

# TP9600 P25 Portable Radio

## User's Guide

MPG-00002 - Issue 02 - July 2021

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# Contact Information

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For the address and telephone number of regional offices, refer to our website: [www.taitradio.com](http://www.taitradio.com)

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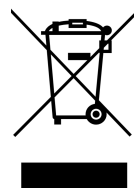
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## Environmental Responsibilities

Tait International Limited is an environmentally responsible company which supports waste minimization, material recovery and restrictions in the use of hazardous materials.



The European Union's Waste Electrical and Electronic Equipment (WEEE) Directive requires that this product be disposed of separately from the general waste stream when its service life is over. For more information about how to dispose of your unwanted Tait product, visit the Tait WEEE website at [www.taitradio.com/weee](http://www.taitradio.com/weee). Please be environmentally responsible and dispose through the original supplier, or contact Tait International Limited.

Tait International Limited also complies with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive in the European Union.

In China, we comply with the Measures for Administration of the Pollution Control of Electronic Information Products. We will comply with environmental requirements in other markets as they are introduced.

# About This Guide

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## Scope of Manual

This manual provides information about all TP9600 P25 Portable Radios.

The radio behavior described in this guide applies to radios with firmware 2.17. To check the radio's firmware version, see "Viewing Radio Information" on page 98. If the radio does not operate as expected, please contact the radio provider for assistance.

## Alerts

Please follow exactly any instruction that appears in the text as an 'alert'. An alert provides necessary safety information as well as instructions about the proper use of the product. This manual uses the following types of alert:



**Warning.** This alert is used when there is a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution** This alert is used when there is a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice** This alert is used to highlight information that is required to ensure procedures are performed correctly. Incorrectly performed procedures could result in equipment damage or malfunction.



This alert is used to highlight significant information that may be required to ensure that you perform procedures correctly, or to draw your attention to ways of doing things that can improve your efficiency or effectiveness.

## Associated Documentation

The following associated documentation for this product is available on the Tait support website.

- MPD-00002-xx TP8000/TP9000 Battery Charging Guide
- MTA-00011-xx TM8000/TP8000/TM9000/TP9000/TU2000 Safety and Compliance Information
- MPG-00004-xx TP9600 Specs Manual
- TD-0058-xx TP9500/TP9600 Operational Description

The characters **xx** represent the issue number of the documentation.

Technical notes are published from time to time to describe applications for Tait products, to provide technical details not included in manuals, and to offer solutions to any problems that arise. Look for new or updated technical notes on the Tait technical support website.



## Acronyms

Acronym	Definition
OTAP	Over The Air Programming
OTAR	Over The Air Rekeying
PTT	Push To Talk
RSM	Remote Speaker Microphone
SFE	Software license key
UTM	Universal Transverse Mercator

## Publication Record

Issue	Publication Date	Description
2	July 2021	Updated scanning icon Added information around colored radios
1	December 2019	First release

# 1 For your safety

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

## Radio frequency exposure information



For individual safety and to ensure compliance with the radio frequency (RF) exposure guidelines of the United States Federal Communication Commission's (FCC), Industry Canada, and those from other administrations, please read the following information before using this radio.

### Using this radio

This radio should only be used for work-related purposes (it is not authorized for any other use) and when the user is fully aware of, and can exercise control over, exposure to RF energy. To prevent exceeding FCC RF exposure limits, the user must control the amount and duration of RF that they 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 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 (2.5cm) 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 (2.5cm) 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 [www.fcc.gov/oet/rfsafety/rf-faqs.html](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.
- European Directive 2004/40/EC on minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields).

This radio complies with the IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environments at operating duty factors of up to 50% talk to 50% listen.

## **Conformité aux normes d'exposition à l'énergie RF**

Cette radio émetteur-récepteur se conforme aux normes et aux règlements d'exposition à l'énergie RF :

- La Commission fédérale de la communication des Etats-Unis, Code de règlements fédéraux (CFR) Titre 47 Sections 1.1307, 1.1310 et 2.1091 (radios mobiles) ou 2.1093 (radios portatives).
- 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.
- La directive européenne 2004/40/EC concernant les prescriptions minimales de sécurité et de santé relatives à l'exposition des travailleurs aux risques dus aux agents physiques (champs électromagnétiques).

Cette radio se conforme aux limites d'exposition de l'IEEE (FCC) et ICNIRP pour les environnements d'exposition au rayonnement RF professionnel et contrôlé aux cycles de marche de 50% en mode transmission et 50% en mode réception.

## **Radio frequency emissions limits in the USA**

### **CFR Title 47 Part 15.19 (a) (1) - Receivers**

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.

### **CFR Title 47 Part 15.19 (a) (3) - All other devices**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

## **Radio frequency emissions limits in Canada**

This device complies with Industry Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## USA public safety bands (764–776MHz and 794–806MHz)

The Code of Federal Regulations (CFR) Title 47 Subpart R deals with the use of frequencies in the 764 to 776MHz and 794 to 806MHz bands.

### Low-power channels

This radio complies with §90.531 (b) (3) and §90.531 (b) (4) of 47 CFR. These sections state that only low-power transmission is permitted on the following channels:

- Regional Planning channels, as defined in §90.531 (b) (3).
- Itinerant channels, as defined in §90.531 (b) (4).

### Use of encryption

This radio complies with §90.553 (a) of 47 CFR. This states that:

- Encryption is not permitted on the nationwide Interoperability calling channels. These channels are defined in §90.531 (b) (1) (ii).
- Radios using encryption must have a readily accessible switch or control to allow the radio user to disable encryption.

## EMC regulatory compliance in Australia

This product meets all ACMA regulatory requirements for electromagnetic compatibility (EMC). For more information about EMC compliance, visit the ACMA website at [www.acma.gov.au](http://www.acma.gov.au).

## 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.

## Health, safety and electromagnetic compatibility in Europe

In the European Community, radio and telecommunications equipment is regulated by Directive 2014/3/EU. The requirements of this directive include protection of health and safety of users, as well as electromagnetic compatibility.

### Intended purpose of product

This product is an FM radio transceiver. It is intended for radiocommunication in the Private Mobile Radio (PMR) or Public Access Mobile Radio (PAMR) services, to be used in all member states of the European Union (EU) and states within the European Economic Area (EEA).

### Restrictions

This product can be programmed to transmit on frequencies that are not harmonized throughout the EU/EEA, and will require a licence to operate in each member state.

This product can be programmed for frequencies or emissions that may make its use illegal. Where applicable, a license must be obtained before this product is used. All license requirements must be observed. Limitations may apply to transmitter power, operating frequency, channel spacing, and emission.

## Declaration of conformity

Brief Declarations of Conformity appear on page 102 of this booklet. To download the formal declaration of conformity, go to [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc).

## 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:

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

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

Consult the manufacturer (or its representative) of any such electronic devices to determine whether electronic circuits in those devices will perform normally when the radio is transmitting.



**If you have a pacemaker:**

- immediately turn off the radio if you suspect it is interfering with the pacemaker
- keep the radio at least 6 inches (15cm) from the pacemaker while the radio is on
- use the radio on the side opposite to the pacemaker to minimize interference
- never carry the radio in a breast pocket.

If there is interference between your hearing aid and the radio, please discuss an alternative solution with the hearing aid manufacturer.

## Potentially explosive atmospheres and blasting areas



**Unless the radio is specifically certified for use in a potentially explosive atmosphere, turn off the radio before entering such an atmosphere. An explosion could cause serious injury or death. Examples of potentially explosive atmospheres**



include filling stations, and any environment where there are flammable liquids, gases, or dusts.



Turn off the radio before approaching blasting caps, a blasting area, or any area where you are instructed to turn off a two-way radio. Obey all signs and instructions. Interference with blasting operations could cause serious injury or death.

## Radio installation and operation in vehicles



Keep the radio away from airbags and airbag deployment areas. Do not install, charge, or place a radio near such areas. An activated airbag can propel a portable radio with sufficient force to cause serious injury to vehicle occupants. An airbag may not perform to specification if obstructed by a radio.



To avoid damage to existing wiring, airbags, fuel tanks, fuel and brake lines, or battery cables, refer to the installation guide for the radio, and to the vehicle manufacturer's manual, before installing electronic equipment in the vehicle.

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.

## Vehicle charger installation and operation

For detailed instructions necessary to the safe installation and operation of the vehicle charger, please refer to the documentation supplied with the vehicle charger.

## Multicharger safety information



This device must be connected to an earthed mains socket-outlet.

Norsk (no): Apparatet må tilkoples jordet stikkontakt.

Suomi (fi): Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.

Svenska (sv): Apparaten skall anslutas till jordat uttag.

## Electromagnetic compatibility in European vehicles

In the European Community, radio equipment fitted to automotive vehicles is regulated by UNECE Regulation R10 Revision 5 and its amendments. The requirements of this regulation cover the electromagnetic compatibility of electrical or electronic equipment fitted to automotive vehicles.

## 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. Failure to do so could invalidate compliance requirements and void the user's authority to operate the radio.

### Attaching of labels



**Do not obstruct the vent hole on the battery or the vent hole on the radio chassis label. If the vent on the battery is obstructed, the battery may explode, causing personal injury and/or damage to property. If the vent on the radio is obstructed, audio quality and/or key function may deteriorate and radio seals may be damaged.**

**Caution** Tait recommends that you do not affix additional labels to the surfaces between the radio chassis and the battery. The fit between these surfaces is intentionally firm and any added thickness will damage the points of attachment between radio and battery. If you must attach a customized label, use only a thin gummed paper label applied to the bottom 25% of the radio chassis label and/or to the top 25% of the battery label. Do not obstruct the vent holes (see Warning above). Do not allow the paper label to extend beyond the recessed label area or to conceal relevant product information.

### Use of lithium-ion batteries



**A damaged battery can cause an explosion or fire, and can result in personal injury and/or property damage. To prevent personal injury and/or damage to property, read the important safety information supplied with the battery.**

## Short-circuiting battery contacts



**Do not short-circuit the battery contacts, neither intentionally nor accidentally, e.g. by placing the battery with conductive materials such as keys or jewelry inside a pocket or container. Short-circuiting the battery contacts can heat up the conductive material and cause personal injury and/or damage to property.**



## 2 Before Using the Radio

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Once the radio has been unpacked, there are a few tasks that must be completed before use. The most important of these is to charge the battery for the first time. Allow up to 3 hours for this.

### **This section covers:**

[Attaching labels to the radio or battery](#)

[Charging the battery before first use](#)

[Attaching the battery](#)

[Removing the battery](#)

[Attaching the antenna](#)

[Removing the antenna](#)

[Attaching a belt clip](#)

[Removing a belt clip](#)

[Installing an audio accessory](#)

### **For your safety — battery warning**



**This radio uses a Lithium-ion battery. If the battery is damaged or handled in an unsafe manner, it can cause personal injury and/or damage to property. Read the important safety information included with the battery.**

## Attaching labels to the radio or battery



Do not cover the battery vent hole or the vent hole on the radio chassis. If the vent on the battery is obstructed, the battery may explode, causing personal injury and/or damage to property. If the vent on the radio is obstructed, audio quality and/or key function may deteriorate and radio seals may be damaged.

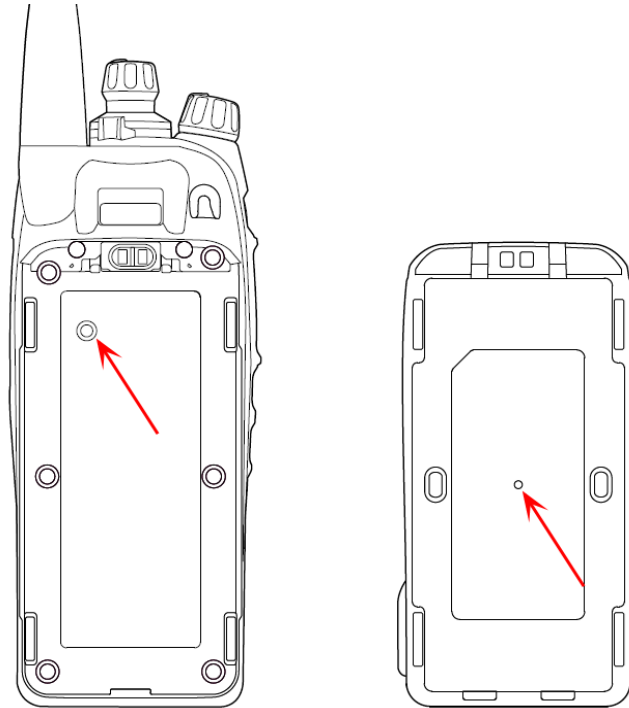


Figure 2.1 Radio chassis and battery vent holes

**Notice** Tait recommends that additional labels are not applied to the surfaces between the radio chassis and the battery. The fit between these surfaces is intentionally firm and any added thickness will damage the points of attachment between radio and battery.

If a customer requires a customized label, use only a thin gummed paper label with a maximum thickness of 1/32 inch (0.1mm). Attach the customized label in the spare label recess in the chassis (if available), or over an existing label. The customized label may be applied to the bottom 25% of the radio chassis label and/or to the top 25% of the battery label.

Do not obstruct the battery vent hole (see Warning above). Do not allow the paper label to extend beyond the recessed label area or to conceal relevant product information.

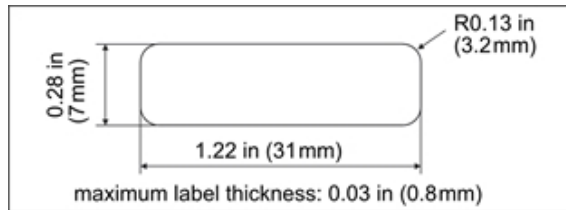
## Attaching a label to the front panel

If a customer requires an additional label, attach the label in the spare label recess in the bottom surface of the radio front panel. In this position, the label is still visible while the battery is attached to the radio.



**Figure 2.2 Spare label recess**

The diagram below shows the specified dimensions of the label.

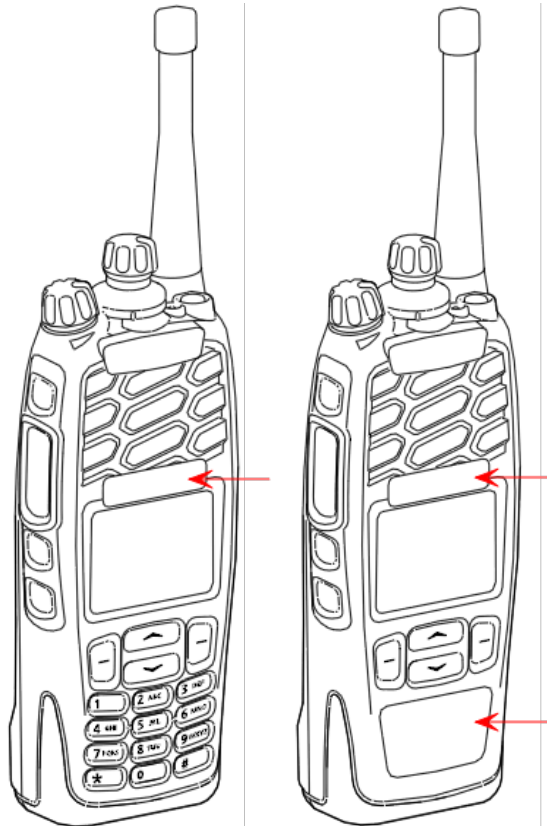


**Figure 2.3 Spare label dimensions**



4-key models have a specially designed recess for custom labels.

Users can also stick labels over the top of the model label. This recess will accommodate 1/4" label maker labels. Please ensure the labels have a suitable adhesive surface before application.



**Figure 2.4 Location of model and custom labels**



Tait offers custom labelling for TP9600 P25 Portable Radios. Contact your Tait representative for more information.

## Charging the battery before first use

Before using the battery for the first time, it must be charged. Follow the instructions included with your Tait charger. This information is repeated in the section "Charging and Caring for Batteries" on page 1.



For best charging performance, switch off the radio before placing it in the charger.

See [Charging and Caring for Batteries](#) for detailed instructions on how to charge your battery.

### Li-ion batteries

Fully charge a Li-ion battery before using it for the first time. This will take up to 3 hours. It is not necessary to prime a Li-ion battery.

