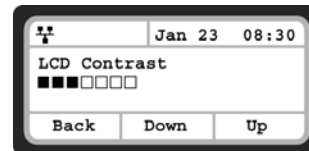
Ring Settings

The IP phone has 9 ring tones and a no ring (*Disable Ringer*) option for incoming call notification. There is also the option to assign each phone book record one of the ring tones for inbound calls. The *Default Ring Tone* is used when a ring tone is *Set as Default* or not defined for a line or phone book record.

In quieter environments, it might be useful to delay the ring signal on incoming calls. Ringing can be delayed by up to 10 seconds. The LED light associated to your extension will flash immediately for all incoming calls.

Default Ring Type
To change the Default Ring Type for the IP phone:

- Press the 📄 button, then select **3. Phone Settings** then **2. Ring Settings**

- Select **1. Default Ring Type**.

- Scroll through Ring Types using the **Down** softkey. Press the **Play** softkey to hear the selected tone.

- Press the **Select** softkey to change to the selected Ring Type.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.
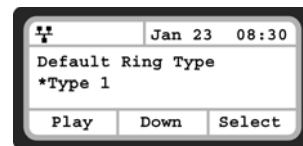
Line Ring Setting
To adjust the Ring Type for a line:

- Press the 📄 button, then select **3. Phone Settings** then **2. Ring Settings**.

- Dial the line number plus one (2 for Line 1 or 3 for Line 2), or move the cursor to **Line *n* Configuration** using the **Down** softkey and press the **Select** softkey. The value of *n* is the line button number.

- Press the ⌁ digit, or move the cursor to **1. Ring Type** using the **Down** softkey and press the **Select** softkey.

- Select the Ring Type using the **Down** softkey. Press the **Play** softkey to hear the selected tone. The *Disable Ringer* selection turns the ringer off for incoming calls on the line. The *Set as Default* uses the Default Ring Type for incoming calls on the line as specified in the previous *Default Ring Type* section.

```
                Jan 23   08:30

Ring Type (2)
*Type 3

   Play      Down     Select
```

- Press the **Select** softkey to save the selection.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.
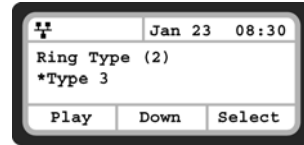
Delayed Ring

The phone can delay when the audible ring tone is played for incoming calls by up to 10 seconds. To configure the Delayed Ring option:

- Press the 📄 button, then select **3. Phone Settings** then **2. Ring Settings**.

- Move the cursor to **Line 1 Settings** using the **Down** softkey and press the **Select** softkey. Repeat for Line 2.

- Press ⌁ or move the cursor to **2. Delayed Ring Timer** using the **Down** softkey and press the **Select** softkey.

- Enter the delay time as 0 to 10 seconds in 1-second increments. 0 provides no delay; the ring signal is immediate.

- Press the **OK** softkey to save the delayed ring setting.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.

```
                Jan 23   08:30

Delayed Ring Timer (1)
0

    ←       Clear       OK
```
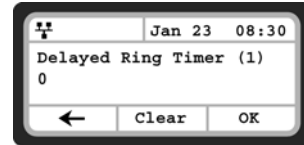
Disable Ringer

The TS-550i can be programmed not to ring when an incoming call is received. It will still light up the LCD, light up the Incoming Call Indicator and show the Caller ID.

To disable the ringer:

- Press the 📄 button, then select **3. Phone Settings**, then **3. Disable Ringer**

- Press the **Yes** softkey to turn the ringer off, or press the **No** softkey to leave the ringer enabled.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.

```
                Jan 23   08:30

Disable Ringer
Current setting is 'No'

   Yes                  No
```
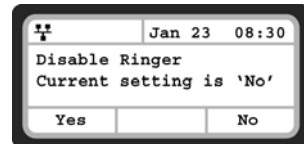
Headset Auto Mode

The TS-550i supports the use of headsets that have a standard RJ22 jack. With Headset Auto Mode enabled, all calls automatically use the headset when engaging lines, redial, speed dials etc.

To enable Headset Auto Mode:

- Press the 📄 button, then select **3. Phone Settings,** then **4. Headset Auto Mode**.

- Press the **On** softkey to enable the Headset Auto Mode or press the **Off** softkey to disable the Headset Auto Mode.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.

```
                Jan 23   08:30

Headset Auto Mode
Current setting is 'Off'

    On                 Off
```
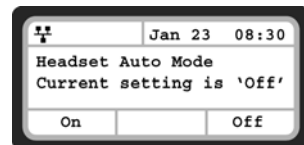
Flexible Key Setting

The flexible keys can be programmed with to access one of several functions. They include Line Appearance, Extension Appearance, Queue Appearance, Phone Book access, System and Personal Speed Dial, Park, Unpark, Call Pickup (any or specific extension), Intercom Page and Overhead Page. These keys are configured via the TalkSwitch management software except for setting a key for Speed Dial use. This can be programmed via the phone interface or phone's web interface.

Note: Local settings will be overidden by the TalkSwitch settings when a configuration file is downloaded to the phone if the key was not configured by the administrator as *User Defined*.

Time Configuration

Within the **Time Configuration** menu, the IP Address or FQDN of the desired Simple Network Time Protocol (SNTP) server and the local time zone are defined. In addition, Daylight Savings Time (DST) is enabled. These settings are all automatically configured by the TalkSwitch phone system and do not require manual configuration.

Speed Dial Number

The TS-550i phone includes a Directory Phone Book of Speed Dial numbers that supports up to 80 entries. Each phone book record includes a speed dial number consisting of two (2) digits. Dialing the speed dial number (00–79) then pressing the **Dial** softkey, places a call using the contact information from the associated phone book record.

To enable/disable Speed Dial Number operation:

- Press the 📄 button, then select **3. Phone Settings**, then **8. Speed Dial Number**.

- Press the **On** softkey to enable the Speed Dial Number, or press the **Off** softkey to disable the Speed Dial Number.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.
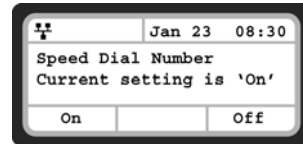
> When enabled**,** dialing an empty Speed Dial Number terminates the call and the LCD will show **Disconnected**.

Key Tone

If desired, a tone can be played out when a button on the phone is pressed.

To enable/disable the Key Tone:

- Press the 📄 button, then select **3. Phone Settings**, then **9. Key Tone**.

- Press the **On** softkey to enable the Key Tone, or press the **Off** softkey to disable the Key Tone.

- To configure another parameter, press the **Back** softkey to continue or press the 📄 button to exit the configuration menu.
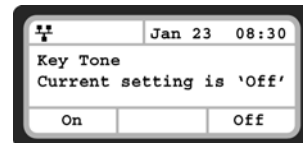
## Language

The TS-550i ships with 3 supported languages — English, Spanish and French. The default language is English. Languages are configured in the TalkSwitch management software for the extension. Please contact your administrator.

Backlight

The LCD on the TS-550i supports a backlight option. The option can be adjusted to have the backlight remain on after any phone activity for a range of 10 seconds to 3 minutes. There is also the option to have it always on. The default setting is 10 seconds.

To adjust the backlight setting:

- Press the 📄 button.
- Press **3** to access the **Phone Settings** menu.
- Press **1 1** to access the **Backlight** menu.
- Use the **Up** and **Down** softkeys to see other options, then press the **OK** softkey to enable the new setting.
- Press the 📄 button to exit the configuration session.

Bluetooth (only visible if optional *Bluetooth* module is installed)

The TS-550i phone can be equipped with an optional *Bluetooth* module. With the module installed, up to 5 *Bluetooth* headsets can be paired with the phone. When using a good quality headset, you will be able to control the On/Off hook status of the phone using the headset. The range of a *Bluetooth* headset used with the TS-550i is approximately 30 feet (10m). Range and quality will vary depending on the obstacles and other wireless devices in close proximity.

- Headsets must support *Bluetooth* v1.2 or higher.
- Stereo headsets are **not supported**.
- We recommend headsets with a built-in volume control.
- We recommend headsets with echo cancellation technology to ensure optimum quality.
- If used in noisy environments, a headset with noise cancellation technology is also recommended.

Pairing a *Bluetooth* headset

A *Bluetooth* headset must be paired with the TS-550i before it can be connected (activated). Up to five (5) headsets may be paired with the phone at one time. Only one headset can be used at a time.

A *Bluetooth* headset must be paired with the TS-60b *Bluetooth* module before it can be connected (activated). Up to five (5) headsets may be paired with the TS-550i at one time. Only one headset can be used at a time. Once paired, the phone can be placed on and off hook using a compatible *Bluetooth* headset.

To pair and connect a new headset with the TS-550i:

- Press the 📄 button.
- Press **3** to access the **Phone Settings** menu.
- Press **1 2** to access the **Bluetooth** menu.
- Press **1** to access **Headset Management**.
- Press the **Search** softkey. The IP phone will search for nearby *Bluetooth* headsets.

- Select a *Bluetooth* headset from the list of headsets using the **Down** softkey, and select the **Select** softkey.
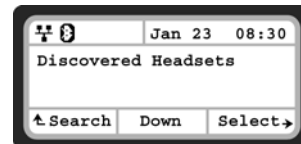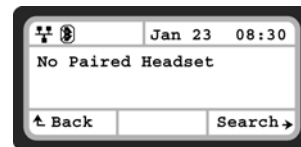
- When the **Enter PIN Code** message displays, input the PIN associated with the headset and press the **OK** softkey. If a valid PIN is entered, it will show **Headset Connected**. Please refer to your headset's user guide for the PIN code.

- Press the 📄 button to exit the configuration session.

Bluetooth Headset Status Indicators

Bluetooth icon, indicates the optional *Bluetooth* module is properly installed with no headsets paired to the phone. When blinking rapidly, the TS-550i is searching or attempting to pair with a headset.

Bluetooth paired icon, indicates one or more (maximum 5) headsets are paired with the module but none are active. When blinking rapidly, the TS-550i is attempting to pair or connect a headset.

Bluetooth connected icon, indicates a headset is connected to the TS-550i. When blinking rapidly, the TS-550i is searching or attempting to pair or disconnect a headset. When blinking slowly, the *Bluetooth* headset is in use.

Connecting or Disconnecting a Paired Headset

When one or more headsets are paired with the TS-550i phone, the headset must be connected (activated) prior to use. When it is desired to change the active headset to an alternate headset, the presently active headset must be disconnected (deactivated) prior to connecting the new headset.

The following procedure describes the steps required to connect or disconnect a headset that is already paired to the TS-550i.

To connect a paired headset and disconnect an active headset:

- Press the 📄 button.
- Dial **3** to access **3. Phone Settings**, then dial **12** to access **12. Bluetooth**.
- Dial **1** to access **1. Headset Management** to display a list of paired headsets.
- Select a *Bluetooth* headset from the list of paired headsets using the navigation keys.
- Press the **Connect** softkey to disconnect the current headset and connect to the alternate headset.
- Press the 📄 button to exit the menu.

