System Release 16.2
WAVE 7000

WAVE 7000 Push-to-Talk for Mobile Devices

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Document History

Version	Description	Date
MN003407A01-A	First release of the *WAVE 7000 Push-to-Talk for Mobile Devices*.	November 2016
MN003407A01-B	Second release of the *WAVE 7000 Push-to-Talk for Mobile Devices*.	December 2016

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List of Procedures

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About This Manual

This manual provides information about using the Push-To-Talk (PTT) application.

Related Links

What is Covered in This Manual?

This manual contains the following chapters:

Return to Process

Helpful Background Information

Motorola offers various courses designed to assist in learning about the system. For information, go to http://www.motorolasolutions.com/training.

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Related Information

Unless otherwise specified, the Motorola documents listed here are available from Motorola Online at `http://businessonline.motorolasolutions.com`. If you are new to Motorola Online, follow the on-screen instructions to sign up for an account. To access LEX devices manuals, select **Resource Center Product Information → Manuals →WAVE 7000**, and select the appropriate release. The Resource Center also provides a Search function.

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Chapter 1

Navigating the Push-to-Talk Application

This chapter will help you get familiar with how to navigate the PSX PTT application:

- Getting Started with Push-to-Talk Client on page 21
- Push-to-Talk Button on page 25
- Push-to-Talk Main Application Screen on page 26
- Push-to-Talk Status Bar Icons on page 29
- Push-to-Talk History Screen on page 30
- Push-to-Talk Audio on page 32

Related Links

Getting Started with Push-to-Talk Client on page 21
Push-to-Talk Button on page 25
Push-to-Talk Main Application Screen on page 26
Push-to-Talk Status Bar Icons on page 29
Push-to-Talk History Screen on page 30
Push-to-Talk Audio on page 32

1.1
Getting Started with Push-to-Talk Client

NOTICE: User must sign in to Cockpit and Converged Services Client before opening up the PSX PTT Client. User roles and enterpise contacts and talkgroups are configured based on the roles defined by your system administrator. You only have to sign in once for the current session. When you sign out the user is required to sign in again and select the PTT configuration and role for that session.

To start using the PSX Push-to-Talk (PTT) Client, complete the following actions:

- Signing in PSX Cockpit After Initial Setup on page 22
- Turning the Push-to-Talk Application On and Off on page 23
- Signing Out of PSX Cockpit on page 25

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Navigating the Push-to-Talk Application on page 21

Related Links

Signing in PSX Cockpit After Initial Setup on page 22
Turning the Push-to-Talk Application On and Off on page 23
Signing Out of PSX Cockpit on page 25

1.1.1

Signing in PSX Cockpit After Initial Setup

PSX Cockpit and Converged Services Client provides the LEX device user the ability to access enterprise contacts and talkgroups based on identified user roles assigned. User roles are defined and configured by a system administrator.

When and where to use:
Use this procedure to sign in to PSX Cockpit to configure WAVE PTT and select user role capabilities.

Procedure:

1 On the **All Apps** screen of the device, select **Settings** → **Accounts** → **PSX Cockpit**.

2 In the **Accounts** screen, tap   → **Sign In**.

3 In the **Username** and **Password** field, enter the username and password and tap **Sign On**.

Figure 1: PSX Cockpit Login
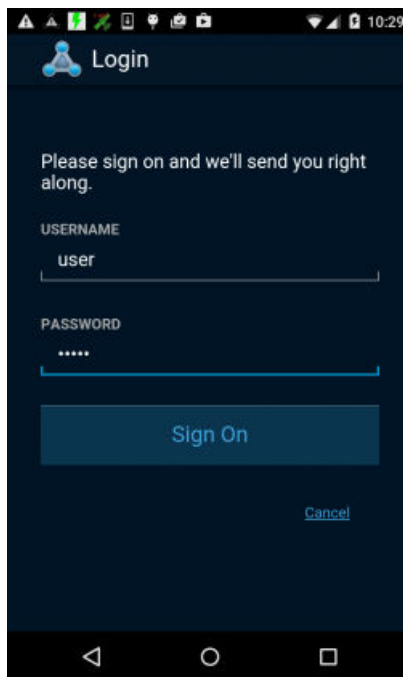
4 Tap .

The PSX Cockpit sidebar menu appears.

Figure 2: PSX Cockpit Sidebar Menu
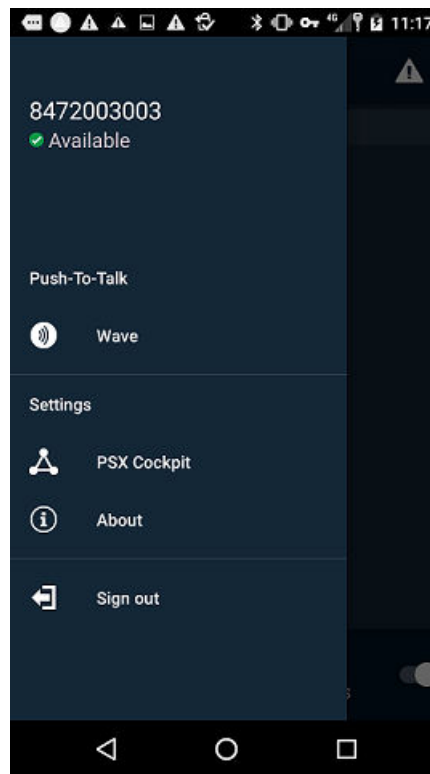
5   From the PSX Cockpit sidebar, tap **Push to Talk** field.

6   In the **Push-to-Talk** window, tap **WAVE** → **OK** to configure PTT.

> **NOTICE:** By choosing WAVE this not only sets your choice for PTT functionality but configures the emergency button priority when initiated with the Emergency power button.

7   From the **Settings** pane, tap **PSX Cockpit**.

8   Tap **User Role Selection**.

9   From the **Select A Role** field, select your user role and tap **Next**.

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1.1.2
Turning the Push-to-Talk Application On and Off

This section covers how to turn on the application, verify that the application has turned on, turn off the application, and verify that the application has turned off.

Prerequisites: Confirm that the handheld is connected to a network by viewing the signal strength indicators .

When and where to use:
Perform this procedure to turn the PSX Push-to-Talk (PTT) application on or off. When the PSX PTT application turns on, it connects and registers with the PTT server. Depending on network traffic, a delay may occur before successful registration. When the PSX PTT application client is turned off, it disconnects from the PTT server.

⚠ **IMPORTANT:** Use this feature with caution since PTT calls are not supported after you turn **OFF** the PTT Service supported by the application.

Figure 3: PSX PTT Sign-in Screen
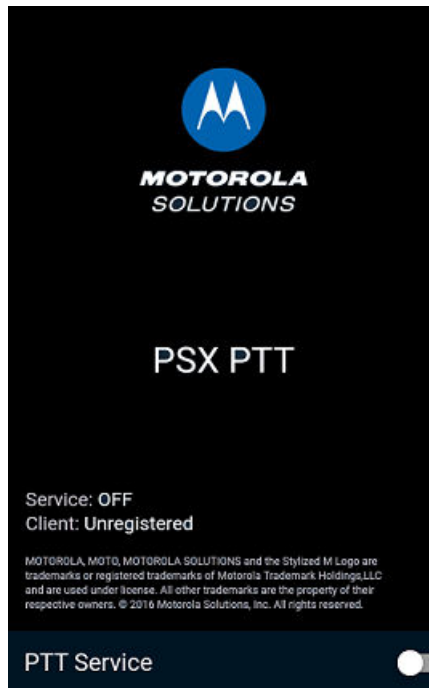
Procedure:

1 Perform one of the following actions:

If…	Then…
If you want to turn on the PSX PTT application,	**a** From the handheld device **Home** screen, tap **PSX PTT** icon. **b** Slide the **PTT Service** switch to **ON**. 📝 **NOTICE:** If the registration is not successful, an error message appears on the **PTT Service** screen and the **PTT Service** switch goes back to **OFF**.
If you want to turn off the PSX PTT application,	**a** From the **PSX PTT** screen, tap **Contacts**. **b** From the the drop-down **Menu** key, select **Settings**. **c** Tap **PTT Service** slider to **OFF**.

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1.1.3
Signing Out of PSX Cockpit

When and where to use:
Use this procedure to sign out of PSX Cockpit to change a user role.

Procedure:

1   On the **All Apps** screen of the device, select **Settings** → **Accounts** → **PSX Cockpit**.

2   Tap .

3   In the **PSX Cockpit** window, tap **Sign Out**.

4   In the **Are you sure?** window, tap **Yes** to sign out.

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1.2
Push-to-Talk Button

A Push-To-Talk (PTT) button is required to start a PTT call or talk during a PTT call. PTT calls are half-duplex call where only one person can speak at a time.

PSX PTT application supports either hard PTT buttons (dedicated or configurable) on the device or a soft PTT button (available on the device screen).

NOTICE: Notifications from hard button press/release are supported on the device platform so that the PTT application will work correctly. Soft PTT button is supported directly within the PTT application.

Figure 4: Soft PTT Button on Private Call View
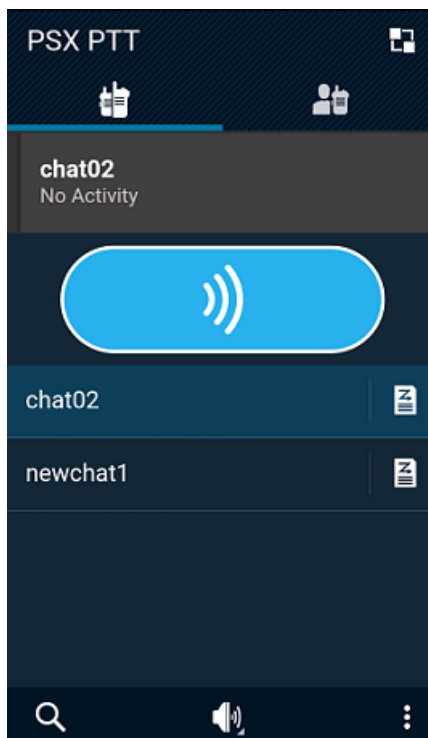
To make a PTT call, press and hold the **PTT** button to take the floor. While holding the button, speak into the device and your voice can be heard by the other person on the call. Release the **PTT** button to allow other people on the call to take the floor and speak.

