

# TP8135/TP8140 MPT Trunked Portable Radios **User's Guide**

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# Directive 2014/53/EU Declaration of Conformity

## **da**      **Dansk**

Undertegnede Tait Limited erklærer herved, at følgende udstyr TPCB1A, TPCH5A & TPCH6A overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EF. Se endvidere: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **de**      **Deutsch**

Hiermit erklärt Tait Limited die Übereinstimmung der Geräte TPCB1A, TPCH5A & TPCH6A mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 2014/53/EG. Siehe auch: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **el**      **Ελληνικά**

Η Tait Limited δηλώνει ότι το TPCB1A, TPCH5A & TPCH6A συμμορφώνεται προς τις ουσιαστικές απαιτήσεις και τις λοιπές σχετικές διατάξεις της Οδηγίας 2014/53/ΕΚ. Βλέπε επίσης: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **en**      **English**

Tait Limited declares that this TPCB1A, TPCH5A & TPCH6A complies with the essential requirements and other relevant provisions of Directive 2014/53/EC. See also: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **es**      **Español**

Por medio de la presente Tait Limited declara que el TPCB1A, TPCH5A & TPCH6A cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/CE.

Vea también: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **fi**      **Suomi**

Tait Limited vakuuttaa täten että TPCB1A, TPCH5A & TPCH6A tyypin laite on direktiivin 2014/53/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Katso: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **fr**      **Français**

Par la présente, Tait Limited déclare que l'appareil TPCB1A, TPCH5A & TPCH6A est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/CE.

Voir aussi: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **it**      **Italiano**

Con la presente Tait Limited dichiara che questo TPCB1A, TPCH5A & TPCH6A è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/CE.

Vedi anche: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **nl**      **Nederlands**

Hierbij verklaart Tait Limited dat het toestel TPCB1A, TPCH5A & TPCH6A in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EG.

Zie ook: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **pt**      **Português**

Tait Limited declara que este TPCB1A, TPCH5A & TPCH6A está conforme com os requisitos essenciais e outras provisões da Directiva 2014/53/CE.

Veja também: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

## **sv**      **Svensk**

Härmed intygar Tait Limited att denna TPCB1A, TPCH5A & TPCH6A står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EG.

Se även: [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc)

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## **Enquiries and comments**

If you have any enquiries regarding this document, or any comments, suggestions and notifications of errors, please contact your regional Tait office.

## **Updates of manual and equipment**

In the interests of improving the performance, reliability or servicing of the equipment, Tait International Limited reserves the right to update the equipment or this document or both without prior notice.

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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.

# For your safety

Before using the radio, please read the important safety and compliance information in the following sections. Before using an intrinsically safe (IS) radio, see also "[Intrinsically Safe radios](#)" on page 16.

## Safety warnings used in this guide

Please follow exactly any instruction that appears in the text as an 'alert'. An alert provides necessary safety information as well as instruction in the proper use of the product. This user's guide 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 icon is used to draw your attention to information that may improve your understanding of the equipment or procedure.

## Radio frequency exposure information

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

### Using this radio

You should use this radio only for work-related purposes (it is not authorized for any other use) and if you are fully aware of, and can exercise control over, your exposure to RF energy. To prevent

exceeding FCC RF exposure limits, you must control the amount and duration of RF that you and other people are exposed to.

It is also important that you:

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

## **Controlling your exposure to RF energy**

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

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

- Do not talk (transmit) on the radio more than the rated transmit duty cycle. This is important because the radio radiates more energy when it is transmitting than when it is receiving.
- When listening and talking on the radio, hold it upright in front of your face so that it is at least one inch (2.5cm) 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.

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.

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

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

## **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.

## 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.

## Australia and New Zealand citizens band (476.4 to 477.4MHz)

AS/NZS 4365 deals with the use of frequencies in the 476.425 to 477.400 MHz band. Products capable of operating in this band have been approved for operation in the UHF Citizens Band Radio Service which is licensed in Australia by the ACMA Radiocommunications (Citizens Band Radio Stations) Class Licence and in New Zealand by the MED General User Radio Licence for Citizens Band Radio. Operation is subject to conditions contained within those licences.

Repeaters operate by receiving a transmission on one channel and re-transmitting it on another. Operators are required to avoid using local repeater input channels, which will be in the range of 31 to 38, unless it is intended to use the repeater facility, and to avoid using local repeater output channels, which will be in the range 1 to 8, at any time.

No voice transmissions are permitted on data channels 22 and 23. Equipment meeting this standard will inhibit voice operation on channels 22 and 23.

In Australia:

- Except in an emergency, a CB transmitter must not be operated on UHF channels 5 and 35.
- Channel 11 is the customary calling channel for establishing communications.
- Channel 40 is the customary road vehicle channel.

## **Health, safety and electromagnetic compatibility in Europe**

In the European Community, radio and telecommunications equipment is regulated by Directive 1999/5/EC, also known as the Radio and Telecommunications Terminal Equipment (R&TTE) directive. 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 [on page 3](#) of this document. To download the formal declaration of conformity, go to [www.taitradio.com/eudoc](http://www.taitradio.com/eudoc).

## Interference with electronic devices



**Warning** 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.



**Warning** 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 your right side 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



**Warning** 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.






**Warning** 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.

## Intrinsically Safe radios

Intrinsically Safe (IS) radios are certified by a third party to be safe to use in particular hazardous locations.

One or more of the following marks identifies a TP8100 portable as an IS radio:

- an IS circle logo on the radio's front panel 
- a label on the radio, showing IS information and the FM diamond logo 
- a label on the radio battery, showing IS information and the FM diamond logo .

An IS radio must be serviced only by an agency certified by both the approval authority and by Tait Limited. Any unauthorized repair or substitution of parts invalidates the intrinsic safety rating and the third party IS approval. To have an IS radio serviced, return it to an authorized Tait branch or subsidiary.

Intrinsically safe TP8100 radios and accessories are approved by Factory Mutual Corporation (FM) to the following ratings:

- IS / I, II, III / 1 / CDEFG / T4, Ta=40°C; IP67
- NI / 1 / 2 / ABCD / T4, Ta=40°C
- S / II, III / EFG; IP67.



TP8100 radios with the product code "T03-20x" have FM IS approval.

The following communication accessories can be used with an Intrinsically Safe TP8100 radio, but are suitable for IS / I / 1 / CD and NI / I / 2 / CD applications only.

- TPK-AA-101 heavy-duty speaker microphone (MIL-STD) with volume control and programmable button
- T952-051 in-ear earphone



**Warning** Use only an IS-approved battery with an IS radio, and do not charge the battery in a hazardous location. An explosion could cause serious injury or death.

Use only IS-approved accessories with IS radios. For an up-to-date list of FM-approved accessories, go to the Tait website or contact your nearest Tait office.



**Warning** IS certification applies only while the product is used in accordance with these instructions.

## Radio installation and operation in vehicles



**Warning** 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.



**Warning** 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.

## Electromagnetic compatibility in European vehicles

In the European Community, radio equipment fitted to automotive vehicles is regulated by Directive 72/245/EEC and its amendments. The requirements of this directive 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 Limited. Failure to do so could invalidate compliance requirements and void the user's authority to operate the radio.

## Attaching of labels



**Warning** 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.

**Notice** Tait Limited 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



**Warning** 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



**Caution** 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.

## Multicharger safety information



**Warning** English (en): This equipment 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.

## Charger compliance information

### United States

This battery charger has been tested and found to comply with the limits for a Class B digital device, in accordance with part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This battery charger generates, and can radiate, radio frequency energy. If it is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur. If this charger does cause harmful interference to radio or television reception (which can be determined by turning the charger off and on), try to correct the interference by:

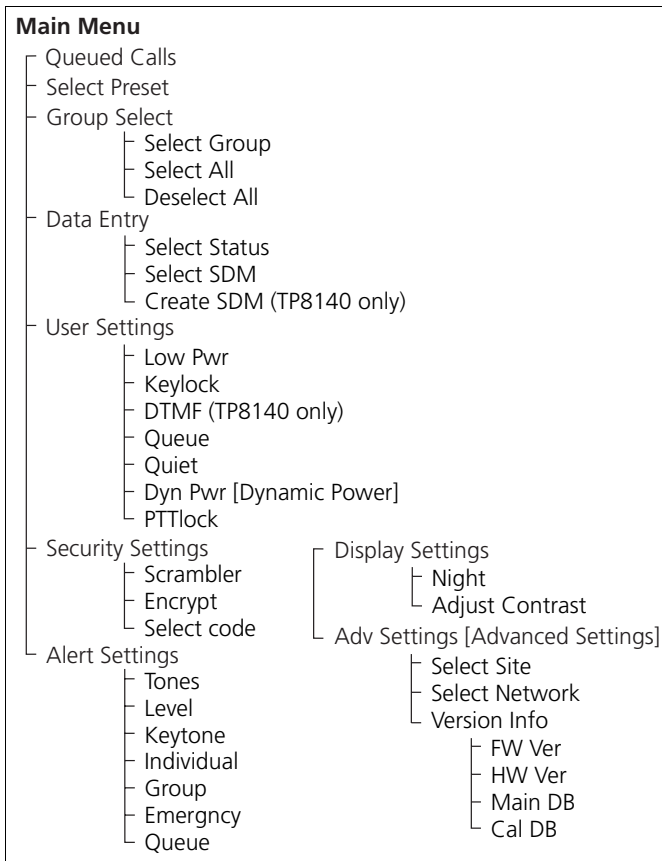
- Reorienting or relocating the receiving antenna.
- Increasing the separation between the equipment and receiver.
- Connecting the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consulting the dealer or an experienced radio or television technician for help.