Deleting a Headset from the Paired List

A *Bluetooth* headset can be removed from the Paired list. This is most useful when replacing an older or lost headset with a new one.

To remove a headset from the Paired list:

- Press the 📄 button.
- Dial **3** to access **3. Phone Settings**, then dial **12** to access **12. Bluetooth**.
- Dial **1** to access **1. Headset Management** to display a list of paired headsets.
- Scroll through the list using the navigation keys to the *Bluetooth* headset you wish to remove. DO NOT press the **Select** softkey.
- Press the **Right** navigation button, then press the **Delete** softkey to remove this headset from the list of paired headsets.
- Press the 📄 button to exit the menu.

Bluetooth Module Information

The *Bluetooth* module has a universally unique identifier assigned to it. Example: 00:22:A5:21:AA:C1.

To view the UUID for the *Bluetooth* module installed in a TS-550i:

- Press the 📄 button.
- Dial **3** to access **3. Phone Settings**, then dial **12** to access **12. Bluetooth**.
- Dial **2** to access **2. Local Device Info.** to display the UUID.
- Press the 📄 button to exit the menu.

Connect Mode

The *Bluetooth* module supports a Connect Mode that can, in some cases, save or reduce battery consumption on headsets. By default, the setting is **Off**. If enabled, there may be connectivity issues with certain headsets. If this is the case, please ensure this setting is set to **Off**.

To enable/disable the Connect Mode:

1. Deactivate the headset by turning it off. Leave powered off for 2-3 minutes so feature can be enabled or disabled.
2. Press the 📄 button.
3. Dial **3** to access **3. Phone Settings**, then dial **12** to access **12. Bluetooth**.
4. Dial **3** to access **3. Connect Mode**.
5. Press the **On** or **Off** softkey.
6. Press the 📄 button to exit the menu.

CALL PREFERENCES

Call Preferences define various call handling features of the phone.

Do Not Disturb

When the DND (Do Not Disturb) feature is active, the phone does not notify the user of an incoming call. The phone system configuration determines routing of the incoming call while your phone is in DND mode.

Do Not Disturb is easiest enabled and disabled by pressing the 🖐 button. When enabled, the LED on the key will be on. The LCD will also show a **DnD enabled** message.

An alternative method to toggle DND on or off is via the **Do Not Disturb** menu under **Call Preferences**.

To enable the DND operation:

- Press the 📄 button, then select **4. Call Preferences**, then **1. Do Not Disturb**.
- Press the **On** softkey to enable DND, or press the **Off** softkey to disable DND.
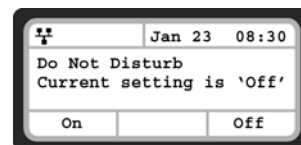
Call Waiting

With Call Waiting configured for a TalkSwitch extension, notification of a new incoming call is indicated via several methods. The dedicated extension button flashes to indicate the new call, and an optional beep tone is delivered over the existing conversation. In addition, the LCD displays the incoming Caller ID during the notification.

If Call Waiting is disabled, the phone will return a busy status to the phone system and it will handle the call accordingly. By default, Call Waiting is enabled on all TS-550i phones.

To enable/disable Call Waiting:

- Press the 📄 button, then select **4. Call Preferences**, then **2. Call Waiting**.
- Press the **On** softkey to enable Call Waiting, or press the **Off** softkey to disable Call Waiting.
- Press the **Back** softkey or the 📄 button to exit the menu.

```
┌──────────────────────────┐
│ ⁞⁞          Jan 23  08:30 │
│ Call Waiting             │
│ Current setting is 'On'  │
│                          │
│    On            Off     │
└──────────────────────────┘
```

Call Waiting Tone

While in a call, the phone can provide a tone over the existing conversation to indicate a call waiting. To receive the tone, Call Waiting must also be enabled.

To enable/disable Call Waiting Tone:

- Press the 📄 button, then select **4. Call Preferences**, then **3. Call Waiting Tone**.
- Press the **On** softkey to enable Call Waiting Tone, or press the **Off** softkey to disable Call Waiting Tone.
- Press the **Back** softkey or the 📄 button to exit the menu.

```
┌──────────────────────────┐
│ ⁞⁞          Jan 23  08:30 │
│ Call Waiting Tone        │
│ Current setting is 'On'  │
│                          │
│    On            Off     │
└──────────────────────────┘
```

Call Hold Ringback

With Call Hold Ringback enabled, the phone rings if the first call is placed on hold then a second call is taken and terminated by hanging up the phone. It is a reminder that there is still a call on hold.

To enable/disable Call Hold Ringback:

- Press the 📄 button, then select **4. Call Preferences**, then **4. Call Hold Ringback**.
- Press the **On** softkey to enable hold ringback, or press the **Off** softkey to disable hold ringback.
- Press the **Back** softkey or the 📄 button to exit the menu.

```
┌──────────────────────────┐
│ ⁞⁞          Jan 23  08:30 │
│ Call Hold Ringback       │
│ Current setting is 'On'  │
│                          │
│    On            Off     │
└──────────────────────────┘
```
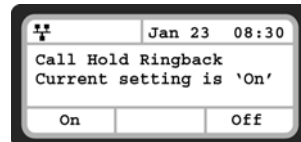
Message Waiting Tone

When the notification of a new message is received, the Message LED flashes. As an option, a brief "stutter" dial tone will provide an audible indication for a message waiting when going off hook to place calls.

To enable/disable stutter dial tone for a message wait indication:

- Press the 📄 button, then select **4. Call Preferences**, then **5. Msg Waiting Tone**.

- Press the **On** softkey to enable stutter dial tone, or press the **Off** softkey to disable stutter dial tone.
- Press the **Back** softkey or the 🖹 button to exit the menu.

```
┌─────────────────────────────┐
│ ⁙          Jan 23   08:30  │
│ Msg Waiting Tone            │
│ Current setting is 'On'     │
│                             │
│     On            Off       │
└─────────────────────────────┘
```
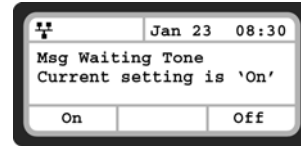
Auto Answer

For incoming calls, the phone can automatically engage the speakerphone or headset.

To enable/disable Auto Answer:

- Press the 🖹 button, then select **4. Call Preferences**, then **6. Auto Answer**.
- Press the **On** softkey to enable Auto Answer, or press the **Off** softkey to disable Auto Answer.
- Press the **Back** softkey or the 🖹 button to exit the menu.

```
┌─────────────────────────────┐
│ ⁙          Jan 23   08:30  │
│ Auto Answer                 │
│ Current setting is 'Off'    │
│                             │
│     On            Off       │
└─────────────────────────────┘
```
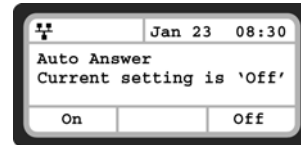
Anonymous Call Block

The TS-550i phone can block incoming calls with an anonymous caller ID.

To enable/disable Anonymous Call Blocking:

- Press the 🖹 button, then select **4. Call Preferences**, then **7. Anonymous Call Block**.
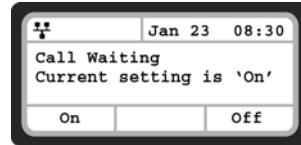- Press the **On** softkey to enable or press the **Off** softkey to disable Anonymous Call Blocking.
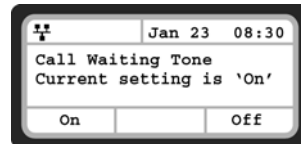- Press the **Back** softkey or the 🖹 button to exit the menu.

```
┌─────────────────────────────┐
│ ⁙          Jan 23   08:30  │
│ Anonymous Call Block        │
│ Current setting is 'Off'    │
│                             │
│     On            Off       │
└─────────────────────────────┘
```
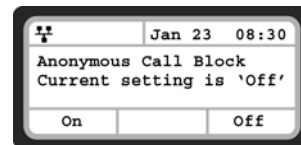
Access Code Prefix

The TS-550i phone can automatically prepend digits* to a phone number dialed from the Missed Calls log, Received Calls log or Phone Book. For example, you should program a Hunt Group (ie. 9) if you normally dial **9** to reach an outside line. This will ensure that calls placed from the Call Logs or Phone Book are properly dialed out of the system.

To program an Access Code:

- Press the 🖹 button, then select **4. Call Preferences**, then **8. Access Code Prefix**.
- Enter the digits that need to be prepended to all numbers dialed from the Call Logs or Phone Book.
- Press the **OK** softkey when complete.

Note: If you use Direct Line Access (No Hunt Group required to place calls), then nothing needs to be programmed.

```
┌─────────────────────────────┐
│ ⁙          Jan 23   08:30  │
│ Access Code Prefix          │
│                             │
│     ←      Mode      OK     │
└─────────────────────────────┘
```
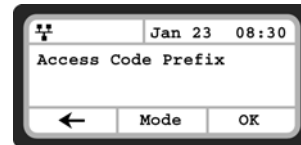
* There is a configurable parameter in the web interface under **Call Preferences** to change the length of a number dialed before the phone will insert the Access Code. The default length is 6. Any numbers stored in a log or phone book will have the Access Code prepended if 6 or more digits in length.

DIRECTORY

Phone Book

The phone supports 80 contacts that can be entered via the phone or via the web interface. Each contact can have a ring type assigned. When a call is received from the contact, the specified ring signal is used to override the default ring type.

The **Phone Book** menu is accessed through the **LCD** menu or when assigned, a Phone Book flexible button. From the Phone Book menu, records may be added, edited, deleted or searched.

Adding a Phone Book Record

To simplify the addition of many contacts to the Phone Book, a comma delimited contact list file can be uploaded directly to the phone using the web interface.

Loading a Contact List using a Web Browser

Note: The contact list must use the following format:
SpeedNumber,Name,PhoneNumber,Information (optional)

Example:

SpeedNumber,Name,PhoneNumber,Information
1,Joe Smith,6135551234,Head Office
2,Dave Jones,6135552222,Ottawa
3,Samantha Davies,8883331234
4,Scott Duff,8004441111,sduff@abccompany.com

Important!
- The file *must* be saved in .csv format.
- The phone number field cannot contain spaces, dashes, decimals or other characters. Only use numbers.
- If a single digit is specified under the SpeedNumber column, then it will automatically be prepended with '0'. Example: 1 will be stored as speed dial 01.
- The number of entries cannot exceed 80.
- An optional header can be included at the beginning of the csv file as shown above. It is not required.

To load a csv file to a phone from a PC located on the same LAN as the phone:

- Log in to the phone via a web browser. To check the IP address of the phone, press the 📄 button, then select **8. Information**. The IP address of the phone will be visible. Write it down.
- From a web browser, enter the IP address of the phone in the address bar. Example: http://192.168.1.111
- Click on **Login**.
- Enter the username and password as required. User name: *admin*, Password: *23646*.
- Once logged in, select **Phone Book** from the left navigation area.
- Click on the **Browse...** button and locate the csv file for upload to the phone.
- Once selected, click the **Upload** button. Once uploaded, the new data should be visible in the Phone Book table.
- Check all entries to ensure they are properly imported. If the file did not upload, please check the file contents to ensure no conditions exist that might cause the phone to reject the file.