In-App Behavior

When the user selects a target from within the PSX PTT application and presses the **PTT** button, a call is started to the selected target.

Out-of-App Behavior

When the user is outside the application and in any other view on the device, and presses the **PTT** button, a call is started to a default target as follows:

- When scanning is enabled, a call is started to the primary group on the current Scan List.

- When scanning is disabled, a call is started to the last selected talkgroup.

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1.3
Push-to-Talk Main Application Screen

Navigating the PSX PTT application is easy using the device touch screen. The following icons appear on the device display and are used in the Push-To-Talk (PTT) application. Not all icons used are shown.

PSX PTT Main Screen

User interfaces with two primary tabs on the PTT application main screen to access contacts and talkgroups:

- **Talkgroups**

  - Displays the enterprise PTT talkgroup list created and managed by Enterprise Administrator and downloaded by the PSX PTT application.

  - Displays the individual personal PTT group contacts defined by the user.

  - Displays the scan List of PTT talkgroups defined by the user and assigned priority for each talkgroup.

Figure 5: PSX PTT Talkgroup Main Screen
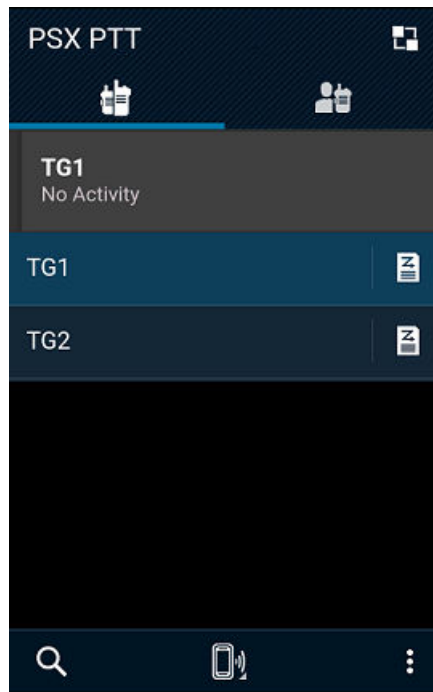
Table 1: Status Bar Icon
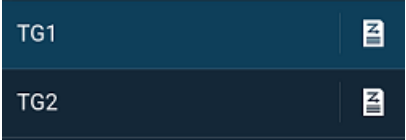
Icon	Name
	Tap to view enterprise PTT talkgroups list, individual personal PTT group contacts, and scan List of PTT talkgroups.
	Not available in release WAVE 16.2.
	Indicates User-selected TalkGroup is highlighted. .
	Tap talkgroup name to initiate a PTT call. PTT TalkGroups List presented in alpha-numeric order.
	Indicates a scan list for the Talkgroup is available. See Administration of PTT Talk-group Scan Lists on page 71.
	Tap to open and type the name to search on the contact list.
	Tap to open audio controls panel. See PTT Audio Output Selection on page 33. **NOTICE:** Audio routing control appears during an active Talk-Group session.

Table continued…

Icon	Name
	Tap to open **Overflows Menu** to show the following list: - **Settings**: Manage PSX PTT settings. See Administration of PTT Settings on page 63. - **Sign out**: Sign out of PSX PTT application. See Turning the Push-to-Talk Application On and Off on page 23.

- **Contacts**

    - Displays the enterprise PTT contact list created and managed by Enterprise Administrator and downloaded by the PSX PTT application.

    - Displays the individual personal PTT contacts defined by the user.
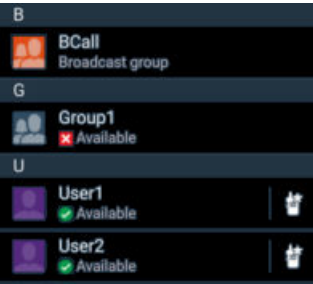
Figure 6: PSX PTT Contact Main Screen
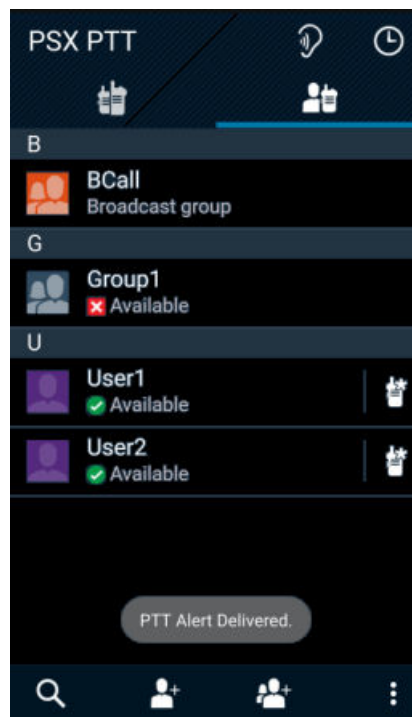
- Table 2: Status Bar Icon

Icon	Name
	Tap to view enterprise PTT contacts and individual personal PTT contacts.
	If implemented in your system, indicates an Ambient listening call (assignement) is active. See Ambience Listening Push-to-Talk on page 45.

Table continued…

Icon	Name
	Tap to view PTT Call Log Screen. See Push-to-Talk History Screen on page 30.
	Tap PTT contact name to initiate a one-to-one PTT call. PTT Contact List presented in alpha-numeric order.
	Tap to open and type the name to search on the contact list.
	Tap to add a new contact. See Administration of PTT Individual Contacts on page 66.
	Tap to begin selecting multiple contacts to start a Multi-Select call.
	Tap to open **Overflows Menu** to show the following list: - **Settings**: Manage PSX PTT settings. See Administration of PTT Settings on page 63. - **Sign out**: Sign out of PSX PTT application. See Turning the Push-to-Talk Application On and Off on page 23.

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1.4
Push-to-Talk Status Bar Icons

Status Bar Icons

The PTT Status Bar icons provides a detailed review of the PTT status bar. The following icons appear on the device display and are used in the Push-To-Talk (PTT) application. Not all icons used are shown.
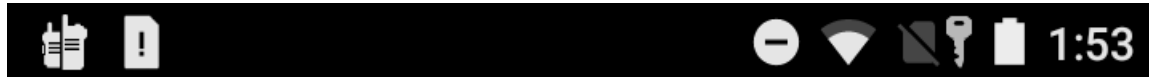
Table 3: Status Bar Icons

Icon	Name
	Indicates Talkgroup being monitored.
	Indicates alarm setting status.
	Indicates Wi-Fi or local network connection.
79%	Indicates battery level.
	Indicates device is on a private network.
10:31 AM Tuesday, October 4	Indicates current time.

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1.5

Push-to-Talk History Screen

The PTT History screen provides a history of recent Call Alert with Acknowledgement, Barge (one-to-one) and Alert, Personal Group, and Temporary Group calls. History includes outgoing, received, and missed calls.

NOTICE: Talkgroup and Broadcast Group calls are not logged.

The log contains a maximum of 500 entries, with the newer entries replacing the oldest. PTT History can be filtered to show only missed, only outgoing, or only incoming. The following screen displays an example of the PTT History logs:

Figure 7: PTT History Screen
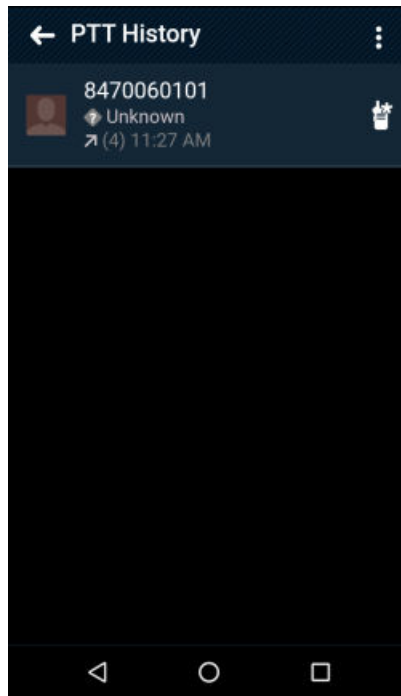
Table 4: Call Log Screen Icons

Icon	Name
← PTT History	Tap to return back to **Private PTT** main view.
	Tap to see Contact Detail screen. Tap , , or , to make a PTT Voice or Message to the selected number.
	Tap to start an alert or call alert with acknowledgement PTT call to the selected number. See Making a One-to-One Alert Push-to-Talk on page 50 or Making a Call Alert with Acknowledgment Push-to-Talk on page 48.
8470060101 Unknown (4) 11:27 AM	• "8470060101" - Indicates missed caller selected number. • "Unknown" - Indicates availability status of the contact or group. • (4) - Indicates how many times the caller called. • "11:27 AM" - Indicates date stamp including time, day of the week, and date.

Table continued…

Icon	Name
	• Tap "8470060101" to initiate a PTT call to the selected number. .
	Tap to view list filters - Show missed only, Show outgoing only, Show incoming only, Clear History, Settings, or Log Out.
	Outgoing session or alert. Color is green.
	Incoming session or alert that was missed and shown in the Session Log view. Color is red.
	Incoming session or alert that was received and shown in the Session Log view. Color is blue.

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Navigating the Push-to-Talk Application on page 21

1.6
Push-to-Talk Audio

The audio for Push-To-Talk (PTT) can be routed to several different outputs and the volume is controllable for each output. PTT audio can route to the following outputs:

*   Handheld speaker

*   Handheld earpiece

*   Operation Critical Wireless (OCW) and wired accessories with or without PTT buttons.

*   Wired headset with or without built-in microphone and PTT

    -   Handheld microphone is used if the headset has no microphone.

    -   PTT functionality available on wired headset.

*   Remote Speaker Microphone

*   Bluetooth devices

     NOTICE: To be selected and used, Bluetooth devices must have been previously mated to the handheld using the Android and handheld manufacturer procedure. The PTT application does not provide a mating procedure for Bluetooth devices.

The audio volume for each output is individually controlled. When PTT is being used (alerts, listening to a call, and more), the volume is automatically set to the last level set in PTT.

When the operator uses other functions of the phone, the volume resets to the previous non-PTT level.

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Navigating the Push-to-Talk Application on page 21

Related Links

PTT Audio Output Selection on page 33
PTT Audio Output Volume on page 33

1.6.1
PTT Audio Output Selection

Tapping an output status icon displays a volume and choice screen. This screen shows the volume setting (length of the slider line), allows the volume to be changed (using the slider), shows the current output of the audio (underlined icon), and allows the audio output to be changed (tapping a selection icon).

