



4. Using the transceiver

This section covers the basic steps necessary to operate your transceiver.

It outlines how you use the control buttons to make various adjustments and settings, and includes transmitting and receiving calls.

Throughout this section all displays show examples of channel and frequency numbers. You must insert your selected channel and frequency numbers as appropriate.

Unless otherwise stated, it is assumed throughout this section that:

- the 12V DC power is supplied to your transceiver
- the front panel Power On/Off button is switched on.

Refer to *Switching the transceiver on or off* on page 4-2.


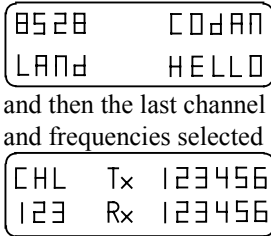

Switching the transceiver on or off

When you switch the transceiver on, the display usually shows the last settings before the transceiver was switched off. If your transceiver has a personal identification number (PIN) allocated, then the display will request you to enter your PIN.

This section covers two methods of switching your transceiver on or off:

- switching on or off without a PIN
- switching on or off with a PIN


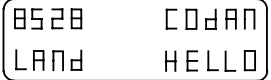
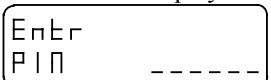
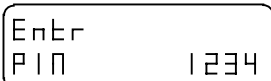


Switching on or off without a PIN

Step	Action...	Display shows...	Remarks...
1.	Ensure power is supplied to your transceiver.		
2.	Press 	You will see this display for one second  and then the last channel and frequencies selected	The Mute and Mode indicators and the LCD display illuminate. The transceiver is turned on and automatically set to the last channel and volume settings used.
3.	To switch off, press 	The display and indicators go off.	The transceiver is turned off.



Switching on or off with a PIN

It is most important not to forget your PIN, otherwise you will never be able to switch on your transceiver. If this happens, you will have to return your transceiver to Codan for them to delete the allocated number.

Step	Action...	Display shows...	Remarks...
1.	Ensure power is supplied to your transceiver.		
2.	To switch on, press 	You will see this display for one second  and then this display 	The Mute and Mode indicators and the LCD display illuminate.
3.	Use the numeric buttons to enter your PIN.		You must enter the correct PIN, otherwise your transceiver will never turn on to the operating mode.
4.	Press 	The display is automatically set to the last channel and volume settings used.	The transceiver is turned on and can now be operated.
5.	To switch off, press 	The display and indicators go off.	The transceiver is turned off.



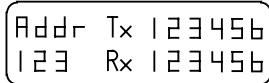
The transceiver display

The display provides you with visual indication of the selected channel numbers, and the transmit and receive frequencies. In addition, it shows you messages that will assist you when operating your transceiver. A detailed description of all the messages can be found in section 12, *Display messages*.

The display– and button legends of the control head– are back-lit to give you the clearest view. If necessary, the brightness can be adjusted to suit your needs, refer to Dimming the display and indicators on page 4-6.

This section explains what the option codes mean and how to reveal the option codes on the display.

The display contains two rows of information. Each row is split into three groups. What you see in each group depends on the transceiver mode selected.




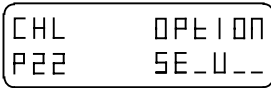
```
R d d r Tx 1 2 3 4 5 6
1 2 3 Rx 1 2 3 4 5 6
```

Option codes

Code	Description
S	in the far left hand position indicates that selective call is enabled for this channel.
E	indicates that emergency calling has been enabled for this channel.
L	indicates the lower side band has been enabled for this channel.
U	indicates the upper side band has been enabled for this channel.
t1-4	indicates this channel has been programmed for tone calling. (Four tone pairs can be used, t1 to t4.)

Displaying the channel option



There are several options that you can select your transceiver to use. The display button gives you the freedom to check the options that have been selected (enabled) at the time of purchase by viewing the option bar in the display.

Step	Action...	Display shows...	Remarks...
1.	Press 		The option bar indicates the options enabled for the channel currently selected. There are six spaces in the option bar that contain either a code (see Option codes) or an underscore (_). An underscore indicates that no function has been enabled.



Dimming the display and indicators

The backlit display and indicators are at maximum brightness when you switch the transceiver on. This procedure explains how to reduce the brightness of the display and indicators.