### Canada

This Class B digital apparatus complies with Canadian ICES-003.  
Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

# Menu map

Some or the menus shown below may not be available for your radio. Menu text may be customized when the radio is programmed.



# Custom radio settings

## Top key

short press: \_\_\_\_\_

long press: \_\_\_\_\_

## Function key 1

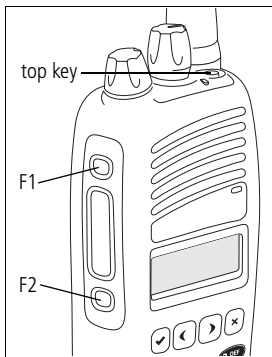
short press: \_\_\_\_\_

long press: \_\_\_\_\_

## Function key 2

short press: \_\_\_\_\_

long press: \_\_\_\_\_



## Shortcut menus

top \_\_\_\_\_

F1 \_\_\_\_\_

F2 \_\_\_\_\_

## Commonly used numbers

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

# About this guide

This user's guide provides information about the TP8135 and TP8140 portable radios.

The radio behavior described in this guide applies to radios with firmware version 2.04 or higher. If your radio does not operate as you expect, contact your radio provider for assistance.

## Related documentation

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

- Safety and Compliance Information—supplied with each radio. (The same information is included in this user's guide.)
- Li-ion Battery Safety Information—supplied with each Li-ion battery.
- Battery Charging Guide—supplied with each charger. (The same information is in the section "[Charging and caring for batteries](#)" on page 96.)

## Before using your radio

Once you have unpacked your radio, there are a few tasks you must do before you can use it. The most important of these is to charge your battery for the first time—allow 2.5 hours for this.



**Warning** Fit only an IS-approved battery and IS-approved accessories to an intrinsically safe (IS) radio. Fitting a battery or accessory that is not IS-approved exposes the customer to a risk of explosion which could cause serious injury or death. For detailed information about IS radios and how to identify them, see ["Intrinsically Safe radios" on page 16.](#)

### **This section covers:**

- [For your safety—battery warning](#)
- [Attaching labels to the radio or battery](#)
- [Charging the battery before first use](#)
- [Attaching the battery](#)
- [Removing the battery](#)
- [Attaching the antenna](#)
- [Attaching a belt clip](#)
- [Removing a belt clip](#)
- [Installing an accessory](#)



## For your safety—battery warning

**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 your battery.

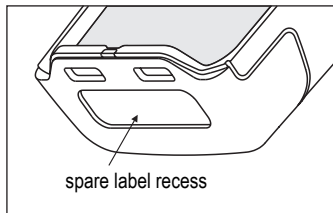
## Attaching labels to the radio or battery

**Warning** 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.

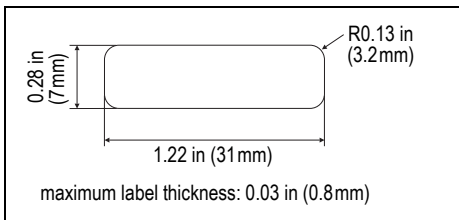
**Notice** Tait recommends that you do not affix additional labels to the surfaces between the radio chassis and the battery. The fit between these surfaces is intentionally firm and any added thickness will damage the points of attachment between radio and battery.

## 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 edge of the radio front panel. In this position, the label is still visible while the battery is attached to the radio.



The diagram below shows the specified dimensions of the label.



## Charging the battery before first use

Before using your battery for the first time, you must charge it. Follow the instructions included with your Tait charger.

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

## Attaching the battery

**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.
- i** 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

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 Slide the battery catch up.
- 2 From the sides, pull the battery away from the radio.

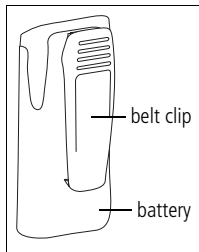
## Attaching the antenna

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.

## 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 you can take it off, if required.

To remove a belt clip from a battery:

- 1 Insert a flat screwdriver blade or similar flat object under the lip of the release lock (that is, between it and the metal slider).
- 2 Lift the release lock up (away from the metal slider) and hold it in position.
- 3 Slide the belt clip out.

## Installing an accessory



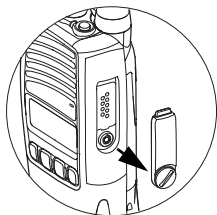
**Warning** Use only IS-approved accessories with IS radios. For an up-to-date list of FM-approved accessories, go to the Tait website or contact your nearest Tait office. For detailed information about IS radios and how to identify them, see "[Intrinsically Safe radios](#)" on page 16.

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 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.



# Getting started

This section provides a brief description of your radio's controls and indicators and explains how to use the radio's menus.

## **This section covers:**

- [About the radio controls](#)
- [Understanding the radio display](#)
- [Understanding the radio indicators](#)
- [Navigating the radio's menus](#)
- [Accessing frequently used menus](#)
- [Turning the radio on and off](#)
- [Entering your PIN](#)
- [Adjusting the volume](#)
- [Preventing accidental calls](#)

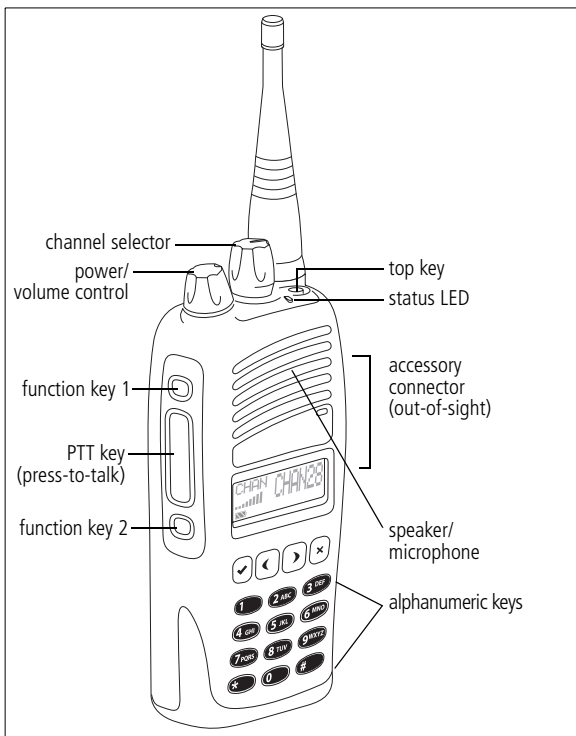
## About the radio controls

The radio controls are the PTT key, power/volume control, channel selector, top key, function keys and keypad keys.

Some keys may have functions assigned to both short and long key presses:

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

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



<b>Symbol</b>	<b>Name</b>	<b>Function</b>
	PTT key	Press and hold to transmit and release to listen
	Power/volume control	Rotate to turn on the radio and change the speaker volume
	Channel selector	Select and change channels
✓	Enter/menu	Short: select a function, turn a function on/off (menu mode); send a short data message Long: enter/exit a mode or menu
◀ ▶	Scroll keys	Scroll through a list of menu options or messages
✕	Clear	Short: cancel, back or delete a single character Long: keypad lock off
	Top key	Usually programmed as the emergency key or for a frequently used option or menu
	Function keys 1 and 2	Programmed for frequently used options or menus
	Alphanumeric keys	Used to enter letters and numbers

## Understanding the radio display

The messages and symbols you see on your radio display depend on the mode in which your radio is operating and the way it is programmed. The following diagram shows a typical display and explains some of the information that may be available.



### Operating modes

Your radio has a number of operating modes, such as **MENU**, **DTMF** (DTMF over dialing), **SDM** (short data message entry) and **QUE** (call queuing). When the radio is operating on a trunking system, the RSSI (received signal strength indicator) is shown below the operating mode.

### Current operation

The panel on the right-hand side shows data for the current radio operation. In the example above, CAR 2 is the name of the last called radio and call queuing (**QUE**) and low power (**f**) modes are turned on.














When you use the keypad to dial a radio ID or enter a short data message, the information appears in the current operation panel.






## Radio display symbols

The bottom line of the display shows a series of symbols that give additional information on the state of the radio. The following table shows some of symbols you may see on your display.












Symbol	Meaning
	Received signal strength indicator (RSSI): the more bars, the stronger the signal being received by your radio
	Encryption status indicator: the radio's transmissions are encrypted. In this example, code <b>2</b> is active.
	Encryption status indicator: the radio's transmissions are not encrypted. In this example, code <b>2</b> is active.
	Flashing: recharge the battery
	The battery is fully charged
	The radio is in DTMF dialing mode
	Monitor is active
	Scrolling is permitted
	There are calls in the call queue
	Steady: scramble is turned on Flashing: encryption is available
	The radio is transmitting
	Steady: low power transmit mode is active Flashing: the radio is transmitting at low power
	Flashing: lone worker is active





## Understanding the radio indicators

The status LED and the radio's audible tones—together with the radio display—all combine to give you information about the state of your radio. The most common way the indicators work is described in the following sections.