> **NOTICE:** Audio Control Pop-up will be timeout after 3 seconds of inactivity.

Figure 8: PTT Audio Device Example View
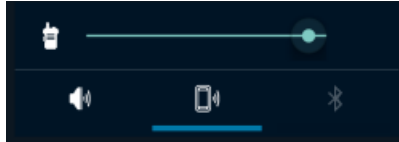
Table 5: Call Log Screen Icons

Icon	Name
	Handset Mode - Tap to route audio to the normal handset speaker/earpiece.
	Bluetooth Mode - Tap to route audio to a Bluetooth device.
	Wired Headset Mode - Tap to route audio to the headset. **NOTICE:** Icon automatically changes to headset when wired headset is plugged in and reverts back to handset icon when wired headset is unplugged.
	Speaker Mode - Tap to route audio to the speakerphone.
	Audio volume level control - Tap to adjust audio level control.

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1.6.2
PTT Audio Output Volume

The hard-button on the device controls:

• Volume for the PTT Alert tone before the call has started.

• PTT voice audio volume after a call has started (user can also adjust the volume in the volume and choice screen).

> **NOTICE:** The volume slider in a volume and choice screen only controls the voice volume and does not control the Alert tone volume.

The PTT application stores the volume setting for each output separately. When an output is selected, the last setting for that output is used.

The Android operating system volume controls do NOT control the PTT voice audio volumes.

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Chapter 2

Push-to-Talk Application Description

This chapter describes function and call capabilities of the Push-to-Talk (PTT) application:

- PTT Application Overview on page 35
- PTT Calls Types on page 41

Related Links

2.1

PTT Application Overview

This section gives an overview of the PSX Push-To-Talk (PTT) application device requirements, provisioning requirements, system requirements, connection requirements, registration requirements, WAVE PTT service requirements, and supported features.

The PSX PTT application offers WAVE PTT services over 4G, 3G, or WiFi network. The quality of service depends on the quality of the data connection.

The PSX PTT application offers a powerful range of capabilities including:

- Call Alert with Acknowledgment
- One-to-One Barge Call and Alert Call
- Multiple types of group calls
- Single talkgroup monitoring
- Talkgroup scanning
- Emergency PTT alarms and calls
- Ambient Listening (AL) calls

PTT contacts are defined either by the PTT App User (Personal Contact) or by the Enterprise Administrator (Enterprise Contact or Group). Individual contacts are defined by each PTT App User for personal use and individual enterprise contacts and talkgroups are always defined and managed by the Enterprise Administrator.

Private calls are calls made to one or a few personal contacts. Talkgroup calls are calls made to a talkgroup which is a large communication group.

PTT over broadband can be interconnected to Project 25 Land Mobile Radio (LMR) networks or TETRA networks to enable PTT interoperability between broadband and P25 or TETRA radio users.

Device Requirements

The PSX PTT application allows a Smartphone (or Tablet) to access WAVE PTT services offered by Motorola Solutions with the following minimal OS specifications::

- The PSX PTT application requires a minimum version of Android 4.4.4 on the handheld device.
- The PSX PTT application requires a minimum version of Windows 10 (UWP).

Provisioning Requirements

Each PTT user must be provisioned for WAVE PTT services and assigns a unique PTT ID.

All broad-band calls are secure calls (FIPS level 1) and system configurable through the MSI PTT server. Availability of optional features requires system configuration on the MSI PTT server.

System Requirements

The PSX PTT application requires the device is running Android 4.4.4 Operating System or a later release.

Connection Requirements

The PSX PTT application must be able to connect successfully to the MSI PTT server. This requires a successful data connection over WiFi, 3G, or 4G interface.

Registration Requirements

The PSX PTT application must register on the MSI PTT server successfully so the user can make PTT calls. The PSX PTT application requires authentication with an Identity Management token. If the token is not valid, a reduced scope of WAVE PTT services is limited to emergency and ambient features only.

WAVE PTT Service Requirement

After the PSX PTT application is installed, the application will auto-start and register with the MSI PTT server whenever the device reboots. The PSX PTT application is always running WAVE PTT service on the device until the user decides to turn **OFF** the WAVE PTT service.

> **NOTICE:** Recommendation is to not turn **OFF** the WAVE PTT service. Once the WAVE PTT service is turned **OFF**, the WAVE PTT service will not auto-start if the device reboots.

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Related Links

2.1.1
PTT Contacts and Groups

User can use a successfully registered PSX Push-to-Talk (PTT) application to access different types of contacts to make different types of PTT calls:

• Individual Personal PTT Contacts

• Personal PTT Groups

• Enterprise PTT Contacts

• Enterprise PTT Talkgroups

  - Single selected talkgroup

  - Scan List of multiple Enterprise Talkgroups

• Broadcast Groups

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Related Links

2.1.1.1
PTT Contact and Group Management

Users manage different types of PTT Contacts and Groups:

- **Personal PTT Contact Management:**

  - Allows user to add, edit, and delete individual personal PTT contacts (non-enterprise). See Administration of PTT Individual Contacts on page 66.

  - Allows user to add enterprise PTT contacts to personal PTT contacts.

    > **NOTICE:** Enterprise PTT contacts are managed by the Enterprise Administrator only (add, edit, and delete). User is notified when enterprise contacts are changed.

- **Personal PTT Group Management:**

  - Allows user to add, edit, and delete personal PTT groups (non-enterprise). See Administration of PTT Personal Groups on page 68.

    > **NOTICE:** Enterprise PTT talkgroups and Broadcast Groups are managed by the Enterprise Administrator only (add, edit, and delete).

- **Scan List Management:**

  - Allows user to create, edit, delete, and update Scan Lists made up of talkgroups. See Administration of PTT Talkgroup Scan Lists on page 71.

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2.1.1.2
PTT Contact List Size, Group List Size, and Group Call Size

The following lists the maximum number of contacts and groups allowed on your device:

- A WAVE 7000 PTT application has up to 500 individual contacts (Enterprise and Personal Contacts combined) in the contact list.

- A WAVE 7000 PTT application has up to 100 groups which includes Personal Groups, Talkgroups and Broadcast Groups.

- Personal Groups and Temporary (Ad-Hoc) Groups can each have up to 50 participants.

- Enterprise Groups (Talkgroups) and Broadcast Groups can have up to 250 participants.

- Scan list maximum is ten for a particular user. In a single scan list, there is a maximum of nine members plus the selected talkgroup for a total of ten.

- Broadcast Groups can have up to 10 talkers. Inter-Enterprise Group Calls are supported using globally unique group names.

- Minimum of 32,000 unique groups in the entire system; solution scales to millions of groups and contacts in the entire system.

- Minimum of 16,000 User role profiles

- Minimum of 16,000 group type profiles. The role based provisioning limit of an enterprise group is only limited by the capacity of the system (100K subscribers). The non-role based provisioning limit of an enterprise group is limited by the Maximum Affiliation Limit. The Maximum Affiliation Limit is 250.

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PTT Contacts and Groups on page 36

2.1.2
PTT Widget
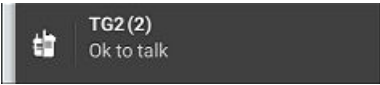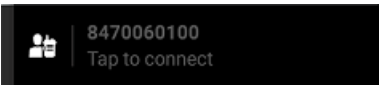
The PSX PTT application has a PTT widget for the device **Home** screen. The PTT widget allows quick access to PTT calls in progress without opening the PSX PTT application.

📝 **NOTICE:** All other features are available on all devices with authorized PTT application.

Figure 9: PTT Widget on Home Screen with Active Talkgroups
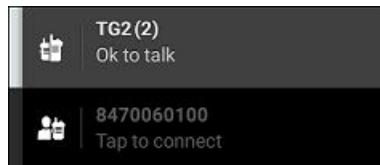
Table 6: PTT Widget for Active Talkgroup Icons

ICON	Description
	Access the talkgroup list view by tapping on **TG** icon.
TG2 (2) Ok to talk	• View active talkgroup name and level of participation. For example, "`Ok to talk`" • Track the progress of an ongoing call with floor status and call status updates.
	Enable/disable scanning by tapping on the scan icon.
	Access the contacts list view by tapping on the private PTT contact icon.
8470060100 Tap to connect	View inactive private PTT contact name and level of participation. For example, "`Tap to connect`"

Figure 10: PTT Widget on Home Screen with Active Private PTT Session
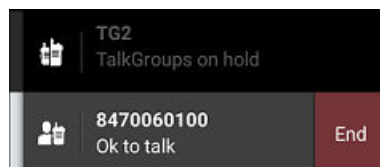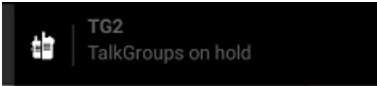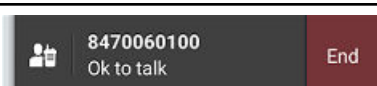
Table 7: PTT Widget for Active Private PTT Session Icons

ICON	Description
	Access the talkgroup list view by tapping on **TG** icon.
TG2 TalkGroups on hold	View inactive talkgroup name and level of participation. For example, "`Talkgroups on hold`"
	Tap on the private PTT contact icon to access the contacts list view.
8470060100 Ok to talk End	• View name of "`caller`" in a private call. • Track progress of an active call with floor and call status updates. For example, "`Ok to talk`"
End	Tap **End** button to end the call.

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2.1.3
PTT Call Behavior While the Application is in the Background

The following scenarios describe expected PTT call behaviors while the application is running in the background.

Incoming PTT Calls

While you are using other applications on the phone, an incoming PTT call brings the PTT application to the foreground and you hear the voice of the caller. At the end of the PTT call, you can go back to the previous application by pressing **Back**.

Ongoing PTT Calls

During a PTT call, if you navigate away to another application, you continue to hear the PTT call, but you are unable to take the floor and speak until you return to the PTT application.

Rejoining a PTT Group Call

Rejoining a Group Call - If you leave during a PTT group call, you can rejoin the call by initiating a call to that group again, either from the call history or from the group list. If the call ended before you try to rejoin, you start a new call to that group.

