5. Using selective call

Selective call allows you to call an individual transceiver or a group of transceivers. This can be best likened to a normal telephone system where the called station has a unique calling address or number. However, the operator can also call a group of stations if desired.

Each transceiver has its own identification number. The identification number is a four digit code that is either:

- self programmed into the transceiver using the front panel buttons
- pre-set at the factory.

The selective call feature operates by the transmission and reception of coded signals. These signals contain the identification number of the transceiver being called (the called address) and the number of the transceiver making the call (the self-identification).

All 8528 transceivers can make selective calls. To receive a selective call however, option SD must be fitted to your transceiver.

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

Selective call terms

The following terms are used in this section.

This term…	Means…
Called address	The four digit identification number of the transceiver being called.
Beacon call	A call used to check signal conditions.
Decoding	Receiving and translating the encoded message.
Encode	The translation of the identification number and instructions into a coded message for transmission.
Group call	A call to all transceivers within a selected group. For example, a call using the identification address 0200 (group call) will be received by all transceivers whose identification address falls in the two hundred digit range (0201 to 0299).
Preamble	Part of the coded selective call message structure which is transmitted when you press the Call button. The message contains the preamble tone which precedes the called address and the self-identification address codes.
Program	Setting the identification addresses into the transceiver.

This term…	Means…
Revertive Signal	A signal automatically transmitted back from the receiving transceiver to indicate message received and decoded satisfactorily. This signal does not apply to group calls.
Selective beacon call	A call used to check signal conditions to a selected station.
Self-identification	The four digit identification number of the calling transceiver.
Station	A term used for the location of a transceiver, either mobile or fixed based.
Selective call encode only	The transceiver can only transmit a selective call—NOT receive. There are two operating conditions that apply: • front panel entry • pre-set controls.
Selective call encode/decode	The transceiver, fitted with option SD, can transmit and receive a selective call. There are two operating conditions that apply: • front panel entry • pre-set controls.

Setting up selective call

There are several features that need to be set up before selective call is used:

- the preamble time period
- the called address
- the self-identification address
- the beacon on or off.

You may cancel the procedure at any time by turning the transceiver off (press the Power On/Off button). Turning the transceiver off stores any changes you made to the features.

This procedure is only appropriate for transceivers with software issue 4.1 or greater. If you own a transceiver with a software issue before 4.1, this procedure will require you to reposition an internal link. Further information on this link can be found in section 11, *Changing the front panel link*.

Once you have commenced this procedure, if no action is required you can skip through all the features by repeatedly pressing the Call button.

Notes: A long preamble is required when scanning selective calls.

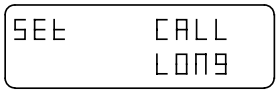
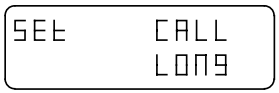
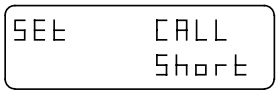
The reason for a long preamble is that during scanning, the preamble has to be present throughout the time it takes to scan all eight selective call channels.

Do not use identification addresses ending in '00' and '99' as they are used for the group call and beacon facilities.

You must always enter information within 60 seconds of pressing the Enter button, otherwise the transceiver reverts back to the normal mode.

Step	Action…	Display shows…	Remarks…

Setting the preamble time period

Step	Action…	Display shows…	Remarks…
1.	Ensure your transceiver is switched off.		
2.	Hold down [Call] and press [Power On'Off]		Hold the Call button down for approximately three seconds. This turns the transceiver on and into the preamble set-up mode.
3.	Press any of the numeric buttons to set the preamble length.	 or 	Pressing any of the numeric buttons alternates between a long or short preamble.
4.	Press [Enter]		Once enter has been pressed, the pre-amble time has been set and can only be changed by repeating this procedure. If your transceiver has the pre-set selective calling switches fitted, proceed to step 6.

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Setting the fixed called address

There are three ways of entering the called address:

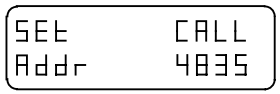
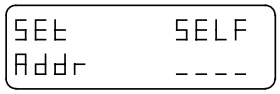
a) as below, which is fixed and cannot be changed easily

b) using the pre-set switches - where applicable

c) by the method used on page 5.16, *Transmitting a selective call* (Open access selective call) which allows the address to be entered from the front panel and is easy to change to call another transceiver.