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

### Status LED indicator

Color	Flash rate	Meaning
red	 steady	Transmitting
red	 slow	Battery low. Recharge or replace as soon as possible.
red	 medium	Transmitting at low power
red	 fast	Radio is stunned. Radio also emits high-pitched beeps. Contact your dispatcher.
red	 two fast flashes	The power-up sequence is complete. Radio also emits two medium-pitched beeps.
red	 repeating fast flashes	Lone worker is now active
green	 slow	Economy mode is active
green	 steady	Conventional mode: channel busy Trunking mode: a traffic channel has been allocated for a call. Proceed with the call.
green	 slow	Radio has access to a trunking system and is ready to make and accept calls
green	 medium	Monitor is active
green	 repeating fast flashes	Lone worker is now inactive

Color	Flash rate	Meaning
orange	 medium	The radio does not have access to a trunking system
orange	 fast	A call has been received
red/green	 fast 	Radio programmed incorrectly or faulty. Contact your radio provider.

## Audible tones

The radio uses a variety of beeps and tones to supplement the information provided by the status LED and the radio display.

Your radio may also have been programmed so that whenever you press a key, the radio beeps to indicate whether or not the action is permitted:


- permitted: short, medium-pitched beep
- not permitted: long, low-pitched beep



Audible tones may have been disabled when your radio was programmed, and a function key assigned to turn audible tones on and off.

## Navigating the radio's menus

Your radio has a number of menus available, each containing lists or submenus. The menus available will depend on the way your radio is programmed. The table below summarizes the possible options that can be accessed either through the main menu or by using programmed shortcut keys.

-  The menu text on your radio display may differ from that described in this section. Menu text may be customized when the radio is programmed.

<b>Display</b>	<b>Operation</b>
QUEUED CALLS	View and return missed calls
SELECT PRESET	Make a preset call to another radio or number
GROUP SELECT	Select groups of radio users to monitor for activity
DATA ENTRY	Select or enter status messages and short data messages
USER SETTINGS	Personalize settings for a range of features
SECURITY SETTINGS	Make communications private using scramble or encryption
ALERT SETTINGS	Disable or adjust the level of warning beeps and tones
DISPLAY SETTINGS	Turn night operation on/off or adjust the display contrast
ADVANCED SETTINGS	Change to a selected control channel, change trunking networks or check radio version information

## Using the main menu

To enter menu mode and access the main menu:

- Long press ✓, or
- Press >.

The radio displays **MENU**, together with the last selected menu or submenu item:

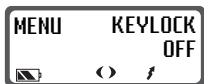


If necessary, press ✕ to exit the submenu, then use ◀ and ▶ to move through the list of menus:



Press and hold ◀ and ▶ to scroll through the menu options quickly.

When the menu you want appears, short press ✓ to open the menu you have chosen:



- To exit a menu or submenu option, press ✕.
- To exit menu mode, long press ✓ or short press ✕.

## Changing settings

To switch between available settings (such as high and low, or on and off):

- 1 Short press ✓ to change the setting.
- 2 Long press ✓ or short press ✕ twice to exit menu mode.

## Accessing frequently used menus



The top key and the function keys provide quick access to features or menus you use most often. These features are assigned to these keys when the radio is programmed.

See "[Function key options](#)" on page 105 for a list of features that may have been assigned to the top and function keys.


### Using the shortcut menu

The top key and function keys may be programmed to provide a shortcut for menu options. Press the key once to access the last selected option, and press again for the next option, moving in a continuous loop.

## Turning the radio on and off

-  The radio may not turn on if your battery is very low. Rotate the power/volume control switch clockwise to turn the radio on.  
Rotate the switch counterclockwise to turn the radio off.
-  After an IS radio is turned on, it takes about two seconds longer to power-up than a non-IS radio.

## Entering your PIN

-  This feature is only available for radios with an alphanumeric keypad.


You may need to enter a personal identification number (PIN) before you can use your radio. If the message **ENTER CODE:** appears, enter your assigned PIN and press ✓.

**ENTER CODE:**

Once you have entered your PIN correctly, the radio sounds two short beeps and normal operation is now possible.

If you do not know your PIN, consult your radio provider or system administrator.

## Adjusting the volume

- Rotate the power/volume control clockwise to increase the speaker volume and counter-clockwise to decrease the volume.
-  The power/volume control also changes the volume of the radio's audible indicators.


## Preventing accidental calls

There are two features that can be used to prevent accidental calls. These features are:



- keypad lock, and
- PTT lock

### Locking the keypad

The keypad lock feature prevents you from pressing a key accidentally. The number of keys that are locked depends on the way your radio is programmed.

-  If you receive a call while the keypad is locked, press any key to answer.

### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **USER SETTINGS > KEYLOCK**.
- 3 Short press  to lock the keypad.



If a locked key is pressed, the radio gives a long, low-pitched beep and the message **KEYPAD LOCKED** appears on the display.



## Using a function key

- Press the assigned function key to turn keypad lock on.

## Turning keypad lock off

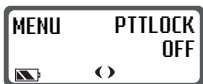
- Long press ✕ to turn keypad lock off.

## Locking the PTT key

The PTT lock feature prevents you from pressing the PTT key accidentally. While PTT lock is active, you are still able to make calls using ✓, if your radio is programmed to allow this.

To turn PTT lock off and on:

- 1 Long press ✓ to enter menu mode.
- 2 Select **USER SETTINGS > PTTLOCK**.
- 3 Short press ✓ to turn keypad lock off or on.



- 4 Short press ✕ twice to exit menu mode.



# Basic operation


## **This section covers:**

- About trunking operation
- Checking that the network is available
- About trunking call setup
- Making a call
- Dialing calls in trunking mode
- Receiving a call
- Using voice inversion scrambling
- Using encryption
- Unconnected calls
- Re-establishing a call
- Responding to missed calls
- Selecting a different trunking network
- Selecting a control channel


## About trunking operation

When your radio is operating on a trunking network, several channels can be shared by a large number of radio users. Your radio communicates with the trunking network on a 'control channel', and the network allocates you a 'traffic channel' when you want to make a call. When your call is complete, the traffic channel can then be used for calls by other radio users on the network.

## Checking that the network is available

When your radio has access to a trunked network, the LED slowly flashes green and  appears in the display. The current control channel may also appear in the display.



If access to the trunked network is lost, the LED slowly flashes orange, and  disappears.

## About trunking call setup

For a trunking call between two radios, the calling radio sends a message on the control channel, giving the identity of the called radio and the type of call.

The network then sets up the call by:

- contacting the other radio, and
- directing both radios to switch to a traffic channel

The conversation is carried out on the traffic channel.

When the conversation is finished or when your allowed call time expires, the network ends the call, and the traffic channel is then available for other calls. The network may also end the call if neither caller transmits for some time or moves out of range.

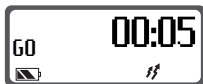
### Transmit timer

Your radio may have a transmit timer that limits the amount of time you can transmit continuously. When the transmit timer is about to expire, the LED flashes red and the radio gives three beeps.

If the transmit timer times out, the call clears down.

### Call time limit

The length of your call may also be limited by the network settings or by your radio. Your radio displays the call duration while it is in progress, either as time remaining for the call or time already used for the call.



When your call time is about to expire, the LED flashes red and the radio gives a repeated beep.

## Making a call

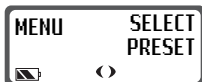
There are four ways to establish a call:

- Each position on the 16-way selector can have a preset call assigned to it. Change to the required position and press the PTT key or ✓.



- The radio can have two function key preset calls, which are assigned to one of the function key positions. Press the assigned function key.

- Use the menu to select from a list of preset calls and press the the PTT key or ✓.



- Radios with an alphanumeric keypad: enter the number of the required party using the keypad and press the PTT key, ✓ or #.



While the network attempts to set up the call, the radio displays the message **WAIT**.



Once the called party has answered, the display shows **GO**.



If the network cannot connect the call, a message appears on the display. See "[Unconnected calls](#)" on page 52.

Once the display reads **GO**, you can proceed with the call:

- 1 Hold the radio so that the microphone is about one inch (2.5 cm) from your mouth.
- 2 Press and hold the PTT key to transmit.
- 3 Speak clearly into the microphone.

While you are transmitting, the LED glows red and **ff** appears in the display.



- 4 Release the PTT key when you have finished talking.


### Ending a call

When you are finished with your conversation or if you do not wish to accept the call:

- press **X**,
- press **\*** then **#**, or
- change to another position on the 16-way selector.

This indicates to the network that you have finished the call, and it can now use the traffic channel for other calls. The radio gives five short beeps and returns to receive mode.

### Dialing calls in trunking mode

 This feature is available for radios with an alphanumeric keypad only.

Your radio may be able to dial numbers in a variety of ways. The actual number you dial may be a direct access number or a preset number, set up at the network level.

For more information on what you can dial, see "[Dialing calls in MPT trunked mode](#)" on page 82.

## Receiving a call

When you receive a call, the radio displays the caller's identity (see "[Caller's identity display](#)" on page 46) and responds in one of two ways. The way your radio responds depends on the way it is programmed and the way the network operates.

- **On-air call setup:** The radio gives a ring and automatically accepts the call. The display shows **GO**.

Press the PTT key and proceed with the call.

- **Full off-air call setup (FOACSU):** The radio rings like a telephone.

Press the PTT key to accept the call. The display reads **WAIT** until a traffic channel has been allocated, then gives two short beeps. The LED glows green and the display shows **GO**.

Press the PTT key and proceed with the call.

### Caller's identity display

When you receive a call, the caller's identity is displayed in one of the following ways:

- If the caller's identity is a name such as **CAR 2**, the caller is one of your preset call numbers with that name.
- If the caller's identity is a number such as **208**, the caller is either one of your preset calls with that name, or is in the same fleet as your radio but is not programmed as a preset call for your radio.
- If the caller's identity is **O FLEET**, the caller is not in the same fleet as your radio and is not programmed as a preset call for your radio.
- If the caller's identity is **PHONE**, the caller is calling from the PSTN (public switched telephone network).
- If the caller's identity is **PABX**, the caller is calling from the PABX (private automatic branch exchange).

