Teo ®

IP Phone 4101

Installation Instructions

Contents

Introduction

> *For operation instructions and user setup options, please refer to the <u>4101 User Guide</u>, doc. #14-280205.*

General Features

The **Teo Model 4101 IP Phone** is a single-line voice terminal that provides sophisticated services over managed IP networks running the Session Initiation Protocol (SIP). The telephone includes a built-in 10/100BaseT Ethernet switch to allow daisy-chain connection of a PC workstation without additional equipment.

Features of the 4101 include:

- 100-entry Call Log for Unanswered, Answered, and Outgoing Calls
- Call Timer
- Last Number Redial
- Speed Dial
- Pre-Dialing
- 12-entry Call Directory
- Voice Mail Access Key
- Message Waiting Indication
- Backlit LCD Display
- Flexible Ringing Options

- Desktop or Wall Mounting
- Integrated Speakerphone
- Call Monitoring
- Handset or Headset Operation
- Headset Activation Key
- Dedicated Headset Jack
- Integrated 10/100BaseT Ethernet Switch
- 802.3af Power over Ethernet or Local Power

Various features may not be available with some SIP services.

Controls and Indicators

1) **Display** – shows the call state, caller ID, dialed digits, network call control messages, elapsed time during calls, the date and time of day, and setup options.

2) **MENU Key** – enters and exits Setup Mode.

3) **ENTER Key** – select menu options, and can be used to initiate dialing.

4) **Navigation (Arrow) Keys** – ▲ and ▼ keys navigate within menus. In editing modes, the ▶ key moves the cursor one position to the right and the ◀ key moves the cursor one position to the left.

5) **LOG Key** – displays Call Log options.

6) **TRANS Key** – transfers a call.

7) **DIR Key** – displays the Call Directory.

8) **CONF Key** – adds other parties to a conference call.

9) **REDIAL Key** – redials the last outgoing number.

10) **DROP Key** – removes the last party added to a conference call, and disconnects you from a call and returns new dial tone when not in conference mode.

11) **SEND Key** – initiates dialing after entering digits.

12) **HOLD Key** – places a call on hold, and enters a pause in a Speed Dial or Call Directory dial string.

13) **Dial Pad** – dials telephone numbers, and sends DTMF tones to external equipment such as voice mail systems. The dial pad is also used for text and number entry during setup.

14) **Multifunction Keys** – programmable for use as Speed Dial keys or feature activators.

15) **FWD Key** – forwards incoming calls to another phone, or may be used to set Presence.

16) **DND Key** – Do Not Disturb; makes the phone appear busy to incoming callers.

17) **VOICE MAIL Key** – accesses voice mail services.

18) **HEADSET Key** – activates the headset.

19) **MUTE Key** – mutes the microphone when using the speakerphone or handset/headset.

20) **SPEAKER Key** – activates the speakerphone or Call Monitoring (if enabled by your installer).

21) **VOLUME Key** – adjusts the receiver/speaker volume when on a call; adjusts the ringer volume when on-hook.

22) **Message Waiting Indicator** – a bright red indicator is lit when messages are waiting.

23) **Microphone** – used for hands-free (speakerphone) calling; located under the right front of the telephone.

24) **Handset Jack** – a jack on the left side of the telephone connects to the included handset.

25) **Headset Jack** – a jack on the right side of the telephone connects to an optional standard headset.

Installation

Connecting the Phone

Connect the 4101 phone to power, LAN, WAN, and the handset or a headset as shown below.

Routing the Cords

If you want to secure the Ethernet and power cords to the base, route the cords through the base and under the retaining tabs as shown before connecting them.
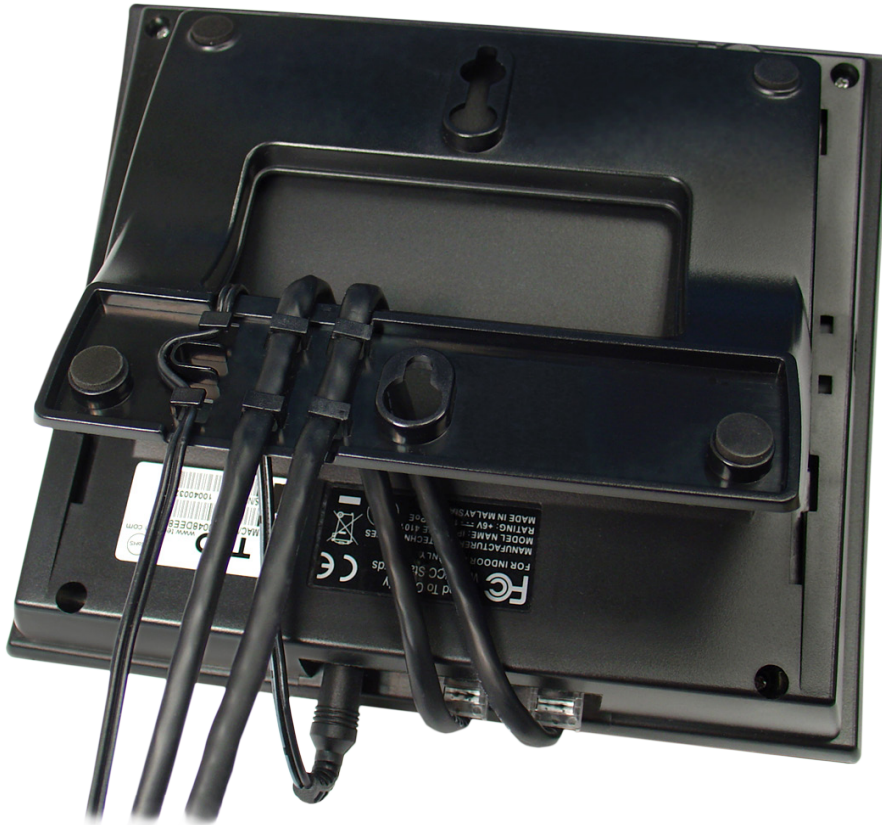
Network Connection

Connect the LAN switch to the phone's **WAN** jack (_not the LAN jack_) using a Category 5 or better cable. If the network switch provides 802.3af Power over Ethernet (PoE), a local power supply connection is not needed.

PC Connection

If you want to use a PC on the same network connection, connect the PC network interface card to the phone's **LAN** jack using a Category 5 or better cable.

Handset/Headset

Plug the supplied handset into the Handset jack on the left side of the phone. Plug a compatible headset into the Headset jack on the right side of the phone.

Power

The 4101 is compatible with IEEE 802.3af power over Ethernet cabling, utilizing either power over spare cable pairs (midspan power source) or phantom power (powered switch/hub port). The phone provides an 802.3af PD Class 2 indication to the power sourcing equipment and requires a maximum of 5 watts of power.

⚠ Power may also be provided an optional local power supply (-PWR5 option, Teo model 901055).

Connect power after all other connections are complete. If PoE is not provided, plug the power supply barrel connector into the round jack on the back of the phone. Connect the power supply to a standard 100-240 VAC, 50-60 Hz power outlet.

Wall Mounting

To save space, you can directly hang the phone on a wall or wall plate. You need two screws that will fit the keyhole slots.

Note: Wall mounting screws are not supplied with the phone.

- Press the base in the direction shown to release the locking tabs, and then remove the base.

- Rotate the base 180°.

- Insert the base tabs in to the upper slots on the phone, and then slide the base upward to lock it into place.

- On the wall or a wall plate, drill two holes with a distance of $3^{15}/_{16}$ inches apart. If drilling into drywall only, make sure to install an anchor system for the screws.

- Thread a screw into each hole with each head extending about $^{3}/_{16}$ inch from the wall or wall plate.
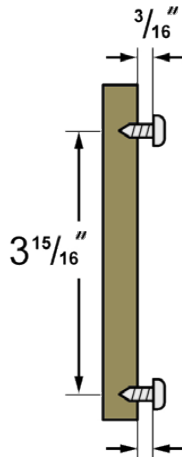
- Connect the AC power adapter, LAN and PC cords *(pages 10-11)*.