Note: by setting a fixed called address the normal function of Call will change. If a fixed call address has been set, pressing Call will automatically send the programmed address. Open access selective calling is disabled.

Setting the self-identification address

Step	Action…	Display shows…	Remarks…
5.	Use the numeric buttons to enter the called address number. To delete an address, enter four zeros.		You can override an existing address by entering a new number.
6.	Press Enter		Once Enter has been pressed, the called address has been set and can only be changed by repeating this procedure. If your transceiver has the pre-set selective calling switches fitted, proceed to step 8. The next step must be completed within 60 seconds.

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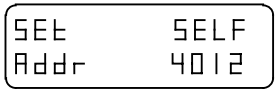
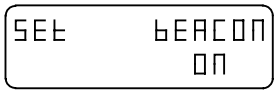
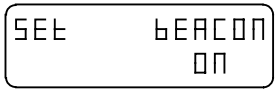
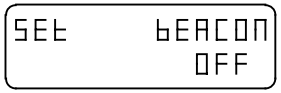
7.	Use the numeric buttons to enter the self-identification address number. To delete an address, enter four zeros.		You can override an existing address by entering a new number.
8.	Press Enter		Once Enter has been pressed, the self identification address has been set and can only be changed by repeating this procedure. The next step must be completed within 60 seconds.

Enabling the beacon mode

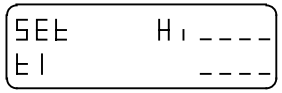
9.	Press any of the numeric buttons to switch the beacon on or off.	 or 	Repeatedly pressing any of the numeric buttons switches the beacon on and off. For more information on this feature, refer to page 5-27, *Using the beacon feature.*

☞

Step	Action…	Display shows…	Remarks…

10. Press

Enter

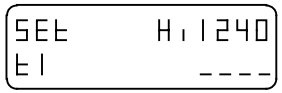


This sets the new beacon setting and moves to the next feature (tone calling).

For more information on tone calling, refer to section 8, *Using tone call.*

Setting tone calls

11. This procedure is not required at this time.



This procedure is covered in detail in section 8, *Setting up tone call.*

12. Press

Power On'Off

This turns your transceiver off and registers all the selective call settings you have just made.

❑

Setting up the selective call switches

Some transceivers under special circumstances have selective calling ident code switches fitted within the transceiver. These are eight small rotary switches located on PCB 08-03300 or 08-03303 (refer to figure 5.1).

The *Self ident code switches* and the *Called address code switches* must all be set to allow you to transmit self and called identification addresses. It must be noted that the setting of the code switches overrides all front panel selection of the ident numbers from the transceiver, control head or remote control console 8570. With ALL the *Self ident* or/and *Called address code switches* set to zero (0), front panel selection of the ident numbers is re-established

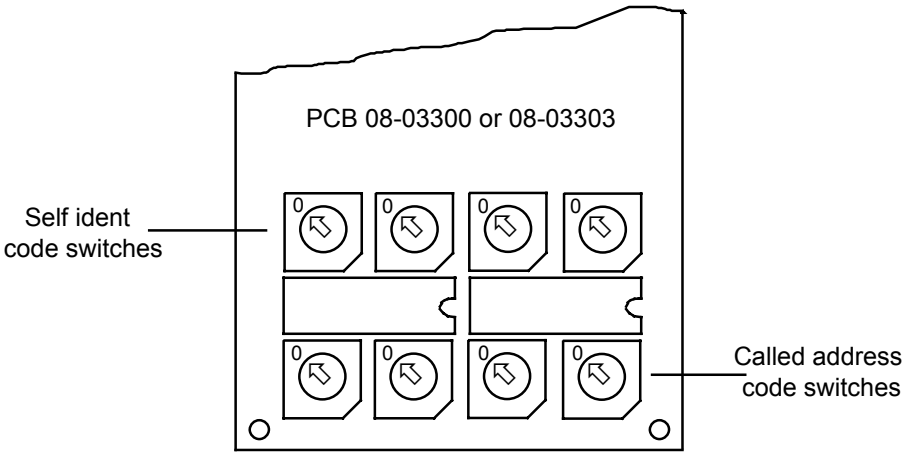
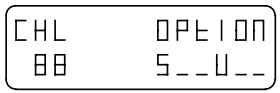


Figure 5.1: Selective call switches

Checking if a channel is enabled for selective call

A channel must be enabled for the selective call facility to operate. If the channel you wish to use has not been enabled, refer to the procedure *Enabling a channel for selective call* on page 5-14.

