

TP9100 portables

User's Guide



Chassis engraving will void warranty

Caution: Engraving the chassis can significantly reduce its mechanical strength and will void any warranty. If the chassis has been engraved, it must be replaced.

To our European customers



Tait Electronics Limited is an environmentally responsible company which supports waste minimization and material recovery. The European Union's Waste Electrical and Electronic Equipment Directive requires that this product be disposed of separately from the general waste stream when its service life is over. Please be environmentally responsible and dispose through the original supplier, your local municipal waste "separate collection" service, or contact Tait Electronics Limited.

For your safety

Before using your radio, please read the following important safety and compliance information.

Radio frequency exposure information

For your own safety and to ensure you comply with the Federal Communication Commission's (FCC) radio frequency (RF) exposure guidelines, please read the following information before using this radio.

Using this radio

You should use this radio only for work-related purposes (it is not authorized for any other use) and if you are fully aware of, and can exercise control over, your exposure to RF energy. To prevent exceeding FCC RF exposure limits, you must control the amount and duration of RF that you and other people are exposed to.

It is also important that you:

- Do not remove the RF Exposure label from the radio.
- Ensure this RF exposure information accompanies the radio when it is transferred to other users.
- Do not use the radio if you do not adhere to the guidelines on controlling your exposure to RF.

Controlling your exposure to RF energy

This radio emits radio frequency (RF) energy or radio waves primarily when calls are made. RF is a form of electromagnetic energy (as is sunlight), and there are recommended levels of maximum RF exposure.

To control your exposure to RF and comply with the maximum exposure limits for occupational/controlled environments, follow these guidelines:

- Do not talk (transmit) on the radio more than the rated transmit duty cycle. This is important because

the radio radiates more energy when it is transmitting than when it is receiving.

- When listening and talking on the radio, hold it upright in front of your face so that it is at least one inch (2.5 cm) away from any part of your face. Keeping the radio at the recommended distance is important because exposure to RF decreases rapidly the further away the antenna is from your body.
- Keep the antenna at least one inch (2.5 cm) from your face at all times.
- If you wear your radio, you must always put it in a carrying accessory that has been specifically approved by Tait for this radio. Using non-approved body-worn accessories may mean you expose yourself to higher levels of RF than recommended by the FCC's occupational/controlled environment RF exposure limits.
- Ensure you only use Tait-approved antennas, batteries, and accessories.

For more information on what RF energy is and how to control your exposure to it, visit the FCC website at <http://www.fcc.gov/oet/rfsafety/rf-faqs.html>.

Compliance with RF energy exposure standards

This two-way radio complies with these RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR §§ 1.1307, 1.1310, and 2.1093.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95.1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition.

This radio complies with the IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environments at operating duty factors of up to 50% transmitting (even though the approved batteries for this radio are rated for a 5-5-90 duty factor (5% talk-5% listen-90% standby)).

Radio frequency emissions limits in the USA

Part 15 of the FCC Rules imposes RF emission limits on receivers.

This radio complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Unapproved modifications or changes to radio

The radio is designed to satisfy the applicable compliance regulations. Do not make modifications or changes to the radio that are not expressly approved by Tait Electronics Ltd. Failure to do so could invalidate compliance requirements and void the user's authority to operate the radio.

Frequency band reserved for distress beacons

Frequency band 406 to 406.1 MHz is reserved for use by distress beacons. Transmissions should not be made within this frequency band.

Safe radio operation



Warning: Switch off the radio:

- at petrol filling stations or near flammable liquids or gases
- in the vicinity of explosive devices and blasting zones

- before boarding an aircraft. Using your radio while in the air is not permitted.

Using a handheld microphone or a radio while driving a vehicle may violate the laws and legislation that apply in your country or state. Please check the vehicle regulations in your area.

Interference with electronic devices

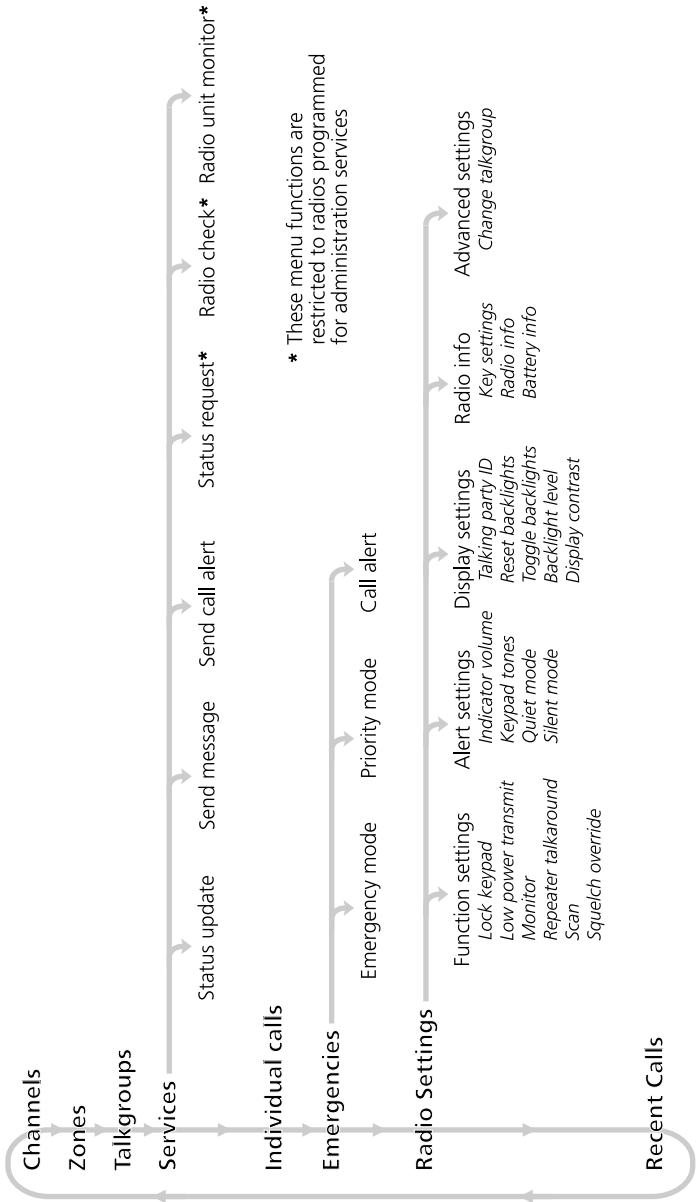
Some electronic devices may be prone to malfunction due to the lack of protection from RF energy that is present when your radio is transmitting.

Examples of electronic devices that may be affected by RF energy are:

- vehicular electronic systems such as fuel injection, anti-skid brakes, and cruise control
- medical devices such as hearing aids and pacemakers
- medical equipment in hospitals or health care facilities.

Consult the manufacturer (or its representative) of the equipment to determine whether these electronic circuits will perform normally when the radio is transmitting.

Menu map



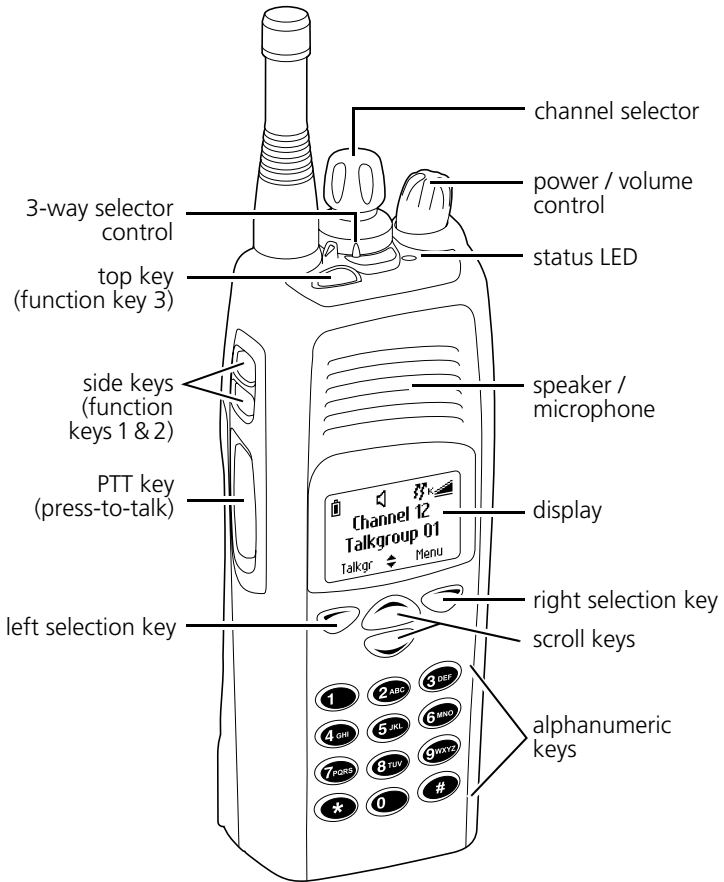
* These menu functions are restricted to radios programmed for administration services



Menu map

Radio controls

For more information about the radio controls, see [“About your radio”](#) on page 7.