## Attaching the battery



**Use only genuine Tait manufactured batteries with Tait radios. Fitting a battery that is not Tait-approved may damage the radio or cause harm.**

**Notice** Fit the bottom edge of the battery to the radio, then the top edge. Attempting to fit the top edge first may damage the contacts.

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



If the battery has been attached while the radio is turned on, turn the radio off and then on again before use.

2. Holding the radio firmly, align the back of the battery with the back of the chassis.
3. Place the two lugs at the bottom edge of the battery into the two slots in the bottom of the front panel.
4. Lightly press the top of the battery towards the radio until the battery catch clicks.
5. Make sure that the battery is firmly in position.

## Removing the battery



**Do not change the battery in a hazardous location. An explosion could cause serious injury or death.**

The battery is secured to the radio by a battery catch in the radio's rear panel.

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

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



If the battery has been removed while the radio is turned on, turn the radio off and then on again before use.

2. Slide the battery catch up.
3. From the sides, pull (tilt) the top end of the battery away from the radio.
4. Lift the lugs at the bottom of the battery upwards out of the mating features at the bottom of the radio body.

## 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.

## Removing the antenna



**Do not change the antenna in a hazardous location. An explosion could cause serious injury or death.**

Use a firm grip and turn the antenna counterclockwise half a turn. Use a lighter grip to fully unscrew the antenna, and carefully remove it.

## Attaching a belt clip

### To attach a belt clip to the radio:

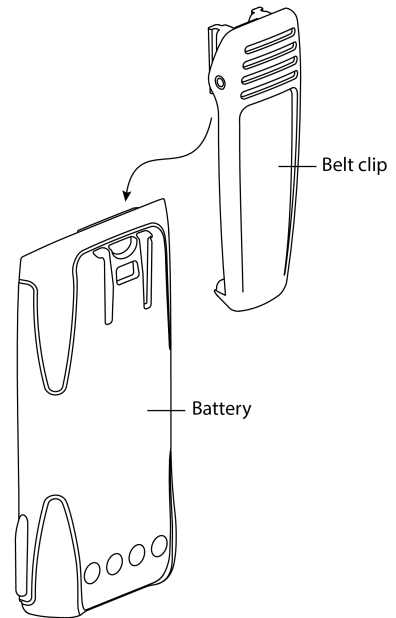
1. Slide the belt clip into the two grooves at the top of the battery.
2. Press down on the belt clip until it snaps into place.

## Removing a belt clip

The belt clip has been designed to prevent accidental removal, but it can be removed, 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.



## Installing an audio accessory



**Use only Tait-supplied, or Tait-approved audio accessories with Tait radios. Fitting an audio accessory that is not Tait-approved exposes the customer to a risk of explosion which could cause serious injury or death. For an up-to-date list of approved audio accessories, contact your regional Tait office.**

Audio accessories plug into the radio's accessory connector. The accessory connector is protected by a cover, which needs to be removed before an accessory can be installed.

**Notice** The accessory cover protects the accessory connector from electrostatic discharge. Keep the cover in place unless the connector is in use.

### To remove the accessory cover and install an audio accessory:

1. Use a coin or other blunt object to loosen the screw that secures the accessory cover to the radio.
2. Remove the accessory cover and store it in a safe place.

3. Plug the accessory into the accessory connector.

4. Tighten the screw.



The screw only needs to be finger tight when assembling the accessory and replacing the accessory cover.

## 3 Getting Started

---

This section provides an overview of the TP9600 P25 Portable Radio, describes the radio's controls and indicators, and explains how the radio menus are organized.

### This section covers:

[About Your Radio](#)

[About the Radio Controls](#)

[Understanding the Radio Display](#)

[Understanding the Radio Indicators](#)

[Using Function Keys to Access Frequently Used Features](#)

[Navigating the Radio's Menus](#)

[Accessing Frequently Used Menus](#)

## About Your Radio

TP9600 P25 Portable Radios **ARE AVAILABLE IN MULTIPLE COLORS. THE RADIO COLOR DOES NOT AFFECT FUNCTIONALITY.**



P25 digital radios can be programmed for analog conventional, P25 conventional or P25 trunking operation. In addition, there are dual-mode channels which can receive both analog and digital, and transmit in either analog or digital.

Differences may be noticed between digital and analog calls in terms of:

- static noise in low signal areas, and



- radio coverage in marginal reception areas.

## Lack of static noise

On digital networks there is no static noise, even in low signal areas. This lack of static is because the digital radio removes the 'noise' from the call, so that only clear voice is audible.

## Active Noise Cancellation

Active noise cancellation uses a secondary microphone on the back of the radio to actively filter out background noise in loud environments. When safety features such as Loneworker Monitoring, Emergency Operation or Radio Unit Monitor are activated, the listener may lose awareness of the noisy environment. Tait recommends users implement supplementary procedures to account for this.

## Coverage

With digital networks, a call remains clear and then drops off quickly at the border of a coverage area. The reason for this is that a digital call is either received or it isn't. With analog networks, the background noise in a call gets progressively worse when the user is in fringe areas or even slightly outside normal coverage areas.

## P25 phase 2 operation



This feature is controlled by a software license (SFE) and may not be available with your radio.

TP9600 radios can be programmed to operate on P25 trunked phase 2 networks. You will recognize that your radio operates on a P25 phase 2 network if the RSSI indicator does not disappear while transmitting. This is because the radio continues to receive data in the background.

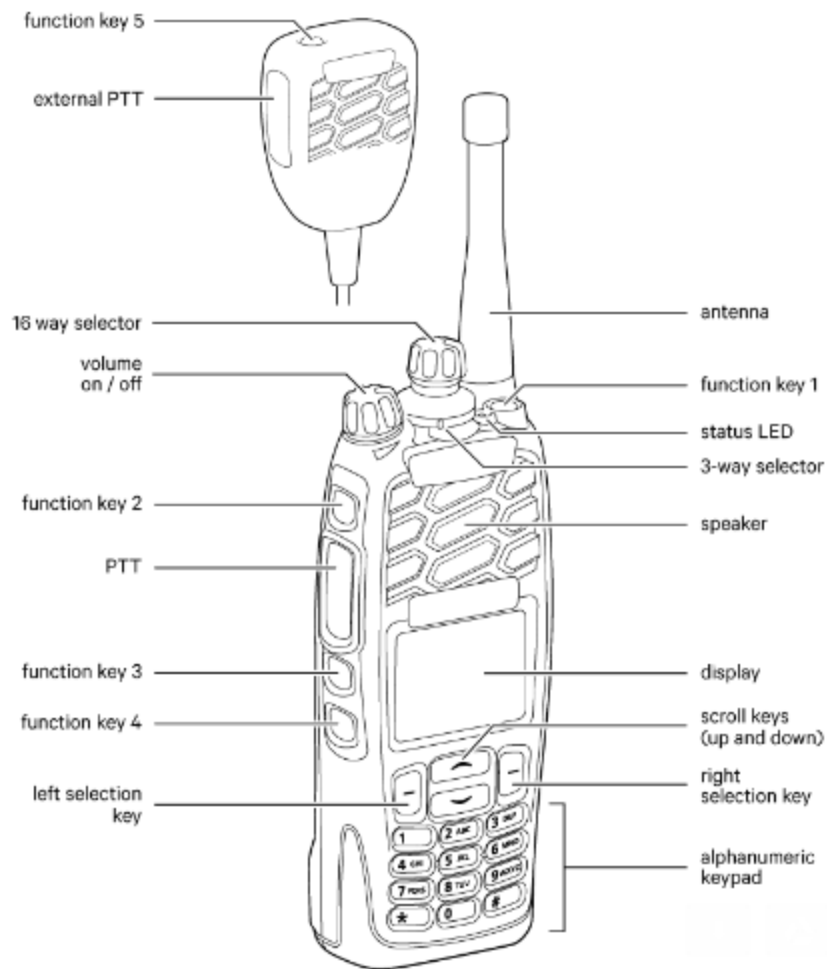
If one participant of a call uses a P25 phase 1 radio, the call may be made as a P25 phase 1 call.

## About the Radio Controls

The radio controls are the PTT key, power/volume control, channel selector, 3-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 0.75 s, and
- a long key press is usually more than 0.75 s.

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

















Name	Function
PTT key	Press and hold to transmit and release to listen
Power/volume control	Rotate to turn the radio on and change the speaker volume
16 way selector	Select and change channels or talkgroups
3-way selector	Select frequently used features
Left and right selection keys	Action determined by the text above the selection key
Scroll keys	Scroll up and down through a list of menu options, or access a pre-programmed menu
Function keys	Programmed for frequently used options
Alphanumeric keys	Used to enter letters and numbers


# Understanding the Radio Display

The messages and icons on the radio display depend on the mode in which the radio is operating and the way it is programmed.

## Radio display icons

These are some of the icons you may see on your radio display:

Icon	Meaning
	Battery indicator: shows how much charge is available in the battery
	Scanning: your radio is monitoring a group of channels or talkgroups for activity
	Silent operation: your radio's audible tones have been turned off
	Low-power transmit: the radio is transmitting in low power
	Transmit: the radio is transmitting
	Headset connected: there is a wireless headset connected to your radio Flashing: your radio is attempting to connect to a headset, or the headset connection has been lost
	Encryption: the radio's transmissions are encrypted
	Signal strength indicator: the more bars, the stronger the signal being received by the radio
	Scrolling: you can use  or  to move through a list, or access a pre-programmed menu
<b>Trunked mode icons</b>	
	Trunking system available: the radio is operating on a P25 trunking system
<b>Conventional mode icons</b>	
	Monitor or squelch override: monitor or squelch override is turned on
	Scanning: your radio is monitoring a group of channels or talkgroups for activity, and the currently selected channel or talkgroup is a member of the scan group.

Icon	Meaning
	Repeater talkaround: your radio is operating in repeater talkaround mode, or you are on a simplex channel
<b>A</b>	Zone: this letter represents the zone in which your radio is operating, where A is zone 1, Z is zone 26 (for example, K represents zone 11)

## Understanding the Radio Indicators

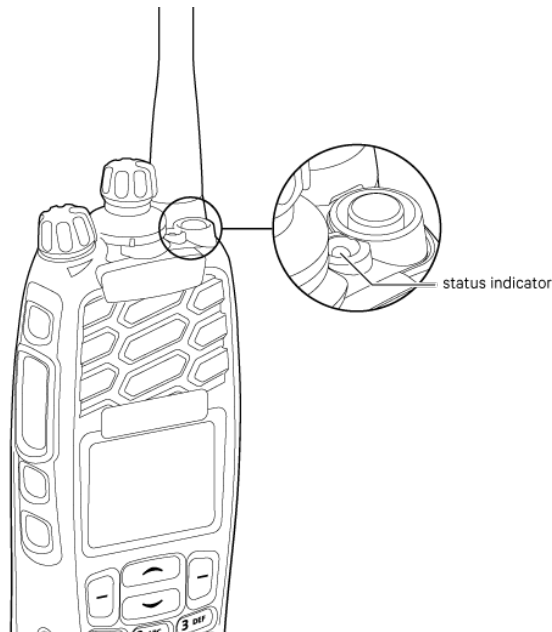
The status LED indicator and the radio's audible tones—together with the radio display—all combine to provide information about the state of the radio.

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






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

### Status Indicators



**Figure 3.1** Location of LED status indicator

Color		Meaning
Red (transmit)		Glowing: the radio is transmitting
		Flashing: the transmit timer is about to expire

Color		Meaning
Green (receive)		Glowing: the current channel is busy Flashing: the radio has received a call (analog channel only)

## Audible Tones

The radio uses audible tones to alert the user to its status:

- Radio controls and keypress tones—the tones and beeps that are audible when the radio's keys are pressed or the controls are used.
- Incoming call tone—when the radio is receiving a call.
- Warning tones—when there is an error, or the battery is low, for example.



**If quiet or silent mode is turned on, you will not hear any alert tones.**

Some of the more common audible tones are described below:

Tone	Meaning
One short beep	Valid keypress: The action you have attempted is permitted. Function activated: A function has been turned on (using a function key).
One short, low-pitched beep	Function deactivated: A function has been turned off (using a function key).
One long, low-pitched beep	Invalid keypress: The action you have attempted is not permitted. Transmission inhibited: You have attempted to transmit, but for some reason you cannot make a call at this time.
Two short beeps	Radio turned on: The radio is powered on and ready to use. Radio is revived: The radio has been made operable by your service provider.
One short, high-pitched beep	Radio is stunned: The radio has been made inoperable by your service provider.
Two low-pitched beeps	Radio's temperature is high: The radio's temperature is in the high-temperature range, but the radio will continue to operate.
Two high-pitched beeps	Radio's temperature is very high: The radio's temperature is in the very high temperature range and all transmissions will now be at low power; if the radio's temperature rises outside this range, transmissions will be inhibited. Turn off the radio and allow it to cool down.
Continuous low-pitched tone	Radio system error: A system error has occurred and the radio may be inoperable. Contact your radio provider.

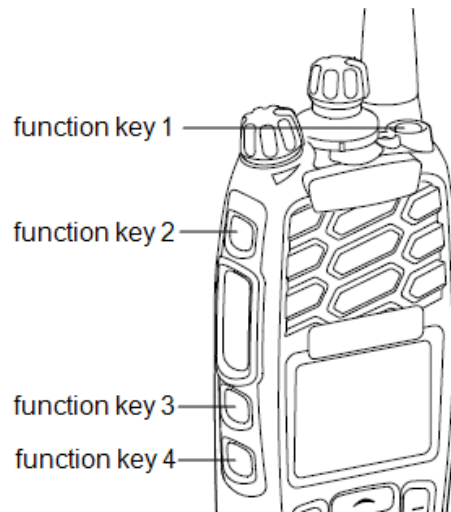
Tone	Meaning
Two long high-low pitched tone pairs	Synthesizer is out-of-lock: The radio's synthesizer is out-of-lock on the current channel and you cannot operate on that channel ( <b>Out of lock</b> appears on the display).

## Voice annunciation

Your radio may be programmed to play a pre-recorded message for the start-up zone and channel, when changing the zone or channel, for the battery condition, or when loneworker monitoring has been turned on or off.

## Using Function Keys to Access Frequently Used Features

The function keys provide access to some of the features you will use most often. These features are assigned to the function keys when the radio is programmed. Some keys may have a feature associated with both a short key press and a long key press.



## Viewing the function key settings

Use the Main menu to check the features assigned to your radio's function keys:

1. Press **Menu** and select **Radio settings > Radio info > Key settings**.
2. In the **Key Settings** menu, scroll through the list of function keys.
3. Press **Select** to view details of the function associated with a particular function key.
4. Press **Back** to return to the **Key Settings** menu.

Use the following table to record the function keys programmed for your radio:

	Short key press	Long key press
F1		

	Short key press	Long key press
F2		
F3		
F4		
F5 <sup>1</sup>		
F6 <sup>1</sup>		

For more information about the function keys that can be programmed on your radio, contact your radio provider.

## Navigating the Radio's Menu

Your radio has a number of menus, each containing lists or sub-menus. The menus available depend on the way your radio is programmed.

### Using the Main Menu

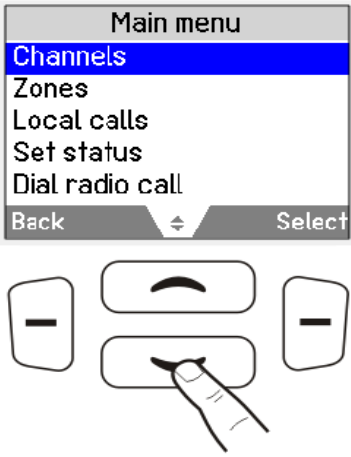
To access the Main menu, press the right selection key whenever **Menu** appears above it.



Use the scroll keys to move through the menu list.

---

<sup>1</sup>On speaker microphone (if fitted)



When the desired menu item is highlighted, press **Select** to open.

Your radio may be programmed to use the scroll keys or the left selection key to directly access a menu.



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 the radio is programmed, there may be two different Quick Access menus. One Quick Access menu is displayed when a scroll key is pressed, and the other when the left selection key is pressed. These allow easy access to the menus used most often.

### Using the scroll key Quick Access menu

There are two ways to use this Quick Access menu:

- Use the scroll keys to scroll through a list of zones or channels.
- Press the scroll keys and the Quick Access menu appears.

### Using the left selection key Quick Access menu

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

To use this Quick Access menu:

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



# 4 Basic Operation

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This section describes the basic operation of your radio.