- Route the cords through the base if needed *(page 10)*.

- Align the phone's keyhole slots with the screws and slide the phone downward to secure it.

Keyhole
Slots
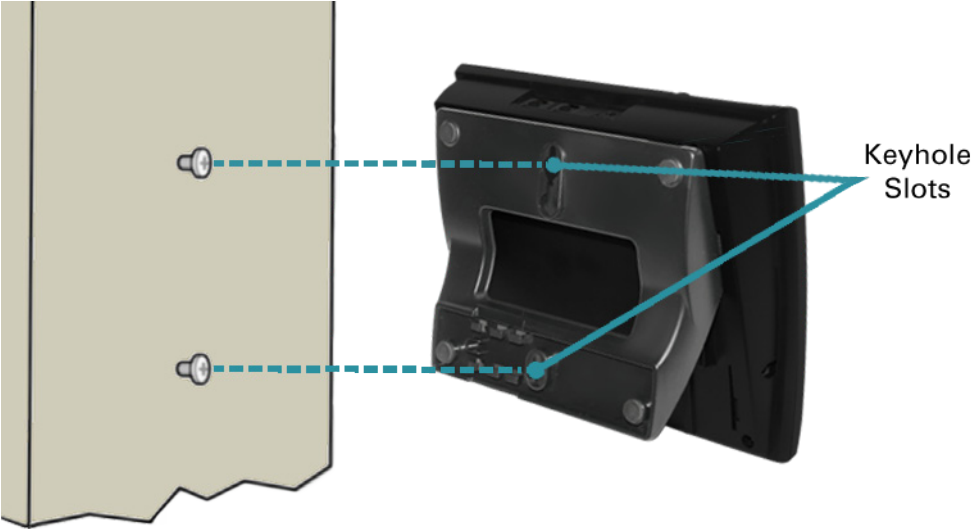
Configure the Set

Appropriate IP addresses, configuration attributes, and passwords may be provided by various network servers, providing automatic configuration of the phone.

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

Entering Alphanumeric Characters

Character strings are entered with the dial pad. New characters can only be added to the right end of a text string.

Directory entry names and some server addresses can include upper and lower case letters and punctuation.

Numeric Character Entry

Press a dial pad key to enter a digit. The flashing cursor will immediately advance to the next character position.

✱ To enter a ✱ or a period, press the ✱ key repeatedly until the desired character appears. After a short delay, the cursor will advance to the next character position. You can also immediately press a dial pad key to enter the next character without waiting for the delay.

Upper or Lower Case Characters

These characters entered are entered with dial pad keys 2-9. Press a key repeatedly until the desired character appears. After a short delay, the cursor will advance to the next character position. For example, repeatedly pressing dial pad key 7 produces these characters:

<div align="center">7 p q r s P Q R S 7…</div>

✱ To enter punctuation or special characters, press the ✱ key to show available characters in the bottom line of the display. Press the ✱ key repeatedly until the cursor is on the desired character. After a short delay, the character will be added to the dial string and the cursor will advance to the next character position. You can also immediately press a dial pad key to enter the next character without waiting for the delay.

<div align="center">
DIR>EDIT>NAME=
.✱:+@_-/\,;"()<>
</div>

To enter a # or a space, press the # key repeatedly until the desired character appears.

Editing Character Strings

▶ Press the Right Arrow key to move the cursor to the right.

◀ Press the Left Arrow key to delete the character to the left of the cursor.

Using Menus

Setup options are accessed via menus. Three setup menus are available:

INSTALL — installation options, including network and SIP settings
ADMIN — test and diagnostic options
USER — user preference options

See Appendix A *(page 59)* for a detailed menu tree.

Accessing Menus

MENU

Press the **MENU** key.

```
SETUP MENU:
USER
```

▲
▼

Press the Up Arrow or Down Arrow key to display one of the three setup menus.

```
SETUP MENU:
ADMIN
```

```
SETUP MENU:
INSTALL
```

ENTER

Press the **ENTER** key to select the displayed menu.

```
SETUP>INSTALL
NETWORK
```

Viewing Available Menu Items

▲
▼

Press the Up Arrow or Down Arrow key to scroll through the items available in the current menu. The current menu name is shown in the upper line of the display, and menu items are shown in the lower line of the display. Menu items may be selectable options or additional menus.

```
SETUP>INSTALL
SIP
```

```
SETUP>INSTALL
QoS
```

```
SETUP>INSTALL
LINE
```

Selecting a Menu Item

ENTER

Press the **ENTER** key to select the displayed item. Repeatedly scroll and press the **ENTER** key until the desired item is displayed.

```
SETUP>INSTALL
NETWORK
```

```
INSTALL>NETWORK
IPv4
```

```
NETWORK>IPv4
IP CONFIG
```

```
IPV4>IP CONFIG
*DHCPV4
```

If the displayed item is a configuration option instead of a submenu, the current setting will be shown preceded by an asterisk.

Scroll to change the value, and then press the **ENTER** key.

ENTER

```
IPV4>IP CONFIG
  STATIC
```

Returning to the Previous Menu

MENU

Press the **MENU** key to back up one menu level. To exit the menus without saving any changes, lift the handset.

```
NETWORK>IPV4
IP CONFIG
```

Initialization

With the application of power, the phone's operating software is loaded into internal memory. During this interval, the Message Waiting Indicator will be illuminated. Upon completion the display will show the model number, followed by the current software version.

```
INITIALIZING...
07.04.16
```

The display will show progress messages while establishing the communication layers.

Many configuration settings can be set automatically by a DHCP server and telephone update server. DHCP should be used if available; it is enabled by default.

If DHCP and update servers are available and configured properly, the phone will prompt for a Line ID and SIP Password the first time that the phone is connected to the network. You may also be prompted for an authentication ID if required by the system.

```
LINE ID=
_
```

- Enter the appropriate Line ID (phone) number, and then press the **ENTER** key. This would typically be the phone number used for station-to-station calls.

```
AUTH ID=
_
```

- If prompted, enter the appropriate authentication ID number, and then press the **ENTER** key. Leave this entry blank if no authentication ID is required.

```
SIP PASSWORD=
_
```

- Enter the appropriate password, and then press the **ENTER** key. Leave this entry blank if no password is required.

- If the update server protocol and IP address are not supplied by DHCP, configure these items as shown on the following page.

During the registration process, the following display will be shown.

```
SIP REGISTRATION
IN PROGRESS...
```

When the phone is registered with the proxy server, the following status message will be displayed.

```
SIP REGISTRATION
SUCCESSFUL
```

The idle display will then appear, indicating that the phone is ready for use.

Initialization without DHCP Server

The DHCP (Dynamic Host Configuration Protocol) server automatically assigns the telephone address, server addresses, and subnet mask. If DHCP is not available, or is not provisioned with all of these parameters, they must be entered manually.

The following display will be shown while the phone attempts to connect to a DHCP server.

```
CHECKING DHCP
DISABLE?
```

- If no DHCP server is available, select DISABLE (press the **ENTER** key) to use static addressing.

```
PHONE IP ADDR=
000.000.000.000
```

- Press the Right Arrow key repeatedly to move to the end of the line, and then press the Left Arrow repeatedly to remove the displayed IP address.

```
PHONE IP ADDR=
_
```

- Enter the phone's IP address with the dial pad; use the ✱ key to enter a "**.**". Press the **ENTER** key when finished.

- Enter the required subnet mask and gateway IP address when prompted; press the **ENTER** key after each entry.

Next, the phone will prompt for an update server protocol and IP address.

```
UPDATE>PROTOCOL
   TEO
```

- Select a protocol with the Up Arrow or Down Arrow key, and then press the **ENTER** key. Enter the update server IP address when prompted. Press the **ENTER** key when finished. If no update server is available, select NONE.