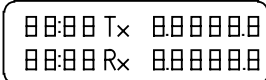

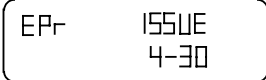
Step	Action...	Display shows...	Remarks...
1.	Press  twice within one second		This reduces the brightness of the indicators and dims the display background lighting.
2.	To restore the brightness, press  again, twice within one second.		This restores both the display and indicators to their maximum brightness



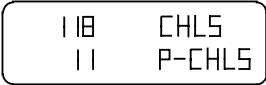
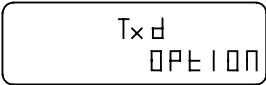
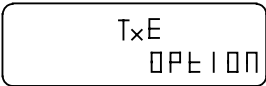
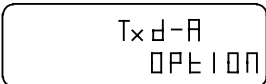
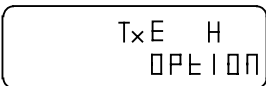

Review the EPROM version and options

This facility allows you to review the EPROM version and some of the options fitted to your transceiver.

This procedure is repeated in section 12, *Reviewing the EPROM program content*.

Step	Action...	Display shows...	Remarks...
1.	Ensure your transceiver is switched on.		
2.	Press and hold down 	 at three second intervals the display changes and shows the following displays.	Displays lamp test: all segments must be on and all the indicators lit.
			This shows the Program (EPROM) type number (example 90-20278-1). Some indicator lamps will turn off.
			Program (EPROM) issue number. This is an example of EPROM issue 4.3.



Step	Action...	Display shows...	Remarks...
2. cont.			<p>The top line shows the number of channels programmed by the factory or agent, this can be up to 501.</p> <p>The second line shows the number of channels programmed by the user, this can be up to 99 or 89 with the telephone mode enabled.</p>
	The following displays indicate some of the options fitted to your transceiver.		d indicates that the transceiver is inhibited from entering transmit frequencies from the front panel.
			E indicates that the transceiver is enabled for entering transmit frequencies from the front panel.
			A indicates that the transceiver is programmed for use on the amateur band.
			H indicates that the transceiver is set for use with an external power amplifier.
3.	Release the 		This switches off your transceiver.

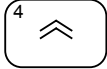
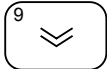
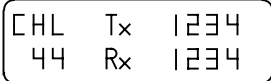
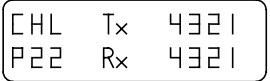


Selecting channels

There are two methods of selecting channels:


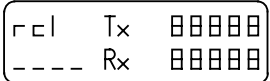
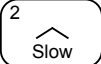
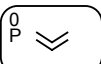

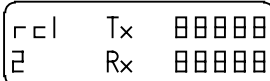
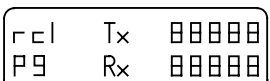

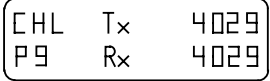
- Using the Channel Up or Down buttons—this method is preferable when you are changing to an adjacent channel
- Using the Recall button—since there may be up to 600 channels available, this method is preferable when you are changing channels over a large range.

Using the Channel Up or Down buttons

Step	Action...	Display shows...	Remarks...
1.	Press either of the Channel buttons  or 	The channel number selected appears in the lower left hand corner of the display, and the transmit and receive frequencies to the right.  Channels you have programmed from the front panel will have either an F or P in front of the number. 	Pressing these buttons moves to the next higher or lower channel. Keep the button pressed to move quickly through the channels. For details on F and P channels, refer to sections 6 & 7 respectively.



Using the recall button

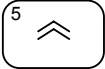



Step	Action...	Display shows...	Remarks...
1.	Press 		
2.	If the channel was installed by the factory, press  If the channel was installed by you, (F or P channels) press  and 	 	This is an example of how to recall channel 2. For details on F and P channels, refer to sections 6 & 7 respectively. This is an example of how to recall channel P9.
3.	Press 		The channel you selected will be recalled (in this case channel P9). If you enter an incorrect channel, the display shows the message 'NOT FOUND', and reverts to the next lowest programmed channel to the one you selected.
	Note: F numbers must always be selected as P numbers.		