Joining a Missed Group Call - If you miss a group call, you can directly call the group. If the group call is still in progress, you automatically join the ongoing call. Otherwise, you start a new call.

Silent Mode

When your phone ringer is set to Silent or Vibrate-Only, PTT calls are not played over the loudspeaker but are played through the device earpiece. To hear a PTT call, hold the phone to your ear as during a regular phone call. You can temporarily switch to the loudspeaker using the on-screen speaker on/off

button for the current call. The next PTT call will again use the phone's earpiece while the phone is in silent mode.

Talkgroup PTT Call Interaction

Call Interaction When a talkgroup is being monitored and the associated scan list is being scanned, the user hears any calls made to the priority talkgroup and to any of the talkgroups on the list. The priority talkgroup has highest priority and overrides a call from a group on the list. The groups on the list all have equal priority and cannot override each other.

When a priority talkgroup call is in progress, the user does not hear any calls from any of the other groups on the list. The priority talkgroup is auto-joined (above all other ongoing PTT calls) whenever it becomes active. All other talkgroups will be auto-joined in order as they become active.

Return to Process

2.1.4
PTT Clear, Secure, and Non-Secure

A PTT device supports clear, secure calls with encryption, and non-secure calls.

PTT Clear Calls

Clear calls and software-encrypted secure calls are supported on all devices running the PSX PTT application. The PTT user audibly hears a notification tone during the call that a clear call is active in both private and group calls if the client is secure capable.

When a device, which contains a cryptr micro, and is the target of a clear unencrypted call, or is the source of a clear unencrypted call, a tone will be played to indicate that a clear unencrypted call is occurring. The clear call notification tone is played at every talk burst at both the source and target(s) of the call.

User configures the clear call notification tone on or off in the client. If the client is secure capable call a clear visual or audible tone indication is available for the following call types:

- Private one-to-one (includes call accept for Alert)
- Ad-Hoc calls
- Personal group calls
- Enterprise Talkgroup calls

PTT on Secure-Capable Devices

A secure-capable device is one with a CRYPTR Micro. On such a device, the PSX PTT application supports highly secure calls (FIPS-140 Level 3) encryption.

> **NOTICE:** Both parties must have CRYPTR Micro to support FIPS-Level 3 Highly Secure calls can be made between two or more devices running the PSX PTT application.

Secure-capable rules for one-to-one calls:

- If the selected user is secure-capable, then the secure toggle is preset to ON.
- If the selected user is not secure-capable, then the secure toggle is not shown.

Secure-capable rules for group calls:

- For secure talkgroups, a talkgroup is considered secure if all of the members in the talkgroup are secure. The talkgroup is listed with a lock icon if it is secure. Only secure users have access to secure talkgroups.

- For ad-hoc group calls, if all selected members of the group are secure-capable, the secure toggle is preset to **ON**.
- For personal group sessions, if the group is a secure group the secure toggle is preset to **ON**.
- When your device technician has paired your device with a CRYPTR Micro:
    - Device logon is required after bootup.
    - Device logon fails if CRYPTR Micro is removed.
    - Highly Secure PTT calls are enabled.
    - Clear PTT calls are supported.
- When your device technician has not paired your device with a CRYPTR Micro:
    - Device logon is not required after bootup.
    - Only clear PTT calls are supported.

For incoming calls:

- If receiving a secure private 1:1 and group call, the **Secure CRYPRT Micro** notification is displayed.
- If receiving a secure private 1:1 where the callers secure keys are not correct, you can chose to end the session or continue the call in clear mode.
- If receiving a secure group call where the callers secure keys are not correct, you must end the session.

PTT on Non-Secure Devices

On all devices without a hardware CRYPTR Micro. the PSX PTT application supports software encryption:

- Secure calls are supported.
- Clear calls are supported.

Non-secure-capable rules for group calls:

- For ad-hoc group calls:
    - If there is a mixed group (at least 1 secure-capable member and at least 1 non-secure user), the secure toggle is preset to OFF.
    - If there is a mixed group and the user toggles secure ON, only the secure-capable user receives the call.
- For personal group calls, if the group is a non-secure group, the secure toggle is not shown.

> **NOTICE:** If no selected users of the group are secure-capable, then the secure toggle is not shown.

Return to Process

2.2
PTT Calls Types

This section summarizes the call capabilities of the PSX Push-To-Talk (PTT) application. Availability of optional features requires system configuration on the WAVE server. Between handhelds, the PSX PTT application supports one-to-one calls and enterprise-wide group calls. All participants in a group call can either talk or listen after someone initiates the group call.

> **NOTICE:** Availability of optional features requires system configuration on the WAVE server.

Between handhelds, the PSX PTT application supports one-to-one and enterprise-wide group calls. All participants in a group call can either talk or listen after someone initiates the group call.

The PSX PTT application supports the following types of PTT calls:

- **One-to-One Private Call Types**
  - Call Alert with Acknowledgment (if implemented in your system).
  - One-to-One Barge Call and Alert Call (if implemented in your system).
  - Callback Request
- **One-to-Many Private Call Types**
  - Temporary Group Calls
  - Personal Group Calls
- **Large Communication Group Call**
  - Talkgroup Calls
  - Broadcast Group Calls
- Console Patch and Linked Group Call (if implemented in your system).
- Ambience Listening (AL) Call (if implemented in your system).
- Emergency Call and Alert (if implemented in your system).
- Push-to-Talk Across Android Devices and ASTRO
- Push-to-Talk Across Android Devices and Tetra

Return to Process

Related Links

2.2.1
One-to-One Private Push-to-Talk

This section defines One-to-One Private Call types between handhelds.

NOTICE: Availability of optional features requires system configuration on the WAVE server.

Call Alert with Acknowledgment
The PTT user selects an individual PTT contact and presses the **PTT** Button. An alert to the callee is requested. The callee has the option of accepting or rejecting the call. While in waiting state, the caller starts hearing tones (when the WAVE server confirms that the callee has received the alert request) to indicate that it is waiting for connection. If the call is accepted, the call proceeds as a regular one-to-one private (barge) call. The call ends when either party ends the call or after call times out.

NOTICE: One-to-one Private (Barge) or Call Alert with Acknowledgment calls are configurable by the system administrator and only one call type is available.

One-to-One Private (Barge) Calls

The PTT user selects an individual PTT contact and presses the **PTT** button. When the call is established, the caller talks, the transmitting handheld sends the voice and the callee hears the voice, with the PTT audio barging in on the callee device. The call ends when either party ends the call or after call times out. Private (Barge) calls contact the called party when the call is established. There is no option for the called party to accept or reject the call. Push-to-Talk voice is sent directly to the receiver and audio is played out on the speaker.

NOTICE: One-to-One Private (Barge) or Call Alert with Acknowledgment calls are configurable by the system administrator and only one call type is available.

One-to-One Alert Calls

The PTT user selects an individual PTT contact and presses the **PTT** Button. An alert to the callee is requested. The callee has the option of accepting or rejecting the call. If the call is accepted, the call proceeds as a regular one-to-one private (barge) call. The alert call ends when either party ends the call or after call times out.

NOTICE: One-to-One Private (Barge) and Alert calls are available together depending on the system configuration for Call Alert with Acknowledgment.

Callback Request

The PTT user selects an individual PTT contact and presses the **PTT** Button. A callback request is sent to the caller. The callee has the option of calling back immediately or later.

Return to Process

2.2.2

One-to-Many Private Push-to-Talk

This section defines One-to-Many Private Call types between handhelds.

NOTICE: Availability of optional features requires system configuration on the WAVE server.

Temporary Group Calls

The PTT user selects (ad-hoc) multiple, individual contacts in **Multi-Select** mode and presses the **PTT** Button. A temporary group call is set up between the selected contacts. The call proceeds like any other half-duplex call when only participant talks and all other listen. The temporary group call ends when the initiator ends the call or after call times out.

NOTICE: A temporary group is not saved on the handheld or the server at the end of the call.

Personal Group Calls

The PTT user selects multiple, individual contacts and creates a personal group on the WAVE server. A personal group is visible (on the **Contacts** tab) only to the owner/creator of the personal group. Only the owner can initiate a call to the group and modify the group (rename, add/remove members, and more). Other group members can only receive and respond to a group call when started by the owner of the group. The personal group call ends when the owner/ initiator ends the call or after call times out.

NOTICE: A temporary group can be optionally saved as a personal group using the **Save** icon in **Multi- Select** mode.

Return to Process

2.2.3
Large Communication Group Push-to-Talk

This section defines Large Communication Group Call types between handhelds.

NOTICE: Availability of optional features requires system configuration on the WAVE server.

Talkgroup Calls

The system administrator defines and manages enterprise talkgroups through the PTT server and are pushed down to specified users. Scanning and monitoring can be done only on talkgroups. In the Talkgroups screen, the talkgroup is selected and the selected group is monitored.

The user can have access to many talkgroups but activity can be monitored only for one talkgroup at a time and is referred to as the priority talkgroup. If there is a call for a monitored talkgroup, the user hears the call however if that call is not monitored the user will not hear that call. The user can change the monitored talkgroup at any time.

Scanning refers to monitoring the talkgroups that are part of a specific scan list. Scanning has no effect on monitoring the priority talkgroup. If that talkgroup has a scan list, then scanning of the groups on the scan list also starts. The user can turn scanning off for that scan list.

Scan lists are created for any talkgroup and more than one talkgroup can have a scan list at the same time, however a talkgroup can only have one list. A talkgroup that has a list is called a priority talkgroup. The members of a scan list are other talkgroups and may contain both secure and nonsecure talkgroups. The user decides which talkgroups have a scan list and which talkgroups are members of the list. The user creates, deletes, and edits scan lists.

Nuisance delete refers to temporarily placing a member of a scan list on the Nuisance Deleted Talkgroup List. The activity for a talkgroup on the Nuisance Deleted Talkgroup List is ignored. When the Talkgroup is removed from the Nuisance Deleted Talkgroup List, it is automatically placed back on the scan list.

Talkgroup calls end when all members leave the call or no member takes the floor for a configured duration of time. When talkgroups are turned off in the application by the user, there is no monitoring of talkgroups for that specific user.

Broadcast Group Calls

The system administrator sets up the broadcast groups. Only selected members are granted the right to initiate a call and only certain members can transmit during the call. All members can hear the call but cannot transmit during the call. The broadcast group call ends when the initiator ends the call.