Step	Action…	Display shows…	Remarks…
1.	Press and hold Display		An S in the left hand position of the options bar indicates that the channel is enabled for selective calling.
2.	Release Display	The display will return to its original display in approximately one second.	

❑

Checking if a selective decode (option SD) is fitted

Option SD must be fitted to your transceiver to receive selective calls.

Step	Action…	Display shows…	Remarks…
1.	Press S'call Mute	The display does not change.	If the S'call Mute indicator lights, then option SD is fitted to your transceiver. However, if the mute has been inhibited intentionally the indicator will not light (refer to page 5-10).

❑

Selective call mute enable or inhibit

This facility enables or inhibits the operation of the S'call Mute button. When S'call Mute is inhibited, you cannot operate selective call mute. To complete this procedure, you must have option SD fitted to your transceiver (refer to page 5-13).

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 S'call Mute and press Power On'Off	Hold the S'call Mute button down until the display shows SEt S-CALL ENAbLE	Repeatedly pressing S'call Mute will switch between ENAbLE and inhib (inhibit).
3.	Press S'call Mute	SEt S-CALL inhib	Stop at the selection you require.
4.	Press Power On'Off	No display.	The transceiver is now switched off.

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Step	Action…	Display shows…	Remarks…
5.	Return the front panel link to its original position (F or E).		Refer to section 11, *Changing the position of the front panel link.*
6.	Replace the cover before switching on your transceiver.		

❑

Enabling a channel for selective call

This procedure explains how to enable an existing programmed channel for selective calling. To achieve this you are required to copy the existing programmed channel into the P-channel program, as outlined below.

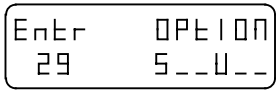
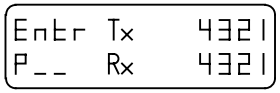
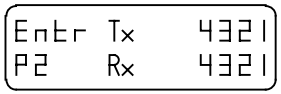
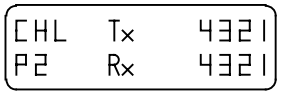
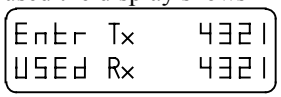
This procedure is similar to *Enabling a channel for tone call* in section 8.

The displays in this section will vary depending on the channel you select.

Step	Action…	Display shows…	Remarks…
1.	Use the Recall or Channel ⩔ and ⩒ buttons to find the channel you wish to enable.	CHL Tx 43211 29 Rx 43211 An example for channel 29.	Refer to section 4, *Selecting channels.*
2.	Press Enter	EntEr Tx ------ 29 Rx 43211	You will hear a 'pip'.
3.	Press Enter	EntEr Tx 43211 29 Rx ------	You will hear a 'pip'.
4.	Press Enter	EntEr OPtIOn 29 ---U--	You will hear a 'pip'. The display shows the individual options for the chosen channel.

☞

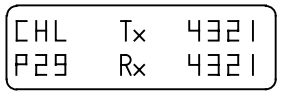
Step	Action…	Display shows…	Remarks…

6.	Press Call Repeat this action until an S appears in the left hand position of the options bar.		You will hear a 'pip'.
7.	Press Enter		You will hear a 'pip'.
8.	Use the numeric buttons to enter the 'P' channel number you wish to use.		You will notice that the display automatically inserts a 'P' to the number.
9.	Press Enter	 If the channel is already used the display shows 	
10.	If the channel is already used, you can either enter another number or press Enter again to override the existing one.	The display reverts back to normal.	The information will either be stored under an existing channel number, or you will have created a new one.

❑

Transmitting a selective call

For selective call to operate you must have your self-identification number programmed, refer to *Setting the self-identification address* on page 5-7.

Step	Action…	Display shows…	Remarks…
1.	Select the required channel.		Ensure the channel is enabled for selective call. Press the 'Display" button to view the enabled options. If you need to enable the channel, refer to *Enabling a channel for selective call* on page 5-14.
2.	Press  to turn the Mute On'Off to the off position.	The display does not change.	The indicator will go out, and you will hear background noise.
3.	Check that the channel is free from traffic. If the channel is busy; wait until the channel is free, or try another channel.	The display does not change.	You will need to listen for approximately 10 seconds to ensure the channel is free.

