6. Using the receiver in scan mode

In the receiver scan mode your transceiver is able to listen into selected channels for transmitted signals. Once a signal has been detected, the transceiver holds that channel for a pre-selected time before continuing with the scan. This is determined at set-up.

In normal operating conditions, a maximum of 15 channels can be programmed to be scanned in sequence for audio (voice) signals. A maximum of 8 selective call channels can also be included but must be programmed within the first eight entries.

The scanning facilities can only be used with a suitable antenna system. For land based installations you'll need a broadband antenna. For mobile installations you'll need a Codan automatic tuning whip antenna.

It is assumed that before you use any of the procedures in this section, you have turned on the transceiver.

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

❑

Scan mode terms

The following abbreviations are shown in the display.

F	Frequency
L	Lower side band
LU	Lower and upper side band
U	Upper side band

❑

Setting up the scan mode

The scan program allows your transceiver to scan a selected number of frequencies. Your transceiver also has the option to run in normal or Auto-scan mode. The Auto-scan mode automatically puts the transceiver back into scan after five minutes of inactivity (such as no channel change, PTT, tune etc.). These scan facilities have two options:

- Enabled—scan programs can be entered and deleted from the front panel.
- Inhibit—scan programs cannot be entered or deleted from the front panel.

Note: The front panel link does not need to be moved for transceivers with an EPROM issue of 4.1 and above. For these models, ensure the transceiver is switched off and go 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, *Changing the position of the front panel link.*
2.	Hold down Scan and press Power On'Off	Hold down the Scan button until the display shows SCAN prog ENABLE	This turns the transceiver on, and into the scan set-up mode.
3.	Press Scan	SCAN prog inhib	Each press of the Scan button scrolls to the next option. If this is the option you want, go to step 7.

Step	Action…	Display shows…	Remarks…
4.	Press Scan	SCAN prog Auto inhib	Switches to Auto option. If this is the option you want, go to step 7.
5.	Press Scan Pressing the Scan button again returns you to the display in step 2.	SCAN prog Auto ENAbLE	Switches from inhib to ENAbLE.

Note: If you select automatic scanning, you now have the option of selecting Selective Call Mute to be enabled as soon as you enter the automatic scan mode. If you wish to select this option then continue with step 6, if not, go to step 7

6.	Press S'call Mute	The display does not change.	The indicator will be lit. You have now selected selective call mute to be enabled as soon as you enter the automatic scan mode.

Step	Action…	Display shows…	Remarks…
7.	Press Power On'Off	No display.	Your selection has been made and the transceiver is now switched off. This procedure is now complete for transceivers with EPROM version 4.1 and above. For earlier models, continue with step 8.
8.	Return the front panel link to its original position (F or E).		Refer to section 11, *Changing the position of the front panel link.*
9.	Replace the cover before switching on your transceiver.		Refer to section 11, *Changing the position of the front panel link.*

❑

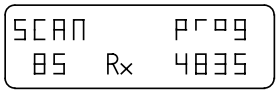
Programming the channels to be scanned

In normal operating conditions, a maximum of 15 channels can be programmed to be scanned in sequence for audio (voice) signals. Channels required to operate on a selective call must be programmed within the first eight entries.

Ensure your transceiver is switched on and scan program has been enabled.

Step	Action…	Display shows…	Remarks…
1.	Press [Enter] and then [Scan] within one second.	SCAN 85 Rx 4835	The Scan button indicator flashes. Any previous channels programmed to be scanned will be erased.
2.	Select the required mode Press [USB / LSB / Mode]		The appropriate mode indicator will light. You can only transmit and receive in the LSB mode if option LU is fitted.
3.	Select the relevant channel Press [4 ^^] or [9 vv]	SCAN 85 Rx 4835	Refer to section 4, *Selecting channels.* Channels required to operate on selective call must be enabled. Refer to section 5, *Enabling a channel for selective call.*

☞

Step	Action…	Display shows…	Remarks…
4.	Press 		The channel is programmed for scanning. Repeat this procedure until all channels you want to scan have been programmed.
5.	Press  and then  within one second.		The channels you have programmed are now registered within the transceiver.

Notes: If an error is made, the programming mode must be switched off (follow step 5), and the procedure repeated.

If you try to program more than 15 entries, you will hear a single low-pitched tone and the error message 'scan full' displays.