The phone then will prompt for the Line ID, authentication ID, and SIP password as shown on the previous page.

Using Local Inspect to Verify Keys

Local Inspect *(page 48)* allows you to identify the line appearance or feature assignment of each configured key, directory number bearer capabilities, and the feature indicator assignment for the Message Waiting Indicator.

Installation Options

The following options are available from the Installation Options menu:

- Network Settings
- PC (LAN) Port
- SIP Options
- Quality of Service *
- Line Settings
- Keys

- Call Timeouts
- Installation PIN
- Reset to Default Settings
- Security Options
- Configuration Updates *
- Debugging Options

*Noted options are explained briefly in this manual. –
For details, refer to the IP Telephone Network Administration Guide.*

Auto Answer is configured from the User Options menu.

Installation Options Menu

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

MENU

Press the **MENU** key.

```
SETUP MENU:
USER
```

ENTER

Scroll to the INSTALL menu, and then press the **ENTER** key.

```
SETUP>INSTALL
NETWORK
```

5 JKL

The Installation Options menu may be protected by a PIN. Enter your PIN with the dial pad, and then press the **ENTER** key.

To change or remove the PIN, please refer to page 43.

```
ENTER PIN:
********
```

Some configuration changes only take effect after a phone restart. You may be prompted to allow a restart before you can proceed with other changes.

```
RESTART REQUIRED
PROCEED?
```

ENTER
⬤ Press the **ENTER** key to proceed with editing, or press the **MENU** key to abort and return to the previous menu.

After exiting Setup Mode, you will be prompted to restart the phone.

```
PLEASE WAIT...
```

```
RESTART REQUIRED
PROCEED?
```

ENTER
⬤ Press the **ENTER** key to restart the phone immediately, or press the **MENU** key to abort and return to the Setup menu.

```
RESTARTING
PLEASE WAIT...
```

IP Addresses

IP address entries are required for the phone, subnet mask, gateway/router, SIP proxy, and optional update and SNTP servers. By default, the phone uses DHCP (Dynamic Host Configuration Protocol) to automatically set the IP addresses and the subnet mask.

The phone can also obtain server addresses, as well as software updates and QoS settings from an update server. Please refer to the IP Telephone Network Administration Guide.

Automatic IP Configuration (DHCP)

IP addresses for the telephone, servers, and subnet mask are normally provided by a DHCP server when the phone starts.

The DHCP server can supply the following addresses:

- Phone IP Address
- Phone Subnet Mask
- Phone Domain Name
- Default Gateway IP Address
- DNS Server IP Address(es)
- SNTP Server IP Address(es)
- Update Server IP Address
- SIP Proxy IP Address(es)

Manual IP Configuration

All IP addresses listed above may be entered as static (fixed) addresses from the phone's Installation Options Menu. When setting up servers and telephones, server names can be entered in place of IP addresses.

*Note: You must restart the phone after any IP address changes have been made for the changes to take effect (**MENU** → ADMIN → RESTART).*

MENU
ENTER

From the Installation Options menu, select NETWORK.
(**MENU** → INSTALL → NETWORK)

```
INSTALL>NETWORK
IPV4
```

▲
▼
ENTER

Navigate to the appropriate submenu if needed, and then select the IP address to view or edit.

IPv4 → IP ADDRESS	– IP address of this telephone
IPv4 → SUBNET	– Subnet mask for telephone IP addresses
IPv4 → GATEWAY	– Gateway to WAN or Internet
IPv6 → LINK ADDRESS	– IPv6 link address of this phone
IPv6 → ADD →GLOBAL1	– IPv6 Global addresses
DOMAIN → DNS	– Domain name server
UPDATE → SERVER	– Update server
SNTP	– Time server
SYSLOG	– Error and QoS logging server
ETHERNET MAC	– Ethernet MAC address (view only)

Note: To edit the SIP proxy server and SIP registration server IP address, see pages 27–28.

Internet Protocol

The 4101 supports both IPv4 and IPv6 protocols. The IP address configuration method can be selected independently for the phone, domain name server, update server, SNTP server, and Syslog server.

Phone IP Address

The phone can have an IPv4 address, as well as several IPv6 addresses. Select the IP address configuration method from the NETWORK menu.

▲
▼
ENTER

Select IPv4 or IPv6, and then select IP CONFIG.

```
IPV4>IP CONFIG
  DHCPV4
```

Select one of the available IP address configuration options.

IPv4:

DHCPv4	– IPv4 address is supplied by DHCP (IPv4)
STATIC	– manually entered static (fixed) IPv4 address
OFF	– IPv4 addressing disabled (IPv6 protocol only)

IPv6:

AUTOv6	– stateless IPv6 address auto configuration
STATIC	– manually entered static (fixed) IPv6 addresses
OFF	– IPv6 addressing disabled (IPv4 protocol only)

Other IP Addresses

▲ ▼ ENTER ● After navigating to the server submenu (DOMAIN → DNS, UPDATE → SERVER, SNTP, or SYSLOG), select IP CONFIG, and then select one of the available options.

> DHCPv4 – IP address is supplied by DHCP (IPv4)
> STATIC – manually entered static (fixed) IP address

Viewing or Editing IP Addresses

▲ ▼ ENTER ● Select VIEW if you want to view the IP address without making any changes.

Select EDIT to change the IP address.

DHCPv4 must be disabled before editing the Phone IP Address, Subnet Mask, or Default Gateway.

For other addresses, disabling DHCP is not required, but recommended, since any manually entered addresses may be overwritten by the DHCP server the next time the phone is restarted.

DHCPv4 can be disabled manually by selecting IP CONFIG for the address, and then selecting STATIC. The phone address, subnet, and gateway IP CONFIG settings are under the IPv4 menu. *Refer to the menu tree on page 59.*

```
DISABLE DHCPV4?
YES
```

Select YES to disable DHCP and edit the address, or NO to leave DHCP enabled.

```
IPV4>IP ADDRESS=
192.154.030.123
```

5 JKL Enter or edit the IP address with the dial pad. The address can be an IP address or fully qualified domain name (FQDN).
Character entry is explained on page 14.

ENTER ● Press the **ENTER** key when finished.

Ping Test

```
IPv4>GATEWAY
PING
```

▲ ▼ ENTER ● To test a server address, select PING (PING 4 or PING 6 for the phone or gateway). If you have entered a new phone IP address, the phone must be restarted before ping will work properly.
(**MENU** → ADMIN → RESTART)

```
PINGING ADDRESS
216.122.033.243
```

If a response is received, indicating a valid address, "PING4 SUCCESSFUL" or "PING6 SUCCESSFUL" will be displayed.

```
PING4 SUCCESSFUL
216.122.033.243
```

If no response is received, the entered address is invalid. "PING4 FAILED" or "PING6 FAILED" Twill be displayed.

```
PING4 FAILED
216.122.033.243
```

Press any key to return to the previous menu.

Update Server

In addition to the IP address or FQDN, you can also specify a non-standard port and path name for update files. Enter a colon between the IP address or FQDN and the port number. To enter a colon, select 123 to change to alpha character entry mode (ABC or abc), then press * twice. If the update files are not located in the root directory of the update sever, include a path name to the appropriate subdirectory under the root directory.

```
SERVER>ADDRESS=
myserv:9443/teo
```

SNTP Server

In addition to the IP address or FQDN, you can also specify the time offset (in hours) from UTC for your local time zone, and automatically adjust for daylight savings time.

Time Offset

```
NETWORK>SNTP
OFFSET
```

ENTER

From the SNTP menu, select OFFSET.

```
SNTP>OFFSET=
-8 HOURS
```

▲
▼
Press the Arrow keys to change the offset.

```
SNTP>OFFSET=
-6 HOURS
```

ENTER
●
Press the **ENTER** key when finished.

Daylight Savings Time

```
NETWORK>SNTP
OFFSET
```

▲
▼
ENTER
●
From the SNTP menu, select AUTO DST ADJUST.

```
SNTP>AUTO DST
  ON
```

Select ON to automatically adjust the clock for daylight savings time, or OFF to disable daylight savings time adjustment.