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Step	Action…	Display shows…	Remarks…
4.	If your transceiver has the fixed, or pre-set selective calling switches fitted, press twice in succession Call	CHL CALL P29 1374 This is an example of the called address identification number 1374. If the called address had been programmed, as described on page 5-6, then the permanent address will be displayed.	The Tx indicator will be lit and you will hear a 'warbling' sound for approximately 10 seconds. Proceed to step 8.
5.	If your transceiver does not have the fixed called address programmed or pre-set selective calling switches fitted, press Call	CHL CALL P29 1374 CHL CALL P29 ----	If the display shows the correct address, proceed to step 7. If no address, or an incorrect address is shown, continue with step 6.
6.	Use the numeric buttons to enter the required selective call address number.	CHL CALL P29 1374	

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Step	Action…	Display shows…	Remarks…
7.	Press Call	CHL CALL P29 1374	You will hear a 'warbling' sound for approximately 10 seconds.
8.	If the call was successfully received and decoded, within 25 seconds you will hear a revertive signal comprising of a number of short tones.	CHL Tx 4321 P29 Rx 4321	You will hear no sound if it was a group call. Normal transmission can now commence.

❑

Receiving a selective call

Your transceiver must be fitted with option SD in order to receive selective calls. To check, press the S'call Mute button and with option SD fitted the S'call Call button indicator will light.

Step	Action…	Display shows…	Remarks…
1.	No action, the transceiver automatically completes this event.	 When you receive a call the display changes to show you the self-identification address of the calling station.	When you receive a call, tones will be heard on the loudspeaker. You will hear a series of three telephone rings for selective calls, and 16 short 'beeps' for group calls.

Notes: On receipt of a call you have two options:

- either answer it immediately, refer to *Answering a received call* on page 5-21
- let the transceiver automatically store the callers self identification number in memory to await your reply, refer to *Returning a received call* on page 5-22.

If your transceiver was unattended at the time the selective call was received, the callers self identification number is stored in memory for you to review at a later time. Refer to *Reviewing the list of received calls in memory* on page 5-23.

If you do not answer the call immediately, once the call is stored in memory your transceiver will continue to give out 'pips' every four seconds to indicate that a call has been received. If you wish to silence these 'pips', yet still retain the display, press the 'Display' button.

If you only wish to receive selective calls, ensure the S'call Mute button is operated and the indicator lit.

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Notes: cont.

If the microphone PTT button is not pressed before the end of the tones:

- the called display will remain on to indicate that a call was received
- a 'pip' will be heard every four seconds
- the external alarm relay contacts will close for approximately two minutes (refer to page 5-33, *Using the external alarm feature*).

❑

Answering a received call

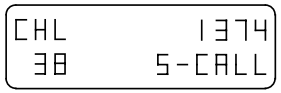
This procedure is used when you want to answer a call that has just been received on your transceiver which is still producing the ringing tone.

Step	Action…	Display shows…	Remarks…
1.	The display shows the channel number and the identification address of the caller.		
2.	Press the microphone PTT button twice in succession.	The display either reverts back to the normal display or shows the details of the next (if any) unanswered calls.	The first press of the PTT button cancels the call and the S'call mute. The second press of the PTT button allows you to transmit to the caller. Proceed to use the transceiver in the normal way..

❑

Returning a received call

This procedure is used when you want to return a call that has been stored in the memory stack.

Step	Action…	Display shows…	Remarks…
1.	Select the call you wish to return. If necessary, tune the antenna.	 The display shows the channel number and the identification address of the caller.	Refer to *Reviewing the list of received calls in memory* on page 5-23.
2.	Press Call		The transceiver will automatically select the correct channel. The call details are now deleted from memory, but ready to transmit.
3.	Check that the channel is free from traffic, then press Call	The display shows the details of the next unanswered call.	The transceiver sends the selective call and the transmit indicator will light. If the call is answered, proceed to use the transceiver in the normal way. The caller details are deleted when you press the PTT button on the microphone.