## This section covers:

[Turning the Radio On and Off](#)

[Adjusting the Speaker Volume](#)

[Locking and Unlocking the Keypad](#)

[Using a Wireless Headset](#)

[Limiting Call Time](#)

[Checking Recent Calls](#)

[Setting and Viewing the Radio's Time and Date](#)

[Updating the Radio Over the Air](#)

## Turning the 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.

When the radio is first turned on, the status LED briefly glows red, and the radio gives two short beeps.



The radio may not turn on if its battery is very low. See [Low Battery Warning](#).

## Security lock on power-up feature

Your radio may be automatically locked each time it is powered-up. If the message **Enter PIN** appears on the display, enter your assigned PIN (personal identification number). See "Turning the Radio On and Off" above below.

### Locking the radio

1. Press **Menu** and select **Radio settings > Functions > Lock radio**. (Depending on how your radio is programmed, you may be able to press a function key to turn radio lock on and off.)
2. Scroll to either **On** or **Off** and press **Select**. (The current setting is highlighted.) The radio is now locked, and the message **Enter PIN** appears on the display. The radio remains locked until the correct sequence of keys is pressed. If you forget the unlock sequence or you do not know it, contact your radio provider for assistance.

## Unlocking the radio

- To unlock your radio, use the unlock sequence you have been given. (This is a pre-programmed sequence of four keys).

## Adjusting the Speaker Volume

Rotate the power/volume control clockwise to increase the speaker volume and counterclockwise to decrease the volume.



The volume control also changes the volume level of the radio's audible indicators.

## Locking and Unlocking the Keypad

The keypad lock feature prevents keys being pressed accidentally. The number of keys that are locked depends on the way the radio is programmed.

### To lock the keypad:

- Press and hold the right selection key for about one second.



Depending on the radio model and the way it is programmed, the radio may have a 3-way selector that can be used to lock the keypad, or the left selection key can be configured to lock the keypad.

The message **Keypad locked** briefly appears on the display, and **Unlock** appears above the right selection key, in place of **Menu**.

When any of the locked keys are pressed, the message **Keypad lock active** appears.



The left selection key can also be configured for the keypad lock function.

### To unlock the keypad:

- Press and hold the right selection key for about one second.

## Using a Wireless Headset



This feature is controlled by a software license (SFE) and may not be available with the radio.

A Bluetooth® wireless headset may be connected to a radio using the **Wireless headset** menu or a function key.



When a menu option has been selected in the **Wireless headset** menu, calls can still be received and replied to without interrupting the selected operation.

## Headset Compatibility with Tait Radios

Bluetooth wireless devices may operate with Tait radios, provided the accessory:

- is compatible with the Bluetooth Specification Version 2.0 or higher. Tait recommends Bluetooth Specification Version 2.1 or higher.
- Includes Bluetooth Headset Profile (HSP) adopted version 1.1 or 1.2, or Bluetooth Handsfree Profile (HFP) version 1.5 or 1.6.

## Wearing the Headset

Headsets come as an over-the-head accessory, or as a remote speaker microphone.

With a headset worn over the head, place it on the ear. Depending on which ear the headset will be worn, simply adjust the ear hook accordingly.

### To get the best performance from the headset:

1. Do not block the device's internal antenna (see the device's user documentation). The human body can interfere with a Bluetooth signal.
2. If the radio is used with the right hand, wear the over-the-head headset on the right ear.
3. Avoid coming in contact with the internal antenna of a headset or radio.
4. When using a remote speaker microphone with active noise cancellation turned on, the RSM should be turned toward the mouth when speaking.

## Pairing and disconnecting a wireless headset with the radio



Before attempting to connect a wireless headset, Tait recommends that the headset is fully charged. Refer to the headset installation instructions for charging instructions.

Pairing creates a unique and encrypted wireless link between the Bluetooth-capable radio, and the Bluetooth headset. To use a headset with a radio, the devices must first be paired.

When connecting to a wireless headset for the first time, instruct the radio to search for compatible headsets using Bluetooth wireless technology. The search should take less than one minute.

### To pair a wireless headset with the radio:

1. Turn on the radio.
2. Put the wireless headset into pairing mode.
3. Press **Menu** and select **Wireless headset > Find new devices**.

The **New devices** menu opens, and while the radio searches for the new device, the message **Searching ...** appears.

4. Select **Connect** when the required accessory appears in the list of new devices, then **Yes** to add the headset to **My Headsets**.

The message **Connecting** appears, while the radio attempts to pair with the headset.

5. When the message **Calling. Answer on headset** appears, press the **Answer** button on the headset to confirm the connection.

6. Repeat the previous steps to add other headsets.



While the wireless headset is connected, the wireless headset icon appears on the display.

## Managing your headsets

Once a headset has been added to My Headsets, the **Manage headsets** menu item appears under the **Wireless headsets** menu. The **Manage headsets** menu shows the headsets currently in My Headsets, along with the following information:

- **+** This headset is currently connected.
- **a** This headset will be automatically connected.
- **c** The radio will ask for confirmation before connecting this **accessory**.

Press **Options** to disconnect or connect a headset (**Disconnect, Connect**), change the priority order of the headsets (**Move down**), or remove a headset from My Headsets (**Remove, Remove all**).

### Disconnecting the headset

To disconnect the headset from the radio:

- Press **Menu** and select **Wireless headset > Disconnect**.  
Alternatively, in the **My headsets** menu select **Options > Disconnect**.

### Reconnecting the headset

The radio may be programmed so that each time the headset is turned on, it will automatically reconnect to the radio.

If the radio does not automatically reconnect to the headset:

1. On the radio, press **Menu** and select **Wireless headset > Reconnect last**.

The radio then prompts to connect to the headsets in My Headsets, in priority order.

2. Select **Yes** to connect, or **No** to choose another headset.

### Changing the way the Headset Reconnects

The **Power-on option** in the menu can be used to change the way the radio reconnects with a headset when the radio is first turned on. The choices are:

- None: The radio does not connect to any headsets, and will need to be manually connected or reconnected to the headset.
- Reconnect last: The radio connects to the previously connected headset.
- Connect: The radio will attempt to connect to the headsets in My Headsets, in priority order.

To change the power-on option:

1. Press **Menu** and select **Wireless headset > Options > Power-on option**, and change to the required option.

## Limiting Call Time

The radio may limit the amount of time you can talk (transmit) continuously. This is known as the 'transmit timer' or 'time-out timer' and allows other radio users to make calls on that channel.

The message **Transmit Timeout Imminent** appears in the display.

## Checking Recent Calls

This feature is available for digital channels only and applies to individual calls and call alert pages only.

The radio may be able to store a list of the last 20 calls. These calls may be calls that have been received, calls that have been made, or calls that have been missed.

### To use the recent calls list to make a call:

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

The most recent call is displayed at the top of the list. If you have not participated in any calls since your radio was switched on, the message **No items in list** appears in the display.



The radio's behavior depends on the mode the radio is set to. See [Making an Individual Call](#).

## Setting and Viewing the Radio's Time and Date

The radio may be programmed to use its internal real-time clock. It may be possible to view the time and date via a function key or via the radio menu. Other features may also make use of the radio's time and date by showing entries based on the current clock setting.

### To set the time, date, and time format:



The radio may be programmed to allow you to set time and date manually, or time and date can be updated using a GPS source.

1. Press **Menu** and select **Time and Date** and the corresponding option.
2. Follow the prompts on the display.

### **To view the time and date:**

- Press **Menu** and select **Time and Date > View clock** (Depending on how the radio is programmed, it may be possible to press a function key to view the time and date).

# 5 Operating in Conventional Mode

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This section explains how to operate your radio on a conventional network (digital and analog).

## This section covers:

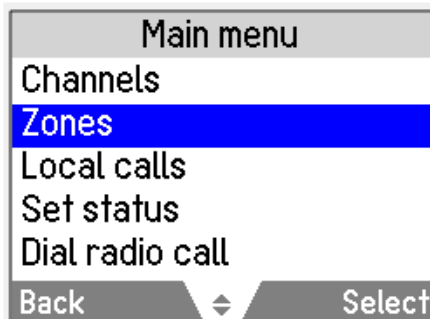
- [Checking That the Channel is Clear](#)
- [Communicating Directly with Other Radios](#)
- [Hearing Faint and Noisy Signals](#)
- [Making a Call](#)
- [Making a DTMF Patch Call](#)
- [Making a Local Call](#)
- [Making an Individual Call](#)
- [Receiving a Call](#)
- [Selecting a Channel](#)
- [Selecting a Zone](#)
- [Setting your Status](#)
- [Understanding Talkgroups](#)
- [Using the Radio in Different Repeater Areas](#)

## Selecting a Zone

The radio may be programmed to use zones, which are collections of channels and groups. 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.). When a zone is selected, only the channels and groups assigned to that zone are available.

### Using the Main menu:

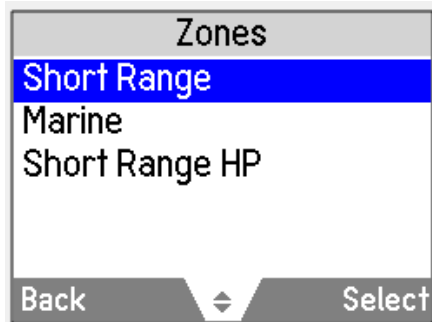
1. Press **Menu** and select **Zones**.





Depending on how the radio is programmed, scroll keys or left selection keys may be used to select the **Zones** menu.

2. In the **Zones** menu, scroll through the list of zones until the desired one appears.



3. Press **Select**, and the zone indication appears either below the channel information, beside the RSSI icon, or in both positions. These can also be set to not be displayed.

## Other ways of selecting a zone

The following controls may also be used to select a zone:

- 3-way selector (see [About the Radio Controls](#))



If the 3-way selector is turned while pressing the PTT key, the zone will change after the PTT key is released.

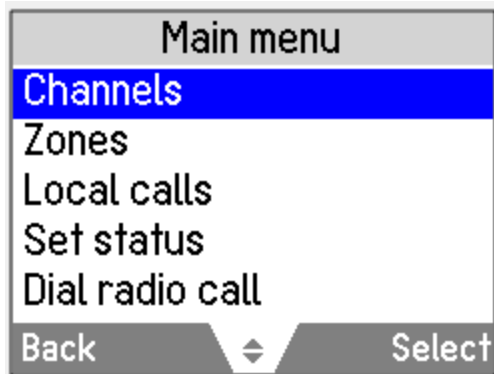
- left selection key (see [Using the left selection key Quick Access menu](#))
- scroll keys (see [Using the scroll key Quick Access menu](#))
- function keys to scroll through zones

## Selecting a Channel

### Using the Main menu:

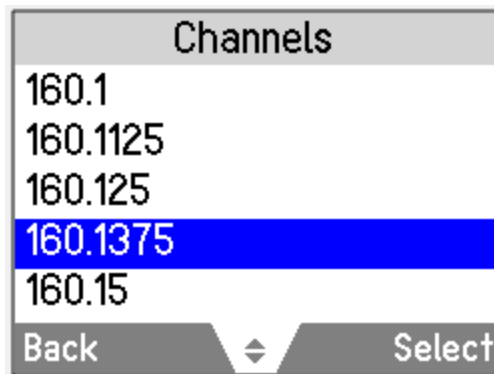
1. Press **Menu** and select **Channels**.





Depending on how the radio is programmed, the scroll keys, the left selection key, or a function key may be used to select the **Channels** menu.

2. In the **Channels** menu, scroll through the list of channels until the desired channel appears.



3. Press **Select**, and the programmed channel is now shown on the display.

### Using the scroll keys:

The radio may be programmed to use the scroll keys to scroll through the channels.

### Using the channel selector

The channel selector can be used to select 16 channels.



If the channel selector is turned while pressing the PTT key, the channel will change after the PTT key is released.

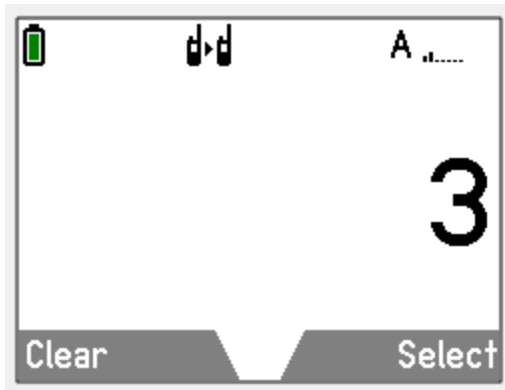
### Using the keypad



This feature is only available for radios with alphanumeric keys.

Dialing a channel may be available from the radio's idle display but is always available while in the **Channels** menu.

1. Dial the number associated with the channel using the alphanumeric keys.



To delete a digit that you have dialed incorrectly, press **Clear**.

2. Press **Select** or **#**, and the programmed channel is now shown on the display.

## Automatic channel selection

The radio may be configured to change channels automatically based on current location. The automatic mode icon **A** will be visible on the display.

Selecting a channel manually as described above will end automatic mode, and the manual mode icon **M** will appear on the display.

The radio may be configured to use a timer or a function key to return to automatic mode.

## Using the numeric keypad to store and recall channels

Channels may be stored and recalled using the numeric keypad.

- Long-press a numeric key to store the current channel.
- Short-press a numeric key to recall the stored channel.

Only one channel can be stored and recalled for each numeric key.

## Other ways of selecting a channel

The following controls may also be used to select a channel:

- function key (see [Accessing Frequently Used Menus](#))
- left selection key (see [Using the left selection key Quick Access menu](#))
- scroll keys (see [Using the scroll key Quick Access menu](#))

## Understanding Talkgroups

This feature is available for digital channels only.

A talkgroup is a collection of radio users with whom to have private conversations. 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 public safety members in other regions. 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.



Talkgroups are configured during set up and cannot be created by the radio user.

## Making a Call



1. Select the required zone (see [Selecting a Zone](#)).
2. Select the required channel (see [Selecting a Channel](#)).
3. Hold the radio so that the microphone is about one inch (2.5 cm) from your mouth and press the PTT key to transmit.



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

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



While transmitting, the LED glows red and the transmit, , or low power transmit, , icon appears on the display.

5. Finish the conversation as soon as possible and release the PTT key. For a short time, the radio may prevent you from making another call.

## Making an Individual Call

This feature is available for digital channels only. For analog individual calls, see [Making a Local Call](#)

### To make a call to one person:

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



If no address book is configured, a preconfigured list appears. The person to whom the last individual call was made is highlighted.

2. Scroll to the desired person to call and press the PTT key to make the call immediately. Alternatively, press **Call** and then PTT.



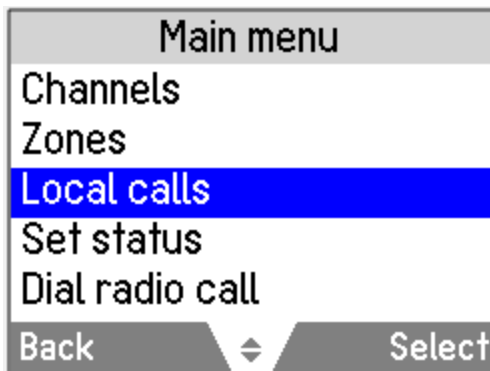
If an address book is configured, it's possible to either dial a number or show the address book.

## Making a Local Call

For analog channels, each channel on the radio may have one or more local calls programmed. For digital radio-to-radio calls, see [Making an Individual Call](#).



### Using the Main menu

1. Select the required channel.
2. Press **Menu** and select **Local calls**.



3. In the **Local calls** menu, scroll through the list of local calls until the desired call appears.
4. Press **Send**.



The call details appear on the display, the LED glows red, and the transmit, , or low power transmit, , icon appears on the display.



### Using the Quick Access menu

1. Select the required channel.
2. Press one of the scroll keys or the left selection key to open the **Local calls** menu.

3. Scroll through the list of local calls until the desired call appears.

4. Press **Send**.



The call details appear on the display, the LED glows red, and the transmit, , or low power transmit, , icon appears on the display.

## Dialing a local call



This feature is only available for radios with alphanumeric keys.

1. Select the required channel.

2. Press **Menu** and select **Dial radio call**.

Alternatively, the radio may be programmed so a local call can be dialed directly from the default display. In this case, the call can be dialed without selecting the menu option.

3. Dial the number using the alphanumeric keys.



The radio may be programmed so group tones can be dialed using the \* and # keys. Dial \* to fill one **X**. Dial # to fill the current **X** and all subsequent **X** characters in the current burst.