The default setting in the phone starts daylight savings time at 2:00 a.m. on the second Sunday of March, and ends it at 2:00 a.m. on the first Sunday of November. These settings can be customized in the phone's XML configuration file – refer to the IP Telephone Network Administration Guide.

ENTER
●
Press the **ENTER** key when finished.

Phone Ports

You can view or edit the phone's SIP port and RTP (Real-Time Protocol) start port from this menu.

```
NETWORK>PORT
SIP
```

From the port menu, select SIP or RTP.

```
NETWORK>PORT>SIP
VIEW
```

Select VIEW if you want to view the port number without making any changes.

Select EDIT to change the port number.

Edit the port number with the dial pad.
Character entry is explained on page 14.

For most SIP implementations, use the default port numbers:

SIP – 5060
RTP – 16384

Press the **ENTER** key when finished.

SIP Configuration

The SIP options configure the phone to allow registration with and signaling of SIP Server applications. Please refer to the <u>IP Telephone Network Administration Guide</u> and the SIP server documentation.

MENU

ENTER

From the Installation Options menu, select SIP.
(**MENU** → INSTALL → SIP)

```
INSTALL>SIP
IP CONFIG
```

▲
▼
ENTER

Select one of the SIP options:

IP CONFIG	–	IP address automatic configuration settings
PROXY	–	SIP Proxy server IP address and port
REGISTRATION	–	enable/disable SIP registration
REGISTRAR	–	SIP Registrar server IP address and port, if registration is enabled
MWI	–	message summary event subscription for Message Waiting Indication

Internet Protocol Configuration

```
SIP>IP CONFIG
  DHCPV4
```

▲
▼
ENTER

Select one of the available options for assigning the SIP address

DHCPv4 – address is supplied by DHCP (IPv4)
STATIC   – manually entered static (fixed) address

SIP Proxy Server and Registrar

▲
▼
ENTER

Select PROXY or REGISTRAR.

```
SIP>PROXY
ID
```

Select ID to view or change the proxy/registrar server IP address, or select PORT to view or change the server port number.

```
SIP>PROXY>ID
VIEW
```

IP Addresses

Select VIEW if you want to view the IP address without making any changes.

Select EDIT to change the IP address.

Disabling DHCP before editing the IP address is not required, but recommended, since any manually entered address may be overwritten by the DHCP server the next time the phone is restarted.

DHCP can be disabled manually by selecting IP CONFIG from the SIP menu, and then selecting STATIC.

Enter or edit the IP address or server name with the dial pad. *Character entry is explained on page 14.*

Press the **ENTER** key when finished.

Ports

```
SIP>PROXY>PORT
VIEW
```

Select VIEW if you want to view the port number without making any changes.

Select EDIT to change the port number.

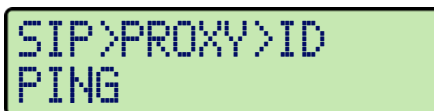Edit the proxy/registrar port number with the dial pad. *Character entry is explained on page 14.*

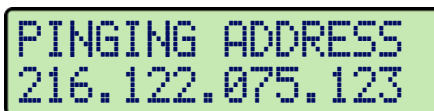For most SIP implementations, use the default port number 5060.

Press the **ENTER** key when finished. SIP signaling will use the new proxy port number on the next call or registration attempt.

Ping Test

```
SIP>PROXY>ID
PING
```

To test the proxy or registrar server address, select PING.

```
PINGING ADDRESS
216.122.075.123
```

If a response is received, indicating a valid address, "PING4 SUCCESSFUL" or "PING6 SUCCESSFUL" will be displayed.

```
PING4 SUCCESSFUL
216.122.075.123
```

If no response is received, the entered address is invalid. "PING FAILED" will be displayed.

```
PING4 FAILED
216.122.075.123
```

Press any key to return to the previous menu.

Enable or Disable SIP Registration

Most SIP implementations require phone registration; leave the registration setting set to ENABLE. Set to DISABLE only if registration is not required, or for testing purposes.

```
SIP>REGISTRATION
  ENABLE
```

Select ENABLE or DISABLE to change the setting.

ENTER

MWI *(Message Summary Event Subscription for MWI)*

This setting determines whether the phone subscribes to message summary events for Message Waiting Indication. This parameter should be set to **OFF** for Cisco voicemail systems.

```
SIP>MSG-SUMM SUB
*ON
```

Select ON or OFF to change the setting.

ENTER

Quality of Service

Quality of Service (QoS) settings can improve voice performance over a network by prioritizing voice packets, and must be coordinated with other network devices.

These settings must be coordinated with other network devices, and should not be changed unless required to correct audio problems. Consult with your network administrator before changing these settings.

MENU
ENTER
To view or change Quality of Service settings, select QoS from the Installation Options menu.
(**MENU** → INSTALL → QoS)

```
INSTALL>QOS
L2 802.1Q
```

▲
▼
ENTER
Select L2 802.1Q for Layer 2, or L3 DIFFSERV for Layer 3.

```
QOS>L2 802.1Q
ON/OFF
```

```
QOS>L3 DIFFSERV
VOICE DSCP
```

Refer to the IP Telephone Network Administration Guide for help with setting QoS options.

Line Appearance Setup

The line appearance is used to place and answer calls.

MENU

ENTER

From the Installation Options menu, select LINE.
(**MENU** → INSTALL → LINE)

```
INSTALL>LINE
LINE ID
```

Select one of the available line options:

LINE ID	– SIP line ID
NAME	– display name
AUTH ID	– SIP authentication ID
SIP PASSWORD	– SIP authentication password
SHARED	– bridged line appearance sharing
CODEC	– codec type
PTIME	– packetization time
JITTER	– jitter buffer type and settings

ENTER

Note: For information about the CODEC, PTIME, and JITTER settings, please refer to the IP Telephone Network Administration Guide.

5 JKL

ENTER

Enter the line ID and display name with the dial pad, and then press the **ENTER** key after each entry.
Character entry is explained on page 14.

The authentication ID and SIP authentication password may be required for this line, and the codec and jitter buffer options may need to be changed; consult with your system administrator.

Bridged Line Appearance Sharing

Line appearance sharing as described below is for use with Avaya and other systems that support shared lines. Leave the SHARED setting disabled when connected to a Teo UC system.

The SHARED setting controls sharing of the line appearance with other telephones.

```
LINE>SHARED=
   DISABLED
```

ENTER

Select ENABLED to enable sharing, or DISABLED to disable sharing.

At other multi-line telephones that will share this line, set up a key (not line key 1) with the same Line ID, and enable sharing for that key. Since the 4101 is a single-line phone, it cannot share lines from another phone. The shared setting is not used for multiple registrations of the same line id as the primary line.

Auto Answer

The phone can be configured to automatically answer a call when the phone is idle, if the call's SIP alert-info header matches a predefined string *(up to 10 strings can be defined; refer to the IP Telephone Network Administration Guide)*. Calls can be answered in 2-way speakerphone mode or with the microphone muted. Applications for the Auto Answer feature include paging, intercom calls, ACD calls, and dialing or answering from computer-based applications.

MENU
ENTER

From the User Options menu, select KEYS.
(**MENU** → USER → AUTO ANSWER)

The current Auto Answer state is shown in the bottom line of the display.

```
USER>AUTO ANSWER
*DISABLED
```

To change the Auto Answer state, select ENABLED 2-WAY, ENABLED w/MUTE, or DISABLED.

ENTER

```
USER>AUTO ANSWER
*ENABLED 2-WAY
```

```
USER>AUTO ANSWER
*ENABLED w/MUTE
```

When disabled, auto answer calls will ring normally with a distinctive ring pattern.

The phone user can change the Auto Answer state at any time.

Configuring Keys

You can assign Speed Dial numbers or feature activators to multifunction keys, and set up the **FWD**, **VOICE MAIL**, and **SPEAKER** keys by using this option.