Adjusting the volume

This procedure tells you how to adjust the volume. When the mute is on, pressing any of the volume control buttons opens the mute for approximately one second. This allows you to hear the background noise, thus assisting you to select the correct level.



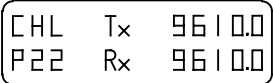


When you switch your transceiver on, the volume level is at the last used setting.

Step	Action...	Display shows...	Remarks...
1.	Press either of the Volume buttons  or 	The display does not change.	The  button increases the volume. The  button decreases the volume. You will hear a "pip" when the volume control has reached its operating limit.



Using the clarifier

The clarifier buttons raise or lower the frequency in steps of 10 Hz. This allows you to fine tune the transceiver to obtain the best clarity for received voice calls.

Step	Action...	Display shows...	Remarks...
1.	Press either of the Clarifier buttons  or 		Alternate between the  and  buttons to obtain the best clarity. You will hear a "pip" when the clarifier control has reached its operating limit. Note: the clarifier resets to the mid range when you change channels, or switch off.

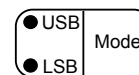


Changing the operating mode (USB - LSB)

Your transceiver has the facility to operate in either Upper Side Band (USB) or Lower Side Band (LSB) mode. You must have option L fitted and enabled on your transceiver on selected frequencies in order to use the LSB mode.

Unless otherwise advised, your transceiver is normally programmed to operate in the USB mode.

Step	Action...	Display shows...	Remarks...
1.	Press the mode button to switch between USB or LSB.	The display does not change.	The relevant indicator lights up.




Using the mute controls

There are two mute controls that inhibit background noise until a signal is received:



- Mute On'Off—this function inhibits background noise until a voice signal appears.
- S'call Mute—this function inhibits background noise until your transceiver has been selectively called (this function is only available if your transceiver has option SD fitted).

Voice mute

Step	Action...	Display shows...	Remarks...
1.	To switch on and off press 	The display does not change.	The indicator is lit when this option is selected. Inhibits background noise until a voice call is received.



Selective call mute

Step	Action...	Display shows...	Remarks...
1.	To switch on press  to switch off press 	The display does not change.	The indicator is lit when this option is selected. Inhibits background noise until a selective call is received.






Tuning the antenna

Before using the selected channel, the antenna must be tuned to the transmission frequency. The procedure used to tune the antenna depends upon the type of antenna or antenna tuner you are using:

- automatic tuning whip antenna
- multi-frequency tapped whip antenna
- antenna tuner.

Automatic tuning whip antenna

Step	Action...	Display shows...	Remarks...
1.	Select the required channel.		Refer to page 4-9, <i>Selecting channels</i> .
2.	Press 	<p>If tuning was successful</p>  <p>If tuning was unsuccessful</p> 	<p>The Tx indicator will be lit during this procedure. You will hear 'pips' while the antenna is tuning (this can take between 20 and 30 seconds). Once tuned successfully you will hear two high pitched 'pips'.</p> <p>If tuning is unsuccessful you will hear two low pitched tones. For further information, refer to the antenna handbook.</p>



Multi-frequency tapped whip antenna

For specific details on how to use the antenna, refer to the relevant antenna handbook.


Step	Action...	Display shows...	Remarks...
1.	Select the correct tap on the antenna to match the transmit frequency.	The display does not change.	The antenna will either have: <ul style="list-style-type: none">• the frequency printed next to the tap• a number that corresponds to a frequency on the list supplied with the antenna.



Antenna tuners

There are two types of antenna tuners, manual and automatic. For specific details refer to the relevant antenna tuner handbook.




Manual

Step	Action...	Display shows...	Remarks...
1.	Select the required channel.		Refer to page 4-9, <i>Selecting channels</i> .
2.	Press and hold  while adjusting the antenna tuner.	The display does not change.	



Automatic

There are two models of Codan automatic antenna tuners, the 4203 and the 9103. The 4203 will produce display messages on the transceiver; the 9103 will not. Further information on these antenna tuners can be found in the relevant handbooks.