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1 About this guide

This user's guide provides information about the TP9155 and TP9160 portable radios.

Safety warnings used in this guide

Within this user's guide, the following warnings are used to alert you to important safety information:



Warning: There is a potential risk of death or serious injury.



Caution: There is the risk of minor or moderate injury to people.

Caution: There is a risk of equipment damage or malfunction.

Feedback about this guide

Your feedback about this user's guide is welcomed. Please send your questions, comments, or suggestions to Technical Support (support@taitworld.com) or the Technical Support Manager, Tait Electronics Limited, PO Box 1645, Christchurch, New Zealand.

Changes to this guide

In the interests of improving the performance, reliability, or servicing of the equipment, Tait Electronics Ltd reserves the right to update both the equipment or this user's guide, without prior notice.

Related documentation

The following documentation is also available for your Tait radio, which you can access from the Tait Technical Support website (<http://support.taitworld.com/>):

- *TP9100 Battery Care and Charging Guide*—supplied with each battery and charger. (The same informa-

tion is in the section “Charging and caring for batteries” on page 50.)

- *TP9100 Product Safety and Compliance Information*—supplied with each radio. (The same information is included in this user guide.)

Copyright information

All information contained in this user’s guide is the property of Tait Electronics Limited. All rights are reserved. These manuals may not, in whole or in part, be copied, photocopied, reproduced, translated, stored, or reduced to any electronic medium or machine-readable form, without prior written permission from Tait Electronics Limited. All trade names referenced are the service mark, trademark, or registered trademark of the respective manufacturers.

Disclaimer

There are no warranties extended or granted by this manual. Tait Electronics Limited accepts no responsibility for damage arising from use of the information contained in this guide or of the equipment and software it describes. It is the responsibility of the user to ensure that use of such information, equipment and software complies with the laws, rules and regulations of the applicable jurisdictions.

2 Before first use of your radio

Once you have unpacked your radio, there are a few tasks you must do before you can use it. The most important of these is to charge your battery for the first time—allow 14 hours for this.

This section covers:

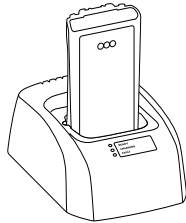
- Charging the battery before first use
- Attaching a battery
- Attaching the antenna
- Attaching a belt clip
- Fitting a speaker microphone

Charging the battery before first use

Before using your battery for the first time, you **must** charge it for 14 hours (subsequent charges should be complete in 2 hours or less). This first charge is important because it prepares ('primes') the battery for use. The battery may take 2-3 shifts (charge/discharge cycles) to reach maximum capacity.

Note: Charging is best performed at temperatures between 50 °F (10 °C) and 77 °F (25 °C) and will start only when the temperature of the battery is between 41 °F (5 °C) and 95 °F (35 °C).

- 1 Ensure that the charger is connected to the correct Tait power adaptor.
- 2 Put the battery in the charger.



The red 'Charging' LED glows to indicate that the battery is being charged.

Note: If the amber 'Fault' LED lights up, refer to "Troubleshooting your charger" on page 61.)

- 3 Leave the battery in the charger for **14 hours**. When the green 'Ready' LED on the charger glows, the battery is ready for use.

You can safely leave the battery in the charger when charging is complete—the charger will not overcharge the battery.

For further information on batteries, see "Charging and caring for batteries" on page 50.

Attaching a battery

To attach a battery to your radio:

- 1 Insert the bottom edge of the battery into the two slots at the back of the radio.
- 2 Press down on the top of the battery to snap it into place.

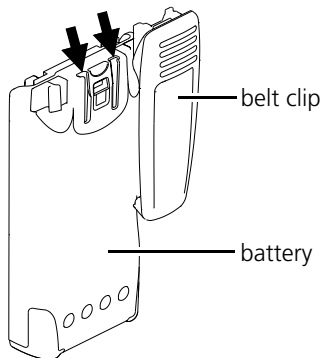
Attaching the antenna

Before using the radio, screw the antenna clockwise into the antenna connector. The antenna should be screwed sufficiently tight so that it doesn't unscrew easily. This is important as it creates a seal.

Attaching a belt clip

To attach a belt clip to your radio:

- 1 Slide the belt clip into the two grooves at the top of the battery.



- 2 Push down on the belt clip until it snaps into place.
See also "Removing a belt clip" on page 60.

Fitting a speaker microphone

The speaker microphone is attached to the radio via a connector.

Removing the protective cover

Before fitting the speaker microphone, you may need to remove the radio's protective cover. This cover is located above the battery on the rear of the radio.

- 1 Insert a coin, or other suitably shaped object, into the slot of the protective cover. Twist the coin clockwise from the locked to unlocked position.
- 2 Remove the cover and store in a safe place.

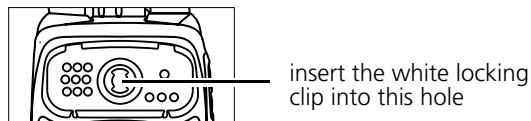
Attaching the accessory connector

Once you have removed the protective cover, you can fit the speaker accessory connector to the back of the radio.

- 1 Push and hold the metal clip to release the lever.



- 2 Rotate the lever clockwise to an upright position.
- 3 Insert the white locking clip into the matching hole at the rear of the radio.



- 4 Rotate the lever counterclockwise until you hear it click.
- 5 Check that the accessory connector is firmly locked into place.

3 About your radio

This section describes all the various buttons and keys on your radio.

This section covers:

- About your digital radio
- Basic operation
- Using function keys to access frequently used features
- Understanding the radio display
- Using the menus to access settings and features
- Understanding the radio indicators

About your digital radio

You may notice some differences between digital and analog channels, for example, the lack of static noise in low signal areas and consequently where you notice that coverage is poor.

Lack of static noise

You may notice the lack of static noise on digital channels. This lack of static is because your digital radio removes the 'noise' from the transmission so that you hear only clear voice.

Coverage

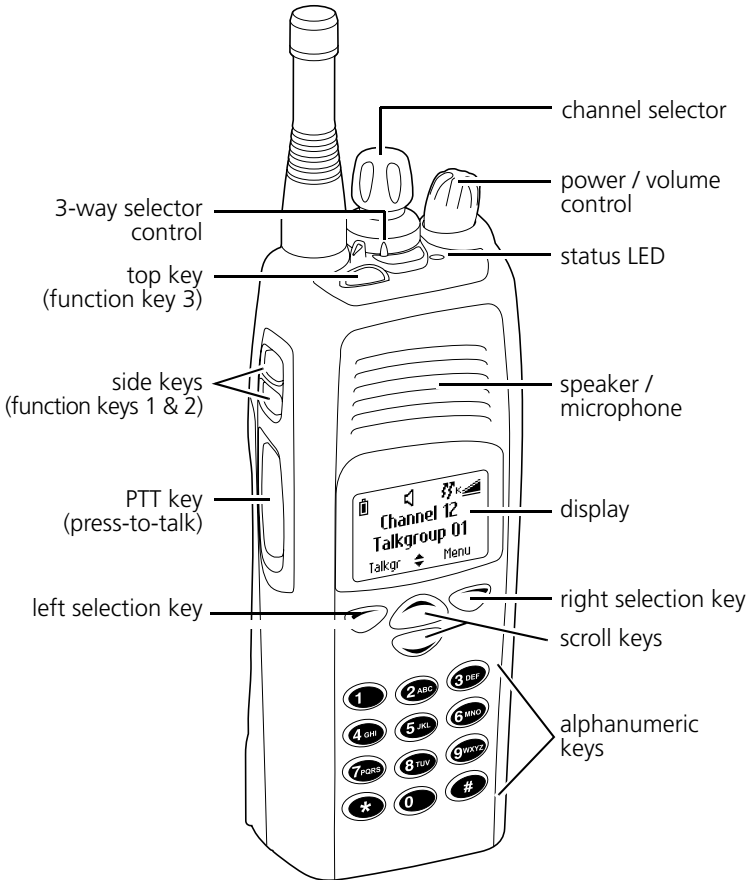
With analog channels, a transmission gets progressively worse when you are in fringe areas or even slightly outside normal coverage areas. However, with digital channels, a transmission remains clear and then drops off quickly at the border of a transmission area. The reason for this is that a digital transmission is either received or it isn't.