The message displayed may include:


- a **G** for a group call, and
- an **E** for an emergency call.



For example, the display above indicates that the call received is a group call from CAR 2.

## Using voice inversion scrambling

Your radio may be programmed so you can turn on voice inversion scramble. While scramble is on, transmissions are unintelligible to any radio or equipment not correctly set to decipher the transmission.

-  Both the transmitting and receiving radios must have scramble activated in order to correctly decipher transmissions.

While scramble is turned on, **P** appears in the display.




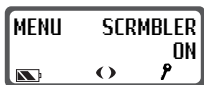
### Turning scrambling on and off



To turn scramble on and off, you may be able to either:

- use the main menu, or
- use a programmed function key

#### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **SECURITY SETTINGS > SCRAMBLER**.



- 3 Short press  to turn scramble off or on.
- 4 Long press  to exit menu mode.

#### Using a function key

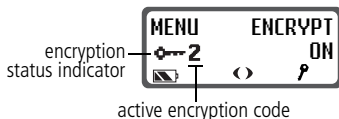
- Press the assigned function key to turn scramble off or on.



## Using encryption

To make communications with other users on your system completely private, your radio may be able to encrypt outgoing calls, using a confidential encryption code. The radio receiving your call must have the same active encryption code before it can decipher your encrypted call.

If encryption is available on your radio, **P** appears in the display. When you change encryption settings, the encryption status indicator may also briefly appear in the display, along with the active encryption code.



### Encrypting calls

To turn call encryption on and off on your radio, you may be able to either:

- use the main menu, or
- use a programmed function key

#### Using the main menu

- 1 Long press **✓** to enter menu mode.
- 2 Select **SECURITY SETTINGS > ENCRYPT**.



- 3 Short press **✓** to turn call encryption off or on.
- 4 Long press **✓** to exit menu mode.


#### Using a function key

- Press the assigned function key to turn call encryption on or off.

## Receiving an encrypted call

When you receive an encrypted call, your radio unmutes and you can hear clear speech, so long as the code required to decrypt the call is the radio's active encryption code.

If the code required is not currently active, then the call remains unintelligible.


-  Call encryption does not need to be turned on for the radio to decrypt a call.

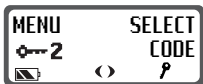
## Changing the radio's encryption code




To change your radio's active encryption code, you may be able to either:

- use the main menu, or
- use a programmed function key.


### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **SECURITY SETTINGS > SELECT CODE**.



- 3 Use  and  to scroll through the list of encryption codes and short press  to select the code you want.



- 4 Long press  to exit code selection mode.

## Using a function key

- 1 Press the assigned function key enter code selection mode.
- 2 Use ◀ and ▶ to scroll through the list of encryption codes and short press ✓ to select the code you want.



- 3 Long press ✓ to exit code selection mode.

## Unconnected calls

If your call is not connected, your radio responds with one of the following messages:

- If the display reads **ENGAGED**, the radio you are calling is already busy. Try your call again later.
- If the display reads **QUEUED**, the radio you are calling has queued your call. Wait for the radio to call you back, or try your call again later.
- If the display reads **SYS BUSY**, the system is too busy to handle your call. Try your call again later.
- If the display reads **NOT HOME**, the radio you are calling has their radio switched off, in 'do not disturb' mode or is out of range. Try your call again later.
- If the display reads **WAIT QUE**, the system is not able to connect your call straight away but queues it and connects it as soon as possible.
- If the display reads **UNAVAIL**, your radio is not permitted to make the type of call you requested.
- If the display reads **UNOBTAIN**, the number you called is not supported.

## Re-establishing a call

The last number recall, unanswered call and callback functions allow you to re-establish calls using the PTT key.

### Last number redial

When an outgoing call has ended, the called unit's identity may appear on the display.

To make a call to that person again, briefly press the PTT key.

### Unanswered call

When an incoming call is missed, the LED rapidly flashes orange, the radio periodically gives a medium-pitched warble, and the caller's identity appears on the display.

To return the call, briefly press the PTT key.

If you do not wish to return the call, press **X** or switch to another position on the channel selector.

### Callback

When an incoming call has been ended, the caller's identity may appear in the display, together with the message **CALLBACK**.

If you do not wish to return the call, press **X** or switch to another position on the channel selector.




Callback does not operate for PABX and PSTN calls.

### Call queuing


If you have missed an incoming call, it may be stored in the call queue, so that you can return the call later. See "[Responding to missed calls](#)" on page 54.

## Responding to missed calls

If you have missed an incoming call, it may be stored in the call queue, so that you can return the call later.

If a call has been missed, the display shows **QUEUED CALLS** and  appears in the display.



-  Duplicate calls and group calls are not queued.

### Different types of call queuing


Call queuing can operate in one of three ways:

- Full call queuing: all unanswered calls are queued.
- Unanswered call queuing: status calls and short data messages are queued, along with unanswered voice calls.
- Last call queuing: only the last unanswered call is queued.

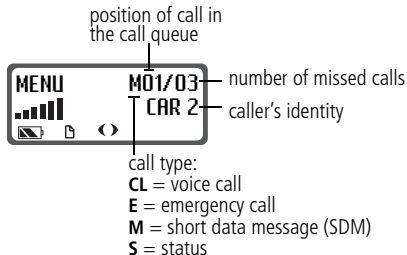
The following section assumes that full call queuing is operating.

### Accessing a missed call

To access a missed call:

- 1 Long press  to enter the call queue.

The first call in the queue is displayed, along with information about the type of call and its position in the queue.



- 2 Scroll through the calls in the call queue using ◀ and ▶ until the call you want appears.

The options available depend on the type of call it is.

- Voice call: short press ✓ to return the call, or short press ✕ to delete the call.
- Status call or short data message: use ◀ and ▶ to scroll through the message and short press ✕ to delete it.

- 3 Long press ✓ to exit the call queue.

## Queuing all calls

If you are unable to answer calls immediately, you can turn call queuing on, so that all incoming calls can be stored in the call queue. While call queuing is active, **QUE** appears in the display.

To turn call queuing on and off you may be able to either:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press ✓ to enter menu mode.
- 2 Select **USER SETTINGS>QUEUE**.



- 3 Short press ✓ to turn call queuing off or on.
- 4 Long press ✓ to exit menu mode.

### Using a function key

- Press the assigned function key to turn call queuing on and off.

## Selecting a different trunking network

Your radio may be programmed to operate on different trunking networks.

To change to another trunking network:

- 1 Long press ✓ to enter menu mode.
- 2 Select **ADV SETTINGS** > **SELECT NETWORK**.



- 3 Use ◀ and ▶ to scroll through the list of trunking networks and short press ✓ to select the network you want.



- 4 Long press ✓ to enter menu mode.

## Changing networks using a preset call

Your radio may be programmed so that a preset call can be used to change to another trunking network. The preset call can be assigned to the channel selector or a function key.

To change to another network:

- press the assigned function key, or
- change the channel selector to the required position and press the PTT or ✓.




## Selecting a control channel

The 'site select' feature allows you to select a control channel for the radio, overriding the usual way the radio selects a control channel. The process the radio normally uses to select a control channel is known as 'hunting'.

To manually select a control channel, you may be able to either:

- use a programmed function key, or
- use the main menu

### Using a function key

 This feature is available for radios with an alphanumeric keypad only.

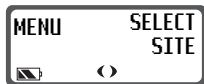
- 1 Enter the number of the required control channel using the keypad.
- 2 Press the assigned function key and the radio attempts to acquire the selected control channel.

To deactivate site select:

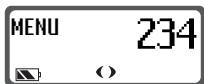
- Press the assigned function key again to resume normal control channel hunting. The message **RESUMING** briefly appears in the display.

### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **ADV SETTINGS > SELECT SITE**.



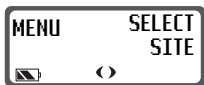
- 3 Use ◀ and ▶ to scroll through the list of control channels and short press ✓ to select the channel you want.



- 4 Long press ✓ to exit menu mode.

### Using the main menu to deactivate site select

- 1 Long press ✓ to enter menu mode.
- 2 Select **ADV SETTINGS**>**SELECT SITE**.



- 3 Use ◀ and ▶ to scroll through the list of control channels until **RESUMING** appears and short press ✓.



- 4 Long press ✓ to exit menu mode.

# Making and receiving different types of calls

The types of calls available to your radio depend on the way in which it is programmed and the way the trunking network operates.

## **This section covers:**

- Making a preset call
- About groups and scan groups
- Making a group call
- Changing group membership
- Making an emergency call
- Making an SOS call
- Using the lone worker emergency features
- PABX and PSTN calls
- DTMF mode calls
- About status messages
- About short data messages
- Placing the radio in do-not-disturb mode
- Calls to conventional channels

## Making a preset call

The preset calls programmed for your radio may be to other radios, to PABX extensions or to PSTN numbers. To make a preset call from your radio, you may be able to either:

- use a programmed function key,
- use the channel selector,
- use the main menu, or
- dial the preset call using the keypad

Preset calls can also be used to activate or deactivate a function, temporarily subscribe your radio to a group, change to conventional channels and change to a different trunking network.

### Using a function key

- Press the assigned function key to make a preset call.