4. Press **Send** (if the Send option appears).



The call details appear on the display, the LED glows red, and  appears on the display.



When the called party receives the calls, the message **Ack received** may appear on the display.

## Making a DTMF Patch Call

DTMF patch dialing may be used to connect to a telephone network or signal another device by dialing the number manually, or using preset dialing sequences.

Users may either:

- use a programmed function key
- use the Main menu to dial the call
- make a local call (see [Making a Local Call](#))

## Using a function key



Depending on how DTMF patch calls are programmed, some or the following steps may not be necessary.

1. Select the required channel.
2. Press the function key programmed for DTMF patch call.



The radio may send tones to capture the line.

3. Press **Send**, or press the function key a second time, to send the preset number.



There may be telephone dialing and ringing tones.

4. Proceed with the call.
5. Press **End**, or give a long press on the function key, to end the call.



The radio may send tones to release the line.

## Using the Main menu



This feature is only available for radios with alphanumeric keys.



Depending on how DTMF patch calls are programmed, some or the following steps may not be necessary.

1. Select the required channel.
2. Press **Menu** and select **Dial patch call**.
3. Dial the required number using the alphanumeric keys.
4. Press **Send**.



The radio may send tones to capture the line.

5. Press **Send** to send the number dialed in step "Making a DTMF Patch Call" on the previous page.



There may be telephone dialing and ringing tones.

6. Proceed with the call.
7. Once the call has finished, press **End**.



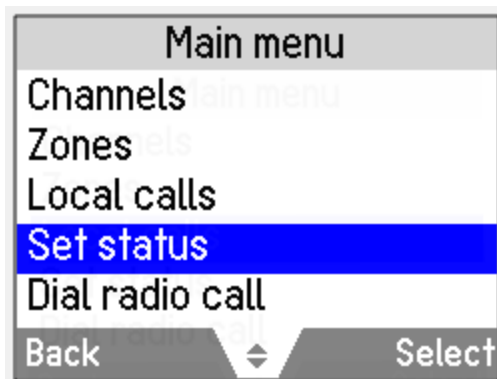
The radio may send tones to release the line.

## Setting your Status

The radio may be able to maintain a record of its current status. This status may be sent with outgoing calls programmed to contain status information. If the radio receiving the call has been programmed with the same status messages, it will decode and display its status. The status indicates the current activity or location, such as “en route” or “at lunch”.

### To change the current status:

1. Press **Menu** and select **Set status**.



2. In the **Set status** menu, scroll through the list of status messages until the desired message appears.
3. Press **Select**. The message **Status updated** appears on the display.

## Communicating Directly with Other Radios

You can bypass the radio repeater and communicate directly with another radio using the radio talkaround feature. This is useful when you are out of range of the repeater, or if the repeater is busy.

While repeater talkaround is active, all calls are made on your current channel's receive frequency.

### Turning repeater talkaround on and off

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

- Press the function key to turn repeater talkaround on.

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

Repeater talkaround remains on until the function key is pressed again.

## Checking That the Channel is Clear

Monitor allows you to override some or all of the radio's mutes, allowing you to hear if there is any traffic (including talk-group and individual calls) on a channel.

For analog channels, this is so that you can check that the channel is clear before you make a call.


### Turning monitor on and off

1. Press **Menu** and select **Radio settings > Functions > Monitor**.




Depending on how the radio is programmed, you may be able to press a function key to toggle monitor on and off.

2. Scroll to **On** (or **Off**) and press **Select**.

While monitor is active,  appears in the display.

## Using the Radio in Different Repeater Areas

The radio may have a group of channels programmed as a voting group. The channels in the voting group all carry the same traffic, but from different repeaters. As the radio moves in and out of different repeater coverage areas, the best communication channel is automatically selected for use.

This channel is known as the 'home' channel, and will be the channel used to make and receive calls. While voting is active, the scanning icon  appears on the display.

### Selecting a voting group

#### Using the channel selector

You can use the channel selector to select a preset voting group, if your radio is programmed in this way.

- Rotate the channel selector to the group you want.

#### Using a function key

To use a function key to select a voting group:

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

#### Using the Main menu

To select a voting group using the Main menu:



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

## Suspending a channel from a voting group

Users may be able to use the function key programmed for nuisance delete to temporarily delete one of the channels from the voting group.

When that voting group is next selected, or after the radio has been turned off and then on, the deleted channel is again part of the voting group.

Alternatively, the function key programmed for voting may be programmed so that a short key press turns on voting, and a long key press activates nuisance delete.

- Press and hold the function key programmed for voting to remove the current channel from the voting group.

If the operation has been successful, the message **Channel nuisance deleted** appears on the display.

## Hearing Faint and Noisy Signals



This feature is only applicable to analog channels.

Usually the radio's squelch mute (known as 'squelch') prevents the user from hearing faint or noisy calls on a channel. Without squelch, the radio's speaker would 'chatter' in low signal strength areas.

On occasions when you want to hear everything that is being said on a channel, even if it is hard to understand, you can use the squelch override feature to force the mute open.

### Turning squelch override on and off

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

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

# 6 Operating in P25 Trunking Mode

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This section explains how your radio operates on a P25 trunking system. This includes how to make group calls, individual calls and phone calls.



This feature is controlled by a software license (SFE) and may not be available with your radio.

The features described in this chapter are only available for radios configured for P25 trunking operation.

## This section covers:

[About P25 Trunking](#)

[Checking That the System is Available](#)

[Dynamic Regrouping](#)

[Emergency Calls](#)

[Failsoft Mode Operation](#)

[Making a Phone Call](#)

[Making an Individual Call](#)

[Making a Talkgroup Call](#)

[Receiving an Individual Call](#)

[Receiving a Talkgroup Call](#)

[Unconnected Calls](#)


## About P25 Trunking

The radio may be able to operate on a P25 trunking system as well as a conventional repeater-based system. On a conventional system, radio users compete for access to individual channels, and one channel can be overloaded with traffic while others are often unused.


The trunking system allows several channels to be automatically shared by a number of radio users. These traffic channels are pooled and allocated, as required, for the duration of a call. As calls are completed, the traffic channels are returned to the pool, to be used for other calls. This system means reduced waiting times to make calls.

## Checking That the System is Available

When you first switch to a talkgroup configured for P25 trunking, the radio attempts to access the network and register on a control channel.



If registration is successful, the trunking system available icon,  appears in the display.

### Registration is unsuccessful

If registration is not successful,  does not appear, and the display shows **No service**.

The radio may sound five beeps, followed by a repeating double beep. The double beep continues until registration is successful.

## Service is lost

If access to the trunking system is lost,  no longer appears, the bars in the RSSI icon disappear , and the display shows **No service**.

The radio sounds five beeps to indicate the loss of service, followed by a repeating double beep. The double beep continues until service is restored.

## Site trunking operation

During normal trunking operation, your radio may roam between a number of sites. This behavior is transparent to you, unless there is a problem with a system controller. When this happens, the radio enters 'site trunking' mode, and you will only be able to communicate with users within a single site.

While in site trunking mode, the display shows **Site Trunking**, and the radio sounds a repeating double beep. The double beep continues until normal service is restored.

When access to the zone controller is available again, the radio automatically returns to normal multi-site operation.

## P25 phase 1 features not supported in P25 phase 2

If the user tries to use a P25 phase 1 feature which is not yet supported in P25 phase 2, the radio may show a system error.

## P25 phase 2 fallback mode

If there is a fault on the phase 2 network, operation may fall back to phase 1 mode.

## Failsoft operation

Your radio may be programmed to enter 'failsoft' mode when service is lost due to failure of a trunking site controller. For information about failsoft mode, see [Failsoft Mode Operation](#).

# Making a Talkgroup Call

A talkgroup is a collection of radios on a trunking system. Trunked talkgroups are found in the Channels menu, along with conventional channels that may also be available for the currently selected zone.

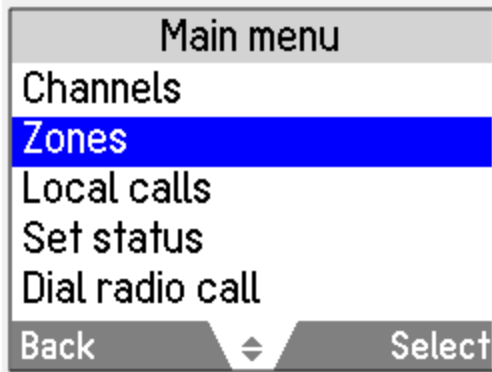
Depending on how the radio is programmed, you may be able to press a function key, use the Quick Access menu or use the channel selector to select a trunked talkgroup.

**Caution** In some situations, the call will not proceed. For an explanation of the radio behavior, see [Unconnected Calls](#).

## To make a talkgroup call on a trunking system:

1. Select the required zone:
  - Press **Menu** and select **Zones**.

- Scroll to the required zone, and press **Select**.



Depending on how the radio is programmed, you may be able to press a function key, use the Quick Access menu or use the 3-way selector to select a zone.

The radio can be configured to indicate the zone in which it is operating, either as a letter in the top right corner of the display, or as a zone name in the second line of the display, or neither.

2. Select the required talkgroup:

- Press **Menu** and select **Channels**.
- Scroll to the required talkgroup, and press **Select**.



Depending on how the radio is programmed, you may be able to press a function key, use the Quick Access menu or use the channel selector to select a talkgroup.



The radio now indicates the currently selected talkgroup.

3. To call this talkgroup, hold the radio so that the microphone is about one inch (2.5 cm) from your mouth.

4. Press and hold the PTT key to transmit.

5. When you hear three short beeps, speak clearly into the microphone and release the PTT key when you have finished talking.



While transmitting, the LED glows red and the transmit, , or low power transmit, , icon appears in the display.

## Receiving a Talkgroup Call

To hear calls from other members of a talkgroup, your radio must have that talkgroup selected, or the talkgroup must be part of an active scan group.

For information about selecting a talkgroup, see [Making a Talkgroup Call](#), and for information about talkgroup scanning, see [Activating Talkgroup Scanning](#).

When you receive a call from a talkgroup, the radio displays the name or the identity of the talkgroup, and that of the calling radio.

## Making an Individual Call

**Caution** In some situations, your call will not proceed. For an explanation of the radio behavior, see [Unconnected Calls](#).

### To make a call to one radio on a trunking system:

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



The person to whom you last made an individual call is highlighted, if that person is in the address book.

Depending on the radio model and how it is programmed, you may be able to dial the identity of the radio you want to call, press a function key or use your Quick Access menu to select an individual call.

2. Scroll to the person you want to call and press **Select** or press the PTT key.
3. The message **Calling...** briefly appears.
4. When the called party accepts the call, you will hear three short beeps.
5. Once the called party has finished talking, press and hold the PTT key to transmit, speak clearly into the microphone, and release the PTT key when you have finished talking.

## Receiving an Individual Call

When you receive a call from an individual radio, your radio displays the caller's name or identity.

The radio rings until the call is answered.

Press the PTT key to accept the call, or **Cancel** to reject the call.

## Emergency Calls

In an emergency, you can summon help by sending an emergency call. When an emergency call is initiated, the radio enters 'emergency mode'. For more information on emergency mode, see [Standard Emergency Mode](#).

### Making an emergency call

You can make an emergency call using the emergency function key (function key 1).

- Press the function or emergency key to activate emergency mode.

The message **Emergency mode** appears and the radio sounds three short beeps, rising in pitch.

## Receiving an emergency call

When you receive an emergency call, your radio displays the caller's name or identity and sounds a long beep.

## Making a Phone Call



This feature is only available for radios with alphanumeric keys.

You may be able to use your radio to connect to a telephone network and make a phone call.

**Caution** In some situations, your call will not proceed. For an explanation of the radio behavior, see [Unconnected Calls](#).

### To make a phone call on a trunking system:

1. Press **Menu** and select **Phone call**.

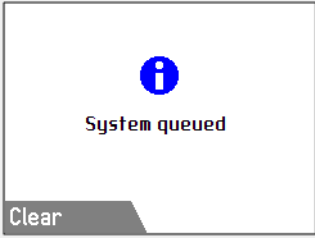

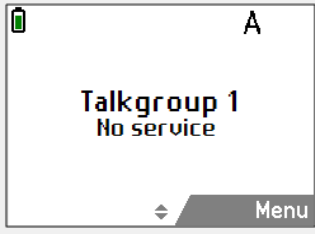





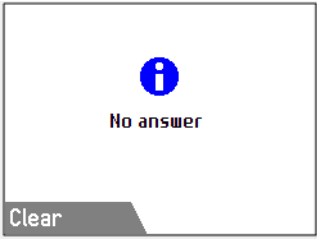
The phone call you last dialed appears in the display, unless that number was manually dialed.

2. Scroll to the number or person you want to call, or dial the required number using the alphanumeric keys.
3. Press **Select** or the PTT key.  
Call progress will be indicated by “ring” or “busy” tones as for a standard telephone call.
4. When the call is answered, proceed with your conversation.
5. At the completion of the call, or if the dialed number is busy or does not answer, press the **End** left selection key.

# Unconnected Calls

If a call is not connected, the way the radio behaves is explained in the following table.



Radio behavior	Explanation
	<p>The system is too busy to process your talkgroup or individual call.</p>
 <p>The radio sounds three short beeps.</p>	<p>The system is now available to process your talkgroup or individual call.</p>
 <p>The radio sounds five beeps, followed by a repeating double beep.</p>	<p>You have selected a talkgroup that does not currently exist on the system. The display shows that service is lost, and  no longer appears.</p> <p>See <a href="#">Service is lost</a>.</p>
 <p>The radio sounds two short beeps.</p>	<p>You have attempted to make an individual call to a radio that does not currently exist on the system.</p>

Radio behavior	Explanation
 <p>The radio sounds two short beeps.</p>	<p>You have attempted to made an individual call to a radio that has never existed on the system.</p>
 <p>The radio sounds two short beeps.</p>	<p>You have attempted to make an individual or phone call, but you are not authorized to do this.</p> <p>Your individual or phone call has been rejected or is unanswered.</p>

## Failsoft Mode Operation

If the radio is unable to access the trunking system, it may be programmed to enter failsoft mode. Failsoft mode operates in one of two ways: 'radio-based' failsoft and 'infrastructure' failsoft.

### Radio-based failsoft

When access to the trunking system is lost,  no longer appears, the bars in the RSSI icon, , disappear and the display shows **No service**.

After a short time, the radio switches to a programmed conventional communications channel.

The radio remains on that channel until you select a trunked talkgroup with access to the trunking system.

### Infrastructure failsoft

The radio receives a message from the trunking infrastructure to say that the trunking system is now operating in failsoft mode.

While in failsoft mode, the display shows **Failsoft**, and the radio sounds a repeating double beep. The double beep continues until normal service is restored.

You may still be able to communicate with your dispatcher and other talkgroup members, depending on the type of system failure that has occurred, and how your radio is programmed.

When the trunking system returns to normal operation, your radio is notified, and will attempt to register on the control channel it was previously using.



# Dynamic Regrouping

The dynamic regrouping feature allows the user to send a dynamic regrouping request to the dispatcher. The dispatcher can then reassign the user's radio to a special communications group.

**Caution** While are operating on this group, normal channel selection may be disabled.

## To send a dynamic regrouping request:

- Press **Menu** and select **Trunking > Dyn Regrouping**.

When **Select** is pressed, 'Sending dynamic regroup rqst' appears in the display.



If the request is successful, an acknowledgment message is displayed.

# 7 Scanning

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This section explains the different types of scanning that may be available on your radio, and also how to view and edit scan group members.

## This section covers:

[About Scanning](#)

[Activating Background Scanning](#)

[Activating In-Zone Scanning](#)

[Activating Standard Scanning](#)

[Activating Talkgroup Scanning](#)

[Editing a Scan Group](#)

[Making a Call While Scanning](#)


[Suspending a Channel From a Scan Group](#)


## About Scanning


The scan feature is used to monitor groups of channels or talkgroups for activity of interest. This means that you are able to operate across multiple channels or talkgroups at the same time. For example, you may need to monitor your own conventional dispatch channel as well as other local area channels, such as a local sheriff and highway patrol channel.

Members of a scan group may be conventional channels (P25 or analog), trunked talkgroups, and vote groups, depending of the type of scan group. When scanning is active, the radio searches through member channels for activity. If activity is found, the radio remains on that channel or talkgroup, so that you can hear the activity, and respond if necessary. Once the activity has finished, the radio begins searching again.