NOTICE: Broadcast group calls have elevated priority on the system priority, second only to emergency PTT calls. When a device receives a broadcast group call, any other active PTT call (other than emergency PTT call) is dropped.

Return to Process

2.2.4
Console Patch and Linked Groups Push-to-Talk

This section defines a console patch between a console and handhelds.

> **NOTICE:** Availability of optional features requires system configuration on the WAVE server.

If a console is present and enabled, this feature allows a dispatcher to create a console patch with 1 or more enterprise groups. When a console user successfully reserves a group in a patch, or removes a group in a patch call, all other users affiliated to that group are informed including change in secure properties.

When a group in a linked group keys up in emergency state, only that group is allocated emergency resources. All other groups in the linked group remain at linked group priority. The linked group does not break up due to emergency on a constituent group.

Return to Process

2.2.5
Ambience Listening Push-to-Talk

If implemented in your system with a console setup, a dispatcher can make a special call to a target device to listen to conversations and background noises within the range of a particular device's microphone. The target device receives no indication that the Ambient Listening (AL) assignment has been activated, and may take priority over ongoing voice or PTT calls.

The AL listeners receive an indication on the device screen an AL assignment has been started.

Based on your system administrator's device configuration, an AL device can be an:

- **Ambient Listener** - a listener (for example, console or privileged user) who is ambience listening to the target device when an AL call is initiated.

- **Ambient Target** - a target device that is required to send microphone audio back to the console user and AL listeners when a call is initiated.

- > **NOTICE:** A PTT device can be an AL Target in only one AL assignment but may be an AL Listener in multiple AL assignment.

The call ends when the LEX device user initiates any voice call, switches to Emergency, or sends an Emergency Alarm.

Return to Process

2.2.6
Emergency Push-to-Talk Operation

This section defines emergency PTT call operation between handhelds.

> **IMPORTANT:** It is critical to check with your technician for the assigned operation of the Emergency button (Hard button, soft button, or configurable button) on your device to ensure you can communicate a critical emergency call.

Emergency PTT is used to indicate a critical situation. You are able to initiate an Emergency at any time on any screen display even when there is activity on the current device. When starting Emergency Operations, any ongoing voice call is aborted and the session remains open.

During Emergency Operations, the radio rejects phone and private calls, and will not monitor the talkgroups in the selected scan list.

Emergency PTT Target

User can initiate PTT emergency calls to the following Emergency targets:

• PTT User

• PTT group (configured for emergency use by system administrator)

• The last affiliated group (the current active group) of the user

To configure Emergency targets, see "Emergency Settings" section in Administration of PTT Settings on page 63 to configure emergency settings.

Emergency PTT Activation Method

User can initiate Emergency Communication by the following PTT methods:

• Press the Power button on device (if supported by device and OS)

• Press the Soft emergency button in PTT Client

• Press the user configurable hardware button on the device (for example, volume or camera button) (based on device/device OS support).

A Hard button or soft button application is configured to send an emergency signal that overrides any other communication over the device.

Hot Mic

The Hot Microphone allows a user to talk on the device without pressing the PTT button during Emergency Operations. The transmission continues for a provisioned amount of time. If the PTT button is pressed before the Hot Microphone time expires, the radio ignores the PTT press and remains in emergency mode.

The "hot mic" intervals are configured to enable sending of voice from originator's device at periodic intervals in an emergency state. To configure Hot mic, Hot Mic duration, and Hot Mic frequency, see "Emergency Settings" section in Administration of PTT Settings on page 63.

Return to Process

PTT Calls Types on page 41

2.2.7
Push-To-Talk Across Android Devices and Tetra Devices

If available in your server configuration, user can participate in secure communication group calls (TETRA talkgroups) across Android devices and TETRA devices (TETRA MTP3000 series radios and TETRA MTP6000 series radios).

Contact your system administrator if you are unable to communication with TETRA devices.

Return to Process

PTT Calls Types on page 41

Chapter 3

Push-to-Talk Calls

This chapter describes how to manage the PSX Push-to-Talk (PTT) application, monitor status, and make and receive PTT calls.

Related Links

3.1

Push-to-Talk Status

User can use PTT Status to determine availability of a PTT Contact:

- Monitor and display Individual PTT Contact status.
- Monitor and display Personal PTT Group status
- Monitor and display activity of Enterprise PTT Talkgroups

Individual PTT Contact Status

Contact status is shown in all screens related to individual PTT contacts and allows the user to check the availability of an individual PTT contact for a PTT call. The status of a contact can be:

- `Offline` - PTT contact is not reachable for a PTT call.
- `Available` - PTT contact is reached in any type of PTT call.
- `Busy` - PTT contact is requesting a DO NOT DISTURB.

Personal PTT Group Status

Personal PTT Group status is shown in all screens related to personal PTT groups and allows the user to check the availability of a personal PTT group for a PTT call. The status of a personal PTT group can be:

- `Offline` - PTT personal group is not available.
- `Available` - PTT personal group is available.
- **NOTICE:** If at least two other members (than yourself) is available, the status of a personal group is shown as `Available`.

Enterprise PTT Talkgroup Status

Enterprise PTT Talkgroup status is shown for each talkgroup in the **Talkgroup** list view. User can check the activity on any talkgroup. The status of a talkgroup can be:

- "`no activity`" - No visual indication on the PTT talkgroup.
- "`activity`" - Visual indication on the PTT talkgroup. The status of a talkgroup is marked "`active`" when a call has is activated on the talkgroup by some member of the talkgroup.

  NOTICE: If the talkgroup is being monitored either alone or on a scan list, the PSX PTT application auto-joins the user into that active talkgroup based on priority. The "`activity`" status enables the user to manually select any "`active`" talkgroup and join the call, at any time.

Return to Process

3.2
Using Push-to-Talk

This section describes how to make and receive Push-to-Talk (PTT) type calls.

Return to Process

Related Links

3.2.1
Initiate and Receive One-to-One Private Push-to-Talk

Initiate and receive one-to-one Private Calls with an individual personal contact or Enterprise Contact.

Return to Process

Related Links

3.2.1.1
Making a Call Alert with Acknowledgment Push-to-Talk

When and where to use:
Perform this procedure to make a Call Alert with Acknowledgment. Call Alert with Acknowledgment calls contact the called party with an option for the called party to accept or reject the push-to-talk (PTT) call.

Procedure:

1 From the **PSX PTT** main screen, tap **Contacts** .

2 Scroll up and down or use the **Search** icon and verify the contact is available.

> **NOTICE:** The contact list indicates the contact is secure or non-secure.

3 Tap the name of the contact to start a PTT call.

4 Wait for the receiver to accept or reject the PTT call.

> **NOTICE:** After the PTT call is connected, if using a soft PTT button, either sender or receiver can initiate the PTT call. If using a hard PTT button, only the receiver is able to initiate the PTT call.

Return to Process

Related Links

3.2.1.1.1
Receiving a Call Alert Acknowlegment Call

When a Call Alert Acknowlegment call is received, a **PTT call Invitation** message with **Ignore** and **Connect** are displayed.

- If **Ignore** is selected, the call does not complete and the original screen is displayed. The sender is informed that the target did not accept the call.

- If **Connect** is selected, the **PTT In-Session** screen automatically displays.

- A missed call notification will display in the notification bar as configured in your Android settings. User can tap to send a call alert or initiate a private PTT session from the notification bar.

- **NOTICE:** This information applies to a handheld that is locked or unlocked.

Return to Process

3.2.1.2
Making a One-to-One Barge Push-to-Talk

When and where to use:
Perform this procedure to make a one-to-one private call between two people. Barge (Private) calls contact the called party as soon as the call is established. There is no option for the called party to accept or reject the call. Push-to-Talk voice is sent directly to the receiver and audio is played out on the speaker.

Procedure:

1. From the **PSX PTT** main screen, tap **Contacts** .

2. Scroll up and down or use the **Search** icon and verify the contact is available.

     NOTICE: The contact list indicates the contact is secure or non-secure.

3. Tap the contact name to start a PTT call. Do not tap .

4. Press and hold **PTT** button and start speaking after the "chirp".

5. Release **PTT** button to listen.

6. If your handheld is secure and the called party is not secure, a warning is displayed. Tap **OK** to continue with a clear call.

7. Tap **End** to end the call.

Return to Process

Related Links

3.2.1.2.1
Receiving a One-to-One Barge (Private Call

When a call is received, the **Private PTT In-Session** screen automatically displays. The receiver can hear the caller and can talk to the caller by pressing and holding the PTT button. When the call ends, the original screen is displayed.

A missed call notification will display in the notification bar as configured in your Android settings. User can tap to send a call alert or initiate a private PTT session from the notification bar.

NOTICE: This information applies to a handheld that is locked or unlocked.

Return to Process

3.2.1.3
Making a One-to-One Alert Push-to-Talk

When and where to use:
Perform this procedure to make a One-to-One Alert Call. An Alert call contacts the called party and allows the called party to **Ignore** or **Connect** to the call. If Connect is selected, the call is accepted and the call proceeds like a One-to-One Private (Barge) call. If Ignore is selected, the call is not completed and the caller is informed that the call was rejected.

Procedure:

1   From the **PSX PTT** screen, tap **Contacts** .

2   Scroll up and down or use the **Search** icon and verify the contact is available.

   NOTICE: The contact list indicates the contact is secure or non-secure.

3   Tap . Do not tap the contact name.

   An alert is sent to the contact. The contact is given the option to **Ignore** or **Connect**.

   See Information on Receiving Calls.

Return to Process

Related Links

3.2.1.3.1
Receiving a One-to-One Alert Call from a Personal or Enterprise Contact

When the alert is received, a `PTT call Invitation` message with **Ignore** and **Connect** are displayed:

- If **Ignore** is selected, the call does not complete and the original screen is displayed. The sender is informed that the target did not accept the call.

- If **Connect** is selected, the `Private PTT In-Session` screen automatically displays.

The receiver can hear the caller and can talk to the caller. When the call ends, the original screen is displayed.

A missed call notification will display in the notification bar as configured in your Android settings. User can tap to send a call alert or initiate a private PTT session from the notification bar.

NOTICE: This information applies to a locked or unlocked handheld.

