LCD Display VoIP Phone
User Manual

Nyquist NQ-T2000

Contents

1 Using the VoIP Phone

The Bogen Model NQ-T2000 VoIP Phone by Yealink is designed to serve as an admin or staff phone for various Nyquist systems. This phone combines a traditional telephone keypad with a 132 x 64 pixel, backlit graphical Liquid Crystal Display (LCD) to provide rapid, efficient, and reliable control over many Nyquist features, such as launching Emergency-All-Call pages and paging zones.

This manual guides you through the use of the VoIP Phone with the Nyquist system.

1 Hardware Components and Features

The main components of the VoIP Phone are the LCD screen and the keypad. The LCD screen shows the time of date and the station numbers and call-in priority of stations that are calling in. Depending upon the system CoS programming, the VoIP Phone can display menus to activate Zone Paging, All-Call Paging, Emergency All-Call Paging, alarm signals, audio files, and external functions.

> **Note:** Various T2000 menu controlled features are only available if the station **Type** is set to **Admin Phone**.

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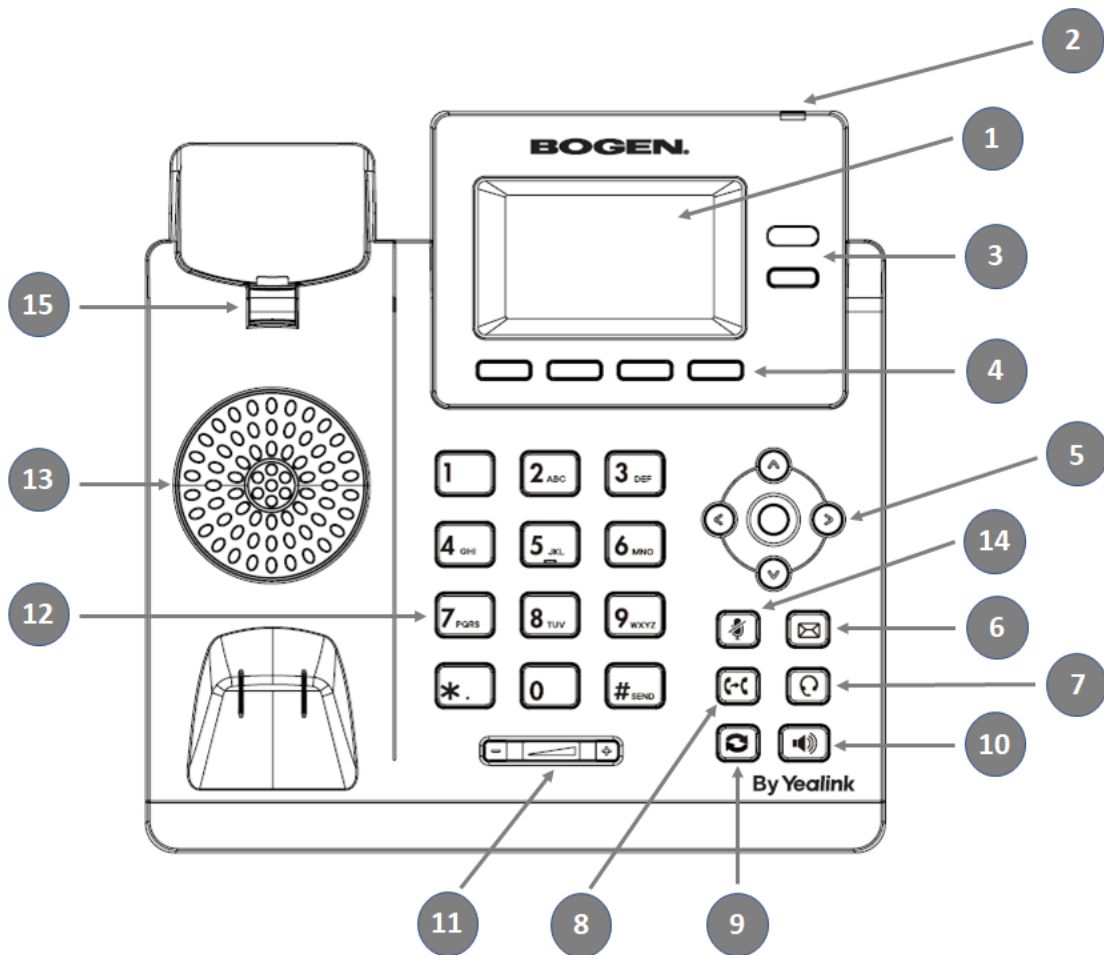
Figure 1-1, Hardware Components

