

7. Programming channels

Generally transceivers are supplied with an inbuilt facility (option TXD—Transmit Disabled), which prevents you from programming or changing transmit frequencies from the front panel. Under special circumstances, and where local licensing authorities permit, you may fit option TXE (Transmit Enable) which allows you to create or change the transmit frequencies of your transceiver.

Your transceiver can store up to 600 channels. A maximum of 501 transmit and receive channels can be pre-programmed by the factory or a Codan agent. The remaining 99 programmable channels (P-channels) can be set by you from the front panel.

Pre-programmed channels may be copied as P-channels and have their options modified, such as:

- E—emergency call (RFDS in Australia)
- S—selective call
- t—calls (four 2-tone calls)
- Upper Side Band mode (USB) or Lower Side Band mode (LSB—if fitted).

The factory or agent programmed channels are stored in the internal memory and can only be reprogrammed or deleted by the factory or agent. You can only create or change the transmit frequencies if your transceiver has option TXE fitted.

P-channels are stored in memory but can be reprogrammed or deleted at any time by the operator.

All displays in this section show examples of channel and frequency numbers. You must insert your selected channel and frequency numbers.

Setting up the P-channel inhibit options

The programmable channel feature (P-channel) that you program from the front panel of the transceiver, has four inhibit options. Each option places different restrictions on the operator to prevent interference to the programmed channels. The four options are:

- No inhibit (No inhib). This option allows you to overwrite or delete P-channels from the front panel.
- Standard inhibit (Std inhib). This option inhibits you from overwriting and deleting P-channels, but allows you to program new P-channels.
- Full inhibit (FULL inhib). This option prevents the Enter button from working (which inhibits all P-channel programming) and the Tune Rx Frequency buttons are disabled.
- Total inhibit (tOtAL inhib). This option is the same as Full inhibit, plus the transmit and receive frequencies are not displayed.



Apart from 'No inhibit', the remaining options require an Inhibit link fitted to the microprocessor PCB. Further details can be found in section 11, *Inserting the microprocessor link*.




This section covers two procedures:

- Checking if the inhibit link has been fitted to the PCB
- Changing the inhibit options.


Checking if the inhibit link is fitted to the PCB

In this mode, all P-channels may be overwritten or deleted from the front panel. This facility is only available when there is no Inhibit link fitted to the microprocessor PCB.

Note: The front panel link does not need to be moved for transceivers with an EPROM issue of 4.3 and above. For these models, ensure the transceiver is switched off and proceed to step 2.

Step	Action...	Display shows...	Remarks...
1.	Turn the transceiver off and move the front panel link to position 1.	No display.	Before moving the link, note its original position. Refer to section 11, <i>Changing the position of the front panel link.</i>
2.	Hold down  and press 	Hold down the Enter button until the display shows  Note: If there is an Inhibit link fitted, the display shows whichever inhibit has been selected.	This display confirms that no Inhibit link is fitted to your transceiver. The message means that there are no inhibits on P-channel programming.






Step	Action...	Display shows...	Remarks...
3.	Press 	No display.	The transceiver is now switched off. This procedure is now complete for transceivers with EPROM version 4.3 and above. For earlier models, continue with step 4.
4.	Return the front panel link to its original position (F or E).		Refer to section 11, <i>Changing the position of the front panel link.</i>
5.	Replace the cover before switching on your transceiver.		Refer to section 11, <i>Changing the position of the front panel link.</i>




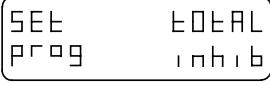




Changing the inhibit options

Only qualified technicians should complete this procedure. This mode can only be entered if the Inhibit link is fitted across pad 2 on the microprocessor PCB and the front panel link is repositioned. Refer to section 11, *Inserting the microprocessor link* and *Changing the position of the front panel link*.