Basic operation

The radio controls are the PTT key, power/volume control, channel selector, three-way selector control, scroll keys, selection keys, and function keys. Some keys have functions assigned to both short and long key presses:

- a short key press is less than one second, and
- a long key press is more than one second

The radio controls and their functions are described in the following sections.



Turning your radio on and off

Rotate the power/volume control switch clockwise to turn the radio on. Rotate the switch counterclockwise to turn the radio off.

Note: Your radio may not turn on if your battery is very low. (See “Low battery warning” on page 53.)

Adjusting the volume

With the radio turned on, rotate the power/volume control clockwise to increase the speaker volume and counterclockwise to decrease the volume.

Note: The volume control also changes the volume level of the radio’s audible indicators.

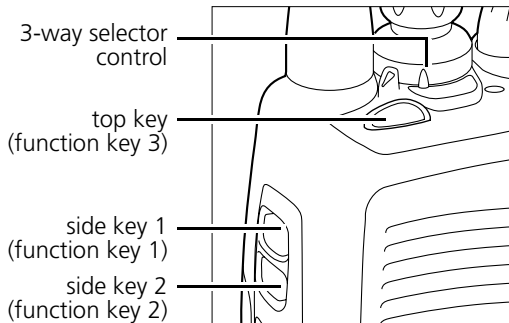
About the channel selector

The channel selector allows you to select and change channels. When first turned on, the radio will go to the channel that was last selected.

See also “Selecting a channel” on page 23.

Using function keys to access frequently used features

The function keys and three-way selector control provide quick access to some of the features you will use most often. The actions that they perform (when pressed or turned) will depend on how your radio is programmed.



Three-way selector control

You can change zones using the three-way selector control, if your radio is programmed in this way.

See “Selecting a zone” on page 22.

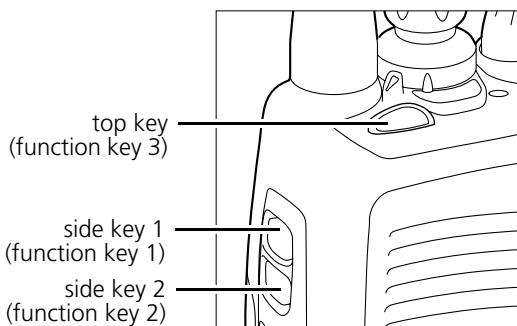
Emergency key

You can activate emergency mode by pressing the top key, if your radio is programmed in this way.

See also “About emergency calls” on page 46.

Viewing your function key settings

You can check which functions are assigned to the function keys.



- 1 Press **Menu** and select **Radio settings > Radio info > Key settings**.
- 2 In the menu list, scroll to a function key and press **Select** to view the function assigned to it.

The example shown is for a function key programmed to turn backlighting on and off:

















- 3 Press a selection key  or  to return to the menu.

Understanding the radio display

The messages and symbols you see on your radio display depend on the mode in which your radio is operating and the way it is programmed.

These are the various symbols you may see on your radio display:

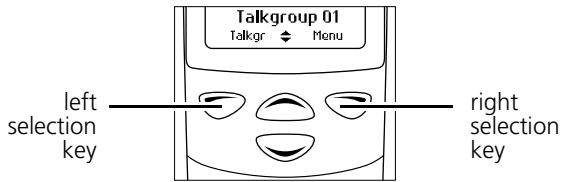
Symbol	Meaning
	Signal strength indicator: the more bars, the stronger the signal being received by your radio
	Transmit: your radio is transmitting
	Low-power transmit: indicates that low power mode is turned on.
	Repeater talkaround: your radio is operating in repeater talkaround mode
	Zone: your radio is operating in this zone (the example shown is zone K)
	Scanning: your radio is monitoring a group of channels for activity
	Monitor or squelch override: monitor or squelch override is active
	Silent operation: your radio's audible tones have been turned off
	Recent calls: a call or message is in the recent calls list
	Scrolling: you can use the scroll keys  or  to move through a list
	Battery indicator: shows how much charge is available in the battery
	Battery in charger: appears when you place a radio (with a TP9100 battery attached) in the charger

Using the menus to access settings and features

You can access settings and features for your radio using the menu.

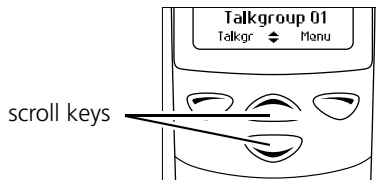
The selection and scroll keys enable you to make selections and move around the menus.

Selection keys



There are two selection keys beneath the display screen. How these keys work depend on the word that appears above them on the screen.

Scroll keys

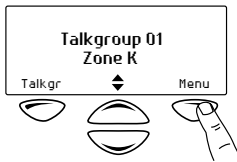


The up and down scroll keys allow you to:

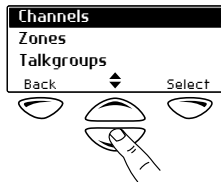
- access the quick access menu
- scroll up and down through a list, and select items
- display the previous or next part of a message that is too long to be displayed on the screen.

Accessing the main menu

- 1 To access the main menu, press the right selection key whenever **Menu** appears above it.



- 2 Use the scroll keys to move through the menu list.



- 3 When the menu you want is highlighted, press **Select** to enter the menu you have chosen.



Tip: To quickly exit the menu system, press and hold the left selection key when the word Cancel or Back appears above it.



Accessing frequently used menus

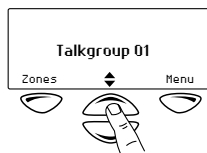
Depending on how your radio is programmed, you may have two different 'quick access' menus. One quick access menu is displayed when you press a scroll key, and the other when you press the left selection key. These give you easy access to the menus you use most often.

Using the scroll key Quick Access menu

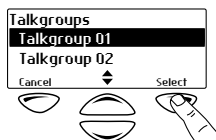
To use this Quick Access menu:

- Press a scroll key  or , and the Quick Access menu appears.

In the example shown below, the Talkgroups menu is the Quick Access menu. Press a scroll key  or  to go directly to the Talkgroups menu:




The Talkgroups menu, with a list of your available talkgroups, is now displayed:

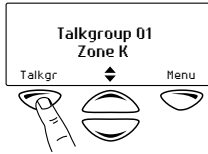


Using the left selection key Quick Access menu

The text above the left selection key corresponds to the Quick Access menu, for example, Talkgroups.

To use this Quick Access menu:

- Press your left selection key , and the associated menu appears.



Understanding the radio indicators

The status LED indicator and the radio's audible tones—together with the radio display—all combine to give you information about the state of your radio.

The most common way the indicators work is described in the following sections.

Audible tones

The radio uses audible sounds (tones and beeps) to alert you to its status:

- Radio controls and keypress tones—the tones and beeps you hear when you press your radio's keys or use the controls. (You can turn these tones off—see “Turning off radio controls and keypress tones (quiet operation)” on page 70.)
- Incoming call tone—when the radio is receiving a call.
- Warning tones—when there is an error, or the battery is low, for example.

Note: If quiet or silent mode is turned on, you will not hear any alert tones. See “Customizing the audible alert tone settings” on page 68.