Some channels or talkgroups, known as 'priority' channels or talkgroups, are scanned more often than others in the scan group. Calls from priority channels or talkgroups take precedence over those from non-priority group members.

While the radio is scanning for activity, the animated  icon appears on the display.

When the radio stops on a channel or talkgroup where there is activity, the  icon flashes.

In a background or talkgroup scan group, a scanning icon with a tick (  ) indicates that the selected channel or talkgroup is a member of the scan group.

The four types of scanning that may be available are:

- standard scanning (P25 conventional and analog channels)
- background scanning (P25 conventional and analog channels, and may include some voting groups)
- in-zone scanning (P25 conventional and analog channels, and P25 trunked talkgroups)
- talkgroup scanning (P25 trunked talkgroups, and may include some P25 conventional and analog channels,).



For information about viewing and editing scan group membership, see [Editing a Scan Group](#).

# Activating Standard Scanning

A standard scan group scans conventional channels (P25 and analog) from across zones, and can also scan one or two voting groups. A standard scan group appears and behaves on the radio like a separate channel, and all standard scan groups are included in the channel list. Standard scanning is activated when a standard scan group is selected.

## To select a standard scan group:

1. Press **Menu** and select **Channels**.



Depending on how the radio is programmed, you may be able to press a function key or use the channel selector or Quick Access menu to select channels.

2. Scroll to the required group and press **Select**.

# Activating Background Scanning

A background scan group scans the group members, as well as the current channel selected on the radio. The group member channels can include conventional channels (P25 or analog) across zones, and can also include one or two voting groups.

Background scanning provides more flexibility than standard scanning, as the radio user can select a current channel to operate on, while still monitoring permanent group members for activity.

To turn background scanning on:

- Press **Menu** and select **Radio settings > Functions > Scanning**, or press the function key programmed for background scanning.



Background scanning remains on until you either press the function key again, or select a standard, in-zone or talkgroup scan group.

## Changing the background scan group assigned to the function key

1. Press **Menu** and select **Radio settings > Functions > Set scan key**.
2. Scroll through the list of background scan groups available and press **Select**. When you next turn on background scanning, this is the scan group that is activated.



This is also available for Talkgroup and In-zone scanning. See [Activating Talkgroup Scanning](#) and [Activating In-Zone Scanning](#).

## Activating In-Zone Scanning

An in-zone scan group scans the first 50 conventional channels (P25 or analog) or trunked talkgroups from the currently-selected zone. If zones are changed, the radio stops scanning the previous zone's channels and automatically starts scanning channels from the new zone.

In-zone scanning is useful when scanning conventional channels and trunked talkgroups from within the selected zone, and zones are used to separate different geographic regions or work roles. As you change to a new region or role, you can change to another zone and the radio will automatically start scanning channels or talkgroups in the new zone, with no further action required.

### To turn in-zone scanning on:

- Press **Menu** and select **Radio settings > Functions > Scanning**, or press the function key programmed for in-zone scanning.



In-zone scanning remains on until you either press the function key again, or select a standard, background or talkgroup scan group.

## Activating Talkgroup Scanning

Talkgroup scanning monitors calls from multiple trunked talkgroups, and up to five additional conventional channels (P25 or analog), from across zones. If conventional channels are included as group members, your radio will briefly leave the trunking control channel to scan these channels at regular intervals.



**If a talkgroup scan group contains P25 or analog conventional channels, scanning needs to exit trunk mode briefly to scan the conventional channels. This may result in delayed or even missed calls!**

Talkgroup scanning is useful if you need to operate across multiple trunked talkgroups. When talkgroup scanning is activated, the currently-selected talkgroup or channel is temporarily included in the scan group. If you change zones, the radio continues to monitor group members as well as the currently selected talkgroup or channel from the new zone.

### To turn talkgroup scanning on:

- Press **Menu** and select **Radio settings > Functions > Scanning**, or press the function key programmed for talkgroup scanning.



Talkgroup scanning remains on until you either press the function key again, or select a standard, background or in-zone scan group.

# Making a Call While Scanning

1. Press the PTT key to transmit.

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. the dispatcher
- your radio calls the channel where activity was last detected
- your radio calls the last free channel.

2. When the called party responds, proceed with your conversation.

# Suspending a Channel From a Scan Group

If a group member is busy for a long time and you do not want to hear the conversation, you may be able to use the function key programmed for nuisance delete to temporarily delete the group member. When the scan group is next selected, or after the radio has been turned off and then on, the deleted member is again part of the scan group.

## To temporarily remove a captured group member from the scan group:

- Press the function key programmed for nuisance delete.

If the channel has been removed successfully, the message **Channel nuisance deleted** appears in the display.



The function key programmed to activate scanning may be programmed so that a short key press activates scanning and a long key press activates nuisance delete.

# Editing a Scan Group

## Selecting a group to edit

1. Press **Menu** and select **Radio settings > Functions > Advanced > Edit groups**. The **Edit Groups** menu lists all scan groups programmed for your radio.



Depending on how your radio is programmed, you may be able to press a function key or use your Quick Access menu to select the Edit Groups menu.

2. Scroll to the group to be viewed or edited, press **Select**.
3. In the Edit Group menu, select from the following options:
  - **Group members**: shows the current members of a group, and may also show the designated transmit channel and priority channels.

- **Add or Delete channel:** adds or deletes member channels of a group.
- **Change tx:** changes the group's transmit channel.
- **Change P1 or P2:** changes the group's first or second priority channel.

## Icons and messages

The following icons may appear when viewing group membership details, adding or deleting channels from a group, or changing a group's transmit or priority channels.

Icon	Meaning
$T_X$	This channel is used to transmit on when there has been no recent activity. You cannot delete this channel (it will not appear under <b>Delete channel</b> ).
$P_1$	This channel is the group's first priority channel. You cannot delete this channel (it will not appear under <b>Delete channel</b> ).
$P_2$	This channel is the group's second priority channel. Deleting this channel is configurable.
+	There is more than one instance of this channel in the group (the channel will be scanned more often). If this channel is deleted, the radio will attempt to delete all instances of the channel.

## Viewing group membership

1. In the **Radio settings** menu, select **Edit groups** and select a scan group. Press **Select**.
2. In the **Edit Group** menu, select **Group members** and press **Select**.
3. Scroll through the list of group members. The names of the group members may be shortened.

## Adding a channel to a group

1. In the **Radio settings** menu, select **Edit groups** and select a scan group. Press **Select**.
2. In the **Edit Group** menu, select **Add channel** and press **Select**. A list of channels that are not group members appears.
3. Select the channel to be added and press **OK**.



For all types of scanning except standard scanning, if the radio is programmed to use the scroll keys to scroll through a list of channels and also has a function key programmed to Nuisance Delete, you can **permanently** add or delete a channel to the active group by scrolling to the channel and pressing the **Nuisance Delete** function key.

## Deleting a channel from a group

The priority 1 channel cannot be deleted using the Delete Channel menu.

1. In the **Radio settings** menu, select **Edit groups** and select a scan group. Press **Select**.
2. In the **Edit Group** menu, select **Delete channel** and press **Select**. A list of group members that are able to be deleted appears.
3. Select the channel you want to delete and press **OK**.



For all types of scanning except standard scanning, if the radio is programmed to use the scroll keys to scroll through a list of channels and also has a function key programmed to Nuisance Delete, you can **permanently** add or delete a channel to the active group by scrolling to the channel and pressing the Nuisance Delete function key.

## Changing a group's transmit channel



The group's transmit channel can only be changed if it has been pre-programmed.

1. In the **Radio settings** menu, select **Edit groups** and select a scan group. Press **Select**.
2. In the **Edit Group** menu, select **Change tx** and press **Select**.

The current transmit channel is highlighted at the top of the list.

3. Select the new transmit channel and press **OK**.



The transmit channel remains changed even after the radio is turned off.

## Changing a group's first or second priority channel

1. In the **Radio settings** menu, select **Edit groups** and select a scan group. Press **Select**.
2. In the **Edit Group** menu, select **Change P1** or **Change P2** and press **Select**.

The current priority channels are highlighted at the top of the list.

3. Select the new priority 1 or priority 2 channel and press **OK**.

## 8 P25 Services

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This section describes the P25 services that may be available on your radio.



This feature is controlled by a software license (SFE) and may not be available with your radio.

### This section covers:

[Call Alert](#)

[Messages](#)

[Radio Check](#)

[Radio Inhibit and Uninhibit](#)

[Radio Unit Monitor](#)

[Status Request](#)

[Status Update](#)

## Call Alert

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, they can call you back when it is convenient.

If you are on a P25 trunk channel, you can send a call alert to any other radio on a trunk channel on the same network. If you are on a P25 conventional channel, you can send a call alert to any other radio on the same conventional channel.

### To send a call alert page:

1. Press **Menu** and select **Services > Call alert**.
2. Select the radio you want to page.
3. Press **Send to**.



A message appears in the display.

The LED glows red and a message may be displayed to advise you whether the call alert has been sent successfully or not.

If an acknowledgement is not received from the recipient's radio, you will have the option of either canceling or resending the request.

### Answering a call alert page

If you receive a call alert page from another radio user, the message **Page rx'd from...** briefly appears in the display.



Select **Call** to return the page or **No** to delete it. If you miss the call alert page, the identity of the caller may be saved in your recent calls list.

## Messages

You may be able to send short messages to another radio user. These messages are defined at programming time.

If you are on a P25 trunk channel, you can send a message to any other radio on a trunk channel on the same network.

If you are on a P25 conventional channel, you can send a message to any other radio on the same conventional channel.

The radio to whom you are sending the message must have the same message programmed in order to read and display your message.

### Sending a message

You may be able to send your message to a predetermined person or to the dispatcher administering the current talkgroup, or to a person of your choice.

#### Sending a message to a predetermined person or talkgroup administrator

1. Press **Menu** and select **Services > Messages**.
2. Select the required message from the list.
3. Press **Select**.



A message showing the destination appears in the display.

The LED glows red and a message may be displayed to advise you whether the message has been sent successfully or not.

If an acknowledgment is not received from the recipient's radio, you will have the option of either canceling or resending the request.

#### Sending a message to a person of your choice

1. Press **Menu** and select **Services > Messages**.
2. Select the required message from the message list.
3. Press **Select**.
4. Select the message recipient from the list and press **Send to**.



A message showing the destination briefly appears in the display.

The LED glows red and a message may be displayed to advise you whether the message has been sent successfully or not.

If an acknowledgement is not received from the recipient's radio, you will have the option of either canceling or resending the request.

## Radio Check

**Notice** This feature is only available on P25 conventional channels.

If you want to find out whether a particular radio is available on the system, you can use the radio check feature. This sends a radio check message to the radio unit you have specified.

1. Press **Menu** and select **Services > Radio check**.
2. Scroll to the radio you want to check.
3. Press **Send to**.



The LED glows red and a message showing the destination appears in the display.

If the radio is available on the system, an acknowledgement message is displayed.

If an acknowledgement is not received from the recipient's radio, you will have the option of either canceling or resending the request.

## Radio Inhibit and Uninhibit



**When a radio is immobilized ('inhibited'), the encryption keys may be automatically deleted from the radio.**

This feature is only available for digital channels operating in conventional mode, and for radios configured for dispatcher operation.

If you want to make another radio on the system inoperable, you can use the radio inhibit feature. This feature is also known as 'stun'.

To the user of the inhibited radio, it appears as though the radio has turned off. The radio remains inoperable even if it is turned off and then on again.

The radio cannot return to operation until it receives an uninhibit request. This is also known as 'revive'.

### To send a radio inhibit request:

1. Press **Menu** and select **Services > Radio inhibit**.
2. Scroll to the desired radio to make it inoperable.
3. Press **Send to**.



The LED glows red and a message appears in the display.

If the radio has been successfully immobilized, an acknowledgment message is displayed.

### To send a radio uninhibit request:

1. Press **Menu** and select **Services > Radio uninhibit**.
2. Scroll to the radio to be made operable.
3. Press **Send to**.



The LED glows red and a message appears in the display.

If the radio has been successfully returned to operation, the uninhibited radio will briefly display **Radio revived**.

If an acknowledgment is not received from the recipient's radio, users will have the option of either canceling or resending the request.

## Radio Unit Monitor



This feature is controlled by a software license (SFE) and may not be available with your radio. This software license is only required for the radio that sends the radio unit monitor request. The receiving radio does not need the software license.

This feature is only available for digital channels operating in conventional mode, and for radios configured for dispatcher operation.

The radio unit monitor feature can be used when you are concerned about the safety of a radio user on your system. When you send a radio-unit monitor request to a radio, it calls you back without giving any indication that it is making a call. You can hear any activity near the radio for up to 20 seconds.



If Active Noise Cancellation is turned on, you may not be able to hear any background noise.

### Sending a radio unit monitor request

1. Press **Menu** and select **Services > Radio monitor**.
2. Scroll to the radio you want to monitor.
3. Press **Send to**.



The LED glows red and a message appears in the display.

If the other radio has received your request, it will now call you, so that you can monitor activity near the radio.

If an acknowledgement is not received from the recipient's radio, you will have the option of either canceling or resending the request.

## Status Request

**Notice** This feature is only available on P25 conventional channels.

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

### To send a status request:

1. Press **Menu** and select **Services > Status request**.
2. Select the status request recipient from the list.
3. Press **Send to**.



A message showing the destination appears in the display.

The LED glows red briefly. If the request was successful, a message showing the status appears in the display.

If an acknowledgement is not received from the recipient's radio, you will have the option of either canceling or resending the request.

## Status Update

You can inform another radio user of your current status by sending them a status update, for example, 'At scene'. You may be able to send the status update to a predetermined person or talkgroup, or to a person of your choice.

If you are on a P25 trunk channel, you can send your status to any other radio on a trunk channel on the same network.

If you are on a P25 conventional channel, you can send your status to any other radio on the same conventional channel.

When you send a status message, you are also *setting* your status, which the dispatcher may be able to check by 'interrogating' your radio. You can change your status at any time by selecting another status message and sending it. See [Status Request](#).

### To send a status update:

1. Press **Menu** and select **Services > Status update**.
2. Select the required status message from the list.
3. Press **Send to** or **Select**.



A message showing the destination appears in the display.

The LED glows red and a message may be displayed to advise you whether the status update has been sent successfully or not.

If an acknowledgment is not received from the recipient's radio, you will have the option of either canceling or resending the request.



To set a status without sending it to anyone, see [Setting your Status](#)

# 9 Location Services

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This section explains how to use the location services that may be available on the radio.



This feature is controlled by a software license (SFE) and may not be available with the radio.

## This section covers:

[About Location Information](#)

[About Location Statuses](#)

[Viewing Location Information](#)

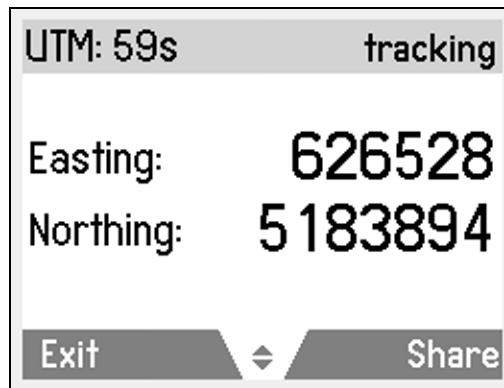
## About Location Information

The radio can display location information such as latitude and longitude, true course, speed, and coordinated universal time. The radio can also display universal transverse mercator (UTM) information such as the UTM zone, and northing and easting coordinates.

The radio may also be set up to send and log location information.

## About Location Statuses

In the **Own location** screen, location status information appears on the display:



- **Trk**: the receiver is displaying up-to-date satellite information.
- **stored**: the receiver is having trouble connecting to satellites and the radio is displaying stored information that may not be current.
- **no cnx**: the radio has lost serial communications with the receiver.

# Viewing Location Information

1. Press **Menu** and select **Location Svs > Own location**.

Location information is now shown in the display, if it is available and has been configured as visible. The images below show a selection of available options.



The radio may be programmed to show any of these displays.



Immediately after the radio is turned on, location reporting is set to all zeros, until the first satellite fix is achieved.