The channel entries can be reviewed while in the scan programming mode. Use the channel ^^ and vv buttons to scroll through the channels. Any channel in the scan program is indicated by 'prog' on the display (as shown in step 4 above).

The scan program can be inhibited, refer to *Setting up the scan mode* on page 6-3.

❑

Receiving in scan mode

This procedure covers three topics when receiving in scan mode:

- start scanning
- stop scanning
- changing the scan mode.

Start scanning

Step	Action…	Display shows…	Remarks…
1.	Press 	The display shows details of each channel as it is scanned.	The Scan button indicator will be lit during scanning.

Notes: You cannot transmit while the transceiver is in the scan mode. If you attempt to transmit, you will hear a single 'pip' and the error message 'No Ptt Error' will be displayed.

If you need to transmit, you must stop the scanning operation.

❑

Stop scanning

Step	Action…	Display shows…	Remarks…
1.	Press  or press the microphone PTT button twice in succession.	The display shows the last channel scanned.	The Scan button indicator is off.

Note: If you only press the PTT button once, the display shows 'NO PTT Error'

❑

Changing the scan mode

There are three scan mode options available to you which can be selected by repeatedly pressing the Mute On/Off button. Your transceiver must be in the scan mode to complete this operation (refer to *Receiving in scan mode* on page 6-8).

- Pause scanning. Scanning stops for five seconds when an audio signal is detected.
- Hold scanning. Scanning stops when an audio signal is detected, and continues only when the signal ceases.
- Continuous scanning. Each channel is monitored for one second; scanning continues regardless of any audio signals being detected.

Note: scan modes operate for both voice and selective call reception

Step	Action…	Display shows…	Remarks…
1.	Ensure the transceiver is in the Scan mode.	The display shows the frequencies as they are scanned.	The Scan button indicator will be lit in the Scan mode. Refer to *Receiving in scan mode* on page 6-8.
2.	Pause scanning Press once 		You will hear a single 'pip' and the Mute On/Off indicator will be lit. If you want *Hold scanning*, go to step 3. To exit this mode go to step 5. ☞

Step	Action…	Display shows…	Remarks…

3. Hold scanning

Press again

You will hear two 'pips' and the Mute On/Off indicator will be lit.

If you want *Continuous scanning*, go to step 4.

To exit this mode go to step 5.

4. Continuous scanning

Press again

You will hear a single 'pip' and the Mute On/Off indicator will be off.

5. To exit this mode, press

❑

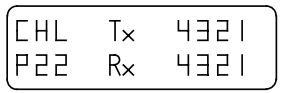
Using selective call in scan mode

Selective call scanning ensures that you are only alerted when the incoming calls are specifically addressed to you.

This facility also allows the transceiver to store in memory the addresses of up to ten stations that may have tried to contact the transceiver whilst unattended. These addresses may have been transmitted over any of the programmed channels.

The first eight channels of the scan are used for selective call scanning.

For networks using this facility, it is important for the calling station to transmit a long preamble. For more details on selective calling, refer to section 5, *Using selective call*.

Step	Action…	Display shows…	Remarks…
1.	Press 	The display shows each channel as it is scanned.	The Scan indicator will be lit.
2.	Press 		On detection of a call, scanning stops until the call is decoded. If the call is addressed to your transceiver you will hear a series of three telephone rings followed by pips every four seconds. If the call is not addressed to your transceiver, the scan continues.

☞

Step	Action…	Display shows…	Remarks…
3.	If the call is addressed to the transceiver the display changes. Every time an addressed call is detected, the display will repeat the same message with the appropriate channel frequency.	CHL 428 129 CALLEd	If the call is not answered immediately, the scanning stops for 2½ minutes and you will hear 'pips' every 4 seconds. After this period of time the transceiver carries on scanning.
4.	To stop scanning press 		The button indicator will go out.

❑

Programming frequency band scan

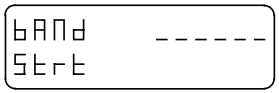
The band scanning facility enables the transceiver to scan between two programmed frequencies. You can program the frequency bands to suit your needs.

Up to 30 bands can be programmed into the transceiver, and stored between channels P70 and P99.

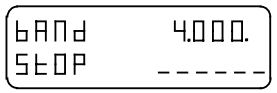
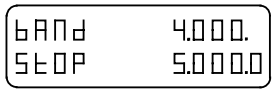
There are two rates of scan available, fast and slow:

- fast scanning changes the frequency in ten 1 kHz steps per second
- slow scanning changes the frequency in ten 100 Hz steps per second.