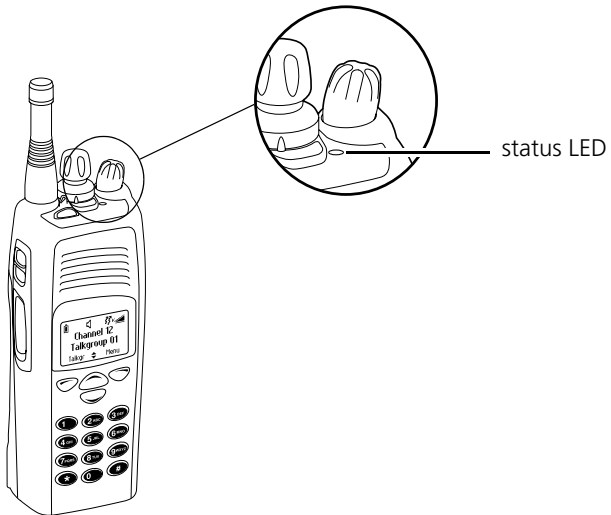
Some of the more common audible beeps are described below:

Tone	Meaning
One short beep	<ul style="list-style-type: none">■ Valid keypress: the action you have attempted is permitted, or■ Function activated: a function has been turned on (using either the Main menu or a function key)

Tone	Meaning
One long, low-pitched beep	<ul style="list-style-type: none"> ■ Invalid keypress: the action you have attempted is not permitted, or ■ Transmission inhibited: you have attempted to transmit, but for some reason transmission is not permitted at this time
One short, low-pitched beep	Function deactivated: a function has been turned off (using either the Main menu or a function key)
Two short beeps	Radio turned on: the radio is powered on and ready to use

Status indicators

Note: The way these indicators behave may be affected by the way your radio is programmed.



Color	Meaning
Red (transmit)	Glowing: your radio is transmitting Flashing: your transmit timer is about to expire
Green (receive)	Glowing: the current channel is busy Flashing: you have received a call
Amber (scanning)	Flashing: your radio has detected activity on a channel, and has halted on this channel

4 Making and receiving calls

This section describes how to make and receive calls.

This section covers:

- Making calls
- Receiving calls
- Communicating directly with other radios
- Call alert paging
- Checking missed calls
- Checking that the channel is clear (monitor)

Making calls

- 1 Ensure the required zone is selected (see “Selecting a zone” on page 22).
- 2 Ensure the required channel is selected (“Selecting a channel” on page 23).
- 3 Ensure the required talkgroup is selected (see “Selecting a talkgroup” on page 25) or individual radio ID (see “Making an individual call” on page 25).
- 4 Hold the radio so that the microphone is about 1 inch (2.5 cm) from your mouth and press the PTT key to transmit.

Note: If the channel is busy, you may not be able to transmit. Wait until the green status LED has stopped glowing, and then try again.

- 5 Speak clearly into the microphone and release the PTT key when you have finished talking.

While you are transmitting, the LED glows red and the transmit icon appears in the display:

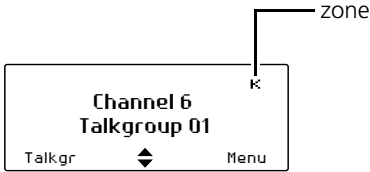


Selecting a zone

A zone is a collection of channels. Zones are a way of grouping channels, for example, by public safety agency type (fire, police, ambulance, etc.) or by geographical region (Dallas, Houston, etc.).

- 1 Press **Menu** and select **Zones**.
- 2 Scroll to the zone you want and then press **Select**.

Your radio display now shows the zone:



Selecting a channel

It is important to distinguish between channels and talkgroups: a channel is frequency-related whereas a talkgroup is a group of radio users.

For an explanation of talkgroups, see “Understanding talkgroups” on page 24.

Using the channel selector

For channels 1 to 16, rotate the channel selector switch to the channel you want. For all other channels, use the Main menu to select a channel.

Using the Main menu

You can select a channel using the Main menu:

- 1 Press **Menu** and select **Channels**.
- 2 Scroll to the channel you want and press **Done**.

Using a function key

You can use a function key to select a preset channel, if your radio is programmed in this way.

- Press the function key to select a preset channel.

Using the keypad

If your radio model has an alphanumeric keypad, you can enter a number to select the channel you want.

Limiting call time (transmit timer)

Your radio may limit the amount of time you can talk (transmit) continuously, if it is programmed in this way. This is known as the transmit or time-out timer and allows other radio users to make calls on that channel.

The radio warns you before the transmit timer expires by beeping three times. Also, the red status LED flashes and a message appears in the display:



Finish your conversation as soon as possible and release the PTT. For a short time, your radio may prevent you from transmitting to allow other radio users to make calls on the channel.

Understanding talkgroups

Note: This feature is available for digital channels only.

Talkgroups are a collection of people (radio IDs) with whom you want to have private conversations as a group.

For example, a state's public safety agencies could have the following talkgroups:

- Local talkgroups—used by a specific agency to communicate within their own local agency. It may even be made up of a county of public safety officers.
- Regional talkgroups—used by large state agencies that have regional divisions.
- Statewide talkgroups—used by an agency to communicate with a public safety member in another region. Statewide talkgroups, as their name suggests, enable public safety agencies to communicate with each other from one end of the state to the other.

- Special event talkgroups—may be used to manage emergencies encompassing a large area, or even events such as visits by heads of state.

Making a talkgroup call

- To make a call to the currently selected talkgroup, press the PTT.

Selecting a talkgroup

You can select a new talkgroup (if your radio is programmed in this way):

- 1 Press **Menu** and select **Talkgroups**.
- 2 Scroll through the list of talkgroups to the one you want and press **Select**.
- 3 Press the PTT to make a call to the talkgroup.

You can also select a new talkgroup using speed dialling. The first 10 talkgroups are available using the alphanumeric keypad—keys 1-9 and 0 correspond to talkgroups 1-10.

Making an emergency call

For information about making and ending emergency calls together with an explanation of how your radio behaves in emergency mode, see “About emergency calls” on page 46 and “Understanding emergency mode” on page 47.

Making an individual call

Note: This feature is available for digital channels only.

You can make a call to one person rather than a group of people.

Using the Main menu

You can also use speed dialling, or the Main menu:

- 1 Press **Menu** and select **Individual call**.

- 2 Scroll to the person you want to call and press **Select**.
- 3 Press the PTT to make the call.
- 4 Press Cancel to end the call.

Using a function key

You can make an individual call by pressing a function key, if your radio is programmed in this way.

- 1 Press the function key.

The last person (radio ID) to whom you made an individual call appears in the display.

- 2 Press the PTT to call the person or radio shown.

Receiving calls

When a valid signal is received the radio unmutes and you can hear the call.

Identifying a caller (talking party ID)

Note: This feature is available for digital channels only.

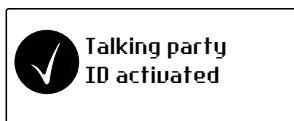
You can identify the radio user who is calling you using Talking Party ID. (This feature is enabled by default.)

When you are in a call, you can select Talking party ID from the menu. If you are in a talkgroup call, the name of the talkgroup is displayed. If you are in an individual call, the name of the radio ID from your call list together with the radio ID is displayed (if there is no associated name, only the radio ID is shown).

Turning talking party ID off and on

- 1 Press **Menu** and select **Radio settings > Display settings > Talking party ID**.
- 2 Scroll to **Off** (or **On**) and press **Select**.

The message **Talking party ID activated** (or **Talking party ID deactivated**) appears in the display:



Communicating directly with other radios

You can bypass the radio repeater and communicate directly with another radio. This feature is known as repeater talkaround.

You can do this, for example, when you are out of range of the repeater, or if the repeater is busy or stops working for whatever reason.

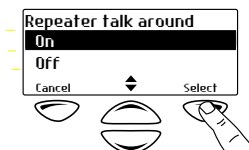
While repeater talkaround is active, all transmissions are made on the receive frequency of the channel you are on.


Turning repeater talkaround on and off

Using the Main menu

You can turn repeater talkaround on and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Functions > Repeater talkaround**.
- 2 Scroll to **On** (or **Off**) and press **Select**.



The message **Repeater talkaround activated** (or **Repeater talkaround deactivated**) appears and the repeater talkaround symbol  appears in the display.



- 3 Change to the required channel and proceed with your call.

Using a function key

You can turn repeater talkaround on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn repeater talkaround on. It remains on until you press the function key again.

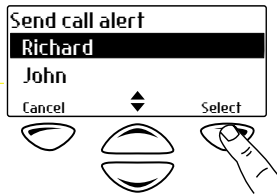
Call alert paging

Note: This feature is available for digital channels only and applies to individual calls only.

You can let another radio user know that you want to talk to them by sending them a Call Alert Page. When the other radio user receives the call alert page together with your radio ID, they can call you back when it is convenient.

Sending a call alert page


- 1 Press **Menu** and select **Services** > **Send call alert**.
- 2 Select the radio unit ID from the call list and press **Send To**.



A message appears in the display:



Answering a call alert page

If you receive a call alert page from another radio user, the call queue symbol  appears in the display.