To add entries to the Phone Book using the telephone interface

• Press the 📄 button, then select **5. Directory**, then **1. Phone Book**.

• Press the **Add** softkey.

• Enter a name for the new contact, then press the **OK** softkey.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Name   abc  │
│ Sammy                    │
├─────────────────────────┤
│     ←    │  Mode  │  OK  │
└─────────────────────────┘
```
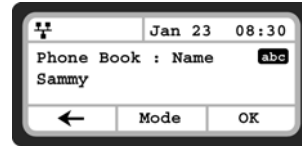
• Enter a phone number, then press the **OK** softkey.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Number 123  │
│ 5555598                  │
├─────────────────────────┤
│     ←    │  Mode  │  OK  │
└─────────────────────────┘
```
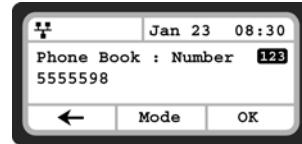
• Select the Ring tone to use when receiving a call from this contact, then press the **Select** softkey.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Ring Tone   │
│ Ring Tone 3              │
├─────────────────────────┤
│  Play  │  Down  │ Select │
└─────────────────────────┘
```
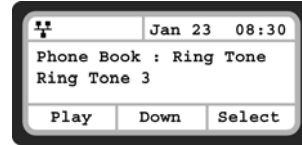
• Enter a Speed Number (00–79), then press the **OK** softkey.

The phone adds the new contact to the Phone Book and returns to the Phone Book list.
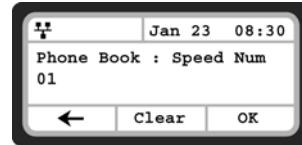
```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Speed Num   │
│ 01                       │
├─────────────────────────┤
│     ←    │  Clear │  OK  │
└─────────────────────────┘
```

> To enter alphanumeric characters, select the **Mode** softkey.
>
> If no ring tone is defined for a Phone Book entry, the default ring tone is used.

Editing a Contact

If logged in via the web interface, then click the **Modify** button next to the contact you wish to edit, then change the information as required and save.

To edit a Phone Book contact from the phone:

• Press the 📄 button, then select **5. Directory**, then **1 .Phone Book**.

• Select a contact to edit using the **Up** and **Down** navigation keys.

• Press the **Right** navigation button to scroll to the additional softkey options.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book               │
│ >[14]Sam.7744            │
├─────────────────────────┤
│  Edit  │  Add   │ Delete │
└─────────────────────────┘
```

• Press the **Edit** softkey.

• If required, edit the name of the contact and press the **OK** softkey.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Name   abc  │
│ Tom                      │
├─────────────────────────┤
│     ←    │  Mode  │  OK  │
└─────────────────────────┘
```

• If required, edit the phone number and press the **OK** softkey.

```
┌─────────────────────────┐
│ ⠿           Jan 23  08:30│
├─────────────────────────┤
│ Phone Book : Number 123  │
│ 5555598                  │
├─────────────────────────┤
│     ←    │  Mode  │  OK  │
└─────────────────────────┘
```

- Select the Ring Tone to use when receiving a call from this contact and press the **OK** softkey.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Phone Book : Ring Tone          │
│ Ring Tone 3                     │
│                                 │
│  Play   │  Down   │  Select     │
└─────────────────────────────────┘
```

- If required, enter a new Speed Dial Number for the contact and press the **OK** softkey.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Phone Book : Speed Num          │
│ 11                              │
│                                 │
│   ←     │  Clear  │   OK        │
└─────────────────────────────────┘
```

> To enter alphanumeric characters, select the **Mode** softkey.
>
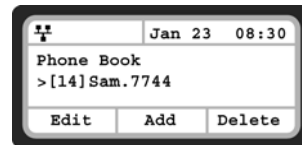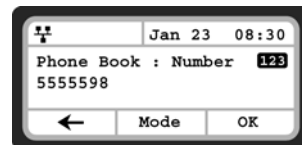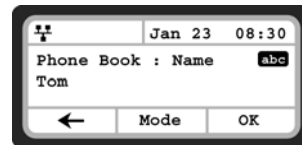> If no ring tone is defined for a Phone Book entry, the default ring tone is used.
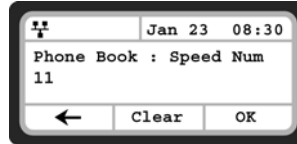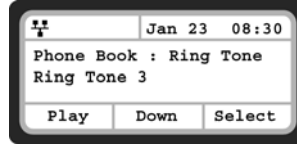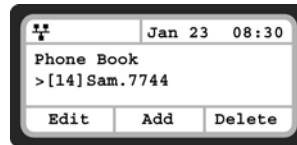
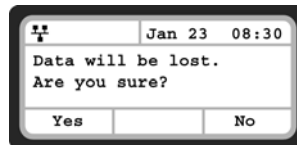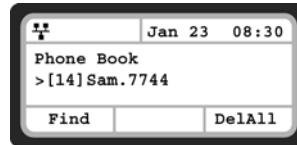## Deleting a Phone Book Record

To delete a Phone Book record:

- Press the 📄 button, then select **5. Directory** then **1. Phone Book**.
- Select a contact to delete using the **Down** softkey.
- Press the **Right** navigation button to scroll to the additional softkey options.
- Press the **Delete** softkey.
- Confirm by selecting the **Yes** softkey. Caution: this action deletes the record from the Phone Book.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Phone Book                      │
│ >[14]Sam.7744                   │
│                                 │
│  Edit   │  Add    │  Delete     │
└─────────────────────────────────┘
```

Deleting All Records

To delete all Phone Book records:

- Press the 📄 button, then select **5. Directory** then **1. Phone Book**.
- Press the **Right** navigation button to scroll to the additional softkey options.
- Press the **DelAll** softkey.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Phone Book                      │
│ >[14]Sam.7744                   │
│                                 │
│  Find   │         │  DelAll     │
└─────────────────────────────────┘
```

- Press the **Yes** softkey to confirm deletion of all contacts or **No** to retain the contacts and return to the Phone Book.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Data will be lost.              │
│ Are you sure?                   │
│                                 │
│  Yes    │         │   No        │
└─────────────────────────────────┘
```

Searching the Phone Book

To search for the Phone Book using either Name or Number:

- Press the 📄 button, then select **5. Directory** then **1. Phone Book**.
- Press the **Right** navigation button to scroll to the additional softkey options.
- Press the **Find** softkey.

```
┌─────────────────────────────────┐
│ ⁛          Jan 23  08:30        │
│ ───────────────────────────────│
│ Phone Book                      │
│ >[14]Sam.7744                   │
│                                 │
│  Find   │         │  DelAll     │
└─────────────────────────────────┘
```
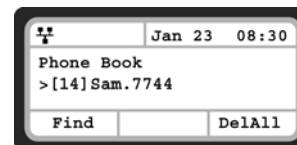
- Input a search keyword, and press the **OK** softkey.

```
┌─────────────────────────────┐
│ ⊕        Jan 23   08:30     │
│ Search for            abc   │
│ Jerry                       │
│                             │
│   ←     │  Mode  │   OK     │
└─────────────────────────────┘
```
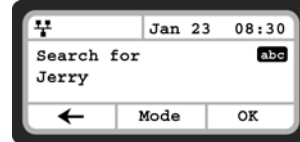
- The search result displays showing the Speed Number Name and number.

```
┌─────────────────────────────┐
│ ⊕        Jan 23   08:30     │
│ Phone Book (page 1)         │
│ >[10]Jerry.5555584          │
│  [11]Sammy.95774            │
│  Back  │  Down  │   Dial    │
└─────────────────────────────┘
```
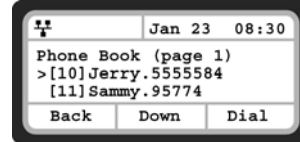
To enter alphanumeric characters, select the **Mode** softkey. Refer to **Appendix B** for the character mapping of dial pad digits.

Dialing from the Phone Book

To dial a number from the Phone Book:

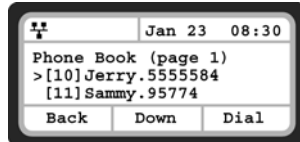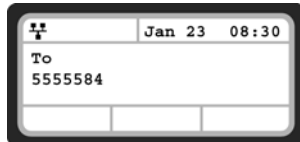- Press the 📄 button, then select **5. Directory** then **1. Phone Book**.
- Select a contact to dial using the **Down** softkey or search using the **Find** softkey.
- Press the **Dial** softkey to place the call.

```
┌─────────────────────────────┐
│ ⊕        Jan 23   08:30     │
│ Phone Book (page 1)         │
│ >[10]Jerry.5555584          │
│  [11]Sammy.95774            │
│  Back  │  Down  │   Dial    │
└─────────────────────────────┘
```

To dial a contact using a flexible button programmed for Phone Book access:

- Press the button while the phone is idle.
- Select a contact to dial using the **Down** softkey or search using the **Find** softkey.
- Press the **Dial** softkey to place the call.

```
┌─────────────────────────────┐
│ ⊕        Jan 23   08:30     │
│ To                          │
│ 5555584                     │
│                             │
│        │        │           │
└─────────────────────────────┘
```

Call Log

The phone stores logs to track inbound and outbound calls. There are 3 separate logs that support 100 entries each. The memory for the logs is circular so if the logs are not cleared when the capacity reaches 100, the oldest entries are automatically overwritten by new entries.

Missed Calls stores any calls that were unanswered.
Received Calls stores calls that were answered.
Outgoing Calls stores all calls placed from this phone.

To access the Call Logs:

- Press the **Call Logs** softkey while the phone is idle.
- Alternatively, press the 📄 button, then select **5. Directory** then **2. Call Log**.
- Press **1** to access **Missed Calls**, **2** to access **Received Calls** or **3** to access **Outgoing Calls**.

Dialing from a Log

Calls can be made directly from the logs. In the case of the Missed and Received call logs, the Access Code Prefix is automatically inserted if configured. This is important if you normally are required to dial a hunt group to access an outside line. For the Outgoing Calls log, the number is dialed exactly as shown.

To dial from a log:

• While viewing an entry, press the **Dial** softkey.

To edit an entry before placing a call:

• While viewing an entry, press the **Right** navigation button, then press the **Edit** softkey.
• A cursor is placed at the beginning of the phone number. Enter the digits required, then press the **Dial** softkey.

Deleting (single or all entries)

To delete a single entry:

• While viewing an entry, press the **Right** navigation button, then press the **Delete** softkey.
• Press **Yes** to delete the entry or **No** to keep the entry.

To delete all entries:

• While viewing an entry, press the **Right** navigation button twice, then press the **Del All** softkey.
• Press **Yes** to delete the entire log or **No** to keep the log.