MENU
ENTER

From the Installation Options menu, select KEYS.
(**MENU** → INSTALL → KEYS)

```
INSTALL>KEYS
SELECT A KEY
```

M1

Press the key to be programmed.

M1 - **M7**	– Speed Dial (one touch dialing of frequently-called numbers) or feature activator, such as Directed Call Pickup
FWD	– Call Forward (forwards incoming calls to another phone) or Presence (sets user presence status)
VOICE MAIL	– accesses voice mail services

```
KEYS>M1
*UNUSED
```

Programming procedures for each key type are described below.

Multifunction Keys (M1 – M7)

Multifunction keys may by assigned as feature activators or used for speed dialing frequently-called numbers. Speed Dial keys may also be programmed from the User Options menu.

Speed Dial Keys

▲
▼
ENTER

Select SPEED DIAL from the list of available options.

```
KEYS>M1
 SPEED DIAL
```

```
KEYS>SPEED DIAL
_
```

5 JKL

Enter speed dial digits with the dial pad.

```
M1>SPEED DIAL
5553491000
```

"Smart" Pauses

HOLD

"Smart" pauses are entered with the HOLD key, and are shown in the display as a ⸮ character. The first pause in a dial string will wait until the call is answered; additional pauses delay dialing for one second per pause. Enter multiple pauses to increase the delay time. You can use a smart pause to automatically enter a PIN code after the called number answers.

```
M1>SPEED DIAL
5553491000⸮1234#
```

Immediate or Editable Dialing

#

For one-touch dialing, enter a # character at the end of the dial string. The string will be dialed immediately when the Speed Dial key is pressed.

A Speed Dial key can be used in conjunction with manual dialing. If you want to enter more digits after pressing the Speed Dial key, or edit the dial string before dialing, <u>do not</u> include the # character.

ENTER

When all digits have been entered, press the **ENTER** key.

Feature Activator Keys

▲
▼
ENTER

Select from the list of available features.

```
KEYS>M1
   DIR CALL PICKUP
```

Unused Keys

▲
▼
ENTER

Select UNUSED to remove any speed dial strings or features from a key.

```
KEYS>M3
   UNUSED
```

ENTER

Press the **ENTER** key to return to key selection. The key is converted to Unused.

DND Key

The DND (Do Not Disturb) key is not configurable.

FWD Key

The FWD key can be configured to forward calls to another phone, or to set user presence; the Teo Presence feature includes a Call Forward option.

▲
▼
ENTER

Select CALL FORWARD to configure the **FWD** key for local forwarding of calls.

The user can choose to forward all calls, unanswered calls, calls that ring when the phone is busy, or no calls (Call Forwarding off).

```
KEYS>FWD
 CALL FORWARD
```

▲
▼
ENTER

Select PRESENCE to configure the **FWD** key for setting the user presence state on a Teo UC System server.

The user can choose from a list of predefined presence states, such as Busy, Available, On Vacation, or After Hours.

```
KEYS>FWD
 PRESENCE
```

VOICE MAIL Key

The **VOICE MAIL** key is used to speed dial a voice mail system.

```
KEYS>VOICE MAIL
_
```

5 JKL

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

Enter the voice mail system number with the dial pad.

Note: A # character at the end of the dial string is not required for immediate dialing; the voice mail key always dials immediately when pressed.

```
KEYS>VOICE MAIL
9555143271234
```

"Smart" Pauses

HOLD

"Smart" pauses are entered with the **HOLD** key, and are shown in the display as a ₽ character. The first pause in a dial string will wait until the call is answered; additional pauses delay dialing for one second per pause. Enter multiple pauses to increase the delay time. You can use a smart pause to automatically enter a voice mail PIN code after the voice mail system answers.

ENTER

When all digits have been entered, press the **ENTER** key.

Configuring the Speakerphone

The speakerphone can be configured with full speaker and microphone functionality, or with the microphone always muted (Call Monitoring). You can also completely disable the speakerphone.

On-hook dialing is available with the both speakerphone and Call Monitoring. Call Monitoring provides a listen-only call monitor function that is activated by the **SPEAKER** key.

When Call Monitoring is active, call progress tones, dialed digits, and the remote party can be heard through the built-in speaker, but you can only talk to the remote party with the handset or headset.

MENU
ENTER

From the Installation Options menu, select KEYS.
(**MENU** → INSTALL → KEYS)

```
INSTALL>KEYS
SELECT A KEY
```

SPEAKER

Press the **SPEAKER** key.

```
KEYS>SPEAKER KEY
  SPEAKERPHONE
```

▲
▼
ENTER

Select SPEAKERPHONE to enable the speakerphone, MONITOR ONLY to enable Call Monitoring, or DISABLE to disable the speakerphone and Call Monitoring.

MENU

When finished, press the **MENU** key repeatedly to return to the Installations Options menu or to exit Setup Mode.

Call Timeout Options

These options set dialing, ringing, and reorder timeouts.

MENU
ENTER

From the Installation Options menu, select TIMEOUT.
(**MENU** → INSTALL → TIMEOUT)

```
INSTALL>TIMEOUT
DIALING
```

Dialing Timeout

▲ ▼
ENTER

Select DIALING.

```
TIMEOUT>DIALING=
10
```

5 JKL

Enter the number of seconds (1-24) to wait after entering digits, before a call is automatically dialed without pressing the **SEND** or **ENTER** key.

ENTER

Press the **ENTER** key when finished.

Ringing Timeout

▲ ▼
ENTER

Select RING.

```
TIMEOUT>RINGING=
180
```

5 JKL

Enter the number of seconds (0-300) that an incoming call will ring, before ringing is turned off and the call is abandoned. Enter 0 for no ringing timeout (call continues to ring).

ENTER

Press the **ENTER** key when finished.

Reorder Timeout

▲ ▼
ENTER

Select REORDER.

```
TIMEOUT>REORDER=
180
```

5 JKL

Enter the number of seconds (0-300) that the phone will remain in a disconnected or error state before the call is cleared. Enter 0 for no reorder timeout (call remains in a disconnected or error state).

ENTER

Press the **ENTER** key when finished.

Updates

The telephone can be remotely configured, and its operating software updated, by several methods. Configuration and program updates can be stored on a Teo UC Server, or on a TFTP, HTTP, or HTTPS server. Updates can be scheduled to occur automatically at a fixed time each day or disabled. The update may be initiated manually using the START menu option.

The Installation Options menu can be protected by a PIN to prevent unauthorized updates (page 43).

Please refer to the IP Telephone Network Administration Guide for more information.

MENU
ENTER

From the Installation Options – Network menu, select UPDATE.
(**MENU** → INSTALL → NETWORK → UPDATE)

```
NETWORK>UPDATE
  SERVER
```

▲
▼
ENTER

Select one of the following options:

SERVER – update server IP address settings *(page 21)*
PROTOCOL – update server protocol
CONFIG – configuration update options
PROGRAM – phone operating software update options

Update Server Protocol

▲
▼
ENTER

Select the update server type: TEO (for use with Teo UC System), TFTP, HTTP, HTTPS, or NONE.

```
UPDATE>PROTOCOL
    TEO
```

MENU

Press the **MENU** key to return to the Update menu.

Configuration Updates

▲
▼

ENTER
●

Select DOWNLOAD for immediate or automatic configuration update.

Manual Configuration Update

```
CONFIG>DOWNLOAD
NOW
```

▲
▼

ENTER
●

Select NOW to immediately update the phone configuration. The phone will restart after a successful update.

Automatic Configuration Update

The phone configuration can be automatically updated from the server at a preset time.

```
CONFIG>DOWNLOAD
AUTO
```

▲
▼

ENTER
●

Select AUTO to change automatic update settings.

```
DOWNLOAD>AUTO
  ENABLED
```

Select ENABLE or DISABLE as needed.