To access the call queue and return the call:


- 1 Press **Menu** and select **Recent calls**.

The oldest calls are displayed at the top of the queue; the most recent calls are displayed at the bottom.

- 2 Scroll through the list of queued calls until the call you want appears, and then press **Done**.
- 3 Press **Options** to open the Call Queue Options menu.
- 4 Select **Call** to return the call or **Delete** to delete it.

Checking missed calls

Note: This feature is available for digital channels only and applies to individual calls only.

If you have missed an incoming call, it is saved in the call queue so you can return the call later. The call queue symbol  appears in the display.

See also “Checking received messages” on page 41 and “Answering a call alert page” on page 29.

- 1 Press **Menu** and select **Recent calls**.

The oldest calls are displayed at the top of the queue; the most recent calls are displayed at the bottom.

- 2 Scroll through the list of queued calls until the call you want appears, and then press **Done**.
- 3 Press **Options** to open the Recent Calls Options menu.
- 4 Select **Call** to return the call or **Delete** to delete it.

Checking that the channel is clear (monitor)

Monitor allows you to hear if there is any traffic (including talkgroup and individual calls) on a channel. For analog channels, this is so that you can check that it is clear before you make a call.

Turning monitor on and off

Using the Main menu

You can turn monitor on and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Functions > Monitor**.
- 2 Scroll to **On** (or **Off**) and press **Select**.

Using a function key

You can turn monitor on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn monitor on. It remains on until you press the function key again.

5 Listening to channel traffic

This section describes scanning a group of channels for activity, and using the squelch override function to hear faint and noisy signals on a channel.

This section covers:

- Scanning a group of channels
- Understanding the different types of scanning
- Selecting a scan group
- Making a call while scanning
- About nuisance delete
- Editing a background scan group
- Hearing faint and noisy signals
- Turning squelch override on and off

Scanning a group of channels

The scanning feature is used to monitor a pre-programmed group of channels for activity. When a busy channel is detected in a group, the radio stops on ('captures') that channel, and you can now hear the transmission. Scanning resumes when the channel is no longer busy.

Note: 'Priority' channels may be specified when the radio is programmed. These are channels that you want the radio to check for activity more often than other 'non-priority' channels. Priority channels are scanned periodically when a non-priority channel is busy.

Understanding the different types of scanning


The two types of scanning that may be available on your radio are *standard* scanning and *background* scanning. Background scan can only be activated using a function key programmed for background scan. When you activate background scan, the currently selected channel automatically becomes a member of the scan group.

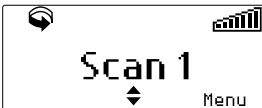
Selecting a scan group

Using a function key

You can use a function key to select a preset scan group, if your radio is programmed in this way.

- Press the function key to select a preset scan group and activate scanning.

The programmed scan group is now shown in the display (standard scan only), the LED glows amber and the scanning icon  appears in the display.

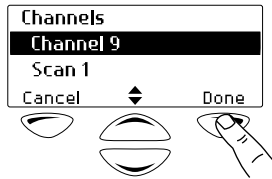



Using the Main menu

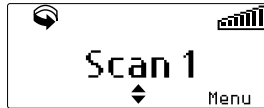
You can select a scan group using the Main menu, if your radio is programmed in this way.

Note: This method is only available for standard scan.

- 1 Press **Menu** and select **Channels**.
- 2 Scroll to the scan group you want and press **Done**.



The LED glows amber and the scanning icon  appears in the display:



Making a call while scanning

If you want to make a call while your radio is scanning:

- 1 Lift the microphone off the microphone clip.
- 2 Press the PTT key to transmit.

If the LED is flashing amber, or background scan is active, your radio will now call the currently selected channel.

If standard scan is active and there has been no recent activity on the channel (the LED is glowing amber rather than flashing), then the channel that is called depends on the way your radio has been programmed. The possible options are:

- your radio calls a predetermined channel e.g. your dispatcher,

- your radio calls the channel where activity was last detected, or
 - your radio calls the last free channel.
- 3 When the called party responds, proceed with your conversation.

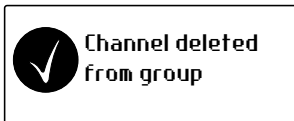
About nuisance delete

If the radio is continuously stopping on an undesired channel (for example, if there is too much activity or even interference) while scanning, you may be able to temporarily remove this channel from the scan group.

Removing a channel from a scan group

When the radio has stopped on the channel that you want to remove from the scan group, press the function key programmed for this purpose.


If the channel has successfully been removed from the scan group, the message **Channel deleted from group** appears in the display:



Scanning automatically begins again. The channel remains removed from the scan group until you either select another scan group or the radio is turned off and then on again.

Editing a background scan group


Your radio may be programmed so that you can permanently change the membership of your background scan group by using the function key programmed for nuisance delete.

When background scan is active, you can scroll through the channel list to see which channel is a member of your background scan group. When the channel is a group member, the scanning icon  includes a tick.

Note: The function key programmed to activate your background scan group may be programmed so that a short key press activates background scan and a long key press activates nuisance delete.

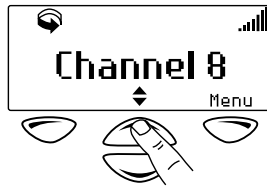
Adding a channel to your background scan group

- 1 Press the function key that activates background scan.

The LED glows amber and the scanning icon  appears in the display.



- 2 Scroll through the list of channels until the channel that you want to add appears.




- 3 Press the nuisance delete key and this channel is now added to your background scan group.

The message **Channel added** appears in the display and the scanning icon  now includes a tick.



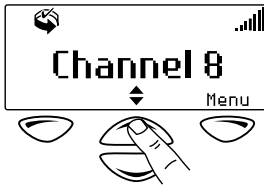
Removing a channel from your background scan group

- 1 Press the function key that activates background scan.


The LED glows amber and the scanning icon  appears in the display.



- 2 Scroll through the list of channels until the channel that you want to delete appears.



- 3 Press the nuisance delete key and this channel is now deleted from your background scan group.

The message **Channel deleted** appears in the display and the scanning icon  no longer includes a tick.



Hearing faint and noisy signals

Usually, the radio prevents you from hearing faint or noisy calls on a channel (known as 'squelch'). Without squelch, the radio would 'chatter' on and off in low signal strength areas, for example, which can be annoying.

However, there may be occasions when you want to hear what is being said on a channel, even if it is hard to understand. You can do this using the squelch override feature, which allows you to listen to *everything* on the channel.

This feature is more applicable for analog channels. For digital channels, use the Monitor feature (see page 31).

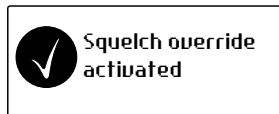
Turning squelch override on and off

Using the Main menu

You can turn squelch override on and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Functions > Squelch override**.
- 2 Scroll to **On** (or **Off**) and press **Select**.

The message **Squelch override activated** (or **Squelch override deactivated**) appears in the display:



Using a function key

You can use a function key to turn squelch override on and off, if your radio is programmed in this way.

- Press the function key to turn squelch override on. It remains on until you press the function key again.

6 Sending and receiving messages

This section describes sending and receiving messages as well as responding to requests for status information.

This section covers:

- About messages
- Sending a message
- Checking received messages
- Informing other radio users of your status
- Sending a status update
- Requesting a status update

About messages

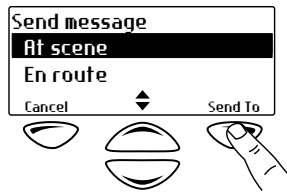
Note: This feature is available for digital channels only.

You can send short messages to another radio user. These messages are defined at programming time and are known variously as 'pre-programmed messages', 'short data messages' (SDMs), or 'short messages'.

Note: The person to whom you are sending a message must have the same message programmed into their radio so that he or she can read your message.

Sending a message

- 1 Press **Menu** and select **Services > Send message**.
- 2 Select the message you want from the message list and press **Send to**.



Note: The person or group to whom the message is sent to depends on how your radio is programmed. You may be able to send messages to whomever you choose or your radio may be programmed to automatically send messages to the current talkgroup or a specific person (such as the dispatcher).


- 3 (Optional, depending on how your radio is programmed. See note above.) Select the recipient (radio unit ID) from the call list or enter their radio unit ID using the alphanumeric keypad.
- 4 Press the PTT or select **Send to**.

The red LED glows and the message details appear in the display:



A message will be displayed to advise you whether the message has been sent successfully or not.