Saving an Entry to the Phone Book

To save an entry to the phonebook:

• While viewing an entry, press the **Right** navigation button, then press the **Save** softkey.
• Press **OK** to store the current name or edit/add a name, then press **OK**.
• Confirm the phone number or edit as is necessary. If an Access Code Prefix (hunt group number) has been configured for the phone, do not add a hunt group prefix. Calls placed from the Phone Book will automatically have the the configured Access Code Prefix inserted. Press **OK** to continue.

• Optionally, select a ring tone that will be used when the Call ID is matched for inbound calls. **Set to Defaults** will use the default ring cadence and tone. Press **Select** to continue.
• Assign an available 2-digit speed dial number (00–79), then press **OK**. This number can be used to quick dial. For example, if stored as 02, simply dial **02** then lift the receiver to place the speed dial call.
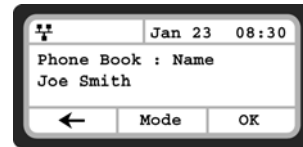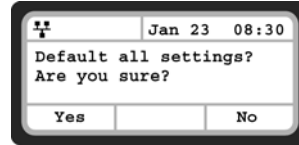
SET TO DEFAULTS

If required, the phone configuration can be returned to the original factory default settings.

To default the configuration:

- Press the 📄 button, then select **6. Default**.
- Press the **Yes** softkey to set the phone to factory defaults, or press **No** to cancel.

> Defaulting the phone requires a reboot. When you leave the menu (press the **Back** softkey)**,** you will receive a reboot notice. Press the **Yes** softkey to reboot the phone now. The configuration will not use default values until the phone is rebooted. If looking to re-register the phone that has been preconfigured as an extension to a TalkSwitch system on the same LAN**,** reboot the phone again by pressing the 📄 button**,** then select **9. Reboot**. Press the Y**es** softkey to reboot the phone.
>
> Returning the phone to factory defaults deletes any previously customized settings.

LOCK/UNLOCK CONFIG

If required, some of the critical configuration parameters can be locked to prevent accidental changes. These include Network settings, SIP setting and Flexible key assignments.

To lock portions of the configuration:

- Press the 📄 button, then select **7. Lock/Unlock Config**.
- Enter a password then press **OK**.
- Confirm the password then press **OK**.
- Store the password somewhere for future reference.
- Once assigned, select **7. Lock/Unlock Config** to lock the config.
- To unlock the config, press the 📄 button, then select **7. Lock/ Unlock Config**.
- Enter the password, then press **OK**.
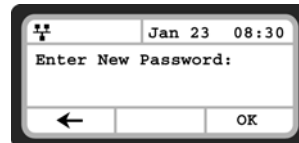
INFORMATION

The TS-550i phone provides the means to quickly view the network parameters (IP address, default gateway address, and subnet-mask), server IP addresses (SIP serveres, TFTP server, and SNTP server), results of the last file download attempt, boot version, hardware and firmware version.

- Press the 📄 button, then select **8. Information**.
- Press the **Up** or **Down** softkeys to scroll through the parameters.

Jan 23 08:30 IP Address 192.168.0.20 Back Down Up	Jan 23 08:30 Call Server Address 2 100.0.0.2 Back Down Up	Jan 23 08:30 Download (SYS CFG) DOWNLOAD OK Back Down Up
Jan 23 08:30 Subnet Mask 255.255.255.0 Back Down Up	Jan 23 08:30 TFTP Server Address 192.168.0.2 Back Down Up	Jan 23 08:30 Download (MAC CFG) DOWNLOAD OK Back Down Up
Jan 23 08:30 Default Gateway 192.168.0.1 Back Down Up	Jan 23 08:30 SNTP Server Address 100.200.5.1 Back Down Up	Jan 23 08:30 Boot version: 1.1.00ts Back Down Up
Jan 23 08:30 SIP Server Address 1 100.0.0.1 Back Down Up	Jan 23 08:30 Download (F/W): F/W UPGRADE: OK Back Down Up	Jan 23 08:30 H/W version: 1.00 S/W version: 1.1.00sts Back Down Up

- Press the 📄 button to exit the menu.

REBOOT

After changing certain parameters, the phone will require a reboot to utilize the settings. These settings include the following:

— Network Configuration settings
— TFTP Server Address settings
— Software Update settings
— Default settings
— After a TalkSwitch phone system firmware update, new features might be enabled so a reboot is a good idea to ensure consistent behavior.

To reboot the phone:

- Press the 📄 button, then select **9. Reboot**.
- Press the **Yes** softkey to reboot the phone, or press **No** to cancel this menu.
- If you press **No**, any parameter changes will only update after the next reboot.

Jan 23 08:30 Reboot Phone Are you sure? Yes   No
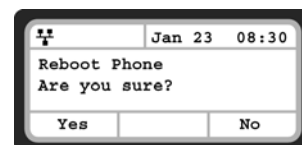
USING WEB MANAGER FOR CONFIGURATION

The Web Manager is a web-based tool for configuring phone parameters. The Web Manager has access to all parameters including some not available through the LCD Configuration Menu. It also provides for an easier method to view, make changes or load a contact list to the phone book. Please note that if used with a TalkSwitch phone system (or other system) which automatically provides the configuration for the phone, then many key parameters should not be changed as they will revert to their preconfigured settings after the phone is rebooted and retrieves a configuration file.

LOGIN & SITE MAP

- Point your browser at the IP address currently assigned to the TS-550i phone.
  Example: **http://150.150.255.251**.

- To confirm the address from the phone, press the 📄 button, then **8**. Upon a successful attempt, the following page will be visible.

- Click **LOGIN**

- Enter **admin** for the User name and **23646** for the password to gain access.

- Once logged in, the following **Site Map** page is loaded.

The **Site Map** page is divided into 2 sections: the left hand navigation menu and page content on the right side for the various sections. Select the desired page from either the navigation menu or the site map.

VOIP CONFIGURATION

TS-550i
Web Manager
(SIP)

VoIP Configuration
LAN Configuration
Call Preferences
Dial Plan
Phone Information
Phone Settings
Phone Book
Programmable Keys
Call Log
Network Time Configuration
Upgrade Configuration
QoS Configuration
Load Default Configuration
Reboot

talkswitch

VoIP Configuration

Line 1 | Line 2
Common Settings

Line Settings

Line 1 (TOP)			Line 2 (TOP)
192.168.0.200	Proxy Address	192.168.0.200	
5060	Proxy Port	5060	
158 Joe Smith	Display Name	158 Joe Smith	
158	Name	158	
001A7E158	Authentication Name	001A7E158	
••••••••	Authentication Password	••••••••	
Private	Line Type	Private	
	BLA Primary Address		
	Extension for DSS		
Default ring	Ring Type	Default ring	
Not Use	Delayed Ring	Not Use	
Disable	Auto Answer	Disable	
OK	Registration Status	OK	

Common Settings (TOP)

Outbound Proxy Address	192.168.0.200
Outbound Proxy Port	5060
Backup Proxy Address	
Backup Proxy Port	5060
Domain	
VMS Address	tsvm
Proxy Registration	enable
Registration Timer (sec)	3600
Local UDP Port	5130
Local TCP Port	5060
Local TLS Port	5061
TCP Port	5060
TLS Port	5061
Transport Mode	UDP 1. AES_CM_128_HMAC_SHA1_80 2. ARIA_CM_128_HMAC_SHA1_80
Start Rtp Port	4000
SRTP	disable 1. AES_CM_128_HMAC_SHA1_80 2. ARIA_CM_192_HMAC_SHA1_80
Codec Priority	1. PCMU 2. PCMA 3. G729 4. G723 5. None
Centralized Conference	disable URL
Dialog BLF	enable
OPTIONS Timer (sec)	○ Off ⊙ On 60 (1~6400)
STUN Server Address	
MWI Usage	enable

Save

Return to the Site Map

At the top of the **VoIP Configuration** page is a table indicating the SIP lines available. Selecting a line from the list will display the characteristics assigned for the line. If the phone is provisioned with a TalkSwitch system, these values will automatically be assigned.

Line based parameters

- **Proxy Address:** The IP address or FQDN of the phone system, SIP server or SIP proxy.
- **Proxy Port:** The server port for incoming SIP requests and outgoing responses.
- **Display Name:** The name used for outgoing Caller ID. The display name assigned for Line 1 also displays on the LCD display when idle.
- **Name:** The name (phone number) used during registration. The name is generally the telephone number or the SIP user ID assigned by the administrator or service provider.
- **Authentication Name:** The user ID for authentication of the line with the phone system or SIP server/service.
- **Authentication Password:** The password for authentication of the line with the phone system or SIP server/service.
- **Line Type:** The type of line. Private, Shared (BLA), or DSS line.
- **BLA Primary Address:** If the line is set to BLA, enter the IP address or FQDN of the server providing BLA status to the phone.
- **Extension for DSS:** The extension number associated with the line when the type is DSS. Do not enter an extension number unless the Line Type is set to DSS.
- **Ring Type:** Sets the ring tone for incoming calls on the line. The Ring Type can be Set as Default, Ringer Off or Ring type 1 to 4, 101 to 105 or 201 to 205. The default ring is configured under the **Phone Settings** menu.
- **Delayed Ring:** Delays the audible notification (ring) for a line. The delay is set in 1-second increments from 0 (no delay) to 10 seconds.
- **Auto Answer:** If enabled, the phone will automatically enter speakerphone mode for incoming calls on this line.
- **Registration Status:** Shows the registration status of the phone. Refresh the page if it doesn't match the status indicated on the phone.

General Parameters

- **Outbound Proxy Address:** The IP address or FQDN of the outbound proxy server to receive SIP requests in place of the line-based Proxy Server.
- **Outbound Proxy Port:** The port of the outbound proxy server.
- **Backup Proxy Address:** The IP address or FQDN of the backup proxy server, used when the connection with the primary proxy times-out.
- **Backup Proxy Port:** The port of the backup proxy server.
- **Domain:** The domain for SIP service when the service provider desires to use a specific SIP domain.
- **VMS Address:** The address (IP or phone number) of the Voice Mail Server.
- **Proxy Registration:** Enables SIP registration to the proxy. This parameter is ignored if an Outbound Proxy Address is not defined.
- **Registration Timer:** Sets the interval (in seconds) between SIP registration renewal attempts.
- **Local UDP Port:** The UDP port used on the LAN for sending and receiving SIP packets.
- **Local TCP Port:** The TCP port used on the LAN for sending and receiving SIP packets.
- **Local TLS Port:** The TLS port used on the LAN for sending and receiving SIP packets.
- **TCP Port:** The TCP port used on the LAN for sending and receiving SIP packets.
- **TLS Port:** The TLS port used on the LAN for sending and receiving SIP packets.
- **Transport Mode:** The packet transport mode for voice traffic. UDP is most widely used by most services. TalkSwitch phone systems use UDP.

- **Start RTP Port:** The starting port for used for Real-time Transport Protocol (voice) packets.

- **SRTP:** Enable if required by the system or service provider.

- **Codec Priority**: Select the priority for audio codecs.

- **Centralized Conference:** This parameter enables or disables server control and processing of conferences. When enabled, the server provides a single RTP stream for the conference. When disabled, the phone processes separate RTP streams for each participant, maximum 3-parties. A URL is required for centralized conference. TalkSwitch does not use centralized conference.