If this option is enabled, select UPDATE TIME to change the time of day for automatic configuration updates.

```
AUTO>UPDATE TIME
12:00AM
```

5 JKL

Enter the update time, in 12-hour format, with the dial pad. A leading "0" is required for hours 0-9.

▲
▼

Press the Up Arrow or Down Arrow key to select AM or PM.

ENTER
●

Press the **ENTER** key when finished.

Program Updates

This option updates the phone operating firmware. Phone operating firmware is digitally signed by Teo to ensure code validity. Modified operating firmware cannot be loaded into the phone.

Select DOWNLOAD for immediate or automatic configuration update.

Manual Program Update

```
PROGRAM>DOWNLOAD
NOW
```

Select NOW to immediately update the phone software. The phone will restart after a successful update.

Automatic Program Update

The phone software can be automatically updated from the server at a preset time.

```
PROGRAM>DOWNLOAD
AUTO
```

Select AUTO to change automatic update settings.

```
DOWNLOAD>AUTO
   ENABLED
```

Select ENABLE or DISABLE as needed.

If this option is enabled, select UPDATE TIME to change the time of day for automatic program updates.

```
AUTO>UPDATE TIME
12:00AM
```

Enter the update time, in 12-hour format, with the dial pad. A leading "0" is required for hours 0-9.

▲
▼   Press the Up Arrow or Down Arrow key to select AM or PM.

ENTER   Press the **ENTER** key when finished.

LAN Port

The built-in Ethernet switch and LAN port allows a computer to share the phone's Ethernet connection.

MENU
ENTER   From the Installation Options – Network menu, select LAN PORT.
(**MENU** → INSTALL → NETWORK → LAN PORT)

```
NETWORK>LAN PORT
     ENABLED
```

▲
▼   Select ENABLED or DISABLED as needed.

ENTER

Debugging Options

Error log options are accessed from the Debug menu.

MENU
ENTER

From the Installation Options menu, select DEBUG.
(**MENU** → INSTALL → DEBUG)

```
INSTALL>DEBUG
ERROR LOG
```

▲
▼
ENTER

Select one of the following options:.

ERROR LOG – view the error log
CLEAR LOG – clear the error log

Viewing the Error Log

After selecting ERROR LOG, the most recent log entry will be shown.

```
02:04:25P 03/22
TIME SERVER SET
```

The time and date is shown in the upper line, and the error description is shown in the lower line.

▶
▶

The entire error description may not be shown; scroll with the Left or Right Arrow key to view additional text.

▲
▼

Press the Down Arrow key to view previous entries, or press the Up Arrow key to return to newer entries.

ENTER

Press the **ENTER** or **MENU** key to return to the Debug menu.

Clearing the Error Log

```
CLEAR ERROR LOG?
YES
```

▲
▼
ENTER

At the prompt, select YES to remove all entries from the error log, or select NO to return to the Debug menu.

Installation PIN

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

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

MENU
ENTER

From the Installation Options menu, select PIN.
(**MENU** → INSTALL → PIN)

```
INSTALL PIN
SET
```

▲
▼
ENTER

Select SET.

```
NEW PIN:
```

5 JKL

Enter a new 4 to 20 digit PIN with the dial pad.

If you need to make corrections, select ◄BKSP *(backspace) to delete the previous digit, or select* CLEAR *to remove all digits*.

Each entered digit will be briefly shown in the display.

```
NEW PIN:
***********
```

ENTER

Press the **ENTER** key.

5 JKL

Repeat the PIN when prompted to verify the new entry.

```
VERIFY PIN:
***********
```

ENTER

Press the **ENTER** key.

"PIN SET" will be displayed to confirm the new PIN.

```
PIN SET
```

Record your PIN for future reference.

If you lose your PIN, you will no longer be able to access the Installation Options menu – contact Teo Technical Support for assistance.

ENTER

Press the **ENTER** key return to the Installation Options menu or press the **MENU** key to exit Setup Mode.

Removing the PIN

To remove the Installation Options PIN, the phone must be reset. Refer to Reset to Factory Default Settings below.

Reset to Factory Default Settings

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

MENU
ENTER

From the Installation Options menu, select RESET.
(**MENU** → INSTALL → RESET)

```
RESET OPTIONS
PROCEED?
```

▲
▼

ENTER

Select CLEAR.

ENTER

Press the **ENTER** key to comfirm the reset operation, or press the **MENU** key to abort without resetting.

```
SETTINGS CLEARED
RESTARTING...
```

Security Options

The security options allow you to control ARP monitoring, SRTP, SIP transport, and MLPP dialing. Leave these settings at the default values unless changes are required for your network.

MENU

ENTER

From the Installation Options menu, select SECURITY.
(**MENU** → INSTALL → SECURITY)

```
INSTALL>SECURITY
ARP
```

ARP Monitoring

If your network does not monitor for Address Resolution Protocol (ARP) attacks, enable this option to turn on ARP monitoring in the phone.

▲
▼
ENTER

Select ARP.

```
ARP MONITORING
*DISABLED
```

Select ENABLE or DISABLE as needed.

SRTP

Secure Real-time Transport Protocol (SRTP) is used to encrypt transmitted voice packets.

▲
▼
ENTER

Select SRTP.

```
SECURE RTP
*DISABLED
```

Select ENABLE or DISABLE as needed.

SIP Transport

Defines the type of SIP transport used for SIP signaling.

▲
▼
ENTER

Select SIP TRANSPORT.

```
SIP TRANSPORT
*UDP
```

Select UDP, TCP, TLS (uses SIP in the URI), or TLS+ (uses SIPS in the URI).

MLPP Dial Plan

Enables MLPP dialing and identifies the MLPP network domain.

Note: This option may display "NOT CONFIGURABLE" if a custom dial plan has been configured through XML configuration download.

Select MLPP DIALPLAN.

ENTER

```
MLPP DIALPLAN
*DISABLED
```

Select DSN DOMAIN, UC DOMAIN to enable MLPP, or DISABLED to disable MLPP dialing and preemption.

Administration Options

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

- Local Inspect
- Hardware Version
- Software Version
- Serial Number

- Test Functions
- Diagnostics
- Phone Restart

Administration Options Menu

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

MENU   Press the **MENU** key.

```
SETUP MENU:
INSTALL
```

▼   Press the Down Arrow key to scroll to the ADMIN option.

```
SETUP MENU:
ADMIN
```

ENTER   Press the **ENTER** key to select ADMIN.

```
SETUP>ADMIN
INSPECT KEYS
```

Local Inspect

Local Inspect allows you to identify the speed dial number or feature assignment of each configured key.

MENU

ENTER

From the Administration Options menu, select INSPECT KEYS.
(**MENU** → ADMIN → INSPECT KEYS)

```
ADMIN>INSPECT
SELECT A KEY
```

M1

Press one of the following keys:

      Speed Dial (M1-M7)   DND   FWD   VOICE MAIL

The Speed Dial key number or feature activator key name will be shown in the upper line of the display. The lower line will show the speed dial number, feature information, or voice mail access number.

```
1=SPEED DIAL
5551234
```

```
5=UNUSED
```

```
DND=
DO NOT DISTURB
```

```
FWD=
CALL FORWARD
```

```
VOICE MAIL
3040
```

Version

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

MENU
ENTER

From the Administration Options menu, select VERSION.
(**MENU** → ADMIN → VERSION)

```
ADMIN>VERSION
HARDWARE
```

Hardware Version

▲
▼
ENTER

Select HARDWARE.

```
HW MODEL: 4101
TOP:A  PCB:A
```

Application Software Version

▲
▼
ENTER

Select SOFTWARE.

```
VERSION>SOFTWARE
07.04.16
```

Serial Number

▲
▼
ENTER

Select SERIAL NUMBER.

```
VERSION>SERIAL#
1004000000
```

MENU

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

Test

Select this option to test the LCD display or keys.