Hardware components are described in the following table:

Table 1-1, Hardware Components

	Item	Description
1	LCD Screen	Shows information about calls, messages, soft keys, time, date, and other relevant data: • Default account • Call information—caller ID, call duration • Icons • Missed call text or second incoming caller information • Prompt text • Time and date

Table 1-1, Hardware Components (Continued)

	Item	Description
2	Power Indicator LED	Indicates call status, message status and phone's system status. The following statuses are available: • Solid red – The phone is initializing. • Fast-flashing red (300ms) – The phone is ringing. • Slow-flashing red (1s) – The phone receives a voice mail or text message. • Off – The phone is powered off, idle, or busy or the call is placed on hold or muted.
3	Line Keys	Allows you to activate up to two accounts and to assign various features. The following statuses are available: • Solid green – The line is connected and in use. • Fast-flashing green – The line is receiving an incoming call. • Slow-flashing green – The call is on hold. • Off – The line is inactive.
4	Soft Keys	Are labeled automatically to identify their context-sensitive features.
5	Navigational Keys	Allows you to scroll through displayed information, confirm or cancel actions, answer or reject incoming calls, and mute or unmute calls.
6	MESSAGE Key	Indicates and accesses voice mails.
7	HEADSET Key	Toggles the headset mode.
8	TRAN Key	Transfers call to another party.
9	RD Key	Redials the previously dialed number.
10	Speakerphone Key	Toggles the hands-free (speakerphone) mode.
11	Volume Key	Adjusts the volume of the handset, headset, speaker, ringer.

Table 1-1, Hardware Components (Continued)

	Item	Description
12	Keypad	Provides the digits, letters, and special characters for the Nyquist application.
13	Speaker	Provides hands-free (speakerphone) audio output.
14	Mute Key	Press to mute the microphone during a handset call or speakerphone call.
15	Hookswitch Tab	Secures the handset in the handset cradle when the VoIP phone is mounted vertically.

1.1　　Common Status Icons

Some of the most common status icons that appear on the LCD screen are described in the following table:

Table 1-2, Common Display Icons

Icon	Description
	Network is unavailable.
	Phone is in hands-free (speakerphone) mode.
	Phone is in handset mode.
	Phone is in headset mode.
	Voice mail message is available.
	A text message is available.

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Table 1-2, Common Display Icons (Continued)

Icon	Description
🔇	The phone's ringer volume is set to 0.
🎤	The call has been muted.
↘	A missed call was received.
↱	Call forwarding is on.

2   Configuring the VoIP Phone

Refer to the applicable *Nyquist System Administrator Manual* for instructions on adding the VoIP Phone as a station. You will need the **Extension Number**, **Name**, and **MAC address** for the phone.