2. Use the scroll keys to scroll through the **Own location** displays.

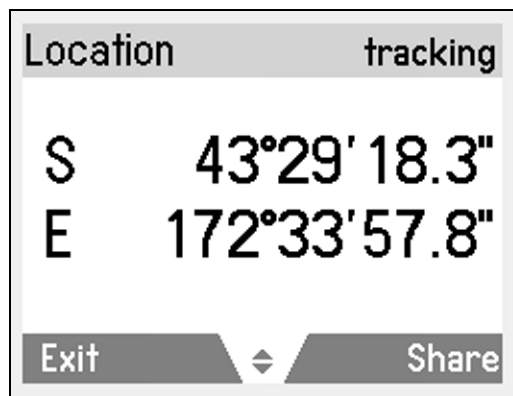


Figure 9.1 Latitude and longitude in degrees, minutes and decimal seconds



Latitude and longitude can be displayed in various formats depending on configuration.

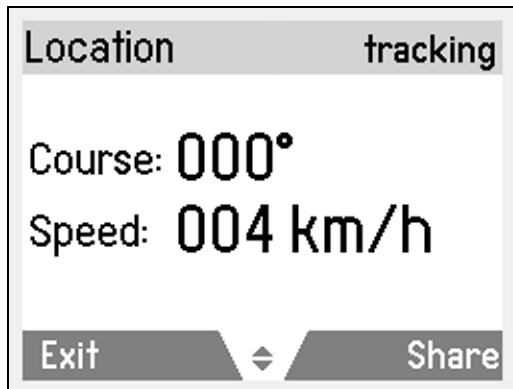


Figure 9.2 The radio's current course and speed

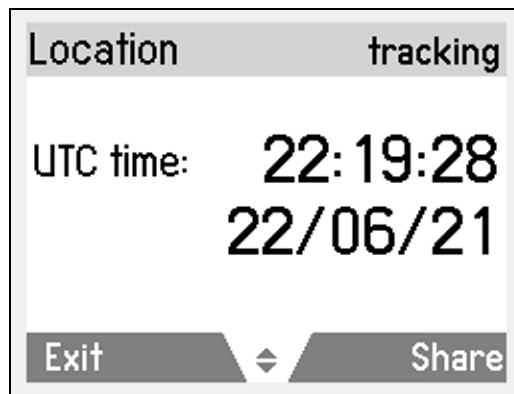


Figure 9.3 UTC: Coordinated Universal Time, 24-hour clock

3. Press **Exit** to exit the location display.



In certain situations, the radio may automatically exit the location display.



# 10 Emergency Operation

---

This section describes how to make different types of emergency calls.

## This section covers:

[About Emergency Calls](#)

[About Manual Emergency Operation](#)

[Accessing Emergency Location Information](#)

[Making a Priority Call](#)

[Standard Emergency Mode](#)

## About Emergency Calls



**When emergency mode is activated, encryption keys may be automatically deleted from the radio.**

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

Call type	Explanation
Priority call	(Digital channels only.) An emergency alert is automatically sent to the current talk-group. Calls made when the priority call feature is turned on are flagged as 'emergency' calls. For further information see <a href="#">Making a Priority Call</a> .
Standard emergency call	When an emergency call is initiated, the radio enters 'emergency mode'. For further information see <a href="#">Standard Emergency Mode</a> "About Emergency Calls" above.
Manual emergency call	(Digital channels only.) Emergency is activated and your radio sends an alert to your dispatcher and other members of your group, along with your radio digital alias and location. For further information see <a href="#">About Manual Emergency Operation</a> "About Emergency Calls" above.

## Making a Priority Call

**Notice** 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.

## To turn the priority call feature on and off:

1. Press **Menu** and select **Priority call**.
2. Scroll to **On** (or **Off**) and press **Select**.

## Standard 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.



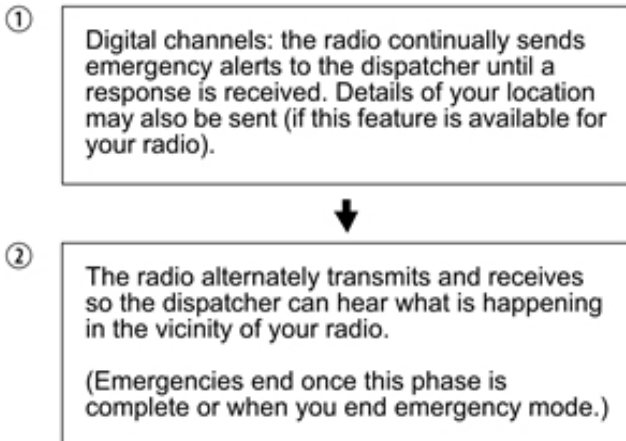
**The way the radio behaves in emergency mode depends on how it is programmed.**

## What happens during an emergency call?

The *exact* way your radio behaves when it enters emergency mode depends on how it is programmed.

The main phases for emergency modes are summarized below. The length of each phase is determined when the radio is programmed.

When the emergency key is pressed:



## Activating emergency mode

You can activate emergency mode using the emergency function key.

1. Long press the function or emergency key to activate emergency mode.



**How emergency mode is activated depends on how it has been configured. Confirm this step with your administrator.**



'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 [Standard Emergency Mode](#).

2. To end emergency mode and return the radio to normal operation, either:

- Turn the radio off and on again to end emergency mode,
- Push the function or emergency key again, or
- If configured, press the PTT button.

## About Manual Emergency Operation

**Notice** This feature is available for digital channels only.

When you press the emergency key, your radio sends an alert to your dispatcher and other members of your group, along with your radio digital alias and location.

While the emergency call is active, the emergency information is sent out periodically, until either you or another member of your group end the emergency call.

You are still able to make and receive voice calls while emergency information is being sent, but your radio does not display caller details.

### Making a manual emergency call



**You will not be able to make a voice call on the channel until the 3-second emergency alarm has finished.**

1. Press and hold the emergency key for longer than three seconds.



**How emergency mode is activated depends on how it has been configured. Confirm this step with your administrator.**

The radio gives three short beeps, rising in pitch.

**Emergency** appears in the display, and remains until the manual emergency call is canceled.

If you receive an acknowledgment from another radio in your group, the manual emergency call is canceled, and the message **Emergency Acked** briefly appears in the display.



This feature is controlled by a software license (SFE) and may not be available with your radio.

## Canceling a manual emergency call

If the emergency situation has been resolved, the manual emergency call can be canceled either by you or another member of your group.

- Press and hold the emergency key until the message **Emergency canceled** appears in the display.

Your radio now returns to the channel that it was operating on prior to the emergency call.

## Canceling a manual emergency call you have received

When you have received a duress emergency call, the Emergency menu always moves to the top of the menu list. In the Emergency Menu, you can manually acknowledge the duress emergency call. This acknowledgment cancels the call.

1. Press **Menu** and select **Emergency > Acknowledge**.



The name of the radio that initiated the emergency call appears in the display.

2. Press **Send** to cancel the manual emergency call from that number.



The message **Emergency ack. sent** briefly appears in the display.

## Accessing Emergency Location Information

If **Location** appears in the display, above the left selection key, you can display the current location of the radio that has sent a manual emergency call. The last location of the radio will still be available even if the radio is turned off and then on again.

To access the location information, either press **Location** or use the **Last Stored** menu.

### Using the Location menu

1. Press **Location** to display the current location of the radio.
2. Use the scroll keys to view more location information.
3. Press **Exit** to return to the previous display.

## Using the Last stored menu

1. Press **Menu** and select **Emergency > Last stored** to display the current location of the radio.
2. Use the scroll keys to view more location information.
3. Press **Exit** to return to the previous display.

# 11 Loneworker Monitoring

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Loneworker monitoring is a safety feature for people who work alone. Loneworker monitoring may be programmed to be on or off at all times, or can be switched on and off by the user using a programmed function key or the menu.

A loneworker alarm is activated if for a predetermined period of time:

- the radio has been tilted by more than the configured number of degrees (man down)
- the radio has not moved
- there has been no user activity



The radio may be programmed to respond to a combination of these events.

When the predetermined time has expired, an audible warning is given and the user will have a predetermined time to respond to the loneworker situation.

If the user is unable to respond, the radio either enters emergency mode or (in digital mode) sends a status update to a predetermined person or talkgroup.

## This section covers:

[Activating Loneworker Monitoring](#)

[Responding to a Loneworker Alarm](#)

## Activating Loneworker Monitoring

1. Press **Menu** and select **Radio Settings > Extra features > Loneworker**.
2. In the **Loneworker** menu, choose **On**.

A vertical scroll bar on the right-hand side of the display indicates the remaining activity timeout. To reset the count-down bar, press any key.

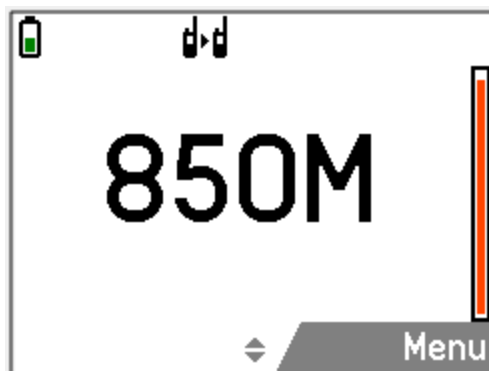
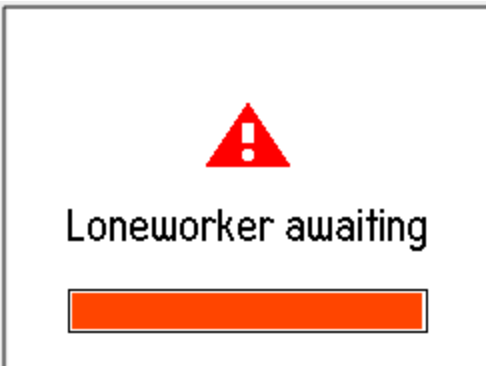


Figure 11.1 Radio display when loneworker is activated

## Responding to a Loneworker Alarm

If the radio beeps to indicate that the radio is expecting a response from the user to acknowledge they are safe, the message **Loneworker awaiting** and a horizontal scroll bar appear indicating the remaining time until an emergency action is triggered.



- Press any key,
- Move the radio,
- If using the man down feature, restore the radio to an upright position.

Otherwise the radio will activate emergency mode or (in digital mode) send a status update.

# 12 Encryption

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This section describes how to use encryption to make users' communications completely private.



This feature is controlled by a software license (SFE) and may not be available with the radio.

## This section covers:

[About Encryption](#)

[Changing the Radio's Encryption Key](#)

[Encrypting Calls](#)

[Making an Encrypted Call](#)

[Receiving an Encrypted Call](#)

[Removing Encryption Keys from the Radio](#)

[Updating Encryption Keys Over-The-Air](#)

## About Encryption

The encryption feature is available for digital and dual-mode networks only.

To make communications with other users on a users' system completely private, the users' radio may be able to encrypt outgoing calls, using a confidential encryption key. The radio receiving a users' call must have the same encryption key installed before it can hear an encrypted call.


### About the proper key detect feature

The radio may be programmed with 'proper key detect'. This means that you can only hear an encrypted call if the key used to encrypt the incoming call matches the key used to encrypt your outgoing calls on that channel.

Note that encryption does not need to be turned 'on' for the radio to unmute.

For example, you are encrypting your outgoing calls using encryption **key 7**. Although **key 1** and **key 2** are also stored in your radio, your radio has been programmed so that it will only unmute for incoming calls encrypted using **key 7**.

## Encrypting Calls

The radio may be able to turn encryption on and off. While encryption is on, outgoing calls are encrypted on networks programmed for encryption, and the encryption icon  remains in the display.

This setting only affects outgoing calls. Incoming calls will still be decoded by the radio so long as the key required to decode the call is stored in the radio.



## To turn encryption on or off:

1. Press **Menu** and select **Security > Encryption**. (Depending on how the radio is programmed, users may be able to press a function key to turn encryption on and off.)
2. Scroll to **On** (or **Off**) and press **Select**.

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

## Using the 3-way selector


1. Rotate the 3-way selector to either position A or B to turn encryption on.

The message **Encryption activated** briefly appears in the display.


2. Rotate the 3-way selector to position C to turn encryption off.

The message **Encryption deactivated** briefly appears in the display.

## Making an Encrypted Call

1. Select the desired channel or group.
2. Check that encryption is on (encryption key  is showing in the display).
3. Press and hold the PTT key to transmit.

The name of the encryption key that the radio is using for the transmission may briefly appear in the display.

While transmitting, the LED glows red and  appears in the display.

## Receiving an Encrypted Call

When receiving encrypted call, the radio unmutes and clear speech can be heard, so long as the key required to decode the call is stored in the radio.

The name of the encryption key used to encrypt the incoming call may briefly appear in the display, below the name of the caller.

If the key required to decode the call is not stored in the radio, then the radio remains muted.

The radio may also remain muted if the currently selected channel has 'proper key detect' programmed.

## Changing the Radio's Encryption Key

The **Change All** menu can be used to change the encryption key that encrypts outgoing calls. The **Preset Keys** menu can then be used to change the encryption keys back to the default encryption key for each channel.



Once the encryption key is changed, it may also automatically update the encryption keys used to encrypt calls on other channels.

## Changing the transmit encryption key

1. Press **Menu** and select **Security > Change all**.
2. Scroll to the required key and press **Select**. The message **Global key selected** briefly appears in the display.

## Changing the transmit encryption key back to the default setting

1. Press **Menu** and select **Security > Preset keys**. The message **Select preset keys?** appears in the display.
2. Press **OK** and the message **Preset keys selected** briefly appears in the display.

## Changing the encryption keyset

It may be possible to change the encryption data associated with the encryption keys loaded in the radio.

1. Select **Menu > Security > Security > Change keyset**.
2. Scroll to **01** or **02** and press **Select**. The message **Keyset selected** briefly appears in the display.

## Removing Encryption Keys from the Radio

It may be possible for users to delete encryption keys from their radio.



When emergency mode is activated, or when the radio is immobilized ('inhibited'), encryption keys may be automatically deleted from the radio.



If the encryption keys are deleted, the message **Key fail** appears and a warning tone will periodically sound. The message **Cannot transmit** will be displayed if the user tries to transmit.

## Deleting an encryption key

1. Press **Menu** and select **Security > Advanced > Zeroize key**.
2. Scroll to the desired key and press **Select**. The message **Single key zeroized** briefly appears in the display.

## Deleting all encryption keys

1. Press **Menu** and select **Security > Advanced > Zeroize all**. The message **Zeroize all keys?** appears in the display.
2. Press **OK** and the message **All keys zeroized** briefly appears in the display.

## Updating Encryption Keys Over-The-Air

Encryption keys may be updating using over-the-air-rekeying (OTAR).



This feature is controlled by a software license (SFE) and may not be available with your radio.

This feature is only available for digital channels.

- Press **Menu** and select **Security > OTAR > Rekey request**.

The message **Rekey request ack** appears in the display. If there is no response to the rekey request, the message **Rekey request timeout** appears.

# 13 Customizing Radio Settings

---

This section describes ways of customizing the radio.



These features are common to radios operating in either trunked or conventional mode.

## This section covers:

[Adjusting the Display Contrast](#)

[Changing the Color Mode](#)

[Changing the Volume of all Audible Indicators](#)

[Changing the Volume of Keypress Tones](#)

[Changing to Quiet Operation](#)

[Changing to Silent Operation](#)

[Extending Battery Life on Shift](#)

[Rotating the Display](#)

[Turning On Active Noise Cancellation](#)

[Turning on Backlighting](#)


## Extending Battery Life on Shift

The radio's power consumption can be reduced (thereby extending the life of the battery during a shift) in the following ways:

- Transmit at low power (if the radio is not already configured to do this).
- Ensure that backlighting automatically turns off when no radio activity is detected (see [Turning on Backlighting](#)).

## Turning low power transmit on or off

If the radio is being used in conditions where signal strength is high, the battery's shift life can be extended by transmitting at low power.

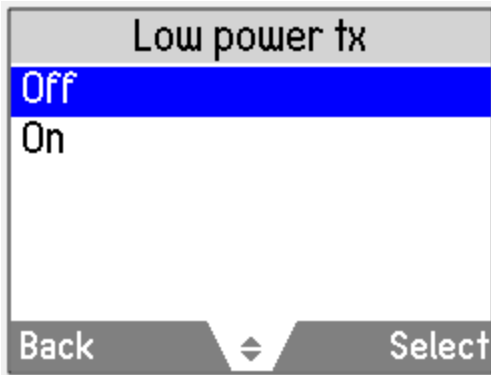
When low power transmit is turned on,  appears in the display and calls are made at low power rather than at the programmed power setting.