MENU
ENTER

From the Administration Options menu, select TEST.
(**MENU** → ADMIN → TEST)

```
ADMIN>TEST
DISPLAY
```

Keys

ENTER

Select KEYS.

```
PRESS EACH KEY
OFF-HOOK TO EXIT
```

5 JKL
SEND
VOLUME

Press each key on the telephone, including the dial pad keys, one at a time. Press both the top and bottom of the **VOLUME** key.

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

Three lines of letters or numbers are used to accommodate all keys; the display will shift up or down to show the last key pressed.

```
ABCDEFGHIJKLMNOP
ABCDEFGHIJKLMNOP
```

```
123456789*******
****************
```

If all keys are operational, the following display will be shown. Press any key to return to the Test menu.
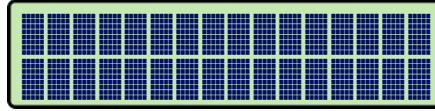
```
KEY TEST PASSED
ANY KEY TO EXIT
```

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

LCD Display

▲
▼
ENTER
⬤

Select DISPLAY. All pixels (picture elements, or dots) on the display should turn dark as shown, and the message waiting indicator should illuminate.

ENTER
⬤

Press any key to return the display to normal operation.

Diagnostic Displays

MENU
ENTER

From the Administration Options menu, select DIAGNOSTIC.
(**MENU** → ADMIN → DIAGNOSTIC)

```
ADMIN>DIAGNOSTIC
LINK
```

Link

▲ ▼
ENTER

Select LINK to determine test the Ethernet link.

```
PHY:100MBPS
IP:AUTO OK
```

The connection speed, 10 MBPS or 100 MBPS, is shown in the upper line.

The lower line shows the DHCP state.

AUTO OK – DHCP enabled and successfully completed
NO AUTO – DHCP enabled and not successfully completed
STATIC – DHCP not enabled

Ping

▲ ▼
ENTER

Select PING to verify the path to an IP address.

```
DIAGNOSTIC>PING
PHONE
```

The following choices are available:

PHONE	SNTP
GATEWAY	DHCP
UPDATE	REGISTRAR
PROXY	OTHER

▲ ▼
ENTER

Select a device to ping, or select OTHER, and then enter an IP address.

```
OTHER=
192.154.030.135
```

The display will show the result of the ping test.

```
PING4 SUCCESSFUL
192.154.030.135
```

```
PING4 FAILED
192.154.030.154
```

ENTER

Select PING to repeat the ping test to the same device, or press the **MENU** key to return to the previous menu.

MENU

When finished, press the **MENU** key repeatedly to return to the Administration Options menu or to exit Setup Mode.

Restarting the Phone

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

MENU

ENTER

From the Administration Options menu, select RESTART.
(**MENU** → ADMIN → RESTART)

```
RESTART REQUIRED
PROCEED?
```

ENTER

Press the **ENTER** key to restart the phone immediately, or press the **MENU** key to abort and return to the Administration Options menu.

```
RESTARTING
PLEASE WAIT...
```

Troubleshooting

4101 telephones have built-in diagnostic and testing capabilities to quickly isolate problems affecting their operation.

Power-up & Connection Troubleshooting

Whenever power is applied or a connection is made to the LAN or WAN, the phone initiates a startup routine, with progress shown in the display. When the phone and network are fully initialized, the idle display, indicating date and time, will be shown. In cases where full initialization is not attained, the following displays or conditions will be shown continuously until corrected.

Problem Observed	Remedial Action
No display information is shown	Check power connections and source, or verify connection to 802.3af-compatible PoE power source.
NO ETHERNET CONNECTION	Check connections to the LAN or WAN.
LINE ID=	The Line ID is a null value. Enter the appropriate Line ID number.
DHCP4 ERROR RETRYING	Verify that the DHCP server is operating and accessible. If the LAN or WAN does not include a DHCP server, disable IP configuration via DHCP and enter the appropriate IP values (phone, default gateway, subnet mask, update) using the INSTL→IP Menu.
PHONE=	The phone IP address is a null value. Enter the appropriate phone IP address or name.
GATEWAY=	The default gateway IP address is a null value. Enter the appropriate gateway IP address or server name.
SUBNET=	The subnet mask is a null value. Enter the appropriate subnet mask.
UPDATE=	The update server IP address is a null value. Enter the appropriate update server IP address or server name.
AUTH ID=	The AUTH ID is a null value. Enter the appropriate AUTH ID.
AUTH PASSWORD=	The AUTH PSWD (password) is a null value. Enter the appropriate AUTH password.
SIP PROXY=	The Proxy server address is a null value. Enter the appropriate Proxy server IP address or server name.

Problem Observed	Remedial Action
REGISTERING WITH SIP SERVER	The primary line has not registered with the SIP server. Verify all entries (LINE ID, AUTH ID, AUTH Password, all IP addresses and subnet mask) and re-enter as required. If the phone belongs to a VLAN, verify that VLAN tagging is enabled and the correct VLAN ID is entered
RESTART REQUIRED PROCEED?	Certain critical values have changed and a restart is required. Select YES.
PHY:100MBPS IP DOWN	Upon lease expiry, the phone was unable to negotiate a new lease with the DHCP server. Verify that the DHCP server is operating and accessible.
PING4 FAILED	If all attempts to ping IP addresses fail, check Layer 2 802.1Q (VLAN) programming at the phone, using the QoS menu. If "LAYER 2 802.1Q=ON", verify that the network supports this packet prioritization standard. If it does not, set LAYER 2 802.1Q to "OFF". Ping valid addresses using the ADMIN→DIAG→PING Menu.

Call Control Troubleshooting

After the phone is fully initialized (idle display showing), the following call control anomalies may be encountered.

Problem Observed	Remedial Action
The phone never rings.	Verify that "RINGER OFF" is not showing in the display. If it is, use the Volume key to set the ringer level to a value higher than OFF.

Diagnostic Troubleshooting

After the phone is fully initialized (idle display showing), the following diagnostic information may be reviewed, using the ADMIN→DIAG Menu.

Diagnostic Mode	Information Provided

LINK option selected:	The LINK option provides information about the network status as follows:
	
	`PHY:100MBPS`
	`IP:AUTO OK`
	(*DHCP used for IP addressing at phone*)
	
	or
	
	`PHY:100MBPS`
	`IP:NO AUTO`
	(*DHCP is enabled, and has not completed successfully*)
	
	or
	
	`PHY:100MBPS`
	`IP:STATIC`
	(*DHCP is disabled, fixed IP addresses are in use at phone*)

Diagnostic Mode	Information Provided

PING option selected:	The PING option provides the means for measuring single packet network delays.
	
	The following IP addresses may be "pinged":
	  PHONE
	  GATEWAY
	  UPDATE SERVER
	  SIP PROXY SERVER
	  SNTP SERVER
	  DHCP SERVER
	  SIP REGISTRAR SERVER
	  OTHER*
	  *A valid address must also be entered.
	