Next, configure the VoIP Phone through the phone's web user interface (UI).
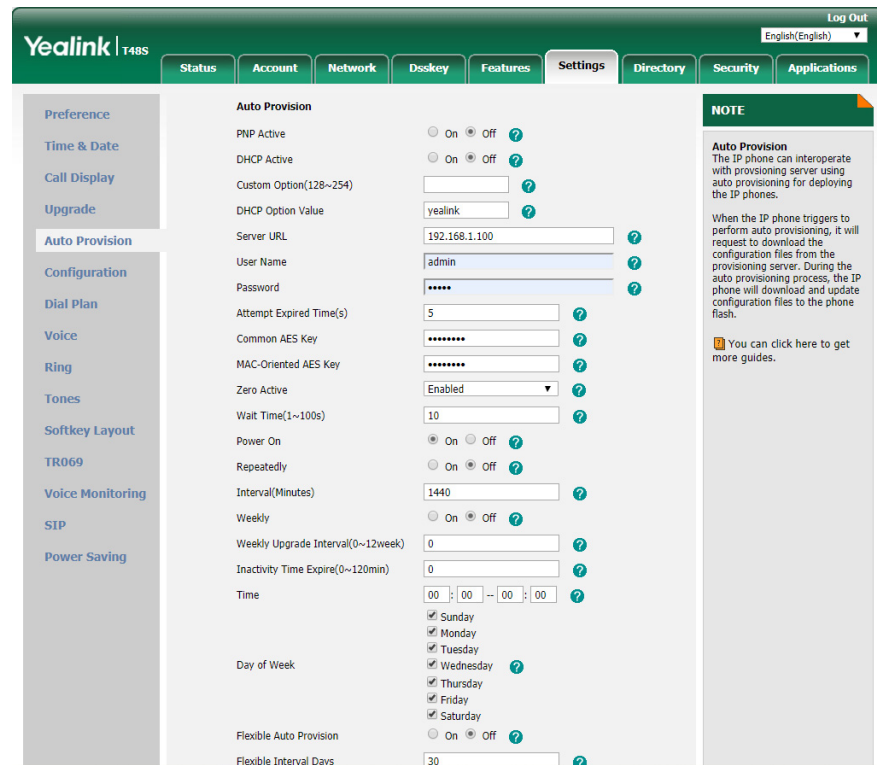
Figure 1-2, Auto Provision Options

To configure the VoIP Phone:

Step 1   Identify the phone's Internet Protocol (IP) address by doing one of the following:

- Locate the IP address in your network's Dynamic Host Configuration Protocol (DHCP) client table.

- Press the VoIP Phone's **OK** navigation key to display the IP address.

Step 2   Open your computer's web browser, enter the phone's IP address (for example, http://192.168.0.10 or

192.168.0.10) in the address bar, and then press **Enter**. The computer will display the VoIP Phone's web UI.

Step 3   On the logon page, enter the **Username** (default is **admin**) and **Password** (default is **bogen**) and click **Confirm**.

Step 4   Click the **Settings** tab.

Step 5   Click **Auto Provision**.

Step 6   Select **Off** for **PNP Active**.

Step 7   Select **Off** for **DHCP Active**.

Step 8   Enter the Server IP address in the **Server URL** field.

Step 9   Click the **Confirm** button.

Step 10   Reboot the phone by unplugging the network connection.

The phone will reboot, automatically download its configuration information from the server, and reboot a second time to come online.

3   Making Pages

The VoIP Phone allows the following types of paging from the phone's LCD screen:

- All-Call
- Emergency All-Call
- Station, Zone, or Faciity

You can place a page in one of three ways:

- Using the handset
- Using the speakerphone
- Using the headset

3.1 All-Call Paging

An All-Call page is a non-emergency page that simultaneously plays throughout the facility.

To make an All-Call page:

Step 1   Select the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Paging** and then press **OK**.

Step 3   Use the navigation keys to select **All-Call** and then press **OK**.

Step 4   Talk into the handset, or if using the speakerphone or headset, talk into the microphone.

Step 5   Hang up when finished.

3.2 Emergency-All-Call Paging

An Emergency-All-Call page is a high priority page that simultaneously plays throughout the facility. An Emergency-All-Call page has a higher priority than an All-Call or Normal page.

To make an Emergency-All-Call page:

Step 1   Select the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Paging** and then press **OK**.

Step 3   Use the navigation keys to select **All-Call-EMERGENCY** and then press **OK**.

Step 4   Talk into the handset, or if using the speakerphone or headset, talk into the microphone.

Step 5   Hang up when finished.

3.3 Record Page

You can record a page to be added to a zone queue. The maximum length time for a recorded page is 60 minutes; if the recording

exceeds 60 minutes, it will time out and not be saved. If the recording is silent for 60 seconds, it will time out and not be saved.

Note: When the DTMF Code #{Zone Number} is used to initiate a zone page, Nyquist will start recording a queued page if the zone belongs to a queue. If you want to start a real-time page to the zone instead, dial #{Zone Number}*.

Pages in a zone's queue are played in the order that they are placed in the queue. A live page started on a zone that is playing a recorded page will cause the recorded page to be terminated and sent back to the queue. The interrupted message will play again from the beginning of the message when the zone becomes idle. Multi-Site Emergency-All-Call, Multi-Site All-Call, Emergency All-Call, All-Call, Alarm, Tone, and Emergency Announcement will also interrupt any queued messages playing in any zones. All re-queued messages will play again from the beginning of the message when the applicable zones become idle.