Return to Process

3.2.1.4
Making a One-to-One Private Push-to-Talk Using the Android People List

When and where to use:
Perform this procedure to make a one-to-one private call from the Android people list.

Procedure:

1 From the handheld **Home** screen, tap the **All Apps** button.

2 Tap **PEOPLE** icon.

  The icon is determined by the operating system and the phone manufacturer.

3 From the people list, tap the name of a PTT contact.

  A PTT contact displays a circle and/or status under their name. The status shown is either available or no status unknown.

4 Perform a one-to-one private call:

  - For Call Alert with Acknowledgment, see Making a Call Alert with Acknowledgment Push-to-Talk on page 48.

  - For Barge (Private) call, see Making a One-to-One Barge Push-to-Talk on page 49.

  - For Alert call, see Making a One-to-One Alert Push-to-Talk on page 50.

Return to Process

3.2.2
Initiate and Receive One-to-Many Private Push-to-Talk

Initiate and receive one-to-many Private Calls. Make a PTT call on a small group selected ad-hoc by the user (Temporary group calls) or PTT call on a small group pre-defined by the user (Personal group calls).

Return to Process

Related Links

3.2.2.1
Making a Personal Group Push-to-Talk

When and where to use:
The individual handset user creates and stores a personal group in the device. Only that device can initiate a call to the personal group. The group members can receive the Push-to-Talk (PTT) group call, the group members can talk during the call, but group members cannot initiate a new PTT call to the personal group.

To create a personal group, see Adding a PTT Personal Group on page 69.

Procedure:

1   From the **PSX PTT** screen, tap **Contacts**.

2   Scroll up and down or use the **Search** icon and verify the group is available.

3   Tap tname of the group.

4   Press and hold the **PTT** button and start speaking after the "chirp".

5   Release the **PTT** button to listen.

If any members are Available or Busy, an active session begins and the caller sees an `OK to Talk` message.

The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, everyone sees an `OK to Talk` message. When any member presses and holds the **PTT** button, they see a `Talking` message and the other members see a message showing the name of the member talking.

6   Tap **End** to end the call.

Return to Process

Related Links

3.2.2.1.1
Receiving a Personal Group Call

This information applies to a locked or unlocked handheld.

When a call is received, the `Private PTT In-Session` screen automatically displays and indicates a group call. The receiver can hear and talk to the caller. When the call ends, the original screen is displayed.

The caller sees an `OK to Talk` message. The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, everyone sees an `OK to Talk` message. When any member presses and holds the **PTT** button, the members see a `Talking` message and a message showing the name of the member talking.

Return to Process

Making a Personal Group Push-to-Talk on page 52

3.2.2.2
Making a Temporary Group Push-to-Talk

When and where to use:
Perform this procedure to create a Temporary Group. Temporary Groups are not stored in the handheld and only that handheld user can initiate a call to the Temporary Group.

The group members can receive the Push-to-Talk (PTT) group call, the group members can talk during the call, but group members cannot initiate a new PTT call to the Temporary Group. Both secure and non-secure members are allowed in the Temporary Group.

Procedure:

1 From the **PSX PTT** screen, tap **Contacts**.

2 Tap **Multi-Select Mode** .

   The **Individuals** screen displays.

3 Select the check box for each contact to add to the group.

   Contacts can be added to the group even if the status of the contact is Offline.

4 From the bottom of the screen, tap icon to call the temporary group.

5 Press and hold the **PTT** button and start speaking after the "chirp".

6 Release the **PTT** button to listen.

   If any members are Available or Busy, an active session starts. The caller sees an **OK to Talk** message.

   The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, everyone sees an **OK to Talk** message. When any member presses the **PTT** button, they see a Talking message and the other members see a message showing the name of the member talking.

7 Tap **End** to end the call.

Return to Process

Initiate and Receive One-to-Many Private Push-to-Talk on page 51

Related Links

Receiving a Temporary Group Call on page 54

3.2.2.2.1
Receiving a Temporary Group Call

If any members are Available or Busy, an active session starts. The caller sees an `OK to Talk` message. The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, everyone sees an `OK to Talk` message. When any member presses the **PTT** button, they see a `Talking` message and members see a message showing the name of the member talking.

> **NOTICE:** This information applies to a locked or unlocked handheld.

Return to Process

Making a Temporary Group Push-to-Talk on page 53

3.2.3
Initiate and Receive Large Communication Group Push-to-Talk

Initiate and receive Large Communication Group Calls. Make a PTT call on an enterprise talkgroup or broadcast group managed by the Enterprise Contact Management.

Return to Process

Using Push-to-Talk on page 48

Related Links

Making a Talkgroup Push-to-Talk on page 54
Initiating a Broadcast Group Push-to-Talk on page 56
Placing a Talkgroup Push-to-Talk on the Nuisance Deleted List on page 57
Placing a Nuisance Deleted Talkgroup Back Push-to-Talk on the Scan List on page 58

3.2.3.1
Making a Talkgroup Push-to-Talk

When and where to use:
Perform this procedure to call a Talkgroup. Talkgroups are turned on by default and must remain on to communicate with a selected group. All talkgroups are turned on and off at the same time. When the talkgroups are off, tapping any talkgroup in the **Talkgroups** screen automatically turns the talkgroups on and selects that talkgroup.

> **NOTICE:** Since talkgroups automatically turn on by default, if the user wants to turn on or turn off talkgroups manually through the **Overflows Menu** , see Turning on PTT Talkgroups on page 71 or Turning Off PTT Talkgroups on page 71

Procedure:

1 From the **PSX PTT** screen, tap **Talkgroups** .
2 Tap the name of a talkgroup.

   The Talkgroup is highlighted and the name and activity is available. The **PTT** button is activated.

3 Press and hold the **PTT** button and start speaking after the "chirp".

4 Release the **PTT** button to listen.

The call remains in the `Waiting` state until a member joins the call. If no members join before the call times out, the session ends and `No Activity` message displays. If the server cannot process the call, a `temporarily unavailable` message displays.

If at least one member joins before the call times out, an active session starts.

The caller sees a `Talking` message. The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the PTT button, everyone sees an `OK to Talk` message. When any member presses and holds the PTT button, they see a `Talking` message and the other members see a message showing the name of the member talking.

5 Tap **End** to end the call.

Return to Process

Related Links

3.2.3.1.1
Receiving a Talkgroup Call

When the phone is locked and a call is received, the receiver can hear the caller but cannot respond. The handheld must be unlocked and talkgroups selected to enable talking.

When the phone is not locked and a call is received, the screen does not automatically change but the caller is heard. To talk, talkgroups must be selected.

Return to Process

3.2.3.1.2
Methods of Dropping Out of Talkgroups Calls

To drop out of a talkgroup:

- Select a new talkgroup. This method applies to dropping out of calls from both the primary talkgroup and talkgroups on the scan list. See Selecting a Talkgroup.
- Turn scanning off. This method applies to dropping out of calls from talkgroups on the scan list. See .
- Place the talkgroup on the Nuisance Deleted list making the talkgroup temporarily inactive. This method applies to dropping out of calls from talkgroups on the scan list. See .

Return to Process

3.2.3.1.3
Turning Scan On and Off

When and where to use:
Perform this procedure to turn scanning on to auto-join calls from the talkgroups in the scan list or to turn scanning off. When scanning is off, primary talkgroup calls are still automatically joined.

Procedure:

1 From the **PSX PTT** screen, tap **TalkGroups**.

2 Tap a talkgroup.

3 Tap the **Scan** icon.

   Tapping the icon toggles the scanning state between on and off. Scanning is on when the icon is bright. Scanning is off when the icon is dim .

Return to Process

3.2.3.2
Initiating a Broadcast Group Push-to-Talk

Prerequisites: Ensure the broadcast group member using the handheld is enabled to start a broadcast group call.

When and where to use:
Perform this procedure to call a broadcast group. A system administrator determines the members of a broadcast group, which members can start a broadcast group call, and which members can talk after a call is started. All members in a broadcast group can listen but not all are allowed to talk. Broadcast calls are always non-secure. When a broadcast group session is started, all active sessions for all group members are terminated.

Procedure:

1 From the **PSX PTT** screen, tap **Contacts** .

2 Scroll up and down or use the **Search** icon and verify the broadcast group is available.

   Broadcast Groups will be prioritized and shown at the top of **Groups**.

3 Tap a broadcast group.

   The `Initiating Broadcast` message displays.

4 Tap **Cancel** or **Proceed**.

5 Press and hold the **PTT** button and start speaking after the "chirp".

6 Release the **PTT** button to listen.

   The caller sees a `Talking` message. The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, members that are enabled to talk see an `OK to Talk` message. When any talk-enabled member presses and holds the **PTT** button, they see a `Talking` message and the other members see a message showing the name of the member talking.

7 Tap **End** to end the call.

Return to Process

Related Links

3.2.3.2.1
Receiving a Broadcast Group Call

This information applies to a locked or unlocked handheld.

When a call is received, the **Private PTT In-Session** screen automatically displays and indicates that it is a group call. The receiver can hear the caller and can talk to the caller. When the call ends, the original screen is displayed.

The caller sees a `Talking` message. The called group sees the name or the PTT number of the caller and the number of members in the group. The caller is the only one who can speak at the beginning of the call. When the caller releases the **PTT** button, members that are enabled to talk see an `OK to Talk` message. When any talk-enabled member presses and holds the **PTT** button, they see a `Talking` message and the other members see a message showing the name of the member talking.

Return to Process

3.2.3.3
Placing a Talkgroup Push-to-Talk on the Nuisance Deleted List

Prerequisites: To place a talkgroup on the Nuisance Delete list the user must confirm that:

- Scanning is on.
- The Primary Talkgroup is not active.
- A Talkgroup that is a member of a scan list is currently active.

When and where to use: Perform this procedure to place a talkgroup on the Nuisance Delete list. A member of the scan list is made temporarily inactive. Activity on the specified talkgroup is ignored. The specified talkgroup can be added back to the scan list. This procedure is only for a member of the scan list and not for the primary talkgroup.

Procedure:

1 From the **PSX PTT** screen, tap **TalkGroups**.

   The **TalkGroups** screen displays, showing the active member of the scan list at the top.

2 Tap the **Nuisance Delete** icon.

   The talkgroup is designated as a Nuisance Delete Talkgroup and is not scanned when the scan list is scanned.