### Using the channel selector

Each position of the channel selector can be programmed for a preset call.

To make a preset call using the channel selector:

- Change the channel selector to the required position and press the PTT key or ✓.

### Dialing a preset call



This feature is available for radios with an alphanumeric keypad only.

To make a dialled preset call:

- Dial **0nn**, where **nn** is the preset call number in two-digit format. Press the PTT key, ✓ or #.

For example, to send preset call 17, dial **017**, then press the PTT key, ✓ or #.



## About groups and scan groups

A trunked radio system may consist of a many fleets of radios, each with a number of groups and scan groups.

A group consists of radio users either within the same fleet, or across multiple fleets. A scan group is a group of groups.

When your radio belongs to a group or scan group, it is said to be 'subscribed', and you receive all calls directed to that group of users.

- ❶ It is not possible to make a call to a scan group, but you can call any of its constituent groups.

## Making a group call

Group calls can be either:

- conference calls, in which all members of the group can participate, or
- broadcast calls, in which only the sender can speak.

When you receive a group call, the display includes a **G** to indicate that the call is a group call.

To make a group call:

- Switch to the position on the channel selector designated for the group you wish to call. Press the PTT key or ✓.

## Dialing a group call

- ❶ This feature is available for radios with an alphanumeric keypad only.

The way you dial group calls depends on the dialing scheme your network uses. See "[Dialing calls in MPT trunked mode](#)" on [page 82](#) for more information on how to make group calls.

To dial a group call:

- Dial the number of the group you wish to call. Press the the PTT key, ✓ or #.

## Ending a group call

A group call is automatically cleared down when the caller is finished.

If you want to end the group call:

- press ✕,
- press \* then #, or
- change to another position on the channel selector.

## Changing group membership

There are two methods of changing your membership of groups or scan groups. You may be able to either:

- use the channel selector, or
- use the main menu.


### Using the channel selector

To select a group or scan group:

- Switch to the position on the channel selector designated for the group you wish to call. Press the PTT key or ✓.

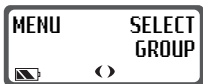
### Using the main menu

Your radio may be programmed with permanent or user-selectable groups and scan groups. If any group or scan group is user-selectable, you can choose to unsubscribe from that group or subscribe to it.

-  Selecting a new scan group means that the previously selected scan group is automatically deselected.

To select a group or scan group:


- 1 Long press ✓ to enter menu mode.
- 2 Select **GROUP SELECT>SELECT GROUP**.



- 3 Use ◀ and ▶ to scroll through the list of groups. The group membership status of a group is shown in the following way:
- a **P** symbol shows that this is a permanent group whose membership cannot be changed.
  - a **+** symbol shows that you are currently a member of the group or scan group. Note that if you are a member of a scan group, all the members of the scan group also have a **+** beside them.
  - If there is no symbol beside the group, then the radio is currently unsubscribed from this group.
  - an **S** symbol shows that this is a scan group and you are not currently a member of the group. Note that if you are a member of a scan group, all the members of the scan group also have a **+** beside them.



- 4 Short press ✓ to select the group you want to join.

 If you select a scan group, all other scan groups in the list are automatically deselected.

- 5 Long press ✓ to exit select group mode.

### Subscribing or unsubscribing to all groups

To either subscribe or unsubscribe to all user-selectable groups:

- 1 Long press ✓ to enter menu mode.
- 2 Select **GROUP SELECT>SELECT ALL**  
(or **DESELECT ALL** to unsubscribe from all groups).



## Making an emergency call

In an emergency, you can summon help by sending an emergency call to a predetermined location, usually your dispatcher. The emergency call takes precedence over other call types, and existing calls on the network are cleared down so that the emergency call can proceed.

If you receive an emergency call, the display includes an **E** to indicate the call is an emergency call.

To make an emergency call from your radio, you may be able to either:

- use the channel selector, or
- dial the emergency call using the keypad.

### Using the channel selector

- Change the channel selector to the required position and press the PTT key or ✓.

### Dialing an emergency call



This feature is available for radios with an alphanumeric keypad only.

To dial an emergency call:

- Dial **\*9**. Press the PTT key, ✓ or #.

To send an emergency call to another radio:

- Dial **\*9\*nn**, where **nn** is the number of the radio you are calling. Press the PTT key, ✓ or #.



## Making an SOS call

In an emergency you can summon help by sending an 'SOS call' to a predetermined location, usually your dispatcher. The radio then cycles between receive and transmit, so that the called party can hear any activity near the radio.



When the radio is in SOS cycling mode, the transmitted audio is always from the radio's internal microphone, regardless of whether an external speaker-microphone is installed.

Depending on how your radio is programmed, your radio may display no sign that an SOS call has been made and the channel selector, PTT and other keys may be disabled for the duration of the SOS call.

An SOS call may also be flagged as an emergency call, and take precedence over other call types and existing calls on the network.

To make an SOS call:

- Press the assigned function key.

### Ending an SOS call

You may be able to end an SOS call by pressing the 'cancel SOS' function key.


## Using the lone worker emergency features

Your radio may be programmed with 'lone worker' emergency features, designed for people who work alone in potentially hazardous areas. If you become incapacitated, the radio automatically sends a distress call to alert other users to your situation. The distress call can be either an emergency call or an SOS call.

After the distress call is sent, the radio may sound a series of 'search alert' beeps at the radio's maximum volume. This gives searchers an audible indication of your location. Once activated, the search alert beeps continue until the radio is turned off and then on again.

A lone worker emergency can be activated in one or more of the following situations:

- Key press: the radio has requested a response from the user at a predetermined interval and the user has not responded.
- Tilt: the radio is tilted more than a programmed angle, (a 'man down' alarm).
- Motion: the radio has not moved for a predetermined period of time (a 'no movement' alarm).

While lone worker is active,  appears in the display.



## Activating lone worker

To turn the lone worker feature on and off:

- Press the assigned function key.



Your radio may be programmed so that lone worker is active as soon as your radio is turned on.

## Key press monitoring

Once lone worker is activated, the radio prompts you for a response at regular intervals, by sounding a series of loud warning beeps. Typically, this will happen every hour.

When you hear the warning beeps:

- Press any key.

If you are unable to respond, the radio sends an emergency call or an SOS call.

## Man down monitoring



**Warning** The radio uses an accelerometer to accurately detect motion. The accelerometer is calibrated when the radio is first programmed, and must be tested at regular intervals to ensure correct operation. Consult with your radio provider or system administrator about a regular testing regime.

The man down alarm activates when the radio is tilted more than a programmed angle, for example when you have been attacked and are lying on the ground. If the radio remains in this position for longer than a minute, it sounds a series of loud warning beeps.

When you hear the warning beeps:

- Return the radio to an upright position.

If you are unable to do this, the radio sends an emergency call or an SOS call.

## No movement monitoring

The no movement alarm activates when the radio has been stationary for a specified length of time. When this time elapses and there has been no movement, the radio sounds a series of loud warning beeps.

When you hear the warning beeps:

- Move the radio.


If you are unable to do this, the radio sends an emergency call or an SOS call.

## PABX and PSTN calls

Your radio may be programmed so that it can make calls to a private automatic branch exchange (PABX) extension or a public switched telephone network (PSTN) number. PABX and PSTN calls can be assigned to the channel selector or a function key.

When you receive a PABX call, the display reads **PABX**. When you receive a call from a PSTN number, the display reads **PHONE**.

### Dialing a PABX number

-  This feature is available for radios with an alphanumeric keypad only.


To make a call to a PABX extension:

- 1 Dial code number, where code is the code specified by your fleet manager and number is the PABX extension you wish to call.
- 2 Press the PTT key, ✓ or #.

For example, to make a call to PABX extension 8909 when the code is 3, dial **38909**, then press the PTT key, ✓ or #.



### Dialing a PSTN number

-  This feature is available for radios with an alphanumeric keypad only.

To make a call to a PSTN number:


- 1 Dial code number, where code is the code specified by your fleet manager, and number is the PSTN number you wish to call.

2 Press the PTT key, ✓ or #.

For example, to make a call to PSTN number 03 584 1212 when code is 0, dial **0035841212**, then press the PTT key, ✓ or #.




## DTMF mode calls

-  This feature is available for radios with an alphanumeric keypad only.

DTMF (dual tone multiple frequency) is the tone-based system used in the world's telephone networks. If your system has access to the public switched telephone network or other networks that make use of DTMF tones, your radio can make a call to a telephone or send control codes to a remote device.

If you simply wish to call a PABX or PSTN number, follow the instructions for making such calls in "[PABX and PSTN calls](#)" on [page 69](#). If, however, once you have set up such a call you wish to send control codes, use DTMF mode.





### Dialing control codes

-  This feature is only available for radios with an alphanumeric keypad.


DTMF numbers can use numbers 0 to 9, letters A to D, and the \* and # keys.

### Entering tones A to D

To dial tones A to D, your radio must be programmed so that you can use the PTT key as a 'shift' key in conjunction with the numeric keys as follows:

- PTT +  = A
- PTT +  = B
- PTT +  = C
- PTT +  = D

To enter the tone A, for example:

- Press and hold the PTT key, then press the  on the keypad.

### Entering a pause

To enter a pause:

- Press and hold the PTT key, then press the **1** key. A hyphen (pause) will be entered in the display.