Checking received messages

If you have received a message, it is saved in the call queue so you can view the message later. The call queue symbol  appears in the display.

Note: Up to 10 messages are stored. If more than that are received, the oldest messages will be deleted to make room for new messages.

- 1 Press **Menu** and select **Recent calls**.

The oldest calls are displayed at the top of the queue; the most recent calls are displayed at the bottom.

- 2 Scroll through the list of queued calls until the message you want appears, and then press **Select**.
- 3 Press **Options** to open the Call Queue Options menu.
- 4 Select **View** to read the message or **Delete** to delete it.

Tip: To quickly clear the message list, turn the radio off and then on again.

Informing other radio users of your status

Note: This feature is available for digital channels only.

Sending a status update

You can inform other radio users or the dispatcher of your current status by sending them a status update, for example, 'At scene'.

Note: When you send a status message, you are also *setting* your status, which the dispatcher can check by 'interrogating' your radio. You can change your status at any time by selecting another status message and sending it.

To inform another radio user or the dispatcher of your current status:

- 1 Press **Menu** and select **Services > Status > Send update**.
- 2 Select the status message you want from the message list and press **Send to** or **Select**.



Note: The person or group to whom the status message is sent to depends on how your radio is programmed. You may be able to send status messages to whomever you choose, or your radio may be programmed to automatically send status messages to the current talkgroup or a specific person (such as the dispatcher).

- 3 (Optional, depending on how your radio is programmed. See note above.) Select the recipient (radio unit ID) from the call list or enter their radio unit ID using the alphanumeric keypad and press **Send to**.

While the radio sends the message, the red LED glows.

Requesting a status update

You can find out what another radio user is currently doing (their 'status') by asking them to send you a status update.

To ask another radio user to inform you of their current status:

- 1 Press **Menu** and select **Services > Status > Query**.
- 2 Use the keypad to enter the radio ID of the radio user to whom you want to send the status query, or select the radio ID from the call list.
- 3 Press the PTT to send the status update request.

7 Safeguarding you and your radio

This section describes how to prevent unauthorized use of your radio as well as how to get help when you need it most.


This section covers:

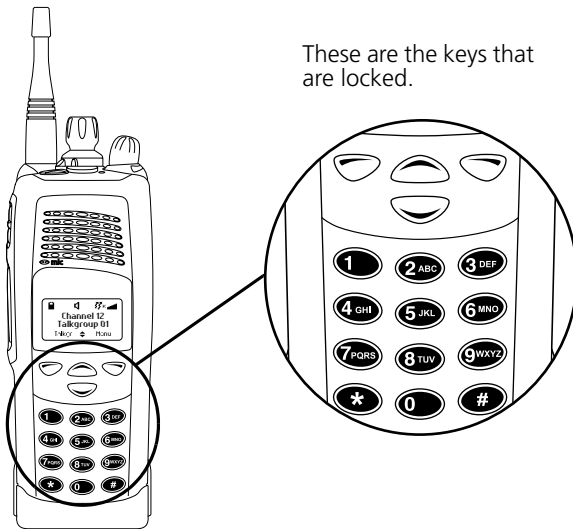
- Locking and unlocking the keypad
- About emergency calls

Locking and unlocking the keypad


You can lock the keypad to prevent accidental calls caused by the keypad being bumped.

When the keypad is locked, you can still answer calls as normal by pressing the PTT.

- 1 To lock the keypad, press and hold the right selection key  for about one second.



The word 'unlock' appears above the right selection key.

- 2 To unlock the keypad, press and hold the right selection key  for about one second.

About emergency calls

In an emergency you can summon help by sending an emergency call. There are two types of emergency calls:

Call type	Explanation
Priority call	(Digital channels only.) An emergency alert is automatically sent to the current talkgroup. Calls made when the priority call feature is turned on are flagged as 'emergency' calls.
Emergency call	Typically for life and death situations. When an emergency call is initiated, the radio enters 'emergency mode'. For further information see "Understanding emergency mode" on page 47.

Making a priority call

Note: This feature is available for digital channels only.

When you turn the priority call feature on, the radio automatically sends an emergency alert (message) to the current talkgroup.

Any calls you make while the priority call feature is turned on are flagged as 'emergency' calls.

Using the Main menu

You can turn the priority call feature on and off using the Main menu:

- 1 Press **Menu** and select **Emergencies > Priority mode**.
- 2 Scroll to **On** (or **Off**) and press **Select**.

Using a function key

You can turn priority call on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn the priority call feature on. The priority call feature remains on until you press the function key again.

Understanding emergency mode

When you press the emergency key your radio enters 'emergency mode', if your radio is programmed in this way.

When the radio enters emergency mode, it will automatically send alerts together with your radio unit ID to the dispatcher. These alerts are usually sent on a designated emergency channel.

Note: The way your radio behaves in emergency mode depends on how your radio is programmed.

For further information on what your radio may do in emergency mode, see "What happens during an emergency call?" on page 48.

Stealth and non-stealth emergency modes

Depending on what your work involves, your radio is programmed to operate in one of these ways:

- **Stealth:** you often work in situations where you do not want an assailant to know that you have activated emergency mode. For this reason, the radio is silent and the display remains unchanged—there is no indication that the radio has entered emergency mode.
- **Non-stealth:** you often work in situations where you want audible and visual confirmation that you have activated emergency mode (for example, at an accident scene).

What happens during an emergency call?

The exact way your radio behaves when it enters emergency mode depends on how your radio is programmed. The main phases for both stealth and non-stealth emergency modes are summarized below. The length of each phase is determined when the radio is programmed.

When the emergency button is pressed:

①

The radio continually sends alerts to the dispatcher until a response is received. Details of your location may also be sent (if this feature is available for your radio).



②

The radio alternately transmits and receives so the dispatcher can hear what is happening in the vicinity of your radio.

(Non-stealth emergencies end once this phase is complete or when you end emergency mode.)



③

Stealth emergencies only: The radio is inactive, but it can receive special 'messages' from the dispatcher so that he or she can hear what is happening in the vicinity of the radio.

(Stealth emergencies end once this phase is complete or when you end emergency mode.)

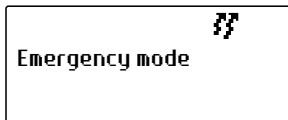
See also "Stealth and non-stealth emergency modes" on page 47.

Making an emergency call

You can activate emergency mode using either a function key or the emergency key, if your radio is programmed in this way.

- 1 Press the function or emergency key to activate emergency mode, or press **Menu** and select **Emergencies > Emergency mode > Emergency mode**.

'Emergency mode' appears in the display:



One or more emergency calls are sent to your dispatcher or another predetermined radio user. During emergency mode, the radio will behave as described in "What happens during an emergency call?" on page 48.

- 2 Turn the radio off and on again to end emergency mode. The radio returns to normal operation.

8 Charging and caring for batteries

This section describes how to charge your Tait radio battery as well as care for it to ensure maximum performance and prolonged battery life.

Note: The instructions in this section apply to both the desktop charger and the multi-charger.

This section covers:

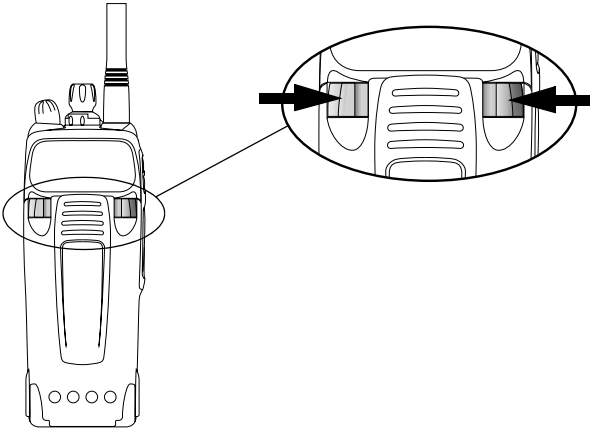
- Removing the battery
- About your charger
- About battery charging
- Maintaining battery life and performance
- Storing batteries
- Disposing of batteries

Removing the battery

See also “Attaching a battery” on page 5.

To remove the battery from the radio so that the battery can be charged or replaced:

- 1 Squeeze and quickly release both battery catches to release the catch mechanism. (Don't push down on the battery; allow the catch mechanism to release the battery from the radio)



- 2 Remove the battery from the radio.