Selecting **Disable Audio** will cause playback paging of all recorded messages to stop. The messages will resume play from the beginning when audio is re-enabled.

To record a page for page queuing:

Step 1   Select the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Paging** and then press **OK**.

Step 3   Use the navigation keys to select **Record Page** and then press **OK**.

Step 4   When prompted, enter the queue number for the queue that you want to page and press #.

Step 5   Wait for the tone and then record your message.

Step 6   Hang up when finished.

3.4 Zone Paging

You can choose to page only certain areas of the facility, called zones. The zones, which are collections of stations, must be created through the Web-based System Admin User Interface (UI) before zone paging from the VoIP Phone can occur. Zones appear in the phone's Directory under the Paging menu. The Paging menu also includes entries for Facility Paging when applicable.

To make a zone page:

Step 1   Select the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Paging** and then press **OK**.

Step 3   Select **Zone.**

Step 4   Talk into the handset, or if using the speakerphone or headset, talk into the microphone.

Step 5   Hang up when finished.

4   Making Calls

The steps for making calls depend on whether you are making the call from the display and speaker or from the handset and whether you know the extension that you want to call.

To make a call by dialing the extension number:

Step 1   Dial the extension.

Step 2   Select **Send**.

Step 3   When the call is completed, hang up.

Note: The **Directory/Stations** submenu is only available on Nyquist E7000.

To make a call using the Remote Phone Book:

Step 1 Select the soft key labeled **Directory**.

Step 2 Use the navigation keys to select **Stations** and then press **OK**.

Step 3 Use the navigation keys to select the station that you want to call and press **OK**.

Step 4 Select **Send**.

Step 5 When finished with the call, either select **End Call** or hang up the handset.

5 Playing Alarms

Note: The **Directory/Alarms** submenu is only available on Nyquist E7000 and only if the station **Type** is set to **Admin Phone**.

You can play a facility alarm from a list of default alarms and those created through the Admin Web UI.

To play an alarm:

Step 1 Select the soft key labeled **Directory**.

Step 2 Use the navigation keys to select **Alarms** and then press **OK**.

Step 3 Use the navigation keys to select the alarm that you want and then press **OK**.

Note: The alarm plays continuously until you manually stop it.

Step 4 To end the alarm, hang up.

Note: If you want to end an alarm started by another VoIP Phone or Admin Web UI, use the navigation keys to select **Stop Alarm**.

6   Playing Tones

> *Note:* The **Directory/Tones** submenu is only available on Nyquist E7000 and only if the station **Type** is set to **Admin Phone**.

Nyquist provides tones that can be used with events, such as bell schedules or announcements. In addition to the default tones, tones can also be created or downloaded through the Admin Web UI.

To play a tone:

Step 1   Select the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Tones** and then press **OK**.

Step 3   Use the navigation keys to select the tone that you want and then press **OK.**

Step 4   To end the tone, hang up.

> *Note:* If you want to end a tone started by another VoIP Phone or Admin Web UI, use the navigation keys to select **Stop Tone**.

7   Forwarding Calls

If your VoIP Phone has the appropriate CoS parameter set, you can forward your calls to another Nyquist extension, whether it's a physical station or a Web UI station. You can select to always forward calls, forward calls if you are on another call, or forward calls if they are not answered within a specified number of seconds.

The DAHDI FXS based Admin Station (also known as Analog Phone station Type) does not display an incoming call queue, and there is no incoming call queue prioritization. If the DAHDI FXS based Admin Station is already on a call, subsequent VoIP call-switch callers will continue to ring as expected. However, there is no visibility that an incoming call is happening, and there is no FIFO queue to handle multiple incoming calls.

If a VoIP phone directly calls a DAHDI FXS Admin Station that is busy, the call will go to voicemail.

For incoming emergency calls from an Analog Call Switch and Speaker or Digital Call Switch and Speaker station types, if the DAHDI

FXS based Admin Station is on a call, the current call will automatically be dropped and the Admin Station will hear a busy signal. When the Admin Station hangs up the call, the emergency call will ring the Admin Phone.