## Using the Main Menu

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



The current setting is highlighted.



The message **Low power tx activated** (or **deactivated**) appears on the display.

## Using a function key

1. Press the function key programmed for low-power transmit to transmit at low power on your current channel and any channels subsequently used.

The message **Low power tx activated** appears briefly, and the low-power transmit icon appears on the display.

2. Press the low-power transmit function key again to turn low-power transmit off, and the message **Low power tx deactivated** appears on the display.

## Changing the Color Mode

The display colors can be changed to suit the environment. For example, Red/Black is suited for night display while Color - Dark is ideal for bright environments. The default setting is Color - Light.

### To change the color mode:

1. Press **Menu** and select **Radio settings > Display settings > Color mode**.

2. Scroll to the desired mode and press **Select**.

The color modes are:

Mode	Description
Color - Dark	Dark background, light text.
Color - Light	Default setting. Light background, dark text. Best suited for day time display.

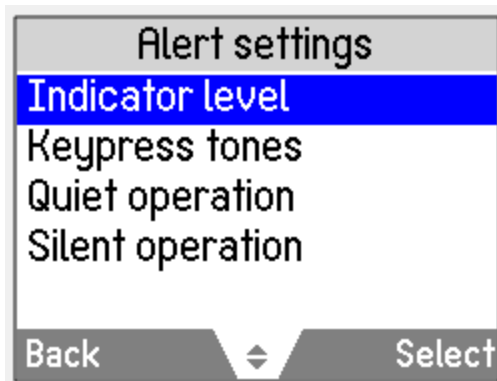
Mode	Description
Black/White	White background, black text.
White/Black	Black background, white text.
Red/Black	Black background, red text. Best suited for night display.

## Changing the Volume of all Audible Indicators

Users can set the volume of all the audible indicators to either high or low. Audible tones include incoming call tones, warning tones and confirmation tones.

### To change the volume of the radio's audible tones:

1. Press **Menu** and select **Radio settings > Alert settings > Indicator level**.



Depending on how the radio is programmed, users may be able to press a function key to change the level of indicators.

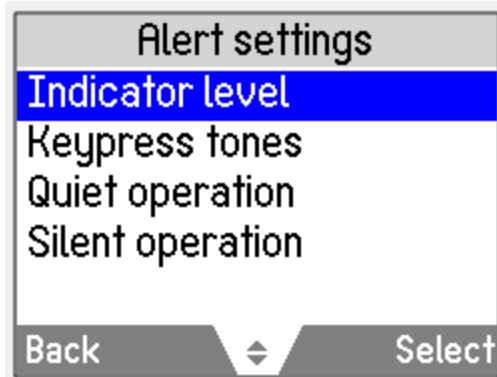
2. Scroll to **High** (or **Low**) and press **Select**.

## Changing the Volume of Keypress Tones

Whenever you press the radio keys, the keypress tones give you an audible indication as to whether or not your action is allowed. A short, medium-pitched beep indicates that an action is allowed. A long, low-pitched beep indicates that the action is not allowed.

### To change the volume of your radio's keypress tones:

1. Press **Menu** and select **Radio settings > Alert settings > Keypress tones**.



2. Scroll to either **Off**, **Low** or **High** and press **Select**.



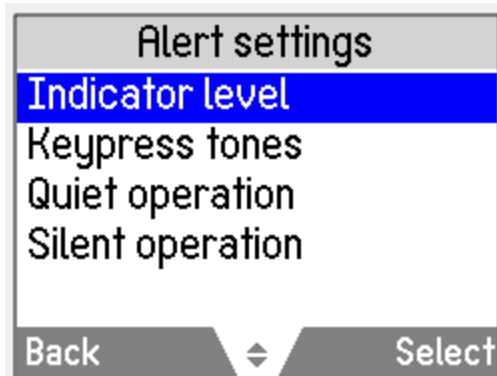
Depending on how your radio is programmed, you may be able to press a function key to toggle keypress tones on and off, and to change between high and low volume.

## Changing to Quiet Operation

When quiet operation is on, keypress tones and confirmation tones are turned off. Incoming call tones, signaling tones and warning tones all remain audible.

### To turn quiet operation on or off:

1. Press **Menu** and select **Radio settings** > **Alert settings** > **Quiet operation**.



Depending on how your radio is programmed, you may be able to press a function key to toggle quiet operation on and off.

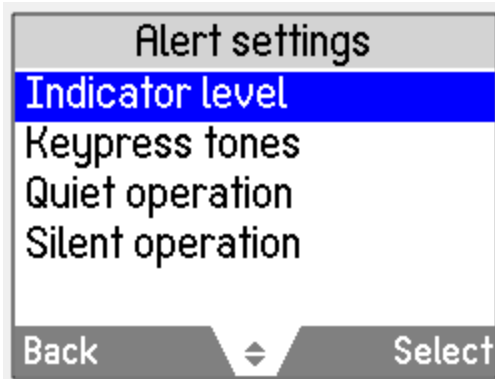
2. Scroll to **On** (or **Off**) and press **Select**.

## Changing to Silent Operation

When silent operation is on, all the radio's audible tones are turned off, and only channel traffic can be heard.

### To turn silent operation on or off:

1. Press **Menu** and select **Radio settings** > **Alert settings** > **Silent operation**.



2. In the **Silent operation** menu, scroll to either **On** or **Off** and press **Select**.



Depending on how your radio is programmed, you may be able to press a function key to toggle silent operation on and off.

While silent operation is on, the  icon appears in the display.

## Turning On Active Noise Cancellation

Active noise cancellation uses a secondary microphone on the back of the radio to actively filter noise in loud environments, making it easier for recipients to discern the speech of the talking party who is in a noisy environment.

Active noise cancellation can be left on regardless of environment. However, when safety features such as Loneworker Monitoring, Emergency Operation or Radio Unit Monitor are activated, the listener may lose awareness of the noisy environment. Tait recommends users implement supplementary procedures to account for this.

The complementary feature of microphone sensitivity allows the internal and external microphones to be configured to suit the type of environment the user is in, further improving audio quality. When active noise cancellation is enabled, sensitivity should be decreased. In a quiet environment, increasing the sensitivity is suggested.



Speaking to the side (nearest the noise canceling microphone) could result in both ambient noise and voice being canceled. To use the radio correctly, and achieve the best results, Tait recommends holding the radio 2 - 5 cm (1 - 2 inches) from the mouth and speaking directly into the front of the radio speaker/microphone.



## To turn active noise cancellation on or off:

1. Press **Menu** and select **Radio settings > Functions > Noise cancellation**.



Depending on how your radio is programmed, you may be able to press a function key to toggle active noise cancellation on and off.

2. Scroll to either **On** or **Off** and press **Select**.



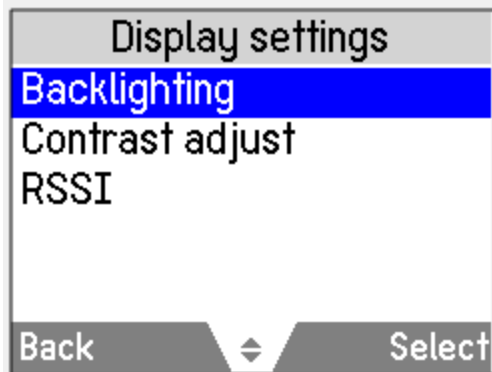
Covering the microphone on the back of the radio may reduce the effectiveness of the function.

## Turning on Backlighting

If configured, whenever a key is pressed or a call is received, the keypad and display will light up automatically. Backlighting only remains on for a few seconds, unless there is further radio activity. When backlighting is turned on, it remains on until the setting is changed to **Off**, regardless of radio activity.

## To turn backlighting on or off:

1. Press **Menu** and select **Radio settings > Display settings > Backlighting**.



Depending on how your radio is programmed, you may be able to press a function key to toggle backlighting on and off, or between 'with activity' and 'on'.

2. Scroll to either **On** or **Off** and press **Select**.

## Turning backlighting on momentarily

You may be able to use a programmed function key to turn backlighting on momentarily, as long as backlighting has been configured to 'with activity'.

- Press the assigned function key to turn backlighting on. Backlighting remains on for a few seconds, and then turns off.

Alternatively, the function key may be programmed so that:

- a short key press turns backlighting on momentarily, and
- a long key press turns backlighting on, and it remains on until there is a further long key press.

## Rotating the Display

When the display is rotated, everything appears upside down.

### To rotate the display:

1. Press **Menu** and select **Radio settings > Display settings > Rotate display**.
2. Scroll to **On** (or **Off**) and press **Select**.



Depending on how your radio is programmed, you may be able to press a function key to toggle rotate display on and off.

# 14 Charging and Caring for Batteries

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

## **This section covers:**

[About the Chargers](#)

[6-Way Charger Safety Information](#)

[Before Using the Charger](#)

[Charging Temperatures](#)

[Leaving the Battery on Charge](#)

[Receiving Calls while Charging](#)

[Low Battery Warning](#)

[Inserting the Radio into the Vehicle Charger](#)

[Charging a Battery](#)

[LED Behavior](#)

[Removing the Battery from the Charger](#)

[Maintaining Battery Life and Performance](#)


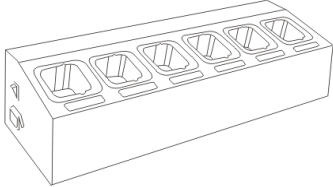
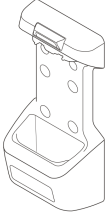
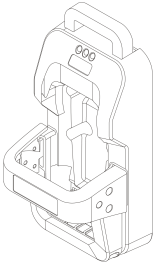
[Storing Batteries](#)

[Disposing of Batteries](#)

## **About the Chargers**

Unless otherwise indicated, the charging advice and instructions in this document apply to all chargers.

The following chargers are available for Tait radios and batteries:

Part Number Range	Designation	
T03-00012-xxxx	Desktop charger for non-IS/Ni batteries	
T03-00013-xxxx	6-way charger for non-IS/Ni batteries	
T03-00014-AAAA	Battery-only vehicle charger for non-IS/Ni batteries	
T03-00014-Bxxx	Vehicle charger for non-IS/Ni batteries	

## 6-Way Charger Safety Information



**This device must be connected to an earthed mains socket-outlet.**

**Norsk (no):** Apparatet må tilkoples jordet stikkontakt.

**Suomi (fi):** Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistotrasiaan.

**Svenska (sv):** Apparaten skall anslutas till jordat uttag.

## Before Using the Charger

Check the battery label and charger label to see if the charger is compatible with the battery. See also [About the Chargers](#) "About the Chargers" on page 91



**Handle the battery safely. Failure to observe the following handling recommendations could result in personal injury and/or equipment damage.**

- Before using a Li-ion battery, read the Li-ion Battery Safety Information (MPD-00002-xx) included with your battery, and follow the instructions it provides. Incorrect use of a Li-ion battery can cause explosion or fire.
- Do not short-circuit the battery contacts to the radio, neither intentionally nor accidentally, e.g. by placing the battery with conductive materials such as keys or jewelry inside a pocket or container. Short-circuiting the battery contacts can heat up the conductive material.
- Do not obstruct the vent hole(s) on the battery. If the vent on the battery is obstructed the battery may explode, causing personal injury and/or equipment damage. If the vent on the radio is obstructed, audio quality and/or key function may deteriorate and radio seals may be damaged.

**Notice** Turn the radio off before removing the battery, and turn it on again after attaching the battery. This ensures that the radio powers down and up correctly. Failing to follow this procedure may require the radio to be turned off then on again to operate correctly.

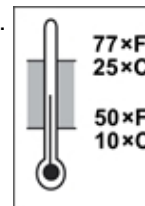
## Charging Temperatures

**Notice** Do not expose a battery to very high or very low temperatures for extended periods of time. Doing so will shorten the usable life ('service life') of the battery.

To achieve the best results when charging the battery:

- Before beginning to charge the battery, ensure that the battery temperature is close to the room temperature in which the battery is to be charged.
- If possible, charge the battery in temperatures between 50°F and 77°F (between 10°C and 25°C). This temperature range is the optimal charging range.

Charging only starts when the battery is between 32°F to 104°F (0°C to 40°C).



When the battery temperature is outside the normal charging range, the orange LED on the charger is lit. Charging will start or resume once the temperature is within normal limits, and no action is required.

## Leaving the Battery on Charge

A battery/radio can be left in the charger once charging is complete. Leaving a battery in the charger will not over-charge or damage it.

A battery/radio can be removed from the charger at any time without harming the battery, the radio, or the charger. When the battery/radio is returned to the charger, charging is automatically resumed.

### Vehicle chargers only

It is safe to switch off the ignition while there is still a battery in the charger. But if the vehicle will not be used again for some time, check whether charging will continue while the ignition is off, and consider what effect this might have on the vehicle battery.

To check, place the battery in the charger and switch off the vehicle ignition:

- If no charger LED stays lit, the charger will resume charging only when the ignition is switched on again. Minimal charger standby power will be drawn from the vehicle battery until then.
- If a charger LED stays lit, the charger will continue to charge the radio battery even while the ignition is off, and will continue to draw power from the vehicle battery. Once the battery is charged, the charger draws minimal current and has little effect on a healthy vehicle battery.

## Receiving Calls while Charging



Does not apply to battery-only vehicle chargers

**Notice** For best charging performance, switch off the radio before placing it in the charger.

Calls can be received while the radio is in the charger, but radio performance may be degraded. If the radio is removed from the charger to answer a call, the call will not be disrupted.

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.

If a radio was turned on while being charged, the battery indicator may not be accurate when the radio is initially removed from the charger. After a few seconds, the battery indicator is updated to display the amount of charge available in the battery

## Low Battery Warning

**Notice** Do not allow a radio battery to fully discharge every time it is used, or the service life of the battery will be shortened.

When the battery is low, the radio provides warnings in the following ways:

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

The battery should be recharged or replaced 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 turns off. Turn off the radio.

## Inserting the Radio into the Vehicle Charger

1. Place the radio in the charger with the battery attached.



**When the portable radio is used inside a vehicle, radio performance is degraded. Use a mobile radio for all critical communications. If the portable radio must be left switched on while it is in the charger, removing the radio from the charger will improve radio performance. Check your local regulations about using a portable radio in a vehicle.**

2. Firmly press the retention bar towards the radio.



If the larger battery is attached to the radio, there will be an audible click as the catches engage. If the smaller battery is attached to the radio, there will be two audible clicks as the catches engage. If the catches do not engage, remove the radio. Press once firmly on the release bar, then try again.

## Charging a Battery

### Charging a Battery for the

Fully charge a battery before using



The red LED stays lit

### First Time

it for the first time.

while the battery charges.

### Charging a Battery

**Notice** For best charging performance, switch off the radio before placing it in the charger (not for battery-only vehicle charger).

- **Desktop charger:** Connect the charger to the correct Tait power adaptor.
- **6-way charger and vehicle charger:** Power on the charger.



Initially, all three LEDs are lit for 2 seconds.

- Place just a battery in the charger, or a radio with a battery attached (desktop charger or 6-way charger only). There is no need to remove a belt clip, antenna, or any accessory that is attached to the accessory connector.



The red LED lights up and stays lit while the battery charges.



When charging is complete, the green LED stays lit.

## LED Behavior

If there is a battery in the charger when power is supplied to the charger, the LEDs behave as follows:

	Meaning
 (briefly)	The charger has been connected to a power supply.
 (steady)	The battery is charging.
 (steady)	Charging complete. Remove the battery, or leave it in the charger.
 (steady)	<p>The battery temperature is outside the normal charging range. Charging will start or resume once the temperature is within normal limits. No action is required by you.</p> <p>There is a fault. Contact your dealer.</p>
 or  (flashing)	If the LEDs for all charger slots continuously flash orange, or red then orange, the charger itself may be faulty (e.g. the 6-way charger fan may be jammed). Contact your dealer.
 (all off)	There is a fault. Contact your dealer.

If the charger does not behave as expected:

- Make sure the radio or battery is seated properly in the charger. For the vehicle charger, see also [Inserting the Radio into the Vehicle Charger](#).
- Check that the charger is properly plugged into the originally supplied power supply.
- Check that the battery and charger contacts are clean. To clean, wipe the contacts with a dry lint-free cloth to remove any dirt, oil or grease.