About your charger

There are three types of charger available for your Tait radio battery:

- Desktop charger—small enough to fit on your desk, it charges one battery at a time.
- Multi-charger—charges up to six batteries. It can be mounted on a desk, on a wall, or in an equipment rack.



Note: The charging instructions in this user guide apply to both the desktop charger and the multi-charger.

- Vehicle charger—enables you to charge your battery using the vehicle's power supply. Charges one battery at a time. (Installation instructions are supplied with the charger.)



When the charger is first connected to a suitable power supply, all three LEDs light up briefly.

About battery charging

See also “Charging the battery before first use” on page 4.

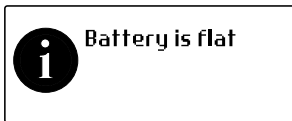
Low battery warning

When the battery is almost empty, your radio warns you in the following ways:

- The battery indicator on the radio display looks empty. 
- The status LED slowly flashes  red.
- A high-pitched beep sounds.

You should recharge or replace the battery as soon as possible.

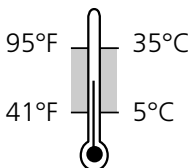
When the battery is completely empty, the message **Battery is flat** appears on the display. The radio emits a long, low-pitched beep and then stops operating.



Turn off the radio immediately. You will reduce the battery’s service life if you allow the battery to fully discharge each time you use it.

Optimal charging temperature

Charging is best performed between 50°F (10°C) and 77°F (25°C) and starts only when the battery is between 41°F (5°C) and 95°F (35°C).

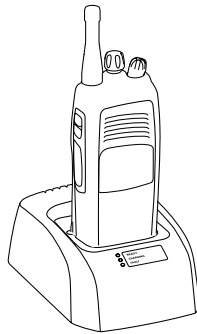


Charging the battery

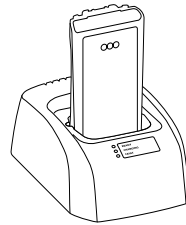
Important: If you are charging the battery for the first time, follow the instructions on page 4.


- 1 Ensure that the charger is connected to the correct Tait power adaptor.
- 2 Put the battery in the charger.

Note: If you're putting the radio in the charger as well, you can leave it turned on if you're expecting a call. The battery still receives a full charge.



You can put the battery in the charger either *with* or *without* the radio



If a radio is attached, the 'battery in charger'  symbol appears in the radio display.

The red 'Charging' LED glows to indicate that the battery is charging. For a battery that is almost completely discharged, allow 2 hours.

Note: If the amber 'Fault' LED lights up, refer to "Troubleshooting your charger" on page 61.

- 3 When the green 'Ready' LED on the charger glows, the battery is fully charged. Remove it when you are ready—the charger will not overcharge the battery.

Receiving and making calls while charging

You can receive a call while the radio is in the charger. To answer the call, remove the radio from the charger—the call will not be disrupted.

To make a call, remove the radio from the charger. (The radio will not transmit while it is in the charger.)

Note: Removing the radio from the charger to make or receive a call ends the charging process. Charging safely recommences when the radio is reinserted into the charger.

Maintaining battery life and performance

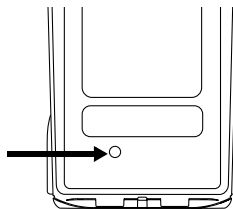
With proper care and maintenance you will maintain the performance and life of the battery. It is recommended that you:

- Use only Tait chargers.
- Avoid exposing batteries to high temperatures (above 122°F (50°C)) or extremely cold temperatures for long periods of time (-4°F (-20°C) for NiMH, and -22°F (-30°C) for NiCd).
- Charge batteries at room temperature (between 50°F (10°C) and 77°F (25°C)).
- Allow your nickel-based battery to fully discharge every so often—NiCd batteries once a month and NiMH batteries once every 3 months. To do this, leave your radio switched on and ignore the ‘battery low’ warnings. When the radio switches off, the battery is fully discharged.
- Store batteries properly when not in use. See “Storing batteries” on page 57.

Battery safety vent



Warning: Do not cover the battery safety vent (shown below).



Storing batteries

When not in use for a month or more, batteries should be stored correctly to prolong their life:

- Remove the battery from the radio before storage.
- Store the battery (in either a charged or discharged state) in a cool dry place.

Using nickel-based batteries after storage

Batteries that have been stored for any length of time must be charged before being used. See “Charging the battery” on page 54.

When first using nickel-based batteries that have been in storage for three months or more, you may notice that they do not last an entire shift. This is normal. If stored properly, the battery’s optimal capacity should be restored after two or three shifts (charge/discharge cycles).

Disposing of batteries

Batteries should be disposed of properly. NiCd (nickel cadmium) batteries contain cadmium which, if disposed of in landfills, is very hazardous to the environment.



Please contact your radio provider for information on recycling programs in your area.

9 Troubleshooting

This section describes troubleshooting procedures and basic maintenance.

This section covers:

- Troubleshooting
- Error messages
- When your radio won't turn on
- Removing a belt clip
- Checking the version of your radio
- Troubleshooting your charger
- General care
- Cleaning the radio




Troubleshooting

If you are experiencing difficulty operating your Tait radio, you may find the following sections helpful. Consult your radio provider for assistance, if necessary.

Error messages

If an error message appears in the radio display, refer to the table below.

For any error messages not shown in the table below, it is recommended that you make a note of the error code (the letter 'E' followed by a four-digit number, for example, E0001) and consult your radio provider.

Error message	What you must do
 Error E0001 Unknown Reboot radio	Turn the radio off and back on again.
 Error E0009 High Temp Stop Tx	The radio is very hot—turn it off and allow it to cool down.
 Error E0017 Discharge battery	The battery has not been fully discharged for some time and the battery capacity information is now out of date. The battery indicator in the radio display may not accurately indicate the remaining charge. Fully discharge the battery (for instructions see “Maintaining battery life and performance” on page 56) and then charge it.

When your radio won't turn on

If the red LED on the radio does not light up when the radio is turned on, it is probable that power is not reaching the radio. Check the following:

- Is the battery firmly attached to the radio?
- Is the battery sufficiently charged?
- Is the battery charger working properly?

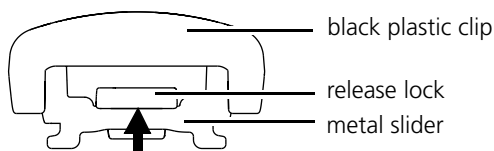
If all appears to be in order, but your radio still fails to operate properly, contact your radio provider for further assistance.

Removing a belt clip

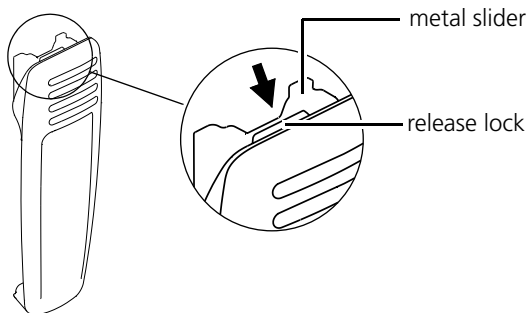
The belt clip has been designed to prevent accidental removal, but you can take it off, if required.

To remove a belt clip from a battery:

- 1 Insert a flat screwdriver blade or similar flat object under the lip of the release lock (that is, between it and the metal slider).



- 2 Lift the release lock up (away from the metal slider) and hold it in position.



- 3 Slide the belt clip out.

Checking the version of your radio



Your radio provider may ask you for the hardware / firmware version of your radio for troubleshooting purposes.

You can check the version of your radio by using the Main menu:

- 1 Press **Menu** and select **Radio info > Version information**.
- 2 Scroll to the version information you want to view and press **Select**.

Troubleshooting your charger

The table below describes what to do if the amber 'Fault' light on the battery charger is either flashing or glowing.

Charger Fault LED	Meaning	Possible reason(s) and solution
Flashing 	Fault	<ul style="list-style-type: none">■ The battery is not compatible with the charger—use only Tait chargers and batteries.■ There is insufficient voltage to the charger—check you are using the correct power adaptor.■ The battery may be faulty—consult your radio provider for advice.
Glowing 	Charging suspended	The battery is either too hot or too cold. Charging will begin when the temperature of the battery is between 41°F (5°C) and 95°F (35°C).

General care

Your Tait radio requires no regular maintenance other than ensuring that the battery has sufficient charge and that no damage has occurred to the antenna or the battery.

To prevent permanent damage to the radio case, do not allow the radio to come into contact with detergents, alcohol, aerosol sprays, or petroleum-based products.