Return to Process

3.2.3.4
Placing a Nuisance Deleted Talkgroup Back Push-to-Talk on the Scan List

Prerequisites: To restore a Nuisance Deleted Talkgroup back to the scan list perform one of the following:

- Toggle scanning off and on.

- Toggle Talkgroup monitoring off and on.

- Exit the application.

- Shut down the handheld.

- Manually restore the Talkgroup to the scan list by performing the following procedure.

When and where to use:
Perform this procedure to place a Nuisance Deleted Talkgroup back on the scan list.

Procedure:

1 From the **PSX PTT** screen, tap **Talkgroups** .

   The **TalkGroups** screen displays.

2 Tap the scan list icon for the Primary Talkgroup containing the scan list with the Nuisance Deleted Talkgroup.

   The **SCAN LIST** pane displays the Talkgroups on the scan list and the **Nuisance Deleted TalkGroups** pane displays the Nuisance Deleted Talkgroups. This example shows Police Command as a Nuisance Deleted Talkgroup.

3 Tap the **+** for the Nuisance Deleted Talkgroup.

   The group is added back to the list and the SCAN LIST screen is updated and remains displayed.

Return to Process

3.2.4
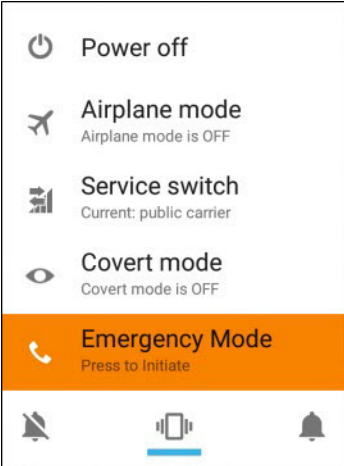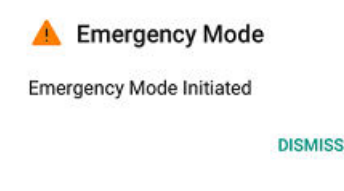## Using Emergency Push-to-Talk

Prerequisites: User must configure Emergency Settings for **Emergency Target**, **Hot Mic**, **Hot Mic Duration**, and **Hot Mic Frequency** settings. For settings information, See "Emergency Settings" section in Administration of PTT Settings on page 63.

When and where to use: Perform this procedure to send a PTT emergency to an individual or designated talkgroup.

Procedure:

1 Select the method you want to use to initiate emergency mode on your device, and perform one of the following actions:

If…	Then…
If you want to make an Emergency call using the Emergency soft button,	Complete the following actions:

If…	Then…
	a Press and hold the Emergency **Power** button until the menu appears. ⏻ Power off ✈ Airplane mode Airplane mode is OFF ⛛ Service switch Current: public carrier 👁 Covert mode Covert mode is OFF ☎ Emergency Mode Press to Initiate 🔕 〔｜〕 🔔 **b** Tap **Emergency Mode**. After 3 seconds, the Emergency Mode is enabled.
If you want to make an Emergency call using the Emergency hard button,	Complete the following actions: **a** Press and hold the Emergency **Power** for three seconds. ⚠ Emergency Mode Emergency Mode Initiated DISMISS Vibrations occur at each second, with a long vibration when emergency is initiated.

2 Hold the device vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth and press and hold **PTT** and announce your emergency into the microphone.

> 📝 **NOTICE:** When hot mic has been enabled, the radio's speaker opens and automatically transmits voice without a PTT press until the hot mic duration expires.

3 Release **PTT** button to listen.

> 📝 **NOTICE:** If using the soft PTT button, when hot mic mode is on, soft **PTT** button will not show.
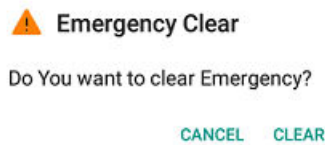
4 To clear the emergency call, press and hold down the programmed emergency button till menu appears and tap **Clear Emergency** to exit emergency.

Figure 11: Emergency Clear Mode
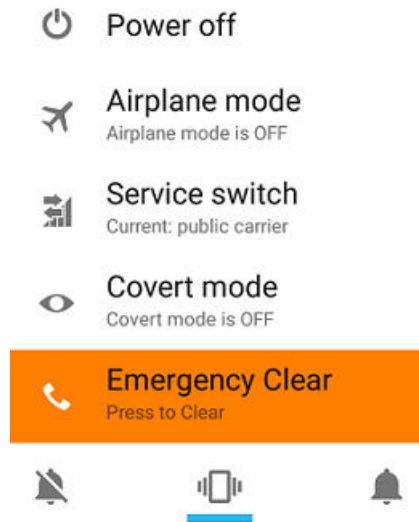
The **Emergency Clear** window appears and tap **Clear**.

Figure 12: Emergency Clear

> **NOTICE:** If the PTT application is in reduced feature mode you can still make emergency PTT calls but you are unable to use all features of the PTT application. Tap **Log in** to go to the **Single Sign On** screen.

> **NOTICE:** If user initiates emergency call but the device is out of coverage (out of broadband network coverage), after regaining the broadband network coverage, emergency call is initiated automatically.

Return to Process

Related Links

3.2.4.1
Receiving Emergency Push-to-Talk

The radio receives an Emergency Group Call from a selected pre-programmed group.

When an emergency call is received from a selected pre-programmed group or contact, the call is indicated by an appropriate tone, status icon, and orange color of the display.

The receiver can hear the caller and can talk to the caller by pressing and holding the **PTT** button. The emergency call displays the name when the emergency initiator talks and when a non-emergency user it talking.

Emergency PTT call ends when:

- Initiating user ends the call

- Another privileged user (for example, control room operator) ends the call

- Emergency hang timer expires (hang time set to a much larger value compared to hang time for non-emergency calls).

- The **Clear Emergency** status is pressed

Return to Process

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Chapter 4

Push-To-Talk Application Administration

This chapter covers operation and administration for the Push-to-Talk (PTT) application.

Related Links

4.1
Administration of PTT Settings

This section describes the settings within the PTT application. Preference settings allow the user to configure PSX PTT client Display Options, Account Settings, Advanced Settings, Emergency Settings on the device.

Return to Process

Related Links

4.1.1
PTT Display Options

To access the settings from inside the PTT application, tap PSX PTT Talkgroup/Contact screen, and

choose **Overflows menu** ▮ **→ Settings**.
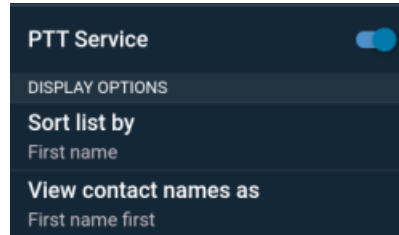
Table 8: PTT Display Options

	Name
PTT Services	Tap to turn on/off the Push-to-Talk (PTT) service state.
Sort List By	Tap to sort list by **First Name** or **Last Name**.
View Contact Names As	Tap to view contact names as **First name first** or **Last name first**.

Return to Process

Administration of PTT Settings on page 63

4.1.2
PTT Account Settings

To access the settings from inside the PTT application, tap PSX PTT Talkgroup/Contact screen, and

choose **Overflows menu** → **Settings**.
To access the settings from inside the PTT application, tap PSX PTT Talkgroup/Contact screen, and

choose **Overflows menu** → **Settings**.
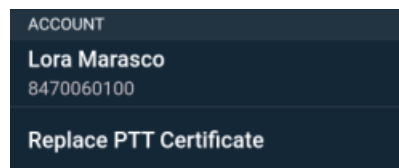
Table 9: PTT Account Settings

	Name
Name and PTT ID number	Displays user name and PTT ID number. Managed by the system administrator.
Replace PTT Certificate	Displays PTT Secure Certificates. Managed by the system administrator.

Return to Process

Administration of PTT Settings on page 63

4.1.3
PTT Advanced Settings

To access the settings from inside the PTT application, tap PSX PTT Talkgroup/Contact screen, and
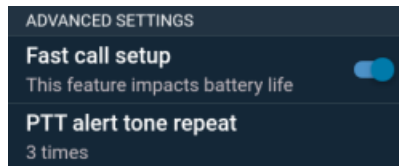
choose **Overflows menu** ⋮ → **Settings**.

	Name
Fast Call Setup	Tap slider to turn on/off **Fast call setup**. Fast call learns from your usage habits to intelligently help you find the right person every time. This feature impacts battery life.
PTT Alert Tone Repeat	Tap to configure **PTT alert tone repeat**.

Return to Process

4.1.4
PTT Emergency Settings

Access to the PTT Emergency settings are available through the PSX PTT settings on the device. Preference settings allow the user to configure Emergency Target, Hot Mic, Hot Mic Duration, and Hot Mic Frequency options on the device.

To access the settings from inside the PTT application, tap PSX PTT Talkgroup/Contact screen, and

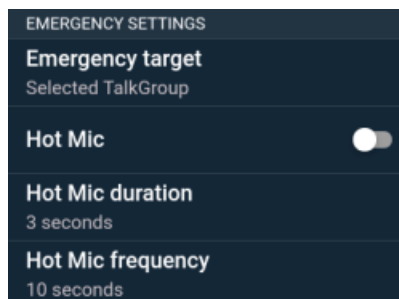tap **Overflows menu** ⋮ → **Settings**.

Table 10: PTT Emergency Settings

	Name
Emergency Target	Tap to open **Emergency Target** window, to configure one of the following:

Table continued…

Name
• **Emergency Contact** - Tap to select an emergency contact from the contact list. • **Selected Talkgroup** – Tap the selected talkgroup.   **NOTICE:** Selected talkgroup is managed by the system administrator. • **Emergency talkgroup** – Tap to select emergency talkgroup from the talkgroup list.
Hot Mic
Tap slider to turn **Hot Mic** on/off.   **NOTICE:** By default Hot Mic is off.
Hot Mic Duration
Tap and type "# of minutes" in **Hot Mic** field.
Hot Mic Frequency
Tap and type "# of seconds" in **Hot mic frequency** field.

Return to Process

Administration of PTT Settings on page 63

4.2
Administration of PTT Individual Contacts

Users defines individual contacts and save them in the PTT Individual Contacts list in the device. This section provides the administration of adding, editing, making, and synchronizing your contact list.