❑

Reviewing the list of received calls in memory

Your transceiver is able to record up to 10 calls in memory from various stations. These may be on different channels if your transceiver is on scan mode. These calls are recorded in a memory stack awaiting your review. If a station calls more than once on the same channel, your transceiver only records one of the calls. If more than 10 calls are made to your transceiver, the first call stored in memory is deleted to make room for the latest call.

Ensure your transceiver is not in the scan mode before commencing this procedure.

A permanent or brief loss of power to your transceiver will delete information stored in memory . Ensure you record or use all the information stored in the memory stack before switching off the transceiver.

Notes: If the transceiver power is lost momentarily (such as during starting the vehicle engine), the call memory is retained but the number is lost.

Switching the transceiver off using the Power On'Off button deletes all calls stored in the memory stack.

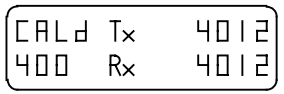
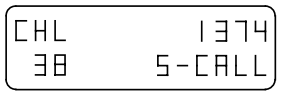
There are two methods of reviewing the list of received calls held in the memory:

- using the Display button to review all calls in the memory
- using the Recall button have direct recall of the called channel.

Reviewing calls held in memory

This procedure allows you to review all calls held in the memory in the order received. Ensure the transceiver is not in scan mode when reviewing the list of selective calls received.

If no calls have been made to your transceiver, the display will continue to show both the channel and frequency numbers.

Step	Action…	Display shows…	Remarks…
1.	No action, this is what you will see on the display of your transceiver.		The last call recorded will be shown in the display.
	If scanning, and not on the channel that called, the display will show CALd.		
2.	To view the calls held in memory, press Display twice within one second.		The first station to call will be displayed first. The display shows the callers identification code (1374) and the channel used (38).

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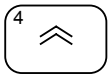
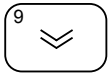
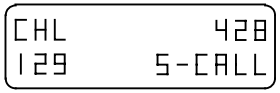
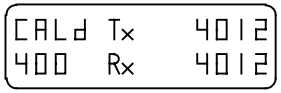
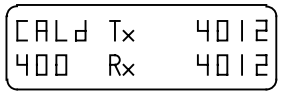
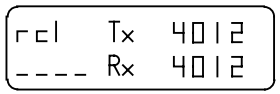
Step	Action…	Display shows…	Remarks…
3.	Press either  or 		Pressing ^^ will change the display to show the next call, and vv will reverse the order viewed. The identification address and corresponding channel number will change for each caller.
4.	If you wish to return a call, refer to *Returning a received call* on page 5-22.		
5.	To delete a call, press the PTT button on the microphone.	The display will show the next caller's details.	When you press the PTT button, the identification number in the display is deleted from memory. You can then select, call or clear the remainder of the calls from memory.
6.	If you don't clear all the calls, the display will show CALd until memory is empty.		If you are on the channel where the call was recorded, the display shown in step 1 will be on view.
7.	Press 	The display shows the standard display.	This returns the transceiver to normal operation.

Recalling calls held in memory

Ensure the transceiver is not in scan mode when recalling a selective call held in memory.

Step	Action…	Display shows…	Remarks…
1.	No action.		
2.	Press Recall and then		
	Call		
3.	Check that the channel is free from traffic, then press Call	The display shows the details of the next unanswered call.	The transceiver sends the selective call.
4.	Once the recalled channel has been cleared, to recall other calls held in memory they have to brought forward by repeating steps 2 and 3.		

❑

Using the beacon feature

The beacon facility is used to check signal conditions between two transceivers fitted with selective call.

The beacon facility has two modes of operation:

- selective beacon mode
- base station (99) beacon mode.

Selective beacon mode

This facility is only available to transceivers with EPROM version 4.1 and above.

With the beacon facility enabled on a transceiver, it will transmit a beacon signal on receipt of a selective beacon call from another transceiver. Refer to the *Selective beacon mode* procedure on page 5-30.

Both transceivers must be on the same channel, or the receiver of the selective beacon call must be scanning through the same channel.

(99) beacon mode

The 99 beacon mode is recommended for use in base station applications and for those transceivers that may have operating selective call but do not have the beacon mode facility.

With a base station enabled for beacon mode, it will transmit a beacon signal on receipt of a selective call ending in 99. Refer to the *(99) beacon mode* procedure on page 5-31.