Step	Action...	Display shows...	Remarks...
1.	Turn the transceiver off and move the front panel link to position 1.	No display.	Before moving the link, note its original position. Refer to section 11, <i>Changing the position of the front panel link</i> .
2.	Insert an Inhibit link across pads 2 on the microprocessor PCB.		Refer to section 11, <i>Inserting the microprocessor PCB link</i> .
3.	Hold down  and press 	Hold the Enter button down until the display shows 	This display shows your last setting, either Std, FULL or tOTAL inhib. Pressing the Enter button scrolls through the available options. If this is the option you want, go to step 6.








Step	Action...	Display shows...	Remarks...
4.	Press 		Pressing the Enter button scrolls through the available options. If this is the option you want, go to step 6.
5.	Press 		If this is the option you want, go to step 6.
6.	Press 	No display.	The transceiver is now switched off.
7.	Remove the inhibit link you inserted across pads 2 on the microprocessor PCB.		Refer to section 11, <i>Inserting the microprocessor link.</i>
8.	Return the front panel link to its original position (F or E).		Refer to section 11, <i>Changing the position of the front panel link.</i>
9.	Replace the cover before switching on your transceiver.		

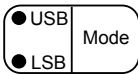
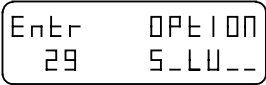

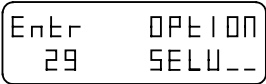

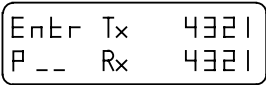
Copying channels to P-channels

This facility allows you to copy the factory or agent pre-programmed channels already stored in memory and make them P-channels. This allows you to group the most commonly used channels which can save you time searching for them in the main program.

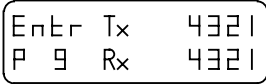
Ensure your transceiver is switched on before commencing this procedure.

Step	Action...	Display shows...	Remarks...						
1.	Use the Recall or Channel  and  buttons to find the channel you want to copy.	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse; width: 100%;"> <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;">29</td> <td style="padding: 2px 10px;">Rx</td> <td style="padding: 2px 10px;">4321</td> </tr> </table> </div> <p>An example for channel 29.</p>	CHL	Tx	4321	29	Rx	4321	Refer to section 4, <i>Selecting channels</i> .
CHL	Tx	4321							
29	Rx	4321							
2.	Press 	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px 10px;">Enter</td> <td style="padding: 2px 10px;">Tx</td> <td style="padding: 2px 10px;">-----</td> </tr> <tr> <td style="padding: 2px 10px;">29</td> <td style="padding: 2px 10px;">Rx</td> <td style="padding: 2px 10px;">4321</td> </tr> </table> </div>	Enter	Tx	-----	29	Rx	4321	Your next action must start within 60 seconds.
Enter	Tx	-----							
29	Rx	4321							
3.	Press 	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px 10px;">Enter</td> <td style="padding: 2px 10px;">OPT 00</td> </tr> <tr> <td style="padding: 2px 10px;">29</td> <td style="padding: 2px 10px;">---U--</td> </tr> </table> </div>	Enter	OPT 00	29	---U--	This allows you to select options.		
Enter	OPT 00								
29	---U--								
4.	Repeatedly press  to select either option S/t1/t2/t3 or t4.	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px 10px;">Enter</td> <td style="padding: 2px 10px;">OPT 00</td> </tr> <tr> <td style="padding: 2px 10px;">29</td> <td style="padding: 2px 10px;">S--U--</td> </tr> </table> </div>	Enter	OPT 00	29	S--U--	<p>Stop when you reach the option you require.</p> <p>Refer to section 4, <i>Option codes</i>.</p> <p>Note: You cannot select both tone call and emergency call.</p>		
Enter	OPT 00								
29	S--U--								


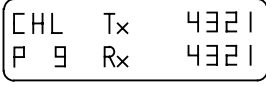


Step	Action...	Display shows...	Remarks...
5.	Press 		Each press of the Mode button presents the next sideband option. Stop when you reach the option you require. Refer to section 4, <i>Option codes</i> .
6.	Press 		Repeatedly pressing the Emergency Call button switches this option on and off. Note: You cannot select both emergency call and tone call.
7.	Press 		This registers the options you selected and allows you to enter a channel number. The 'P' is automatically entered.