- **Dialog BLF:** This parameter enables or disables use of the Broadsoft BLF function that provides a location for BLF (Busy Lamp Field) indications for all DSS line types. If enabled, enter the URL of BLF server where the status information will be retrieved.

- **Options Timer:** This timer sets the SIP options interval.

- **STUN Server Address:** If required, enter a STUN server IP address or FQDN.

- **MWI Usage:** Enable for indication of new messages for the registered voicemail system.

When done, press the **Save** button to store settings to the phone.

> Changing the proxy server address, proxy port, outbound proxy, backup proxy, VMS address or local UDP port requires a reboot of the phone.

LAN CONFIGURATION

The **LAN Configuration** page is used to set the network parameters required for proper operation when connected to a LAN. If using DHCP, then the values should be automatically filled and no edits required. For manual configuration, see the network administrator for IP information.

LAN Configuration

- **Network Selection:** Select Static or DHCP. If Static selected, then manually assign the required IP parameters.
- **IP address:** A valid IP address is required for the phone.
- **Subnet Mask:** Enter the subnet mask for the LAN.
- **Default Gateway:** Enter the default gateway IP address of the LAN.
- **Mac Address:** Shows the MAC address of the phone LAN port. Not editable.
- **Primary DNS:** IP address of the primary DNS server.
- **Secondary DNS:** IP address of an auxiliary DNS server. Optional
- **Domain Name:** Domain name for the LAN. Optional
- **CDP:** Enable or disable for the use of the Cisco Discovery Protocol used for VLAN ID.

When complete, select the **Save** button to store the new values to the phone.

The MAC address is fixed and cannot be modified.

The IP address, subnet mask, etc. can only be changed if the static Network Mode is assigned.

Changing any values on the LAN page requires a reboot.

CALL PREFERENCES

Most of the call preference parameters can be altered according to the user's requirements.

Call Preferences

- **Anonymous Call Block:** When enabled, the phone blocks incoming calls with an anonymous Caller ID.
- **Call Waiting Function:** When enabled, the phone will accept additional calls and notify the user visually of the incoming call while in a conversation. If disabled, no additional calls are accepted and the system will follow the busy response configuration.
- **Call Waiting Tone:** When enabled, a tone is played to the user along with Caller ID information to announce the new call.
- **Call Hold Ringback:** When enabled, the phone rings if the user has taken a 2nd call then terminated the call with another caller still on hold.
- **Message Waiting Tone:** When enabled, a stutter dial tone is played when first going off-hook and a new message is waiting. The visual LED notification is always enabled for voicemail notification.
- **Auto Answer:** When enabled, it will automatically activate the speakerphone or headset when an incoming call is received.
- **Access Code Prefix:** To simplify dialing from the Phonebook or Call Logs, enter a hunt group (9, 81-88) that you would like the phone to use as aprefix to place calls using the specified hunt group. If direct line access is enabled for the extension, then leave blank.

- **Call Forwarding:** is not supported directly by the TalkSwitch phone. Call forwarding is configured in the TalkSwitch system for busy, no answer and DND conditions for the extension.

- **Direct Call (Hotline/Warm-Line):** When used with the TalkSwitch system, the feature is controlled by the configuration in the software for this extension. No configuration is required.

  - **Direct Call:** when enabled, places a call to a predefined destination automatically when the phone goes off hook.

  - **Direct Call Number:** defines the destination for a direct call.

  - **Direct Call Timer:** sets a delay timer for Warm-Line operation. The timer specifies the period before placing a direct call. The timer supports 1 second increments from zero (0) to ten (10) seconds. For Hotline operation, set the timer to zero (0) seconds.

To modify parameters on the Call Preferences screen:

- Select the desired parameter and enter or select the new values.

- When complete, select the **Save** button to save the new values to the phone.

DIAL PLAN

The phone incorporates a dial plan, which monitors the user-dialed digits for patterns matching the dial plan number. If a match occurs, the phone modifies the digits and processes the call using the configured script in the dial plan. The phone supports a digit map plan or routing table plan. If used with the TalkSwitch system, then these maps are automatically generated.

Routing Table

Up to fifty (50) dial plan numbers may be defined in the Routing Table. Specific entries for the Routing Table are:

- **Number:** The digit pattern to match with the user-dialed digits.
- **TRNC:** Defines the number of digits to delete (truncate) from the number dialed.
- **Pre:** Defines the digits to insert in front of the number (including if truncated).

- **Post:** Defines the digits to insert at the end of the number (including if truncated).
- **Pause:** Defines the position in the number where, if matched, the phone will pause for additional digits before processing the call. The pause duration is programmable under the **Dial** section of the configuration file and has a default of 5 seconds.
- **Extra:** IP address of SIP device to send a call if a match occurs. The call is placed to the IP address in place of the modified number.

Special characters can be used for special cases.

?	matches any single digit.
~	matches a string of characters of any length.
,	locates the position of a pause.
.	returns dial tone.

The following are examples of dial plans using the Routing Table.

Simple Dial Plan

Customer requirements
Process the call after any seven-digit number is dialed or if the Operator is dialed - 0.

Number	TRNC	Pre	Post	Pause	Extra
0??????	0	NULL	NULL	?,	0.0.0.0
???????	0	NULL	NULL	NULL	0.0.0.0

From the above table, if the user dials 0 as the first digit, the phone will pause for additional digits. After the pause, if no additional digits are dialed, the phone places a call to the Operator. In addition, after the user dials any seven digits, the call is processed.

Complex Dial Plan

Customer requirements
Process the call after the local Operator at 0, long distance Operator at 00, a four-digit local extension number starting with 3, 4 or 5, a seven-digit local number prefixed by an 8, two-digit number preceded by star (*), a ten-digit long distance number prefixed by 91, or an international number starting with 9011 is dialed.

Number	TRNC	Pre	Post	Pause	Extra
0?	0	NULL	NULL	?,	0.0.0.0
00	0	NULL	NULL	NULL	0.0.0.0
3???	0	NULL	NULL	NULL	0.0.0.0
4???	0	NULL	NULL	NULL	0.0.0.0
5???	0	NULL	NULL	NULL	0.0.0.0
8???????	0	NULL	NULL	NULL	0.0.0.0
*??	0	NULL	NULL	NULL	0.0.0.0
91??????????	0	NULL	NULL	NULL	0.0.0.0
0 9011~	0	NULL	NULL	NULL	0.0.0.0

Customer requirements

To provide second dial tone after a 9 is dialed, establish a Dial Plan as below.

Number	TRNC	Pre	Post	Pause	Extra
9.~	0	NULL	NULL	?,	0.0.0.0

To change Routing Table parameters:

• Select **Routing Table** under the **Dial Plan Type**.

• Enter the desired values into the respective boxes.

• Select the **Add Entry** button.

To delete an entry from the Current Routing Table:

• Select the checkbox in front of the desired entry.

• Click the **Delete Entry** button.

To delete all the entries:

• Enter **all** as the index.

• Click the **Delete Entry** button.

Digit Map Table

Using the **Digit Map Table**, a string of 512 characters may be entered to define the dial plan. Within the string, individual numbers are entered, separated by a '|'. In addition to dial pad digits, special characters may be entered as follows:

x	matches any single digit (0 to 9).
T	inserts a timed pause for additional digits.
.	matches any number of occurrences of a digit, including zero occurrences and includes special character matches.
+	matches any number of occurrences of the previous match, including special characters.
[ ]	matches a digit from a group of digits. This character combination is used with "." to define a range, [2-6] matches any digit from 2 to 6 inclusive.

The dial plan can include modification of a matching dialed number before call set-up. The Digit Map Process defines the modification procedures for a number. The process may include:

- **TRNC:** Defines the number of digits to delete (truncate) from the number dialed.
- **Pre:** Defines the digits to insert in front of the number (including if truncated).
- **Post:** Defines the digits to insert at the end of the number (including if truncated).

The following are examples of dial plans using the digit map tables.

Simple Dial Plan

Customer requirement

Process the call after any seven-digit number is dialed or if the Operator is dialed - 0.

Digit map routing entry

The digit map of this Dial Plan is (0T|xxxxxxx).

From this map, if the user dials 0 as the first digit, the phone will wait for the pause time for additional digits. After the pause, if no additional digits are dialed, the phone places a call to the Operator. In addition, after the user dials any seven digits, the call is processed.

Complex Dial Plan

Customer requirement

Process the call after the local Operator at 0, long distance Operator at 00, a four-digit local extension number starting with 3, 4 or 5, a seven-digit local number prefixed by an 8, two-digit number preceded by star (*), a ten digit long distance number prefixed by 91, or an international number starting with 9011 is dialed.

Digit map routing entry

The dial plan for this is (0T|00T|[3-5]xxx|8xxxxxxx|*xx|91xxxxxxxxxx|9011x.T).

2nd Dial Tone

A second 512-character string map is employed to provide 2nd Dial Tone.

Customer requirements

To provide second dial tone after a 9 is dialed, establish a Dial Plan as below.

In the Digit Map (2nd Dial Tone) text box, the dial plan for this is (9|).

To change Digit Map Table parameters:

• Select **Digit Map** under the **Dial Plan Type**.

• Enter the desired values into the Digit Map (Routing) box.

• Select the **Save** button.

To set-up or change a Digit Map to provide 2nd Dial Tone.

• Enter the digits in the Digit Map (2nd Dial Tone) box.

• Select the **Save** button.

To modify a Digit Map process:

• Enter the digits in the Digit Map (Process) boxes.

• Select the **Save** button.

To delete a Digit Map process:

• Select the **DEL** checkbox.

• Select the **Save** button.

PHONE INFORMATION

The **Phone Information** page displays useful information for the TS-550i phone. In addition, it is possible to change the Web Manager password from this page.

To change the phone name:

- Enter the desired name.
- When complete, press the **Save** button.

To change the password:

- Enter the existing password.
- Enter the new password then confirm.
- When complete, press the **Save** button.

PHONE SETTINGS

The **Phone Settings** page contains a mix of parameters that should only be changed if familiar with the resulting change.

Phone Settings

• **Frame Duration:** Sets the interval to send/receive RTP packets in milliseconds. Do not change this value if you do not understand the settings.

• **Headset Auto Mode:** When enabled, the phone will switch to the headset port when calls are placed from the phonebook or call logs.

• **DTMF Relay:** Configure the method for DTMF signaling (in-band, out-of-band or negotiate). Do not change this value if you do not understand the settings.

• **DTMF Payload:** Configure the payload type for DTMF signals according to RFC 2833. Do not change this value if you do not understand the settings.

• **DTMF Duration:** Configure the duration of DTMF signals sent from the phone in milliseconds. Do not change this value if you do not understand the settings.

• **The Number of Lines:** Sets the number of flexible buttons allocated for lines. The minimum is one (1). The maximum number of line buttons is the maximum number of buttons available on the phone. If using buttons for SIP accounts, then set the number of lines to match the number of accounts to be

used or depth per account. For example, selecting 2 lines but configuring the same phone number for both lines will allow for 2 calls per button to be handled for a total of 4 calls. Do not change this value if you do not understand the settings.