The thousand and hundred digits of the address must be the same for both the beacon transmitting and receiving stations.

If mobile transceivers have the beacon enabled, the first two digits of each mobile transceiver's self-identification address should be set to a different number so that they do not all transmit a beacon response together.

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General information for both modes of operation

The beacon signal consists of four long tones.

Self-identification addresses ending in 99 should be avoided as these will cause confusion.

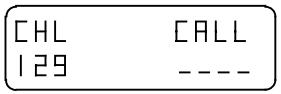
No alarm or call is recorded at the receiving transceiver, only the Tx indicator flashes.

If the receiving transceiver is in scan mode, the scan sequence recommences immediately.

Normal selective call operation is not affected.

❑

Selective beacon mode

Step	Action…	Display shows…	Remarks…
1.	Ensure your transceiver is switched on.	The last channel selected.	
2.	Select the required test channel and tune the antenna.		Refer to section 4, *Selecting channels*.
3.	Press 		When this button is pressed, the S'call Mute is automatically switched off.
4.	Use the numeric buttons to enter the required selective call address number.		This allows you to send a selective call to a station whose address number is 1374.

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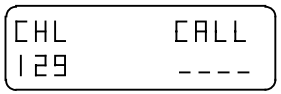
Step	Action…	Display shows…	Remarks…
5.	Check that the channel is free from traffic, then press Tune (beacon call button)	 Immediately the call is received, the display shows the last channel and transmit & receive frequencies used.	The transmit indicator will be lit and you will hear a warbling sound for approximately 10 seconds. If the call is successfully decoded you will hear four long revertive tones. You can check these tones for signal strength and compare them with signal strengths from other channels. Select the channel giving the best return signal strength. ❑

(99) beacon mode

Step	Action…	Display shows…	Remarks…
1.	Ensure your transceiver is switched on.	The last channel selected.	
2.	Select the required test channel and tune the antenna.		Refer to section 4, *Selecting channels*.
3.	Press 		When this button is pressed, the S'call Mute is automatically switched off.
4.	Use the numeric buttons to enter the required selective call number. Use the first two digits of the stations self identification number and ensure the last two are 99.		This will send a signal to the base station enabled for beacon call, whose four digit self ident address begins with 13.

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Step	Action…	Display shows…	Remarks…
5.	Check that the channel is free from traffic, then press Call (beacon call button)	CHL 129 CALL 1399 Immediately the call is received, the display shows the last channel and transmit & receive frequencies used.	The transmit indicator will be lit and you will hear a warbling sound for approximately 10 seconds. If the call is successfully decoded you will hear four long revertive tones. You can check these tones for signal strength and compare them with signal strengths from other channels. Select the channel giving the best return signal strength.

❑

Using the external alarm feature

If your transceiver has option SD fitted, an external alarm facility is made available through the external alarm socket on the rear panel (refer to figure 2.3).

A pair of relay contacts are wired to the socket, which close for two minutes when your transceiver receives a selective call. The relay contacts can be used to operate an alarm bell or buzzer.

- Relay contact rating: 50V DC - 1 Amp
- Plug connections: pins 2 and 3.

Further details on the socket can be found in section 13.

These contacts must not be used to switch voltages greater than 50V, or loads that draw more than 1 Amp.

❑

Testing the selective call functions

This is a special test mode which will not be required for normal operations.

In this mode, the transceiver decodes all selective call signals, and displays the address to which it was sent and the self identification of the calling station.

No called alarms or revertives are generated. (A revertive is a signal transmitted back from the receiving transceiver to indicate message received and decoded satisfactorily.)

Ensure your transceiver is switched off before entering this mode.

Step	Action…	Display shows…	Remarks…
1.	Press and hold 2 Slow and press Power On'Off		Do not hold down the Power On'Off button, just the Slow button for approximately five seconds.
2.	Press S'call Mute within 10 seconds of releasing the 2 Slow button.	CHL 5-CALL 85 _TEST_	
3.	No action. After approximately five seconds the display changes.	CHL -TEST- 85 Rx 1234	The display stays the same until a selective call is received.

☞

Step	Action…	Display shows…	Remarks…
4.	No action.		When a selective call is received, the display shows the called station identification address and the self identification address.
5.	To exit this mode, press Power On'Off		You must switch your transceiver off and on again to clear this mode.

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