	There are three outcomes as the result of a ping:
	
	   IP ADDRESS
	   NOT SET
	In this case enter the appropriate IP address, using the INSTL/IP Menu.
	              or
	
	  PING4 FAILED
	  In this case, check Layer 2 802.1Q and other network settings.
	
	              or
	
	  PING4 SUCCESSFUL

INSTALL *(Installation Options – PIN Protected)*

    IPv4 *(IPv4 Options)*

        IP CONFIG *(Phone IP Address Configuration)*

            DHCPv4

            STATIC

            OFF *(IPv6 Only)*

        IP ADDRESS *(Phone IP Address)*

            VIEW

            EDIT

            PING4

        SUBNET *(Phone IPv4 Subnet Mask)*

            VIEW

            EDIT

        GATEWAY *(Gateway IPv4 Address)*

            VIEW

            EDIT

            PING4

    IPv6 *(IPv6 Options)*

        IP CONFIG *(Phone IP Address Configuration)*

            AUTOv6

            STATIC

            OFF *(IPv4 Only)*

        LINK ADDRESS *(Phone Link Address)*

            VIEW

            PING6

        GLOBAL1 *(Global Address)*

            VIEW

            EDIT

            REM *(Remove Global Address)*

            PING6

        ADD *(Global x Address)*

            VIEW

            EDIT

            REMOVE

            PING6

    PORT *(Port Numbers)*

        SIP *(SIP Port Number)*

            VIEW

            EDIT

        RTP *(RTP Port Number)*

            VIEW

            EDIT

    DOMAIN *(Domain Options)*

           IP CONFIG *(DNS IP Address Configuration)*

              DHCPv4

              STATIC

          NAME *(Local Domain Name)*

              VIEW

              EDIT

          DNS *(Primary DNS Server Address)*

              VIEW

              EDIT

              PING

UPDATE *(Configuration and Program Updates)*

      SERVER *(Update Server Address)*

          IP CONFIG *(Update Server IP Address Configuration)*

              DHCPv4

              STATIC

          VIEW

          EDIT

          PING

          TEO

          TFTP

          HTTP

          HTTPS

          NONE

          DOWNLOAD *(Configuration Download)*

              AUTO *(Automatic Update Settings)*

                  ENABLED

                  UPDATE TIME *(If Automatic Update is Enabled)*

                  DISABLED

              NOW *(Start Manual Options Download)*

          DOWNLOAD *(Program Download)*

              AUTO *(Automatic Update Settings)*

                  ENABLED

                  DISABLED

                  UPDATE TIME *(If Automatic Update is Enabled)*

              NOW *(Start Manual Program Download)*

      IP CONFIG *(SNTP Server IP Address Configuration)*

          DHCPv4

          STATIC

      VIEW

      EDIT

      PING

      OFFSET

      AUTO DST ADJUST

          ON

          OFF

    SYSLOG *(Logging Server Address)*

      IP CONFIG *(Syslog Server IP Address Configuration)*

DHCPv4
STATIC
VIEW
EDIT
PING
ETHERNET MAC *(Ethernet MAC Address)*
LAN PORT *(Ethernet Port for PC)* .... page 41
ENABLED
DISABLED

SIP *(Session Initiation Protocol Settings)* .... page 27
IP CONFIG *(SIP Proxy IP Address Configuration)*
DHCPv4
STATIC
PROXY
ID *(SIP Proxy Name or IP Address)*
VIEW
EDIT
PING
PORT *(SIP Proxy Port Number)*
VIEW
EDIT
REGISTRATION *(SIP Registration)*
ENABLE *(Enable SIP Registration)*
DISABLE *(Disable SIP Registration)*
REGISTRAR *(SIP Registrar, if registration is enabled)*
ID *(SIP Registrar Name or IP Address)*
VIEW
EDIT
PING
PORT *(SIP Registrar Port Number)*
VIEW
EDIT
MWI *(Message Summary Event Subscription for MWI)*
OFF
ON

JITTER *(Jitter Buffer Type and Settings)*
  FIXED DELAY *(Fixed Jitter Buffer Delay)*
    DELAY =10mS to DELAY=90mS *(in 5 ms increments)*
  ADAPTIVE BUFFER *(Adaptive Jitter Buffer Delay)*
    DELAY RANGE
      MINIMUM
        0mS to 280mS *(in 10 mS increments)*
      MAXIMUM
        MINIMUM+1mS to MINIMUM+300mS *(in 10 ms increments)*

  UNUSED
  SPEED DIAL
  Feature Service Descriptions *(Available Feature Key Functions)*
    SPEAKERPHONE *(Speakerphone)*
    MONITOR ONLY *(Call Monitor; Microphone Disabled)*
    DISABLE *(Speakerphone and Call Monitor Disabled)*

  DIALING *(Dialed Digits Timeout)*
  RINGING *(Ringing Timeout)*
  REORDER *(Reorder Timeout)*

    SET *(Add or Change PIN)*

  ARP *(ARP Monitoring)*
    ENABLED
    DISABLED
  SRTP *(Secure Real-time Transport)*
    ENABLED
    DISABLED
  SIP TRANSPORT *(SIP Transport Protocol)*
    UDP
    TCP
    TLS
    TLS+
  MLPP DIAL PLAN *(MLPP Dial Plan)*
    DSN DOMAIN
    UC DOMAIN
    DISABLED

    ERROR LOG *(View Error Log)*
    COPY LOG *(Copy Error Log)*
    CLEAR LOG *(Clear Error Log)*
    TELNET *(Telnet Access)*
      ENABLED
      DISABLED

ADMIN *(Administration Options)*

USER *(User Options)*

Options in this menu are described in the <u>IP Phone 4101 User Guide</u>.

CLOCK *(Set Time and Date)*

KEYS *(Speed Dial Keys)*

EDIT DIRECTORY *(Call Directory)*

RINGING *(Personal Ringing)*
    TONE *(Ringing Tone)*
        1 - 6
    OFF HOOK *(Off-Hook Ringing)*
        NORMAL
        SINGLE BURST

VOICE *(Handset/Headset Options)*
    MODE
        HANDSET
        HEADSET
    VOLUME
        HANDSET
            RECEIVE
            TRANSMIT
        HEADSET
            RECEIVE
            TRANSMIT
        SPEAKER TRANSMIT *(Speakerphone)*
        RESET *(Reset to Default Volume Levels)*

PIN *(Call Log PIN)*
    SET *(Set New PIN)*
    CLEAR *(Remove PIN)*

AUTO ANSWER .... page 32
    DISABLED *(No Auto Answer)*   in this manual
    ENABLED 2-WAY *(Answer with Microphone Enabled)*
    ENABLED w/MUTE *(Answer with Microphone Disabled)*

Appendix B
Service and Warranty

Service

The Teo 4101 has no user-serviceable parts inside; repair must be done by Teo.

Prior to equipment removal, call Teo Customer Technical Support for assistance in determining the source of the problem. This critical action can often prevent needless removal of equipment and subsequent customer inconvenience.

Teo Technical Support Department 11609 49th Place West Mukilteo, WA 98275-4255 USA	Phone: (425) 349-1000 (800) 524-0024 Fax: (425) 349-1010 E-mail: tech@teotech.com Web: www.teotech.com

Teo is committed to meeting the product needs of our customers. Please write or call us with any suggestions for improvement.

Teo Product Warranty

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

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

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

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

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

Appendix C
Specifications

Contents of Shipping Container

Telephone + Stand
Handset
Modular handset coil-cord
Ethernet cable
Documentation CD

Standards Compliance

FCC Part 15
Hearing Aid Compatible
CE Listed

Network Compatibility

10BaseT and 100BaseT Ethernet

Power Requirements

Power over Ethernet: 802.3af Class 2
Optional Local Power: 6 VDC nominal @ 1 A max.

Physical Dimensions

8" W x 7" D x 4.2" H, excluding handset

Weight

1.8 lbs., including stand and handset

Environmental

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

Appendix D
Regulatory Statements

⚠ **Important Safety Instructions**

1. Read the installation instructions before connecting the system to its power source.

2. Installation of equipment must not route interconnecting cables or external power supply sources outdoors. This is defined as "Network Environment 0" by IEC TR 62101.

3. Never install network jacks in wet locations unless the jacks are specifically designed for wet locations.

4. Never touch uninsulated wires or terminals.

5. Do not connect this product to telephone network voltage (TNV) circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.

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

6. Read and understand all instructions.

7. Follow all warnings and instructions marked on the product.

8. Unplug all cables before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

9. Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

10. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

11. This product should be operated only from the type of power source indicated on the marking label.

12. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.

13. Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

14. This product contains "No User-Serviceable Parts."

15. `Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    A. When the power supply cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

    E. If the product has been dropped or the case has been damaged.

    F. If the product exhibits a distinct change in performance.

SAVE THESE INSTRUCTIONS

FCC Requirements

The Teo 4101 is hearing-aid compatible (HAC) per Section 68.316, FCC Rules and Regulations.

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