- **Use Speed Number:** Enable or disable using 2-digit dialing to dial contacts from the Phone Book.
- **Key Tone:** enables or disables the tone generated when a button on the phone is pressed.
- **End of Digit:** A digit can be specified for terminating a dialing string. # is the default.
- **Backlight:** Set the duration that the backlight will remain on after any interaction with the phone.

Functions

- **Download Flag:** Enables the visibility of the S/W and configuration download flags functions under the **LCD Configuration Menu**.
- **One-touch Pickup:** When enabled, pressing a line button will connect the call to the speakerphone or headset. If One-touch Pickup is disabled, the phone will instead display the call status when a line button is pressed. The call does not connect to the speakerphone or handset unless the button is pressed a second time.
- **Display DTMF:** If disabled, digits entered after a call is placed will not appear. This is useful for security purposes where a PIN code or Access Code is required to gain access to external lines or features.

Ring Settings

- **Ringer Type:** Sets the default ring type from one of 14 ring signals.
- **Ringer:** Set to On to enable the ringer or Off for no ring. The phone will still show Caller ID and flash the LED light associated to the line.

User Define Rings (RTTTL)

- Add and delete user-defined rings (RTTTL text format). The **Browse** button can be used to find and upload an RTTTL file for use. The RTTTL file must be uploaded before it can be assigned for use as the Ring Type. Up to five (5) RTTTL ring types, no greater than 512 characters, may be stored in the phone. Do not change this value if you do not understand the settings.

To modify Phone Setting parameters:

- Select the parameter.
- Enter the new value or select a value from the drop-down menu.
- When complete, press the **Save** button.

Changing DTMF Payload, Frame Duration or DTMF Relay requires a reboot of the phone.

PHONE BOOK

The phone includes an internal Phone Book with 80 contact records. Calls to a contact can be made using the Speed number (00–79). Records may be added, edited, deleted or searched from the phone interface via the Phone Book section under the Directory.

To add a Phone Book entry:

* Click the **Add** button and enter the new values. Information is purely an optional field. For example, you might enter company names or e-mail addresses if desired.

* When complete, select the **Save** button to store the record.

To modify an entry:

* Select **Modify** for the desired record and enter the new values in the **Phone Book Entry** screen.
* When complete, select **Save** to store the modified record.

To place a call using the Phone Book:

* Click the **Dial** button for the desired contact.

To delete specific entries from the Phone Book:

• Click the *Clear* box for the desired records and select the **Clear** button to delete checked records.

To delete all entries from Phone Book:

• Select the **ClearAll** button.

The Phone Book can be downloaded or uploaded to and from a *.csv formatted file. To upload/download:

• Click the **Browse** button and locate the desired csv file on your PC.
• Select **Upload** or **Download**, as desired.

Loading a contact list using a web browser

Note: The contact list must use the following format:
SpeedNumber,Name,PhoneNumber,Information (optional)

Example:
SpeedNumber,Name,PhoneNumber,Information
1,Joe Smith,6135551234,Head Office
2,Dave Jones,6135552222,Ottawa
3,Samantha Davies,8883331234
4,Scott Duff,8004441111,sduff@abccompany.com

Important!
• The file *must* be saved in .csv format.
• The *phone number* field cannot contain spaces, dashes, decimals or other characters. Only use numbers.
• If a single digit is specified under the SpeedNumber column, then it will automatically be pre-pended with 0. Example: 1 will be stored as speed dial 01.
• The number of entries cannot exceed 80.
• An optional header can be included at the beginning of the csv file as shown above. It is not required.

Downloading the phone book to a file on a PC using a web browser

To backup the phone book to a file:

• Press the **Download** button to save the records in a csv format.
• We recommend you select the option to save to a location on the PC rather than open directly to ensure data integrity in case any phone numbers begin with zeros as Excel™ and other applications will strip the zeros from the beginning of any numerical string.

Note for importing csv files into Excel™ that contain phone numbers which have a leading 0:

1. Open Excel™ and create a new worksheet.

2. From the Excel™ menu, select **Data > Import External Data**.

3. Select the csv file to import and proceed.

4. Select *comma* as the delimiter (if csv).

5. For column values, select *Text* format for the column containing the phone number.

Once imported, the phone numbers with leading zeros should be in the proper format.

PROGRAMMABLE KEYS

The TS-550i has 22 flexible keys that can be assigned to various functions. When programmed by a phone system, these keys are usually defined via the configuration file. For keys set to user defined in TalkSwitch software (shown as *None* in the web interface of the phone), these keys can be programmed from the phone or web interface and will not be overwritten when a configuration file is loaded onto the phone via the TalkSwitch system.

To change key functions:

- Select the function from the drop-down menu next to the key.
- For a Speed dial key, enter the contact number.
- For a Message key, enter the phone number of the voicemail server.
- When complete, press the **Save** button.

To delete the functions assigned to all flexible keys:

- Select the **ClearAll** button. CAUTION: selecting **ClearAll** will immediately clear all programmed keys on the phone so ensure this is an intended action.

CALL LOG

The **Call Log** page provides a list of all calls (incoming, outgoing or missed) for the extension. The log is organized to show the type of call — IC (incoming/received), OG (Outgoing) and M (Missed), the contact name and contact information, date and time, duration, and state of the call — Connected (OK), no call established (NOK). From the Call log, the user can call a contact or store a record directly to the Phone Book.

To add a number from the Call Log to the Phone Book list:

• Select the **Add** button.

• If an Access Code Prefix, such as a Hunt Group, has been programmed into the phone, then it will be inserted when an outbound call is placed from the Phone Book. Do not add to the phone book entry.

To delete all Call logs:

• Select the **ClearAll** button. CAUTION: selecting the **ClearAll** button will delete all records in the Call Log.

To call a party from the Call Log:

• Click the **Dial** button associated with the desired Call log record. If an Access Code Prefix, such as a Hunt Group, has been programmed into the phone, then it will automatically be inserted when dialed.

NETWORK TIME CONFIGURATION

The **Network Time Configuration** page allows you to configure the parameters required for proper maintenance of the time and date on the phone. If provisioned by TalkSwitch, nothing needs to be changed on this page.

Configurable Parameters

- **SNTP Server Address:** Enter the URL or IP address of the SNTP server that will be used to synchronize the date and time for the phone. Example: time.nrc.ca
- **Time Zone:** Select the time zone that matches the location of the phone.

- **DST (Daylight Savings Time):** Enable DST if applicable in your region. Ensure DST configuration parameters are properly configured for the start and end of the DST cycle.

- **Time Format:** Sets the format of the LCD time display. Options include: Off, 12-hour or 24-hour.

- **Date Format:** Permits the configuration of the date format as will be shown on the LCD of the phone.

- **DST Configuration:** If DST is enabled, then rules for when it is engaged and disengaged need to be configured. DST can be configured to start and end on specific dates or switch according to a day of the week in a certain month (typically used in North America).

Known public SNTP servers that can be used:

— ntp.nasa.gov
— clock.via.net
— tick.ucla.edu
— time.nrc.ca

- To modify parameters on the Network Time screen, select the desired parameter and enter new values or select values from the drop-down menus. When complete, press the **Save** button.

UPGRADE CONFIGURATION

If using with TalkSwitch, these parameters should never need to be altered. When performing a firmware update, follow the instructions provided in the *Start Guide* or support section of the website.

On the **Upgrade Configuration** page, the results of the most recent download attempt are displayed at the top. In addition, the following parameters can be modified:

- **TFTP/HTTPS:** Select the protocol that will be used to connect to the server where configuration and software files are stored.
- **TFTP Server Address:** Enter the IP address or FQDN of the TFTP server where configuration and firmware files are located. Select the *Received by DHCP on boot* checkbox if the phone will use DHCP option 66 or 150 to populate this field.

- **HTTPS URL:** is the URL of the HTTP/HTTPS server where configuration and software files are located. Select the *Received by DHCP on boot* checkbox if the phone will use the DHCP Option defined to retrieve the URL. If the option is present, the provisioning type is changed automatically to HTTP/HTTPS using the URL from the DHCP option and default option 160. Note: Port 80 is used for HTTP and 443 for HTTPS.

- **ID:** If required, enter the user name for HTTPS authentication.

- **Password:** If required, enter the password for HTTPS authentication

- **MAC Cfg. Format:** Define the format of the MAC (phone specific) configuration filename. *$MAC* is replaced with the MAC address of the phone and must be included as part of the file name or path to the configuration file on the HTTP/HTTPS server.

- **Verifying Cert.:** Enables the verification of the Certificate of Authority (CA) on the HTTPS server. When enabled, the phone checks the CA signature. When *Server name verification* is checked, the phone checks whether the name of the server sending the CA is valid. When *Expiration* is checked, the phone checks the certification expiration date.

- **Root CA:** Defines a Certificate of Authority (CA) other than the internal CAs, which include Versign®, to use for verifying the CA from the server. When the CA is not available in the phone memory, paste the Root CA in this area of web page.

- **File to Upgrade:** Select the *S/W* checkbox if the phone should check for new firmware files on bootup. Select the *Configuration* checkbox if the phone should check and download during bootup. We recommend you leave both enabled. If no new files are found, no changes are made.

- **Decryption Key:** If required, enter the hexadecimal key required to decrypt configuration files.

- **Smart Upgrade:** Enables periodic checks for new software on the provisioning server. Two methods of smart upgrade are available; one checks the server at the interval in hours, the second checks daily at the time specified in a 24-hour clock format. Select *enable* from the *Use Smart Upgrade* drop-down menu, then select the method with the radial button and enter the interval or time as appropriate.

  If the phone finds a new version of software during the smart upgrade, the phone either downloads the file or displays the availability of the new version and awaits confirmation to download. To await confirmation, select the *If discovered, confirm downloading* checkbox.

To modify the configuration:

- Select the parameter and enter the new value or select the checkbox.

- When complete, press the **Save** button.

> If the **Received by DHCP on boot** box is checked and there is an address specified for TFTP or HTTPS, then it is ignored since the server information retrieved from the DHCP server is used.
>
> Changes made to the Upgrade section require a reboot of the phone.

QOS CONFIGURATION

Only make adjustments if you understand how these features work.

Diffserv Configuration

DiffServ Code Point (DSCP) or ToS establishes the priority of voice packets. Compatible routers apply the DSCP for packet priority, handling higher priority packets first. However, at congested routers, higher priority packets are discarded first. Thus, a median value for DSCP is recommended.

IEEE 802.1Q

The VLAN tag defines the priority for Ethernet frames and the VLAN ID based on IEEE 802.1p/q. If using with TalkSwitch phone systems, 802.1p/q tagging is not currently supported. The phone PC and LAN (voice) ports use separate VLAN tags. With a VLAN ID assigned, only frames with the ID are accepted and frames sent from the phone include the LAN port ID and priority. In addition, the PC, LAN ports and the default gateway must be assigned to employ the VLAN tags for proper operation.