If both a normal and emergency call are placed to a DAHDI FXS based Admin Station at the same time, the calls are not received in any specific order. The normal call could be answered before the emergency call. In this case, when the Admin Station hangs up the normal call, the emergency call will ring the Admin Station.

If the Admin Station remains busy for more than two minutes, an Analog Call Switch and Speaker or Digital Call Switch and Speaker caller will be told that the call cannot be completed and to please try again. The call switch will return to the idle state.

You can forward calls using either the Menu or Directory options.

> *Note:* The **Directory/Features/Call Forward** submenu is only available if the station **Type** is set to **Admin Phone**.

> *Note:* If you want to use the handset, pick up the handset and then
>
> select the button before following the steps.

To forward calls from the Menu:

Step 1   Use the soft key labeled **Menu**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Call Forward** and then press **OK**.

Step 4   Select from one of the following options:

1. Always Forward
2. Busy Forward
3. No Answer Forward

Step 5   Select **OK**, and then enter the extension or phone number that the call is to be forwarded to.

Step 6   Select **OK**.

> *Note:* If you attempt to forward to an extension that is already forwarding to your extension, you will not receive an error, even though the call forwarding will not be activated.

To turn Call Forwarding off:

Step 1   Use the soft key labeled **Menu**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Call Forward** and then press **OK**.

Step 4   Select **Off**.

Step 5   Press **OK**.

8 Using the Voice Mail Feature

If your phone has the appropriate CoS parameter set, you can view details about and listen to voice mail messages and set the code that can be used to retrieve your voice mail messages.

The Power indicator flashes red if you have a new voice mail message.

To listen to voice mail messages:

Step 1   Press the **Message** key.

Step 2   Follow prompts to retrieve messages.

9 Recording Announcements

> *Note:* The **Directory/Features/Record Announcements** submenu is only available if the station **Type** is set to **Admin Phone**.

You can record announcements to be played immediately after they are recorded or to play at a later date and time.

To record an announcement:

Step 1   Use the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Record Announcement** and then press **OK**.

Step 4   After the tone, record your announcement, pressing # when finished.

Step 5   Select from the following options:

- Select **1** to save.

- Select **2** to listen to the announcement.

- Select **3** to re-record the announcement.

- Select **4** to play the announcement now.

- Select **7** to schedule the announcement to play at a different time.

  If you select 7, enter the 2-digit month, 2-digit date, 4-digit year, and then enter the hour and minutes in HH:MM format for the date and time the announcement will play.

10   Playing Recorded Calls

> **Note:** The **Directory/Features/Playback Recorded Calls** sub-menu is only available if the station **Type** is set to **Admin Phone**.

If your phone has the appropriate CoS parameter set, you can play-back recorded calls.

To play a recorded call:

Step 1   Use the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Playback Recorded Calls** and select **OK**.

Step 4   Select the type of recorded call that you want to play-back. Options are:
1 - Emergency
2 - Monitoring Call
3 - Urgent
4 - Normal

11 Restart Nyquist Server

> **Note:** The **Directory/Features/Restart Nyquist Server** submenu is only if the station **Type** is set to **Admin Phone**.

To restart the Nyquist Server:

Step 1   Use the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Restart Nyquist Server** and select **OK**.

Step 4   Enter your system password and select **OK**.

> **Note: Restart Nyquist Server** only restarts the Nyquist application; it does not reboot the server or restart the OS.

12 Stop Announcement

> **Note:** The **Directory/Features/Stop Announcement** submenu is only available if the station **Type** is set to **Admin Phone**.

To stop an announcement:

Step 1   Use the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Stop Announcement** and select **OK**.

Step 4   Follow audio prompt.

13   Stop Scheduled Audio

> *Note:* The **Directory/Features/Stop Scheduled Audio** submenu is only available on the Nyquist E7000 and only if the station **Type** is set to **Admin Phone**.

To stop scheduled audio:

Step 1   Use the soft key labeled **Directory**.

Step 2   Use the navigation keys to select **Features** and then press **OK**.

Step 3   Use the navigation keys to select **Stop Scheduled Audio** and select **OK**.

14   Launching Routines

> *Note:* The ability to manually launch routines is only available if the station **Type** is set to **Admin Phone** and the CoS configuration assigned by your system administrator for your Admin Phone allows the launching of routines.