Step	Action...	Display shows...	Remarks...
8.	Use the numeric buttons to enter your choice of channel number between 1 and 99.		<p>This is an example for channel P9.</p> <p>If the display shows either FULL, USED or inhib, refer to page 7-16, <i>Programming display messages</i>.</p>

Note: Channels using different transmit and receive frequencies (2-frequency simplex channels) must be copied to channels P70 to P99.


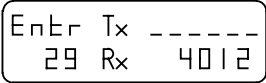

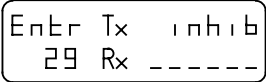
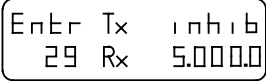

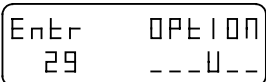
9.	<p>Press</p> 		<p>This registers the new channel in your transceiver.</p>
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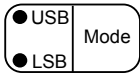


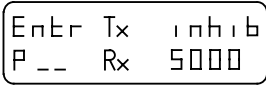
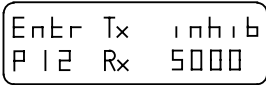

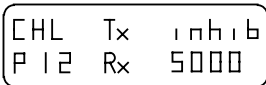
Creating receive only P-channels

All transceivers have the facility to create or change the receive P-channels from the front panel.

Ensure your transceiver is switched on before commencing this procedure.

Step	Action...	Display shows...	Remarks...
1.	Press 		Your next action must start within 60 seconds.
2.	Press 		
3.	Use the numeric buttons to enter the receive frequency.	 If the display shows either a 'too hi' or 'too lo' error message, refer to <i>Programming display messages</i> on page 7-16.	The frequency must be entered to the nearest 100 Hz, between 250 kHz and 30 MHz. The display shows an example of 5 MHz.
4.	Press 		This facility defaults to the last channel setting.



Step	Action...	Display shows...	Remarks...
5.	Press 		Each press of the Mode button presents the next sideband option. Stop when you reach the option you require. Refer to section 4, <i>Option codes</i> .
6.	Press 		This registers the options you selected and allows you to enter a channel number. The 'P' is automatically entered.
7.	Use the numeric buttons to enter your choice of channel number between 1 and 99.		This is an example for channel P12. If the display shows either FULL , USED or inhib , refer to page 7-16, <i>Programming display messages</i> .
8.	Press 		This registers the new channel in your transceiver. You can now continue with normal transceiver operations.




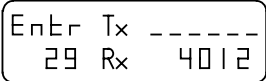
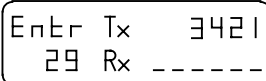

Creating transmit and receive P-channels

All transceivers have the facility to create or change the receive P-channels from the front panel.


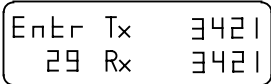


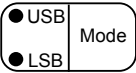


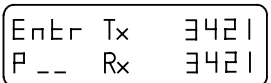
You can only create, or change, transmit P-channels from the front panel of your transceiver if it has option TXE fitted. Under special circumstances, and where local licensing authorities permit, option TXE (transmit enable) may be fitted to your transceiver. This option must be requested at the time of purchase.

Only under these conditions will the following apply.

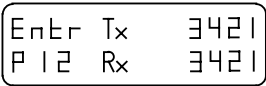

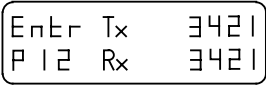
Ensure your transceiver is switched on before commencing this procedure.