For battery care, see “Maintaining battery life and performance” on page 56.

Cleaning the radio

If you need to clean the radio case, use a cloth dampened with clean water. Do not immerse the radio in fluids.

10 Customizing your radio

This section describes the ways in which you can customize your radio.

This section covers:

- About display and keypad backlighting
- Extending battery life on a shift
- Customizing the audible alert tone settings

About display and keypad backlighting

Whenever the keypad is pressed, the three-way or channel selector controls are turned, or a call is received, the keypad and display light up automatically to make it easy to read in poor light conditions.

Backlighting usually remains on for a few seconds, unless further radio activity is detected. The period of time that the backlighting remains on once no further radio activity is detected is determined by the backlighting timer. The duration of this timer is set when the radio is programmed.

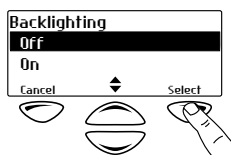
The radio's display can also be made darker or lighter to suit your working conditions. See "Adjusting the display contrast" on page 65.

Turning backlighting on or off

Using the Main menu

You can turn backlighting on and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Display settings > Backlighting**.
- 2 Scroll to either **On** or **Off** and press **Select**. (The current setting is highlighted.)



The message **Backlighting activated** (or **deactivated**) appears in the display.



Using a function key



You can turn backlighting on and off using a function key, if your radio is programmed in this way.

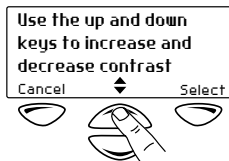
- Press the function key to turn backlighting on. It remains on until you press the function key again.

Note: You can turn backlighting on momentarily using a function key, if your radio is programmed in this way. Backlighting remains on for a few seconds and then turns off.

Adjusting the display contrast

You can change the contrast of your radio display to suit the lighting conditions that you are working in.

- 1 Press **Menu**, and select **Radio settings > Display settings > Contrast adjust**.
- 2 Use the scroll keys  or  to adjust the display contrast to the level you want.



- 3 Press **Select** to accept the setting.

Extending battery life on a shift

You can reduce the power consumption of your radio (and thereby extend the life of the battery during a shift) in three ways:

- transmit at low power (if your radio is not already configured to do this)
- ensure that backlighting automatically turns off when no radio activity is detected (see “About display and keypad backlighting” on page 64).

Turning low power transmit on and off

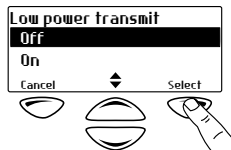
If you are using your radio in conditions where signal strength is high, you can extend the shift life of your battery by transmitting at low power.


When low power transmit is turned on, transmissions are made at low power rather than at the preprogrammed power setting. However, some channels may be preprogrammed to always transmit at low power.

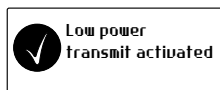
Using the Main menu

You can turn low power transmit on and off for the current channel using the Main menu:

- 1 Press **Menu** and select **Radio settings > Functions > Low power transmit**.
- 2 Scroll to **On** (or **Off**) and press **Select**.



The message **Low power transmit activated** (or **deactivated**) appears and the low power transmit icon  appears in the display.



Using a function key

You can turn low power transmit on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn low power transmit on for the current channel. It remains on until you press the function key again.

Customizing the audible alert tone settings

The radio uses audible sounds (tones and beeps) to alert you to its status:

- Incoming call tone—when the radio is receiving a call.
- Warning tones—when there is an error, or the battery is low, for example.
- Radio controls and keypress tones—the tones and beeps you hear when you press your radio’s keys or use the controls. (You can turn these tones off—see “Turning off radio controls and keypress tones (quiet operation)” on page 70.)

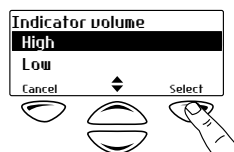
Changing the volume of all audible tones

You can set the volume of all the audible sounds (‘status indicators’), which the radio makes to indicate what is happening.

Using the Main menu

You can change the volume of the audible tones between high or low using the Main menu:

- 1 Press **Menu** and select **Radio settings > Alert settings > Indicator volume**.
- 2 Scroll to **High** or **Low** and press **Select**. (The current setting is highlighted.)



Using a function key

You can change the volume of the audible tones between high or low using a function key, if your radio is programmed in this way.

- Press the function key to set the volume. The volume setting remains until you press the function key again.

Changing the keypress volume

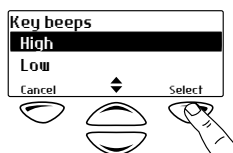
Whenever you press a key, you will hear a beep to indicate whether or not what you are trying to do is allowed:

- Allowed: a short, medium-pitched beep.
- Not allowed: a long, low-pitched beep.

Using the Main menu

You can change the volume of the keypress beeps between high, low, and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Alert settings > Key beeps**.
- 2 Scroll to **High**, **Low**, or **Off** and press **Select**. (The current setting is highlighted.)



Using a function key

You can switch the volume of the keypress beeps between high, low, and off using a function key, if your radio is programmed in this way.

- Press the function key to change the volume. The volume setting remains until you press the function key again.

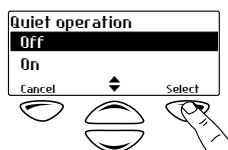
Turning off radio controls and keypress tones (quiet operation)

You can turn off all the tones and beeps you hear when you press the keys or use the radio controls. This is known as quiet operation. You will still hear incoming call and warning tones.

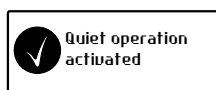
Using the Main menu

You can turn quiet operation on and off using the Main menu:

- 1 Press **Menu** and select **Radio settings > Alert settings > Quiet operation**.
- 2 Scroll to **On** or **Off** and press **Select**. (The current setting is highlighted.)



The message **Quiet operation activated** (or **deactivated**) appears.




Using a function key

You can turn quiet operation on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn quiet operation on. It remains on until you press the function key again.

Hearing only channel traffic (silent operation)

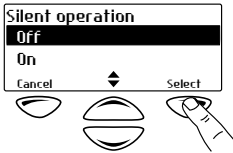
You can turn off all the audible tones that the radio makes so that the only sound you will hear from the speaker is channel traffic. This is known as silent operation.


When silent operation is turned on  appears in the display.

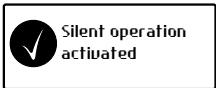
Using the Main menu

You can turn silent operation on and off using the Main menu:

- 1 Press **Menu**, and select **Radio settings > Alert settings > Silent operation**.
- 2 Scroll to **On** or **Off** and press **Select**. (The current setting is highlighted.)



The message **Silent operation activated** (or **deactivated**) appears and the silent operation symbol  appears in the display.



Using a function key

You can turn silent operation on and off using a function key, if your radio is programmed in this way.

- Press the function key to turn silent operation on. It remains on until you press the function key again.

11 Glossary

A

APCO The Association of Public Safety Communications Officials, International (<http://www.apcointl.org/>). The APCO Project 25 standards committee defined a digital radio standard. The standard is often referred to APCO or P25.

C

channel A channel is a pair of frequencies used to transmit and receive radio signals.

F

FCC Federal Communications Commission. The FCC is an independent United States government agency that regulates interstate and international radio communications.

frequency band A range of frequencies used for transmitting or receiving radio waves, for example, 136-174 MHz.

L

LED Light Emitting Diode. A device that emits light when charged with electricity.

P

P25 Project 25. The Association of Public Safety Communications Officials (APCO) established Project 25 (P25). This project was led by United States Federal, state, and local government representatives to develop standards for interoperable digital radios and systems to meet the needs of public safety users. See <http://www.project25.org> for further information.

R

repeater A repeater is a relaying site, usually situated above a city or town, for example, on a hill, that receives and re-transmits signals received from radios.

repeater talkaround In repeater talkaround mode radios transmit and receive directly with other radios on a single frequency (known as simplex operation) without the need for a repeater.

RF Radio Frequency is the signal (radio waves) that the radio transmits and receives. The frequency of the signal is described in terms of the number of cycles per second or Hertz (Hz). RF is part of the electromagnetic spectrum, as is sunlight.

RSSI RSSI (Received Signal Strength Indicator) is a level that indicates the strength of the received signal.

V

valid signal A valid signal is a signal that the radio responds to by unmuting the receiver. A signal is valid, for example, when it is stronger than a minimum level.

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