## Using DTMF mode

To use DTMF mode while the radio is operating on a trunking network:

- 1 Set up a call to the device you want to send control codes to, which is usually a PABX extension or PSTN number.
- 2 Once the call is connected, activate DTMF mode, using either a function key or the User Settings menu.
- 3 Dial the control codes required.
- 4 Press ✓ to exit DTMF mode.
- 5 When you are finished with your call, press ✕ to end the call, or change to another position on the channel selector.

### Example: Accessing telebanking

In this example, the code the trunking system requires for making a PSTN call is 0 and the telephone banking system's phone number is 5487777.

To access telebanking:

- 1 Dial **05487777** (the code plus the PSTN number) and press the PTT key, ✓ or # to make the call.
- 2 When the trunking system has set up the call (the display reads **GO**), and the telebanking system has answered, activate DTMF mode using either a function key or the User Settings menu.
- 3 Start entering the control codes required by the telebanking system.

For example, if your telebanking system requires you to enter your user code (e.g. 12345678), followed by #, you would dial **12345678#** and wait for the telebanking system's response.

When you are finished entering control codes, exit DTMF mode, using either a function key or the User Settings menu.



### **Example: Calling an automated attendant**

An automated attendant is an automated answering service that requests the caller to dial the extension number they wish to call. If an organization's PABX extensions cannot be dialled directly by outside callers, an automated attendant can transfer external phone calls to those extensions.

In this example, the code the trunking system requires for making a PSTN call is 0, the automated attendant's phone number is 5487777, and the extension the caller wants to call is 8866.

To call extension 8866:

- 1** Dial **05487777** (the code plus the PSTN number) and press the PTT key, ✓ or # to make the call.
- 2** When the trunking system has set up the call (the display reads **GO**), and the automated attendant system has answered, activate DTMF mode using either a function key or the User Settings menu.
- 3** Dial **8866**.
- 4** When your call is connected, proceed with the conversation as you would for a normal PSTN or PABX call.
- 5** Exit DTMF mode, as control codes are no longer required.

## About status messages

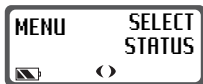
A status message is sent to another party to indicate your current activity or location, such as 'on site' or 'at lunch'. If the radio receiving your call has been programmed with the same status messages, it decodes and displays your message.

If you receive a status message, the message is automatically queued, since a response is not expected (see "[Responding to missed calls](#)" on page 54).

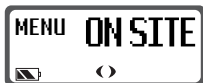
### Selecting a status message

To select a status message and make a status call:

- 1 Long press ✓ to enter menu mode.
- 2 Select **DATA ENTRY>SELECT STATUS**.



- 3 Use ◀ and ▶ to scroll through the list of status messages and short press ✓ to select the message you want.



- 4 Use ◀ and ▶ to select the party you wish to call.



- 5 Short press ✓ or the PTT key to confirm the selection and make the call.

## Dialing a status call



This feature is only available for radios with an alphanumeric keypad.

To dial a status call:

- 1 Dial **\*Oss\* number**, where **ss** is the two-digit status message number and **number** is the number of the party you wish to call.



- 2 Press the PTT key, ✓ or # to make the call.

## About short data messages

Your radio may be able to send and receive short data messages (SDMs). If the radio receiving your message has been programmed with the same message, it decodes and displays your message.

If you receive an SDM, the message is automatically queued, since a response is not expected (see ["Responding to missed calls" on page 54](#)).

For radios with an alphanumeric keypad, it may also be possible to create an SDM using the keypad.

### Using the alphanumeric keypad to enter text

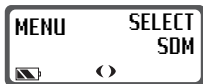
When the keypad is used to enter text, the keys have special functions. Use the alphanumeric keys to enter letters, numbers and punctuation.

- Key **1**: character 1.
- Keys **2 ABC** to **9 WXYZ**: press a key once to enter the first letter on that key. Repeat the process to enter the other letters and the number.
- Key **0**: press once to enter a space. Further keypresses enter the following characters:  
**0 # \*,.! ? ' : ; " @ ( ) \_ - + = / \$ & %**
- To delete a character: use **◀** and **▶** to select the character and press **✕** to delete it.

### Sending a preset short data messages

To send a preset short data message:

- 1 Long press **✓** to enter menu mode.
- 2 Select **DATA ENTRY > SELECT SDM**.



- 3 Use ◀ and ▶ to scroll through the list of SDMs and short press ✓ to select the message you want.




- 4 Use ◀ and ▶ to select the radio you want to call.



- 5 Short press ✓ or the PTT key to confirm the selection and make the call.

### Creating a short data message

 This feature is available for radios with an alphanumeric keypad only.

- 1 Long press ✓ to enter menu mode.
- 2 Select **DATA ENTRY > CREATE SDM**.



The last SDM you sent is displayed.

- 3 Enter your message using the keypad.




- 4 Short press ✓ and use ◀ and ▶ to select the party you wish to call.



- 5 Short press ✓ or the PTT key to confirm the selection and make the call.

## Placing the radio in do-not-disturb mode

If you do not want calls for a while, you can place the radio in do-not-disturb mode, so that incoming calls can be ignored. You can make outgoing calls in the usual way. While do-not-disturb mode is active, **DND** appears in the display.

-  While the radio is in do-not-disturb mode, incoming calls cannot be stored in the call queue.



To place the radio in do-not-disturb mode, you may be able to:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **USER SETTINGS > QUIET**.



- 3 Short press  to turn do-not-disturb mode off or on.
- 4 Long press  to exit menu mode.

### Using a function key

- Press the assigned function key to turn do-not-disturb mode on and off.

## Calls to conventional channels

You may be able to change to conventional channels using the channel selector. Radios with an alphanumeric keypad may be able to dial the channel number.

In conventional mode, you communicate directly with other radios or via a repeater rather than through the trunking network. The following diagram shows a typical display in conventional mode and explains some of the information that may be available.



### Selecting a conventional channel

To select a conventional channel:

- change to the assigned position on the channel selector and press the PTT key or ✓, or
- dial the number for the channel you wish to call (**101 to 110**) and press the PTT key, ✓ or #.

**i** If any trunking functions, such as 'do not disturb' or call queuing, are active when the radio enters conventional mode, these functions are automatically deactivated.

### Checking that a channel is clear

On conventional channels, you or your user group may be segregated from other user groups by special signaling. If an incoming call carries the special signaling tones specific to you or your user group, your radio's signaling mute opens and you can hear the call. These tones may not be audible.

The monitor function allows you to override any special signaling on a channel, so that you can check that the channel is clear before you make a call.

To activate monitor:

- 1 Press the monitor function key to activate monitor and hear any traffic on the channel.

Alternatively, long press ✕.

While monitor is on, the LED slowly flashes green and ◀ appears in the display.



- 2 Press the monitor function key again to turn monitor off. Alternatively, long press ✕.

### **Receiving a call in conventional mode**

When there is valid activity on your radio's currently selected channel or group, the radio unmutes and you can hear the call.

### **Making a call in conventional mode**

To make a call in conventional mode:

- 1 Select the required conventional channel ("[Selecting a conventional channel](#)" on page 79).
- 2 Check that the channel is clear. If the LED is glowing green, then the channel is busy and you may not be able to transmit.
- 3 Once the channel is clear (the LED no longer glows), hold the radio so that the microphone is about one inch (2.5cm) from your mouth.
- 4 Press and hold the PTT key to transmit.



- 5 Speak clearly into the microphone.

While you are transmitting, the LED glows red and **RF** appears in the display.



- 6 Release the PTT key when you have finished talking.

### Returning to trunking mode

To exit conventional mode and return to trunking operation, either:

- select a position on the channel selector that is not programmed for a conventional channel, or
- enter two or three numbers that do not correspond to a conventional channel, then press the PTT key, **✓** or **#**.

The radio then returns to operating on the trunking network it was operating on before entry into conventional mode.

- i** If you dialled a conventional channel, then press **✕** to return to the currently programmed channel selector position.

# Dialing calls in MPT trunked mode

If your radio has a keypad, you can make dialled calls from your radio. The numbers you dial and dialing features available depend on the way your radio is programmed and the way your network operates.

**This section covers:**

- [MPT 1343 dialing](#)
- [Nokia ANN fleet calls](#)
- [Accessing common trunking functions](#)

## MPT 1343 dialing

If your MPT trunked network uses the MPT 1343 dialing scheme, your radio's unique number on the network consists of:

- a three-digit prefix,
- a four-digit fleet number, and
- a two- or three-digit radio unit number.

You may also be part of a group, with a two- or three-digit group number.

### Finding your radio's MPT number

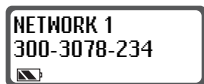
To find your radio's full MPT number:

- 1 Dial **\*700**.
- 2 Press **#** or the PTT key.

The name associated with your network and your radio's full MPT number appears.

The number is in the form:

Prefix 300	Fleet 3078	Radio unit number 234
---------------	---------------	--------------------------



## MPT 1343 dialled calls

The following table summarizes the way you dial calls to other radios and groups of radios and gives an example of each type of call.




In the following examples, the final # may be replaced by a short press of the PTT key.

Call to	Dialing code and example			
Radio <b>23</b> in the same fleet as you	Radio unit number 23		#	
Radio <b>234</b> in the same fleet as you	Radio unit number 234		#	
Radio <b>23</b> in fleet <b>3078</b> with the same prefix as you	Fleet 3078	Radio unit number 23		#
Radio <b>234</b> in fleet <b>3078</b> with the same prefix as you	Fleet 3078	Radio unit number 234		#
Radio <b>234</b> in fleet <b>3078</b> with a different prefix to you ( <b>300</b> )	Prefix 300	Fleet 3078	Radio unit number 234	#
Group <b>92</b> in the same fleet as you	Group 92		#	
Group <b>923</b> in the same fleet as you	Group 923		#	

## Nokia ANN fleet calls

If your MPT trunked network uses Nokia ANN dialing, the numbers you dial depend on your fleet size. Fleets are defined as either large, small or mini. Your radio's unique number on the network consists of:

- a lead number **7**, **8** or **9**, depending on the fleet size,
- a zero-, one-, two- or three-digit prefix,
- a one- or two-digit fleet number, and
- a two- or three-digit radio unit number.