Step	Action...	Display shows...	Remarks...
1.	Select the required channel.		Refer to page 4-9, <i>Selecting channels</i> .
2.	Press 	<p>If tuning on model 4203 was successful</p>  <p>If tuning on model 4203 was unsuccessful</p>  <p>For the 9103, the display is unchanged throughout this procedure.</p>	<p>The Tx indicator will be lit during this procedure.</p> <p>You will hear 'pips' while the antenna is tuning (this can take between 20 and 30 seconds).</p> <p>Once tuned successfully you will hear two high pitched 'pips'.</p> <p>If tuning was unsuccessful you will hear two low pitched tones. For further information, refer to the antenna handbook.</p>



Tune receive only mode

Your transceiver can be tuned to receive frequencies in the range 0.25 MHz to 30 MHz.



Note: Due to internally generated signals, it will be difficult to receive on and near frequencies 6599, 9998, 13199, 19799, 19995 and 26399 kHz.

While you are in tune receive mode you cannot receive selective calls or tone calls.

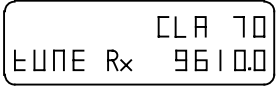





If the transceiver is used with an automatic antenna tuning system, the Tune button should be pressed to improve reception. If the transceiver is used with a manual tuner, the tuner controls should be set to the Scan settings.

Note: This is also recommended for transmit inhibit channels.

This procedure covers the two methods of changing the receiver frequency, and how to store a receive only frequency:

- using the Tune Rx Frequency  or  buttons—this method is preferable for small changes in frequency.
- selecting the desired frequency—this method is preferable for large changes in frequency
- storing a tuned receive only frequency.

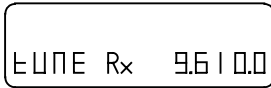

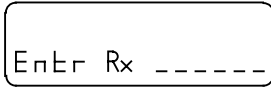
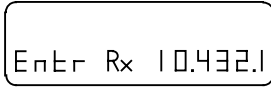

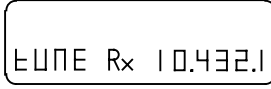
Using the Tune Rx Frequency or buttons

Step	Action...	Display shows...	Remarks...
1.	Press and hold any Tune Rx Frequency button	The display scrolls through the numbers until you release the button. 	Use the Fast buttons for coarse tuning (1 kHz steps) and the Slow buttons for medium tuning (100 Hz steps). For fine tuning, the Clarifier  and  buttons can be used to make final adjustment in 10 Hz steps.
2.	There are three ways to exit this mode, either press the Channel  or  buttons, the  button, or the PTT button on the microphone.		



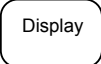


Selecting the desired frequency

This procedure allows you to select the frequency you desire, and therefore save time. Once you have selected a frequency you have the option to store the frequency as a P-channel or exit this facility.

Step	Action...	Display shows...	Remarks...
1.	Press any Tune Rx Frequency button.		The display shows the last selected channel.
2.	Press 		Your next action must start within 60 seconds, otherwise you will have to repeat this procedure.
3.	Enter the frequency number using the numeric buttons.		The decimal point is automatically inserted by the transceiver. The example shows the display reading if you typed in 104321.
4.	Press  If required, you can fine tune reception by using the Tune Rx Frequency buttons.		The transceiver now receives this frequency. Note: after pressing the Enter button, the MHz decimal point disappears for frequencies below 10 MHz.




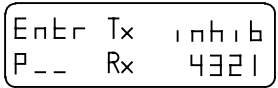
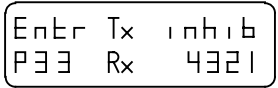

Step	Action...	Display shows...	Remarks...
5.	If you wish to store this selection as a P-channel, refer to the procedure <i>Storing a tuned receive only frequency</i> on page 4-23.		
6.	There are three ways to exit this mode, either press the Channel  or  buttons, the  button, or the PTT button on the microphone.		



Storing a tuned receive only frequency

You can store a tuned receive only frequency as a personal channel number in the range P1 to P99. This frequency can then be selected as outlined on page 4-9, *Selecting channels*.

This procedure can only take place if your transceiver is in the tune receive only mode, as outlined on page 4-21 *Selecting the desired frequency*

Step	Action...	Display shows...	Remarks...
1.	Press the Enter button twice in rapid succession. 		The display will be different if you only press the Enter button once.
2.	Use the numeric buttons to enter a channel number you have selected between 1 and 99.		The P is automatically inserted. The example is given for number P33.
3.	Press 		The frequency is now stored as channel P33 and your transceiver has returned to the normal operating mode.