Step	Action...	Display shows...	Remarks...
1.	Press 		Your next action must start within 60 seconds.
2.	Use the numeric buttons to enter the transmit frequency.		This example is for transmit frequency 3421. The frequency must be entered to the nearest 100 Hz, between 250 kHz and 30 MHz.
3.	Press 		





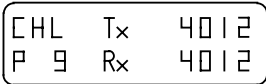

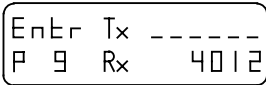

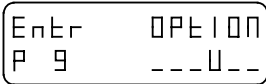

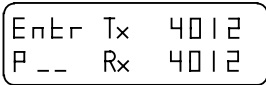

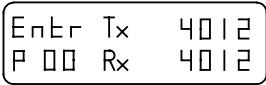

Step	Action...	Display shows...	Remarks...
4.	<p>Use the numeric buttons to enter the receive frequency.</p> <p>Or push  again if the receive is the same frequency as transmit.</p>	 <p>If the display shows either a 'too hi' or 'too lo' error message, refer to <i>Programming display messages</i>, page 7-16.</p>	<p>This example is for receive frequency 3421.</p> <p>The frequency must be entered to the nearest 100 Hz, between 250 kHz and 30 MHz.</p>
5.	<p>Press </p>		<p>This facility defaults to the last channel setting.</p>
6.	<p>Press </p>		<p>Each press of the Mode button presents the next sideband option. Stop when you reach the option you require.</p> <p>Refer to section 4, <i>Option codes</i>.</p>
7.	<p>Press </p>		<p>This registers the options you selected and allows you to enter a channel number.</p> <p>The 'P' is automatically entered.</p>



Step	Action...	Display shows...	Remarks...
8.	Use the numeric buttons to enter your choice of channel number between 1 and 99.		<p>This is an example for channel P12.</p> <p>If the display shows either FULL, USEd or inhib, refer to page 7-16, <i>Programming display messages</i>.</p>
9.	Press 		<p>This registers the new channel in your transceiver.</p> <p>You can now continue with normal transceiver operations.</p>



Deleting unwanted P-channels

Step	Action...	Display shows...	Remarks...
1.	Use the Recall or Channel  and  buttons to find the channel you want to delete.	 An example for channel P9.	Refer to section 4, <i>Selecting channels</i> .
2.	Press 		Your next action must start within 60 seconds.
3.	Press 		You need to press enter to scroll through the options.
4.	Press 		
5.	Press this button twice 		Two zeros entered as a channel number will cause the transceiver to erase the information in that channel.
6.	Press 	The transmit and receive frequencies of the next lowest channel.	If the display shows inhib , refer to page 7-16, <i>Programming display messages</i> .



Programming display messages

Whilst programming channels, the display may present you with the following messages:

- inhibit (**inhib**)
- used (**USEd**)
- full (**FULL**)
- too hi or too low (**too hi** or **too lo**).

Inhibit (**inhib**)

P-channels can be protected from being accidentally deleted or overwritten by soldering a link on the microprocessor PCB. (Refer to section 11, *Inserting the microprocessor PCB link*.)

If you try to delete or overwrite a channel with the link installed, the display shows **inhib** when you press the Enter button. You must try another channel number in order to store your selection.

Used (**USEd**)

If the display shows **USEd**, the channel number you selected is already being used and the overwrite protection link is not installed (refer to Inhibit, above). Either enter another channel number or overwrite the existing channel number by pressing the Enter button again.



If the overwrite protection link is not installed, pressing the Enter button again will erase the frequency previously allocated to this channel number.

Full (FULL)

If the display shows **FULL**, all 99 P-channels have been used.



If the overwrite protection link is not installed, pressing the Enter button again will erase the frequency previously allocated to this channel number.

Select a channel number you no longer need, and overwrite that number by pressing the Enter button again.

If the overwrite protection link is installed, it will have to be removed before you can save your new channel selection. (Refer to section 11, *Inserting the microprocessor PCB link.*)

Too high or too low (too hi or too lo)

If you try to program a frequency outside the range of 250 kHz to 30 MHz, the transceiver shows an error message **too hi** or **too lo**. To overcome this problem, you must reprogram another frequency within the transceivers range.



Setting up temporary channels

During any channel programming operations, copying or creating a P-channel, you can press the Enter button instead of entering a channel number. This creates a temporary channel which will not be saved when you switch off the transceiver.