## Removing the Battery from the Charger

- **Desktop charger and 6-way charger:** Lift the battery/radio out of the charger.
- **Battery-only vehicle charger:** Pull up the top clip of the vehicle charger, and then lift out the battery.
- **Vehicle charger:** Press down once firmly on the release bar at the top of the vehicle charger, and then lift out the radio.

A battery/radio can be removed from the charger at any time without harming the battery, the radio, or the charger. When the battery/radio is returned to the charger, charging is automatically resumed. A battery/radio can also be left in the charger once charging is complete.

## 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 and batteries.
- Do not expose a battery to very high or very low temperatures for extended periods of time. Doing so will shorten the service life of the battery.



Very high: above 140°F (60°C)  
Very low: less than -4°F (-20°C)

- Charge the battery at a room temperature of between 50°F and 77°F (between 10°C and 25°C). This temperature range is the optimal charging range.
- Wipe excess moisture and dirt from the radio, radio contacts and battery contacts before charging the battery.
- Store batteries properly when not in use. See [Storing Batteries](#).

## 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.
- Fully charge the battery if storing for less than one month.
- Charge batteries to about 30% if storing for longer than one month.
- Store in a cool dry place.

Batteries that have been stored for any length of time must be charged before being used. See [Charging a Battery](#).

## Disposing of Batteries



Run the battery flat before disposing of it. When disposing of the battery, be sure to do so in an environmentally sensitive manner. Please contact your radio provider for information on recycling programs in your area. See [Environmental Responsibilities on page 1](#) for more information.

# 15 Troubleshooting

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This section describes troubleshooting procedures and basic maintenance.

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

## This section covers:

[The Radio Won't Turn On](#)

[Identifying the Radio's Audible Tones](#)

[Viewing Radio Information](#)

[General Care](#)

[Changing the Radio ID](#)

[Running Diagnostic Tests](#)

## The Radio Won't Turn On

If the radio LED doesn't light up red briefly when the radio is turned on, power is likely 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 the radio still fails to operate properly, contact your radio provider for further assistance.

## Identifying the Radio's Audible Tones

The radio's audible tones can help you identify a potential problem. See [Audible Tones](#).

## Viewing Radio Information

Use the **Radio info** menu to view information such as the hardware and firmware version of your radio, function key settings, the radio serial number, and various radio identities.

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

## Checking the version of your radio using the PTT key

1. Turn off the radio.
2. Hold down the PTT key and turn on the radio.



The firmware and hardware versions, and your radio's frequency band is briefly displayed.

## General Care

The only radio maintenance required is ensuring the battery has sufficient charge and that the antenna and battery are not damaged.

**Notice** 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 general battery care, see [Maintaining Battery Life and Performance](#).

## Cleaning the Radio



**Risk of permanent damage to the radio housing! Do not clean the radio with solvents or alcohol based products. This includes (but is not limited to) ethylene glycol (antifreeze), propanone (acetone), ethanol (methylated spirits), isopropyl alcohol, and pool chlorine (calcium hypochlorite).**

### To clean the radio:

1. Use a lint-free, dry cloth to remove surface dirt, oil, or grease.
2. Use an alcohol-free, antibacterial wipe to disinfect the radio.

**Notice Risk of internal damage!** To avoid damaging the inside of the radio, do not allow excess liquid to enter the radio body (speaker grille, keypad, buttons, and connectors).

3. Use a water-dampened, lint-free, microfibre cloth to remove any remaining dirt.
4. If the damp cloth is ineffective, dilute a (5 to 10%) solution of alcohol-free dishwashing liquid in clean water, on a cloth, to remove remaining dirt.



**Health risk! Always use protective equipment (gloves, face mask) when handling bleach.**

5. If the dishwashing liquid solution is ineffective, use a solution of one part household bleach to two parts clean water, on a cloth, to wipe away remaining dirt.

## Cleaning the Contacts of the Battery

**Notice** Do not scratch or scrape the contacts of the battery. If necessary, wipe the contacts of the battery with a dry, lint-free cloth to remove any dirt, oil or grease.

## Running Diagnostic Tests

Diagnostics tests are available via the main menu.



This feature is controlled by a software license (SFE) and may not be available with your radio.

1. Press **Menu** and select **Diagnostics**.
2. Scroll to the name of the required test and press **Select**.

The following table lists diagnostics tests may be available on your radio.

**Notice** The radio may transmit when you select some tests. Make sure you have a suitable load or antenna connected before running diagnostics tests.

Test	Description
Display freq	Displays the transmit and receive frequencies of the current channel. Also displays the channel status (CNV, TCH, CCH <sup>1</sup> ) and the mode (ANA, PH1 or PH2 <sup>2</sup> ). If the radio is scanning, this information may not be available.
Display test	Displays a test screen of all colors that appear on the screen. Useful for identifying dead pixels.
QoS (P25 channels only)	Displays information about the quality of service (received signal strength (RSSI) with an indication of digital voice quality). Also displays the channel status (CNV, TCH, CCH <sup>1</sup> ) and the mode (PH1 or PH2 <sup>1</sup> ).
RSSI	Displays the received signal strength (RSSI) of the current channel.
Rx Tone	Receives a 1011Hz or 1031Hz tone and displays the received signal strength (RSSI) and the bit error rate (BER) of the received signal. Also displays the channel status (CNV, TCH, CCH <sup>1</sup> ) and the mode (PH1 or PH2 <sup>1</sup> ). On a P25 conventional channel, the user can select whether to receive a 1011Hz (Phase 1) or 1031Hz (Phase 2) tone.

Test	Description
	On a P25 trunked channel, the network selects whether 1011Hz or 1031Hz is used.
Site display	Shows the channel number, signal strength and system-identity code (SYSCODE) for the currently registered trunked site.
Site measure	Lists the current trunked site (indicated with an asterisk) and up to six detected adjacent sites, with received signal strength (RSSI) information.
Tx Tone	Transmits a tone of 1011Hz or 1031Hz on the current P25 channel.
Tx Tone Cal	Transmits a 1011Hz or 1031Hz tone on the current channel with a bit error rate (BER) of 5%.

<sup>1</sup>CNV = conventional, TCH = traffic channel, CCH = control channel

<sup>2</sup>ANA = analog, PH1 = P25 Phase 1, PH2 = P25 Phase 2

# Simplified Declaration of Conformity

**EN** Hereby, Tait International Limited declares that the radio equipment type TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**BG** С настоящото Tait International Limited декларира, че този тип радиосъоръжение TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**ES** Por la presente, Tait International Limited declara que el tipo de equipo radioeléctrico TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**CS** Tímto Tait International Limited prohlašuje, že typ rádiového zařízení TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C,

TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A je v souladu se směnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**DA** Hermed erklærer Tait International Limited, at radioudstyrstypen TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelses-erklæringens fulde tekst kan findes på følgende internetadresse: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**DE** Hiermit erkläre Tait International Limited, dass der Funkanlagentyp TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**ET** Käesolevaga deklareerib Tait TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A vastab direktiivi 2014/53/EL nõuetele. Eli vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**EL** Με την παρούσα ο/η Tait International Limited, δηλώνει ότι ο ραδιοεξοπλισμός TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A πληροί την οδηγία 2014/53/EE. Το πλήρες κείμενο της δήλωσης συμμόρφωσης EE διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**FR** Le soussigné Tait International Limited, déclare que l'équipement radioélectrique du type TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**HR** Tait International Limited ovime izjavljuje da je radijska oprema tipa TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**IT** Il fabbricante, Tait International Limited, dichiara che il tipo di apparecchiatura radio TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA &

TPGH7A è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**LV** Ar šo Tait International Limited deklarē, ka radioiekārta TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā internetā vietnē: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**LT** Aš, Tait International Limited, patvirtinu, kad radijo įrenginių tipas TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**HU** Tait International Limited igazolja, hogy a TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**MT** B'dan, Tait International Limited, niddikjara li dan it-tip ta' tagħmir tar-radju TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C,

TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**NL** Hierbij verklaar ik, Tait International Limited, dat het type radioapparatuur TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**PL** Tait International Limited niniejszym oświadcza, że typ urządzenia radiowego TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**PT** O(a) abaixo assinado(a) Tait International Limited declara que o presente tipo de equipamento de rádio TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**RO** Prin prezenta, Tait International Limited declară că tipul de echipamente radio TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**SK** Tait International Limited týmto vyhlasuje, že rádiové zariadenie typu TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese:

**SL** Tait International Limited potrjuje, da je tip radijske opreme TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**FI** Tait International Limited vakuuttaa, että radiolaitetyyppi TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A on direktiivin 2014/53/EU mukainen. EU-vaatimusten-



mukaisuus-vakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

**SV** Härmed försäkrar Tait International Limited att denna typ av radioutrustning TMAA4A, TMAA4C, TMAB1A, TMAB1C, TMAB1E, TMAC0A, TMAC0C, TMAH5A, TMAH5C, TMAH5E, TMAH6A, TMAH6C, TMAH6E, TMBB1A, TMBC0A, TMBH5A, TMBH7A, TMBM1A, TPAB1A, TPAH5A, TPAH6A, TPCB1A, TPCC0A, TPCH5A, TPCH6A, TPDB1A, TPDB1B, TPDB1C, TPDB1D, TPDC0A, TPDC0D, TPDH5A, TPDH5D, TPDH7A, TPDH7D, TPDHBB, TPDHKB, TPDH7C, TUFM2D, TUFM3A, TPGB1A, TPGHKA & TPGH7A överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

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4.4. Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Tait, or a third party nominated by Tait, may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and security regulations. Tait is responsible for the payment of all expenses and costs of the inspection, provided that Licensee shall indemnify Tait for all costs (including audit costs and legal costs on a solicitor client basis) if Licensee has breached the terms of this Agreement. Any information obtained by Tait during the course of the inspection will be kept in strict confidence by Tait and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

#### **Section 5 OWNERSHIP AND TITLE**

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#### **Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY**

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7.1. Licensee will not transfer the Software or Documentation to any third party without specific prior written consent from Tait. Tait may withhold such consent or at its own discretion make the consent conditional upon the transferee paying applicable license fees and agreeing to be bound by this Agreement.

7.2. In the case of a value-added reseller or distributor of Tait Designated Products, the consent referred to in Section 7.1 may be contained in a Tait Reseller or Tait Distributor Agreement.

7.3. If the Designated Products are Tait vehicle-mounted mobile products or hand-carried portable radio products and Licensee transfers ownership of the Tait

mobile or portable radio products to a third party, Licensee may assign its right to use the Software which is embedded in or furnished for use with the radio products and the related Documentation; provided that Licensee transfers all copies of the Software and Documentation to the transferee.

7.4. 7.4. For the avoidance of any doubt, Section 7.3 excludes TaitNet Infrastructure, or the products listed at any time under network products at: <http://www.-taitradio.com>.

7.5. If Licensee, as a contractor or subcontractor (integrator), is purchasing Tait Designated Products and licensing Software not for its own internal use but for end use only by a Customer, the Licensee may transfer such Software, but only if a) Licensee transfers all copies of such Software and the related Documentation to the transferee and b) Licensee has first obtained from its Customer (and, if Licensee is acting as a subcontractor, from the interim transferee(s) and from the ultimate end user sub license) an enforceable sublicense agreement that prohibits any other transfer and that contains restrictions substantially identical to the terms set forth in this Software License Agreement. Except as stated in the foregoing, Licensee and any transferee(s) authorised by this Section may not otherwise transfer or make available any Tait Software to any third party nor permit any party to do so. Licensee will, on request, make available evidence reasonably satisfactory to Tait demonstrating compliance with all the foregoing.

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8.2. Within thirty (30) days after termination of this Agreement, Licensee must certify in writing to Tait that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to Tait or destroyed by Licensee and are no longer in use by Licensee.

8.3. Licensee acknowledges that Tait made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement

will result in irreparable harm to Tait for which monetary damages would be inadequate. If Licensee breaches this Agreement, Tait may terminate this Agreement and be entitled to all available remedies at law or in equity including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation. Licensee shall pay all Tait costs (on an indemnity basis) for the enforcement of the terms of this Agreement.

## **Section 9 CONFIDENTIALITY**

Licensee acknowledges that the Software and Documentation contain proprietary and Confidential Information valuable to Tait and are Tait trade secrets, and Licensee agrees to respect the confidentiality of the information contained in the Software and Documentation.

## **Section 10 LIMITATION OF LIABILITY**

10.1. In no circumstances shall Tait be under any liability to Licensee, or any other person whatsoever, whether in Tort (including negligence), Contract (except as expressly provided in this Agreement), Equity, under any Statute, or otherwise at law for any losses or damages whether general, special, exemplary, punitive, direct, indirect, or consequential arising out of or in connection with any use or inability of using the Software.

10.2. Licensee's sole remedy against Tait will be limited to breach of contract and Tait sole and total liability for any such claim shall be limited at the option of Tait to the repair or replacement of the Software or the refund of the purchase price of the Software.

## **Section 11 GENERAL**

11.1. COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption of publication of the Software or public disclosure of any trade secrets associated with the Software.

11.2. COMPLIANCE WITH LAWS. Licensee acknowledges that the Software may be subject to the laws and regulations of the jurisdiction covering the supply of the Designated Products and will comply with all applicable laws and regulations, including export laws and regulations, of that country.

11.3. ASSIGNMENTS AND SUBCONTRACTING. Tait may assign its rights or subcontract its obligations under this Agreement, or encumber or sell its rights in any Software, without prior notice to, or consent of, Licensee.

11.4. **GOVERNING LAW.** This Agreement shall be subject to and construed in accordance with New Zealand law and disputes between the parties concerning the provisions hereof shall be determined by the New Zealand Courts of Law. Provided however Tait may at its election bring proceedings for breach of the terms hereof or for the enforcement of any judgment in relation to a breach of the terms hereof in any jurisdiction Tait considers fit for the purpose of ensuring compliance with the terms hereof or obtaining relief for breach of the terms hereof.

11.5. **THIRD-PARTY BENEFICIARIES.** This Agreement is entered into solely for the benefit of Tait and Licensee. No third party has the right to make any claim or assert any right under this Agreement, and no third party is deemed a beneficiary of this Agreement. Notwithstanding the foregoing, any licensor or supplier of third-party software included in the Software will be a direct and intended third-party beneficiary of this Agreement.

11.6. **SURVIVAL.** Sections 4, 5, 6.3, 7, 8, 9, 10, and 11 survive the termination of this Agreement.

11.7. **ORDER OF PRECEDENCE.** In the event of inconsistencies between this Agreement and any other Agreement between the parties, the parties agree that, with respect to the specific subject matter of this Agreement, this Agreement prevails.

11.8 **SECURITY.** Tait uses reasonable means in the design and writing of its own Software and the acquisition of third-party Software in order to limit Security Vulnerabilities. While no software can be guaranteed to be free from Security Vulnerabilities, if a Security Vulnerability is discovered, Tait will take the steps specified in Section 6 of this Agreement.

11.9 **EXPORT.** Licensee will not transfer, directly or indirectly, any Designated Product, Documentation or Software furnished hereunder or the direct product of such Documentation or Software to any country for which New Zealand or any other applicable country requires an export license or other governmental approval without first obtaining such license or approval.

11.10 **SEVERABILITY.** In the event that any part or parts of this Agreement shall be held illegal or null and void by any court or administrative body of competent jurisdiction, such determination shall not affect the remaining terms which shall remain in full force and effect as if such part or parts held to be illegal or void had not been included in this Agreement. Tait may replace the invalid or unenforceable provision with a

valid and enforceable provision that achieves the original intent and economic effect of this Agreement.

11.11 **CONSUMER GUARANTEES.** Licensee acknowledges that the licenses supplied in terms of this agreement are supplied to Licensee in business, and that the guarantees and other provisions of prevailing consumer protection legislation shall not apply.

11.12 **WHOLE AGREEMENT.** Licensee acknowledges that it has read this Agreement, understands it and agrees to be bound by its terms and conditions. Licensee also agrees that, subject only to the express terms of any other agreement between Tait and Licensee to the contrary, this is the complete and exclusive statement of the Agreement between it and Tait in relation to the Software. This Agreement supersedes any proposal or prior agreement, oral or written, and any other communications between Licensee and Tait relating to the Software and the Designated Products.