Jitter Buffer Configuration

A jitter buffer stores incoming packets to allow for re-sequencing of packets received out of order. The jitter buffer configuration controls the size of the buffer used. The minimum, normal and maximum delays expected can be changed. Using larger values produce less packet loss as the phone waits longer to receive packets before processing. Note that large values may delay voice packet processing and smaller values may produce more packet loss but quicker voice packet processing. We recommend you use the default settings.

- When done making changes, press the **Save** button.

LOAD DEFAULT

The **Load Default** page provides an option to return the phone configuration to factory default values.

To set the phone to the default configuration:

- Select the **Load** button. **Note: All settings will be lost!**
- The phone will load the default configuration and automatically reboot.

REBOOT

To reboot the phone:

• Select the **Reboot** button.
• The phone will reboot.

USING THE TS-550i PHONE

RECEIVING A CALL

When you receive a call, the phone rings while the LCD displays the incoming call information and the associated extension button flashes.

To answer an incoming call:

• Lift the handset. You may press the 🔊 button, line button or the **Answer** softkey to activate the speakerphone. To use a headset, press the headset button.

To end a call:

• Hang up the handset. If using the speakerphone, press the 🔊 button. If using the headset, press the ⭕ button.

To refuse a call:

• Press the **Refuse** softkey. The phone system or service will handle the call according to the 'busy' settings.

PLACING A CALL

Calls can be placed with the handset on-hook or off-hook. This is similar to a mobile phone. The phone supports a technique called 'store and forward dialing'. After you dial a digit, the IP phone waits about 5 seconds for additional digits. If you do not dial additional digits, the phone sends the digits you dialed to the phone system for processing. When done dialing, press the **Dial** softkey or **#** key to place the call immediately.

To place a call:

• Lift the handset or press the 🔊 button or line button to activate the speakerphone. To use a headset, press the ⭕ button.

• Dial the destination number. After a short delay, the phone will send the number. Optionally, press the **Dial** softkey or press **#** to place the call immediately.

• When connected to the remote party, the LCD displays the elapsed call time and provides softkey options for call control.

To end a call:

• Hang up the handset. If using the speakerphone, press the 🔊 button. If using the headset, press the ⭕ button.

PUTTING A CALL ON HOLD

When placing a call on hold, the held party cannot hear you and you will not hear the held party. The held party will hear MOH (Music On Hold), if configured with the phone system.

While a call is on hold, you can answer or place other calls and can toggle between held calls on the same dedicated extension key. With Call Hold Ringback enabled, the phone rings as a reminder of calls on hold when you hang up after completing the other call.

To place a call on hold:

- Press the ⌣ button or the **Hold** softkey. The call status changes to hold and you receive dial tone. You can then select another line to answer or place a call.

To toggle between two calls on the same line:

- Press the ⌣ button or the **Resume** softkey.

To retrieve a call held on a different line:

- Press the flashing flexible key associated with the call on hold.

ATTENDED CALL TRANSFER

Calls can be announced to a transfer party before making the transfer.

To transfer an active call:

- Press the ⟿ button or the **Transfer** softkey. The active call status changes to hold and you receive dial tone to dial an alternate extension/number.
- Dial the extension or phone number, or press a preprogrammed flexible key linked to an extension.
- Wait for the remote party to answer and announce the transfer.
- Hang up the handset to complete the transfer, or press the **EndCall** softkey to cancel the transfer.

BLIND CALL TRANSFER

You can transfer an active call to another extension without talking to the party receiving the call. The call transfers to the new party without verifying that the new party is there or willing to receive the call.

To transfer a call without announcing the transfer

Manual method:
- Press the **Transfer** softkey.
- Dial the extension or phone number, or press a preprogrammed flexible key linked to an extension.
- Hang up the handset to complete the transfer, or press the **EndCall** softkey to cancel the transfer.

Simple method:
If flexible keys are programmed to monitor extensions, the blind transfer process becomes a one-touch process.

- To blind transfer while on a call, simply press a flexible key associated with an extension and the call is transfered.

3-PARTY CONFERENCE

The phone supports conferencing with two other parties. There are 2 methods for setting up a conference.

Method 1: Setting up a conference call

- Place the first call.
- Press the **Right navigation** button to scroll to the next softkey option, then press the **Conf** softkey to place the first call on hold and get dial tone.
- Dial the second party for the conference, then press the **Dial** softkey.
- When the party answers, press the **Join** softkey to join all parties into a conference call.

Method 2: Conferencing a second person with first person already on hold

- With one caller already on hold and the second call in progress, simply press the **Right navigation** button *twice* to scroll to the next softkey option, then press the **Join** softkey to establish the conference.

Ending a conference call

To end a conference and disconnect all parties:

- Hang up the handset or press the **EndCall** softkey.

CALL WAITING

If the extension is configured in the phone system for Call Waiting, while on a call, the line button flashes and a beep tone is played to you over the active conversation to indicate the new call. In addition, the LCD displays the incoming Caller ID so you know who is calling before deciding to interrupt the current call.

To answer an incoming call while on a call:

- Press the **Answer** softkey. The first call will be placed on hold and you will be connected to the second caller.

REDIAL

The TS-550i saves the last number dialed and allows you to redial the number with the touch of a button.

To redial a call:

- Press the **Redial** softkey. The phone activates the speakerphone and places the call.
- For privacy, lift the handset or press the ⬭ button, then press the **Redial** softkey.

PREPROGRAMMED SPEED DIAL KEYS

Flexible keys can be programmed by the administrator for system or personal speed dial use.

To place a call using a speed dial key:

- Press the desired flexible key preprogrammed as a speed dial . The phone activates the speakerphone and places the call according to the outgoing line hunting rules programmed in the phone system for the extension. You can also select a different line button on the phone prior to selecting the speed dial key.
- For privacy prior to placing the call, lift the handset or press the ⬭ button.

DIALING USING A SPEED DIAL NUMBER

The TS-550i has a Phone Book that can store up to 80 contacts. Each record includes a name, contact information and a speed dial number (00–79). When you dial a speed dial number, the phone initiates a call to the contact. By default, the speed dialing feature is enabled. If disabled, this feature will not work.

To place a call using a speed dial number:

• Dial the speed dial number (00–79), then press the **Dial** softkey or press **#** to place the call to the desired contact. The phone will dial the number programmed in the phone book. If an access code has been preprogrammed for the phone (example: 9 for gaining access to outside lines), the access code will automatically be prepended to the programmed speed dial entry for placing the call.

DND (DO NOT DISTURB)

When the DND (Do Not Disturb) feature is activated, the phone will not notify you of an incoming call thus allowing you to work without interruptions from incoming calls. Calls will be routed according to the settings programmed for your extension or service.

To activate DND:

• While the phone is idle, press the ✋ button. When active, the ✋ button LED illuminates red, and **Do not disturb** is displayed on the LCD.

To deactivate DND:

• Press the illuminated ✋ button again.

MUTING A CALL

Mute toggles the microphone of the handset, speakerphone and headset off or on. When mute is active, the connected party will not hear anything from the TS-550i.

To mute the microphone:

• Press the 🎤 button. The 🎤 button LED illuminates red indicating mute is active.

To unmute the microphone:

• Press the illuminated 🎤 button again. The other person will hear audio once the mute LED is off.

ACCESSING YOUR VOICEMAIL

When you have a message waiting, the Message LED flashes to indicate you have new messages in your mailbox.

To access your voice mailbox:

• Press the ✉ button. The display indicates the number of new and old messages that reside in your mailbox.
• To access the voicemail system, press the **Dial** softkey. Follow the instructions from your voicemail system to listen to messages.

  Alternatively, press the **Vmail** softkey to immediately access the voicemail system.

LINE/EXTENSION APPEARANCE COVERAGE

The TS-550i has BLF/DSS line functionality that addresses the special needs typically associated with an Attendant or Secretarial answering position but may be used for any employee. Options to monitor lines, extensions or queues are programmed on a key-by-key basis in the phone system.

The specific needs for these users are:

• **Direct Station Selection (DSS)** — one-touch calling and transfers to extensions.

• **Busy Lamp Field (BLF)** — visual status indication of lines, extensions or queues.

• **Coverage** — the ability to pick up calls ringing at monitored extensions.

To call an idle monitored extension:

• Press the flexible key associated with the extension you wish to call. For privacy, lift the handset or press the ⤵ button.

To blind transfer a call:

• Press the flexible key associated with the extension. The phone will transfer the call.

To answer a call ringing at a monitored extension:

• Press the flexible key associated with the extension that is ringing (flashing green). For privacy, lift the handset or press the ⤵ button.

HOTLINE/WARM-LINE

With Hotline/Warm-Line operation configured, the TS-550i automatically calls the defined destination when you take the handset off-hook or press the 🔊 button. Hotline means the call is made immediately, while warm-line provides a delay of up to 10 seconds before placing the call. The latter provides time to access a system feature or line as might be required. Note that with Hotline configured, speed dial, redial and other automated dialing features will not operate.

USING YOUR TS-550i PHONE WITH TALKSWITCH

ACCESSING FEATURES

[†]**Note:** If Direct Line Access is enabled, you will automatically access an outside line.
If you're not using the programmed key for intercom calls or indicated ([††]) features, you will first need to dial ******.

Access an outside line

Dial hunt group **9** or **81**–**88** (Americas, UK), dial **0** or **81**–**88** (other countries). No hunt group is required if Direct Line Access is enabled for this extension. Alternatively, you can select a line if programmed to one of the flexible keys.

Do not disturb

Press the 🤚 button to toggle on/off.

Pick up — Any ringing extension[††]

Press the programmed **Pickup** key, or dial ***9** + **#**.

Pick up — Specific extension[††]

Press the programmed key associated with the extension ringing or dial ***7** + extension + **#**.

Place a caller on hold

Press the ⬇ button.

Retrieve a caller on hold

Press the ⬇ button or press the flashing key associated with the call on hold.

Answer queued call[††]

Press the flashing key associated with the call in the queue. Otherwise, dial **7** + **#** to retrieve the next caller in your queue.

Answer TalkSwitch call waiting

Press the **Answer** softkey or press the flashing line appearance key.

Screened transfer

Press the ⟿ button + extension (or outside number) + **#**. To complete the transfer, press the **Transfer** softkey or hang up. To cancel transfer, press the **EndCall** softkey and then the **Resume** softkey to connect to the caller on hold.

Blind transfer

Press the ⟿ button + extension (or outside number) + **Dial** softkey, then hang up. If an extension is tied to a programmable key, then during the call, press that key to transfer.

Voicemail transfer

Press the ⟿ button + ***** + extension + **Dial** softkey, then hang up.

Conference call

Press the ➔ softkey then press the **Conf.** softkey to put the first party on hold. Call the second party (for external calls, first access an outside line). Press the **Join** softkey to connect to all parties.

Park a caller

Press the programmed **Park** key. Otherwise, press the ☏ button + ***510** + **#**. The system will respond with a parking orbit.

Retrieve a parked caller††

At the dial tone, press the programmed **UnPark** key, then dial orbit + **#**. Otherwise, dial ****** + orbit + **#**.