 See your radio provider or network administrator for Nokia ANN call details.

### Finding your radio's MPT number

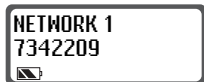
To find your radio's full MPT number:

- 1 Dial **\*700**.
- 2 Press **#** or the PTT key.

The name associated with your network and your radio's full MPT number appears.


The number is in the form:

Lead	Prefix	Fleet	Radio unit
7	34	2	number 209



## Nokia ANN dialled calls

The following table summarizes the way you dial calls to other radios and gives an example of each type of call.

-  In the following dialled numbers, short press the PTT key instead of the final #.

---

Call to	Dialing code and example
---------	--------------------------

---

Radio <b>23</b> in the same fleet as you	Radio unit number 23	#
--	----------------------	---

---

Group <b>923</b> in the same fleet as you	Group 923	#
---	-----------	---

---

### Large fleet:

Radio <b>234</b> in fleet <b>1</b> with the same prefix as you	Lead 7	Fleet 1	Radio unit number 234	#
--	--------	---------	-----------------------	---

Radio <b>235</b> in fleet <b>2</b> with a different prefix to you ( <b>32</b> )	Lead 7	Prefix 32	Fleet 2	Radio unit number 235	#
---	--------	-----------	---------	-----------------------	---

---

### Small fleet:

Radio <b>23</b> in fleet <b>51</b> with the same prefix as you	Lead 7	Fleet 51	Radio unit number 23	#
--	--------	----------	----------------------	---

Radio <b>23</b> in fleet <b>52</b> with a different prefix to you ( <b>126</b> )	Lead 7	Prefix 126	Fleet 52	Radio unit number 23	#
--	--------	------------	----------	----------------------	---

---


### Mini fleet:

Radio <b>23</b> in fleet <b>80</b> with the same prefix as you	Lead 7, 8 or 9	Fleet 80	Radio unit number 23	#
--	----------------	----------	----------------------	---

Call to	Dialing code and example				
Radio <b>23</b> in fleet <b>81</b> with a different prefix to you ( <b>3</b> )	Lead 7, 8 or 9	Prefix 3	Fleet 81	Radio unit number 23	#

## Accessing common trunking functions

The following tables explain how you can access special MPT trunking functions using the \* and # keys. The availability of these functions is dependant on the way your radio is programmed and the way your network operates.

 In the following examples, you can short press the PTT key instead of the final #.

### \*... # functions

Dialing code	Functions	Example
#	Accept an incoming FOACSU call	
*#	Clear call or displayed item, or decline an incoming FOACSU call	
*0#	Request base dispatcher to call you back	
#0#	Cancel request	
*0*n#	Request another dispatcher to call you back	*0*234#
#0*n#	Cancel request	#0*234#
*0s*n#	Status call (s = status 1 to 30) to radio n	*015*23#
*0s#	Status call to dispatcher	*015#
*1*g#	Conference call to group g	*1*92#
*11*g#	Broadcast call to group g	*11*92#
*31*n#	Non-prescribed data call	*31*23#

## \*... # functions

Dialing code	Functions	Example
<b>*41*n#</b>	Divert own calls to radio <b>n</b>	<b>*41*23#</b>
<b>#41#</b>	Cancel divert	
<b>*41*0n#</b>	Divert own calls to PSTN <b>n</b>	<b>*41*03456798#</b>
<b>#41#</b>	Cancel divert	
<b>*44*n*m#</b>	Divert 3rd party calls <b>n</b> to <b>m</b>	<b>*44*23*21#</b>
<b>#44*n#</b>	Cancel divert of 3rd party calls	<b>#44*23#</b>
<b>*48#</b>	Queue incoming calls	
<b>#48#</b>	Cancel queue	
<b>*49#</b>	Do not disturb	
<b>#49#</b>	Cancel do not disturb	
<b>*491#</b>	Do not disturb - voice calls only	
<b>#491#</b>	Cancel do not disturb, voice calls only	
<b>*492#</b>	Do not disturb - data calls only	
<b>#492#</b>	Cancel do not disturb, data calls only	
<b>*700#</b>	Display your MPT number and current network	
<b>*70n#</b>	Change to network <b>n</b> (1 to 4)	<b>*702#</b>
<b>*8*n#</b>	Priority call to radio <b>n</b>	<b>*8*23#</b>
<b>*8*1*g#</b>	Priority conference call to group <b>g</b>	<b>*8*1*923#</b>
<b>*9*n#</b>	Emergency call to radio <b>n</b>	<b>*9*23#</b>
<b>*9*1*g#</b>	Emergency conference call to group <b>g</b>	<b>*9*1*92#</b>
<b>**n#</b>	Abbreviated dialled codes (1-49)	<b>**3#</b>

# Customizing your radio

Your radio's audible indicators, radio functions and display settings can be changed to meet your requirements in the Alert Settings, Display Settings and User Settings menus.

## **This section covers:**

- [Changing the audible tone settings](#)
- [Activating backlighting](#)
- [Adjusting the display contrast](#)
- [Extending battery life](#)



## Changing the audible tone settings

Your radio has two features for controlling which audible tones you hear:

- **Keypress tones:** This feature controls the tones you hear when you press a function key, or a key on the keypad. Keypress tones can be turned on and off.
- **Audible tones:** This feature provides overall control for all audible tones, including keypress tones, received-call tones and warning tones. Audible tones can be turned on and off. If the audible tones are turned off, keypress tones are also off.

### Turning keypress tones on and off

To turn keypress tones on and off:

- 1 Long press ✓ to enter menu mode.
- 2 Select **ALERT SETTINGS > KEYTONE.**
- 3 Short press ✓ to turn keypress tones off or on.
- 4 Short press ✕ twice to exit menu mode.

### Turning audible tones on and off

To turn audible tones on and off you may be able to either:

- use the main menu, or
- use a programmed function key

#### Using the main menu

- 1 Long press ✓ to enter menu mode.
- 2 Select **ALERT SETTINGS > TONES.**



- 3 Short press ✓ to turn audible tones off or on.
- 4 Short press ✕ twice to exit menu mode.

## Using a function key

- Press the assigned function key to turn audible tones either on or off.

## Adjusting the level of audible tones

To change between the high and low setting:

- 1 Long press ✓ to enter menu mode.
- 2 Select **ALERT SETTINGS > LEVEL**.



- 3 Short press ✓ to change the level of audible tones to either high or low.
- 4 Short press ✕ twice to exit menu mode.

## Activating backlighting

The radio's display and keypad light up when backlighting is on. This normally only happens when a key is pressed or a call is received.

To turn backlighting on and off you may be able to either:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press ✓ to enter menu mode.
- 2 Select **DISPLAY SETTINGS > NIGHT**.



- 3 Short press ✓ to turn backlighting off or on.
- 4 Short press ✕ twice to exit menu mode.

### Using a function key

- Press the assigned function key to turn backlighting either on or off.



## Adjusting the display contrast

You may be able to change the contrast of your radio's display to suit the lighting conditions in which you are working. After making the adjustment, the radio will automatically return to its previous mode of operation after a few seconds of inactivity.




To adjust the display contrast, you may be able to either:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press  to enter menu mode.
- 2 Select **DISPLAY SETTINGS > ADJUST CONTRAST**.
- 3 Short press , the radio enters contrast adjustment mode and the RSSI symbol appears in the display.



- 4 Use  and  to adjust the contrast to the desired level.
- 5 Short press  twice to exit menu mode.

### Using a function key

- 1 Press the assigned function key.

The radio enters contrast adjustment mode and the RSSI symbol appears in the display.



- 2 Use  and  to adjust the contrast to the desired level.

## **Resetting contrast to the default setting**

You can reset the contrast to the factory's default setting by using function key 2.

To reset the contrast to the radio's default setting:

- Press and hold function key 2 while turning the radio off then on again.

## Extending battery life


Your radio may have two features that allow you to extend the shift life of the radio battery:

- low power transmit mode, and
- dynamic power control

### Low power transmit

If you are using your radio in conditions where signal strength is high, you can extend the shift life of your battery by transmitting at low power. While low power transmit is active, transmissions are made at low power rather than at the preset power level and  $f$  appears in the display.



-  Some channels may be programmed to always transmit at low power.

To override the power settings of the current channel, you may be able to:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press  $\checkmark$  to enter menu mode.
- 2 Select **USER SETTINGS > LOW PWR**.
- 3 Short press  $\checkmark$  to turn low power transmit off or on.
- 4 Short press  $\times$  twice to exit menu mode.

### Using a function key

- Press the assigned function key to turn low power on and off.

## Dynamic power control

If you have the 'dynamic power control' feature turned on, your radio automatically reduces transmit power in areas where signal strength is high.

To turn dynamic power control on or off, you may be able to:

- use the main menu, or
- use a programmed function key

### Using the main menu

- 1 Long press **✓** to enter menu mode.
- 2 Select **USER SETTINGS>DYN PWR**.
- 3 Short press **✓** to turn dynamic power control off or on.
- 4 Short press **✕** twice to exit menu mode.