Transmitting

It is important when transmitting to use the microphone to its best advantage. By following the notes under *Using the microphone* you will obtain the best transmitting results. This section covers two topics:

- using the microphone
- transmitting a message.

Using the microphone

To connect the microphone to the transceiver; push the microphone plug gently into the microphone socket and fasten the locking ring finger tight, do not over tighten.

Please observe the following notes when using the microphone.

- Hold the microphone side-on and close to your mouth.
- Press and hold down the PTT (press to talk) button.
- When starting a transmission, always state the call sign of the person you are addressing and then your own call sign.
- Speak clearly at normal volume and rate.
- Do not use abusive language, remember others may be listening to your conversation and it can offend.
- Use the word 'over' to indicate you have finished speaking and release the PTT button.
- The transceiver has a 'time out' facility that stops the transmission after a pre-set period. This facility prevents problems occurring if you have jammed the PTT button down. The time out period can be adjusted to suit your requirements; refer to section 11, *Changing the set-up options*.

Transmitting a message

Step	Action...	Display shows...	Remarks...												
1.	Select a channel for transmission.	The display shows the channel number and the transmit (Tx), and receive (Rx) frequencies.	Refer to page 4-9, <i>Selecting channels</i> .												
2.	Check the display to see if the channel transmit frequency has been enabled.	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">CHL</td> <td style="padding: 2px 10px;">Tx</td> <td style="padding: 2px 10px;">4321</td> </tr> <tr> <td style="padding: 2px 10px;">P22</td> <td style="padding: 2px 10px;">Rx</td> <td style="padding: 2px 10px;">4321</td> </tr> </table> </div> <p>If the display shows 'inhib' then the channel frequency is for receive only purposes.</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">CHL</td> <td style="padding: 2px 10px;">Tx</td> <td style="padding: 2px 10px;">i n h i b</td> </tr> <tr> <td style="padding: 2px 10px;">P15</td> <td style="padding: 2px 10px;">Rx</td> <td style="padding: 2px 10px;">3600</td> </tr> </table> </div>	CHL	Tx	4321	P22	Rx	4321	CHL	Tx	i n h i b	P15	Rx	3600	<p>If the channel has been enabled, continue with step 3.</p> <p>If not and the display shows 'inhib' then you will have to select another channel on which to transmit.</p>
CHL	Tx	4321													
P22	Rx	4321													
CHL	Tx	i n h i b													
P15	Rx	3600													
3.	Tune the antenna.		Refer to page 4-15, <i>Tuning the antenna</i> .												
4.	Listen and check that the channel is free from traffic.														


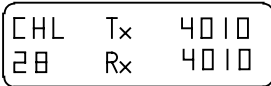



Step	Action...	Display shows...	Remarks...
5.	Press the PTT button on the microphone and commence talking. Transmit your message following the notes outlined in <i>Using the microphone</i> on page 4-24.		The Tx indicator flashes during transmission.





Making an emergency call (Australia only)

The Emergency Call button is used in Australia to call the Royal Flying Doctor Service. This button will only function if the selected channel is enabled for emergency calls.

Step	Action...	Display shows...	Remarks...
1.	Select the correct RFDS channel for the base station required. You can use the channel or recall buttons, then tune the antenna.		Refer to page 4-15, <i>Tuning the antenna.</i>
2.	Press 		When you press the Emgcy Call button you will hear a tone. After the 'pip', the tone continues for 20 seconds. During this period the Tx indicator will be lit.
3.	If you hear a single low pitched tone and the display shows 'Not ENABLE', the channel is not an RFDS frequency and cannot be used for an emergency call.		Try again and select a correct RFDS channel.



Step	Action...	Display shows...	Remarks...
4.	Wait for a reply before transmitting your message.	The display does not change.	<p>If the call was received by an attended RFDS base, they will reply immediately.</p> <p>If the call was received by an unattended RFDS base, they will transmit a tone within two minutes.</p> <p>If the tone call is not received, you should try again or go to another channel.</p>
5.	To cancel a call during the 20 second transmission time either press  the PTT switch on the microphone or the  button.		