Two-way intercom paging†† **to TalkSwitch phones**

Press the programmed **Intercom** key + extension + **Dial** softkey. Otherwise dial ***84** + extension + **#**.

PA overhead paging††

Press the programmed **Overhead Paging** key, or dial ***0** + **#**.

Attach account code to last call††

At dial tone, dial ***88** + **#**. When prompted, enter <Account code> + **#**. CDR logging must be active.

VOICEMAIL

Access Mailbox — Locally	Press the **Vmail** softkey or the ✉ button.
Access Mailbox — Remotely	Press ****** + <mailbox number>
Change greeting options	Dial **2**
Change personal options (password, date stamp, remote notification options)	Dial **3**

MESSAGE PLAYBACK CONTROLS	
Rewind 10 seconds	Dial **1**
Go to beginning	Dial **1 1**
Skip ahead 10 seconds	Dial **3**
Skip to end of message	Dial **3 3**
Check time and date stamp	Dial **5**
Forward message	Dial **6**
Delete message	Dial **7**
Save message	Dial **9**
Skip to next message	Dial **#**

UPDATING THE FIRMWARE

Updating the firmware on the phone can be done two different ways — direct via the Internet or using the TalkSwitch IP Phone Update Utility.

Checking for Updates

From the phone,

- Press the 📄 button.
- Press **8** to enter the **Information** menu.
- Press the **Up** softkey.
- Take note of the F/W version.
- Go to **http://www.talkswitch.com/us/en/support** to check for the latest updates.

Internet Update

- Press the 📄 button.
- Press **3** for **Phone Settings** then select **7. Firmware Update**.
- Press **2** to access the **TFTP Server Address**.
- Write down the IP address shown on the screen. This will be required once the update is complete.
- Clear the current entry and enter **tsphones.talkswitch.com**. Once changed, the phone will request a reboot. Select **Yes**.

After the Update

- Press the 📄 button.
- Press **3** for **Phone Settings** then select **7. Firmware Update**.
- Press **2** to access the **TFTP Server Address**.
- Enter the IP address that was previously entered to point the phone back to your TalkSwitch phone system. Once changed, the phone will request a reboot. Select **Yes**.

Using the TalkSwitch IP Phone Update Utility

If your phones are on a closed network (no Internet access), or you are having problems with updating over the Internet, you can download the IP Phone Update Utility from **http://www.talkswitch.com/us/en/support**.

- After installing the application, run it.
- Follow the directions in the update utility for performing the update.

TROUBLESHOOTING

INFORMATION

The TS-550i phone provides the means to quickly view the network parameters (IP address, default gateway address, and subnet-mask), server IP addresses (SIP servers, TFTP server, and SNTP server), results of the last file download attempt, boot version, and hardware and firmware version. This information may be useful if calling TalkSwitch Support.

- Press the ▤ button, then select **8. Information**.
- Press the **Up** or **Down** softkeys to scroll through the parameters.

Jan 23 08:30 IP Address 192.168.0.20 Back Down Up	Jan 23 08:30 Call Server Address 2 100.0.0.2 Back Down Up	Jan 23 08:30 Download (SYS CFG) DOWNLOAD OK Back Down Up
Jan 23 08:30 Subnet Mask 255.255.255.0 Back Down Up	Jan 23 08:30 TFTP Server Address 192.168.0.2 Back Down Up	Jan 23 08:30 Download (MAC CFG) DOWNLOAD OK Back Down Up
Jan 23 08:30 Default Gateway 192.168.0.1 Back Down Up	Jan 23 08:30 SNTP Server Address 100.200.5.1 Back Down Up	Jan 23 08:30 Boot version: 1.1.00ts Back Down Up
Jan 23 08:30 SIP Server Address 1 100.0.0.1 Back Down Up	Jan 23 08:30 Download (F/W): F/W UPGRADE: OK Back Down Up	Jan 23 08:30 H/W version: 1.00 S/W version: 1.1.00sts Back Down Up

- Press the ▤ button to exit the menu.

TROUBLESHOOTING GUIDE

Symptom	Corrective Action
LCD Off	1. Ensure PoE cable or power adapter is properly connected. 2. Check/replace AC/DC adapter.
Handset off-hook, no dial tone	1. Ensure the RJ-45 cable is correctly connected. 2. Make sure that the SIP Server IP Address is correct.
Button LEDs flash alternating red/yellow	Line not registered with the SIP server (TalkSwitch phone system) 1. Check the SIP configuration parameters are correct. 2. Check network connections. 3. Check the phone system / SIP server is operational.
Phone is stuck displaying "Obtaining IP Address"	The DHCP server is not responding. 1. Check the DHCP server is functional. 2. If enabled, check VLAN settings. To exit the DHCP searching mode, press the ▤ button 3 times to complete the bootup. Manually assign an IP address or reboot the phone to try having the DHCP server assign an IP address.
No audio during a call	If the phone is outside the LAN where the phone system resides, then ensure the proper ports are open on the firewall to ensure calls can make it through.
The phone has locked up or the screen is blank but there is power.	A phone lock-up may be caused by a communications error during a firmware upgrade. To correct this problem: 1. Disconnect power from the phone. 2. Press and hold the **volume up** and **2** button while re-applying power. 3. Release the buttons when the Message LED in the top corner turns off. 4. When the **BootC** screen appears, enter the digits **1, 2, 3, 4**. 5. Follow the prompts to configure IP parameters for the phone. 6. At the **Server Addr?** prompt, enter the TFTP server address where the phone can find the firmware files. If already correct, press the **Next** softkey. 7. At the **Do you want to apply default?** prompt, select the **Yes** softkey to use defaults or **No** softkey to use previously assigned parameters. The phone will reboot, perform the update and return to normal operation.

APPENDIX A. SPECIFICATIONS — TS-550i

HARDWARE SPECIFICATIONS

Item	TS-550i
Network Interface	RJ-45 IEEE 802.3 Ethernet/Fast Ethernet switch port
PC/Workstation Interface	RJ-45 IEEE 802.3 Ethernet/Fast Ethernet switch port
Power	802.3af or AC/DC Power Adapter
LED Indicators	Message Indicator, Speakerphone, Mute, DND, Headset, Red LEDs
	22 Programmable Buttons with Multi-colored LEDs
LCD	240 x 56 dot graphic
Physical Size (H x W x D)	20.8 x 22.3 x 10.5 cm 8.1 x 9.25 x 2 inches
Weight	1.3 Kg
AC/DC Adapter	Output: 48VDC, 0.3A (max.) Input: 100-240 VAC, 50/60 Hz.
Operation Temperature	0 – 40° C
Storage Temperature	-20 – 60° C
Operation Humidity	10 – 85% RH, non-condensing
Audio	Acoustic Echo Canceller & Voice Active Detection
Codecs	G.711, G.723.1/a, G.729a/b, and G.722

APPENDIX B. CHARACTER TABLE FOR DIAL PAD MODEL

The TS-550i supports a special character mode for enterning non-numeric characters. The table below covers all possible character options.

Digit	Dial Pad Mode		
	Upper Case '[A]'	Lower Case '[a]'	Symbols '[*]'
1	@ : /	@ : /	@ : /
2	A B C	a b c	| $ %
3	D E F	d e f	^ & _
4	G H I	g h i	( ) ?
5	J K L	j k l	- + , /
6	M N O	m n o	‹ › =
7	P Q R S	p q r s	; :
8	T U V	t u v	' " `
9	W X Y Z	w x y z	{ }
0	. , ? !	. , ? !	. , ? !
*	. *	. *	. *
#	Space (' ')	Space (' ')	# [ ]

REGULATORY AND SAFETY NOTICES

RADIO FREQUENCY EMISSIONS

FCC Compliance Statement

This device complies with Part 15 rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and the receiver.

• Connect the equipment into an outlet on a different circuit from that to which the receiver is connected.

If problems persist, consult the dealer or an experienced radio/TV technician for help.

Canadian Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with Class B Limits of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

European Union Declarations of Conformity

TalkSwitch declares that the equipment specified in this document, which bears the "CE" mark, conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (R&TTE 1999/5/EC) including,

• Electromagnetic Compatibility Directive (89/336/EEC) and

• Low Voltage Directive (73/23/EEC)

The product fulfills the essential requirements of the harmonized standards shown above.

PRODUCT SAFETY INSTRUCTIONS

This product complies with and conforms to the following international Product Safety standards as applicable:

• Safety of Information Technology Equipment, IEC 60950-1, including

• Relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE)

• Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-1/UL 60950-1

E-911 AND USE OF THE TS-550i WITH MULTI-LINE TELEPHONE SYSTEMS

Please note the use and operation of this phone as part of a multi-line telephone system (MLTS) may be subject to state and/or federal E-911 MLTS laws that require the MLTS to provide a caller's telephone number, extension, and physical location to applicable state and/or local emergency services when a caller initiates a 911 call. The MLTS may not provide a caller's telephone number, extension, or physical location information to emergency services when a caller dials 911, and compliance with state and/or federal E-911 MLTS laws is the sole responsibility of the purchaser of this phone.

PRIVACY

TS-550i implements security and encryption technologies however, privacy of communications may not be ensured when using this telephone.

LIMITED WARRANTY

TalkSwitch Corp. ("TalkSwitch") warrants this product against defects and malfunctions during a one (1) year period from the date of original purchase. If there is a defect or malfunction, TalkSwitch shall, at its option, and as the exclusive remedy, either repair or replace the telephone set at no charge, if returned within the warranty period. If replacement parts are used in making repairs, these parts may be refurbished, or may contain refurbished materials.

If it is necessary to replace the telephone set, it may be replaced with a refurbished telephone of the same design and color. If it should become necessary to repair or replace a defective or malfunctioning telephone set under this warranty, the provisions of this warranty shall apply to the repaired or replaced telephone set until the expiration of ninety (90) days from the date of pick up, or the date of shipment to you, of the repaired or replacement set, or until the end of the original warranty period, whichever is later. Proof of the original purchase date is to be provided with all telephone sets returned for warranty repairs.

EXCLUSIONS

TalkSwitch does not warrant its telephone sets to be compatible with the equipment of any particular telephone company. This warranty does not extend to damage to products resulting from improper installation or operation, alteration, accident, neglect, abuse, misuse, fire or natural causes such as storms or floods, after the telephone is in your possession.

TalkSwitch shall not be liable for any incidental or consequential damages, including, but not limited to, loss, damage or expense directly or indirectly arising from the customers use of or inability to use this telephone, either separately or in combination with other equipment. This paragraph, however, shall not apply to consequential damages for injury to the person in the case of telephones used or bought for use primarily for personal, family or household purposes.

This warranty sets forth the entire liability and obligations of TalkSwitch with respect to breach of warranty, and the warranties set forth or limited herein are the sole warranties and are in lieu of all other warranties, expressed or implied, including warranties or fitness for particular purpose and merchantability.

WARRANTY REPAIR SERVICES

Should the set fail during the warranty period:

• **In North America**, please call 1-866-393-9960 for further information.
• **Outside North America**, contact your sales representative for return instructions.

You will be responsible for shipping charges, if any. When you return this telephone for warranty service, you must present proof of purchase.