### Using a function key

- Press the assigned function key to turn dynamic power control either on or off.

# Charging and caring for batteries

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](#)
- [Special conditions when using IS radios](#)
- [Before using the charger](#)
- [Charging the battery](#)
- [Maintaining battery life and performance](#)
- [Storing batteries](#)
- [Disposing of batteries](#)

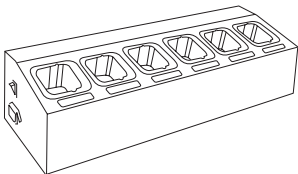


## About the chargers

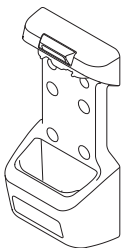
Unless otherwise indicated, the charging advice and instructions apply to all chargers.

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

- Desktop charger: Small enough to fit on a desk, it charges one battery at a time.
- Multicharger: Charges up to six batteries. It can be mounted on a desk, on a wall, or in an equipment rack.



- Vehicle charger: Charges one battery at a time while installed in a vehicle.



### Multicharger safety information



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

## Special conditions when using IS radios



**Warning** Fit only an IS-approved battery to an IS radio. Fitting a battery or accessory that is not IS-approved exposes the customer to a risk of explosion which could cause serious injury or death.

For detailed information about identifying IS radios, see ["Intrinsically Safe radios" on page 16.](#)

## Before using the charger

### Handle the battery safely



**Warning** 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, please read the Li-ion Battery Safety Information (MPC-00006-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, 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.

### Attaching of labels



**Warning** 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.

For detailed information about attaching labels safely, see ["Attaching labels to the radio or battery" on page 25.](#)

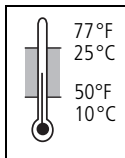
## Charging temperatures

**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 your battery:

- Before you begin to charge your battery, make sure 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).



### Temperature indications

- ○ ● 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 by you.

### Leaving the battery on charge

You can leave a battery/radio in the charger once charging is complete. Leaving a battery in the charger will not overcharge or damage it.

You can remove a battery/radio from the charger at any time without harming the battery, the radio, or the charger. When you return the battery/radio to the charger, charging is automatically resumed.

## Vehicle charger 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 and making calls while charging (desktop charger and multicharger only)

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

You can receive or make a call while the radio is in the charger, but your radio performance may be degraded. If you do remove the radio 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 you use it, or you will shorten the service life of the battery.

When the battery is low, your radio warns you 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.

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

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

## Charging the battery

### Charging a battery for the first time

Fully charge a battery before using it for the first time. This will take up to 2.5 hours.

- ● ○ The red LED stays lit while the battery charges.

### Charging a battery

**Notice** For best charging performance, switch off the radio before placing it in the charger (desktop charger or multicharger only).

- 1 Desktop charger: Connect the charger to the correct Tait power adaptor.  
Multicharger and vehicle charger: Power on the charger.
- ● ● Initially, all three LEDs are lit for two seconds.
- 2 Place just a battery in the charger, or a radio with a battery attached (desktop charger or multicharger 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. For a battery that is almost completely discharged, allow two hours.
- ○ ○ 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:

LED	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	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. There is a fault. Contact your local regional Tait office.

If the charger does not behave as expected:

- Make sure the radio or battery is seated properly in the charger.
- Check that the charger is properly plugged in.
- 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 multicharger: Lift the battery/radio out of the charger.
- Vehicle charger: Pull up the top clip of the vehicle charger, and then lift out the battery.

You can remove a battery/radio from the charger at any time without harming the battery, the radio, or the charger. When you return the battery/radio to the charger, charging is automatically resumed. You can also leave a battery/radio 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 -22°F (-30°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.
- Store batteries properly when not in use. See "[Storing batteries](#)" on page 104.

## 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.

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

## Using batteries after storage

Batteries that have been stored for any length of time must be charged before being used. See "[Charging the battery](#)" on [page 101](#).

## 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 8](#) for more information.



# Troubleshooting

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



**Warning** TP8100 portable radios with the product code "T03–20\*" have FM IS approval. An IS portable radio must be serviced only by an agency certified by both the approval authority and by Tait Limited. Any unauthorized repair or substitution of parts invalidates the intrinsic safety rating and the third party IS approval. To have an IS radio serviced, return it to an authorized Tait branch or subsidiary.

For detailed information about IS radios and how to identify them, see ["Intrinsically Safe radios" on page 16](#).

## **This section covers:**

- [When your radio won't turn on](#)
- [Checking the version of your radio](#)
- [Troubleshooting your charger](#)
- [General care](#)
- [Cleaning the radio](#)

## When your radio won't turn on

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

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

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

## Checking the version of your radio

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

To check the version of your radio:

- 1 Long press ✓ to enter menu mode.
- 2 Select **ADV SETTINGS > VERSION INFO**.
- 3 In the Version Information menu, use ◀ and ▶ to scroll through the list of version information available.



The information that may be available is:

- firmware version (**FW VER**)
- hardware version (**HW VER**)
- main database (**MAIN DB**)
- calibration database (**CAL DB**).

## Troubleshooting your charger

### Charger LEDs do not light up

- ○ ○ Possible reason(s) and solution(s) include:
- The power adaptor is not connected, or not turned on. Remove power adaptor plug and refit.
  - The battery has not been detected. Check that the battery contacts are clean and battery is seated correctly.
  - The charger contacts are stuck. Check that the charger contacts move freely.

### ○ ○ ● Charger orange LED lights up

The table below describes what to do if the orange LED on the battery charger is glowing.

Meaning	Possible reason(s) and solution
Fault	<ul style="list-style-type: none"><li>■ The battery is not compatible with the charger. Use only Tait chargers and batteries.</li><li>■ There is insufficient voltage to the charger. Check you are using the correct power adaptor.</li><li>■ The battery may be deeply discharged (less than 3V). Disconnect the battery from the radio and charge the battery.</li><li>■ The battery may be faulty. Consult your radio provider for advice.</li></ul>
Charging suspended	The battery is either too hot or too cold. Charging will start or resume once the temperature is within normal limits. No action required.

## General care

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

**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 battery care, see "[Maintaining battery life and performance](#)" on page 103.

### 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.

### Cleaning the radio

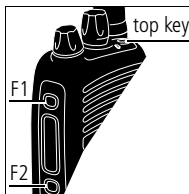
If you need to clean the radio case, use a cloth dampened with clean water.

# Function key options

**i** Some functions are not permitted in some countries.

The features below can be assigned to the top key and the function keys when the radio is programmed. If you do not know which features have been programmed for your radio, contact your radio provider or system administrator.

For information on function keys, see ["Accessing frequently used menus" on page 38.](#)



## Common functions

Function	Description
audible tones	Turns audible indicators on and off. See <a href="#">"Changing the audible tone settings" on page 89.</a>
backlighting	Turns backlighting on. Backlighting will turn off after a programmed period. See <a href="#">"Activating backlighting" on page 91.</a>
call queuing	Turns call queuing on and off. See <a href="#">"Call queuing" on page 53.</a>
clear	Clears the last request to the trunking system. See <a href="#">"Ending a call" on page 45.</a>
contrast adjustment	Allows you to adjust the display contrast. See <a href="#">"Adjusting the display contrast" on page 92.</a>
do not disturb	Turns do-not-disturb mode on and off. See <a href="#">"Placing the radio in do-not-disturb mode" on page 78.</a>
DTMF mode	Turns DTMF over dialing mode on and off. See <a href="#">"DTMF mode calls" on page 71.</a>
dynamic power control	Turns dynamic power control on, so that the radio transmits at low power in a strong signal-strength area. See <a href="#">"Dynamic power control" on page 95.</a>

<b>Function</b>	<b>Description</b>
encryption	Turns call encryption on and off. See " <a href="#">Encrypting calls</a> " on page 49.
encryption code select	Changes the radio's active encryption code. See " <a href="#">Changing the radio's encryption code</a> " on page 50.
keypad lock	Locks the keypad so the keys cannot be activated accidentally. Long press <b>✕</b> to disable keypad lock. See " <a href="#">Preventing accidental calls</a> " on page 39.
lone worker	Monitors radio activity so that an emergency call can be sent if a worker becomes incapacitated. See " <a href="#">Using the lone worker emergency features</a> " on page 66.
low power transmit	Overrides the radio's programmed transmit power setting. See " <a href="#">Low power transmit</a> " on page 94.
monitor	Turns monitor on and off, so that the user can hear all traffic on a conventional channel. See " <a href="#">Checking that a channel is clear</a> " on page 79.
night use	Turns night operation mode on and off. See " <a href="#">Activating backlighting</a> " on page 91.
preset call	Sends a preset call to another radio, PABX extension or PSTN number. See " <a href="#">Making a preset call</a> " on page 60.
scrambler	Turns the scrambler on and off, so the user can scramble transmissions and decipher scrambled incoming calls. See " <a href="#">Using voice inversion scrambling</a> " on page 48.
shortcut menu	Acts as a shortcut to the radio menu. See " <a href="#">Using the shortcut menu</a> " on page 38.
site select	Allows you to select a trunking control channel that the radio must tune to. See " <a href="#">Selecting a control channel</a> " on page 57.
SOS call	Sends a call to a predetermined number, indicating that an emergency situation has arisen. See " <a href="#">Making an SOS call</a> " on page 65.
SOS call cancel	Ends an SOS call. See " <a href="#">Ending an SOS call</a> " on page 65.

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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.

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

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