You can manually launch a routine that has **Allow DTMF** enabled from an Admin Phone by dialing *94<Routine-DTMF-Code>.

If you disconnect the call during a routine, the routine continues until finished. If the routine includes **Pause** actions, the call will not disconnect until all **Pause** actions have been executed.

A routine launched from the Admin Phone can end with any of the following page commands, provided the Admin Phone has the appropriate CoS enabled:

- All-Call
- Emergency-All-Call
- Facility-Page
- Mutli-Site-All-Call
- Multi-Site-Emergency-All-Call
- Zone-Page

2 Nyquist DTMF Feature Dialing Codes

> **Note:** The use of feature dial codes is restricted by a station's CoS assignments.

2.1 Alarm/Tone Activation (CoS: Activate Alarm Signals | Manually Activate Tone Signals)

*91{DTMF-Code} – Start Alarm specified by {number}

*96{DTMF-Code} – Start Tone specified by {number}

2.2 Calling

<extension> – Call <extension> speaker (intercom, auto-answer) (CoS: Call Any Station)

*<extension> – Call <extension> ringer (telephonic, ringing)   (CoS: Call Any Station)

*#<extension> – Join conversation at <extension> (CoS: Join Conversation)

##*<Facility-Number>*<extension> – Call <extension> at <Facility-Number>

981AAANNNNNNN – Place long distance call with area code (AAA = Area code, NNNNNNN = number)

98AAANNNNNNN – Place local ten-digit call with area code

98NNNNNNN – Place local seven-digit call

98911 – Place 911 emergency call

911 – Place 911 emergency call

**** – Place Emergency call to designated Admin station

2.3   Call Forwarding (CoS: Call Forwarding)

970 – Call Forwarding Menu

971{extension} – All-Calls (CFALL)

972{extension} – When Busy (CFBS)

973{extension} – When No Answer (CFNA)

974{extension} – When Busy or No Answer (CNBN)

975 – Cancel Call Forwarding

976 – Call Forwarding Status (Caller only)

977 – Call Forwarding Status (All users)

2.4   Call Parking/Call Pickup

DTMF: #72 - Park call (during call)

To pick up a parked call, dial the parked call's extension (by default, extensions 21-29) that was provided when the call was parked using #72. The parking lot extensions can be changed at the Admin Web UI through **System Parameters**.

7*{extension} - Call pickup {extension} when ringing (CoS: Remote Pickup)

2.5   Call Transfer (CoS: Call Transfer)

DTMF: #1<extension number> - Blind transfer (during call)

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DTMF: *1<extension number> - Attended transfer (during call)

DTMF: *2 - Complete attended transfer, dropping out of call

DTMF: *3 - Complete attended transfer, but stay in the call

DTMF: *4 - Swap to the other party (during attended transfer)

*3 – Transfer (drop) call from Speaker to associated Phone

– Transfer (drop) call from Speaker to associated Phone

DTMF: #1<speaker-extension> – Transfer call from Phone to associated Speaker

2.6   Conferencing

**{number} – Create/Enter Dynamic Conference {number} (CoS: Conference Admin/Conference User)

Note: If the conference owner enters 0000 as the password, the conference will be deleted. If an Admin station user type enters 0000 as the password but is not the conference owner, the user will be prompted for the system password. If the correct system password is entered, the conference will be deleted.

**0 – Launch system playback of list of created conferences that includes the conference number and the extension that created the conference

2.7   Monitoring/Recording

978{extension} – Monitor call or location at {extension} (CoS: Monitor Calls/Locations)

Note: Spy Mode monitoring cannot be used on a station that has been set to Privacy Mode.

DTMF: 4 – Enable "spy mode" (MUTE) during call monitoring

DTMF: 5 – Enable "whisper mode" during call monitoring

DTMF: 6 – Enable "barge mode" during call monitoring

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*990 – Record Message (Announcement) (CoS: All-Call Paging)

> **Note:** When you record an announcement by dialing *990 or by selecting **Record Announcement** on the Admin phone's **Announce** menu, the initial DTMF Code for the recorded and saved announcement will be set to the announcement's row ID. You can change the DTMF Code after the announcement is saved by editing the announcement in the web interface **Announcements** view.
>
> The saved announcement has **Play to Zone** set to blank (no zone selected). This means that when you play an announcement via an IP phone **Announcement** menu selection, you will be asked to enter a zone number (where 0 = All Speakers). You can define a permanent zone number for the saved announcement by updating **Play to Zone** after the recorded announcement has been saved.