Your transceiver must be switched on before commencing this procedure.

Step	Action…	Display shows…	Remarks…
1.	The following buttons must be pressed within one second. Press [Enter] then press any of the Tune Rx Frequency buttons, example [1 Fast] then press [Scan]		The Scan button indicator flashes. The next action must start within 60 seconds.

☞

Step	Action…	Display shows…	Remarks…
2.	Using the numeric buttons, enter the start frequency to the nearest 100 Hz.		This is an example of selecting a band scan to start at 4000 kHz.
3.	Press Enter		The decimal points are automatically entered by the transceiver.
4.	Enter the stop frequency to the nearest 100 Hz.		This is an example of selecting a band scan to stop at 5000 kHz.
5.	Press Enter		
6.	Press 2 Slow		S indicates the slow rate of scan (100 Hz steps).
	or 1 Fast		F indicates the fast rate of scan (1 kHz steps).

☞

Step	Action…	Display shows…	Remarks…
7.	If a mode change is required, press ● USB / ● LSB Mode	EntEr OPtIOn __LU_F	Each press selects the next option; upper side band (U), lower side band (L), both side bands (LU) and back to (U). Note: option L is required for lower side band operation.
8.	Press Enter	EntEr 4000 F__ 5000	
9.	Enter the channel number you have selected. (eg 88)	bAnd 4000 F88 5000 If the display shows either prog USEd, prog inhib or prog FULL refer to the notes on the next page.	You can select a number between 70 and 99. The F is automatically entered.
10.	Press Enter	bAnd 4000 F88 5000	The Scan indicator light goes out. The frequency band has been selected. You can repeat the operation until all the channels are full.

☞

Notes: If the display shows 'prog USEd', either enter another channel number or press the Enter button to overwrite the existing information.

If the display shows 'prog inhib', the scan facility is inhibited. Refer to section 11, *Changing the set up options*.

If the display shows 'prog FULL', all 99 user program channels are used. Either press the Enter button to overwrite the existing information, or select a channel that you no longer require and press Enter.

Further details on these three messages can be found in *Programming display messages* in section 7.

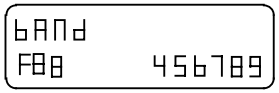
Scanning frequency bands

The band scanning facility enables the transceiver to scan between two programmed frequencies, refer to *Programming frequency band scan* on page 6-13.

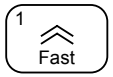
There are two rates of scan available, fast and slow:

- fast scanning changes the frequency in ten 1 kHz steps per second
- slow scanning changes the frequency in ten 100 Hz steps per second.

The following steps explain how to scan the frequency bands:

Step	Action…	Display shows…	Remarks…
1.	Select the relevant programmed band scan channel between P70 and P99.		Refer to section 4, *Selecting channels.* Band scan channels are indicated as an 'F' number.
2.	Press 	 The display shows the channel number and all the frequencies as the band is scanned continuously.	The Scan button indicator will be lit.

☞

Step	Action…	Display shows…	Remarks…
3.	To pause the scan, press any of the fast or slow Tune Rx Frequency buttons. Example: 	The display shows the channel number and the current frequency.	You may move between the frequencies by using any of the Tune Rx Frequency buttons.
4.	To resume scanning, press 	The display shows the channel number and all the frequencies as the band is scanned continuously.	The rate of scan will be determined by whether you pressed the fast or slow button in step 3.
5.	To stop scanning, press 		The Scan button indicator will go out.
6.	To recommence normal scanning, select another non-band scanning channel and press 		Refer to section 4, *Selecting channels.*

❑

Deleting unwanted scan channels

Step	Action…	Display shows…	Remarks…
1.	Select the channel you wish to delete.	bAnd 4000 F88 5000 An example for channel 88.	Refer to section 4, *Selecting channels*.
2.	Press Enter	Entr 4000 F__ 5000	
3.	Press this button twice 0 P	Entr 4000 F00 5000	Two '0's entered as a channel number deletes the information in the selected channel.
4.	Press Enter	The display shows the details of the next lowest channel.	

Note: The scan program can be locked to prevent changes being made. If changes are attempted on a locked channel the display shows 'prog inhib'. If you need to amend this facility, refer to page 6-3 *Setting up the scan mode*.