NOTICE: Some Contacts are controlled by the enterprise administrator and added to the device from the MSI PTT server. These PTT Enterprise Contacts cannot be edited or deleted, and show up on the Contact list as "not editable".

Return to Process

Push-To-Talk Application Administration on page 63

Related Links

Adding a PTT Personal Contact on page 66
Editing or Deleting a PTT Personal Contact on page 67
Turning PTT Contacts and Groups Synchronization On and Off on page 68

4.2.1
Adding a PTT Personal Contact

Prerequisites: You must obtain the name of the contact, Push-to-Talk email address, and Push-to-Talk number of the contact from your system administrator.

When and where to use: Perform this procedure to add a personal contact.

Procedure:

1   From the **PSX Private** main screen, tap **Contacts** .

2   From the **Bottom Action** bar, tap **Add Contact** .

3   From the **Add new contact** window complete the following:

   •   In the **Name** field, type the name of the contact. Last name first and first name last.

   •   In the **PTT** field, type the PTT number.

      NOTICE: The PTT ID must be "xxx-xxx-xxxx" and between 3-16 digits.

4   Tap .

Return to Process

Administration of PTT Individual Contacts on page 66

4.2.2
Editing or Deleting a PTT Personal Contact

When and where to use: Perform this procedure to edit or delete a personal contact. Do not use this procedure with enterprise contacts added by the system administrator.

Procedure:

1   From the **PSX PTT** main screen, tap **Contacts** .

2   Tap on the contact avatar you want to delete. Do not tap the contact name.

3   Perform one of the following actions:

If…	Then…
If editing contact information,	From the drop-down **Menu** , tap **Edit** and update the appropriate fields.
If deleting the contact,	From the drop-down **Menu** , tap **Delete** → **OK**. The contact is deleted

4   Tap **Done**.

Return to Process

Administration of PTT Individual Contacts on page 66

4.2.3
Turning PTT Contacts and Groups Synchronization On and Off

When and where to use:
Perform this procedure to synchronize the PTT contacts and groups to the Android people list. Synchronizing can be automatic by leaving synchronization turned on.

> **NOTICE:** Synchronization does not add Android information to the PTT contacts and groups.

Procedure:

1. From the device **Home** screen, tap the **All Apps** button.

2. Tap **Settings → Accounts → PSX PTT**.

3. Perform one of the following:

   - For automatic synchronization, from the **PSX PTT** window, slide the **Contact** switch to on.

   - To turn off automatic synchronization, from the **PSX PTT** window, slide the **Contact** switch to off.

   - To manually sync, from the drop-down menu ⋮ tap **Sync now**.

Return to Process

Administration of PTT Individual Contacts on page 66

4.3
Administration of PTT Personal Groups

Handheld users define Personal Groups and save them in the Push-To-Talk (PTT) Contacts list in the handheld. One or more PTT contacts can be added to the group, even if the contact is Offline. The handheld user who defined the Personal Group is the only one who can initiate a PTT call to that group. Group members can receive the PTT group call and group members can talk during the call, but group members cannot initiate a new PTT call to the group.

The handheld user can modify the Personal Group (rename, add/remove members, and more) at any time, except during a call.

The status of the Personal Group is determined by the status of the members. The Personal Group status is:

- Available if at least one member of the group is available.

- Offline if all the group members are offline.

Return to Process

Push-To-Talk Application Administration on page 63

Related Links

Adding a PTT Personal Group on page 69
Deleting a PTT Personal Group on page 69
Editing a PTT Personal Group on page 70

4.3.1
Adding a PTT Personal Group

When and where to use:
Perform this procedure to add a personal group.

Procedure:

1 From the **PSX PTT** main screen, tap **Contacts** .

2 Tap .

3 From the **Individuals** window, check the contact check box to add to the group.

    Contacts can be added to the group even if the status of the contact is Offline. Use the **Search** icon to find the contacts.

4 Tap **Save** icon.

    The **Create Group** screen displays.

5 In the **Enter a name for this group** field, type the group name. The length of the group name is limited to 21 characters.

6 Tap **SAVE**. Tap **CANCEL** to return to the **Individual** window.

7 Tap **Done**.

    A new personal group is created.

Return to Process

4.3.2
Deleting a PTT Personal Group

When and where to use:
Perform this procedure to delete a personal group.

Procedure:

1 From the **PSX PTT** main screen, tap **Contacts** .

2 Scroll up and down or use the **Search** icon and verify the group is available.

3 Tap on the group avatar you want to delete. Do not tap the group name.

4 From the drop-down menu , tap **Delete → OK**.

Return to Process

4.3.3
Editing a PTT Personal Group

When and where to use:
Perform this procedure to edit a personal group.

Procedure:

1 From the **PSX PTT** main screen, tap **Contacts** .

2 Scroll up and down or use the **Search** icon and verify the group is available.

3 Tap on the group avatar you want to delete. Do not tap the group name.

4 From the drop-down menu , tap **Edit**.

5 Make the edits and tap **Done** .

Return to Process

4.4
Administration of PTT Talkgroups

Talkgroups are turned on by default and must remain on to communicate with a selected group. All talkgroups are turned on and off at the same time. When the talkgroups are off, tapping any talkgroup in the **Talkgroups** screen automatically turns the talkgroups on and selects that talkgroup.

Since talkgroups automatically turn on by default, if the user wants to turn on or turn off talkgroups manually, see:

Return to Process

Related Links

4.4.1
Turning on PTT Talkgroups

When and where to use:
Perform this procedure to run on talkgroups. Talkgroups are turned on by default and must remain on to communicate with a selected group. All talkgroups are turned on or off at the same time.

> **NOTICE:** When the talkgroups are off, tapping any talkgroup in the **Talkgroups** screen automatically turns the talkgroups on and selects that talkgroup.

Procedure:

1   From the **PSX PTT** main screen, tap **TalkGroups**.

2   From the drop-down menu, tap **Turn on Talkgroups**.

Return to Process

Administration of PTT Talkgroups on page 70

4.4.2
Turning Off PTT Talkgroups

When and where to use:
Perform this procedure to turn off the talkgroups. Talkgroups are turned on by default. Turn off talkgroups to stop scanning and communicating with the groups. All talkgroups are turned off or on at the same time.

Procedure:

1   From the **PSX PTT** screen, tap **TalkGroups**.

2   From the drop-down menu, tap **Turn off Talkgroups**.

Return to Process

Administration of PTT Talkgroups on page 70

4.4.3
Administration of PTT Talkgroup Scan Lists

Talkgroups enable handheld users to monitor and scan group traffic and place group calls across the system. Talkgroups are defined and managed on a WAVE Motorola Push-to-Talk (PTT) Server by a system administrator.

Return to Process

Administration of PTT Talkgroups on page 70

Related Links

Creating a Talkgroup Scan List on page 71
Viewing a Talkgroup Scan List on page 72
Editing a Talkgroup Scan List on page 72

4.4.3.1
Creating a Talkgroup Scan List

When and where to use:

Only a Talkgroup can have a scan list. A scan list can contain both secure and non-secure groups.

Procedure:

1   From the **PSX PTT** screen, tap **TalkGroups**.

2   Tap a Talkgroup.

A scan icon next to the group name at the top indicates that there is a scan list for this Talkgroup. When the scan icon is not displayed, it indicates that there no scan list for this Talkgroup.

3   Next to the Talkgroup name, tap **Scan List** icon.

> **IMPORTANT:**
> * A Talkgroup can have only one scan list.
> * There is a maximum of 10 scan lists.
> * In a scan list, a maximum of 9 non-priority Talkgroups can be added.

4   Tap **Add TalkGroups** or the plus "**+**" button.

5   Check the check box next to each group to add to the list and tap **Done**.

6   To return to the **Talkgroups** pane, tap the backwards arrow. Do not tap the plus "**+**" icon.

Return to Process

4.4.3.2
Viewing a Talkgroup Scan List

When and where to use:
Perform this procedure to view a talkgroup scan list.

Procedure:

1   From the **PSX PTT** main screen, tap **TalkGroups**.

2   Tap the **Scan List** icon for the talkgroup.

> **NOTICE:** If the talkgroup does not have a scan list, the **SCAN LIST** screen displays but does not show any talkgroups. If the talkgroup does have a scan list, the **SCAN LIST** screen displays and shows the talkgroups in the list.

Return to Process

4.4.3.3
Editing a Talkgroup Scan List

Prerequisites: A Talkgroup that has a scan list.

When and where to use:

Perform this procedure to edit a talkgroup scan list.

Procedure:

1 From the **PSX PTT** screen, tap **TalkGroups**.

2 Tap the talkgroup **SCAN LIST** icon you want to edit.

3 Perform one of the following actions:

If…	Then…
If you want to delete Talk-groups to remove from the scan list,	**a** Tap the "**X**" next to the group name. The group is deleted.
If you want to add Talkgroups to the scan list,	**a** From the **SCAN LIST** pane, tap **Add TalkGroups**. **b** From the **ADD TO LIST** pane, select the check box to add a talkgroup. **c** Tap **Done**.

Return to Process

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Chapter 5

Troubleshooting Push-to-Talk Unexpected Conditions

This chapter describes troubleshooting scenarios of the PSX Push-to-Talk (PTT) application.

The following table shows unexpected conditions and the recommended actions.

Table 11: Registration Behaviors

Behavior	Resolution
Unable to turn PTT Service switch **ON** or **OFF**	If you receive this message, `PTT service offline`, your PTT Service may have stopped. Contact your system administrator for resolution.
PTT Service is **ON** but the client is not available	If you receive this message, `PTT service offline`, you might have a problem with your data connection. Ensure that your device is not set to **Airplane** mode and you are connected to a 4G LTE network or over Wi-Fi. Sign in again later.
PTT Service is **OFF** and an error code is available	If you receive this message, `PTT service offline`, you might have a problem with your PTT service. Ensure that your device is not set to **Airplane** mode and you are connected to a 4G LTE network or over Wi-Fi. If an unrecoverable errors (exit codes) are available, contact your system adminstrator and provide the exit codes for resolution.
PTT application freezes	In rare cases, the PTT application may suddenly stop working or freeze. If this happens, close the application and then open it again. Steps to do this vary by device, but you can typically close an application by going to the **Settings** in your phone and using the app manager. For device-specific instructions, please refer to the User Guide for your phone.

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