999 – Playback recorded calls (CoS: Manage Recordings)

(MENU: 1–Emergency, 2–Monitored, 3–Urgent, 4–Standard)

DTMF: *3 – Start/Stop recording (DTMF used during a call.) (CoS: Record Calls)

2.8   Paging

##0911 – Multi-Site Emergency All-Call Page (CoS: Emergency All-Call Multi-Site Paging)

##0 – Multi-Site All Call Page (CoS: All-Call Multi-Site Paging)

#0911 – Emergency All-Call Page (CoS: Emergency All-Call)

951 – Emergency All-Call Page (CoS: Emergency All-Call)

#0 – All-Call Page (CoS: All-Call Paging)

#00 – All-Call Page (CoS: All-Call Paging)

0000000 – All-Call Page (CoS: All-Call Paging)

#{Zone} - Page to {Zone Number} (CoS: Zone Paging)

#{Zone}* – Real-time Page to {Zone} that belongs to a queue (CoS: Zone Paging)

##{Facility Number} – All-Call Page to {Facility Number} (CoS: Inter-Facility Call/Page)

##{Facility Number}#{Zone Number} – Zone Page to {Zone Number} at (Facility Number)(CoS: Inter-Facility Call/Page)

##{Facility Number}#{Zone Number}* – Real-time page to {Zone} that belongs to a queue at (Facility Number) (CoS: Inter-Facility Call/Page)

*92{DTMF-Code} – Start Announcement specified by {number} (CoS: All-Call Page)

*991 – Record page; system will prompt for Zone Number (CoS: Zone Paging)

991{Zone Number} – Record page for {Zone Number} (CoS: Zone Paging)

> **Note:** The next two DTMF codes only work if made from the same extension that created the recorded page.

*992 – Cancel Recorded Page (CoS: Zone Paging)

992{Zone Number} – Cancel Recorded Page for {Zone Number}

2.9 Voicemail (CoS: Voicemail)

900 – Voicemail for current caller

904{extension} – Voicemail for specified {extension}

904{extension}* – Leave voicemail for specified {extension}

2.10 Walking CoS (CoS: Walking Class of Service)

3*{authCode}*{extension} – Current IP phone's extension becomes {extension}

If **Auth Code** is set to 0000 in the Admin Web UI's **System Parameters**, this feature is disabled.

2.11   Dial Codes Used for Simulating Calls to Admin Station from Station Call Switches

> **Note:** During the Check-In process, a Normal call starts the check-in process for a station.

 0   - Normal call to admin

*0   - Emergency call to admin

*00 - Urgent call to admin

*000 - Outside line calling in (uses night-ring logic)

2.12   Routines (CoS: Execute Routines)

*94<Routine-DTMF-Code> – Execute Routine with <Routine-DTMF-Code>

0000094<Routine-DTMF-Code> – Execute Routine with <Routine-DTMF-Code>

> **Note:** Only routines with **Allow DTMF** can be executed from the Admin Phone.

2.13   Audio Distribution (CoS: Audio Distribution)

987*{DTMF-Code} – Start Audio Distribution for {DTMF-Code}

980*{DTMF-Code} – Stop Audio Distribution for {DTMF-Code}

920 – Stop ALL Scheduled Audio

2.14   Miscellaneous Dial Codes

#*349 – Restart Nyquist system server

*9 – Toggle Audio Distribution to associated speaker

0000097 – Disable Audio (CoS: Disable Audio)

0000098 – Enable Audio (CoS: Enable Audio)

920 – Stop Scheduled Audio

942#{extension}#{contact-number} – Close {contact-number} on I/O Controller {extension} (For example, dialing 942#120#1 closes contact number 1 on I/O Controller 120; dialing 943#120#1 opens contact number 1 on I/O Controller 120.)

943#{extension}#{contact-number} – Open {contact-number} on I/O Controller {extension}